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ABSTRACT

Various studies had identified location, neighbourhood characters, property characters and environmental characters as factors affecting property values. Flooding in most cases are natural occurrence that damages life and properties whenever it occurs. Lekki Phase I, having experienced consistent flooding over the years, this paper therefore examines the effect such occurrences on residential property values in the neighbourhood. The study was carried out using survey approach. A total of 200 copies of the questionnaire were administered on the residents while 126 copies were retrieved (63%). Also, a total of 81 questionnaires were administered on Estate Surveyors and Valuers within Victoria Island and Lagos Island axis and 43 (53%) were retrieved. The data collected was analysed using both descriptive and inferential statistical tools. The study found that almost 70% of the properties are owner occupied; prominent causes of flood are drainage problems and rise in sea level. The study further found that there is disparity in rental values of properties in flooded and non-flooded areas. The paired sample t-test conducted showed that there is statistically significant relationship between four pairs of the properties. The study therefore recommends that construction of drainage channels should be made wide enough to drain a large quantity of water.

Keywords: Flooding, Lagos, Lekki Phase I, Rental Values, Residential Property

Introduction

Water is one of the most useful substances on earth. We drink it, bathe in it, clean with it and use it to cook food. We do so many things with water that without it, sustenance of life on earth is impossible. Most of the time, it is completely benign but in large enough quantities, this very same liquid we find so useful can cause a lot of havoc, it can overturn cars, demolish houses and even kill. In this sense, it is termed flooding. A flood is an overflow of an expanse of water that submerges land. It is a temporary covering by water of land not normally covered by water. Flooding is a natural and inevitable occurrence though sometimes can be caused by human activities. Flooding can be defined as an overflow that comes from a river or other body of water and causes or threatens damage. It can also be defined a s high water stage in which water overflows its natural or artificial banks into normally dry land causing unpredicted damage and threat to life. It is a situation that results when land that is usually dry is covered with water from overflowing river or heavy rain, flooding occurs naturally on the flood plains which are prone to flood disaster (Omisore, 2011). Floods are regularly occurring

events. They can even be considered predictable natural disasters whose effects can be mitigated (Bohnsack, Bruce, Dunstan and Spring, 2008). Flooding is a common phenomenon in several parts of the world and its damaging effects cannot be overemphasized. During the 1997 flooding in Yuba California, 38,000 residents were evacuated; nearly 1000 acres of residential land, 15,500 acres of farmland and orchards, and 1700 acres of industrial land were flooded. In all, 322 homes were destroyed, 407 suffered major damages (Dunstan, 1997). Also in England and Wales, according to the UK Environment Agency (2001) over 10% of the population is directly at risk from flooding, with a greater percentage of the population being indirectly affected by flooding due to road closures, service disruption and the loss of goods and produce.

In Northern Nigeria, flood displaced more than two million people as the flood gates on Challawa and Tiga dams were opened to release rising waters along the Niger River. Flooding has also affected at least 300,000 people, submerging hundreds of villages in Niger State (Osowe, 2010). Flooding has wreaked havoc across many other parts of Nigeria in recent years including the states of Sokoto in the northwest, Borno in the northeast, Plateau in the centre and Yobe in the north. Over the years in Lagos, flood has remained a worrisome natural problem which successive governments in the State could not effectively solve. The present administration in Lagos State however received some commendation in the attempt at reducing some of the flooded areas in the state through the commissioning of over 120 drainages (Westo, 2010)

Despite the extent of work done and drainages commissioned by the Lagos State Government, these efforts have been overtaken by bad behaviour of citizens who turn these waterways into refuse dumps (Westo, 2010). Flood therefore is still a problem in areas like Mushin, Jakande, Ajegunle, Alagbado, Festac, Ijora Olopa, Apapa, Iganmu, Ikorodu Road, Adeniran Ogunsanya Street, Maryland, Ebute-Metta, Lawson Street, Victoria Island, Ajah and of course Lekki.

