

International Journal of Circuit, Computing and Networking

E-ISSN: 2707-5931

P-ISSN: 2707-5923

IJCCN 2020; 2(2): 16-20

Received: 05-05-2021

Accepted: 07-06-2021

Nkpite Bari-ene Samuel
Department of Estate
Management, Rivers State
University, Port Harcourt,
Nigeria

Adibe Nkeiruka Okwakpam
Department of Architecture,
Rivers State University, Port
Harcourt, Nigeria

Amakiri Ibiene Tamunoala
Department of Architecture,
Rivers State University, Port
Harcourt, Nigeria

Corresponding Author:
Nkpite Bari-ene Samuel
Department of Estate
Management, Rivers State
University, Port Harcourt,
Nigeria

Evaluating mechanisms influencing residential satisfaction in federal housing estates in Abia state, Nigeria

Nkpite Bari-Ene Samuel, Adibe Nkeiruka Okwakpam and Amakiri Ibiene Tamunoala

DOI: <https://doi.org/10.33545/27075923.2021.v2.i2a.27>

Abstract

Residential satisfaction in public housing estates, its impact can better understand through buildings delivery processes and decision on resident's response to initially and over the life cycle of the building. This study focused on mechanisms influencing residential satisfaction in federal housing estates in Abia State, Nigeria. An investigative post occupancy evaluation (POE) was the approach adopted for this study with questionnaire and interview conducted on the residents. A sample of 75 households were selected from 105 housing units within the two public housing estates. The sample represents 78.6% of the total public housing population. Data collected were analyzed using percentage, mean, and relative importance index (RII) on a 5 point likert scale questions with scaling namely: strongly disagree = 1, disagreed = 2, undecided = 3, agree = 4, and strongly agree = 5, in order to weigh the influencing mechanisms. It was found that more than half of the respondents (52.8%) agree that physical and social/environment characteristics are the components of residential satisfaction in public housing estates. Also, with RII of >0.60 the study established that the physical mechanism of residential satisfaction is buildings aesthetics, space, enclosure, location and health (personal/environmental). In the case of social mechanisms, the influencer of residential satisfaction is attitude to maintenance of facilities, educational and economic status of residents, safety and security, social needs and community involvement. Other residential satisfaction mechanisms identified in the study include maintenance of residential block, population density of the estate, and maintenance of public areas. Therefore, feedback mechanisms should be adopted by public estate developers; as data collected and information on buildings are better target to appropriate decision making, and the lesson learned are applied in the next building cycle of a similar facility type.

Keywords: Evaluation, mechanisms, influence, residential satisfaction, federal housing estates

1. Introduction

End-user's satisfaction has subject of investigation by scholars, various interest groups and researchers in the built environment. It has been viewed as an evaluation of the extent to which the current building environment of residents met their needs, expectations and aspiration (Mohit, Ibrahim and Rashid, 2010) [1]. Recently, there has been an increasing recognition of the importance of the occupants' voice in determination quality residential estates (Boldy, 2001, Boldy and Grenade, 2001; Ryden, Gross, Savik, Snyder, Oh, Jang, *et al*; 2000; Schmitt, 2000) [1,3,4]. Understanding the residents' views and the factors influencing their satisfaction can assist facility managers to provide occupant focused services that with enhance occupant's quality of life., it has also been stressed that occupants provide a valuable source of information about the appropriateness and quality of service and that such information would be used for improvement (Chou, Boldy and Lee, 2003) [5].

In the past housing was defined as the physical space in people resided and carried out their everyday lives. However, housing has risen in significance from a simple residential space to a driver of change in the quality of life (Byun and Hal, 2016) [6]. In responding to this situation, Federal Government of Nigeria adopted a strategic plan to construct public housing estates in Ogbo-Hill aba and Umuahia in Abia State. Although the building has been occupied, but several of the housing units constructed and occupied could not deliver to the residents, the needed expectations. Nevertheless, there complaints from residents regarding the quality and physical space provided within the housing estates. The perception of achieving residential satisfaction as a basic condition of the comfort due all the occupants has been fail to be achieve, put forth continuously.

