Impact of Physical Infrastructure Facilities on the Living Condition of Residents in Festac Town, Lagos

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Abstract

The study utilises the survey design to hypothesise the impact of Estate Physical Infrastructure Facilities (EPIF) on the living conditions of residents of Festac town of Lagos. It identifies infrastructure issues that require urgent care. Using questionnaires on a sample population of 210 Festac residents and the stratified sampling technique to collect data, 81.4% response rate was attained. The primary variables of the study are the functional condition and the adequacy of the EPIF. From Pearson's chi-square and Crammer's V Symmetric measures, inferences were drawn about the deplorable functional condition and the inadequacies of the studied EPIF. Weak effects size between EPIF and living conditions were also verified. The poor status of water supply lines and pipework, street lighting, access roads and footpaths; the inadequacy of water supply, and drainage facilities are the infrastructure issues that exhibit least impacts on living conditions. The Estate is not able to meet the needs and aspirations of the residents significantly on the scale of EPIF. Cross boundary validity is not proven. Based on the empirical information, there is a need to upgrade the physical infrastructure facilities comprehensively.

Keywords: *Living Conditions, Festac Town, Estate Infrastructure, Impact, Physical Facilities, Public Housing*

Introduction

Lagos Metropolitan Area witnessed an unprecedented high rate of infrastructure and facilities' provision when trade and commerce flourished with the introduction of export cash products in the late 1940s.

The economic system of the country was modernised with the construction of road and railway networks, Apapa sea and Ikeja airports, which enhanced the accessibility of Lagos from other regions of the country. Lagos remained the major town for taking in and discharging both imported and exported goods. During this period, there was a concentration of infrastructure and social amenities in Lagos. However, the most worrisome situation was the selective planning system presented by the pre-1960 administrations. Instead of a comprehensive planning of Lagos Metropolitan Area, it was only the government places of residence and works, such as Government Residential Areas (GRA) at Apapa, Ikoyi, Ilupeju and Ikeja that were properly designed.

The predicament of indigenous urban residents was left open. Long-term uncoordinated urban-based developments of these governments were inherited by the post-independent governments. Lagos, during this period, especially between 1962 and 1968 witnessed an unprecedented high rural-urban migration of people from the rural and less privileged regions (Onibokun, Atwal & George, 1973). Similarly, the oil boom era of 1970s favoured urban concentration of industrial and social facilities in the South West Area. Lagos, then became one of the twenty emerging industrial centres, and that also made post-civil war rehabilitation programmes possible. Depravation, rapid urbanisation, poverty, and poor governance that pervaded the Nigerian space impacted on environmental quality, quantitative and qualitative residential housing. The United Nations (2002) informed that the quality and coverage of infrastructure services have a major impact on existing standards and economic growth. It is reckoned that two billion of the world's poor people lack access to decent sanitation, two billion lack access to electricity, one billion lack access to fresh water.

The demand to amend the status of existing infrastructure facilities in many housing

estates, particularly those established over thirty-five years ago by the Federal Housing Authority, is now of paramount importance in most developing nations. The report tries to produce an original and make a vital contribution to municipal housing studies. If metropolitan public housing infrastructure issues are not empirically documented and addressed, unabated social problems and misdemeanours could spread from one urban geographical area to another. This work investigates the impact of Estate Physical Infrastructure Facilities (EPIF) on living conditions in Phase One, Festac Town Housing Estate using the functional condition and adequacy of the EPIF as the latent variables and explanatory parameters. The objectives are:

(1) To assess the functional condition of the EPIF
(2) To evaluate the adequacy of the EPIF in the Estate
(3) To appraise the impact of EPIF on living conditions in the Estate, and identify specific EPIF that require comprehensive upgrades.

The survey should provide empirical data about the importance of EPIF to aggregate conditions of livelihood, and attract the attention of the Federal, State, and Local Government policy makers to improve the EPIF and the housing quality in the Estate. The fundamental queries to be answered by this study derive from the objectives. They relate to the functional condition, adequacy of the EPIF, and overall statistical association between EPIF and condition of living, and the EPIF that requires attention.

Review of Literature

Housing, in a more general and social term, is the process of providing dwelling units for people to live in. Fadahunsi (1985) argued that for housing to be effective, it has to be seen in its communal setting: That is, housing must be considered beyond ordinary building, but it must be a building in which the occupier would like to live with happiness. Many components bear upon the desire to live in a house: These include the community, the physical setting, the installations that make the ingress into and outflow from the community easy or difficult, affordability, the accessibility of essential facilities for

use in the home, such as water, and electricity (Onibokun, 1985).

