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City Liveability and Housing in Nigeria: A Case Study of Low-income Housing in Niger State

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Abstract

Studies on the liveability of cities have been on the increase due to their perceived aftermath significant contributions to the quality of life. Although the quality of life (QOL) has been studied from different disciplines, however, it does not mean absence of diseases or sickness rather QOL depends primarily on the living environment. The aim of this study is to examine the quality of life against the backdrop of the existing environment in the public low-income housing estates in Niger State of Nigeria. The conceptual framework for this study was developed based on empirical review. Based on the desktop literature the study used both subjective and objective measurements to investigate the liveability of the selected housing estates. Issues examined include the home environment, neighbourhood amenities, economic vitality, social environment and civic protection. Questionnaires were distributed to household heads in the selected three housing estates. The stratified random sampling technique used was to choose all types of homes. The data analysis techniques include; descriptive statistics, factor analysis and structural equation modelling (SEM). This study contributes to the existing body of knowledge in liveability studies in terms of model construct. It also uncovers the quality of life in public low-income housing in Niger State.

Keywords: Liveability, Public Low-income Housing, Quality of life, Confirmatory factor analysis

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1. Introduction

The term liveability is nebulous in meaning and as a result it becomes a multi-faceted phrase that different researchers perceived differently. In most cases, the prefix such as city, urban and neighbourhood have been added in various studies. Liveability connotes the ability of a living place to support well-being or quality of life. According to Cambridge Advance Dictionary (2008) the world "Liveable" means a place or a building fit for living. Liveability is a concept that describe the existing conditions of a particular area or a city in relation to what ought to be and the reality of the situation of the inhabitants. As the city grows, the population pressure persists, and more house units are required to cater for the city dwellers. Therefore in discussing city liveability, housing is a major key indicator. Housing as one of the three most essential needs of man (UN-Habitat, 2006) can be described as an integral part of a human frame which should respond to the need of its inhabitants. It encompasses all the auxiliary services and living environment facilities, which are necessary to human well-being. The right to a safe, secure, healthy and inexpensive adequate housing was enshrined in the Habitat Agenda (2001). This global call for human settlement and shelter encouraged the government of nations to intensifying efforts to provide houses for their citizen in particular for the low-income populace (Makinde, 2013). Prior to this, Nigeria government at various times have introduced different housing policies to solve housing deficit problem. Thus, evidences from various studies, show that Nigerians are still under-housed (Nse, 2012; Ademiluyi and Raji, 2008; Makinde, 2013; Ibem and Aduwo, 2012; Aribigbola, 2008). Nevertheless, both federal government and the state government have continuing building housing units for various levels of income groups (low, middle and high-income) in their respective territory. However, Niger state is one of the 36 states in Nigeria, and the Niger state government is one of the leading providers of public low-income housing to the low-income people among the states in Nigeria. From the foregoing, this study therefore, investigates the liveability of the public low-income housing estates of Niger State, Nigeria.

1.1 Aim

The aim of this study is to examine the quality of life against the backdrop of the living environment in the public low-income housing estates in Niger State of Nigeria.

1.2 Objectives

- To establish various dimensions and indicators of the liveability of public low-income housing through literature review;
- To find out the perception of the residents towards the liveability of the housing estates.
- To find out the factors that significantly influences the perception of the residents' level of satisfaction with their housing estate.
- To assess the fitness of the hypothesized model of liveability of the low-income housing

1.3 Research Questions

- What are considered as dimensions and indicators of liveability?
- How residents did perceive their living environment?
- What are the factors that influence the residents' level of satisfaction?
- How useful is the hypothesized model of liveability of the low-income housing?

2.0 Literature Review

The term "liveability" is closely related to the environment. Cambridge Advance Dictionary (2008) define "environment" as the conditions of living and the way the conditions influence how the inhabitants feel. Also, environment has been defined as the external conditions that can affect the life of an individual or group of citizens (Omuta, 1988). The problem with the concept of liveability has been that scholars created definitions that were appropriate for their research. Consequently, various meanings, definitions, dimensions and indicators of liveability circulate in the literature (Van de Heuvel, 2013). As a result of this, few examples of definitions of liveability are as follows:

The Centre for Liveable Cities Singapore in 2011 define liveability as the city with excellent planning, create a lively, attractive and secure environment for people to live their life, work and play. It also encompasses good governance, a competitive economy, high quality of life and environmental sustainability.

