Suitability of Landscape Features of the Lagos Lagoon for Tourism as Perceived by its Users and Users of Lagos Coastal Tourism Venues

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Abstract
The Lagos lagoon is a major geographical feature in Lagos Metropolis and it is the largest of the network of lagoons that stretch from the Republic of Benin through to the Nigerian Niger Delta. Some parts of the Lagos lagoon waterfront has degenerated into slums with non-distinctive housing, comprising mainly of shanties at various points, wood processing, sand dredging, markets and commercial fishing activities. Water-based tourism is a proven revenue earner globally, usually providing revenue for the government and a source of enjoyment, employment and recreation to the residents and visitors alike. The tourism potentials of the lagoon remain largely untapped. To determine the place of landscape features of the Lagos Lagoon in its suitability for tourism, the paper evaluates its landscape characteristics and evaluates the perception of users of water-based recreation destinations along its waterfront with those of users of similar tourist attractions along the Lagos coastline. The aim of the study is to answer questions on landscape perception and assessment of the area and to identify other factors which may be relevant to its tourism development. Using structured questionnaires with pictures of the landscape features of the lagoon, field survey and interviews, the study identified the communities, problems, and factors influencing tourism at three venues on the lagoon waterfront and three water tourism venues along the Lagos coastline. Results show that the landscape characteristics of the lagoon have a very significant effect on tourism in the area. It also identified the major factors influencing the tourism development of the Lagos Lagoon. The outcome of the research will be of benefit to property owners in the area, architects, landscape architects, tourists, visitors, tourism practitioners and policy makers in determining appropriate facilities and land-use planning options for developing this natural resource.

Keywords: Landscape assessment and perception, tourism, water-based recreation, suitability and Lagos Lagoon.

INTRODUCTION
With a protected location on the Lagos Lagoon and one outlet to the sea, Lagos was the gateway for European contact with the Nigerians on the coast during the colonial times (Oshundeyi & Babarinde, 2003). Described as the state of aquatic splendour, Lagos State is replete with creeks, bays, lagoons, coastlines and breath-taking scenic views. As the metropolis itself is mainly occupied by water, it is highly expected to benefit from water tourism. There is however, insufficient emphasis on water as a tool for recreation and tourism in Lagos. Instead, water-based sites are largely neglected, they lie fallow and under-utilized (Uduma-Olugu & Oduwaye, 2010). The existing developed waterfront sites in the metropolis do not appear to have adequate infrastructure, nor do they present water-use in ways that are sufficiently appealing to tourists (Uduma-Olugu & Iyagba, 2009b; Uduma-Olugu & Onukwube, 2012).

The landscape characteristics of a place among other things determine its character and subsequently, its uses (Gnoth, 1997; Swaffield, 1999). The landscape features and characteristics of the Lagos Lagoon are keys to determining the usage of the lagoon. Apart from water which is its main feature, its vegetation, land form, land cover, ecology, human settlement and general scenic quality are major assets in land use and management (Daniel & Boster, 1976). All these affect its usefulness for tourism or recreation. Landscape as part of the key indicators of a place's character comprises not only the land cover and landscape quality, but also its very essence and spirit which can be captured when the landscape is assessed and evaluated using pre-determined parameters (Swaffield, 1999).The uniqueness or otherwise, of a place can influence tourism. Traditionally, water-based resources, either coastlines or lakes, are important tourism resources (Gunn, 2002). Globally, tourism has been identified as a major revenue source and continues to grow in popularity. In this blooming tourism industry, the Americans, Europeans and Asians are far ahead of Africa (UNWTO, 2011).

Lagoons are fragile ecosystems susceptible to pollution from municipal, industrial and agricultural runoff. The Lagos Lagoon specifically, is under intensified pollution pressure from point and non-point sources (Nwankwo, 2004). Major sources of pollution in the lagoon have been identified to include the discharge of raw sewage, wood shaving, refuse and other domestic wastes, sand dredging, industrial waste disposal, petroleum hydrocarbons and waste oil discharge among others (Nwilo, Peters & Badejo, 2009; Okoye *et al.*, 2010). This level of pollution and misuse of the natural asset and landscape resources of the Lagos Lagoon precludes it from benefiting from laudable uses such as tourism and recreation. A great tourism potential therefore remains untapped on the Lagos Lagoon (Uluocha, 1999).

