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VARIATION IN THE QUALITY OF UPGRADED SLUMS IN LAGOS, NIGERIA

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Abstract
This paper examines the variation in the quality of nine (9) upgraded slums in Lagos metropolis using two scales of measurement structured around 16 variables. Data used for this study were collected from primary and secondary sources. The primary data was sourced from questionnaire administration. A total of one hundred and twenty (120) respondents in each of the nine (9) upgraded slums were selected through systematic-random technique. The information collected was analyzed with tables, percentages and Analysis of variance. The results of the dwelling type revealed that over 80% of the respondents in all the slums lived in a room/room and parlour while hand-dug well and borehole were the common sources of water. In addition, buildings with inadequate drainage facilities as revealed by respondents were also areas with high rate of flooding. These include Agege, Makoko and Iwaya with 71.7%, 74.8% and 60%of buildings respectively prone to flood. A multiple comparison of housing quality between Agege and the other eight slums indicated that Ajegunle and Itire/Ijeshatedo had better housing conditions while Agege was better off in housing quality than Makoko. Ajegunle had better quality housing than the slums of Badia, Iwaya and Makoko with Amukoko housing of considerable high quality compared to those in Badia, Iwaya and Makoko. The results of the ANOVA revealed that variation in housing quality is not significant at 0.05. This showed that there are no significant differences in housing quality in the study area while variation in environmental quality is significant at 0.05.This shows that significant differences existed in variables used to measure environmental quality in the study area.

Key Words: *Slums, Quality, spatial Difference, Lagos, Nigeria*

Introduction

Cities are generally places of intensive human activities. The city environment therefore is often characterized by complex economic, social and cultural activities that create consequently many difficulties and concomitant problems. These problems relate to transportation, waste generation, unemployment, housing, health among others. One of such problems relating to housing is the proliferation of illegal or informal settlements regarded as ghettos, squatter settlement or slums. The term 'slum' is given various meanings across different geographical areas. Some of these are: favelas of Brazil, chawls zopadpatttis of Mumbai, (India), the bustees of Kolkata (India), the colonias populares of Mexico City, the intra-murios of Rabat (Morocco), the katchi abadis of Karachi (Pakistan), the bidonvilles of Abidjan (Cote D'lvoire) and

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baladis of Cairo, Egypt (UN-HABITAT, 2003**).**

Slums are captured by the majority as settlements outside the planned cities and their inhabitants as outside the society. Francoise (2006) describes the slum as a place with high prevalence of lawless and illegal activities. He identified four phases in the approach to slums. The first phase (1950s-1970s) identified the slums as being the result of transitional process generated by a strong rural exodus. During this period, urban managers justified the destruction of slums by making reference to dual ideologies of modernization and decolonization. The second phase which started from 1970s onwards witnessed the upgrading of slums as strategies towards uplifting the standards of these precarious neighbourhoods. However, these promotions were spearheaded by international organizations like UNICEF and World Bank. The third phase from 1990s focused on strategies towards slum rehabilitation and resettlement. This concern emerges from the growing consciousness of the extreme environmental degradation in slums and the resulting risks for residents. The fourth was summarized in the UN-HABITAT Declaration, 2004/2005 which aims to combat poverty and improve the housing conditions of at least 100 million slum dwellers by 2020. The improvement of slum residents living conditions through upgrading programmes of Lagos state government was reflected in improved method of refuse disposal, provision of pipe-borne water, construction of roads and drainages among others (Adedayo and Malik, 2014).

The slums of the world especially in developing countries are manifestations of spatial and environmental inequalities with features of deprivation, unemployment, social exclusion, disease, crime and insecurity. This supports the findings of Makinwa-Adebusoye (1988) study in Lagos slum of Olaleye-Iponri which was characterized by bucket-type of toilet shared bathroom and kitchen facilities and houses not connected to pipe borne water. However, these slums are also centres of economic and social opportunities through the provision of low-cost labour for the public and private production of goods and services as well as providing a social network of support for migrants (Francoise 2006). Hence, the UN-HABITAT proposes a dual classification of slums. These are: classification linking it to neighbourhood suffering a process of degeneration and as settlements undergoing transformation and improvement.