Economic Intelligent Unit (2011) described liveability as one of the determinants of quality of life. Shuhana et al., (2012) opined that high quality of living will affect citizen's lifestyle, health condition and shows stability of the built environment. Liveability according to Castellati (1997) means experiencing oneself as a real person in the City. Similarly, Southworth (2007) consider it as determinant of how well the City works for its inhabitants.

Pacione (2003) opines that liveability is a relative term of which the actual meaning depends on the place, time and purpose of the assessment, and on the value system of the assessor.

On the empirical study, Chaudhury (2005) examined the liveability of the capital city of Bangladesh, Dhaka and the third largest town in Bangladesh, Khulna. The evaluation focused on consumer goods, utility services, housing affordability (rent), social security and environmental conditions. The study findings showed that economic growth of Dhaka makes it more liveable than Khulna. However, the residents of Taman Melati in Kuala Lumpur Malaysia have expressed to continuing living in the area. The residents were satisfied with their living environment although their satisfaction was low on some physical environmental parameters such as noise pollution, air pollution and no brightness of streetlight at night. Non brightness of the streets light at night is link to insecurity of the resident at night. The study seeks the perception of residents of residential environment areas of Taman Melati on air, noise, streetlight illumination, and traffic volume through the questionnaire survey. The study recommends improvement of the physical environment of Taman Melati especially in terms of safety (Abdul Azeez *et al.,* 2010). Similarly, the quality of the living environment of Seremban in the state of Negeri, Malaysia had been assessed to be moderate; this is based on the perception of the urban dwellers of Seremban. Seremban according to Azahan *et al.,* (2009) has the potential to provide a better living condition to inhabitants if the planning authority takes cognisance of its potentialities. Also, urban density and liveability relationship of Fairfield, Newtown in New Zealand and Churton Park in Canada was investigated through a triangulation methodology i.e. quantitative, qualitative and literature review. The measured variables include; connectivity, accessibility, mixed use and density. The study results revealed that more amenities are needed in the area, and improvement of the existing facilities is required. However they (residents) believed their neighbourhood is liveable (Betanzo, 2009).

Omuta (1988) investigated the environmental problems of Benin City, Nigeria through conceptual standards such as employment, housing, amenity, education, nuisance and socio-economic dimensions. The study adopted stratified random sampling of which twenty-one neighbourhoods of Benin City serves as units of assessment. The study analysis shows that the quality of life in the areas and overall environment and liveability of the city is too low. However, Olajuyigbe et al., (2013) assessed the quality of life of Benin City and found that the quality of life of the area is below average. Hypothetically one would have expected to see improvement in the area follow its current status as the state capital. The study used Geographical Information System (GIS) Approach; twelve determinants grouped into three different domains of life were used to assess the QOL such as social, economic and physical. Asiyanbola

et al., (2012) studied neighbourhoods' liveability of Ago-Iwoye and Ijebu-Igbo in Ogun State, South-West Nigeria. The findings show that necessary facilities and amenities in the areas were in a disrepair state. Ekop (2012) conducted principal component analysis to explain the variability of the set of data input for housing quality of Calabar metropolis, Nigeria. The inter-correlations of the data set revealed that socio-economic, housing characteristics and neighbourhood features are essential determinants of the liveability of the Calabar metropolis.

However, away from informal housing environment/settlement, Ilesanmi (2012) examined the quality of public housing in Lagos state, Nigeria. His finding shows that public housing in Lagos State, Nigeria were of the low quality. Some studies on public housing in Nigeria focus on housing policies (Aribigbola, 2008; Olotuah, and Bobadoye, 2009). Some researchers focus on housing delivery strategies (Olayiwola, Adeleye and Ogunshakin, 2005; Makinde, 2013; Ifesanya, 2012) and a number of researchers examine public-private partnership in housing development (Musa and Usman, 2013; Ibem, and Aduwo, 2012). It is against this background this study is critical given that study on the liveability of public low-income housing is still almost not being research in Nigeria.