Likewise, the availability of these facilities, as noted by Hardy and Setterthwaite (1986) defines the quality of the housing area and the survival of its dwellers. Misra (1986) and Ajibola, Awodiran & Salu-Salako (2013) regarded these facilities as basic infrastructure needed for quality urban life. As a stipulation for a household to be more attractive and conducive for the occupier, the entire physical environment must be viewed. The reason is that a planned environment would provide easy communication and transportation, schools, parks, and playgrounds, shopping centres, open spaces, water and electricity. Similarly, a livable housing area must be adequately drained, while waste disposal systems must be functioning effectively, to ensure the cleanliness of the surrounding environment (Fadahunsi, 1985).

In characterising housing delivery, one should see the need to eliminate overcrowding, which is the worst pollutant of the environment and a major cause of slums. Clinard (1973) characterises slum areas as overcrowding, congested housing, area with deficient physical amenities. Thus, absence of social amenities coupled with an inadequate housing unit provision to fit the demand of the resident population may be reckoned as the root of slum and urban blight (Barrett and Beardmore 2000; Cronin and Guthrie, 2011).

Housing needs go beyond quantitative housing units. One needs to look at the quality of existing housing facilities and the prospects of increasing the housing stock. Hence, the effort to meet with housing units required must not jeopardize the relevance of housing quality (Fagbohun, 2008) It is suggested that neighbourhood conditions, structure, internal adequacies of dwelling units, the number of people in the household and their peculiar requirements and traditions, combine to constitute different needs of individual families and householders (McNeil and Dollery, 1999).

In this wise, housing is shelter, and for the shelter to meet the criteria of habitability and livability, it should conform to a set minimum standard (Onibokun, 1985). Ibiyemi and Adenuga (2013) explained

physical estate, infrastructure facilities as a set in the aggregate of all facilities that grant a housing estate to run effectively. Such facilities are water supply, drainage, waste disposal, roads, sewerage, street lighting, and telecoms, while estate social infrastructure constitutes the other. Agbola (1994) indicated that it is only through development control which contains land use zoning and planning standard that the ultimate objective of physical planning could be attained. The aim is to achieve a healthy, conducive, satisfying and aesthetically pleasing environment in which to pursue different kinds of human activities.

Hammer, Booth, and Love (2000) stated that the provision of safe and adequate infrastructure is also key to enhancing property values. Harvey (1993) was of the view that a residential user may be prepared to pay a high value for a property depending on his consideration for basic installations such as accessibility, water and electricity, while McNeil and Dollery (1999) informed that infrastructure services have contracted along a new urgency in part because they possess a direct bearing on economic development. McNeil and Dollery revealed further that studies had demonstrated that adequate infrastructure reduces the cost of production, which in turn affect profitability, levels of output and employment; particularly in small-scale businesses. They were of the opinion that when infrastructure works, productivity and labour increase; when it does not operate, economic renewal can be shelved or even arrested.

Living conditions as a construct, is expressed as the qualitative measure of a residential Estate as a place of abode that considers the needs and aspirations of residents in terms of utility and satisfaction derivable from functional condition and adequacy of the estate physical and social infrastructure facilities (Ibiyemi and Adenuga, 2013). Living in a livable housing area also correlates with affordability, adequate social infrastructures, secure, dependable and economical transportation choices (NARC 2012; Centre for Affordable Housing; CAH, 2012). Jakande (2003) noted that in Nigerian urban areas, there is an acute scarcity of livable residential houses. The reason is that most Nigerians in

Urban areas live in rented houses. Private owners, built a larger percentage of these houses incrementally over many years, and since most of these owners hold for economic purposes, the rents they charge are often high, and are usually payable two years or more in advance, whereas, the tone of these houses is poor and of substandard classes. A good deal could not be managed by the government to contain the situation, as its contributions are a minuscule fraction of the entirety of the existing housing stock. Therefore, urban poor has no option than to pay high rents for substandard housing and its complimentary services.

