Conditions And Residents' Preferences In Public Low-cost Housing in Jigawa State, Nigeria For Subjective Well-being

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Abstract

The purpose of this article is to report on a study that investigated the current low-cost housing conditions, the residents' subjective well-being and examine how residents' preferences can be used to improve the subjective well-being of the residents in Jigawa State, Nigeria. This article is a product of a quantitative research whereby descriptive analysis was employed. The results showed that, almost all the low-cost housing estates in the state are in poor conditions characterised by poor structural design, insufficient facilities and supporting services. The findings reveal that, about 73.4% of the resident exhibit a low level of subjective well-being with a mean score of (M=3.54). Through Relative Important Index, the study found out that residents preferred more number of bedrooms, toilets, access to services and remain safe from accidents than any other attributes of housing units. In conclusion, this article reveals that the subjective well-being of the residents can be improved if what residents preferred is considered in the development of the low-cost housing estates for both present and in the future. Thus, the article would serve housing developers and housing policymakers to understand that the housing constructions and infrastructural elements should be considered in relation to the preferences of the beneficiaries.

Keywords: Housing Conditions, Low-cost housing, Residents' preferences, subjective well-being.

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Introduction

There are over 130 million Nigerians without access to adequate sanitation and about 57 million lack access to safe water (NDHS, 2013). About 69% of the urban population of Nigeria lives in slums with majority lack most of basic services such as potable water, electricity, sanitation services, paved roads and garbage collection (WHO, 2018). This condition of houses tends to affect the well-being of the people as described in previous literature. In a study done by Cooke, Melchert, and Connor (2016) identified common aspects of well-being that are living standards, quality of life and human development. Others aspects of well-being include life satisfaction, utility, needs fulfilment, well-living, prosperity, welfare, social welfare, empowerment, development, capability expansion, human poverty and happiness.

The well-being level of people in Nigeria as a developing country was mean 5.07 this is low compared to South Africa with mean 5.43, Algeria with Mean 6.35 or Norway Mean 7.53 (Botha, 2013; Helliwell, Layard, and Sachs, 2017). The low level of well-being could be as a result of many factors such as income, employment and housing related issues. Mafini (2017) and Abah, Walker, Ogunleye, and Hirst (2015) stated that, well-being of the people is being affected by a number of key factors such as housing, education level, unemployment, health conditions, income, household size and government services. Housing is one of the basic necessity in the improvement of well-being, but access to quality and affordable housing are among the major problems facing the low-income group in most of Nigerian cities (Rigon, 2018). –Fakunle et al. (2018) revealed that, most residents of public low-cost housing live in an unsatisfactory and very poor housing environment in Nigeria. The public low-cost housing conditions for the low-income people in Nigeria is characterised by substandard, structurally unsound and a bad sanitary environment, poor architectural standard and poor construction (Makinde,

2014a). Furthermore, most of public low-cost housing units are associated with absent, little or inadequate services such as infrastructural and social amenities, such as water, electricity and indecent residential environment (Olotuah, 2015; Ugonabo and Emoh, 2013). Recently, in her research, Farha (2019) compared housing conditions of low-income people in Nigeria and international human rights law and standards, where she found out that, the government have not meet their obligations in that regard especially the housing conditions of low-income people that she referred as clearly inadequate. To ensure well-being of the people is improved, government should create enabling environment through provisions of infrastructure and services that might be difficult for people to provide for themselves. Some of these infrastructure include water supply, good road network, electricity and public transportation (Rigon, 2018). Anofojie, Adeleye, and Kadidri (2014) emphasised that, for government to improve residents' well-being, productivity and health, there is need to do more in the provision of quality housing and services for residents of public low-cost housing in Nigeria. This is necessary because, most of public housing projects fail to meet the needs of the target users due to lack of vital information about the design criteria, housing quality and general physical aspects of the house (Garg, Dhagat, and Shrivastava, 2014).

Since, the number of houses that need to be built for low-income group is high, this situation require government to allocate a huge amount of money. Therefore, it is very important to identify and give priority to elements of that the low-income earner perceived as important, preferred and a must for a house to have including its surrounding for the improvement of his/her subjective well-being.

Research aim and objectives

The aim of the article is to examine the public low-cost housing conditions and residents' preferences for the improvement of their subjective well-being, through the following objectives;

a) To explore the public low-cost housing conditions in Jigawa State, Nigeria.
b) To measure the level of subjective well-being among the residents of public low-cost housing estates in Jigawa State, Nigeria.
c) To examine the residents' preferences for the improvement of the subjective well-being among the residents of public low-cost housing estates in Jigawa State, Nigeria.

