

Manuscript Number: JEP-14-146

Title: Satisfaction with neighbourhood environments in public housing:
evidence from Ogun State, Nigeria

Article Type: Article

Keywords: Neighbourhood satisfaction, Urban areas, Public housing;
Neighbourhood environment, Surveys

Corresponding Author: Dr. Eziyi Offia Ibem, Ph.D

Corresponding Author's Institution: Covenant University

First Author: Eziyi Offia Ibem, Ph.D

Order of Authors: Eziyi Offia Ibem, Ph.D; Pearl A Opoko, Ph.D; Egidario
B Aduwo, Ph.D

Abstract: Although previous studies have identified the contributions of dwelling units' and neighbourhood characteristics in residential satisfaction, further study is required to examine neighbourhood satisfaction and the factors influencing it in the context of public housing. Hence, we investigated neighbourhood satisfaction in nine public housing estates using data derived from household surveys conducted between December 2009 and February 2010 in urban areas of Ogun State southwest Nigeria. Data were sourced from 517 respondents using structured questionnaire and subjected to descriptive statistics, factor and multivariate regression analyses. The respondents were generally dissatisfied with neighbourhood environment in the housing estates with the main sources of dissatisfaction being poor access to basic services and infrastructural facilities, and unsatisfactory social and economic environment in the estates. The most important features that influenced neighbourhood satisfaction among the respondents were related to availability and access to services and infrastructural facilities, cleanliness, socio-economic environment; location of homes, noise, privacy; and security in the estates. These three neighbourhood features together with marital status, employment and tenure emerged as the predictors of neighbourhood satisfaction. Therefore, to improve neighbourhood satisfaction in public housing and urban areas; city planners and housing developers must engage in innovative planning and design strategies that ensure residents' satisfaction with these neighbourhood features.

Suggested Reviewers: Abraham Taiwo Ph.D
Associate Professor, Architecture, Federal University of Technology,
Akure, Nigeria
abraham_taiwo@yahoo.com
His research interest include environment- behaviour

Franklin Obeng-Odoom Ph.D
Research Fellow, School of Built Environment, UNIVERSITY OF TECHNOLOGY,
SYDNEY | NSW | Australia
Franklin.Obeng-Odoom@uts.edu.au
He is an expert in evaluation of public housing projects

Opposed Reviewers:

Dear Editor,

The paper submitted for consideration in this journal is drawn from a larger research project conducted to investigate public housing in urban areas of Ogun State South west Nigeria. The goal was to satisfaction with neighbourhood environment and factors influencing this in public housing estates in urban centers in the study area.

The paper makes contribution by improving understanding of the extent to which residents in public housing are satisfied with neighbourhood environment in the estates; the dimensions of residents' perception of neighbourhood satisfaction; and the predictors of neighbourhood satisfaction in the context of public housing in Nigeria.

The authors believe that this study reported in this paper can inform urban planning and housing development in Nigeria in particular and in other developing countries with similar urban planning and housing challenges like Nigeria. This is which is why we unanimously agreed to submit the paper for consideration in this highly rated journal.

We hereby declare that the paper has neither been published nor under consideration for publication by any other journal. We are looking forward to receiving reviewers' comments and suggestions on this manuscript.

Thank you.

Eziyi O. Ibem (corresponding author)

Satisfaction with neighbourhood environments in public housing: evidence from Ogun State, Nigeria

Eziyi O. Ibem^{a, b}; Pearl A. Opoko^c & Egidario B. Aduwo^d

^a, Department of Architecture, College of Science and Technology, Covenant University
Km 10 Idiroko Road, Canaan Land, Ota, Ogun State, Nigeria
ibem.eziyi@covenantuniversity.edu.ng

^b School of Construction Economics and Management, University of the Witwatersrand
1 Jan Smut Avenue, Johannesburg, South Africa
Eziyi.Ibem@wits.ac.za

^{c&d} Department of Architecture, College of Science and Technology, Covenant University
Km 10 Idiroko Road, Canaan Land, Ota, Ogun State, Nigeria

Satisfaction with neighbourhood environments in public housing: evidence from Ogun State, Nigeria

Abstract

Although previous studies have identified the contributions of dwelling units' and neighbourhood characteristics in residential satisfaction, further study is required to examine neighbourhood satisfaction and the factors influencing it in the context of public housing. Hence, we investigated neighbourhood satisfaction in nine public housing estates using data derived from household surveys conducted between December 2009 and February 2010 in urban areas of Ogun State southwest Nigeria. Data were sourced from 517 respondents using structured questionnaire and subjected to descriptive statistics, factor and multivariate regression analyses. The respondents were generally dissatisfied with neighbourhood environment in the housing estates with the main sources of dissatisfaction being poor access to basic services and infrastructural facilities, and unsatisfactory social and economic environment in the estates. The most important features that influenced neighbourhood satisfaction among the respondents were related to availability and access to services and infrastructural facilities, cleanliness, socio-economic environment; location of homes, noise, privacy; and security in the estates. These three neighbourhood features together with marital status, employment and tenure emerged as the predictors of neighbourhood satisfaction. Therefore, to improve neighbourhood satisfaction in public housing and urban areas; city planners and housing developers must engage in innovative planning and design strategies that ensure residents' satisfaction with these neighbourhood features.

Keywords: Neighbourhood satisfaction, Urban areas, Public housing; Neighbourhood environment, Surveys

1. Introduction

1 Studies on neighbourhoods and how they affect the well-being and over-all quality of life of
2 residents have continued to be of global interest to varied stakeholders including, residents,
3 researchers, policy makers, planners, service providers and developers. From the literature
4 (Ge and Hokao, 2006; Leby and Hashim, 2010; Hur *et al.*, 2010) two reasons can be
5 identified for the sustained interest on neighborhoods. First is the understanding that
6 neighbourhood environments have profound influence on the behaviour, attitudes, values
7 (Brooks-Gunn *et al.*, 1993), health (Braubach, 2007), quality of life of residents (Hur and
8 Morrow-Jones, 2008) and satisfaction with their residential environment (Mohit *et al.*, 2010;
9 Ibem and Aduwo, 2013). Second is the vital role neighborhood environments play in social
10 interactions, interpersonal relationships, friendship, work, financial status and marital
11 relations (Sirgy and Cornwell, 2002). Put succinctly, the increasing interest on
12 neighbourhood can be linked to its influence how people live, interact, work and play.

13 Although the concept of neighbourhood is often interchanged with community, Cater and
14 Jones (1989) explained that the two differ in content and meaning. They made it clear that
15 while “neighbourhood” refers to geographical location, “community” on the other hand
16 denotes the social dynamics within that location. Moreover in their paper on understanding
17 neighbourhoods, Higgitt and Memken (2001) identified two main approaches to
18 understanding the concept of neighbourhood: the ecological approach and planning approach.
19 Whereas the former views neighbourhood as a functional entity, which relates to the physical
20 features of a community and the manner in which social groups are distributed into various
21 neighbourhood settings; the latter approach sees neighbourhood as a construct that is
22 concerned with how the physical environment supports residents in their daily livelihoods.
23 Drawing from the above, Berk (2010) defined neighbourhood as ‘*the immediate social and*
24 *physical environment around the dwelling unit*’. Therefore, neighbourhood environment as
25 used in this study refers to the physical, social and economic setting in which residential units
26 are located.

27 In their study on why people are satisfied with their neighbourhoods, Parkes *et al.* (2002)
28 observed that there has been a renewed interest in neighbourhood (dis)-satisfaction.
29 According to Permentier *et al.* (2011), neighbourhood satisfaction deals with how a resident
30 assesses his or her neighbourhood environment. Hence, in the current study, neighbourhood
31 satisfaction is viewed as residents’ perception of the extent to which they are satisfied or
32 dissatisfied with the physical, social and economic environment of their dwelling units.