This study benefited from the operational definition of liveability in Flanders and the Netherlands through four dimensions namely:

1. Housing/dwelling quality
2. Physical environment quality i.e. level of utility services and facilities
3. Quality of the social environment
4. Safety of the neighbourhood

In addition, Heylen (2006) discussed a conceptual model based on the 'model about the perception of a residential environment'. (See figure 1)

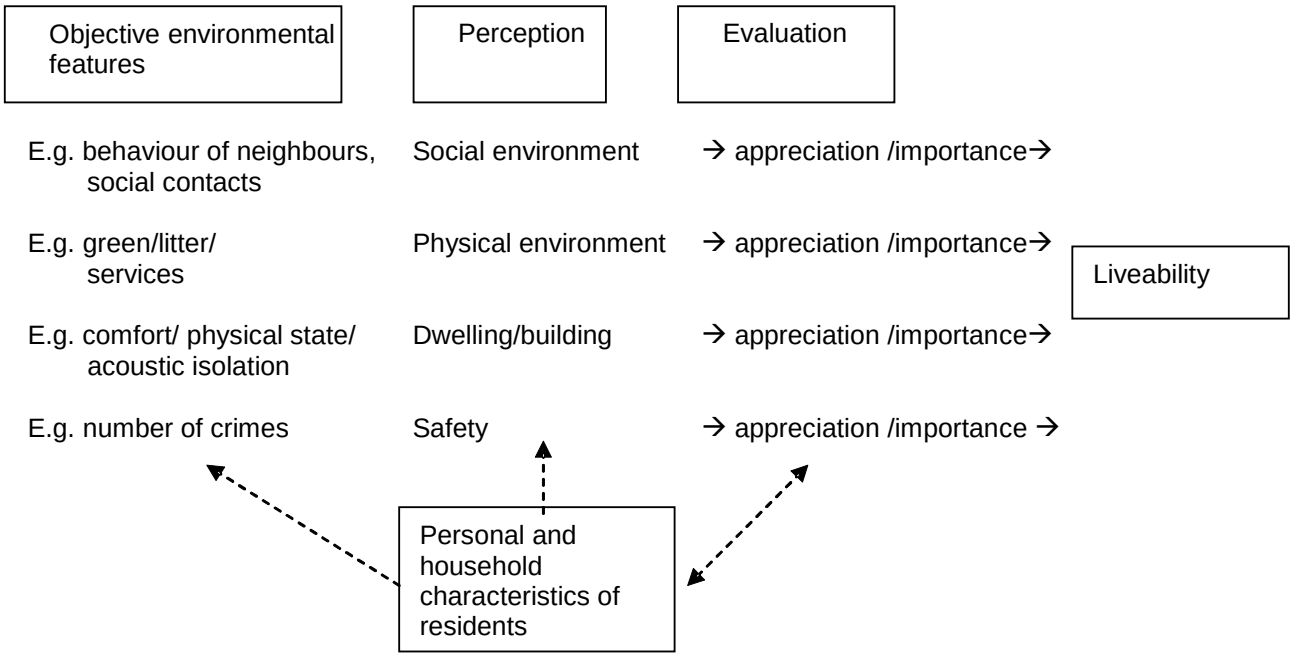

Figure 1: Model of the perception of a residential environment
Source: Heylen (2006)