The growth of slums in Lagos state results from the population, size and age of existence. Presently, the number of slum areas in Lagos is over forty-two (UN HABITAT, 2003). This confirms UN HABITAT (2003) research that 327 million people live in slums in Commonwealth countries, that is, one out of six Commonwealth citizens as well as a quarter of Commonwealth countries (11 Africans; 2 Asians and 1 Pacific).

A great challenge facing Lagos Metropolis is shelter (Abiodun, 1976) particularly for people living in overcrowded slums. The estimates from official records put the population density at 1,308 persons per square kilometers with the available land falling prey to unregulated and unplanned development. The problem of insecure land tenure defined by the inability of the slum residents also contributes to the growth of and the poor sanitation condition of the slums. The common practices of bulldozing the slum environment exemplified by the Maroko case of 1990

do not proffer the best solution to the proliferation of slums. The victims of this bulldozer were neither resettled nor compensated. This has been the agitation of non-governmental organizations such as social and economic rights action (SERAC) and centre on human rights and evictions (COHRE) to defend the plight of these victims of eviction. This was substantiated by Agbola and Jinadu (1997) findings that the maroko residents forcefully evicted were legal occupants who government had issued certificate of occupancy legitimizing their stay before eventual demolition. The spatial variability in the quality of nine (9) upgraded slums of Lagos metropolis therefore constitutes the rationale for this study.

Study Area

The upgraded slums in metropolitan Lagos are the focus of this study. Lagos State is located in the south-western part of Nigeria. It lies approximately between longitudes 2^0 42'E and 3^0 42'E and latitudes $6^0$22'N and $6^0$52'N. There are 1,620 hectares of land covered by the 42 slums identified by United Nations study of 1984 which employed thirty-six indicators to measure access to basic infrastructural and social services. However, with the support of Norwegian Government and International Development Association, the Lagos State Government through its agency called Lagos Metropolitan Development and Governance project (LMDGP) has upgraded nine (9) out of the forty-two identified in 1984. The nine slums covered 760 hectares representing 46.1 percent of the total number of slums (Figure 1).