Tourism along the coast receives more attention perhaps because of the white water effects of ocean currents. Tourism along the coast is better developed than on the lagoon as attested to the popularity of places like Bar Beach, Kuramo beach and Lekki/ Maiyegun Beach (Oshundeyi and Babarinde, 2003). Adejumo (2010) explored the economic impact of rural coastal beach tourism at Eleko beach. Some of the problems he identified as plaguing the water tourism industry include lack of tourism product development, lack of government support, poor social capital, lack of financial resources and lack of human resources. Cultural issues were examined by Aina and Babatola (2010) in their study of its effect on a sustainable tourism development strategy for rural areas. Studies by Uduma-Olugu & Onukwube (2012) explored the potentials of tourism in some of these coastal tourism venues and highlighted the deficiencies in the provided facilities.

LANDSCAPE AND HUMAN PERCEPTION

The development of methods for systematically integrating aesthetic values into ecological and land-use decision making began in the mid-1960s. Ndubuisi (2002) posits that K. Craik, L. Leopld, B. Linton, E. Shafer, J. Wohwill and E. Zube in the United States and K. Fines and his colleagues in Britain conducted pioneering studies in landscape perception and assessment during the late sixties. Zube's 1966 visual assessment study on Nantucket Island and his 1968 resource assessment study of the US Virgin Islands provided significant methodological directives for the assessment and integration of visual resources in ecological planning. Also notable in this period, was Linton's work which developed a framework in 1968 for describing and analyzing visual elements in large forested landscapes (Ndubuisi, 2002).

Landscape functions comprise the current and potential ability of the landscape to fulfil the human needs regarding the natural resources and the landscape experience. The degree of human impact and the visibility in the landscape can be measured by visual indicators such as relief, vegetation, land use, structural elements or lines of sight. However, characteristics such as harmony and scenic beauty that depend on the perceptual process. The features which the landscape evoke in the human viewer should also be assessed (Daniel, 2001). The Scenic Beauty Estimation (SBE) which considers the relevance of physical features in evaluating landscape beauty serves to measure the perceptual preferences of landscape scenes (Daniel & Boster, 1976). Daniel *et al* (1976) updated by Daniel (2001) and Franco *et al.* (2003) posited that scenic beauty judgments depend jointly on the perceived properties of the landscape and the judgmental criteria of the observer.

Landscape assessment research has primarily focused on the visual properties of the land area under study. Consequently, the dimension most often measured is the scenic quality of a given area (Zube, 1975). This variable also has been described as scenic beauty (Daniel and Boster, 1976) and landscape preference (Buhyoff and Wellman, 1978). Psychophysical landscape assessments typically represent the experiences of visitors to the area under study by means of colour slides. Criticism has focused on whether human reactions to areas represented by photographs are valid indicators of reactions that would occur if people were to visit the areas and view them directly. However, when comparing between perceptual data gathered using colour slide depictions of landscapes and data obtained at the actual sites where those slide photographs were taken, a very close relationship between the two has been established (Daniel and Boster, 1976; Malm *et al.*, 1981). Correlations between photo-based and direct on-site assessments have been found to be .80 or greater (Daniel, 1990). Landscape assessments

utilizing psychophysical methodology have been obtained using Likert-type rating scales (Daniel and Boster, 1976), rank orders (Shafer and Brush, 1977) and others.

RESEARCH METHODS

The general study area is the Lagos Lagoon which along with its connected neighbour to the east, the Lekki Lagoon have a combined size of 646km^2, covering about 25% of the total area of the eastern half of the state of about 2561km^2 (Fig. 1). The location is at about Latitude 6^0 23' 30"N and 6^0 23' 38"N and Longitude 3^0 20'E and 4^0 02'E. The Lagos Lagoon which is 40 – 50km long is the largest of the barrier-lagoon complex which spans the entire coastline of Lagos State from the Nigeria/Benin Republic border in the west for about 200km eastwards to the western limit of the Transgressive mud beach abutting western Niger Delta (Ibe, 1988). The western arm of the Lagos Lagoon through the Commodore Channel is the only connection of this lagoon system to Bight of Benin/Atlantic Ocean. The specific study locations consisted of the three water-based recreational spots on the Lagos Lagoon including UNILAG waterfront, Lekki Phase1 Club House, The Pavilion and Origin zoo and jetty, Ipakodo, Ikorodu and three coastal water-based tourist destinations on the Lagos Atlantic coastline including Bar Beach, Alpha Beach and Maiyegun/Lekki Beach (Fig. 2).