Literature Review

Although housing has numerous meanings, it is literally seen as buildings, shelters, homes, a dwelling place where people live (Kalu, Agbarakwe and Anowor, 2014). Housing is a basic necessity of life just like food and clothing where every human being must be provided with it (Festus and Amos, 2015). It is ranked second after food in the hierarchy of man's needs. It serves as a shelter, in the basic sense as protection from rain water and sun. It is also serves as an asset from that income can be generated through various uses such as creation of rental space or productive space in the dwelling, it is a security collateral for access to credit and an investment for future accumulation of value to be realised if eventually resale or through inter generation transfer (Ayedun and Oluwatobi, 2011; Tiwary and Nuhu, 2014; Ugonabo and Emoh, 2013). But still, most of low-income group in Nigeria live in substandard and poor quality housing, because access to quality housing is far beyond the economic reach of the majority of the citizen (Makinde, 2014a).

According to Ayoola and Amole (2014), low-income people preferences, needs and aspirations were not considered and usually neglected in Nigeria that led to low-subjective well-being.

Referring to end users in all housing construction is necessary because the beneficiaries, low-income group in particular are in the best position to express their preferences, needs, what they should have and order of their priorities (Ayoola and. In Nigeria, researchers on housing focused on issues related to low-income housing such as Ayoola and Amole (2014), Ebiaride and Umeh (2015) and Fadairo and Olotuah (2013). Others emphasised on public-private partnership in housing development (Ibem, Aduwo, and Uwakonye, 2012) and a number conducted researches on housing delivery strategies (Makinde, 2014b). However, little or none have focus on the investigating the effects of the housing conditions and residents' preferences for improving residents' subjective well-being in Nigeria. Therefore, this article tends to focus on housing conditions and residents' preferences in public low-cost housing for the improvement of subjective well-being of residents in Jigawa State, Nigeria.

To define well-being is very difficult, because the concept is used by scholars from different disciplines that require the use of different language for analysis (Abah et al., 2015). Well-being can be classify into different dimensions through person-centred framework developed by Sarah White and the well-being in Developing Countries Research Programme at the University of Bath (Sarah, 2010). In the framework, there are three interdependent dimensions of well-being as suggested by Sarah, these includes: subjective; relational; and material. Subjective is a combination of two main elements: perceptions of one's own position; and belief, ideologies and cultural values, comprising of cultural roots of material welfare or standards of living. The relational dimension that was divided into the human (attitudes to life, personal relationships and capabilities) and the social (access to public goods and social relations). The material comprising standard of living, welfare and assets (Sarah, 2010).
Subjective well-being is specifically defined as an overall

cognitive appraisal of the quality of one's life (Uchida, Norasakkunkit, and Kitayama, 2004). Diener and Ryan (2015) and –Diener and Suh (1997) observed that the term subjective well-being as an umbrella used to describe the level of wellbeing people perceive based on their subjective evaluations of their lives. According to Furlan (2016) to make a place comfortable, opportunities must be ensured in such a way that residents are provided with appropriates areas or spaces in which to meet, eat, sit and drink. If housing units do not provide features that are expected by the residents, such conditions will generate stress in parents and reduces the normal family activities as such will affect the parent as well as their children's socio-emotional functioning, this will eventually affect the well-being of the whole family –(Lynch & Kull, 2013). It is important for the residents of low-cost housing estates to be provided with what they need to make them happy and improved their well-being. Diener and Ryan (2015) confirmed that high level of well-being greatly improves life of individual within four major areas such as social relations, work and income, health and longevity and societal benefits. These factors are the key elements of a good quality house, if not properly addressed they will certainly affect well-being of the people negatively.

The study by "Bayulken and Huisingh (2015) revealed that the most important elements influencing how residents perceived their actual condition of the housing estates are social environment factors especially the neighbourhood facilities and satisfaction with sense of community relations among the residents. In addition, the factors that describe the status of the house are characteristics that are associated with privacy, security, visual comfort, thermal, utilities such as water supply, power and other issues of neighbourhood, health-related, durability of the houses, structural soundness and security of the tenure. Other characteristics are access to neighbourhood facilities such as markets, workplace, shopping centres, recreational and

educational facilities –(Bankole & Oke, 2016). Thus, public low-cost housing conditions have great influence on residents' subjective well-being.

Methodology

This research employed quantitative approach based on the survey questionnaire that was analysed as source of primary data. Respondents were drawn from the seven low-cost housing estates available in Jigawa State, Nigeria; Takur housing estate, Olayinka housing estate, Yadi housing estate, 744 housing estate, Dan Masara housing estate, Red bricks low-cost housing estate and Fatara housing estate. Systematic sampling was employed to select the respondents from each housing estate through the application of the formula developed by Cohen (1988). Total population of all housing units were 3,156, total sample size was 341 and total number of households in each housing estate were used to obtain the following number of respondents in each housing estate; Olayinka (15), Takur (64), Yadi (62), Red-bricks (11), 744 housing (88), Fatara (76) and Dan Masara (59) that made up the total of 375 respondents.