In most areas of the Island, such as Ikoyi, Victoria Island, Lekki and Ajah, flooding has posed a major concern to the occupants of properties. The access roads to some of these properties during raining season are usually in their worse states and this deteriorates year after year. In Lekki Phase I, the case is not different. Most access roads have poor drainage systems and Lekki land being a reclaimed land, with a relatively flat elevation of between 3meters and 5meters above sea level (Atere, 2000) flooding is inevitable. With the above background, this paper therefore examines the effect of flooding on property values in Lekki Phase I and establishes why such an area is still constantly being sort for even with the recurrent flood disasters. The study also tests whether there is significant relationship between flooding and residential property values in the study area.

Fig- 1: Map of Lagos Metropolis Source: Wikipedia (2011)

Study Area

According to Lekki Peninsula Development Plan (1985), Lekki is located at the Eastern end of the Kuramo Waters, stretching eastward about 22km in Eti Osa Local Government Area of the state. It is bounded in the East by Eti Osa Local Government, in the west by Cowries Creeks and Kuramo Waters, in the North by Lagos Lagoon, and in the south by the Bight of Benin. An important locational characteristic of Lekki Peninsula is the sand beaches with relatively flat elevation of between 3metres to 5metres above sea level. In the land use plan of the area, 22% of the area was mapped out for residential use and 26% for preservation. The Lekki Sub-Region comprises of a naturally formed peninsula on the Atlantic Ocean East of Lagos City and on Lagos Lagoon. The peninsula is approximately 70 to 80 km long, stretching from Victoria Island in the west to Refuge Island in the east, with an average width of 10 km.

Literature Review

In developed countries, a large part of the literature concerned with flooding has focused on topics such as impact of flooding in relation to various hurricanes, its effects on megalopolitan land prices, coastal inundation, sea level rise and its impact on properties values. Effects and flood damages to various economies have also been recurrent themes.

As earlier stated flood is a great flow of water; an inundation; a deluge; a condition of abnormally great flow in a river (Chambers, 1993). However, flood mean different thing to different people. Equally there are many ways of categorising floods. A source might be heavy rainfall or high tides, a pathway might be a river or overland flood and a receptor could be a house, field or factory. For the purpose of this paper, a simplified grouping of flood types is practical while recognising that many flood events may combine more than one type. The Environment Agency (EA) definitions of the flood events of 2000 cited in National Audit Office (2001) categorises flood as coastal and estuarine flooding, fluvial flooding and overland flooding (also known as pluvial flooding). In his paper Omisore (2011) identifies six types of flooding: coastal flooding, river flooding, urban flooding, dam burst levee failures, dam spills and flash flooding.

Causes of Flooding

Since the start of history, the world has been plagued by natural disasters. An extreme natural event only becomes a natural disaster when it has an impact on human settlements and activities. There is a strong social as well as natural science component to natural disasters and while the events themselves cannot be prevented, their disastrous consequences can often be reduced by appropriate advance planning and the preparation of emergency measures on the part of the community at risk (National Audit Office, 2001).

From a geological perspective, floods are a natural consequence of stream flow in a continually changing environment. Floods have been occurring throughout earth history, and are expected so long as the water cycle continues to run. Streams receive most of their water input from precipitation, and the amount of precipitation falling in any given drainage basin varies from day to day, year to year, and century to century (Khalequzzaman, 1994). The author went ahead to identify the causes of flood as; sea level rise, subsidence and compaction of sediments, riverbed aggradation, soil erosion due to tilling, excessive development, damming of rivers, seismic (earthquake) and neotectonic activities and greenhouse effects. Ojo (2011) identifies causes of flood in developing nations as unregulated developments, invasion of public areas, lack of institutional capacity at municipal level, unrealistic regulations, economic pressures from developers, ineffectiveness of planning regulation by allowing development on flood plains and poor and lack of standard drainage system on roads. In his own paper, Omisore (2011) grouped the causes as natural causes (heavy torrential rains or storm, ocean storms and tidal waves, usually along the coast and blockade of river or drainage courses by waste) and human causes (lack of meteorological data for weather forecasting, burst of main pipes, dam burst/levee failures, dam spills, property development along river setbacks and

