EXAMINING THE EFFECTS OF COASTLINE ON PROPERTY VALUES IN VICTORIA ISLAND

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Abstract: The impacts of coastal region cannot be over emphasized, as this tends to benefit and impact residents, property owners, tourists, businesses, local authority and state governments. Developers, private investors, and individuals may be affected as controls impact growth in the area. Therefore this study examined the effects of coastline on property values in Victoria Island. Data was collected using questionnaire administered on Estate Surveyors and Valuers managing properties in Victoria Island. A total of 55 questionnaire was retrieved from the 90 administered giving a return of 61.11%. The study revealed that rental values of residential properties are on the increase from ₦1.5million in 2011 to ₦4.5million in 2015, duplexes increased form ₦2.5million in 2011 to ₦5.5million in 2015. Also, the rental value of detached buildings jumped from ₦2.5miion in 2011 to ₦6.2million in 2015 while that of bungalows moved from ₦1.5million in 2011 to ₦5.8million in 2015. Equally, the rental values of office (commercial) properties are on annual increase. The study indentified sea level rise (96.4%), ocean currents (87.3%) and population density (61.8%) as the main factors affecting property values in the coastline region of Victoria Island. The main challenges faced along the coastline in the study area are water logging (96.4%), land erosion (90.9%), spatial expansion (87.3%) and flooding (65.5%). Finally, the study further revealed that, in spite of the challenges, there are still some benefits derivable along the coastline of Victoria Island and these benefits include economic benefits (92.7%), socio-cultural (96.4%) and health benefits (60.0%). The study concluded that despite all the challenges, property values in coastline region of Victoria Island are always on the increase.
Keywords: Coastline, Estate Surveyors and Valuers, Nigeria, Property Values, Victoria Island.

1.0   Introduction

This study mainly focused on assessing the impact of coastline on property values in Victoria Island. The study characterizes and quantifies the rental values of properties found in the study area. The resource of the coastal region impacts on property values in several ways. From the biological and ecological perspective of the living resources, the Coastal Bays

environment provides habitat, food and protection, including unique estuary water resources and wetlands that support flora and fauna, and fish, wildlife, insects and birds. These Coastal Bay resources are also valued by humans for their boating, fishing and swimming, as well as aesthetics, tranquility, and their environmental features that attract development, new residents, tourists and economic growth. There is a rich literature that gives test assessments of the impact of nearness to amenities, for example, schools (Brasington, 1999), golf courses (Grudnitski and Do, 1997), parks (Harner, 1974), airport noise (Bell, 2001), overhead transmission lines (Wolverton and Bottenmiller, 2003), and toxic waste sites (Reichert, 1997) on the conceivably negative side. Assessments   of the impacts of these kinds of location-particular variables are important to make informed valuation decisions used by buyers, sellers, lenders, and tax assessors. The location characteristic of enthusiasm for this study is nearness to the sea. Much easygoing and less observational proof recommends those waterfront properties, and especially those proximate to a shoreline, have gained an advantage over most real estate market segments over the previous decade.

It is not just the scenic beauty that this exo-region has to offer that drives people to crowd themselves in these thin extends yet the way that the beach front region are to a great degree gainful terrains facilitating almost a world's quarter essential plant generation, the world's major producing grounds and fish nurseries furthermore the most fertile agricultural land . The coastal location   incorporates both the regions of area subject to marine impact and the zone of ocean subject to land impact. As indicated by Coastal Zone Management Subgroup (CZMS, 1990), the development requirements for a huge number of people is the yearning to live on the world's coastal location, where they appreciate the lavishness and magnificence of the ocean. The ocean gives assets, joins waterfront urban areas and provides opportunities for trade.