After 10% was added, four hundred (400) questionnaires were distributed between the months of November and December 2018. Three hundred and seventy-two (372) questionnaires were retrieved, from the distributed questionnaires. The questionnaire was administered by the researcher. The data drawn out was analysed descriptively using IBM SPSS Version 20 software.

Public low-cost housing conditions and their impact on Residents' subjective well-being

Dwelling unit features and Residents' Subjective Well-being

Condition of housing in Nigeria is not encouraging at all, instead of improving the quality of housing especially in the major towns, the situation has been worsening (Arku, Luginaah, and Mkandawire, 2011). The conditions of dwelling unit are subjected to perception

of residents based on priority assign to each attribute. –Ntema and Marais (2013) stated that, selection of what households should have or need in housing can be judge in terms of three housing aspects: number of rooms, type of building material used and quality of work done. Some residents prefer few number of bedrooms while others may preferred large number of bedrooms. For instance, Li, Sun, and Jones (2012) in their research pointed out that, some residents in their study area preferred to live in one-bedroom to two-bedroom dwelling units due to family size, while others preferred to live in three-bedroom dwelling units. As at the time of the research, they pointed about 58% of residents were living in two-bedroom dwelling units.

Mohit, Ibrahim, and Rashid (2010) stated that, in most cases households make their judgments on housing conditions based on their aspirations and achievements. Households' satisfaction with housing conditions indicates that, there is no any complaint and there is a high degree of similarity between actual and desired situations. On the other side, differences between housing aspirations or achievement may lead to dissatisfaction (Galster, 1987). Thus, the public low-cost housing for low-income earners, should comprises the preferred dwelling features by the residents such as medium size of bedroom, number of bedrooms and living area. This is necessary because there is relationship between residents' housing satisfaction and their general subjective well-being (Türkoğlu, Terzi, Salihoğlu, Bölen, and Okumuş, 2019).

Yoade (2015) revealed that, majority of dwellings in the core area of Ife-Ile city in Nigeria, were in a very poor conditions and not conducive for human habitation. In fact, most of public low-cost housing in Nigeria do not reflect the needs and aspiration of the people in terms of number of rooms, size of living rooms and number toilets. As such, residents should have what they preferred in their respective housing units, achieving that, will improve their subjective well-being (Ayoola & Amole, 2014).

Physical elements and Residents' Subjective Well-being

Contact with physical elements especially natural recreational places improve subjective well-being and positively influences mental, emotional and physical health (Schipperijn et al., 2010). Baur and Tynon (2010) found that, physical elements such as play area, parks, green spaces positively influences the well-being of communities in terms of nature-based recreation, health improvements and socialization. Hamsa, Masao, Shuhei, and Yosuke (2010) pointed out that, about 60% of the respondents expressed their interest in public facilities like library and other services that they believed will affects their subjective well-being. Residents of Ayaangburen housing estate considered provision of school, children play areas and recreation areas as the most important with high priority to them (Hassan, Awotungase, Olaitan, Adewunmi, and Talabi, 2019). In the absence of these facilities, Hassan et al. (2019) suggested the integration of green infrastructure, upgrading of physical infrastructure and sustainable designs as possible intervention to ensure development of residential estate in Ikorodu, Lagos, Nigeria. Therefore, provisions of these physical elements help to make the subjective well-being of the residents better.

Social elements and Residents' Subjective Well-being

In Istanbul Metropolitan Area, Turkey, residents perceived quality of a social's and neighbourhood characteristics as significant in determining residential satisfaction that are also key factors in improving subjective well-being of the people (Türkoğlu et al., 2019). –Diener and Suh (1997) stated that, level of subjective well-being tends to be higher when individuals have large number of friends and family members, therefore, individuals who have higher well-being tend to have more supportive social relationships and closer than individuals with low baseline subjective well-being. Likewise, people tend to be happier when

they associate themselves with other people (Diener and Ryan, 2015). Lee, Kim, Parrott, Giddings, and Robinson (2017) observed that, in some public low-cost housing in Nigeria, interaction among the residents is very low, such situation weaken friendship that eventually affect the subjective well-being of the people.

Safety and Crime elements and Residents' Subjective Well-being

In most of the regions in the world, increase in crime rate has strong relationship with difficult housing conditions (Terminski, 2011). Unsafe environment is said to be a neighbourhood with high rate of crime (Leby and Hashim, 2010). It seems some of public low-cost housing residents in Nigeria do not satisfy with minimum security as explained by Mohit and Iyanda (2015). Mohit and Iyanda (2017) revealed that, respondents of public low-cost housing in Niger State, Nigeria, indicated low satisfaction with safety situation due to poor constant supply of electricity that create an avenue for criminal activities in the night. To improve the well-being of the residents, housing estate is expected to be free crime environment that guarantee every individual to walk day and night without fear of criminals' attack.