indiscriminate waste disposal). Atere (2000) examines the causes of floods in Ikoyi and Victoria Island, Lagos. The author identifies causes of flood in these areas as excessive rainfall, faulty drainage designs, blocked drainage channels by refuse and sediments, obstruction by buildings and inadequate drainage heads to make the drainages efficiently drain off storm water. The study examined the efficiency of some drainage channels in the face of tidal waves, sea level rise and other human activities.

Factors Affecting Property Values

Real property has no value if it has no utility, not scarce and not effectively demanded. Real property has significance only as it satisfies man's needs and desires. It is this man's collective desire for real property that gives rise to value (Olusegun, 2003). Thus, the ability of a property to satisfy man's needs and desires together with its degree of scarcity and utility compared with others makes man to ascribe value to it. Property value, therefore, according to Millington (1981) is the money obtainable from a person(s) willing and able to purchase property when it is offered for sale by a willing seller, allowing for reasonable time for negotiation and with the full knowledge of the nature and uses which the property is capable of being put. Real property is a heterogeneous good that is comprised of a bundle of unique characteristics reflecting not only its location, but equally affected by other amenities such as the quality of neighbourhood and infrastructure. Ge and Du (2007) opine that property value is an essential aspect of property markets worldwide and determined by a variety of factors and the determination of those factors is a significant part of property valuation. The list of the main factors affecting property values from various studies include; age, location, size, neighbourhood characteristics, economic activity, population, transport etc. (Joslin, 2005; Kauko, 2003; Paz, 2003; Oyebanji, 2003 and Olusegun, 2003). Kamali, Hojjat and Rajabi (2008) group the variables determining property values into; environmental variables, neighbourhood variables, accessibility (location) variables and property variables.

On country basis, the studies carried out in UK showed that location, level of income, interest rates and population are the major factors affecting property values. While in United States of America, the studies conducted showed that the main factors influencing property values are: number of employment, age composition of the population and rate of household formation. On the other hand, the studies in New Zealand revealed that property values are mostly influenced by the level of income, construction activities, economic activities, lot size, age of the house and other property characteristics. The Nigeria situation is not too different from that of the UK because according to Olusegun (2003) and Oyebanji (2003), the major factors influencing property values, among others, are location, plot size, income, interest rate and population.

Various earlier studies had been conducted on the effect of location on property values. These studies include Burgess (1925), Hoyt (1939), Pred (1966) and Isard (1956) Hendrikse (2003). Their various findings agreed that location is a major determinant of property value. Location is important in relation to proximity to the target market and sources of supplies; conditions and facilities are important in relation to attracting optimal rentals, and security is important in relation to tenant and visitor safety. However these studies ignore the effects of other factors (variables) in the determination of property values. McCluskey et al (2000) measure the effect of location on residential house prices using the Ordinance Survey of Northern Ireland data and conclude that location and structural characteristics are the key determinants of residential property values. Kauko (2003) lists a set of attributes that have been commonly used in property valuation research including accessibility factors, neighbourhood level factors, specific negative externalities, public services, taxes and density factors.