On the other hand, the ocean often times threatens the inhabitants of the coastal regions, taking its toll in human and natural resources. Worthy of note are tornadoes, tempests, waves and ocean storm, characteristic change, shoreline front disintegrating, coastal flooding, rise in sea level can batter the coastal regions, accomplishing disaster and distress. All of these potential risks of coastline zones have resulted in diminish property values in such areas (Ramsay and Bell, 2008). According to Center (2000) coastal erosion may be responsible for the loss of about 1,500 homes per year–costing coastal property owners about USD4.75 billion per year including damage to structure and the loss of land. The Millennium Development Goal (MDG) No 7 tries to guarantee environmental sustainability by year 2015

(which had already passed). The targets of this goal include: incorporating the principles of sustainable development into country policies and reverse loss of environmental resources; reduce by half the proportion of people without feasible access to safe drinking water; and accomplish significant improvement in lives not less than 100 million slum dwellers by 2020 (Ibikunle, 2009). Ibikunle, (2009) was of the opinion that federal government's efforts at controlling development within the flood plains of Nigeria has not been impressive, the National Inland Water Ways (NIWA) is a federal government agency vested with the authority to control development within the flood plains limited to one hundred meters (100m) inland from all waterways within the country and such has not been effective in the control of development in the flood plains of Lagos where flood plains are often more than one hundred meters (100m) from the water body.

Less casual and empirical evidence suggest that coastal properties and particularly those proximate to a beach have outperformed most real estate market segments over the past decades. Since the late 1950s there have been several unsuccessful attempts to keep the ocean at bay, by sand-filling. By the turn of the 21st century, the Atlantic had crept dangerously close to the heart of Victoria Island, offices and homes were flooded when the ocean overflows its banks and eventually washing away half of the Ahmadu Bello Way (coastal road) which made the road virtually impassable. Adjoining streets, such as Bishop Oluwole, Tiamiyu Savage, Adetokunbo Ademola, Oju Olobun, Ologun Agbaje and others are not spared. Most properties around these areas were vacant. The question therefore is whether the few properties occupied around these areas can command high values as it should be. Can the empirical studies about coastal properties still apply in this situation? Based on this, the study assessed the effects of coastline on property values in Victoria Island.

2.0   Literature Review

Coastal inhabitants enjoy living in the coastal zone because it is part of their lifestyle, but they are under constant threat due to a combination of natural condition and human influence. Ocean widths are sustained by erosion of the coastal dunes, but subsequent development on top of these dunes has meant that this replenishment process has to be carried out artificially. Factors affecting the coastal zones are population factors along with other factors such as: wind and waves, sea level rise, sea grass loss, tides, fluctuation in water level and ocean current. The population factors include population density, migration and urbanization.

Various researches had been conducted on factors affecting property values. These factors could be grouped into social forces, economic forces, governmental force and environmental

forces (Appraisal Institute, 2001). Wilhelmsson (2000) identifies four main factors that affect demand for properties and hence the price. These factors include the property's structural attributes, its location or neighbourhood amenities, its environmental attributes and macro attributes like inflation and interest rate. The independent variables affecting property values are limited to property structural characteristics and location in terms of neighbourhood quality and accessibility (Bowen, Mikelbank and Prestegaard, 2001). McCluskey, Deddis, Mannis, Lamont, and Borst (2000) classify location in terms of neighbourhood characteristics and accessibility and structural or physical characteristics of the property. On the on other hand, Gallimore, Fletcher, and Carter, (1996) and Wilhelmsson, 2000) opine that neighbourhood quality is a major factor affecting property values. Accessibility and physical characteristics – accommodation and size also play their parts in influencing property values (Sirmans, Macpherson and Zietz, 2005). Structural improvement and materials used, age and condition of structure, effects of coastline on property equally influence property values (Byron Shire Council, 2000; Spillar, 2000; Major, 2004; Anning, Dominey-Howes and Withycombe, 2009 and Anning, 2011).

The major problems of the coastal zone derive from human and natural impacts due to high population, industrial and agricultural activities aimed at meeting food, energy, goods and other requirements of the populace. Most of the environmental problems of the coastal zone are caused primarily by land based activities such as human activities like overexploitation of fisheries (Stokstad, 2006; Food and Agriculture Organization FAO, 2007; Rebufat, 2007; Coll, Libralato, Tudela, Palomera, and Pranovi, 2008; Niles, Dey, and Maslo, 2014) coastal and marine pollution (Black 1996), oil spills (Smith, 1970), coastal erosion (Ayoade and Akintola 1980), challenges of coastal urbanization, Spatial expansion, earthquake, salinity (Shamsuddoha and Chowdhury, 2007), water logging, (Rahman, 1995), land erosion and land-sliding