The study of Olajuyigbe, Rotowa & Adewunmi (2012) reported that Festac Town was a typical community that is presently not being serviced by mains water utilities due to the inability of the Water-Supply Agency (WSA) to supplying water to the area. Households, as a result seek other alternative sources, including water vending. Previous work on EPIF and living conditions of estate residents is known to literature, but theories regarding statistical measures of impacts for priorotisation are less considered. Past studies dwell on adequacies and availability of infrastructures. However, decision makers also need to have insights into the specific requirements to guide them in ordering infrastructure repair-replacement choices. This study proceeds further to contribute the empirical baseline information upon which to rationalise their decisions.

The Study Area

The Estate, *FESTAC Town,* also known as the Black Arts Festival Town, situates along the Badagry Expressway. The long-term objective is to offer additional housing stock for the people of Metropolitan Lagos after Black Arts Festival of 1977. The Estate will occupy, in its closing phase, an area of 1,770 hectares and will let in seven residential communities of 15-20,000 people each. Therefore, the entire development will be able to hold a total population of 24,000 dwelling units or approximately 120,000 people. The Phase 1 development commenced in 1974 and was completed by mid-1976. The construction of buildings and various services was awarded to about 40 contractors in 70 sites of the project while 14 main contractors got the works on infrastructure. Lagos is the commercial

capital of Nigeria and a microcosm of Nigeria. The population is over twenty million, and due to its apparent planlessness, the pressure on social and physical facilities finds its fullest manifestation. Festac Town Housing Estate is the largest public residential housing estate in Nigeria, both in physical size and resident population (Ibiyemi & Adenuga, 2013). The choice is justified for study as a case. Figure 1 below shows the arterial and connector roads in the Estate. The tiny-urls connect the links to the Location Map (http://tinyurl.com/pe4au8a) and the Report Images (http://tinyurl.com/j7bg4ln) .

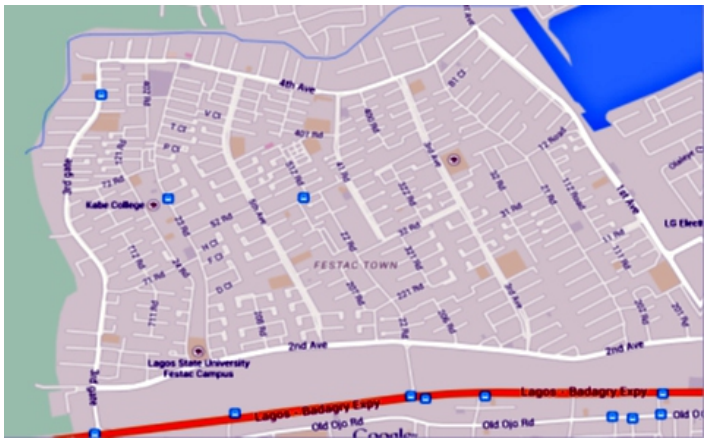

Figure 1. Map showing arterial and connector roads in the Estate:
Source: Olajuyigbe, Rotonwa & Adewunmi (2012)

Phase 1 covers a total area of about 460 hectares, comprising of three residential communities I – III. It has a combined planned capacity of about 11,000 dwelling units for 55,000 people. The road layout is made up of local roads (cul-de-sacs and minor roads; connector roads - 5th Avenue, 23 Road, 22 Road, 21 Road, and 20 Road, while the arterial roads are the 1st, 2nd, 4th and 7th Avenues. The distribution of dwelling units by income groups is shown in Table 1 infra.

Table 1. Distribution of Dwelling Units by Income Group

COMMUNITY	LOW INCOME	MEDIUM INCOME	HIGH INCOME	TOTAL
I	2482	638	1100	4220
II	3008	332	723	4053
III	1835	206	461	2502
TOTAL	**7325**	**1166**	**2284**	**10775**
%	**68%**	**11%**	**21%**	**100%**

Source: FHA Brochure, 1976

Over 1,000 additional units were also provided in the reclaimed area of Community III (also in Phase 1) and thus, the total number of dwelling units in this phase is 12,000 with an expected population of 60,000. Under the present phase, the total number of dwelling units was divided into 68% for low income, 11% for middle income and 21% for high income. Plot sizes for individual units range from 200 to 1,200 square metres.