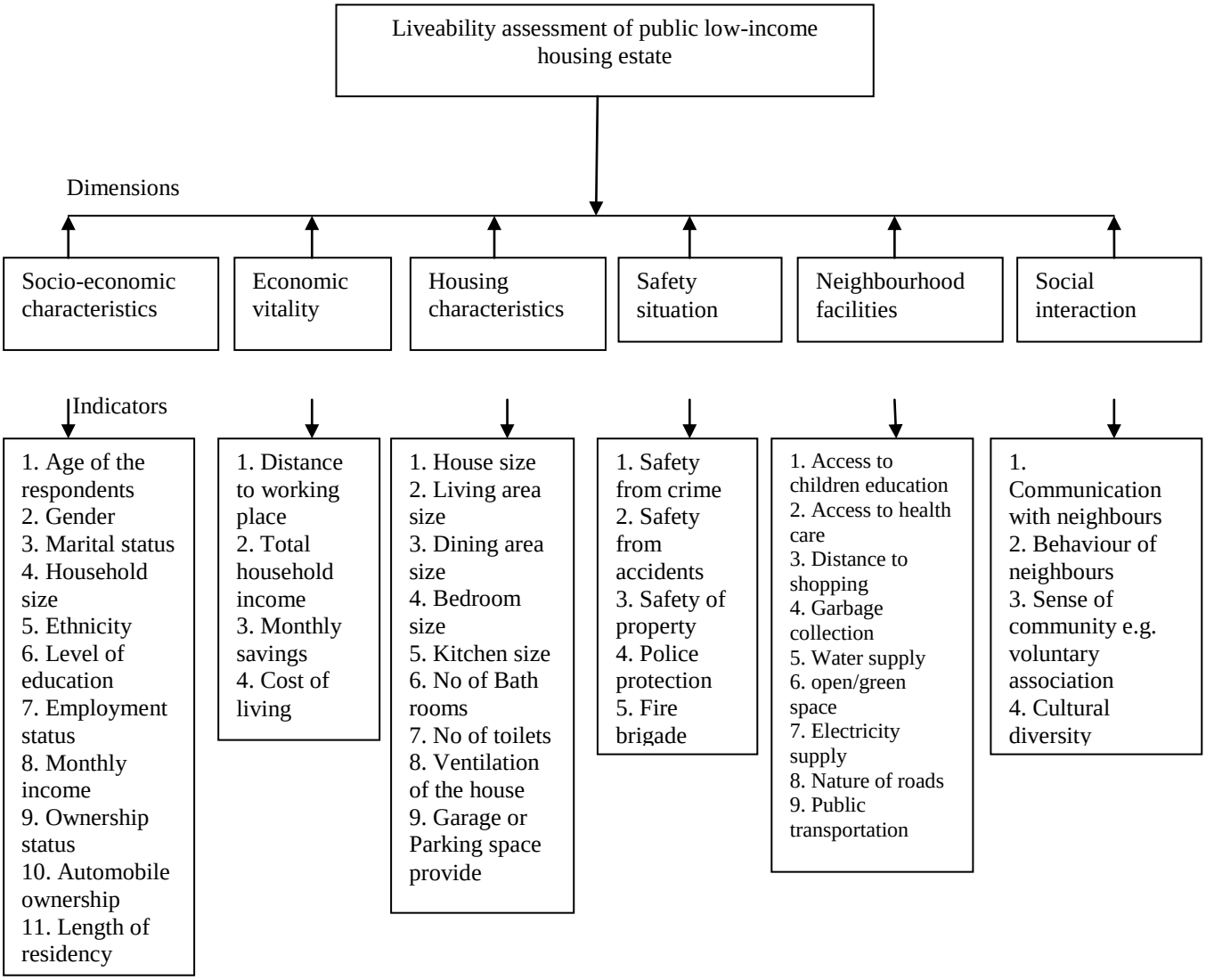

Figure 2: Conceptual framework for this study

3.0 Methodology

This study aimed to examine the liveability of public low-income housing estates of Niger State, Nigeria. As one of the objectives of this study, the researcher had to identify first the dimensions and indicators related to liveability of housing areas through a rigorous literature review. Based on the literature examine the dimensions identified were grouped into six categories – socio-economic characteristics, economic vitality, housing characteristics, the safety situation, neighbourhood facilities, and social interaction. Thus, the questionnaire explicitly asks questions based on these categories that form the primary source

of data (Mohit and Hannan, 2010). The conceptual framework developed for this study considered many variables from other studies (Omuta, 1988; Lawanson, et al., 2013; Leby and Hashim, 2010; Namazi-Rad, et al., 2012; Saitluanga, 2013; Van den Heuvel, 2013).