Functional elements and Residents' Subjective Well-being

In low-cost houses, neighbourhood facilities has a positive impact on one's perception towards life through several impacts on residents that leads to one's life satisfaction and then dictates one's subjective well-being "(Bayulken and Huisingh, 2015). Low-cost housing estates to be provided with important components such as neighbourhood facilities like schools, hospitals, shopping mall and public facilities like roads: walkways will affect feeling of general well-being of a household (White and Schollaert, 1993). " Bayulken and Huisingh (2015) observed that, functional environment attributes affect the well-being of residents, if quantity and/ or quality of educational and healthcare services

perceived as being either costly or inadequate especially when the residents are located too far from locations of schools and hospitals. Thus, residents and their children should have easy accessibility to schools, the health care delivery and shopping centres without difficulties. Once these are achieved, the well-being of the residents is bound to be improved.

However, Wilson (1967) argued that, "satisfaction of basic needs causes happiness and on the other hand, persistence of unfulfilled needs causes unhappiness". The major assumptions of this theory are individual's cognitive and emotional estimate of his or her lifetime, primarily founded on three mechanisms: life pleasure, positive affect and negative affect. Subjective well-being is a cognitive part of well-being that shows one's own assessment of life. One filled satisfied with life when no difference between present situation and what is to be deserved or an ideal situation. In the other part, dissatisfaction of life is a situation where by the result indicated a significant difference between present conditions and the ideal standard, as exactly the outcome of the situation of well-being of the residents in relation to the conditions of low-cost housing in Jigawa State.

Results

The respondents consist of civil servant, retired civil servant and head of the family on owner occupier or a renter and or owned the house unit. The houses are semi-detached type, mainly one-bedroom and two-bedroom designs. All houses were constructed by the government and oversees by the Jigawa State Housing Authority.

Conditions of Public low-cost housing Estates

Based on literature review, public low-cost housing conditions in Nigeria is generally poor, it is characterized by structurally unsound, substandard and located in a bad sanitary environment,

poor architectural standard and poor construction (Makinde, 2014a). Most of housing estates are associated with absent, little or inadequate services such as infrastructural and social amenities, for instance; water, electricity and indecent residential environment (Olotuah, 2015; Ugonabo & Emoh, 2013). Farha (2019) revealed that, the Nigerian government have not met their obligations with regard to issues related to public low-cost housing conditions, that she referred as clearly inadequate.

Residents' Subjective Well-being

Based on Pallant and Manual (2010) categorisation format, the result of residents' subjective well-being revealed that, out of the 372 respondents 273 (73.4%) exhibit low level of subjective well-being with this the mean score of (M=3.54) and falls within (1 – 2.99). About 79 respondents (21.2%) indicated moderate level of subjective well-being. Meanwhile, only 20 respondents (5.4%) showed high level of subjective well-being (see table 1).

Table 1: Level of residents' subjective well-being

Level	Frequency	Percent	Mean	SD	Min.	Max.
Low subjective well-being (1 – 2.99)	273	73.4	3.54	0.84	1	7
Moderate subjective well-being (3.00- 4.99)	79	21.2				
High subjective well-being (5.00 – 7.00)	20	5.4				

Low (1-2.99), moderate (3.00- 4.99), high (5.00-7.00)