Tse and Love (2000) identify four categories of attributes namely; structural, physical, neighbourhood and environmental, for measuring residential property values, using hedonic equation in Hong Kong. Similarly, Chau, Wong and Yiu (2004) studied the effect of balconies on the residential property values in Hong Kong and found a positive effect on the value of a property irrespective of the

quality of the view. Oyebanji (2003) identifies seven factors that affect property values. These factors are; population (increase or decrease), changes in fashion and taste, institutional factors (these are factors relating to people's culture, religious belief and government action), technological factors, economic factors, location and complementary uses. Olusegun (2003) also identifies these factors under three major groups as external factors, internal factors and economic factors. The external factors include location and accessibility, internal factors include the individual features of the property such as number of bedrooms, plot size, garage, number of toilet, and so on, economic factors include individual's purchasing power, the level of interest and inflation rates in the country. Kalu (2001) argues that major considerations for property value hinge on the property's ability to produce income, be in demand and have a good location relative to its use. He identifies other determinants of value to include scarcity, prospect of income growth, state of the economy, cost in use, government and political factors, physical attributes and taxation.

Effects of Flooding on Property Values

Various scholars have researched on the impact of flooding on property values in different nations. In the United States of America existing studies have examined the impacts of both flood risk and a particular flood event on house prices. A consensus reached stated that flood risk lowers house prices after controlling for property attributes, location and neighbourhood characteristics, although the magnitudes of price discounts vary (MacDonald, Murdoch and White 1987; Holway and Burby, 1990; Bartosova et al., 1999; Harrison, Smersh and Schwartz, 2001; Hallstrom and Smith, 2005; Bin and Polasky, 2004). Tobin and Montz (1988) compared means/medians of property values before and after the 1985 flood event in Yuba County, California, using simple t-tests. They found that immediately after the flood event there was no property market in the flooded area and houses were sold in the next few months but at a lower price; as memories of the flood receded, the housing market picked up to better than pre-flood levels. These findings are based on a small sample size (62 properties) and no allowance was made for the differing characteristics between houses. In the authors' following paper (1989), No significantly negative effect of flooding was reported. Montz (1992) examines the relationship between flooding and residential property values through repeat sales techniques, in three New Zealand communities, Te Paeroa, Te Aroha and Thames. He finds differing reactions to the disaster in different communities. For example, in Te Paeroa flood-free properties experienced a significant increase in prices following the flood event while those flooded did not. In Te Aroha the entire community experienced a decline in property values. In Thames however, no price decrease existed. Another study in Pennsylvania, California and Illinois finds that selling prices fell following flood events but recovered to levels at or above pre-flood values; and the recovery period was shorter for places experiencing less severe flooding (Tobin and Montz, 1994). Three possible explanations exist to interpret the inconsistent results about the house price effects of a flood event. First, different socio-economic contexts and flood experiences may result in differences in people's perception of flood hazard and therefore market behaviour of house prices (Montz, 1992; Tobin and Montz, 1994). If flooding occurs only rarely in an area and there is a long time gap between two flood events, it is likely that house price falls immediately after a flood event and then recovers, as people tend to forget flood risks. If flooding occurs frequently, house prices may remain low as the market does not have enough time to recover between flood events. In this case, flood risks have been completely capitalised into house price and future flood has no impact on property values. A second explanation for the mixed findings in the literature is that sample sizes in some studies are too small to reach robust conclusions, e.g. 62 properties in Tobin and Montz (1988). A third explanation concerns different methods used by researchers in various studies. For example, some studies controlled for property attributes while others did not. Bin and Polasky (2004) uses the 1999 Hurricane Floyd as a natural experiment to analyse property prices of 8,375 homes between 1992 and 2002. The authors reported that houses located within the floodplain were worth on average 5.7% less than a comparable

property located outside of the floodplain. This price discount doubled after Hurricane Floyd.