3.1 Participants and instruments

Using stratified random sampling (Mohit and Hannan, 2012; Omuta, 1988), a total of 400 homes were surveyed out of 1000 housing units in three different locations (Krejcie & Morgan, 1970). However, 366 respondents (household heads) returned their questionnaires and used for the analysis. The questionnaire items measurement was based on 5-piont Likert scale (Marques *et al.*, 2015; Mohit and Hannan, 2012).

3.2 The study area

Niger State is one of the states in the North Central Geopolitical Zone of the Federal Republic of Nigeria. It is situated between longitudes 3^0.20 E and 7^0.40E and latitudes 8^0.30 N. Minna, the state capital that is the study area is approximately 170 kilometres from Federal Capital Territory (F.C.T) Abuja, the Nigeria capital. Niger State has the largest share area of land mass of 76, 469.903 Square Kilometres with 4 million population (Niger State Bureau of Statistics, 2012). Niger State proximity to the Federal Capital Territory (FCT) Abuja has a significant impact on the increasing demand for housing. The Niger state government has intensified efforts to build more low-income homes in the state, therefore, there is need to investigate the living conditions of these housing estates so as to serve as a feedback on the government efforts to house its citizens.

3.3 Results and Discussions

3.3.1 Description of Socio-Economic Characteristics of the Respondents

The descriptive statistics shows that 79% of the participants are males, and the remaining are females. About 83% are in the age of 31-60years and close to 94% obtained higher education. Approximately 70% are gainfully employed in both government and private sectors. 85% represents married class and the majority of them 62% have between 5-12 members in the family while 58% of the families have only two persons working. However, 63% earned close to N100, 000.00 per month, 32% about N200, 000.00 monthly and the remaining 5% earned above N200, 000.00 monthly. Furthermore, 76% represent owners' occupied, and 24% are renters. Also, on the length of stay 73% indicates less than ten years while others have lived there between ten years and thirty years. In addition, 75% are from the state, and the other 25% are from other states of Nigeria.

3.3.2 Respondents' liveability perception

The result of the descriptive statistics in Table 1 shows the overall mean satisfaction that includes; location of the estates, residential types and the liveability indicators of the residential environment. From Table 1 it is evident that the respondents were satisfied with the location of their housing estates with mean satisfaction score of 3.33 for both M.I. Wushishi and Bosso Estates while the Tunga Low-Cost housing estates mean satisfaction score is 3.45. In addition, respondents are satisfied with the provision of the two and three bedrooms originally constructed with an average value of 3.30 and 3.43 respectively. However; it seems four bedrooms and above is preferable given the average score of those who have added to the number of bedrooms to be 3.82.

Table 1: Housing Estates

Name	Mean	N	S.D
M.I. Wushishi	3.33	132	0.673
Bosso Estate	3.33	115	0.697
Tunga Low Cost	3.45	118	0.635

Residential types

Bungalow	Mean	N	S.D
Two Bedrooms	3.30	227	0.672
Three Bedrooms	3.43	121	0.656
Four Bedrooms & Above	3.82	17	0.529

Table 2: Liveability dimensions and satisfaction mean constructs

Satisfaction constructs	Mean	N	S.D
Housing characteristics	3.40	366	0.477
Neighbourhood facilities	2.71	365	0.412
Safety environment	2.97	366	0.478
Economic vitality	3.41	366	0.757
Social interaction	2.64	365	0.477

From the Table 2 it is evident that the respondents are satisfied with their economic vitality and housing unit characteristics with mean values of 3.41 and 3.40 respectively. These means that respondents are contended with what they are earning and not affected either by being paying housing loan or being a renter. On the other hand, the respondents express low satisfaction with the following; safety situation, neighbourhood facilities and social interaction with mean values of 2.97, 2.71 and 2.64 respectively. Similar result was found in the study by Ismail *et al.* (2015) in Malaysia. Further analysis shows that, very low satisfaction expressed by the respondents is attributed to unavailability of some fundamental amenities in the neighbourhoods and lack of preventive measures for safety. For example, no police protection and fire-fighter services in the selected estates. There is also a lack of open spaces, recreational ground for interaction in the estates.