Table 2: RII and ranking of public low-cost housing attributes

Attribute	Code	NI (1)	LI (2)	SI (3)	N (4)	I (5)	VI (6)	MI (7)	SUM	RII	RANK WITHIN	RANK	RANKING
Dwelling unit													
The size of Housing unit	DUF1	2	14	57	228	410	726	588	2025	0.778	3rd	9th	VI
The size of Living area	DUF2	3	70	258	320	305	414	266	1636	0.628	7th	37th	N
The number of Bedroom	DUF3	1	4	57	180	425	606	833	2106	0.809	1st	2nd	MI
The size of Dinning area	DUF4	46	98	210	364	335	186	126	1365	0.524	10th	51st	LI
The Ventilation spaces	DUF5	2	30	138	324	400	426	539	1859	0.714	4th	21st	I
The number of Toilet	DUF6	1	4	27	172	515	684	700	2103	0.808	2nd	4th	MI
The number of Bathroom	DUF7	8	38	135	248	455	384	581	1849	0.71	5th	22nd	I
The size of Kitchen	DUF8	34	58	189	316	360	384	217	1558	0.598	8th	44th	SI
The size of Drying area	DUF9	25	38	270	320	375	354	168	1550	0.595	9th	45th	SI
The Cleanliness of the drainage	DUF10	17	40	183	348	330	270	532	1720	0.661	6th	31st	N
Social Environment													
Noise level	SE1	30	60	117	220	400	588	280	1695	0.651	6th	33rd	N
Guard keeping you at night	SE2	17	54	114	260	480	456	371	1752	0.673	5th	29th	N
Neighbors' friendliness?	SE3	1	6	63	208	475	504	812	2069	0.795	2nd	5th	MI
Neighbourhood helpful?	SE4	2	18	75	212	420	504	805	2036	0.782	3rd	7th	VI
Trust your neighbours?	SE5	1	6	33	232	400	588	847	2107	0.809	1st	2nd	MI
Community Association?	SE6	7	38	162	376	405	288	483	1759	0.675	4th	28th	N
Being a member of any association?	SE7	23	102	189	300	325	384	217	1540	0.591	7th	46th	SI
Physical Environment													
Play area	PE1	36	60	135	292	470	426	161	1580	0.607	9th	43rd	SI

Parking area	PE2	14	54	147	396	395	402	259	1667	0.64	7th	35th	N
Masjid (Mosque)/ Church	PE3	1	16	30	160	320	546	1106	2179	0.837	1st	1st	MI
Perimeter road	PE4	15	130	201	300	335	198	350	1529	0.587	10th	47th	SI
Pedestrian Walkways	PE5	15	118	261	360	345	204	126	1429	0.549	11th	49th	LI
Work place	PE6	3	22	87	236	730	438	357	1873	0.719	4th	19th	I
Police Station	PE7	12	38	129	308	405	438	469	1799	0.691	5th	25th	I
Multipurpose hall	PE8	43	110	285	348	290	144	70	1290	0.495	12th	53rd	NI
Local shops	PE9	3	54	183	352	435	408	266	1701	0.653	6th	32nd	N
Food Stalls	PE10	9	62	207	360	465	372	126	1601	0.615	8th	42nd	SI
Motor park/bus stop	PE11	3	40	63	224	655	558	336	1879	0.722	3rd	18th	I
Library	PE12	84	106	231	264	245	144	133	1207	0.464	14th	55th	NI
Green Space	PE13	70	132	201	260	290	150	147	1250	0.48	13th	54th	NI
Market	PE14	5	6	48	224	630	564	504	1981	0.761	2nd	14th	VI
Safety and Crime													
Police protection	SC1	11	22	51	188	390	756	574	1992	0.765	4th	13th	VI
Vigilante protection at night	SC2	10	50	171	240	345	498	476	1790	0.687	5th	27th	I
Safety from crime	SC3	3	14	84	208	500	492	700	2001	0.768	3rd	12th	VI
Safety from accident	SC4	1	20	66	220	515	450	742	2014	0.773	1st	10th	VI
Property safety	SC5	1	8	84	276	415	498	728	2010	0.772	2nd	11th	VI
Fire brigade service available	SC6	15	62	195	372	235	384	399	1662	0.638	6th	36th	N
Street light	SC7	49	70	180	252	200	120	735	1606	0.617	7th	41st	SI
Functional Environment													
Distance to town centre	FE1	3	22	72	304	785	474	154	1814	0.697	8th	24th	I
Distance to work place	FE2	4	20	66	280	700	516	280	1866	0.717	6th	20th	I

Distance to School	FE3	2	12	66	300	610	630	280	1900	0.73	4th	16th	I
Distance to Hospital	FE4	3	20	81	272	560	648	308	1892	0.727	5th	17th	I
Distance to shopping centre	FE5	10	48	168	380	400	438	238	1682	0.646	11th	34th	N
Distance to Market	FE6	5	36	117	332	470	594	238	1792	0.688	9th	26th	I
Distance to Bus Station/ Motor park	FE7	10	108	177	248	370	534	168	1615	0.62	14th	40th	SI
Distance to public Library	FE8	60	84	207	372	275	234	98	1330	0.511	17th	52nd	NI
Distance to Mosque / Church	FE9	6	18	126	196	340	642	637	1965	0.755	3rd	15th	VI
Distance to play area	FE10	25	66	162	456	470	174	161	1514	0.581	15th	48th	SI
Nearness to green space	FE11	36	114	225	272	425	192	133	1397	0.536	16th	50th	LI
Availability of Public transport	FE12	6	32	108	288	490	516	406	1846	0.709	7th	23rd	I
Distance to Police station	FE13	13	26	144	296	620	414	217	1730	0.664	10th	30th	N
Distance to Fire station	FE14	14	54	198	360	435	360	196	1617	0.621	13th	39th	SI
Access to Water supply	FE15	3	26	93	188	305	630	784	2029	0.779	2nd	8th	VI
Access to Electricity/Power supply	FE16	3	10	99	228	315	564	819	2038	0.783	1st	6th	VI
Nearness to food court	FE17	9	34	180	420	605	210	175	1633	0.627	12th	38th	N