In United Kingdom, Eves and Brown (2002) wrote on the impact of flooding on residential property values in England. The objectives of their research were to determine the performance of flood affected properties in comparison to similar nearby residential properties that are not flood liable, to establish if there is an increasing reluctance for insurance companies to insure residential property in flood liable areas, and to determine if flood liable residential property provides an additional security risk to financial institutions in the home lending market.
Eves and Brown(2002) quoting the Environmental Agency (2001) stated that over 10% of the population of England and Wales is directly at risk from flooding, with a greater percentage of the population being indirectly affected by flooding due to road closures, service disruption and the loss of goods and produce. This was equated to 1.85 million residential properties in England being at risk of flooding, with an additional 185,000 commercial properties also being situated in flood prone areas. Based on these residential and commercial property numbers, Environmental Agency (2001) stated that there were up to five million people in England and Wales who were directly at risk from flood event and that as at 2001 the value of residential and commercial properties subject to flooding was over £200 billion, with a further £14 billion of rural land subject to flooding. The study was based on the survey of chartered surveyors in all counties of England that had been identified as flood liable and subject to coastal tidal flooding. These counties were identified from the Environment Agency flood maps. The result of the survey showed that out of the 23 counties surveyed, 12 counties rarely experienced any residential property flooding, with a further 4 counties experiencing frequent flooding and seven counties being subject to regular flooding. Their findings also revealed that the decline in residential property values is linked to the availability of both residential property insurance and finance. In areas where insurance is difficult to obtain, the impact on residential values is more significant.

Eves and brown, (2002) concluded in their research that there is a direct significant correlation between the severity of a flood and a reduction in residential property values. A severe flood provides a very visual short-term impact on the property buyer, seller, chartered surveyor, insurer and financier. Previous research by Eves (1999) indicated that this perception of flooding reduces in relation to purchasers and sellers but is still a significant factor for the other parties involved in residential property.

In Australia, Eves (1999) researched on the long term impact of flood effect on residential property prices in Australia. The research was conducted to determine the performance of flood affected properties in comparison to similar nearby residential properties that are not flood liable and to establish if the difference in values between flood liable residential properties and flood free residential properties is constant, or decreases as the time period from the last known flood increases. In his research he quoted Lambley and Cordery (1991) stating that the property that is subject to over floor flooding can result in the overcapitalisation of the property due to the requirement to restore the property after flooding has occurred and that not rectifying the damage from flooding may minimise the problem of overcapitalisation but would result in the loss of property value due to the neglected state of the building and overall structural depreciation. He also quoted Fibbens, (1992) stating that flood prone properties are not considered as attractive as other residential properties and this results in a lower price or value and that on this basis the greatest impact on value or price would be immediately after a severe over floor flood where both disruption and property damage occur. Eves, (1999) analysis, showed a definite price differential between similar types of properties that are flood free compared to the same type of properties that are flood liable. He noted that the price differentials were not uniform but varied on an annual basis. His research confirmed that the results of earlier studies that flood liable property has a lower value than similar property that is not flood liable. The study also showed that following a period of both decreasing property prices and only small annual increases in property prices,

the price difference between flood liable and flood free land will decrease, provided there are no further incidences of over floor flooding.

Research Methods

In the conduct of this research, the survey, cross sectional and descriptive methods of research design were used. While the population of study consists of the 2000 Lekki Residential Buildings and the 267 firms of Estate Surveyors and Valuers in Lagos State (Nigerian Institution of Estate Surveyors and Valuers, NIESV, 2009) Seventh Edition of the Directory of Members and Registered Firms in Nigeria. However, the sample frame comprises the 1000 properties located on flooded streets and the other 1000 properties located on non flooded streets (information obtained from the Lekki Phase I Association) out of which 10% (Nwana,1981) was sampled from each group along with the 81 Estate Surveying and Valuation Firms on the Lagos Island and Victoria Island axis. Random sampling technique was adopted in the selection of the sampled properties. Data collection was done with the administration of instrument (questionnaire) on the selected respondents. In analysing the data collected, the t -test model was applied in addition to frequency tables, percentage and bar chart methods.

Table 1 shows the various types of properties in the study area. It is evident from the table that more than half of the respondents reside in Duplexes (65%), while 22% reside in 3 bedroom flats and the remaining (13%) reside in one bedroom apartment. Indepth interview conducted revealed that the respondents living in one bedroom apartment occupy the boys' quarters of the main buildings and majority of them are not married.

