

Impacts of Households' Prior Experience on Current Housing Satisfaction: A Study of Selected Estates in Lagos, Nigeria

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Abstract

Researchers in housing satisfaction mostly limit selection of research variables to current on-site parameters of the housing environment. Thus, variables perceived as not having explicit relationships with overall housing satisfaction are often relegated. However, users' current satisfaction ratings are usually influenced by such relegated background variables, including user's prior-experience in erstwhile housing environments. This paper explores the prospects of users' housing background experience in influencing the build-up to determining current levels of satisfaction. The survey utilised structured self-administered questionnaires on a sample of 572 households in selected estates in the study area. The retrieved 283 were edited and analysed with Statistical Package for Social Sciences (SPSS) version 19. Housing relative satisfaction indices were calculated for the respective estates first from mathematical formula and then compared with mean scores. A hypothesis was tested with Spearman's Rank Order Correlation to establish a significant relationship between Satisfaction with Prior Housing Environment (SATPRIORHSE) and current Overall Housing Relative Satisfaction (OVERALLHRSAT). A further test with one-way ANOVA confirmed the outcome of the earlier test. The study revealed positive correlation of though, low coefficient of +0.281, between SATPRIORHSE and OVEARALLHRSAT. This was significant at the 0.01 (2-tailed) level. This analysis showed a significant relationship between the respondents' prior housing and the recorded level of housing satisfaction in the current estates. The respondents who experienced various levels of low-satisfaction with their former housing recorded higher rates of satisfaction with current housing in the estates, than those who had better prior experiences. The research underscores the relevance of 'prior experience' variable in assessment of current housing satisfaction levels. When rigorous financial analysis is involved, an underplay of such variable could lead to wrong conclusions, with misapplication of research outcomes accompanied by serious financial implications. The user's prior-experience determines the housing norms on which satisfaction is premised.

Keywords: Housing, housing experience, housing norm, housing research variables, user satisfaction

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1.0 INTRODUCTION

The concern of the real estate sector had been traditionally more on brick and mortar elements of the buildings than the users and their preferences. With an ever-increasing Nigerian national housing deficit which was in thousands in the 1980s but now put at about 17 million, the user had been left with little choice in the face of both qualitative and quantitative scarcity thereby creating a sellers' market. From this stance, the user had little choice in the face of emerged conditions of "take it or leave it" syndrome. The producer on the other hand could effectively cash in on this, to lower standards as cost cutting measure. Similarly, the pressure on developers to deliver as many housing units as possible is known to have had compromising consequences for quality and sustainability (Rosenberger, 2003). On the public housing side, Ibem and Amole (2011) noted that standards over the years were known to have been hampered by the social nature of delivery which, became either a populist agenda or one simply focused on social welfare. Even when housing provision is stimulated by entrepreneurial motives, the need to make extra profit or/and exploit its scarcity may result in several forms of marginal adjustments. Besides, most housing programmes had been based on developers' standards rather than users' requirements and preferences (Jiboye, 2010). This, as Kaitilla (1993) earlier pointed out, at times, resulted in the sacrifice of essential utilities necessary for consumer satisfaction.

However, there is ample evidence in the housing market today that the concern of user with the housing environment is coming into focus (Mohit et al., 2010). The need to include rigorous analysis of consumer satisfaction in investment analysis can thus, no longer be overemphasised. As such, companies interested in gaining customer input usually conduct systematic and continuous assessment of the actual levels of customer satisfaction (Torbica & Stroh, 2001). Deng et al. (2010) confirmed the importance of user satisfaction as a crucial tool for producers to differentiate themselves from other competitors towards the enhancement of market share.

In the hierarchy of human needs, housing ranks next only to food (Jiboye, 2009; Oladapo, 2006). Housing affects the health, productivity and general quality of lives of the user. Housing is intricately interwoven with physiological and psychological well-being, character formation and moulding, as well as social and economic productivity of man. Furthermore, housing is a status symbol and an expression of the attainment of manhood in the traditional African society. The extent to which housing will achieve these, especially among the several other influences on the user (and the society), would not only be determined by, but will also be interpreted as the degree of user satisfaction with the housing environment.