3.0   Research Methodology

Survey research design was adopted by administering questionnaires to registered Estate Surveyors and Valuers who have their firms in Lagos Island and Victoria Island. This was done because it was possible for the researchers to reach all the respondents (90) hence; the instrument of data collection (questionnaire) was administered on all the respondent firms. The data retrieved was collated and analysed using descriptive and inferential analytical tools such as, frequency distribution tables, and relative importance index (RII). Frequency distribution was used to enable the researcher have a glance at the entire data conveniently

since it shows whether the observations are high or low and also whether they are clustered in an area or spread across the entire scale. It equally helps in organising the data into a meaningful form after the completion of data collection so that a trend, if any, emerging out of the data can be seen easily. On the other hand, relative important index measure was used, to rate variables against a scale so as to assist in assessing the significance of each factor. Thereafter, the scale is transformed into an index otherwise known as relative important index (RII) for each factor to determine the ranks of the different factors. The analysis for this study employs the relative important index or RII model stated as follows:

$$RII = \frac{\sum a_i n_i}{\sum x_j}$$

Where: i = response category index

x_j = the sum of j factors 1,2,3………N

a_i = constant expressing the weight given to the ith response

n_j = the variable expressing the frequency of the ith

4.0 Analysis of Data

In order to establish the effects of Victoria Island coastline on property values within the study area, the data collected were collated and analysed as contained in tables 1 – 7 and was further buttressed by figs 1 – 2.

Table 1: Professional Qualification

| Qualification	Frequency	Percentage
Associates	47	85.5
Fellows	8	14.5
Total	**55**	**100.0**

Table 1 shows the professional qualification of the respondent Estate Surveyors and Valuers. It is evident from the table 85.5% of the respondent Estate Surveyors and Valuers are Associates members of the Nigerian Institution of Estate Surveyors and Valuers while the reamining 14.5% are fellows. The result shows that all the respondents are professionally qualified to practice as Estate Surveyors and Valuers whose professional experience was relied upon for this study.

Table 2: Rental Values of Residential Properties in Victoria Island

Properties	Year 2011 ₦ (million)	Year 2012 ₦ (million)	Year 2013 ₦ (million)	Year 2014 ₦ (million)	Year 2015 ₦ (million)
Flats	1.5 – 3.0	1.8 – 3.0	2.5 – 3.7	3.0 – 4.2	3.5 – 4.5
Duplex	2.5 –4.0	3.0 – 4.2	3.6 – 4.5	3.7 –5.0	4.5 – 5.5
Detached Building	2.5 – 4.5	3.5 – 5.0	4.3 – 5.9	5.0 – 6.0	5.0 – 6.2
Bungalow	1.5 – 3.0	2.5 – 3.8	3.0 – 4.0	3.8 – 4.5	4.0 – 5.8

Table 2 exhibits the rental values of residential properties in Victoria Island. The result from the table reveals that rental values of residential properties are on the increase from ₦1.5million in 2011 to ₦4.5million in 2015, duplexes increased form ₦2.5million in 2011 to ₦5.5million in 2015. Also, the rental value of detached buildings jumped from ₦2.5miion in 2011 to ₦6.2million in 2015 while that of bungalows moved from ₦1.5million in 2011 to ₦5.8million in 2015. From the table, it could be concluded that the rental values for each property type is increasing over the years.