Table 2 shows the occupancy status of residents in the study area. According to the analysis in table 2, Lekki Phase I properties are majorly occupied by their owners (owner occupier, 68%), while the remaining 32% are tenants. With 68% owner occupied properties within the study area, it could be deduced that there are relatively few rented properties in Lekki Phase I.

The annual rent paid by tenants is shown in table 3. The table reveals that 2.5% of the respondents paid annual rent between ₦1million and ₦1.5million. At the extreme end of the rental ladder are respondents (25%) paying rent above ₦4.6million. Indepth interview conducted reveals that similar properties located in flood free zone of the study area command higher rents than the ones contained in table 3. The table clearly reveals that the minimum rental value in Lekki Phase I is ₦ 1million naira and this could be the reason why there are few rented properties in the study area.

Table 4 shows the annual income of respondents (residents) in the study area. Only 4% of the respondents are at the lower rung of income ladder earning between ₦100,000 and ₦500,000 annually. Indepth interview conducted on this set of respondents reveals that they occupy boys' quarters paying tokens to the main occupant of the properties. On the other hand, 78% of the respondents earn ₦5million and above annually. The indepth interviews conducted on the respondents earning above ₦5million shows that majority of them occupy their houses.

Table 5 contains the analysis of the causes of flooding in Lekki Phase I from the perspectives of both the residents and Estate Surveyors and Valuers. The table shows that 58% of the residents were of the opinion that drainage problem are the major cause of flooding in the study area. 24% opined that the major cause of flooding in the study was sea level rise. From the perspectives of the respondent Estate Surveyors and Valuers, 49% were of the view that drainage problems cause flooding in Lekki Phase I while 23% belief that sea level rise is the cause. The table shows that, to different degree, both the residents and the Estate Surveyors and Valuers agree that drainage problems and sea level rise are the main causes of flooding in the study area.

A comparison of rental values of properties in the flooded and non-flooded areas of Lekki Phase I is contained in table 6. The average rental value for 5-bedroom duplex in flooded area is ₦4,150,000 while similar property in non-flooded area attracts ₦ 4,956,500 annually.

On the other hand, while 4-bedroom duplex in flooded area lets for ₦3,375,000 annually, similar property in non-flooded area lets for ₦3,923,900 annually. The trend runs through for other types of properties identified in the study area. The analysis contained table 6 reveals that properties in non-flooded areas of Lekki Phase I attract higher rental values than similar properties in the flooded areas.

Test of Hypothesis

The hypothesis was tested to determine whether there is a statistically significant relationship between rental values of properties in the flooded and non flooded areas of the study area. This was tested using the paired sample t-test from SPSS version 17.0 and the result is shown in table 7.

In table 7 the first column shows the five different types of properties in the study area (flooded and non flooded areas). The second column shows the mean of the rental values of the properties while the third column shows the standard deviation of the of the rental values of the properties. Using the probability "p" value, [last column labelled Sig. (2-tailed)] at 5% degree of freedom the table reveals that the p values for pairs 1 – 4 were less than .05 (i.e. p = .002, .023, .002 and .029 respectively). On the contrary, the p value pair 5 was more than .05 (i.e. p = .069). It can therefore be inferred from the table that for pairs 1, 2, 3 and 4, there is a statistically significant difference between rental values of properties in flooded and non flooded areas while for pair 5 there is no statistically significant difference between the rental values of properties in flooded and non flooded areas.

Conclusions and Recommendations

Flooding is a perennial problem in Lagos Metropolis, in general, and Lekki Phase I, in particular. The major causes of flooding in Lekki Phase I are drainage problems and sea level rise. A comparison of rental values from both flooded and non-flooded areas of Lekki Phase I show a great disparity with rental values of properties in non-flooded areas higher than those of the flooded areas. The paired t-test conducted also shows that there is a statistically difference in the rental values of properties from both areas. Other causes of flooding identified are poor refuse disposal and heavy rainfall. The study therefore recommends a widening of the drainage systems within the area and subsequent drainage construction should take into consideration the peculiarity of the low lying nature of the soil strata in Lekki Phase I.