Researchers across the globe including Merrill et al. (2006) in the US, Agbola and Adegoke (2007) in Nigeria, and Muhammad et al. (2010) in Malaysia attested to the assertion that household's investment in housing constitutes the family's single largest lifetime expenditure. Meanwhile, Lee and Parrott (2004) acknowledged that there are diverse housing expectations and needs among users. Thus, the degree to which these diverse expectations and needs have been met (user satisfaction) deserves not only to be properly understood but the factors responsible for the levels of its attainment also deserve in-depth analysis. This analysis provides a justification for the huge capital expenditure on the part of the user as well as a measurement of success of delivery policy and actions on the part of the developer organisations; both public and private. It also provides a tool for housing managers in decision making process.

From economic perspectives, the extent of the users' satisfaction recorded in the housing environment is a key factor in the determination of their (users') willingness to pay for housing services. This in turn has profound effects on project viability and replication possibilities. The investors need to be proactive in the forecast of market segmentation they are set to capture by assessing satisfaction with existing housing projects. This is necessary to achieve or/and maintain competitive edge in the housing market. A growing body of evidence, confirmed by Torbica and Stroh (2000), suggests that delivering high quality housing and high customer satisfaction is rewarded with economic returns. Similarly, an improvement in user satisfaction builds up the reputation of the developer now and in future projects. The implications for non-satisfaction by user, however, could have consequences for extension of projects' break-even point and accumulation of interest on construction loans which in turn would eat deep into profitability and effect a distortion in investment projections.

The search for user satisfaction parameters in housing is an ongoing process. Jiboye (2009) had identified one of the tasks confronting housing delivery authorities in Nigeria as that of identification of the relevant factors which determine users' satisfaction with their housing and how to use this information in housing planning and development. It had further been established that users' satisfaction with housing is non-static and could only be measured in relative terms (Jiboye, 2009; Ukoha & Beamish, 1997). The explanations of Ibem and Amole (2013) on the perception of housing satisfaction, lent credence to its measurement being subject of both objective and subjective variables (Mohit & Nazyddah, 2011). The perception of satisfaction, according to Potter and Cantarero (2006), encapsulates the opinion of many earlier researchers in agreeing to view it as a complex, multi-dimensional, global appraisal combining *cognitive*, *affective* and *conative* facets. The *affective* component was both emotional and evaluative (e.g. place attachment, etc.) while the *cognitive* represented aspects of perception and beliefs (e.g. about physical environment, other residents, etc). The *conative* component measured behavioural intentions (e.g. of moving or staying, etc.).

Meanwhile, the methodological approach of cross-sectional survey in ascertaining user satisfaction has necessitated a process where respondents are lumped together at certain location and a particular time to be tested for user perceptions in housing environment. While this approach is valid in determining satisfaction level at that instant, it might not have enlisted all the variables building up to the expression of recorded level of individual or collective state of satisfaction. Even in cases where the research core was focused on factors affecting user satisfaction, some factors which may not enjoy direct but curvilinear relationship with current housing situation might be overlooked. Unfortunately, current perceptions usually have some of their roots in these somewhat overemphasised factors. An evaluation of user satisfaction without socio-psychological underpinnings which could result from housing experience might produce a result so hazy that would not be very valuable as input into policy instrument in housing delivery. However, a major root of housing satisfaction often left unconsidered is the background from which a current user in a housing estate is coming. Most satisfaction studies in Nigeria (including Ibem & Amole, 2013; Ikurekong, 2009; Ogu, 2002; Oladapo, 2006) did not indicate the inclusion of housing background or experience and its derivatives in their research. It is the object of this paper to explore the relevance of users' background experience in the build-up to influencing their cognitive base in the determination of what is currently seen as their levels of housing satisfaction. This work is presented in six sections including Introduction, Literature Review and Methodology. Others are Results/Discussions and Conclusions. The first section (Introduction) gave a background to the study as well as established the research problem while the next section delved into relevant literature about the research problem. The third section (Methodology) threw light on the method employed in carrying out the study. The latter is especially necessary in the quest to validate research outcomes. Section four presented and discussed the outcome of the study while conclusions were drawn in the fifth section as contributions to knowledge, for application in the field of study.