A desktop study was done to identify the landscape resources in the area. These were verified and upgraded through personal observation field reconnaissance survey where the existing features were recorded. The motivation for user selection of a destination identified from the literature review is based on how the potential tourist perceives the location, word-of-mouth and previous experience of the venue. These were covered by questions which dealt with facilities and factors as well as how a person feels at tourism venues. The various elements that constitute the landscape characteristics of the Lagos Lagoon influence tourism differently and their effects were measured from the questionnaire in a table that listed them. A Likert scale was used to measure their level of influence.

The questionnaires consisted of a combination of types of questions such as multiple choice, Likert scale, closed and open-ended questions relating to respondents' perceptions. Preferences for five mapped landscape categories by the users were compared with expert ratings of the same landscapes. The photo questionnaire presented 20 black and white photographs showing vegetation and landforms characteristic of the study area. Photographed sites were selected in consultation with botanical and landscape experts to represent a range of values related to dominant species and degree of human modification of landscape (Fig. 2). A larger scale, coloured version of the same photographs accompanied the questionnaires since the black and white pictures shown in the questionnaires were too small and insufficiently legible.

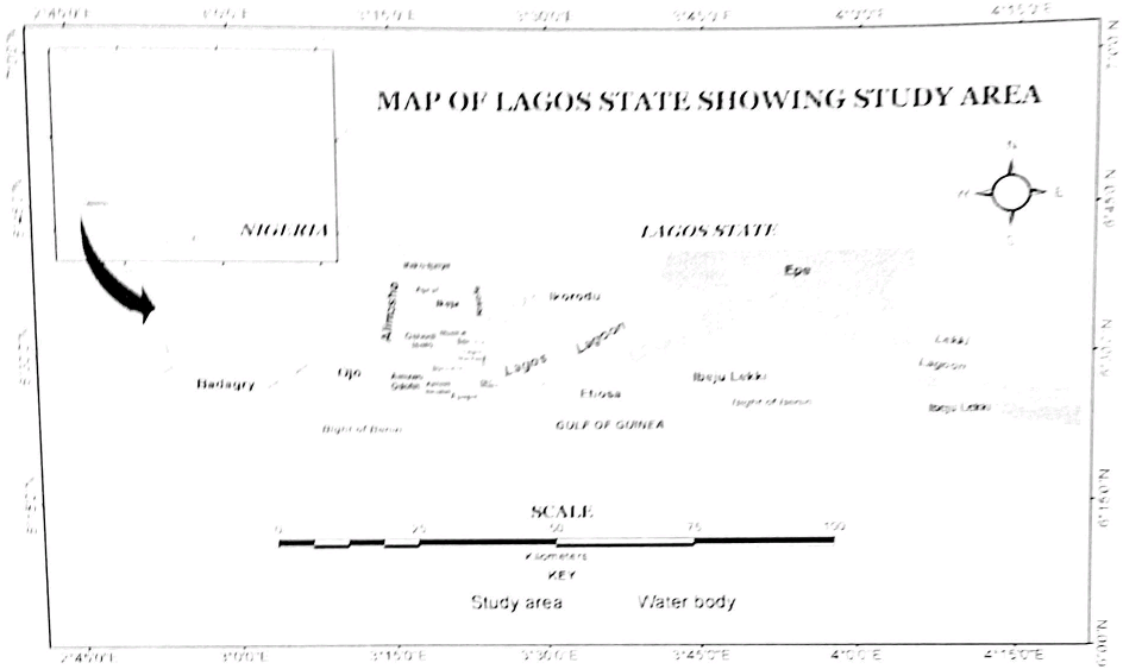


Fig. 1 Map of Lagos State showing the study area --- Lagos Lagoon.