NOTE: NI=Not important, LI=Less Importance, SI=Slightly Importance, N=Neutral, I=Important, VI=Very Important, MI=Most Important and RII=Relative Important Index

Table 3: Top ten (10) most /very important public low-cost housing attributes considered by the Jigawa State low-cost housing residents

Attributes	Code	Attribute	RII	Rank
Availability of Mosque/Church	PE3	Physical Environment-related	0.837	1st
Trust your neighbours?	SE5	Social Environment-related	0.809	2nd
The number of Bedroom	DUF3	Dwelling unit features-related	0.809	2nd

The number of Toilet	DUF6	Dwelling unit features-related	0.808	4th
Neighbors' friendliness?	SE3	Social Environment-related	0.795	5th
Access to Electricity/Power supply	FE16	Functional Environment-related	0.783	6th
Neighbourhood helpful?	SE4	Social Environment-related	0.782	7th
Access to Water supply	FE15	Functional Environment-related	0.779	8th
The size of Housing unit	DUF1	Dwelling unit features-related	0.778	9th
Safety from accident	SC4	Safety and Crime-related	0.773	10th

Discussions

Public low-cost housing Conditions and Residents' Subjective well-being

The result of residents' Subjective well-being showed that, residents of low-cost houses were not satisfied with their life, since majority of them have low level of subjective well-being. Housing conditions could be the reason for the current status of residents' well-being, this because, study by Lynch and Kull (2013) showed that housing conditions was one of contributing factors that affect subjective well-being. Low level of residents' subjective well-being has been related to low standard of housing estates and in most cases the housing design does not addresses the socio-cultural lifestyle of the low-income groups in Abuja, Nigeria (Muhammad, Johar, Sabri and Jonathan, 2015).

Similarly, the residents of public low-cost housing in Jigawa State, were not satisfied with one-bedroom housing design, single toilet and lack of fencing. The result also confirmed the insufficient of water supply, electricity supply and poor drainage and poor road

networks among the elements that affected the well-being of residents of low-cost housing in Jigawa State (Umar, 2018). In most cases, low-income group who live in a poor housing conditions that lacks basic amenities, facilities and live in an overcrowded housing conditions as result of limited number of rooms were found to be their subjective well-being to be low (Ugonabo and Emoh, 2013). Dissatisfaction of residents with their housing units was found to be as a result of in ability to provide standard facilities and amenities in the constructed public low-cost houses. As such, residents' well-being tend to improve if facilities and services are provided within neighbourhood as confirmed by Hassan et al. (2019).

To understand the level of subjective well-being of the people Diener and Ryan (2015) stated that, the intended person is to evaluate his life through perception of living environment. This view was the main guide used to achieve the result shown in Table 1. Generally the result confirmed the assertion that revealed that, the overall well-being level of people in Nigeria as developing country (mean 5.07) is low compared to developing countries such as South Africa, Algeria or developed nation like Norway with mean scores 5.43, 6.35 and 7.53 respectively (Botha, 2013; Helliwell et al., 2017).

Residents' Preferences for the Improvement of their Subjective Well-being

Table 2: indicated the residents' ranking of all public low-cost housing attributes within and among the groups in this study, this was to show the level of important (preference) of each dimension and attribute to the residents obtained from Relative Importance Index (RII).

The findings revealed five (5) the most important (preferred) attributes based on preferences; Masjid (Mosque) was the 1st with (RII=0.837), followed by trust to neighbours and the number of

bedroom both ranked 2nd attributes with (RII=0.809) each. The 4th was the number of toilets with (RII=0.808) while the 5th was neighbours' friendliness (RII=0.795). Table 2 also indicated 10 attributes that were ranked as very important to the residents. These include; access to Electricity that ranked 6th (RII=0.783), no. 7th was the neighbourhood helpful with (RII=0.782), access to supply of water was ranked as 8th with (RII=0.779). Others that were marked as very important attributes are the size of the housing unit (RII=0.778) ranked as 9th, 10th was safety from accident (RII=0.773), 11th property safety (RII=0.772), 12th safety from crime (RII=0.768), police protections ranked 13th (RII=0.765), Market as an attribute ranked 14th (RII=0.761) and the last attribute ranked 15th was distance to the mosque (RII=0.755). Furthermore, 12 attributes were considered as "important" by the residents of public low-cost housing in Jigawa State. These include; distance to School 16th (RII=0.73), 17th was distance to hospital with (RII=0.727), Motor park/bus stop ranked 18th (RII=0.722), 19th was work place with (RII=0.719) and the 20th was distance to work place (RII=0.717). Ventilation was ranked 21st (RII=0.714) and 22nd was the number of bathroom (RII=0.71). Other attributes that marked as important were availability of public transport that ranked 23rd (RII=0.709), 24th was distance to the town centre (RII=0.697), Police station was ranked as 25th (RII=0.691), 26th was distance to market (RII=0.688) and the 27th was vigilante protection at night with (RII=0.687).