33 The review of literature reveals that neighbourhood satisfaction is a well researched subject.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

In fact, the existing studies help to explain that residents in the different countries such as Yemen (Djebarni and Al-Abed, 2000), the UK (Parkes *et al.*, 2002), the US (Basolo and Strong, 2002; Hipp, 2010), Malaysia (Salleh, 2008) and South Africa (Westaway, 2006; 2009) have expressed different levels of satisfaction with their neighbourhood environments. These studies also show that several contextual factors (e.g. physical, safety) and socio-economic variables (attributes of residents, economic situation) influence residents' perception of neighbourhood satisfaction. Further, studies in several countries, including Spain (Amerigo and Aragonés, 1990), China (Fang, 2006), South Korea (Ha, 2008), Malaysia (Mohit *et al.*, 2010) and Nigeria (Ukoha and Beamish, 1997; Olatubara and Fatoye, 2007; Jiboye, 2009; Clement and Kayode, 2012; Ibem and Aduwo, 2013) have examined overall residential satisfaction. These studies have also demonstrated that housing units' and neighbourhood features as well as socio-economic characteristics of residents influence residential satisfaction. Despite the insights provided by the existing studies, there appears to be little or no consensus in the literature on the general pattern of neighbourhood satisfaction and specific factors that influence it across various socio-economic groups in the different residential and cultural settings. Hence, Baum *et al.* (2010) cautioned against generalising findings beyond specific case studies.

This study is designed to investigate the extent to which residents of public housing in urban areas of Ogun State Southwest Nigeria are satisfied with the neighbourhood environment in the estates. We argue that apart from dwelling units' characteristics, the physical, social and economic environments in which dwelling units are located have significant influence on residents' perception of neighbourhood satisfaction in public housing in Nigeria. The study is guided by the following research questions:

- i. To what extent are residents satisfied with the neighbourhood environment in public housing estates in urban areas of Ogun State?
- ii. What are the key dimensions of neighbourhood satisfaction evaluation by residents of public housing in the study area? and
- iii. What factors have significant influence on residents' satisfaction with neighbourhood environments in public housing in Ogun State?

The study is expected to make contribution to the current discourse on neighbourhood satisfaction in urban areas by exploring the extent to which residents of public housing are satisfied with their neighbourhood environments and identifying the features that make the

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

most contribution to this from the Nigerian perspective. Findings of this study can provide feedback to urban planners, housing developers and policy makers in Nigeria and other developing countries with similar urban and housing development challenges.

2. Literature review

2.1. Neighbourhood satisfaction: theoretical clarification

According to Vrbka and Combs (1993), perception of satisfaction is highly subjective and influence by a wide range of factors, including individual's past experiences, current realities and expectations. Consequently, a gamut of theories and conceptions from diverse academic disciplines including, sociology, environmental psychology and consumer behaviour, have been used to explain how individuals measure satisfaction with their environments. In the field of environmental psychology, one of the theories used in explaining how humans interact and evaluate their physical environment is the Mehrabian and Russell's (1974) stimulus-organism-response (SOR) model. This model posits that human reaction to the stimuli of physical environment is divided into three parts: environmental stimuli, emotional states and two opposite responses (approach or avoidance) (Mehrabian and Russell, 1974). The environmental stimuli influence individuals' emotional states which in turn determine how the individual responds or reacts to the environment. Jang and Namkung (2009) explained that the environmental stimuli are external to the individual and consist of different features of the environment, while the organism refers to internal processes and structures standing between the external stimuli and the final actions and responses by the individual. What this means is that a person's evaluation of satisfaction with his/her environment is a function of the person's emotional state, which determines his/her behaviour at a particular time (Kim and Moon, 2009). Whereas emotional states can be classified as pleasure, arousal and dominance; responses to the environment can be in the form of approach or avoidance behaviour as explained by Mehrabian and Russell (1974). Approach behaviour may include a desire to stay, to look around, explore the environment and to communicate with others in the environment. In contrast, avoidance describes behaviours opposite to approach (Mehrabian and Russell, 1974) such as residential mobility as in the case of residential environment.

From the perspective of residential environment, which comprises housing units and surroundings (neighbourhood); the theory of housing adjustment developed by Morris and Winter (1975) can also be used to explain how people evaluate satisfaction with their

1 residential neighbourhood environment. In their seminal work on a theory of family housing
2 adjustment, Morris and Winter (1975:1) identified the two criteria used by families to judge
3 their residential environment to include family norms and cultural norms. Whereas family
4 norms represent values (i.e. social, economic and psychological) importance people attach to
5 their environment; cultural norms are the specific needs associated with cultural standards
6 against which residential neighbourhood are judged. The cultural-related norms in the context
7 of residential environment are expressed in terms of dwelling units' quality and neighborhood
8 features. Morris and Winter (1975) explained that when a household's or individual's
9 neighbourhood conditions do not fit with both the family and cultural norms, deficit is said to
10 exist; and vice versa. Deficit in this context can manifest in the forms of dissatisfaction
11 leading to adjustment behaviours such as mobility, adaptation or transformation/modification
12 of the physical and spatial characteristics of the neighbourhood environment. Based on this
13 theory, the evaluation of neighbourhood satisfaction can be understood as a measure of the
14 extent to which individuals' residential neighbourhood environment conforms to both the
15 family and cultural norms.

16 Russell and Pratt (1980) also help to explain that persons' attribute to environments is divided
17 into affective meaning and perceptual-cognitive meaning. They noted that the first level of
18 response to the environment is affective, which is emotion/ feeling expressed in language;
19 suggesting that the affective meaning or quality of a physical environment is the emotion-
20 inducing meaning or quality that persons verbally attribute to that particular place. Relating
21 this to satisfaction, Oliver (1993) indentified emotions as a mediator among cognitive
22 evaluations, including perceived performance of products or services in meeting consumers'
23 needs, aspirations and expectations. Caro and Garcia (2007) added to this view by noting that
24 literature on cognitive perspective to understanding consumer behaviour tends to see people
25 as cognitive beings, whose expression of satisfaction is the outcome of a process of
26 comparison between expectations and perceived performance of products or services in
27 meeting specific or varied needs.

28 Galster (1987:540) linked Russell and Pratt's proposition to two approaches in understanding
29 satisfaction with residential environment. These are the purposive approach and the actual-
30 aspiration gap approach. In the former approach, Galster (1985) was of the view that people
31 tend to evaluate their environment based on how they think such environments are facilitating
32 the achievement of their goals in life; suggesting that people judge the environment based on
33 their perception of its role in their individual or family lives. Therefore, the extent to which
34 one's neighbourhood environment is seen as playing the expected role (for example
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

facilitating the achievement of one's goal in life) is a measure of satisfaction with the neighbourhood environment. In the latter case, Galster (1987) also noted that, people consciously construct a reference quality that they consider "an ideal standard" of what their environment should be. This ideal standard is most often based on socio-economic status, current needs, expectations, and aspirations of residents as well as some predetermined criteria and standards established by governments, professionals and experts as Mohit *et al.* (2010) explained in a study of residential satisfaction in newly constructed public low-cost housing in Kuala Lumpur, Malaysia. Therefore, in the evaluation process, if the current (actual) environment is perceived to be a par with the ideal standard (aspired condition); meaning that is there is little or no difference between the actual and aspired neighbourhood conditions, then the environment is considered to be satisfactory, and vice versa. In this regard, Galster's conception appears to be in agreement with Morris and Winter (1975) proposition.

From the foregoing, it is evident that three domains, namely, the affective and cognitive behavioural facets are involved in residents' satisfaction evaluation as explained by Amerigo and Aragonés (1990) in a study on residential satisfaction in council housing in Spain. Oliver (1997) and Wirtz and Bateson (1998) explained that the affective deals with emotions (feelings) as opposed to the cognitive domain, which involves thinking and taps into the consciousness of an individual. In a study on residents' satisfaction with public housing in Papua New Guinea, Kaitilla (1993) linked the affective domain to subjective approach and cognitive to objective approach. The subjective evaluation is related to perception and emotion (i.e. psychological feelings) an individual has towards his/her environment, and are influenced by the psychological attributes of an individual (Mohit *et al.*, 2010), cultural values and individuals' life experiences (Kantrowitz and Nordhaus, 1980), economic status and role in the family or society (Filfil, 1999). On the other hand, the objective approach is based on individual's ability to carry out a comparative analysis of what is currently available in relation to what was expected. This form of evaluation is a memory-based judgment (Krishnan, 1996; Warlop *et al.*, 2005) and is determined by how well individuals learn and remember their prior interactions, experiences and the quality attributes they associate with their environments. The behavioural facet deals with individuals' reactions or responses resulting from the affective and/or cognitive evaluation of the environment (Mehrabian and Russell, 1974; Morris and Winter, 1975; Amerigo and Aragonés, 1990).