Table 2. House Types and Classification

TYPE	CLASS	ACCOMMODATION	
10	AH4	2-storey, 4-bedroom detached house– Two sitting/dining, one guest room, study, and a 3 room outhouse	**HIGH INCOME**
9	BH3	2-storey, 3-bedroom detached house, two sitting/dining, and a 2 room outhouse	
8	H4H3	2-storey semi-detached 3-bedroom house, one sitting/dining, and a 2 room outhouse	
7	H3M3	2-storey Terrace 3 bedroom houses, one sitting/dining.	**MEDIUM INCOME**
6	M3	4-storey block of 8 flats, each with 3- bedrooms, one sitting and dining	
5	M3L2A	4-storey block of 16 flats, each with 3 bedrooms, and one sitting/dining.	
4	F1M2B & F1M2A	2-bedroom bungalow with one sitting/ dining + garage	
3	F1L2	2-bedroom bungalow with one sitting/ dining.	
2	L2A	4-storey block of 16 flats (2-bedrooms, and a sitting room)	**LOW INCOME**
1	L/A	4-storey block of 32 flats (one bedroom, and a sitting room)	

Source: Fortune Ebie, 1980

Methodology

In this section, the various steps followed in data collection and analysis are explained. The instrument used for data collection are questionnaire survey, direct observation and personal interview. The questionnaire was mailed to 210 sampled Festac Town residents. The sample size of 210 was

selected randomly from the working population of housing units contained in the Local Government Office at Amuwo Odofin. Stratified sampling technique was also used. Although, there are ten categories of house types in Festac Town Phase 1, stratification was done in three categories in accordance with the major qualifying income levels at the time of the original allocation in 1976: Detached/Duplex houses (above N4500; types 8–10) Terrace houses/Flats/Bungalows, (N2400 – N4000; types 3 -7) Flatlets (under N2400; types 1 & 2) and Private; with a sample population of 45, 96, 60 and 9 respectively.

The Questionnaire was designed to elicit information on functional condition and adequacy of the EPIF. A total of 171 responses were received; made up of 33 for the Detached/Duplex houses, 90 for Terrace houses/Flats/Bungalows, and 39 for Flatlets and 9 for Private residential. The response rate of the survey is 81.4%. Although the response rate is high, we made any effort to investigate any selection bias. Sample selection bias is always a possible problem where there are a substantial number of non-responses. Not accounting for it can lead to bias parameter estimates and misleading conclusions if it exists (Vossler and Kerkvliet, 2003).

Descriptive statistics based on distribution of responses for the two main independent variables: functional condition and adequacy of EPIF, each having sub-variables as in Appendix A. Pearsons chi-square and Crammer's V statistics were employed as test of association and effect size. Reliability analysis was carried out for internal consistencies, and all the items correlated adequately in the constructs. The minimum corrected item-Total-correlation is 0.730, and cronbach alpha coefficient reported 0.89. Generally, Cronbach alpha coefficient =0.7 is the average correlation matrix for internal consistencies (Devellis, 2003;Kline, 2005; Pallant, 2011).

Results and Analysis

The descriptive statistics of the responses in respect of functional condition and adequacy of EPIF are presented in Table 3 and 4, Sections 1and 2 below:

Table 3. Indexed Percentage Distribution of Functional Condition of EPIF

Section One:	***N***	**VB**	**B**	**F**	**G**	**VG**
Condition of access roads, minor roads, and footpaths	171	0.221	0.386	0.086	0.071	0.021
Condition of street lighting	171	0.414	0.257	0.100	0.029	0.014
Condition of drainage system	171	0.157	0.214	0.357	0.071	0.014
Condition of electricity supply lines, and cable network	171	0.129	0.257	0.414	0.014	-
Condition of water supply lines and pipework	171	0.514	0.171	0.071	0.014	0.043

N-no. of respondents; *VB*-Very Bad; B -Bad; *F*-Fair; *G*-Good; *VG*-Very Good

Section one inquired about the condition of EPIF in fulfilment of research question 1. As shown in Table 3 above, an aggregate of.17.8% rated the condition of access roads, minor roads, and foot paths as either fair, good or very good. Street lighting, drainage systems, electricity and water supply lines were rated 14.3%, 44.2%, 42.8%, and 12.8% respectively. The indication is that the estate physical infrastructure facilities are in deplorable conditions.