However, public housing estates remains in short supply and is far worse in the quality than private housing estates.

The residential environment of these public housing estates need to be improved, and to achieve this, a research into satisfaction with public housing and residential environment having the occupants in mind who currently reside in the public housing estates. Therefore, a need arises to evaluate residential satisfaction with Federal Housing Estates in Abia State in order to gauge their expectations, needs and preferences of the residents, thereby determining which factors are important to their satisfaction.

1.1 Aim and Objectives of the Study

The main aim of this study is evaluate influencing of residential satisfaction in Federal Housing Estates in Abia State, Nigeria. In order to meet the above aim, the specific objectives are to:

1. Examine the components of residential satisfaction in Federal Housing Estates, Abia State.
2. Identify key mechanism that determine residential satisfaction at Federal Housing Estates, Abia State.

1.2 Scope of the Study

The scope of this study is limited to Federal Housing Estate; built in Ogbo-Hill Aba and Umuahia in Abia State, Nigeria. The buildings in the Housing Estates comprises of duplex, single family bungalows, semi-detached bungalow and blocks of flat and are been occupied by residents. It should have been ideal that the study covers all public housing estate in Nigeria but study opted to restrict the scope of the Federal Housing Estates in Abia State, which the findings will be used to better the conditions of the public housing estates in the country.

2. Literatures review

Residential satisfaction can be defined as the “emotional response to a person’s dwelling; the positive and negative feelings that the residents have for where they reside (Mohit and Azim, 2012) [16]. Residential satisfaction has been used as a measure to determine the success of building development projects. According to Nkpote and Wokekoro (2017) [15], the basis for optimizing the maintenance management of public building developments is where feedbacks were collected from the end-users occupying the building with regard to occupants’ views on the physical features of the occupied building and then feeding those views back into the procurement process. The method of choice for evaluating residential satisfaction today applies structured surveys follows by statistical correlation on variables (Nkpote and Frank, 2019; Mohit and Azim, 2012) [20, 16].

Research into residential satisfaction with public housing estates has been extensively conducted for the requirement of building performance and quality. The grade of residential satisfaction has become a vitally important indicator of property purchase/sales determination (Tin, Miao, Geng and Sun, 2018) [7]. Therefore, residential which reflects the degree of the satisfaction of the occupants with residential environment, has been a major concern of recent studies (Victoria, 2006; Mohit, M.A. *et al.*, 2010) [8, 1]. They mainly focus on factors influencing residential satisfaction including the resident’s characteristics, the building physical conditions, and the social space state (Salleh, 2008); Parkes; Keams and Atkinson, 2002; Li and Wang, 2014) [9, 10].

Among the factors some scholars believed that the construction quality, relationship have a certain impact on residential satisfaction degree (Ren and Chen, 2010; Fu, 2000; Wu and Chan, 2013; Du, 2002) [11, 12, 13, 14]. These studies fail to establish the component of satisfaction and determining mechanisms of that influencing residential satisfaction.

Nkpote and Wokekoro (2017) [15] study on end-user’s satisfaction highlighted physical characteristics of buildings, the neighbourhood environment and the public facilities provided determine the level of end-user satisfaction with public school buildings. However, these may vary by the type of building, the locate, the community the cultural backgrounds as well as nationality (Mohit and Azim, 2012) [16]. This explains that studies to determine the residential satisfaction of building types is specific to the location of the building, type building provided, community, housing policies and the country itself (Mohit and Nazyddah, 2011) [17]. As such in order to evaluate the level of residential satisfaction with public housing estates at Agbo-Hill aba and Umuahia, the physical, social and other mechanisms which other studies fail to address, would be the criteria to be specific in Abia State. Due to lack of such studies in the Federal Housing Estates at Abia State, this study aims to fill the existing gap and contribute towards the development and growth of the public housing estates sector and contributing to the development of future housing projects in Nigeria.