3.3.3 Factors influencing respondents' liveability perception

Analysis of variance (ANOVA) was conducted to explore those factors that influence the respondents' perception of the liveability of their housing environment. The independent variables being 11 socio-economic characteristics (age, gender, marital status, household size, indigene-ship, education, employment status, number of working class, monthly income, length of stay and tenure status) and dependent variable- perception of liveability. In these only two variables were found to have influenced the respondents' perception of liveability of their living environment, these are age bracket with F-cal (4, 360) = 2.450, P-value = 0.046, and employment status as F-cal (4, 360) = 3.079, P-value = 0.016. This result corroborates the findings of the study of liveability of the City of Bhopal, India by Pandey *et al*. (2014), also lengths of stay (residency) and tenure status were found to have no significant effect on the perception of liveability by the residents of high-rise housing estates in Tianjin, China (Li *et al*., 2012). However, other socio-economic characteristics factors have their P-values > 0.05 such as gender F-cal (4, 360) = 0.698, P-value = 0.594 , household size F-cal (4, 360) = 2.223, P-value = 0.066, indigene-ship F-cal (4, 360) = 1.359, P-value = 0.248, education F-cal (4, 360) = 0.711, P-value = 0.585, number of working class F-cal (4, 345) = 0.895, P-value = 0.467 and monthly income F-cal (4, 353) = 0.917, P-value = 0.454, lengths of stay (residency) F-cal (4, 360) = 0.611, P-value = 0.655 and tenure status F-cal (4, 360) = 0.320, P-value = 0.864. These socio-economic characteristics do not have effect on the residents' perception of liveability of their housing estates. Similar findings were reported in the study by Li *et al*. (2012).

3.3.4 Confirmatory Based-Structural Equation Modelling (CB-SEM)

The focus here is on the model fit; therefore confirmatory factor analysis was conducted to identify the key dimensions of liveability evaluation by the respondents. The confirmatory factor analysis of five-factor constructs of liveability was analyzed with the statistical package for the social science (SPSS version 22) and Analysis of Moment Structure (AMOS version 22) software. To appraise the goodness-of -fit of the hypothesized model, the conventional criteria as found in the literature were considered. For RMSEA value > 0.05 indicates good fit (Marques *et al*, 2015) and other consensuses put it as < 0.1 (Yuet *et al*., 2014). The CFI cut off > 0.9 (Navabakhsh and Motlaq, 2009) and that above 0.95 is preferable (Richard, 2007). However, the statistical assumptions required for conducting CFA were carried out. These include; checking for outliers, assess normality distribution – Skewness and Kurtosis, and Multivariate normality (Adul Malek *et al*., 2009; Marques *et al.*, 2015).

In the hypothesized model of 40 items with five constructs (Model 1), the model result indicates poor model fit. Adul Malek *et al*., (2009) and Marques *et al.*, (2015) opined that the model should be modified until a 'fit' model is achieved. The factors with unacceptable factor weights were removed (i.e. factor < 0.6). And the modified model was tested (Model 2), although model two was found to be fit but with a factor weight on social interaction > 1. The standardize factor loading should be between -1 and +1. One of the remaining two-factor loadings of social interaction has a loading of -1.09; therefore the construct of social interaction failed construct reliability and was removed. Hence, the test of the third model and it revealed goodness-of-fit (see Table 3) considering all criterion above as suggested by many authors. However, Table 4 shows the indicators/measurement items of the construct.

Table 3: Goodness of fit indices for the different hypothesized models-liveability assessment of public low-income housing (n=366)

	Chi-square	P-value	Normed chi-square	CFI	RMSEA
Model 1	4300.319	0.000	5.883	0.615	0.116
Model 2	515.028	0.000	3.627	0.913	0.085
Model 3	617.248	0.000	2.731	0.903	0.069

Note: *CFI= Comparative Fit Index; RMSEA= Root Mean Square of Approximation*.