To have a better view of the rental values indicated in table 2, a graphical presentation is depicted in figs 1a and 1b using composite bar charts and line graphs.
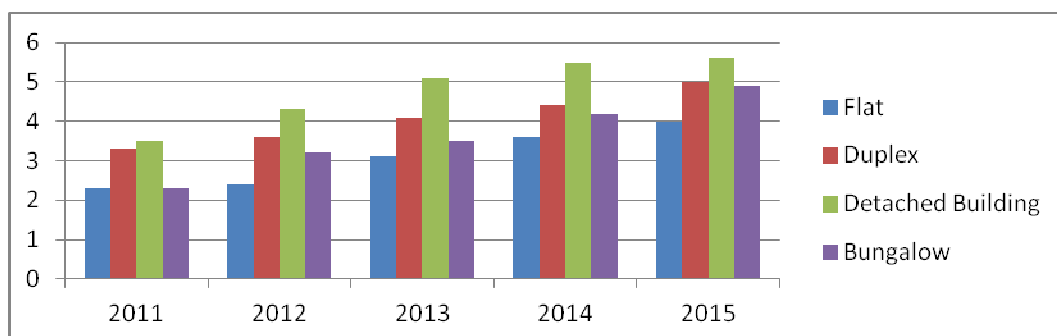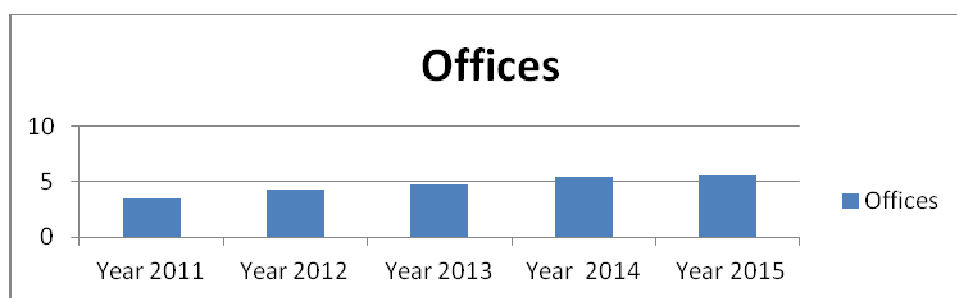

Fig. 1a Composite Graph of Rental Values of Residential Properties in Victoria Island
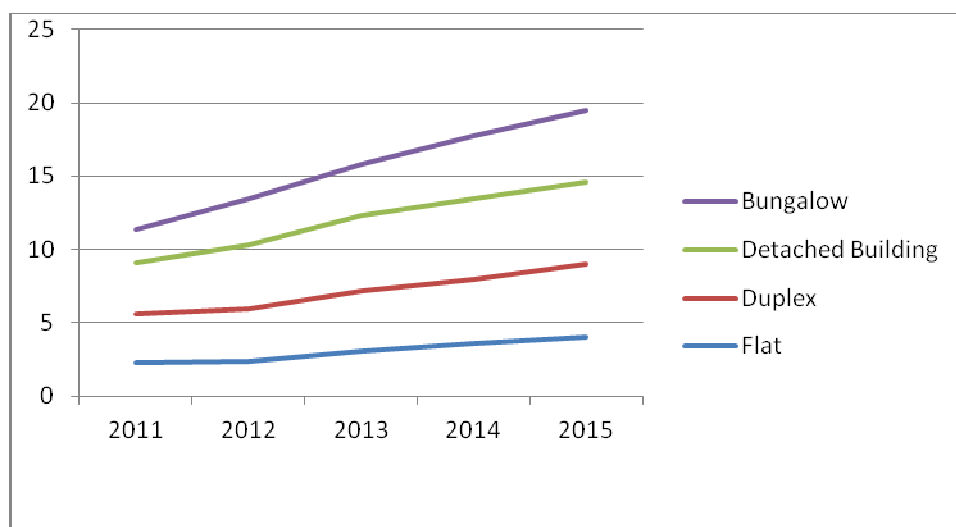
Figure1b Linear Graph of Rental Values of Residential Properties in Victoria Island

Both figures 1a and 1b show that the rental values of residential properties are increasing from 2011 to 2015. The slope of the lines in fig 1b shows the rate at which the rental values increased. The gradient for bungalows and detached buildings is steep and thus implies the rental values for the two types of properties are increasing speedily. On the other hand, the gradient for flats is low which means that the rate of rent increase is low.
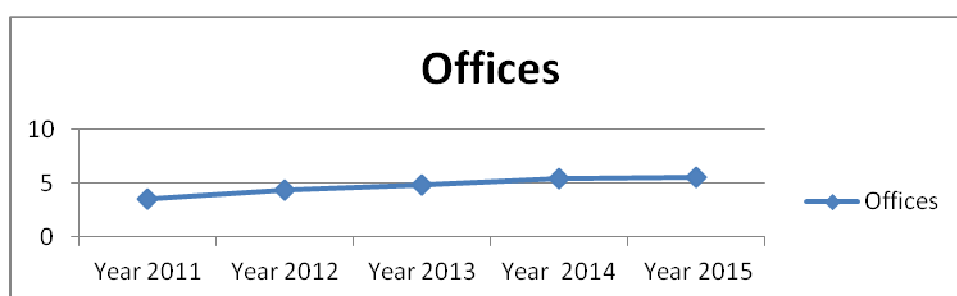
Table 3: Rental Values of Commercial Properties in Victoria Island