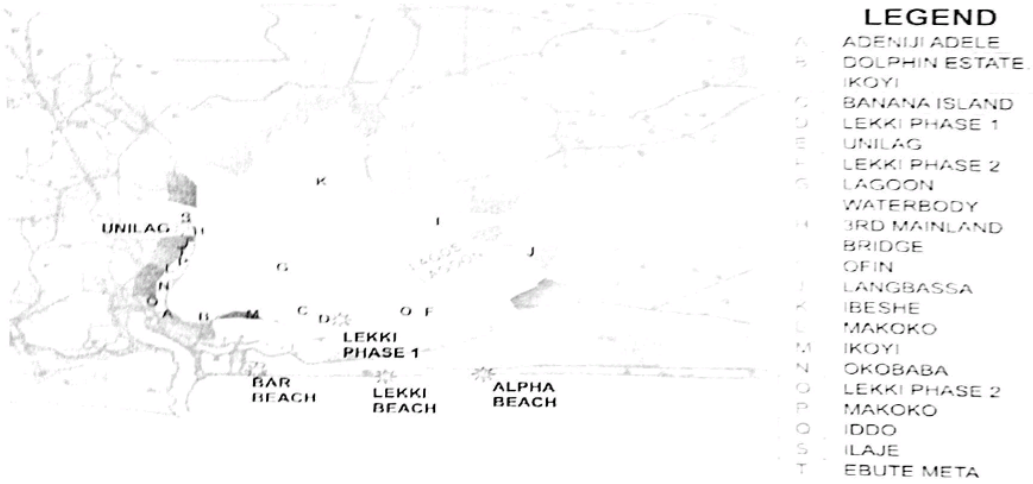


Fig. 2 Map showing sites where photographs were taken along the Lagos Lagoon waterfront.

FINDINGS

Table 1 indicates the locations surveyed – the highest number of respondents came from Unilag waterfront – 32.5% (137) and the least from Maiyegun/Lekki Beach 6.4% (27).

Table 1: Summary of Study Locations.

Variable	Characteristics	Frequency	%	Total
Place	Bar Beach	132	31.3	
	Lekki Phase1 Club House – The Pavilion	55	13.0	
	Alpha Beach	30	7.1	
	Maiyegun/Lekki Beach	27	6.4	
	Unilag Waterfront	137	32.5	
	Origin Zoo Jetty, Ikorodu	41	9.7	422

Table 2: Reliability Analysis of Demographic Variables

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.848	.849	59

From Table 2, the test of reliability of questionnaire based on the standardized Cronbach's Alpha is obtained as 0.849 (84.9%). The result suggested that the instrument of evaluation (questionnaire) is highly reliable judging from the fact that 84.9% > 70%. Also, there is an internal consistency of the items in the instrument (questionnaire) used for data collection.

From the ANOVA test, as the P1-value = 0.000 < 0.05 significant level, the reliability of the instrument is significant. This further validates the adequacy of the instrument (Table 3).

Table 3: ANOVA

		Sum of Squares	Df	Mean Square	F	Sig
Between People		590.954	105	5.628		
Within People	Between Items	1474.834	58	25.428	18.445	.000
	Residual	8395.641	6090	1.379		
	Total	9870.475	6148	1.605		
Total		10461.428	6253	1.673		

Grand Mean = 3.32

Socio-Economic Demographics of Respondents

Gender analysis of the respondents from Table 4 shows that more males: 276 or 65.4%, than females: 146 or 34.6% responded. The average age of respondents was 28.3 years out of which the highest numbers of respondents were youths. The implication is that people that visit such destinations are mostly young males. Respondents that fall within this age bracket are believed to have a lot of energy, dynamic and vibrant and are more likely to be engaged in active rather than passive recreation. There was a high incidence of literate people among the respondents as graduates with BSc. or MSc. had the highest number at 205 or 48.6% while respondents with primary school education were the fewest at 27 or 6.4%. This implies that more literate people appear to appreciate water-based tourism than those with less education. The mean annual income of respondents was relatively high at N4.2 million, indicating that it is mostly middle income earners that visit the destinations.