3. Research methodology

Investigative Post Occupancy Evaluation (POE) was the approach adopted for this study. The targeted population comprises mainly residents of buildings in Federal Housing Estates; Ogbo-Hill and Umuahia in Abia States living there for more than 5 years. A sample of 75 households were selected from 105 housing units within the two public housing estates of Abia State. The sample represents 78.6% of the total public housing population. The primary data source of data for this study was collected through a self-administered questionnaires interview carried out on face-to-face basis as well as observations’ for Federal Housing Estate, Ogbo-Hill Aba 84% questionnaires were retrieved, while 75.6% were retrieved from Federal Housing Estate Umuahia. In order to weigh resident’s satisfaction influencing mechanism in the selected estates, housing variables were identified from previous studies. The questionnaire is a 5 point likert scale questions with scaling namely: strongly disagree = 1, disagreed = 2, undecided = 3, agree = 4, and strongly agree = 5 was used. The overall satisfaction for each component and mechanisms influencing residential satisfaction was analysed based on a mean score of 3.00 as positive indication of satisfaction, and value below 3.00 indicating dissatisfaction.

4. Results and data analysis

This section of the study presents the mechanisms that is influencing residential satisfaction in public residential estates. It will outline component residential satisfaction and the factors affecting it. The analysis utilizes simple percentage and relative importance index (RII) to achieve this particular objective.

Components of Residential Satisfaction

Table 1 illustrates the components of residential satisfaction in public estates. Table 1 showed that 29.1% of the respondents strongly agree with physical characteristics as a component of residential satisfaction, 25% agree, 16.4 undecided, while 14.5% disagree and strongly disagree respectively. The table further revealed that 25.4% of the respondents strongly agree and agree respectively with

notion that social environment characteristics is another component of residential satisfaction, while 18.2% undecided, 16.4% disagree, and 14.5% strongly disagree. On the average, more than half of the respondents (52.8%) agree that physical and social environment characteristics are the components of residential satisfaction in public housing estates.

Table 1: Components of Residential Satisfaction (N = 75)

Components of Satisfaction	SA(5)		A(4)		U(3)		D(2)		SD(1)	
	N	%	N	%	N	%	N	%	N	%
Physical characteristics	16	29.1	14	25.5	9	16.4	8	14.5	8	14.5
Social characteristics	14	25.4	14	25.5	10	18.2	9	16.4	8	14.5
Total	30	54.4	28	51.0	19	34.6	17	30.9	16	28.0
Average	52.8%				47.2%					

Source: Author’s Field Investigation, 2021.

Mechanism Influencing Residential Satisfaction

Mechanisms influencing residential satisfaction in public housing estates and identified in Tables 2, 3 and 4 as physical, social and other mechanisms.

Table 2 indicates the relative importance index (RII) of the physical mechanism influencing satisfaction of residents in public housing estates; locational mechanism and building

aesthetics ranked with RII of 0.63 (1st), respectively building enclosure with RII of 0.62 (2nd), while use of space with RII of 0.61 (3rd) and health (personal and environment) with RII of 0.60 (4th). The least satisfactory the physical mechanism is health (personal and environmental) issues. Another noted with highest satisfaction are building aesthetics and locational features of the estates.

Table 2: Physical Mechanism Influencing Residential Satisfaction

Physical Mechanism Factors	Weigh: N = 75					$\sum fx$	$\frac{\sum fx}{\sum f}$	RII	Rank
	5	4	3	2	1				
Building aesthetics	13	12	10	10	10	173	3.14	0.63	1 st
Use of space	11	12	10	12	10	107	3.03	0.61	3 rd
Building enclosure	7	16	14	9	9	168	3.05	0.62	2 nd
Health (personal/environment)	11	11	11	11	11	165	3.00	0.60	4 th
Locational characteristics	14	10	11	11	9	174	3.16	0.63	1 st
Legend: 1 = Strongly disagree, 2 = Disagree, 3 = Undecided, 4 = Agree and 5 = Strongly Agree.									
Decision: <3.00 = Disagree, > 3.00 = Agree									

Source: Author’s Investigation, 2021.