Properties	Year 2011 ₦ (million)	Year 2012 ₦ (million)	Year 2013 ₦ (million)	Year 2014 ₦ (million)	Year 2015 ₦ (million)
Offices	3.0 – 4.0	3.5 – 5.0	3.7 – 5.8	4.2 – 6.5	4.7 – 6.5

Table 3 shows the rental values for commercial properties in Victoria Island. It is evident from the table that the rental values of office (commercial) properties are increasing yearly.

Fig. 2a Graph of Rental Values of Commercial Properties in Victoria Island

Figure 2b: Linear Graph of Rental Values of Commercial Properties in Victoria Island

To further confirm the inference from table 3, the graphical presentation as contained in figs 2a and 2b were prepared. Both the bar chart and linear graph equally showed that the rental values of commercial properties, particularly offices have been on the increase from 2011 to 2015.

Table 4: Factors Affecting Property values in Coastline Victoria Island

Factors	Yes		No	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Wind and Waves	3	5.5	52	94.5
Sea Level Rise	53	96.4	2	3.6
Sea Grass Loss	5	9.1	50	90.9
Tides	19	34.5	36	65.5
Ocean Currents	48	87.3	7	12.7
Population Density	34	61.8	21	38.2
Migration	0	0	55	100
Urbanisation	2	3.6	53	96.4

The various factors affecting property values in coastline region are listed in table 4. The table shows that sea level rise (96.4%) is the major factor affecting property values in the coastline region of Victoria Island. This is followed by ocean currents (87.3%) and population density (61.8%). It could therefore be concluded, from the analysis in the table, that the principal factors affecting property values in coastline Victoria Island are sea level rise, ocean currents and population density.

Table 5: Challenges Faced along the Coastline Region of Victoria Island, Lagos State

Challenges	Yes		No	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Earthquake	0	0.0	55	100.0
Water Logging	53	96.4	2	3.6
Land Erosion	50	90.9	5	9.1
Flooding	36	65.5	19	34.5
Spatial Expansion	48	87.3	7	12.7

Table 5 shows the challenges faced along the coastline region. The table reveals that water logging (96.4%) is a major challenge faced along the coastline region of Victoria Island. This is followed by land erosion (90.9%), spatial expansion (87.3%) flooding (65.5%). With the analysis contained in table 5, it could be concluded that the prevailing challenges faced along the coastline region of the study area are water logging, land erosion, spatial expansion, and flooding.

Table 6: Benefits Derived along the Coastline Region of Victoria Island, Lagos State

Benefits	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Economic Benefits	51	92.7	4	7.3
Government Revenue	11	20.0	44	80.0
Foreign Exchange Earning	0	0	55	100
Employment Generation	1	1.8	54	98.2
Socio Cultural Benefits	53	96.4	2	3.6
Health Benefits	33	60.0	22	40.0

Listed in Table 6 are the benefits derived along the coastline region of Victoria Island. According to the table, the main benefits are economic benefits (92.7%), socio-cultural (96.4%) and health benefits (60.0%). Other benefits include government revenue (20%) and employment generation (1.8%). The conclusion form table 6 is that socio-cultural benefits, economic benefits and health benefits are the major benefits derived from the coastline region of Victoria Island.

Table 7: **Ranking the Benefits Derived Along the Coastline Region of Victoria Island**