Results and Discussion

Table-1 Type of Properties Occupied.

Type of properties	**Frequency**	**Percentage**
Duplex	82	65
3 Bedroom flat	28	22
One Bedroom Apartment	16	13
Total	**126**	**100**

Source: Field Survey 2011

Table-2 Respondents Occupancy Status

Occupancy Status	**Frequency**	**Percentage**
Owner Occupier	86	68
Tenant	40	32
Total	**126**	**100**

Source: Field Survey 2011

Table-3 Annual Rent of Respondents

Annual Rent (₦)	**Frequency**	**Percentage**
1,000,000 - 1,500,000	1	2.5
1,600,000 - 2,500,000	7	17.0
2,600,000 - 3,500,000	9	22.0
3,600,000 - 4,500,000	13	32.5
4,600,000 and above	10	25.0
Total	**40**	**100.0**

Source: Field Survey, February 2011

Table-4 Annual Income of Respondents (Residents)

Annual income (₦)	**Frequency**	**Percentage**
100,000 - 500,000	5	4
600,000 - 2,000,000	7	6
2,100,000 - 5,000,000	16	13
5,000,000 - 10,000,000	51	41
Above 10,000,000	47	37
Total	**126**	**100**

Source: Field Survey, February 2011

Table-5 Causes of Flood in Lekki Phase I

Causes of Flood	**Lekki Residents**	**Estate Surveyors and Valuers**
Drainage Problems	73 (58%)	21 (49%)
Sea Level Rise	30 (24%)	10 (23%)
Poor refuse disposal	15 (12%)	4 (9%)
Heavy Rainfall	8 (6%)	8 (19%)
Total	**126 (100%)**	**43(100%)**

Source: Field Survey 2011

Table-6 Comparison of Rental Values of Properties in Lekki Phase I. (Flooded and Non-flooded Areas)

Property Type	**Flooded Areas (Rental Value) ₦**	**Non-flooded areas (Rental Value) ₦**
5-Bedroom Duplex	4,150,000	4,956,500
4-Bedroom Duplex	3,375,000	3,923,900
4-Bedroom Terrace	3,300,000	3,923,900
3-Bedroom Flat	2,000,000	2,923,900
2-Bedroom Flat	1,630,000	1,839,100

Source: Field Survey 2011

Table-7 Paired Sample Test of Rental Values in Lekki Phase I

		Paired Differences							
		E= Number of zeros			**95% Confidence Interval of the Difference**				
	Properties	**Mean**	**Std. Deviation**	**Std. Error Mean**	**Lower**	**Upper**	**t**	**df**	**Sig. (2-tailed)**
Pair 1	Five bedroom flooded area – five bedroom non-flooded area	-7.50000E5	9.31891E5	2.08377E5	-1.18614E6	-3.13862E5	-3.59	19	.002
Pair 2	Four bedroom flooded area – Four bedroom Non-Flooded area	-5.25000E5	9.49030E5	2.12210E5	-9.69160E5	-80840.29926	-2.47	19	.023
Pair 3	Three bedroom flooded area – three bed room non-flooded area	-9.00000E5	1.10143E6	2.46288E5	-1.41549E6	-3.84513E5	-3.65	19	.002
Pair 4	Two bedroom flooded area – two bedroom non-flooded area.	-2.05000E5	3.87264E5	86594.94333	-3.86245E5	-23754.70062	-2.36	19	.029
Pair 5	Four bedroom terrace flooded area – four bedroom terrace non-flooded area	-5.50000E5	1.27630E6	2.85390E5	-1.14733E6	47327.82804	-1.927	19	.069

Source: Field Survey 2011

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