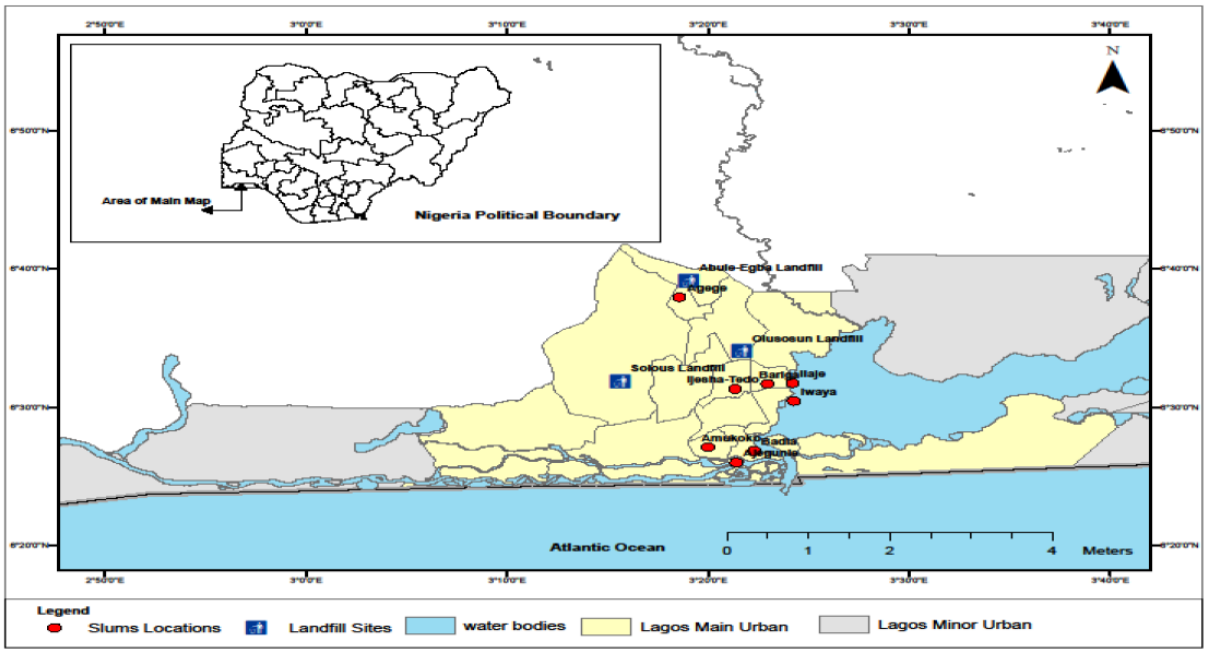

Figure 1: Slums upgraded in Lagos Metropolis

Source: Produced by Cartography section, Geography& planning department, Lagos State University, 2014

Methods of Research

Data used for this study were collected from primary and secondary sources. The primary data was collected through questionnaire administration as well as direct field observation. A total of one hundred and twenty (120) respondents in each of the nine (9) upgraded slums were

selected through systematic-random technique. The administration of the questionnaire started by pure random selection of the first house (starting point) and proceeded progressively at an interval of five houses on a street. Information on map of the study area and review of relevant literature through journals, textbooks and the internet constitute the secondary data sources. The information collected was analyzed through the use of tables, percentages and Analysis of variance was used to test the significant differences in the quality of the slum areas.

Results and Discussion

Table 1 reveals the quality of slum housing in relation to materials used for building construction and dwelling types occupied by respondents. The finding shows that 99.2%, 98.3%, 86.7% and 76.7% of buildings in Amukoko, Ajegunle, Ilaje and Makoko respectively were constructed with bricks. However, 23.3%, 15% and 10.8% of buildings at Makoko, Iwaya and Ilaje respectively were constructed with wooden materials. The implication of buildings constructed with wooden materials is the risk of fire. This was discovered during the field study when an area popularly known as Ilaje-Ebute at Ilaje slum area was completely razed down by fire (see plates 1a & 1b).

Plate 1a: Ilaje- Ebute before Fire Incident

Plate 1b: Ilaje- Ebute after Fire Incident

Table 1: Construction Materials for Slum Dwellings

Slum Areas	Construction materials			Dwelling type			
	Bricks	Mud	Wood	Duplex	Flat	Room & parlour	Room
Agege	100(83.3%)	20(16.7%)			04(3.3%)	36(30.0%)	80(66.7%)
Ajegunle	118(98.3)	02(1.7%)			15(12.5%)	63(52.5%)	42(35.0%)
Amukoko	119(99.2%)	01(0.8%)			17(14.2%)	82(68.3%)	21(17.5%)
Badia	120(100%)				08(6.7%)	70(58.3%)	42(35.0%)
Bariga	120(100%)				10(8.3%)	61(50.8%)	49(40.8%)
Ilaje	104(86.7%	03(1.7%)	13(10.8%)	01(0.8%)	16(13.3%)	37(30.8%)	66(55.0%)
Itire/Ijeshatedo	120(100%)			01(0.8%)	12(10.0%)	77(64.2%)	30(25.0%)
Iwaya	100(83.3%)	02(1.7%)	18(15.0%)		05(4.2%)	64(53.3%)	51(42.5%)
Makoko	92(76.7%)		28(23.3%)		04(3.3%)	64(53.3%)	52(43.3%)

The dwelling type occupied by respondents revealed that very few lived in flats. The families (households) who lived in flats were 14.2%, 13.3% and 12.5% for Amukoko, Ilaje and Ajegunle slum areas respectively. Furthermore, the household

who occupied two rooms (room and parlour) were common in the slum areas of Amukoko, Itire/Ijeshatedo, Badia and Ajegunle representing 68.3%, 64.2%, 58.3% and 52.5% of respondents respectively.