Table 3 further shows the relative importance index (RII) of the social mechanism influence the satisfaction of residents in public housing estates; social needs was ranked with RII of 0.65 (1st), community involvement and economic status of the residents with RII of 0.62 (2nd) respectively, while

safety and security including attitude to maintenance with RII of 0.61 (3rd) respectively, and educational status of residents with RII of 0.60 (4th). The most ranked of the social mechanism is social needs, while the least ranked was educational status of the residents.

Table 3: Social Mechanism Influencing Residential Satisfaction

Social Mechanism	Weigh: N = 75					$\sum fx$	$\frac{\sum fx}{\sum f}$	RII	Rank
	5	4	3	2	1				
Attitude to maintenance of facilities	12	11	12	10	10	170	3.09	0.61	3 rd
Educational status of residents	11	10	14	10	9	166	3.02	0.60	4 th
Safety and security	10	14	12	8	10	168	3.05	0.61	3 rd
Economic status of residents	14	10	11	11	8	173	3.15	0.62	2 nd
Social needs	12	14	12	10	7	179	3.25	0.65	1 st
Community involvement	11	12	13	11	9	173	3.15	0.62	2 nd
Legend: 1 = Strongly disagree, 2 = Disagree, 3 = Undecided, 4 = Agree and 5 = Strongly Agree.									
Decision: <3.00 = Disagree, > 3.00 = Agree									

Source: Author’s Investigation, 2021.

Table 4 also reveals the relative importance index (RII) of other mechanism influencing the satisfaction of residents in public housing estates. The first in rank on other mechanisms is maintenance of public areas with RII of 0.66 (1st), while maintenance of residential blocks and population

density within the estate was ranked with RII of 0.64 (2nd) respectively. Furthermore, other mechanisms listed according to their descending RII were maintenance of public areas as higher and maintenance of residential blocks and population density as lower

Table 4: Other Mechanism Influencing Residential Satisfaction

Other Mechanism Factors	Weigh: N = 75					$\sum fx$	$\frac{\sum fx}{\sum f}$	RII	Rank
	5	4	3	2	1				
Maintenance of residential block	12	11	13	11	9	177	3.21	0.64	2 nd
Population density within estate	12	13	12	10	8	176	3.20	0.64	2 nd
Maintenance of public areas	14	15	12	8	8	184	3.34	0.66	1 st
Legend: 1 = Strongly disagree, 2 = Disagree, 3 = Undecided, 4 = Agree and 5 = Strongly Agree.									
Decision: <3.00 = Disagree, > 3.00 = Agree									

Source: Author’s Investigation, 2021.

Implications of the Mechanisms Influencing Residential Satisfaction

Table 5 shows the implication of residential satisfaction mechanisms on residents of public housing estates. The table showed that 57.3% of the respondents has a negative implication with the mechanisms influencing residential satisfaction, while 26.7% indicated as positive and 16% as uncertain. It implies that both the components and the mechanisms influencing residential satisfaction has a negative effect on the residents of Federal Housing Estates in Abia State.

Table 5: Implications of the Mechanisms Influencing Residential Satisfaction

Implications	Frequency	Percentage (%)
Positive	20	26.7
Negative	43	57.3
Uncertain	12	16.0
Total	75	100.0

Source: Author’s Investigation, 2021.

5. Discussion of findings

The findings on components of residential satisfaction and mechanism influencing it were discussed under this subheading as shown in Tables 1, 2, 3 and 4.