Based on the review of the different theoretical approaches to understanding residents' evaluation of neighbourhood satisfaction, it appears that the way people perceive and

1 evaluate their environment is actually influenced by their emotions and ability to judge the
2 performance of their environment in relation to specific needs, aspirations and expectations.
3 Therefore, residents' satisfaction with their neighbourhood environments cannot be separated
4 from the emotional impact the environment has on them, which is generally governed by two
5 key factors. The first deals with the physical, social and economic attributes individuals
6 attach to their neighbourhood environments. The second relates to individuals' needs,
7 aspirations and expectations, which are products of personal traits, knowledge, ability to
8 remember previous consumption experiences (memory), role in the family or society and
9 values or meaning people attach to their neighbourhood environment.
10
11
12
13
14
15
16

17 **2.2. Studies on neighbourhood satisfaction**

18 In the literature, the concept of satisfaction is generally viewed as the extent to which needs
19 are met as explained by Lovejoy *et al.* (2010) in their study on characteristics associated
20 with higher level of neighbourhood satisfaction among residents in traditional and suburban
21 neighbourhoods in northern California region of the US. Therefore, neighbourhood
22 satisfaction is generally understood to mean the assessment of the extent to which
23 neighbourhood environments are meeting the needs, expectations and aspirations of residents.
24 Studies on neighbourhood satisfaction serve various purposes, including description or
25 indication of the quality of life and other social phenomena like residential satisfaction,
26 residential mobility and sense of belonging and present housing conditions (Amerigo and
27 Aragonés, 1990; Fang, 2006). They are also used in assessing residents' well-being and
28 livability of environments (Hur and Morrow-Jones, 2008; Leby and Hashim, 2010) and can
29 serve as feedback to planners and administrators to meet the needs of residents and for
30 residents to make appropriate housing choices (Basolo and Strong, 2002) and as a measure of
31 success or failure of mass housing (Gruber and Shelton, 1987; Djerbani and Al-Abed, 2000)
32 and urban revitalization projects (Fang, 2006). Indeed studies on neighbourhood satisfaction
33 have generally shown that the level of residents' satisfaction with their neighbourhoods has
34 far reaching implications not only on their health and well-being but also on their mobility
35 decisions and willingness to contribute to improvements in the neighbourhood as explained
36 by Hur and Morrow-Jones (2008). For example, a recent study by Batson and Monnat (2013)
37 indicates that neighbourhood satisfaction affects the overall life satisfaction, mental and
38 physical health, political participation and investment in building healthy and stable
39 communities. Hence, the importance of studies on neighbourhood satisfaction in the current
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

quest for sustainable cities cannot be overemphasized.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
Hipp (2010) observed that numerous studies have explored the determinants of
neighbourhood satisfaction, while Baum, *et al.*, (2010) were of the view that the
contemporary literature on neighbourhood satisfaction seeks to improve understanding of
who is satisfied or dissatisfied and the various personal, social, housing and neighbourhood
characteristics with influence on perceptions of neighbourhood satisfaction. From the existing
studies, we understand that residents have expressed different levels of satisfaction with their
neighbourhood environments in various countries. For examples, in a study of housing
satisfaction in Abuja, Nigeria, Ukoha and Beamish (1997) found that residents were satisfied
with neighbourhood facilities. Their counterparts in Lagos (Olatubara and Fatoye 2007;
Fatoye and Odusami 2009; Ilesanmi 2010) and Ogun States (Ibem and Aduwo, 2013) were
however found to be least satisfied with the layout of estates, access to neighbourhood
facilities and urban services. Elsewhere in South Korea, Ha (2008) found that residents in
social housing estates were satisfied with the provision of healthcare facilities, stores, banks
and post offices, but they were highly dissatisfied with parking facilities and landscaping. In a
study of 45% (informal settlement), 21% (squatter camp), 33% (black suburbanites), and
28% (white suburbanites) in informal settlements in South Africa, Westaway (2009) also
revealed that there were different levels of satisfaction with neighbourhood environments
between black suburbanites and the other three groups.

32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
Several other studies have also examined the predictors of neighbourhood satisfaction.
Aggregate findings from the existing studies suggest that the predictors of neighbourhood
satisfaction can be classified into personal, social, physical and safety factors (see Gifford,
1997; Higgitt and Memken, 2001). Specifically, in their respective studies, Sirgy and
Cornwell (2002) and Lovejoy *et al.* (2010) identified the predictors of neighbourhood
satisfaction to include, physical features (e.g. landscape; street lighting; crowding and noise
level; nearness of neighbourhood facilities; quality of community environment); social
features (e.g. social interaction with neighbours, outdoor play space, people living in the
neighbourhood, ties with people in the community, race relations in the community, sense of
privacy at home) and economic factors (e.g. home value, cost of living in the community,
socio-economic status of neighbourhood, neighbourhood improvements). From the review of
published works, we also identified some of the key physical, social and safety factors that
influence neighbourhood satisfaction in the different contexts in various countries (see Table
1).

<Insert Table 1 here>

1 Examination of Table 1 will reveal that factors associated with neighbourhood satisfaction
2 are diverse, and that the factors identified by studies listed in Table 1 can be also linked to
3 findings by Sirgy and Cornwell (2002) and Lovejoy *et al* (2010) as previously highlighted.
4

5
6 In addition, a number of studies have identified the personal characteristics with significant
7 influence on neighbourhood satisfaction. Studies (including Lu, 1999; Parkes *et al.*, 2002;
8 Baum, *et al.*, 2010) have shown that age is a predictor of neighbourhood satisfaction with
9 younger people known to be less satisfied with their neighbourhood than elderly people.
10 Similarly, household composition has also been identified to have impact on neighbourhood
11 satisfaction. Specifically, Galster and Hesser (1981) observed that single women were more
12 dissatisfied with their neighbourhood than others, while Parkes *et al* (2002) found that the
13 presence of children has a positive impact on neighbourhood satisfaction. Socio-economic
14 status variables such as family income and educational level have also been associated with
15 positive impact on neighbourhood satisfaction. Lu (1999) and Baum, *et al.*, (2010) have
16 demonstrated that a higher income and/or higher level of education can lead to higher
17 neighbourhood satisfaction. In the same vein, Lu (1999) and Parkes *et al.* (2002) have linked
18 tenure options with neighbourhood satisfaction; and they have shown that homeowners tend
19 to be more satisfied with their neighbourhood than renters. Although authors have identified
20 ethnicity/race (Westaway, 2009; Baum, *et al.*, 2010) and length of stay in the neighbourhood
21 (Fang, 2006; Baum, *et al.*, 2010) as significant predictors of neighbourhood satisfaction, a
22 recent study on the impact of economic recession arising from foreclosures on neighbourhood
23 satisfaction in Las Vegas, USA by Batson and Monnat (2013) indicated that length of stay
24 was not a direct positive factor though it appeared to enhance neighbourhood cohesion.
25
26

27 From the studies reviewed here it is evident that it may be difficult to have a general
28 conclusion on the outcomes of empirical studies on neighbourhood satisfaction in the
29 different countries. It is observed that among the several factors identified, specific variables
30 were found to have significant effects on neighbourhood satisfaction in some studies, but
31 were insignificant in others. As Baum *et al.* (2010) rightly observed this may be attributed to
32 a number of factors, including the differences in variables used, the research questions, and
33 perhaps the analyses conducted in each study. This goes to suggest that findings of studies
34 on neighbourhood satisfaction are context specific, and thus may be invalid if generalized.
35
36 However, from the published works, there appears to be a general agreement regarding the
37 relationship between neighbourhood satisfaction and several independent physical, social,
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

economic, safety and personal factors.