The implication of this is that majority of the respondents tend to live with people of their own status where accommodation can be easily assessed. This is in support of the view expressed by Okeke (1984) when he described the slum inhabitants as agglomeration of people from different ethnic background who are self conscious about their differences from the rest of the urban community and thus resolved to live very close to people of their own status.

Table 2 shows that 25%, 23.3%, 20.8% and 20% of respondents in Bariga, Badia, Ilaje and Iwaya respectively made use pipe borne water. The access of respondents to this source of water could be attributed to the presence of Micro water scheme in these slum areas. In addition, 56.7%, 55.8%, 51.7% and 45% of respondents in Itire/Ijeshatedo, Agege, Amukoko and Badia respectively claimed that their source of water was through wells. Despite the risk associated with water purchased from water vendors, this was still prominent in the slum areas of Makoko and Ilaje where 50% and 45.8% of respondents respectively purchase water for domestic uses through water vendors.

Table 2: Water and Waste Disposal Facility in the Slums

Slum Areas	Source of water				Refuse disposal			
	Tap water	Borehole	Well	Water vendor	Landfill	Incinerate	Lawma/Psp	Open space
Agege	02(1.7%)	24(20.0%)	67(55.8%)	27(22.5%)	01(0.8%)		119(99.2%)	
Ajegunle	09(7.5%)	69(57.5%)	34(28.3%)	08(6.7%)	02(1.7%)		118(98.3%)	
Amukoko		43(35.8%)	62(51.7%)	15(12.5%)			120(100%)	
Badia	28(23.3%)	32(26.7%)	54(45.0%)	06(5.0%)	03(2.5%)		117(97.5%)	
Bariga	30(25.0%)	39(32.5%)	23(19.2%)	26(23.3%)		02(1.7%)	82(68.3%)	36(30.0%)
Ilaje	25(20.8%)	28(23.3%)	12(10.0%)	55(45.8%)	19(15.8%)	04(3.3%)	90(75.0%)	07(5.8%)
Itire/Ijeshatedo	14(11.7%)	31(25.8%)	68(56.7%)	07(5.8%)			119(99.2%)	01(0.8%)
Iwaya	24(20.0%)	56(46.7%)	12(10.0%)	28(23.3%)	10(8.3%)		95(79.2%)	15(12.5%)
Makoko	01(0.8%)	50(41.7%)	09(7.5%)	60(50.0%)	02(1.7%)	01(0.8%)	77(64.2%)	40 (33.0%)

The common method of refuse disposal was through the Lagos State Waste Management Authority (LAWMA) trucks and dustbins in partnership with private organizations. Table 2 further reveals that 98.3%, 99.2%, 97.5% and 64.2% of respondents in Ajegunle, Agege, Badia and Makoko respectively disposed their refuse through LAWMA trucks. This implied that the slum residents (respondents) had access to improved method of refuse disposal which may likely translate to improved rate of environmental cleanliness in the slum areas. However, the practice of disposing refuse in open spaces was still common in Bariga and Makoko where 33% and 30% of respondents respectively claimed to dispose their refuse in open spaces.

Drainage facility is essential in building in order to ensure a healthy and clean environment. The slum buildings without drainage facility were more pronounced in the slum areas of Agege, Makoko and Iwaya with 71.7%, 57.5% and 47.5% of buildings surveyed. In addition, majority of the slum areas with drainage facilities were either stagnant or blocked. Table 2 further reveals that 45%, 55%, 42.5% and 41.7% of drainage facility in the slums of Badia, Amukoko, Ilaje and Bariga were either blocked or stagnant.