Table 4. Indexed Percentage Distribution of Adequacy of EPIF

Section two	***N***	**SA**	**NA**	**FA**	**A**
Mains electricity supply	171	0.010	0.686	0.214	-
Mains water supply	171	0.114	0.743	0.057	-
Roads and Streets	65	-	0.686	0.457	0.243
Street lighting	171	0.557	0.557	0.100	-
Drainage facilities	171	-	0.657	0.257	0.100

NA-Not Adequate; SA-Somewhat Adequate *FA*- Fairly Adequate; A-Adequate

In section, two the respondents were asked questions to elicit the adequacy of the estate physical infrastructure in response to research question 2. 68.6% indicated that mains electricity supply is not adequate within the Estate, while 21.4% rated it fair. Respondents rated water supply, street lightening, and drainage facilities as not adequate (74.3%, 55.7%, 65.7% respectively). The response indicates that water, roads, street lighting and drainages are not adequately provided. The services could not be deemed to be efficient.

The descriptive statistics of the responses in respect of functional condition and adequacy of EPIF were recoded for ease of application of SPSS22. The transformed

responses are presented in Table 5. Responses relating to independent variables were recoded into two categories (Yes, 1; No, 0) (see Table 5). **Yes**: *Condition* (Very Good/Good)-Good; *Adequacy* (Adequate/Fairly Adequate); **No**: *Condition* (Fair/Bad/Very Bad)-Bad; *Adequacy* (Not Adequate/Somewhat Adequate).

Table 5. Percentage Summary of Observed Frequencies of Responses (Recoded)

Independent Variables	*Observed Frequencies (OF) EPIF*		
	Yes (1)-good	*No (0)-bad*	*N*
1. Functional Condition			
*Condition of access roads, minor roads and foot paths (CARMFP).	68	103	171
*Condition of street lighting (CSL)	56	115	171
*Condition of drainage system (CDS)	108	63	171
*Condition of electricity supply lines, and cable networks (CESCN)	105	66	171
*Condition of water supply lines and pipework(CWSLP)	54	117	171
2. Adequacy	**Adequate**	**Not Adequate**	
Electricity supply (ADES)	52	119	171
Water supply (ADWS)	21	150	171
Roads and streets (ADRES)	115	50	165
Street lightening (ADSL)	31	137	168
Drainage facilities (ADDF)	52	99	151

The bar chart in Appendix A (Fig.4) further illustrates the relationship between EPIF and livability in the Estate. From the chart, ADRES, CDS, and CESCN have high counts for "livable" while CSL, ADSL, ADES, CWSLP, CSL, CARMFP and ADDF have high counts for "not livable".

The indication is that respondents' "livable" preference is based on their satisfaction with ADRES, CDS, and CESCN, while dissatisfaction with CSL, ADSL, ADES, CWSLP, CSL, CARMFP and ADDF influenced the respondents' "not livable" preference.

Chi-square Test of Independence was utilised to appraise the impact of the EPIF on living conditions in the Estate by testing the overall statistical association to provide answer to research question 3. The frequencies in Table 5 are also encompassed in Table 6 and can be explained in the light of the SPSS output in Table 6.

Table 4 gives the frequency counts, expected frequency and the difference between the two for each of the twenty cells. Expected count frequency in each of the cells produced by the factorial combination of living condition and EPIF is >5. This means that the analysis has not violated a core assumption underlying the chi-square test.

Preference for the independent variables examined varied as a function of living condition. Following considering the magnitude of standardized residuals (STDRes): The residual is the error between what the model predicts (expected frequency) and data actually observed. $Residual_{ij} = observed_{ij} - model_{ij}$, in which i and j represent the two latent variables.

The chi-square statistic is the sum of the STDRes, so the relationship is direct (Field, 2009). To determine what contributes to the overall association, chi-square measures individual STDRes in each cell, and each STDRes is a z score. Field (2009) affirms the rule that: *If the value lies outside of ±1.96, then it is significant at .05.*

For this study, STDRes with greater than ±1.96 value in any cell tells us that significantly more residents than expected considered the sub-variable to live on the Estate, and less number of residents than expected did not consider the sub-variable. Therefore the sub-variable has a positive influence on the overall association, or outcome.

Conversely, (STDRes with less than ±1.96 value indicates that, the sub-variable did not significantly contribute to the association. Hence, ADES (STDres -1.9), CWSLP (STDres 1.6), ADDF (STDres -1.0), CSL (STDres -1.4), CARMFP (STDres .1) did not significantly contribute to the association.

The overall indication is that living condition is influenced by the independent variables at varying magnitudes relative to their standardized residuals.