3. Data and methods

3.1 Data Source

The data used in this paper were derived from a larger study conducted to evaluate public housing in Ogun State southwest Nigeria. The study was based on household surveys conducted in nine of the twelve public housing estates constructed between May 2003 and December 2010 in urban areas of Abeokuta (the State capital), Ijebu-Ode, Ota, Agbara and Ibafo. It might interest you to know that Ogun is an agricultural and industrial State with a land area of about 16,762 square kilometres, representing around 1.8 percent of Nigeria's total land mass of 924,000 square kilometers. This makes Ogun the 24th largest of the 36 States of Nigeria in terms of land mass. According to the Federal Republic of Nigeria (2007), Ogun State has a population figure of 3,728,098 and an annual population growth rate of about 2.83 percent. Based on this, the Ogun State Regional Development Strategy (2008) estimated that by 2025, the state will have a population figure of about 9.3 million of which around 6.5 million representing 70 percent of the total population will be urban dwellers. These demographic dynamics definitely have implications for urban planning and housing development in the state.

Preliminary investigations by the researchers revealed that although the government of Ogun State constructed 1,411 housing units for the low, medium and high income earners between May 2003 and December 2010, only 709 representing around 50.3 percent of the completed housing units were actually occupied. Consequently, stratified sampling techniques were used in the selection of housing units for the study. A total of 670 (95 percent) of the occupied housing units were sampled; meaning that 670 households were selected for the survey. Structure questionnaire was the data collection instrument used for the survey. It had three sections. The first section was used to capture data on personal profile and demographics of the respondents. The second and third sections were designed to capture data on respondents' perception of the adequacy levels of their residences and satisfaction with dwelling units and neighbourhood environments in the nine housing estates sampled, respectively. However, only data derived from the first and third sections are reported in this paper.

To improve validity of the research findings, the questionnaire was pre-tested and feedback from this exercise incorporated into the final version of this instrument. Although 670 questionnaires were administered by hand to each household head or adult family member in

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

the housing units selected for the survey, 517 valid questionnaires representing about 77 percent of the administered questionnaires were retrieved by the researchers and subsequently used in the analyses.

3.2 Variable descriptions

From the review of literature, a number of variables were identified to be statistically associated with neighbourhood satisfaction in both formal and informal settlements. Two categories of variables used in this study have been consistently associated with residents' satisfaction with neighbourhood environment in several countries as summarized in Table 1 and the study by Lovejoy *et al.* (2010:46-47). The first category of variable includes nine socio-economic characteristics of the residents (e.g. sex, age, education, marital status, employment, income, household size, length of stay in the residence, tenure type). The second category is related 24 variables drawn from (i) physical (availability of good drinking water, power supply, recreational, educational and healthcare shopping facilities, location of residence, levels of noise and privacy, cleanliness of the environment, design of the environment in relation to the culture of the residents' culture, parking, place of worship, road network, open spaces/green areas) (ii) social (communal activities, rules and regulations in the neighbourhoods) (iii) safety (security of life and property, crime and anti-social activities) and (iv) economic (prices of goods and services, business and job opportunities) attributes/ characteristics of neighbourhood environment in the housing estates

In order to assess the levels of satisfaction with neighbourhood environments in the estate, the residents were asked to rate their satisfaction with each the aforementioned 24 neighbourhood attributes as found in the nine housing estates based on a 5-point Likert scale ranging from 1 for "Very Unsatisfied" to 5 for 'Very Satisfied'. None response was coded zero.

3.3 Data analysis

The SPSS software package Version 20 was used in the analysis of data derived from the survey. Due to the nature of the research questions, three types of analyses were conducted. The first was descriptive statistics which produced proportions and percentages for the nine variables used to capture the socio-economic characteristics of the respondents, mean satisfaction scores (MSS) for each of the 24 neighbourhood attributes, and mean neighbourhood satisfaction score (MNSS) for all the 24 neighbourhood attributes used in measuring neighbourhood satisfaction. On the one hand MSS represent the average

1 satisfaction scores on each of the 24 attributes used in assessing neighbourhood satisfaction
2 by all the 517 respondents, and were used to assess the extent to which all the respondents
3 were satisfied with each of the 24 attributes investigated. MNSS on the other hand denotes
4 the average satisfaction score by all the 517 respondents for all the 24 neighbourhood
5 attributes put together. This was used to examine the overall neighbourhood satisfaction
6 among the respondents in all the nine housing estates put together.

7
8 A factor analysis with principal component methods was the second type of analysis
9 conducted. The satisfaction scores for each of the 24 attributes used in measuring
10 neighbourhood satisfaction provided by the 517 respondents were subjected to factor
11 analysis. The purpose of this analysis was to identify the key dimensions of neighbourhood
12 satisfaction evaluation by the respondents. It was also used in dealing with the multi-
13 collinearity issue that would have arisen due to intracorrelations among the 24
14 neighbourhood attributes used in measuring neighbourhood satisfaction in the surveys.

15
16 The third and last type of analysis carried out was multivariate regression analysis.
17 Specifically, the Categorical Regression Analysis with optimal scaling technique otherwise
18 known as CATREG in SPSS was used to examine the variance explained by R^2 and to
19 identify the significant predictors of neighbourhood satisfaction among the respondents. In
20 this analysis, the mean neighbourhood satisfaction score (MNSS) was the dependent variable,
21 while the nine variables associated with the socio-economic characteristics of the respondents
22 and the factor scores of the three dimensions identified in the factor analysis were the
23 independent variables. This translated to 12 independent variables investigated in our model.
24 The choice of CATREG analysis in this study was based its advantages over general linear
25 models (GLMs) in the analysis of nominal, ordinal and numerical data as explained by Ibem
26 and Aduwo (2013) in their study on residential satisfaction in public housing in Ogun State,
27 Nigeria; its suitability for analyzing small samples and having very few assumptions as
28 Shrestha (2009) explained in an empirical study on the use of categorical regression models
29 with optimal scaling for predicting indoor air pollution concentrations inside kitchens in
30 Nepalese households.

31 To examine the reliability of the questionnaire instrument in measuring neighbourhood
32 satisfaction, Cronbach alpha coefficient test was conducted on the 24 attributes used in
33 assessing neighbourhood satisfaction. The test result showed Cronbach alpha values of 0.86,
34 which is more than 0.7 recommended by Pallant (2011). This goes to suggest that the scale of
35 measurement used in assessing neighbourhood satisfaction in the surveys is reliable.

4. Results

4.1. Respondents' socio-economic characteristics and Satisfaction with neighbourhood environment

Result of the descriptive statistical analysis reveals that the majority (64%) of residents encounter in the survey were men. Around 57% of them were between ages 31 years and 45 years, 96% had tertiary education, 88% were in marriage relationship and 71% had household size of four persons and above. The result also shows that 58% of the respondents were public sector employees, while 63% were low-income earners living in owner-occupied houses. Around 83% of the respondents were found that have lived in their current residences for over one year. This result suggests that residents who participated in the survey had adequate knowledge of their neighbourhood environment, and thus can be considered to be qualified in providing reliable data for the current research.

With regards to satisfaction with their neighbourhood environments, the result shows mean neighbourhood satisfaction score (MNSS) of 2.88; suggesting that the respondents were generally dissatisfied with neighbourhood environment in the nine housing estates investigated. Table 2 shows mean satisfaction scores (MSS) for each of the 24 attributes used in measuring neighbourhood satisfaction arranged in descending order of satisfaction level as rated by all the respondents.