Table 3: Drainage Facility and Flooding Status

Slum Areas	Drainage			Flooding rate	
	No	Flow	Stagnant &block	Prone	Not prone
Agege	86(71.7%)	05(4.1%)	29(24.2%)	86 (71.7%)	34(28.3%)
Ajegunle	30(25%)	31(25.8%)	59(49.2%)	20 (16.7%)	100 (83.3%)
Amukoko	12(10%)	66(55%)	42(35.0%)	16 (13.3%)	104(86.7%)
Badia	43(35.8%)	54(45.0%)	23(19.2%)	69 (42.5%)	51(57.5%)
Bariga	29(24.2%)	50(41.7%)	41(34.1%)	67 (55.9%)	53(44.1%)
Ilaje	13(10.8%)	51(42.5%)	56(46.7%)	55(45.8)	65(54.2%)
Itire/Ijeshatedo	18(15%)	33(27.5%)	69(57.5%)	41(34.2%)	79(65.8%)
Iwaya	57(47.5%)	25(20.8%)	38(31.6%)	72(60%)	48(40%)
Makoko	69(57.5%)	19(15.8%)	32(26.7%)	89(74.8%)	31(25.8%)

Flooding is induced by both natural and human factors. One major human factor that could cause flooding in the built environment is non-availability and non-functionality of drainage system. This explains the relationship between flooding and drainage facility in the slums. Table 3 reveals that 71.7%, 74.8% and 60% of respondents respectively in Agege, Makoko and Iwaya slum areas claimed that their buildings were prone to flooding. However, 83.3%, 86.7% and 65.8% of respondents respectively in Ajegunle, Amukoko and Itire/Ijeshatedo slums indicated that their buildings were not susceptible to flood.

Variation in the Quality of Slum Areas

Two indicators with respect to housing quality and environmental quality were used to examine the differences that existed in the surveyed upgraded slum areas. These are: housing quality measured by eleven variables and environmental quality by five variables. The variables include: dwelling type occupied by respondents, materials used for slum building, source of water, toilet type, drainage type, and refuse disposal method among others.

Analysis of variance (ANOVA) was used to test if there are significant differences in housing quality in the slum areas. The result in Table 4 revealed that variation in housing quality is not significant at 0.05. This shows that there are no significant differences in housing quality in the study area. The implication of this is that the slums exhibit similarity in the variables used to measure the housing quality. For instance, the findings reveals that majority of the respondents lived in two rooms (room and parlour) or one room and share bathroom and kitchen facilities. This was the findings of similar study earlier conducted by Makinwa-Adebusoye (1988) in olaleye-Iponri slum with majority of the houses investigated using pit latrine and share bathroom and kitchen facilities.

Table 4: Analysis of Variance (ANOVA)

		Sum of Squares	Df	Mean Square	F	Sig.
HOUSING QUALITY SCORE	Between Groups	289.637	8	36.205	.954	.471
	Within Groups	40653.214	1071	37.958		
	Total	40942.851	1079			
ENVIRONMENTAL QUALITY SCORE	Between Groups	9.315	8	1.164	12.917	.000
	Within Groups	96.540	1071	.090		
	Total	105.855	1079			

Furthermore, analysis of variance (ANOVA) result in Table 4 reveals that variation in environmental is significant at 0.05.This shows that significant differences existed in variables used to measure environmental quality in the study area. The findings on drainage type showed variations in the number of buildings in the slum areas without drainage facilities and buildings that were prone to flooding (see Table 3). In addition, the habit of dumping refuses in open spaces features prominently in some slum areas which make the degree of environmental cleanliness in the slums vary significantly.

Multiple comparisons was done in order to show disparities that existed in housing facilities used as indices to measure housing quality in the study area. The comparison was done between a slum settlement in relation to others. Hence, the comparison between Agege and the other eight slums indicated that Ajegunle and Itire/Ijeshatedo had better housing conditions while Agege was better off in housing quality than Makoko. Also, Ajegunle had better housing facilities as compared to the slums of Badia, Iwaya and Makoko. However, Amukoko housing units were of considerable high quality compared to those in Badia, Iwaya and Makoko.