■2.0 LITERATURE REVIEW

Housing represents the best of physical, conceptual and historical evidences of a people's culture and civilisation. An increase in dwelling and environmental quality satisfaction improves people's quality of life, thus directly affecting people's satisfaction with their lives (Kellekci & Berkoz, 2006). The willingness of users to pay for housing services is a function of the satisfaction they derive from it (Hanif et al., 2010). The outcomes of studies in housing satisfaction have been seen by Abidin et al. (2019) as having become a veritable tool - the understanding of which would aid efficiency, among the various stakeholders along the housing value chain. This is the basis on which post occupancy evaluation (POE) is carried out to assure quality and also provide a standard for improvement, or/and consolidation in subsequent productions.

While Potter and Cantarero (2006) recalled that satisfaction studies dated back to the 1940s, their application straddled many academic disciplines, one of which was just housing. As such, satisfaction attracted various definitions and perceptions (Hui & Zheng,

2010). In effect, researchers are not quite unanimous about the nature of housing satisfaction as an evaluative appraisal (Amole, 2009). Therefore, satisfaction had been interpreted by different schools of thought. Amole (2009) identified two of such schools. On one hand, the 'purposive' group held that satisfaction was a measure of the extent to which user aspirations and goals were met or inhibited by the housing environment. This was the view expressed by Aga and Safakli (2007) as they saw satisfaction representing the extent to which the housing environment had provided the user with consumption-related fulfillment. The 'aspiration-gap' school, on the other hand according to Amole (2009), saw satisfaction as a measure of the gap between the household's housing expectation and the achieved housing. This view was supported by Hanif et al. (2010) as well as Mohit and Raja (2014) in seeing satisfaction as an evaluation of the perceived discrepancy between prior expectations and the actual performance of the housing product. The two perspectives above appeared somewhat harmonised by the view of Ibem and Amole (2013) seeing satisfaction as an evaluation of the performance of housing in meeting user requirements as well as a comparison between the expected and received value by the users.

When housing is viewed from the ecological perspective therefore, the interaction and interdependence of humans with the environment is increasingly being given attention (Beamish et al., 2006). Deng et al. (2010) confirmed the importance of user satisfaction as a crucial tool for producers to differentiate themselves from other competitors towards the enhancement of market share. In any production process, the end-user as an entity cannot be ignored. In fact, many highly personal user-values affect housing and distort any purely economic explanation of housing activity.

In many advanced economies of the world, sound post occupancy assessment of user satisfaction has been utilised to guide real estate developers. However, in Nigeria, there is a paucity of holistic and investment-focused information on how satisfied users are in their current estates. Little efforts are also made on identification of factors responsible for recorded satisfaction levels. Many of the earlier researchers had globally found incidences of home purchases not satisfying user requirements. Examples are found even in the US (Varady & Preiser, 1998), as well as Australia (Forsythe, 2007), Nigeria (Ogu, 2002; Ukoha & Beamish, 1997), Papua New Guinea (Kaitilla, 1993), Malaysia (Chee & Peng, 1996) and Yemen (Mustapha et al., 1995) among others. According to Mustafa and Ghazali (2009), the quantum of property abandonment resulting from user dissatisfaction was so high in Malaysia in 2007 that the government had to enforce the coexistence of the concept of 'build then sell' (a post-completion sale approach) with their usual delivery practice of 'sell then build' (a pre-sale arrangement).

However, housing developers in Nigeria have hardly recognised the importance of satisfaction survey in delivery process. Unlike in Nigeria, Cambridge City Council (UK) specifically required that major satisfaction survey of its tenants be carried out every three years. The government even specified majority of questions to be asked (refer to www.cambridge.gov.uk). The Standardised Tenant Satisfaction Survey (STATUS) used in this regard was obtainable from National Housing Federation website, www.housing.org.uk. Varady and Carrozza (2000) also attested to the use of STATUS-like instruments in the US just as Pawson and Sosenko (2012) did about Australia and New Zealand.

Meanwhile, there are very few studies on housing satisfaction in Nigeria (Ibem & Amole, 2013). Even out of these, not many have investigated the phenomenon of housing satisfaction in a holistic manner. Some papers had been written though, relating to various individual indicators, consequences of housing satisfaction issues or at least with the user as focus. This category included the works of Ogu (2002), Oladapo (2006), and Ikurekong (2009). While Ogu (2002) isolated the infrastructure component of the housing environment, Oladapo (2006) centred on maintenance awareness in the determination of user satisfaction. On his own, Ikurekong (2009) focused generally on determinants but ended shoring up infrastructure as the outcome. Others included the works of Jiboye (2009) and Jiboye (2010), both of which dwelt much on the systems approach of Onibokun (1974) but centred only on public housing.