<Insert Table 2 here>

From Table 2 it is evident that the respondents were most satisfied with the level of privacy in the housing estates with MSS of 3.89, followed by noise (3.45), location of homes (3.43) and level of crime and anti-social activities in the estates (3.41), respectively. They were however least satisfied with the distance between their homes and shopping facilities as this attribute has the lowest MSS of 1.86. The result (Table 2) clearly shows that of the 24 neighbourhood attributes, the respondents were satisfied with only eight (33%) of the total investigated. In fact, it can be seen from Table 2 that the respondents were not satisfied with attributes related availability and access to basic amenities and infrastructural facilities required for decent and hygienic living conditions. Therefore, it can be inferred from the result that the main sources of dissatisfaction are related to poor access to basic social services and urban infrastructural facilities within the housing estates.

4.2 Dimensions of neighbourhood satisfaction evaluation by the respondents

Table 3 shows result of the factor analysis performance on the 24 attributes used to assess neighbourhood satisfaction in the study. It is evident from Table 3 that the 24 attributes associated with neighbourhood satisfaction have been reduced to three main factors (dimensions). These factors show the dimensions of neighbourhood satisfaction evaluation by respondents in the survey, and the total variance explained across the 24 attributes is around 52%.

<Insert Table 3 here>

Table 3 also shows three factors with Eigenvalues of more than one. The first factor is related to access to services and infrastructural facilities, cleanliness of the housing estates, communal activities, business and job opportunities and cost of goods and services in the estates. This factor accounts for around 32% of the variance across the 24 variables with 18 variables loaded on it. The second factor is security, which accounts for around 13% of the variance across the 24 variables investigated, while the last is related to location of homes, noise, privacy and open space/green areas in the estates, which explained around 7% of the total variance across the 24 variables investigated. Notably, these are the neighbourhood features with significant influence on residents' satisfaction with neighbourhood environment in the nine housing estates investigated.

4.3 Predictors of neighbourhood satisfaction

Table 4 shows the result obtained in the multivariate regression analysis involving mean neighbourhood satisfaction score as the dependent variable and the nine socio-economic variables and three factors obtained in the factor analysis as the independent variables.

<Insert Table 4 here>

From the p-values in the sixth column of Table 4, it is evident that six variables emerged as the significant predictors of neighbourhood satisfaction in the survey. Examination of the beta weights in the first column of Table 4 reveals that the three strongest predictors of neighbourhood satisfaction in the order of importance are satisfaction with access to services and infrastructural facilities, cleanliness of the housing estates, communal activities, business/job opportunities and cost of goods and services (Factor 1); the location of homes, noise, privacy and open spaces/green areas (Factor 3) ; and security of lives and properties

(Factor 2) in the estates. In addition, three socio-economic variables, namely, employment, tenure types and marital status also emerged as significant predictors of neighbourhood satisfaction in the survey. A combination of these six independent variables significantly predicted neighbourhood satisfaction among residents in the nine public housing estates with $F(24, 516) = 3813.791, P < 0.000$. The R^2 value (0.995) of the model indicates that 99.5% of the variance in neighbourhood satisfaction is explained by the regression model; and thus our model can be said to be well estimated.

5. Discussion

In relation to the research questions of the study, three key issues were identified from result of the analyses of our survey data. The first issue deals with the extent to which the respondents were satisfied with their neighbourhood environment. The second is the dimensions of respondents' evaluation of neighbourhood satisfaction; and the last but not the least is concerned with the predictors of neighbourhood satisfaction among the respondents.

First, our survey data revealed that the respondents were generally dissatisfied with neighbourhood environment in the nine public housing estates sampled. As shown in Table 2, they were satisfied with only eight of the 24 attributes used to assess neighbourhood satisfaction. These attributes are related to security, location of home, noise and privacy, closeness of home from places of work, rules and regulations and design of the estates in relation to their culture. The main source of neighbourhood satisfaction was poor access to basic services and infrastructure, level of cleanliness of the estates, cost of goods and services, lack of communal activities, business and job opportunities within the estates. In the context of public housing environment, this finding appears to support previous study by Djebarni and Al-Abed (2000) in suggesting that residents were most satisfied with the level privacy in their neighbourhoods. It is also consistent with the existing studies (Olatubara and Fatoye 2007; Fatoye and Odusami, 2009; Ilesanmi 2010; Ibem and Aduwo, 2013) indicating that residents in public housing estates in Lagos and Ogun States Southwest Nigeria were least satisfied with access to neighbourhood facilities and city-wide services. Our survey data however contradict findings by Ukoha and Beamish (1997) in Abuja-Nigeria and Ha (2003) in South Korea, indicating that residents in public housing were satisfied with access to key neighbourhood facilities. Similarly, our study does not support that by Salleh (2008) on neighbourhood factors in private low-cost housing in Terengganu and Penang in Malaysia, which revealed that residents were generally satisfied with services provided by providers,

neighbourhood facilities and environment. Admittedly, differences in physical, socio-economic contexts and peculiarities of each study may have accounted for the disparities in result.

Second, the result also indicates that residents encountered in the survey understood and evaluated neighbourhood satisfaction based on three key dimensions: (i) access to services and infrastructural facilities, cleanliness of the housing estates, social contact, business/job opportunities and prices of goods and services of living in the neighbourhoods (ii) security and (iii) location of homes, levels of noise and privacy and open spaces/green areas in the housing estates. As shown in Table 4, these are the three key factors associated with the physical, safety, social and economic attributes of the neighbourhood environments in all the estates that the residents identified to be important in their understanding and evaluation of neighbourhood satisfaction. This implies that these are the factors with significant influence on residents' satisfaction with neighbourhood environment in public housing. Relating this result to studies in other contexts, it is evident that our survey data are consistent with the existing studies (including Vrbka and Combs, 1993; Braubach, 2007; Leslie and Cerin, 2008; Greenberg, 2009; Baum et al., 2010; Table 1) which show that these are indeed among the key neighbourhood features residents consider in their perception of neighbourhood satisfaction. From the evidence available in this study, it can be inferred that despite differences in contexts, residents tend to consider issues related to security, access to services and infrastructural facilities, noise, privacy, open spaces and green areas as well as social and economic well-being in their assessment of satisfaction with neighbourhood environments. This result is to be expected because these issues are associated with the physiological, psychological, health and security needs and by extension the quality of life and survival of humans in the ecological system.

Lastly, six variables including three neighbourhoods attributes ((i) access to services and infrastructural facilities, cleanliness of the estates, social contact, business/job opportunities and cost of goods and services (ii) location of homes, noise, privacy and open spaces; and (iii) security of lives and property in the estates, and socio-economic variables (employment, marital status and tenure) emerged as the significant predictors of neighbourhood satisfaction among the respondents. In fact, the result indicates that access to services and infrastructural facilities, cleanliness of the estates, communal activities, job opportunities and cost of goods and services within the estates was the strongest predictor of neighbourhood satisfaction. In comparison with previous studies in other countries as highlighted by Sirgy and Cornwell (2002) and also summarized in Table 1, it is obvious that our survey data are in line with

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

published works in demonstrating that neighbourhood attributes are the key predictors of neighbourhood satisfaction. In addition, this study also appears to be in support of findings in previous studies indicating that marital status (Galster and Hesser, 1981; Lu, 1999; Parkes *et al.*, 2002) and tenure (Lu, 1999; Parkes *et al.*, 2002) are also predictors of neighbourhood satisfaction. Specifically, our survey data reveal that respondents employed in the public sector felt more satisfied with their neighbourhood environment than private sector employees. One possible explanation for this is that the housing estates were constructed and are owned by the government, who is also the employer of the majority of the respondents. Arguably, this would have contributed to influencing the respondents' perception of the neighbourhood environment in the estates. Similarly, respondents in owner-occupied homes were found to be more satisfied than their counterparts living in rented houses. The feeling of ownership of a home, which is a sign of accomplishment among Nigerians, may have contributed to this result. Also those currently found to be in marriage relationship were more satisfied with their neighbourhood than those who were not. The study however appears to contradict findings of previous studies indicating that age (Lu, 1999; Parkes *et al.*, 2002; Baum, *et al.*, 2010), income and educational level (Lu, 1999; Baum, *et al.*, 2010) and length of stay (Fang, 2006; Baum, *et al.*, 2010) are also predictors of neighbourhood satisfaction. Broadly speaking, the observed similarities in the result of our surveys and the existing studies as they relate to the predictors of neighbourhood satisfaction is one the one hand an indication that within and outside the context of public housing, the predictors of neighbourhood satisfaction are similar and closely related to some extent. On the other hand, the disparities may be explained in the context of differences in socio-economic composition of the respondents, data sources, variables used and the types of data analyses conducted in the studies.