There are about 11 public low-cost housing attributes that collectively residents marked them as neutral that were neither not important nor important. These are community association attribute that was ranked 28th (RII=0.675), 29th was guard keeping residents at night (RII=0.673), distance to Police station ranked 30th (RII=0.664), 31st was cleanliness of the drainage (RII=0.661), local shops were ranked 32nd (RII=0.653) and the 33rd was noise level (RII=0.651). Other neutral attributes that were distance to

the shopping centre, ranked 34th (RII=0.646), 35th was parking area (RII=0.64), fire brigade service available was ranked 36th (RII=0.638), 37th was the size of the living area (RII=0.628) and the last neutral attribute was nearness to food court, it was ranked 38th (RII=0.627).

Generally, out of 55 residential attributes identified in this study, residents expressed their perception by indicating the level of importance to each of the public low-cost housing attribute in in Jigawa State. Through Relative Importance Index (RII), about twenty-seven (27) residential attributes were marked as important to the residents for their subjective well-being. While about 11 attributes were categorised as neutral that means they were neither important nor not important. However, about 17 attributes considered as not important by the residents. (See table 2). Nevertheless, table 3, described the main attributes that were found to be the most preferred by the residents of Jigawa State low-cost housing for the improvement of their subjective well-being.

Top ten (10) preferred housing attributes for the improvement of residents' subjective well-being

Residents of public low-cost housing estate in Jigawa State, perceived some housing attributes as the top ten (10) most/very important to their well-being. The *most important* attributes were availability of Mosque/Church, Trust of neighbours, number of bedrooms, number of toilet and neighbours' friendliness. While the *very important* attributes to them, include; access to electricity/power supply, neighbourhood helpful, access to water supply, size of the housing unit and safety from accidents. See table 3.

Availability of Mosque/Church

As presented in Table 3, the 1st most important attribute was availability of Mosque/Church (RII=0.837). The people of

Jigawa State are predominantly Muslims, as such Mosque could be one of the most important attribute to them. Razali and Talib (2013) have the opinion that religious beliefs tend to improve the quality of life in built environment. They pointed out that, the residents living in Malay traditional dwelling units reveals that religious beliefs of Malays continue to be important aspects in regulating the affairs of the families (Razali & Talib, 2013). Therefore, it is not surprising for residents of public low-cost housing in Jigawa State to preferred Mosque as the most important attribute to them for their subjective well-being.

Trust among the neighbours and number of bedrooms

Trust among the neighbours and number of bedroom (RII=0.809) each, were ranked 2nd most important to the residents, this may be attributed to the type of houses (about 369 are semi-detached and only 2 are Bungalow) where residents shared most of structural and facilities available in the low-cost housing. Number of bedrooms was among the most important attribute to the residents and preferred more than two-bedroom housing unit due to their family size with mean (5.95) per household. This result is consistent with study of Mohit and Iyanda (2015) in Nigeria, that indicated that, respondents preferred four bedroom in their respective housing estate. Meanwhile, Ibem and Amole (2012) pointed out that, occupants of public core housing in Abeokuta, Ogun State, Nigeria indicated interest in having more number of bedroom in their housing units. Thus, number of bedrooms to be 2nd the most important attribute in this study, confirmed the findings of previous studies that revealed the important of number of bedrooms to the residents of low-cost housing.

Number of Toilets

Table 3 showed that, the 4th most important attribute out of 55 attributes was the number of toilets (RII=0.808). Toilets became one of the most important to the residents because, all public low-

cost housing estates in Jigawa State have only one toilet and no additional bath room except Red-bricks low-cost housing, Takur and Yadi housing estates. The residents' well-being was seriously affected by having limited number of toilets as observed by the researcher. Thus, ranking toilet as one of the most important attributes with relative importance index 0.808 justified it to be considered and become necessary in the future housing constructions. This finding is similar to the result obtained by Lukuman, Sipan, Raji, and Aderemi (2017) using the same RII, at Iwo, Osun State, Nigeria. According to Lukuman et al. (2017) the residents of Iwo housing estates considered toilet facility as one of the most important attribute with Relative Importance Index to be 0.0753 and was ranked 25th out of 92 housing attributes.