Factors	Strongly Agree $a_i = 5$	Agree $a_i = 4$	Indifferent $a_i = 3$	Disagree $a_i = 2$	Strongly Disagree $a_i = 1$	Total	RII	Ranking
Economic benefits	50 $a_i n_i = 250$	4 $a_i n_i = 16$	1 $a_i n_i = 3$	0 $a_i n_i = 0$	0 $a_i n_i = 0$	55 269	4.89	1st
Government revenue	0 $a_i n_i = 0$	10 $a_i n_i = 40$	24 $a_i n_i = 72$	16 $a_i n_i = 32$	5 $a_i n_i = 5$	55 149	2.71	4th
Foreign exchange earning	0 $a_i n_i = 0$	0 $a_i n_i = 0$	9 $a_i n_i = 27$	25 $a_i n_i = 50$	21 $a_i n_i = 21$	55 98	1.78	5th
Employment generation	0 $a_i n_i = 0$	0 $a_i n_i = 0$	8 $a_i n_i = 24$	20 $a_i n_i = 40$	27 $a_i n_i = 27$	55 91	1.65	6th
Socio-cultural benefits	31 $a_i n_i = 155$	24 $a_i n_i = 96$	0 $a_i n_i = 0$	0 $a_i n_i = 0$	0 $a_i n_i = 0$	55 251	4.56	2nd
Health Benefits	8 $a_i n_i = 40$	29 $a_i n_i = 116$	18 $a_i n_i = 54$	0 $a_i n_i = 0$	0 $a_i n_i = 0$	55 210	3.81	3rd

Further analysis on the benefits derived along the coastline of Victoria Island was done using relative importance index and ranking. The result is contained in Table 7. The table shows that economic benefits was ranked first as the major benefits derived along the coastline region, followed by socio-cultural benefits ranked second, health benefits which was ranked the third, government revenue ranked the fourth, while foreign exchange earning was the fifth and employment generation ranked sixth. The result in table 7 is a confirmation of the

analysis in table 6. The two tables showed that the benefits from the coastline of Victoria Island are economic, socio-cultural and health in nature.

5.0   Discussion of Findings

With the use of both primary and secondary sources of data, the study examined the effects of coastline on property values in Victoria Island. The data collected was collated and analysed as shown in tables 1 – 7 and further buttressed with Figs 1 – 2. In this section, findings from the analysis carried out were discussed. It was evident from the study that all the respondent Estate Surveyors and Valuers are professionally qualified hence their opinion value could be relied upon. The study revealed that rental values of residential properties are on the increase from ₦1.5million in 2011 to ₦4.5million in 2015, duplexes increased form ₦2.5million in 2011 to ₦5.5million in 2015. Also, the rental value of detached buildings jumped from ₦2.5miion in 2011 to ₦6.2million in 2015 while that of bungalows moved from ₦1.5million in 2011 to ₦5.8million in 2015. Equally, the rental values of office (commercial) properties are on annual increase. All these could not be unconnected with the prime position of Victoria Island as a commercial nerve of Nigeria. Due to the peculiarity of the study area, the study shows that sea level rise (96.4%), ocean currents (87.3%) and population density (61.8%) are the main factors affecting property values in the coastline region of Victoria Island. A cursory examination of the challenges faced along the coastline in the study area reveals that water logging (96.4%), land erosion (90.9%), spatial expansion (87.3%) and flooding (65.5%) are the prominent challenges faced along the coastline region of Victoria Island. In spite of the challenges, there are still some benefits derivable along the coastline and the study have shown that such benefits include economic benefits (92.7%), socio-cultural (96.4%) and health benefits (60.0%). Other benefits, though of lesser magnitude, include government revenue (20%) and employment generation (1.8%). It could therefore be concluded that despite all challenges, property values in coastline region of Victoria Island are always on the increase.

6.0   Conclusions and Recommendations

The empirical findings as stated above were gotten from the data analyzed from the questionnaire administered for this study. The analysis revealed that both residential and commercial properties in Victoria Island have high rental values. The rental values of these properties increase each year. The challenges faced along the coastline region of Victoria Island water logging, land erosion, flooding and spatial expansion but according to analytical findings, the prevailing challenges faced along the coastline region are waterlogging,

flooding and spatial expansion. The factors affecting the coastline of Victoria Island are wind and waves, sea level rise, sea grass loss, tides, ocean currents, population density, migration and urbanization. From the analysis, the principal factors affecting the coastline of Victoria Island are sea level rise, tides, ocean currents, and population density. This study has established that contrary to expectations, properties along the coastline of Victoria Island enjoy high rental values. It equally established the benefits along the coastline of Victoria Island as socio-cultural, economic and health benefits while challenges confronting the study area are majorly water logging, land erosion, spatial expansion and flooding.

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