6. Conclusion and recommendations

In this study, we have investigated and analyzed the extent to which residents in public housing in urban areas of Ogun State, Nigeria are satisfied with their neighbourhood environments; the dimensions of neighbourhood satisfaction evaluation by the residents; and the predictors of neighbourhood satisfaction in the estates sampled. The results provide insights into neighbourhood attributes and socio-economic variables that contribute to predicting neighbourhood satisfaction in the context of public housing in Nigeria. As the result indicates, the respondents were generally dissatisfied with the neighbourhood

environment in the housing estates. The main source of dissatisfaction was poor access to basic services and infrastructural facilities, unhygienic environment, low communal activities, limited business and job opportunities and cost of goods and services in the estates. At a glance, this result can be considered to have implications on the quality of life, well-being and behavioural attitudes of residents in the nine housing estates investigated.

Our analysis of the dimensions of neighbourhood satisfaction evaluation and the predictors of neighbourhood satisfaction is considered to be important in understanding preferences for different neighbourhood attributes. It appears interesting that the three dimensions of neighbourhood satisfaction evaluation identified in the factor analysis also emerged as the strongest predictors of neighbourhood satisfaction. This means that these three neighbourhood features make the greatest contribution to neighbourhood satisfaction among residents of public housing in the study area. Again, this result has three key implications for urban planning and housing development.

First is that in the location of public housing projects, different environmental, social and economic factors must be given adequate consideration. Specifically, the choice of housing schemes should be in such locations that make it easier for the extension of basic amenities (e.g. water, electricity) and urban infrastructural services to such neighbourhoods at minimal costs. Also schools, healthcare, recreational and other social infrastructural facilities needed for social well-being and development of residents should mandatorily form an integral part of housing development processes. This can contribute to a drastic reduction in the travelling distance and time between homes and the location of these vital services. In addition, there is a need for the development of a robust strategy that fosters effective management and maintenance of public housing estates. This calls for a closer collaboration and partnership between urban planners, housing developers and residents' Community Development Associations (CDAs) in strategic areas of service provision and environmental management in public housing estates.

Second, the study also implies that there are low business and job opportunities in the public housing estates investigated. Evidence in this study indicates that the respondents were dissatisfied with economic environment in the estates; suggesting that neighbourhood environment in the estates was perceived by the residents as not providing them with the expected economic support. It is therefore, suggested that this should be addressed through by the provision of spaces for small scale economic activities in the planning, designing and development of public housing projects for low-and-middle income earners. This can encourage the operation of home-based enterprises and create business and job opportunities

for the residents without resulting to unpleasant health and environmental consequences. Lastly, our survey data have reinforced urban residents' preferences for better access to services and infrastructural facilities, security of their lives and property, quietness and privacy in their neighbourhoods. This implies that residents of public housing in urban areas in Nigeria tend to show higher levels of satisfaction with their neighbourhood environment if these features are guaranteed. Therefore, there is a need for urban planners and housing developers to continue to explore and engage in innovative planning and design strategies that ensure that the existing and new developments met these requirements.

Admittedly, this study is limited in a number of ways. First is that only 24 neighbourhood attributes were considered, leaving behind several other variables like those associated with dwelling units in the survey. Second is that the data were based on cross-sectional surveys. Lastly, the study is also focused on nine public housing constructed between 2003 and 2010; and thus, the result cannot be generalized for all public housing constructed before and after this period of time in the study areas. Despite of these limitations, the study can be considered to have achieved its goal by improving understanding of neighbourhood satisfaction in the context of public housing in Nigeria; and thus providing the basis for further studies on the subject.

References

- Am'érigo, M., Aragon'es, J.I.(1990). Residential satisfaction in council housing. *Journal of Environmental Psychology*. 10, 313–325.
- Batson, C. D. and Monnat, S. M. (2013). Neighbourhood Disorder and Resident Sentiment in the Wake of the Las Vegas Foreclosure Crisis. Population Association of America 2013 Annual Meeting Submission.
- Basolo, V. and Strong, D. (2002) Understanding the neighbourhood: from residents' perceptions and needs to action, *Housing Policy Debate*, 13 (1), 83–105.
- Baum, S., Arthurson, K. and Rickson, K. (2010). Happy People in Mixed-up Places: The Association between the Degree and Type of Local Socioeconomic Mix and Expressions of Neighbourhood Satisfaction. *Urban Studies*, 47(3) 467–485
- Berk, M. G. (2010).The Concept of Neighbourhood in Contemporary Residential Environments: An Investigation of Occupants' Perception. Munich Personal RePEc Archive MPRA Paper No. 22481.Retrieved from <http://mpa.ub.uni-muenchen.de/22481/> On September 24, 2013.
- Braubach, M. (2007). Residential Conditions and Their Impact on Residential Environment Satisfaction and Health: Results of the WHO Large Analysis and Review of European

Housing and Health Status (LARES) Study. *International Journal of Environment and Pollution*, Vol. 30(3/4), 384 - 403.

- 1
2 Brooks-Gunn, J., Duncan, G. J., Klebanov, P. K. and Sealand, N. (1993). Do Neighbourhoods
3 Influence Child and Adolescent Development? *American Journal of Sociology*, 99(2),
4 353-395.
5
- 6 Cater, J. and Jones, T. (1989). *Social Geography: An Introduction to Contemporary Issues*.
7 London: Edward Arnold Publishers.
8
9
- 10 Caro, L.M. and Gracia, J.A.M. (2007). Cognitive-Affective Model of Consumer Satisfaction.
11 An Exploratory study within the framework of a Sporting Event. *Journal of Business*
12 *Research*, 60 (2007), 108-114
13
- 14 Chapman, D. W. and Lombard, J. R. (2006) Determinants of neighborhood satisfaction in
15 fee-based gated and nongated communities, *Urban Affairs Review*, 41: 769–799.
16
17
- 18 Clement, O. I. and Kayode, O. (2012). Public housing provision and user satisfaction in Ondo
19 State, Nigeria. *British Journal of Arts and Social Sciences*, 8(1), 103-111.
20
21
- 22 Djebarni, R. and Al-Abed, A. (2000). Satisfaction Level with Neighbourhoods in Low-
23 Income Public Housing in Yemen. *Property Management*, 18(4), 230-242.
24
25
- 26 Fang, Y. (2006). Residential Satisfaction, Moving Intention and Moving Behaviours: A
27 Study of Redeveloped Neighbourhoods in Inner-City Beijing. *Housing Studies*, 21(5),
28 671–694.
29
- 30 Federal Republic of Nigeria (2007), Official gazette on the breakdown of the national and
31 state provisional totals 2006 census, SI No. 23 of 2007, No. 24, Vol. 94, May 15 Lagos:
32 Federal Republic of Nigeria
33
34
- 35 Filfil, M. (1999) *The Housing Environment and Women's Health: The Case Study of*
36 *Ramallah al Tahta, Birzeit , Palestine*. Institute of Community and Public Health/
37 Environmental Health Unit; Birziet University
38
39
- 40 Galster, G. C. (1985). Evaluating indicators for housing policy: Residential satisfaction vs
41 marginal improvement priorities. *Social Indicators Research*, 16(4), 415–448.
42
43
- 44 Galster, G. C. (1987). Identifying the correlates of dwelling satisfaction: An empirical
45 critique. *Environment and Behavior*, 19(5), 537–568.
46
47
- 48 Galster, G. C., and Hesser, G. W. (1981). Residential satisfaction: Compositional and
49 contextual correlates. *Environmental and Behaviour*, 13(6), 735–758.
50
- 51 Ge, J. and Hokao, K. (2006). Research on Residential Lifestyles in Japanese Cities from the
52 Viewpoints of Residential Preference, Residential Choice and Residential Satisfaction.
53 *Landscape and Urban Planning*, 78, 165–178.
54
55
- 56 Gifford, R. (1997). *Environmental Psychology: Principles and Practice*. Boston: Allyn and
57 Bacon.
58
59