Table 4: Summary of Socio-Demographic Variables.

Variable	Characteristics	Frequency	%	Mean	Total
Gender	Male	276	65.4		
	Female	146	34.6		422
Age	(Below 16) Years	6	1.4	28.3 Yrs	
	(16---30) Years	284	67.3		
	(31---45) Years	112	26.5		

	(46---60) Years	20	4.7		422
Employment Status	Retired	8	1.9		
	Office Worker	192	45.5		
	Student	92	21.8		
	Site Worker	11	2.6		
	Business	98	23.2		
	Educator	2	.5		
	Unemployed	19	4.5		422
Marital Status	Married	171	40.5		
	Divorced/Separated	8	1.9		
	Widowed	3	.7		
	Unmarried	240	56.9		422
Educational Qualification	Primary school	27	6.4		
	Secondary school	57	13.5		
	Technical school /Polytechnic	49	11.6		
	Graduate (e.g. B.Sc., B.A)	205	48.6		
	Post Graduate (e.g. M.sc or PhD)	84	19.9		422
Average Annual Income	Low income - less than N500,000 per annum	85	25.4	N4,282,934	
	Middle income - N500,000 - N10,000,000 per annum	232	69.5		
	High income - more than N10,000,000 per annum	17	5.1		334
Place of Residence	Lagos Metropolis	280	66.4		
	Other town in Lagos State	71	16.8		
	Other State in Nigeria	56	13.3		
	Outside Nigeria	15	3.6		422
Nationality	Nigerian	414	98.1		
	European	5	1.2		
	North American	1	.2		
	Middle East	1	.2		
	Other African Countries	1	.2		422

The lowest percentage was the group that earned more than N10 million per annum at 17 or 5.1%. This is not surprising as such people are likely to travel out of the country for tourism than visit the local water tourism venues. Most of the respondents, 280 or 66.4% live in Lagos metropolis while the tourists from outside Lagos State and other countries make up the balance. This result was expected as the area does not seem to have a high traffic of tourists which is what necessitated the study in the first place. The nationality of the respondents was also not surprising as 98.1% were Nigerians. This shows that international tourism is not high at the venues; rather, domestic tourism is mostly prevalent at these locations of the Lagoon.

Ranking of Respondents' Perception of the Landscape characteristics of the Lagos Lagoon

A { } B{ } C { } D{ } E { }

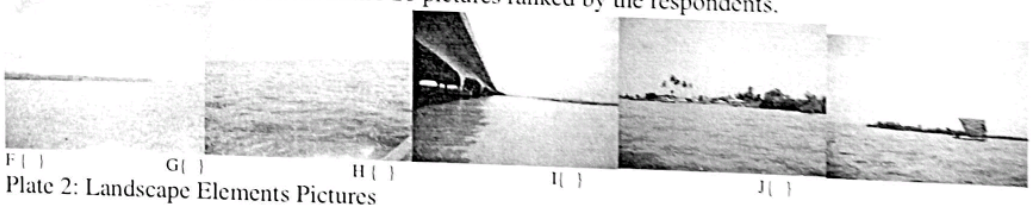
Plate 1: Totally urban scenes.

Table 5: Ranking Of Landscape Perception of the Lagos Lagoon: Totally Urban.

Picture	LB	%	A	%	FB	%	B	%	EB	%	Total	Scale Mean	Response Mean	%
Ranking of Picture: A	23	6.5	71	20.1	83	23.4	116	32.8	61	17.2	354	3.0	3.3	66
Ranking of Picture: B	33	9.3	76	21.5	96	27.2	110	31.2	38	10.8	353	3.0	3.1	62
Ranking of Picture: C	26	7.4	53	15.1	84	23.9	101	28.8	87	24.8	351	3.0	3.5	70
Ranking of Picture: D	28	8.0	68	19.3	97	27.6	107	30.4	52	14.8	352	3.0	3.2	64
Ranking of Picture: E	35	9.9	68	19.2	95	26.8	100	28.2	57	16.1	355	3.0	3.2	64
Total	145	8.22	336	19.04	455	25.78	534	30.28	295	16.74		3.0	3.3	66

Ranking of Landscape Perception of the Lagos Lagoon: LB (Least Beautiful), a (Average), FB (Fairly Beautiful), B (Beautiful), EB (Extremely Beautiful)

Table 5 shows the ranking of the totally urban scenes. The first set of photographs (Plate 1) is comprised of shots of totally urban scenes of the lagoon. Results show that they were all considered beautiful with picture C showing a high-rise luxury building having the highest score of 70. Picture C also had the highest score in the entire 20 pictures ranked by the respondents.