Table 5: Housing quality comparisons for Agege, Ajegunle and Amukoko slums

Dependent Variable	(I) Name of Slum	(J) Name of Slum	Mean Difference (I-J)	Std. Error	Sig.
HOUSING QUALITY SCORE	Agege	Ajegunle	-.06818*	.02047	.036
		Amukoko	-.03561	.02136	.970
		Badia	.04212	.02235	.885
		Bariga	-.00985	.02156	1.000
		Ilaje	-1.63258	1.6868	1.000
		Itire/Ijeshatedo	-.08712*	.02000	.001
		Iwaya	.05909	.02470	0.462
		Makoko	.12636*	.02415	.000
	Ajegunle	Agege	.06818*	.02047	.036
		Amukoko	.03258	.01842	.939
		Badia	.11030*	.01956	.000
		Bariga	.05833	.01865	.068
		Ilaje	-1.56439	1.68677	1.000
		Itire/Ijeshatedo	-.01894	.01683	1.000
		Iwaya	.12727*	.02221	.000
		Makoko	.19455*	.02160	.000
	Amukoko	Agege	.03561	.02136	.970
		Ajegunle	-.03258	.01842	.939
		Badia	.07773*	.02049	.007
		Bariga	.02576	.01962	.999
		Ilaje	-1.59697	1.68678	1.000
		Itire/Ijeshatedo	-.05152	.01790	.144
		Iwaya	.09470*	.02304	.002
		Makoko	.16197*	.02244	.000

The quality of housing in Badia was of less value as compared to Ajegunle, Amukoko and Itire/Ijeshatedo. However, the housing quality in Makoko was of low standard to that of Badia. Itire/Ijeshatedo was characterized by better housing with reference to Badia, Bariga, Iwaya and Makoko. However, Iwaya housing status was of low quality to the slums that Ajegunle, Amukoko and Itire/Ijeshatedo.

Conclusion

This study has established from the slum residents responses to questionnaire and field observation that spatial differences exist in the environmental quality of the nine (9) upgraded slums of Lagos metropolis. The upgrading programmes of the state government such as dredging of canals, waste disposal trucks for refuse disposal has improved the environmental condition of the slums. Despite these efforts, a lot of improvement in the quality of the environment of these slums is required. This study thus recommends that slum upgrading programmes in slums should be sustained, encouraged and incorporated into Lagos state policy and beyond.

References

Abiodun, O.J. (1976). Housing problems in Nigerian Cities. *Town Planning Review*, 47(4):330-348

Adedayo, A.F. and Malik, N.A. (2014). Effects of Urban Renewal Programmes on the Slum Residents of Lagos Metropolis, Nigeria. *Journal of Sustainable Development in Africa,* 16(8):30-43

Agbola, T. and Jinadu, A.M. (1997). "Tenants addressing the needs, increasing options" In *Environment and Urbanization*, 9(2): 271-289.

Francoise Lieberherr-gardiol (2006). Slums forever? Globalisation and Its Consequences. *The European Journal of Development Research*, 18(2): 275-283.

Makinwa-Adebusoye, P.K. (1988). "Managing the Urban Environment: A strategy for upgrading Olaleye-Iponri Slum in Lagos Metropolitan Area" in Sada, P.O. and Odemerho, F.O. (eds.) *Environmental Issues and Management in Nigeria Development*. Evans Brothers. Pp 132-147

Okeke, D.C. (1984). "A renewal programme for urban centre of Enugu", Unpublished M.Sc. Dissertation submitted to the Department of Urban and Regional Planning, Obafemi Awolowo University, Ile- Ife, Nigeria

Onokerhoraye, A.G. (1988). "Case studies of urban slums and environmental problems in Nigerian cities". in Sada, P.O. and Odemerho, F.O. (eds.) *Environmental Issues and Management in Nigerian Development*. Evans Brothers. Pp 118-131.

UN-HABITAT (2003). The Challenge of Slums: Global report on human settlements. London, *Earthsean Publications Ltd.*

UN-HABITAT, 2004/2005, The State of the World's Cities, Globalization and Urban Culture. London: EarthScan.