Neighbours' friendliness

Residents of public low-cost housing in Jigawa State considered neighbours' friendliness among the most important attribute with (RII=0.795). The researcher observed that, there were cordial interaction among the residents. This type of social interaction could be a reason for making neighbours' friendliness as one of their priority and most important to them. Similarly, neighbours' friendliness attracted the attention of residents of Iwo housing estate as the most important attribute among higher ranking attribute with RII to be 0.748 (Lukuman et al., 2017).

Access to electricity/power supply

This attribute is perceived as very important and ranked 6th out of 55 attributes with RII was 0.783. This result, revealed how important the attribute is to the residents of public low-cost housing in Jigawa State. According Umar (2018) with exception of Inuwa Dutse Housing Estate, all housing estates in Jigawa State have poor access to functional facilities and amenities especially electric supply and blocked drainages/culverts. Although electricity supply is responsibility of Federal government of Nigeria not Jigawa State, Abdu (2015) described

electricity supply in Nigeria as irregular, almost everywhere is the same especially in Kano, Nigeria.

Neighbourhood helpful

This is also an aspect of social interaction among the residents of Jigawa State low-cost housing estates. This result indicated that, the residents considered neighbourhood helpfulness as very important, ranked 7th with RII scored 0.782. Most of the residents are low-income people they help one another in most of the activities that affect the entire housing estates. The finding is similar to Lukuman et al. (2017) who revealed that residents of Iwo indicated that the neighbours were helpful, perceived neighbourhood helpful as most important to them with RII scored 0.770. Thus, the residents of public low-cost housing loved social interaction to be part of their well-being.

Access to water supply

This attribute is perceived as very important to the residents of public low-cost housing estates with RII scored 0.779 and ranked 8th out of 55 attributes focused in this study. This result is similar to finding of Lukuman et al. (2017) who found that the residents of Iwo, perceived independent water supply as one of the most important attribute (RII=0.748) and ranked 27th out of 92 attributes. In addition, Abdu (2015) in his studies in Kano, reported that about 50% of residents of Kano neighbourhood did not satisfied with water supply. Thus, water supply is essential to the residents for their well-being that is why it marked as one of the very important attributes.

Size of housing unit

Size of housing unit is perceived by the residents as very important attribute, it has RII scored 0.778 and ranked 9th out of top 10th most/very important attributes. Study by Lukuman et al. (2017) revealed size of housing unit as too small with relative important index to be 0.766, that was the reason the residents

considered it as one of the most important attribute to them. Respondents in Kano expressed their satisfaction with size of the dwelling unit (Abdu, 2015). This nature of the size of the housing unit and its impact on their privacy made residents to perceive it as very important.

Safety from accident

The safety of residents is of great importance especially safety from accident. Accidents by cars and motorcycle are usually occurred along roads connected to the public low-cost housing in Jigawa state due to poor roads and reckless driving of road users. This affected 744 housing estate so much, because of poor road network and difficult accessibility to the estate from town center of Dutse. This situation made the only one road linking the estate to be busiest and characterised with more accident. This could be a reason safety from accident to be ranked 10th very important attribute with RII= 0.773 focused in this study. This can be justify by the finding of Lukuman et al. (2017) who reported that, residents of Iwo perceived safe walking at night as the most important attribute with RII=0.783. This type of attribute attracted the attention of residents in Kano where they value safety from accident as high with standard deviation (SD) to be 0.797 (Abdu, 2015).

Conclusion

The article intends to improve the residents' subjective well-being through exploring the current conditions of public low-cost housing estates and identification of what residents preferred in terms of attributes. Based on justifications from previous literature above, the public low-cost housing conditions in Jigawa State were poor to the extent that limited number of bedrooms, toilets and lacks fencing for maximum privacy. Accessibility to schools, hospitals and markets were also very difficult. In addition, water supply and electricity were insufficient in Jigawa State housing estates. These situations may be contributed to the

low level of subjective well-being of the residents of Jigawa State people compared with other developing countries. This result of subjective well-being showed that, about 73.4 percent exhibit low level of subjective well-being with the mean score of (M=3.54). This indicated that, generally the residents of the low-cost housing was not satisfied with their housing conditions.

The residents' preferences of housing attributes for the improvement of their subjective well-being were found through Relative Importance Index. The preferred attributes include; availability of Mosque, Trust among neighbours, a greater number of bedroom, more number of toilet and high neighbours' friendliness. Others were; access to electricity/power supply, neighbourhood to be helpful, access to water supply, large size of the housing unit and safety from accidents. Generally, the residents' subjective well-being will be improved if what residents preferred are considered in public low-cost housing estates now and in the future constructions.

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