Mustapha et al. (1995) commended the work of Marans and Rodgers (1975) as one of the most comprehensive conceptual model(s) of residential satisfaction. The model postulated that individual's satisfaction depended on his/her perception of three domains namely the dwelling unit, neighbourhood, and community. In contrast to this view Onibokun (1974), in his path analysis, earlier specified that residential satisfaction was based on the user's personal characteristics. This strengthens the view that certain factors, outside but perhaps not entirely beyond the perception of the consumer, dictate the level of satisfaction with housing environment. Such exogenous variables would include prior housing experience of users before coming into the current estate as subject of study.

Generally, the grouping of research parameters appears based on researchers' convenience as a product of the socio-cultural environment of the research. Thus, researchers in housing satisfaction fall into two broad groups; one dealing with the implication or application of holistic housing satisfaction and the other exploring the relative impact(s) of some components of the housing environment in housing satisfaction. On one hand, while Onibokun (1974) worked on the basis of four 'subsystems' (the tenant, environment dwelling and management), Ukoha and Beamish (1997) carried out their study on the basis of five components (structure types, building features, housing conditions, neighbourhood facilities and housing management). Amerigo and Aragones, (1997) as well as Lu (1999) utilised housing characteristics, neighbourhood characteristics and household characteristics. In their own study, Djebarni and Al-Abed (2000) utilised three components of the housing environment (dwelling unit, neighbourhood and community variables) in the analysis of their housing 'effectiveness model'. The study by Salleh and Yusof (2006) employed the use of dwelling units, housing services, neighbourhood facilities and the environment while Jiboye (2009) made use of environmental component, dwelling component and management component. From similar perspectives, Mohit et al. (2010) factored their housing satisfaction variables into five components as follows: dwelling unit features, dwelling unit supportive services, public services, social environment and neighbourhood facilities. From their own perspectives, Mohit and Nazyddah (2011) worked on the basis of five components namely the dwelling unit features; housing unit support services; public facilities; social environment and neighbourhood facilities. More recently, Ibem and Amole (2013) focused on the housing unit characteristics, neighbourhood facilities and housing management in the studied estates.

On the other hand, researchers mostly isolate specific housing components (e.g. tenure status, environmental facilities, etc.) and measure the impacts of such in the determination of housing satisfaction. Examples in the latter category include Cho and Lee (2010) focusing on indoor environment while Berkoz et al. (2009) dwelt on 'environmental quality'. The highlighted components in this case also have several other predictive or explanatory variables or sub-variables. In all these, researchers gave impetus to in situ (site-specific)

features while the root of housing cognition as embedded in prior experience became relegated. Researchers including Johnston et al. (2005) and Forrest et al. (2013) mentioned how little attention had usually been paid to housing experience as a background feature and even saw this as a ‘knowledge gap’ in literature of housing research. Forrest et al. (2013) underscored the importance of households’ housing background as not only capable of affecting their residential satisfaction but also the success of their adjustment and integration into the new housing environment.

Perhaps one of the most holistic of the housing satisfaction works in Nigeria was that of Ukoha and Beamish (1997). On its part however, the study took for granted that user experience was still very fresh enough in memory of residents to affect satisfaction judgment in the studied setting. The assessment was based on perceptions about house structure types, building features, housing conditions, neighbourhood facilities and housing management. The study, not unexpectedly, recorded residents’ dissatisfaction with most of the slated housing characteristics except neighbourhood facilities. This was indicative of the response from the average respondent who, having moved from the Lagos background to Abuja, saw neighbourhood facility (e.g. communal space) as the only value added to his housing situation. Communal spaces were real luxuries in the Lagos of that period. This stresses the importance of households’ background factors or prior housing experience which the study did not take into consideration. The research did not take ‘where the households moved in from’ and ‘the length of residence both in the study area and in the respective house’ into consideration as part of the factors to be analysed.