Components of residential satisfaction

The findings showed that more than half of the respondents with a mean score of >3.00 agree that residential satisfaction has both physical and social components. The study also weighs of agreement the physical and social components of residential satisfaction as positive attributes by the end-users. Generally, the physical and social components of public housing estates are found to derive better residential satisfaction. This finding confirmed that “both physical and social components of the built environment influences end-user’s satisfaction in public residential housing estate. Therefore, the findings clearly showed that physical and social components of residential satisfaction contribute towards improving public housing estates.

Mechanism influencing residential satisfaction in public housing estates

The findings revealed that more than half of the respondents with a mean score of >3.00 agree that the physical mechanisms of residential satisfaction are building aesthetics, use of space, building enclosure, health (personal /environmental) as the physical attributes influencing residential satisfaction in public housing estates. The study found out that more than half of the respondents with a mean score of >3.00 agree that the social mechanism as factors influencing residential satisfaction include attitude to maintenance of facilities, educational status of residents, safety and security, economic status of residents, social

needs and community involvement. Furthermore, other mechanisms indicated in the study are also shown in Tables 2, 3 and 4. The study established that more than half of respondents with mean score of >3.00 agree that the other mechanisms influencing residential satisfaction include maintenance of residential block, population density within the estate and maintenance of public areas. This study confirmed that “physical and social mechanisms of residential satisfaction to influence the residents with their choice of respective estates, type/class of building being occupied, location of building being occupied as well as maintenance issues arising from the use of the buildings”. It implies that as social attributes, community participation/involvement in residents’ meetings held in the estates with contribution make would help to improve maintenance of facilities, safety and security. On the contrary, if the residents found dissatisfied with poor access to recreational facilities, inadequate medical facilities, as well as proximity to market, it will adversely affect the quality of life of the residents, which bear negative consequences on the up keep of residences within the estates.

Implications of the Mechanisms Influencing Residential Satisfaction

Finding showed that 57.3% of the residents agree with both the components and the mechanisms influencing residential satisfaction as having a negative effect on their residence of Federal Housing Estates in Abia State. It was evident that in the estates, schools, medical facilities and recreational facilities were not provided by government at the estates, but found which is inadequate and substandard are provided by private individuals. Attitude to maintenance of facilities, safety and security, building aesthetics, use of space, building enclosure, health (personal/environmental), locational characteristics, etc. pose a serious threat to residents, which they are not very comfortable with the estates.

6. Conclusion and recommendations

The study examined the mechanism influencing residential satisfaction at Federal Housing Estates: Ogbo-Hill Aba and Umuahia in Abia State, Nigeria. This study demonstrated how physical and social mechanisms had been the components of residential satisfaction in public housing estates. This study established that the physical mechanism that residents agree to be the determinants of residential satisfaction are buildings; aesthetics, space, enclosure, location and health (personal/environmental). In the case of social mechanisms that influence residential satisfaction are attitude to maintenance of facilities, educational and economic status of residents, safety and security, social needs and community involvement. Other mechanisms identified in the study as determinant of residential

satisfaction include maintenance of residential block, population density of the estate, and maintenance of public areas. Generally, it is established that the drivers of residential satisfaction in public housing estates are both physical and social mechanisms. The contribution of residents towards improving public estates satisfaction entails these mechanisms as determinants to the extent of building conditions, access to recreational facilities, basic utilities as well as proximity to market, school, healthcare, etc. This situation may have adverse implications either positive or negative on the quality of life of the residents of the public housing estates to bear in keeping the residences or not. Also indication in the finding is the community participation/involvement in residents' meetings held as well as the contributions made towards maintenance of facilities with the population density found within the estates. Therefore, feedback mechanisms should be adopted by public estate developers; as data collected and information on a particular building are better targeted to appropriate decision making, and the lesson learned are applied in the next building cycle of a similar facility type. These feedbacks provide on the causes and effects of environmental issues related to buildings.