Table 6. Crosstab result of Living condition in the Estate, functional condition and adequacy of EPIF

Living condition in the Estate * Functional condition & adequacy of EPIF Cross tabulation

			Functional condition & adequacy of EPIF										
			CARMFP	CSL	CDS	CESCN	CWSLP	ADES	ADWS	ADRES	ADSL	ADDF	Total
Living condition in the Estate	Respondents CAT A - not livable	Count	103	115	63	66	117	119	150	50	137	99	1019
		Expected Count	103.7	103.7	103.7	103.7	103.7	103.7	103.7	100.0	101.8	91.5	1019.0
		% within Living condition in the Estate	10.1%	11.3%	6.2%	6.5%	11.5%	11.7%	14.7%	4.9%	13.4%	9.7%	100.0%
		% within Functional condition & adequacy of EPIF	60.2%	67.3%	36.8%	38.6%	68.4%	69.6%	87.7%	30.3%	81.5%	65.6%	60.6%
		% of Total	6.1%	6.8%	3.7%	3.9%	7.0%	7.1%	8.9%	3.0%	8.1%	5.9%	60.6%
		Std. Residual	-.1	1.1	-4.0	-3.7	1.3	1.5	4.6	-5.0	3.5	.8	
	Respondents CAT B - livable	Count	68	56	108	105	54	52	21	115	31	52	662
		Expected Count	67.3	67.3	67.3	67.3	67.3	67.3	67.3	65.0	66.2	59.5	662.0
		% within Living condition in the Estate	10.3%	8.5%	16.3%	15.9%	8.2%	7.9%	3.2%	17.4%	4.7%	7.9%	100.0%
		% within Functional condition & adequacy of EPIF	39.8%	32.7%	63.2%	61.4%	31.6%	30.4%	12.3%	69.7%	18.5%	34.4%	39.4%
		% of Total	4.0%	3.3%	6.4%	6.2%	3.2%	3.1%	1.2%	6.8%	1.8%	3.1%	39.4%
		Std. Residual	.1	-1.4	5.0	4.6	-1.6	-1.9	-5.6	6.2	-4.3	-1.0	
Total		Count	171	171	171	171	171	171	171	165	168	151	1681
		Expected Count	171.0	171.0	171.0	171.0	171.0	171.0	171.0	165.0	168.0	151.0	1681.0
		% within Living condition in the Estate	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	9.8%	10.0%	9.0%	100.0%
		% within Functional condition & adequacy of EPIF	100.0%	100.0 %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	9.8%	10.0%	9.0%	100.0%

Table 7. Pearson's Chi-square results

Chi-Square Tests			
	Value	**Df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	237.024[a]	9	.000
Likelihood Ratio	246.372	9	.000
Linear-by-Linear Association	15.356	1	.000
N of Valid Cases	1681		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 59.47.

As indicated in Table 7, it could be concluded that there was a statistical association between the living condition in the Estate and EPIF, for the different sub-variables. With Pearson's chi-square = 237.024, p=.001 (<.05), the null hypothesis that there was no overall association between function condition of EPIF, adequacy of EPIF, and living condition could not be accepted. The inference is that the statistical proportion of "livable" is significantly different from the proportion of "not livable", for which the association could be inferred. Therefore, EPIF impacts on the living condition of the estate residents.

Table 8. Symmetric measures of Cramer's V

Symmetric Measures			
		Value	**Approx. Sig.**
Nominal by Nominal	Phi	.376	.000
	Cramer's V	.376	.000
N of Valid Cases		1681	

Table 8 provides measures of the strength of relationships or the effect size (ranges between 0 and 1). The closer to 0, the weaker the association. Cramer's V at .376 indicates a weak effect size. With the situation in the table where Cramer's V is far from 0, it could be concluded that a weak situation occurs. **Conclusion and Policy Considerations**

The work has determined the functional condition, adequacy of EPIF, livability in the Estate, their statistical association (p<. 05; Crammer's V=. 346; z=±1. 96), as indicative of impact of EPIF on living conditions. Since the relationship is a weak one, the infrastructure requires an urgent comprehensive upgrade generally. ADES, CWSLP, CSL, ADDF, and CARMFP are the

infrastructure issues that have to be upgraded urgently by the authorities. All the research questions have been answered, and objectives fulfilled. It validates the theories of McNeil and Dollery (1999) and UN (2002) that the contribution to the quality and coverage of infrastructure services has a major impact on the living standards and economic growth of the people directly.