- Greenberg, M. R. (2009). Neighbourhood Quality and the Older Elderly: Theory and Two Pilot Tests. *Human Ecology Review*, 16(2), 184-194.
- 1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
- Gruber, K. J. and Shelton G. G. (1987). Assessment of Neighbourhood Satisfaction by Residents of Three Housing Types. *Social Indicators Research*, 19(3),303-315.
- Ha, S.-K. (2008). Social housing estates and sustainable community development in South Korea. *Habitat International*, 32, 349–363.
- Howley , P., Scott, M. and Redmond, D. (2009) Sustainability versus liveability: an investigation of neighbourhood satisfaction, *Journal of Environmental Planning and Management*, 52 (6), 847-864
- Higgit, N. C. and Memken, J. A. (2001). Understanding Neighbourhoods. *Housing and Society*. 28(1&2), 29-46.
- Hipp, J.(2010). What is the ‘Neighbourhood’ in Neighbourhood Satisfaction? Comparing the Effects of Structural Characteristics Measured at the Micro-neighbourhood and Tract Level, *Urban Studies*, 47(12) 2517–2536.
- Horn, A. (2004). Reflections on the Concept and Conceptualisation of the Urban Neighbourhood in Societies in Transition: the Case of Pretoria (South Africa). *Dela* 21, 329-340.
- Hur, M. and Morrow-Jones, H. (2008). Factors that Influence Residents’ Satisfaction With Neighbourhoods. *Environment and Behaviour*, 40(5), 619-635.
- Hur, M., Nasar, J. L., and Hur, B. C. M. (2010). Neighbourhood Satisfaction, Physical and Perceived Naturalness and Openness. *Journal of Environmental Psychology*, 30, 52–59.
- Ibem, E. O., and Amole, D. (2013). Residential satisfaction in public core housing in Abeokuta, Ogun State, Nigeria. *Social Research Indicator*, 113(1), 563-581
- Ilesanmi, A. O. (2010). Post-occupancy evaluation and residents’ satisfaction with public housing in Lagos, Nigeria. *Journal of Building Appraisal*, 6, 153–169
- Jang, S. and Namkung, Y.(2009). Perceived Quality, Emotions, and Behavioral Intentions: Application of an Extended Mehrabian-Russell model to Restaurants, *Journal of Business Research*, 62(2009), 451-460
- Jiboye, A. D. (2009). Evaluating tenant’s satisfaction with public housing in Lagos. Nigeria *Town Planning and Architecture*, 33(4), 239–247.
- Kaitilla, S. (1993). Satisfaction with public housing in Papua New Guinea: the case of West Taraka housing scheme. *Environment and Behavior*, 25(4), 514-545.
- Kantrowitz, M. and Nordhaus, R. (1980). The Impact of Post Occupancy Evaluation Research: A Case Study. *Environment and Behavior* 12 (4) 508-519.

- 1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
- Kim, W.G. and Moon, Y.J. (2009). Customers' Cognitive, Emotional and Actionable response to the Servicescape: A test of the Moderating effect of the restaurant type, *International Journal of Hospitality Management*, 28(2009), 144-156
- Krishnan, H.S. (1996). Characteristics of memory associations: A consumer-based brand equity perspective. *International Journal of Research in Marketing* 13 (1996),389-405
- Leby, J. L. and Hashim, A. H. (2010). Liveability Dimensions and Attributes: Their Relative Importance in the Eyes of Neighbourhood Residents. *Journal of Construction in Developing Countries*, 15(1), 67–91.
- Lee, S. Ellis, C. D. and Kweon, B. & Hong, S. (2008). Relationship Between Landscape Structure and Neighbourhood Satisfaction in Urbanized Areas. *Landscape and Urban Planning*, 85, 60–70.
- Leslie, E. and Cerin, E. (2008). Are Perceptions of the Local Environment Related to Neighbourhood Satisfaction and Mental Health in Adults? *Preventive Medicine*. Retrieved from www.sciencedirect.com on 20th July 2010
- Lovejoy, K., Handy, S. and Mokhtarian, P. (2010). Neighbourhood satisfaction versus traditional environments: an evaluation of contributing characteristics in eight California neighbourhoods. *Landscape and Urban Planning*, 97:37-48
- Lu, M. (1999). Do people move when they say they will? Inconsistencies in individual migration behaviour, *Population and Environment*, 20(5), 467–488.
- Mehrabian, A. and Russell, J.A. (1974). *An Approach to Environmental Psychology*. MIT Press, Cambridge
- Mohan, J. and Twigg, L. (2007). Sense of place, quality of life and local socioeconomic context: evidence from the survey of English housing, 2002/03, *Urban Studies*, 44(10), 2029–2045.
- Mohit, M. A., Ibrahim, M., and Rashid, Y. R. (2010). Assessment of residential satisfaction in newly designed public low-cost housing in Kuala Lumpur, Malaysia. *Habitat International*, 34, 18–27.
- Morris, E.W. and Winter, M. (1975). A theory of Housing Adjustment Housing Norms, Housing Satisfaction and the Propensity to Move. *Journal of Marriage and the Family* 37 (1) 97-88.
- Pallant, J. (2011). *SPSS survival manual-a step by step guide to data analysis using SPSS* (4th ed.). Australlia: Allen and Unwin.
- Ogun State Regional Development Strategy. (2008). *Our collective responsibility*. Ikeja: Comprehensive Project Management Services Limited
- Oktay, D. and Marans, R. W. (2011). Neighbourhood Satisfaction among Diverse Groups of Inhabitants: Findings from Famagusta Area Study. ENHR Conference 2011, 5-8 July, Toulouse.

- 1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
- Olatubara, C. O. and Fatoye, E. O. (2007). Evaluation of the satisfaction of occupants of the Abesan public low-cost housing estate in Lagos State, Nigeria. *The Nigerian Journal of Economic and Social Studies*, 49(1), 5-9.
- Oliver, R.L. (1993). Cognitive, Affective, and Attribute bases of the Satisfaction Response. *Journal of Consumer Research*, 20:418-430
- Parkes, A., Kearns, A. and Atkinson, R. (2002). What makes people dissatisfied with their neighbourhoods? *Urban Studies*, 39(13) 2413–2438
- Permentier, M., Bolt, G. and van Ham, M. (2011). Determinants of Neighbourhood Satisfaction and Perception of Neighbourhood Reputation, *Urban Studies*, 48(5) 977–996,
- Russell, J.A. and Pratt, G. (1980). A Description of the Affective Quality Attributed to Environments. *Journal of Personality and Social Psychology*, 38(2), 311-322
- Salleh, A. G. (2008). Neighbourhood factors in private low-cost housing in Malaysia. *Habitat International*, 32: 485–493.
- Shrestha, S. L. (2009). Categorical regression models with optimal scaling for predicting indoor air pollution concentrations inside kitchens in Nepalese Households. *Nepal Journal of Science and Technology*, 10(2009), 205-211.
- Sirgy, M. J. and Cornwell, T. (2002). How Neighbourhood Features Affect Quality of Life. *Social Indicators Research*, 59(1), 79-114.
- Ukoha, O. M., and Beamish, J. O. (1997). Assessment of residents' satisfaction with public housing in Abuja, Nigeria. *Habitat International*, 21(4), 445–460.
- Vrbka, J. and Combs, E. R. (1993). Predictors of Neighbourhood and Community Satisfactions in Rural Communities. *Housing and Society*. 20(1), 41-49.
- Warlopa, L., Ratneshwarb, S. and van Osselaer, S.M.J. (2005). Distinctive brand cues and memory for product consumption experiences. *International Journal of Research in Marketing*, 22 (2005) 27–44
- Westaway, M. S. (2006). A Longitudinal Investigation of Satisfaction with Personal and Environmental Quality of Life in an Informal South African Housing Settlement, Doornkop, Soweto. *Habitat International*, 30, 175–189.
- Westaway, M.S (2009) Aspects of environmental quality of life that affect neighbourhood satisfaction in disadvantaged and advantaged Johannesburg communities, *Development Southern Africa*, 26(3), 447-458