Furthermore, Ukoha and Beamish (1997) concluded that housing in Abuja then did not meet the expected housing norms in the society. Questions could arise as to what created housing norms in a new city at the time of the research. Definitely a city without (or with short and idealised) growth history would probably not provide a research result which could be conveniently generalised. Created by statute in 1976 with nothing on ground, Abuja’s history is relatively recent. Furthermore, with about 22,000 housing units completed in 1980, averaging about 5,500 units per year, it did not show a growth rapid enough to have had its norms formalised. The Federal Capital Territory Decree No. 6 of 1976 (later Federal Capital Territory Act CAP 128 LFN 1990) which created Abuja (FCT) also established the Federal Capital Development Authority (FCDA) which achieved only little success until the office of the Head of State embarked on the move to Abuja on December 12, 1991. It was only after then that ‘[...] Abuja became a reality’ (Mohammed et al., 1991). At the time of that study, the teeming civil servant population ‘forcefully’ moved to Abuja could hardly have settled down in a new capital city of a developing nation or/and would still be deeply burdened by respective housing experience in their various locations before migration, when the study was conducted. Abuja is an artificial city unlike Lagos, Ibadan, Kaduna, Kano, Port Harcourt, Onitsha and the several other urban conurbations in Nigeria, which evolved and made impressions on residents through the requisite history and geography of urbanisation. While some of the criteria adopted by Ukoha and Beamish (1997) might be readily admissible in any future research, some caution should be exercised as to how far its conclusion might be generalised on other urban centres in Nigeria especially when users’ prior experience was ignored in current satisfaction calculations.

■ 3.0 METHODOLOGY

3.1 Development Processes of Cost Breakdown Structure (CBS)

This research formed part of a bigger project on the assessment of user satisfaction in some selected estates in the study area. The research design was exploratory. Research attention was focused on stated preferences of the respondent samples. The adoption of ‘stated preference’ option especially suited the exercise of cross-sectional survey because one of its possible alternatives (i.e. the revealed preference) would have entailed multiple contacts in making inferences from maintained and duly followed up individual consumer’s data base of purchase behaviours. Such data as would have included records of past purchases, additional purchasing behaviour among others were not readily available in the study area.

The bigger project (as pointed out earlier) utilised four on-site domains of the housing environment namely the Dwelling Unit Features; Neighbourhood Features; Environmental Facilities and Housing Management Services as well as an exogenous (off-site) domain of Prior Housing Experience. In each case, the domain was treated as single-item measure which was predicted by several other variables or sub-variables (multiple-item measures). In that sense, and in multi-step assessment, the domains were first viewed as dependent variables (single-items), predicted by some sub-variables (independent multiple items). In the end, the various outcomes now act as independent variables (domains of housing environment) to predict overall satisfaction (OVERALLHRSAT) as a dependent variable. Housing experience (first as dependent variable) was estimated from the perspectives of household-perceptions of sub-variables including the following: -

- Where the household was living before coming to the estate under study.
- The nature of the housing environment there in terms of public or private, low- or high-income estate classification.
- The type of accommodation occupied there.
- Tenancy status
- A comparison of the erstwhile accommodation with the present and
- A general assessment of the level of satisfaction experienced there

The outcome of housing satisfaction as predicted by these independent variables represent ‘satisfaction with prior housing’ as encapsulated in the acronym SATPRIORHSE. Generally, these would form a background for the family’s housing norms as well as a pedestal on which the aspirations and expectations of housing services in the new estate would be built. The extent to which housing norms influence (as a reference point) the determination of the household’s satisfaction is seen in this study as the impact of the background housing experience.

The population of study comprised of the number of household accommodations in 53 housing estates assembled for the study. These estates provided 11,026 household accommodations in medium and high-income estate developments. Among these, public authority developments accounted for 8,130 household accommodations in 32 selected estates while private sector estates contributed 2,896 household accommodations in 21 of the estates. Multi-stage sampling approach was employed in this research. Foremost, from the earlier assemblage of 53 estates, a stratified sampling produced 12 estates for data collection. This translated to 23% of the total assembled. Earlier user satisfaction studies in the state had selected much lower samples. For instance, Jiboye (2009), like some other researchers, selected about 10% of the total housing estates assembled for his study. The details of estates so randomly selected here were as given below in Table 1.