The Estate is bedeviled by the spiral population explosion and resultant overcrowding, with an occupancy ratio of three persons per room (WHO standard – two persons per room) and an average population density of 1950 persons per hectare (Ibiyemi & Adenuga, 2013). The resident population needs to be controlled to reduce overcrowding and the spread of communicable diseases. The buildings appear to be in satisfactory external physical conditions, well ventilated and painted externally. Site observation confirmed that the buildings are structurally sound. However, the Estate is not significantly able to meet the needs and aspirations of its residents on the scale of Estate Physical Infrastructure Facilities. The reason is that only about 50% of the EPIF considered in this study exhibited positive impacts on living conditions.

Festac Town needs to be upgraded with an integrated conservation strategy for a FESTAC TOWN IMPROVEMENT PROJECT (FESTIP). The initiative is to give infrastructure facelift, control of population and community development as linked interventions.

The Improvement Project should be attached to the Office of the Amuwo Local Government Area Chairman, and the operators of the Project are to enlist the support of the Federal Housing Authority (FHA) and the Festac Police. FESTIP could comprise of representatives of the Local Government, Federal Housing Authority, FTRA, an Estate Surveyor and Valuer and a Town Planner. Financial and legal empowerment are desirable, through relevant bylaws to carry out the following tasks:

(1) Demolition of all structures, the development of which are inconsistent with the provisions of section 1 of FHA Revised Approval to Building Plans Regulation of 1985 which states in part as follows: “Any unapproved development shall be liable to demolition after a notice has been duly displayed……” Immediate suspension and subsequent reappraisal of building permits for new development, notably for

shops and places of worship to control and reduce resident population and corresponding pressure on available social services.

(2) Development control is one of the measures applied by physical planning agencies, especially, local planning authority, but in the case of Festac Town, FHA should ensure that developers do not deviate from building plans approved for them throughout the implementation of construction on the plot earmarked for them. The target is to enhance environmental quality, improved housing condition, the privacy of residents and the free flow of air, among others. Despite the importance of development control standards in physical, zoning, and balancing, a series of elements, such as enforcement, hinder its effectiveness.

References

Adisa, J., (1994). *Urban Violence*, IFRA, Ibadan, .http://books.openedition.org/ifra/789?lang=en. [Accessed 2 December, 2014].

Agbola, T., (1994). The politics and administration of housing standards and the structure of Nigerian cities. *Urban Management and Urban Violence in Africa*. Vol.1, IFRA, Ibadan.

Ajibola, M.O., Awodiran, O. and Salu-Kosoko, O., 2013. Effects of infrastructure on property values in Unity Estate, Lagos, Nigeria, *International Journal of Economy, Management and Social Sciences*. *2* (5), pp.195-201

Andy, F., (2009). *Discovering statistics using SPSS* (3rd ed). Thousand Oaks, California: Sage Publications.

Barret, J and Beardmore, R. M., (2000). *Poverty reduction in India: Towards building successful slum upgrading strategies*. Poverty segment of the World Bank South Asian Urban and City Management, Cuba.

CAH (2012). Affordable housing overview', Centre for affordable housing (CAH), Government of North South Wales, Australia, http://www.housing.nsw.gov.au/Centre+For+Affordable+Housing/NSW+Local+Government+Housing+Kit/Statutory+Framework+for+Housing/Affordable+Housing/. [Accessed May 2012].

Clinard, M. B., (1973). Conference contribution in Weitz Rannnem (1973) *Urbanisation and developing countries (ed).* Report on the Sixth Revovut Conference, Preagar, New York Urban Poverty

Cronin, V. and Guthrie, P., (2011). Alternative approaches to slum upgrading in Kibera, Nairobi. *Urban Design and Planning*, 164 (DP2), pp. 129-139.

DeVellis, R. F., (2003). *Scale development: Theory and applications* (2nd edn). Thousand Oaks, California: Sage Publications.

Ebie, SPOF (1980). The *role of the Federal Housing Authority in Providing and in the Administration of Social Services in the Festac Town*.

National Conference on Local Government and Social Services held at the Obafemi Awolowo University, Ile-Ife. Nigeria.

Fadahunsi, S. O., (1985). *Fifty years of housing in Nigeria Onibokun* (ed) Ibadan: Nigerian Institute of Social and Economic Research (NISER), pp. 105-132.

Fagbohun, P. O., (2008). *Housing and liveability in Nigerian cities: The study of housing situation in Oshodi, Lagos*. National Conference on Private Sector Driven Housing Delivery: Issues, Constraints, Challenges and Prospects. University of Lagos, Lagos, Nigeria.