Table 1 : Physical, Social and Safety factors associated with neighbourhood satisfaction

Authors	Predictors of Neighbourhood Satisfaction	Studies
Vrbka and Combs (1993)	Satisfaction with neighbours, location of home and condition of nearby housing	Study on factors associated with neighbourhood satisfaction among rural households.
Djebarni and Al-Abed (2000)	Level of privacy, distance to work, location of schools and shops.	Neighbourhood satisfaction in low-income public housing estates in Yemen
Parkes <i>et al.</i> (2002)	General appearance of neighborhoods, satisfaction with schools, safety, housing satisfaction	Study to investigate how socio-demographic characteristics, area-type and subjective neighbourhood attributes influence neighbourhood satisfaction using data from the 1997/98 Survey of English Housing
Basolo and Strong (2002)	Housing condition, quality of public services, safety, social contact	Survey of 325 neighbourhood residents conducted between 1999 and 2000 to identify the strength and weaknesses of neighbourhoods as perceived by residents and evaluate ongoing neighbourhood revitalization projects in New Orleans in the US
Horn (2004)	Social disorder (e.g. crime and insecurity, loitering, hawking and street prostitution) and physical disorder (e.g. traffic noise and land use transgressions)	Study of neighbourhood satisfaction in Pretoria , South Africa
Westaway (2006)	Housing characteristics	Longitudinal investigation to determine amongst others neighbourhood satisfaction in an informal settlement in South Africa
Braubach (2007)	Noise and perceived safety	Review paper on the results of the WHO large analysis and review of European housing and status (LARES) study
Mohan and Twigg (2007)	Satisfaction with dwellings and fellow-residents, nuisance and noise	Study to investigate sense of place, quality of life and local socioeconomic context using data derived from the survey of English housing 2002/2003
Leslie and Cerin (2008)	Availability of green spaces, safety and walkability, access to amenities, level of crime, traffic load and noise and social capital	Study to investigate whether Perceptions of the local environment relates to neighbourhood satisfaction and mental health in adults
Lee <i>et al.</i> (2008)	Naturalness (quality of landscape)	Study on the relationship between landscape structure and neighbourhood satisfaction in urban areas
Westaway (2009)	Housing and personal safety	Aspects of environmental quality of life that affect neighbourhood satisfaction. Using data derived from 303 tenure allocated residents of an informal settlement in Soweto, 160 residents of a squatter camp in the same informal settlement, and 375 black and 358 white residents of a middle-class Johannesburg suburb
Greenberg (2009)	Crime	case study of neighbourhood satisfaction among the elderly in New Jersey, USA
Howley et al., (2009)	Environmental quality, noise, lack of community involvement, traffic, lack of	A study of neighbourhood satisfaction Dublin's central city, Ireland

Hur <i>et al.</i> (2010)	services and facilities, perceptions of safety, quality of dwelling units, neighbourly interaction and involvement Building density, presence of trees and open spaces.	Conceptual model to study neighbourhood satisfaction and found that it has multidimensional characteristics.
Hipp (2010)	Perceived crime, social disorder and physical disorder	Study to tests whether the social context of the local micro- neighbourhood or of the broader census tract more strongly affects neighbourhood satisfaction using the neighbourhood sub-sample from the American Housing Survey for 1985, 1989 and 1993.
Baum <i>et al.</i> , (2010)	Living in public housing, satisfaction with the current home, social network ; access to services	The potential impact of local community or neighbourhood characteristics on perceived neighbourhood satisfaction using data obtained from Household Income and Labour Dynamics Australia survey
Permentier <i>et al.</i> (2011)	Dwelling units' and neighbourhood attributes	Determinants of neighbourhood satisfaction and perception of neighbourhood reputation using data from a purpose-designed survey to study neighbourhood reputations in the city of Utrecht, the Netherlands
Oktay and Marans (2011)	Attractiveness and environmental maintenance (for students) and livability and sense of community (for local residents)	Comparative study of neighbourhood satisfaction among local residents and mobile student population in Cyprus

Table 2: Satisfaction with neighbourhood characteristics of housing estates

<i>Neighbourhood characteristics of housing estates</i>	MSS
Privacy	3.89
Noise	3.45
Location of home	3.43
Crime and anti-social activities	3.41
Security of life and property	3.38
Rules and regulations	3.28
Design of estate in relation to your culture	3.19
Distance between home place of work	3.14
Cleanliness of the housing estate	2.90
Places of worship	2.77
Communal activities	2.72
Road network	2.69
Parking spaces	2.67
Proximity of home to public infrastructure and urban services	2.59
Power supply	2.46
Water supply and sanitary services	2.44
Distance between home and Children's school	2.41
Open Spaces and green areas	2.15
Distance between home and the nearest market	2.12
Proximity of home to medical/ healthcare facilities	2.00
Business and job opportunities within and around the estate	2.00
Distance between home and recreation / sporting facilities	1.90
Prices of goods and services in the housing estates	1.90
Proximity of home to shopping facilities	1.86

Table 3: Satisfaction with neighbourhood characteristics

	Factor Loadings	Eigenvalue	% of Variance	Cum %
Factor 1: Access to services and infrastructural facilities, cleanliness of the estates, social and economic environment		6.361	31.80	31.80
Water supply and sanitary services	.661			
Power supply	.660			
Road network within the estate	.667			
Parking Spaces provided in the estate	.568			
Distance between home and recreation / sporting facilities	.673			
Proximity of home to public infrastructure and urban services	.597			
Proximity of home to shopping facilities	.601			
Distance between home place of work	.512			
Proximity of home to medical/ healthcare facilities	.642			
Distance between home and Children's school	.453			
Distance between home and the nearest market	.707			
Distance between home and nearest places of worship	.705			
Prices of goods and services in the housing estates	.719			
Business and job opportunities within and around the estate	.460			
Communal activities in the housing estates	.548			
Design of estate in relation to your culture	.645			
Rules and regulations in the housing estates	.615			
Cleanliness of the housing estate	.629			
Factor 2 : Security		2.572	12.86	44.66
Security of life and property in the housing estates	.542			
Level of crime and anti-social activities in the housing estates	.462			
Factor 3: Location of homes, noise, privacy and open spaces/green areas in the estates				
Location of residence in the housing estate	.481	1.391	6.95	51.61
Level of noise in the housing estates	.477			
Level of privacy	.594			
Open spaces and green areas in the housing estate	.578			
<i>Total variance explained= 52%</i>				

Table 4: Regression analysis of mean neighbourhood satisfaction scores, socio-economic and neighbourhood satisfaction variables.

Variables	Standardized Coefficients		df	F	p
	Beta	Estimate of Std. Error			
Respondent's Sex	.005	.003	1	2.209	.138
Age	.004	.007	2	.245	.783
Marital Status	.009	.004	4	5.288	.000*
Highest educational qualification	.008	.010	3	.551	.648
Employment sector	.013	.005	2	7.201	.001*
Average monthly income	-.005	.008	3	.360	.782
Length of stay	-.001	.004	1	.062	.804
Household size	-.006	.004	1	1.899	.169
Tenure types	.008	.004	4	5.433	.000*
Factor 1 : Access to services and infrastructural facilities, cleanliness of the estates, social and economic environment	.884	.010	1	7094.374	.000*
Factor 2: Security	.146	.008	1	366.538	.000*
Factor 3: Location of homes, noise, privacy and open spaces	.196	.009	1	426.637	.000*

**significant predictors*