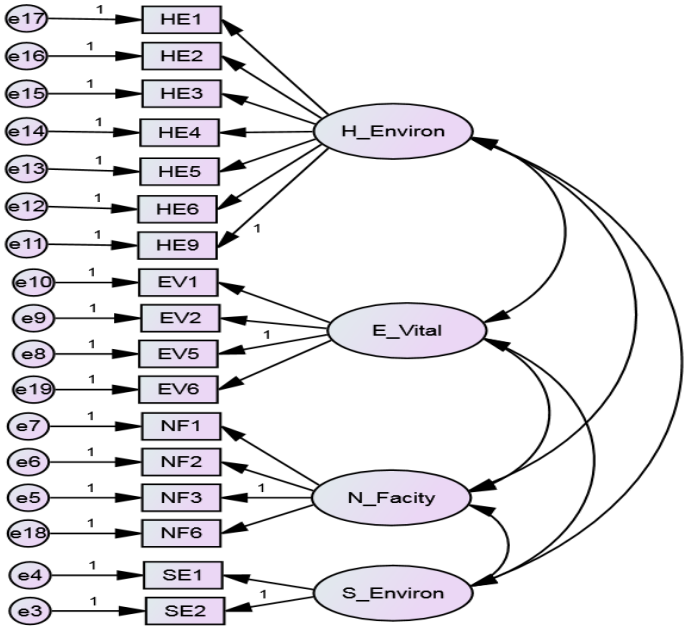

Figure 3: Model 3 for the liveability assessment of public low-income housing of Niger state, Nigeria

Table 4: Indicators/measurement items of the constructs

Constructs	Factor	Description
Housing characteristics (H_Environ)	HE1	Housing unit size
	HE2	Living size area
	HE3	Dining area size
	HE4	Bedrooms size
	HE5	Kitchen size
	HE6	Toilet and bath size
	HE9	Affordability
Economic vital (E_vital)	EV1	Total monthly income
	EV2	Public transport accessibility
	EV5	Effects of loan/rent on total income
	EV6	Standard of living
Neighbourhood facilities (N_facity)	NF1	Children education services
	NF2	Health care services
	NF3	Garbage collection
	NF6	Recreational facilities
Safety situation (S_environ)	SE1	Safety of life and property
	SE2	Availability of security services

4.0 Conclusion

The aim of this research is to examine the quality of life as against the backdrop of the living environment in the public low-income housing estates in Niger state, Nigeria. Firstly, the dimensions and indicators of measuring liveability of housing environment were established through the literature review as this leads to the construct of a conceptual framework for the study.

Secondly, from the survey data, all the respondents were satisfied with the location of their housing estates (see Table 1). However, this finding contrasts with the results of Olotuah and Bobadoye (2009), Ilesanmi, (2012). Their findings revealed that most of the public housing is located in the remote area, and therefore people are dissatisfied with the location. Also, respondents perceived their types of housing units reasonably adequate. Furthermore, analysis of the liveability dimensions construct shows that respondents are satisfied with the affordability of the housing units. On this either paying house loan or being a renter does not have an effect on the respondents' household income for their livelihood. However, low satisfaction was recorded in relation to the safety situation; neighbourhood facilities and social interaction (see Table 2). Therefore, it is recommended that the government should be pro-active in securing the life and properties in the state. Not only guarantee the life and properties but also adequate neighbourhood facilities and maintenance strategies should be in place.

Thirdly, an analysis of variance (ANOVA) conducted shows that only two out of eleven demographic characteristics of the respondents influence their perception of liveability of their housing estates. The two demographic characteristics are age brackets and employment status. Other socio-economic features of the respondents are not significantly influencing their liveability perception, age and employment status explained about 16% and 17% variations respectively in the perception of liveability of their housing environment. This implies that the housing need/required is predicted by age and employment status.

Fourthly, the CFA results of the hypothesized models revealed that a four-factor model (model 3) provides an adequate fit to the data. Therefore, from the analysis it is important that the government consider the findings of this research so as to improve the quality of life of the residents of the selected public housing estates in the state. It can be achieved by providing neighbourhood facilities and improve safety measures in the housing estates. Also for future housing development, it is important to consider homes development beyond two and three bedrooms so as to cater for large families.

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