F{ } G{ } H{ } I{ } J{ }

Plate 2: Landscape Elements Pictures

Table 6: Ranking Of Landscape Perception of the Lagos Lagoon: Landscape Elements.

Picture	LB	%	A	%	FB	%	B	%	EB	%	Total	Scale Mean	Response Mean	%
Ranking of Picture: F	29	8.1	68	19.0	114	31.8	82	22.9	65	18.2	358	3.0	3.2	64
Ranking of Picture: G	36	10.2	81	22.9	82	23.2	98	27.8	56	15.9	353	3.0	3.0	64
Ranking of Picture: H	45	12.8	97	27.6	66	18.8	103	29.3	41	11.6	352	3.0	3.0	60
Ranking of Picture: I	49	13.9	69	16.5	90	25.5	107	30.3	38	10.8	353	3.0	3.0	60
Ranking of Picture: J	54	15.3	78	22.2	84	23.9	104	29.5	32	9.1	352	3.0	2.9	58
Total	213	12.06	393	22.24	436	24.64	494	27.96	232	13.12		3.0	3.1	62

Ranking of Landscape Perception of the Lagos Lagoon: LB (Least Beautiful), a (Average), FB (Fairly Beautiful), B (Beautiful), EB (Extremely Beautiful)

In the second set of pictures (Plate 2) comprising shots of different landscape elements of the lagoon, results show that they were considered beautiful except for picture J which had a score of 2.9 (Table 6).

L{ } M{ } N{ } O{ }

Plate 3: Open Spaces Pictures.

Table 7: Ranking Of Landscape Perception of the Lagos Lagoon: Open Spaces.

Picture	LB	%	A	%	FB	%	B	%	EB	%	Total	Scale Mean	Response Mean	%
Ranking of Picture: K	63	17.2	85	23.2	81	22.1	98	26.7	40	10.9	367	3.0	2.9	58
Ranking of Picture: L	63	17.1	89	24.1	64	17.3	109	29.5	44	11.9	369	3.0	3.0	60
Ranking of Picture: M	59	16.0	82	22.3	81	22.0	115	31.3	31	8.4	368	3.0	2.9	58
Ranking of Picture: N	51	14.1	81	22.4	79	21.9	121	33.5	29	8.0	361	3.0	3.0	60
Ranking of Picture: O	52	14.4	65	18.0	93	25.8	98	27.1	53	14.7	361	3.0	3.1	62
Total	288	15.76	402	22	398	21.82	541	29.62	197	10.78		3.0	3.0	60

Ranking of Landscape Perception of the Lagos Lagoon: LB (Least Beautiful), A (Average), FB (Fairly Beautiful), B (Beautiful), EB (Extremely Beautiful)

In the third set of pictures (Plate 3) comprising shots of open spaces around the lagoon, the scores were generally low (Table 7). Results show that they were considered beautiful except for pictures K (showing fishing circles) and picture M (showing mixed vegetation) which jointly had the lowest score of 58, as the least liked pictures in the group.

P{ } Q{ } R{ } S{ } T{ }

Plate 4: Human and Social activities scenes.

Table 8: Ranking Of Landscape Perception of the Lagos Lagoon: Human and Social Activities.