Field, A. (2009). *Discovering statistics using SPSS*. Thousand Oaks, California: Sage Publications.

FTRA, (2015). Interview with Festac Town Residents Association Exco members. [12 July, 2015].

Hammer L; Booth D. and Love H. E., (2000). Poverty and transport. World Bank report in collaboration with DFID, Overseas Development Institute. http://tinyurl.com/gvquy6n. [Accessed 3 March, 2015].

Harvey, J., (1993). *Urban land economics.* 3rd edition. London, UK: Macmillan Press Limited.

Hardoy, J. E. and Satterthwaite A., (1986). Shelter, infrastructure and services in Third World Cities *Habitat*, *10(3)*, pp.245-284.

Ibiyemi, A. O. and Adenuga, O. A., (2013). Evaluation of housing conditions and livability in Phase One, Festac Town Housing Estate, Lagos, Nigeria. *Built Environment Journal*, *10 (1),* pp.15-26.

Jakande, L. K. (2003). *Housing development in Nigeria: Which way forward?* National Seminar of the Nigerian Institute of Building, Ikeja, Lagos, Nigeria.

Kline, T. J. B. (2005). *Psychological testing: A practical approach to design and evaluation*. Thousand Oaks, California: Sage Publication.

Kosoko, O., (2013).Effects of infrastructure on property values in Unity Estate, Lagos, Nigeria, *International Journal of Economy, Management and Social Sciences*. *2*(5), pp.195-201.

McNeill, J and Dollery, B., 1999. A note on the use of development charges in Australian Local Government, *Urban Policy and Research*, *17(1),* pp. 61-69.

Misra, B., (1986). *Popular settlement in ndian cities: The case of Allahabad city.* International Institute forDevelopment Research, Allahabad, India.

National Power Holdings (2015). Interview with the District Manager, PHCN, Festac Town, Lagos, Nigeria. [24 July, 2015].

NARC, (2012). *Livabilty literature review*: *A synthesis of current practice*. US Department of Transportation. narc.org/wp-content/uploads/Literature-Review-Guidebook-FINAL.pdf. [Accessed 27 August, 2014].

Olajuyigbe, A.; Rotowa,O. & Adewunmi, I., (2012). Water vending in Nigeria: A case study of Festac Town, Lagos, Nigeria. *Mediterranean Journal of Social Sciences*, *3(1),* pp. 229-239.

Onibokun, A. G., Atwal, A., Rich, George (1973). *Housing need: An annotated bibliography.* Retrieved

f r o m http://www.amazon.com/s?ie=UTF8&page=1&rh=n%3A283155%2Cp_27%3AAdepoju%20G.%20Atwal\c%20Ajit\c%20%3B%20Rich\c%20George\c%20Onibokun. [Accessed 6 September, 2013].

Onibokun, A. G., (1985). Housing needs and responses: A Planner's viewpoints. *Housing in Nigeria*, Onibokun (ed) 1985, NISER, Ibadan.

Onibokun, A.G and Kumuyi, A.J., (1996). *Urban poverty in Nigeria: Towards sustainable strategies for its alleviation,* Monograph series 10, 1-2*,* CASSAD, Ibadan.

Pallant, J., (2011). *SPSS survival manual*, 4th Edition, London, UK: Open University Press.

United Nations, (2002). Report on Human Settlement: The Changing Shelter Policies in Nigeria. http://www.un-habitat.org. [15 January, 2011].

Vossler, C.A. and Kerkvliet, J., (2003). A criterion validity test of the contingent valuation method: Comparing hypothetical and actual voting behaviour for a public referendum. *Journal of Environmental Economics and Management 45(3),* pp. 631-649.

Weitz, R., (1973). *Urbanisation and the developing countries.* Sixth Revovut Conference, Preagar Publishers, LondonX C.

Appendix A

Functional Condition

CARMFP	Condition of Access Roads, Minor Roads, and Footpaths
CSL	Condition of Street Lighting
CDS	Condition of Drainage System
CESCN	Condition of Electricity Supply Lines and Cable Network
CWSLP	Condition of Water Supply and Pipework

Adequacy

ADES	Adequacy of Electricity Supply
ADWS	Adequacy of Water Supply
ADRS	Adequacy of Roads and Streets
ADSL	Adequacy of Street lighting
ADDF	Adequacy of Drainage Facilities