7. References

1. Mohit MA, Ibrahim M, Rashid YR. Assessment of Residential satisfaction in Newly Designed Public Low-cost Housing in Kuala Lumpur, Malaysia. *Habitat International* 2010;34(1):18-27.
2. Boldy D, Grenade L. Promoting Empowerment in Residential Aged Care: Seeking the consumer view. In L.F. Heumann, M.E. McCall, and D.P. Boldy (Ed.), *Empowering Frail Elderly People*: Westport, CT: Praeger 2001, 41-52.
3. Ryden MB, Gross CR, Savik K, Snyder M, Oh HL, Jang YJ et. al. Development of a Measure of Resident Satisfaction with the Nursing Home. *Research in Nursing and Health* 2000;23:237-245.
4. Schmitt MH. Quality of Care Issues and Nursing Research that gives voice to the vulnerable. *Research in Nursing and Health* 2000;23:177-178.
5. Chou SC, Boldy DP, Lee AH. Factors Influencing Resident's satisfaction in Residential Aged care. *The Gerontologist* 2003;43(4):459-472.
6. Byun G, Ha M. The factors Influencing Residential Satisfaction by Public Rental Housing Tyre. *Journal of Asian Architecture and Building Engineering* 2016;15(3):534-542.
7. Yin R, Miao X, Geng Z, Sun Y. Assessment of Residential satisfaction and Influence Mechanism: A case study of Jinan City – *Journal of Business Administration Research* 2018;7(2):9-16.
8. Victoria Amestoy Esperanza Vera-Toscana. *The Determinants of Housing satisfaction: Relevance of Social Interactions the Project satisfaction con La Vivienda en Andaluca* 2006.
9. Sallaeh AG. Neighbourhood factors in Private Low-cost Housing in Malaysia, *Habitat international* 2008;32(4):485-494.
10. Parkers A, Keams A, Atkinson R. What makes people Dissatisfied with their Neighborhood? *Urban Studies* 2002;13:2413-2438.
11. Ren C, Chen Y, Yan-tei P. The Analysis of Importance and Differences of Housing Consumption satisfaction in Xian. *Human Geography* 2010;2:61-64.
12. Fu C. Study on the Evaluation of Urban Human Settlements Environment and satisfaction. *Urban planning* 2000;7:25-32.
13. Wu Y, Chen J. Housing satisfaction in Social Housing sector: Empirical Analysis on Hong Kong Public Housing survey, comparative Economic and Social systems 2013;4:09-117.
14. Du H. Research on the Model of Residential customer satisfaction Index Model. *Consumption to Economy* 2002;5:73-76.
15. Nkpitem BS, Wokekoro E 2017.
16. Mohit MA, Azim M. Assessment of Residential satisfaction with Public Housing in Hulhumale, Maldives. *Procedia; Social and Behavioral Sciences* 2012;50:756-770.
17. Mohit MA, Nazyddah N. Social Housing programme of Selangor Zakar Board and Housing Satisfaction, *Journal of Housing and the Built Environment* 2011;26(1):123-142.
18. Nkpitem BS. A Study of Post-Occupancy Evaluation as a Maintenance Management Tool for Rivers State Model Primary Schools. Unpublished MSc Dissertation Submitted to the Department of Estate Management, Rivers State University, Port Harcourt 2017.
19. Nkpitem BS, Frank OL. Potential Benefits for Adopting Post Occupancy Evaluation (POE) as Maintainability Tool for Nigerian Public School Buildings. *International Journal of Science, Arts and Commerce* 2019;4(1):79-89.
20. Nkpitem BS, Frank OL. Evaluating the Influence of School Based Management on Maintenance Management of Public School Buildings. *International Journal of Latest Engineering and Management Research (IJLEMR)* 2019;3(2):2455-2465.
21. Nkpitem BS, Wokekoro E. Users Evaluation of Building Elements of Rivers State Government Model Primary Schools. *Journal of the Nigerian Institution of Estate Surveyors and Valuers* 2018;41(1):85-97.