Picture	LB	%	A	%	FB	%	B	%	EB	%	Total	Scale Mean	Response Mean	%
Ranking of Picture: P	79	22.4	72	20.4	69	19.5	95	28.9	38	10.8	353	3.0	2.8	56
Ranking of Picture: Q	58	16.4	79	22.4	81	22.9	97	27.5	38	10.8	353	3.0	2.9	58
Ranking of Picture: R	64	18.5	91	26.3	65	18.8	89	25.7	37	10.7	346	3.0	2.8	56
Ranking of Picture: S	103	29.5	73	20.9	79	22.6	68	19.5	26	7.4	349	3.0	2.5	50
Ranking of Picture: T	68	19.6	52	15.0	88	25.4	79	22.8	60	17.3	347	3.0	3.0	60
Total	372	21.28	367	21	382	21.84	428	24.48	199	11.4		3.0	2.8	56

Ranking of Landscape Perception of the Lagos Lagoon: LB (Least Beautiful), a (Average), FB (Fairly Beautiful), B (Beautiful), EB (Extremely Beautiful)

The pictures (Plate 4) comprising scenes of human and social activities around the lagoon had the lowest scores in the entire group of pictures. As reflected in Table 8, the picture with the lowest score in this group was picture S (showing slum housing on stilts) which was the least liked picture in the group and among the entire 20 pictures ranked by the respondents.

Factors most significant in determining the impact of landscape characteristics of the Lagos lagoon waterfront on tourism.

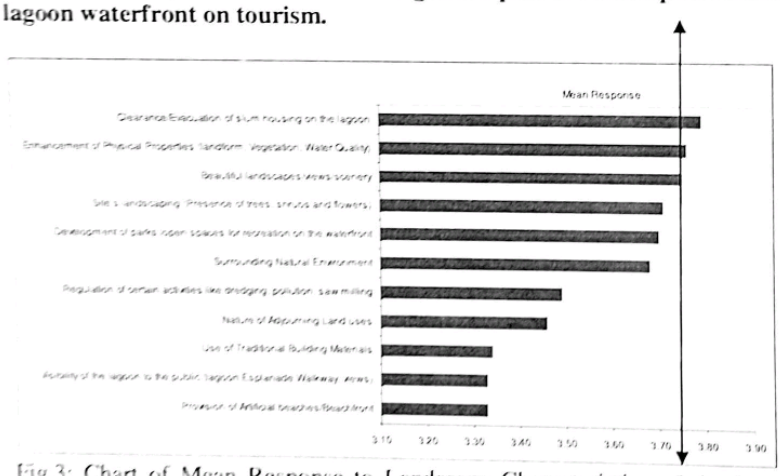


Fig.3: Chart of Mean Response to Landscape Characteristics of the Lagos Lagoon Waterfront on Tourism.

Fig. 3 shows the six factors considered important regarding the effect of the landscape characteristics. The landscape factor considered most significant is the clearance of the slum housing and similar blights on the shores of the lagoon. Handling the problem areas along the lagoon shores will help in influencing its acceptability for tourism. The issue of enhancing the physical properties of the lagoon water needs to be addressed as the water is coloured, smelly and polluted (Nwankwo, 2004; Onyema, 2009). This makes it unsuitable for most water tourism activities as visitors cannot swim in it nor have direct access to it for hygienic reasons. This was the second most important factor. The fifth factor considered relevant by the respondents is the development of parks and open spaces for recreation along the waterfront. Currently, there are very few recreational open spaces or parks directly abutting the shores of the lagoon. Such places would afford the general public an opportunity to directly interact with the lagoon.

DISCUSSIONS & CONCLUSION

The results indicate that tourists and users of water-based recreation showed a preference for well developed parts of the Lagos Lagoon waterfront over the more natural landscape that is in line with previous findings globally (Thayer, 1989; Nassauer, 1995). The perception of the Lagos Lagoon as a tourism resource was generally low as most responded negatively to the use of the Lagoon for tourism, preferring rather the option of its use for urban agriculture and urban residential waterfront development. To a large extent, it indicates that much work needs to be done in bringing the standards of the facilities and infrastructures of the lagoon to more acceptable levels as well as the enlightenment of the public about the benefits and components of tourism to make it more acceptable. One of the very important outcomes of the research is the opinion of the respondents that the most deterring factor to tourism use of the lagoon as regards its landscape is the existence of the slums and similar blights along the lagoon shores. These, along with the issue of water pollution, ranked highest as critically impacting the tourism potential of the Lagos Lagoon. This was also reiterated by the ranking of the slum as the worst picture among the twenty pictures shown to the respondents.

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