Table 1 Details of sampled housing estates

S/No	Name of Estate	Location	Details
1	Northern Foreshore (private estate)	Chevron Drive, Lekki	206 units comprising a mix of 4-bedroom houses with 1-room BQ, 5-bedroom detached houses with 2-room BQ and 3-bedroom as well as 4- bedroom bungalows
2	MKO Gardens (public estate)	Ikeja	Include 72 units each of 3-bedroom and 4-bedroom flats. Others are 80 units and 126 units respectively of 4-bedroom terraced houses and duplexes
3	Grace Courts (private estate)	Makoko Road Yaba	Comprises of 10 units of 4- Bedroom detached houses with BQ, 24 units of 3-bedroom terraced houses and 10 units each of 4-bedroom and 3-bedroom maisonettes
4	Anchorage Estate (private estate)	Amuwo-Odofin	10 units of 4-bedroom detached houses, 30 units of 4-bedroom semi- detached houses all with BQ and 14 units of 3-bedroom terraced houses
5	Oba Oyekan II (public estate)	Lekki Peninsula	112 units of high income 4-bedroom duplexes
6	Femi Okunnu II (public estate)	Lekki Peninsula	127 units of 4-bedroom terraced houses
7	Femi Okunnu IV (public estate)	Lekki Peninsula	32 units of 3-bedroom luxury flats
8	County Estate (private estate)	Iju Road, Agege	174 units of medium income 3-bedroom flats arranged 6 units per block of 3 floors
9	TOS Benson Estate (public estate)	Ikorodu	229 units of 2-bedroom and 58 units of 3-bedroom medium-income terraced bungalows
10	Tajudeen Olanrewaju Estate (public estate)	Yaba	71 units of 3-bedroom terraced houses
11	LSDPC Ebute Meta (public)	Adekunle, Ebute Meta	528 units of medium income 4-bedroom flats
12	Romay Gardens (private estate)	Iroko Awe, Ilasan village, Lekki Peninsula	82 units comprising 26 units of 4-bedroom semi-detached, 16 units of 4-bedroom town houses (type A), 28 units of 4-bedroom town houses (type B) and 12 units of 3-bedroom luxury apartments

The required household samples in respective estates were subsequently taken using the systematic random sampling approach in line with pro-rated numbers required therein. In most cases, the serial identification numbering (where available) of the blocks were employed to achieve this. Generally, each block contained accommodation unit(s) and thus expectantly household(s) ranging between one in detached houses, two (in duplexes) and maximum of six (in blocks of flats or terraced apartments). In this respect, one household was considered as having sufficed for sampling per block. The respondent in each case was the respective household head.

In the determination of sample size, this study adopted a confidence (alpha) level of 0.05 which according to Bartlett et al. (2001) was generally acceptable for most research. According to this source, the Cochran (1977) formula incorporated this (alpha level) into sample size determination by utilising its t-value of 1.96 as applicable to samples above 120. The margin of error of $\pm 5\%$, as also clarified to be

acceptable as a general rule in educational and social research for categorical data (Krejcie & Morgan, 1970), was utilised. An estimate of 50% of the population was made as possessing the major attribute of the outcome variable (i.e. satisfaction level) as the ‘p’ factor with the remainder of population accounting for the ‘1-p’ factor. This was considered safe, as recommended by Krejcie and Morgan (1970).

With the various inputs in place, the other outstanding ingredient in determining sample size was the expected response rate. Contrary to some studies (e.g. Amole, 1989; Oladapo, 2006) which were carried out within academic areas where the level of education toned up the response rate, very few studies outside such environments elicited comparable response. A response rate of about 65% was therefore projected as safe for this study. The study, therefore, estimated a sample size based on Watson (2001) formula given as follows:

$$n = \frac{\frac{A^2}{Z^2} + \frac{P(1-P)}{N}}{R}$$

where, n = sample size required;
 N = number of people in the population (i.e. 11,026 household accommodations);
 P = estimated variance in population (i.e. 0.5 for 50 -50 maximum variability);
 A = precision desired (i.e. 0.05);
 Z = Based on confidence level (i.e. t-value 1.96 for 95% confidence level);
 R = Estimated response rate as decimal (i.e. 0.65 for 65%).

The application of the above formula, incorporating the stated variables and the adjustment factor for expected response, produced a sample size of 571. This was considered high enough for this study. The Universal Accreditation Board (2003) attested that even opinion surveys for the entire United States population frequently consisted of 1,500 to 2,000 interviews while in a state with a population of 3,000,000, surveys often involved only a sample of between 500 and 600.

Based on the above sampling approach, the formula-derived sample size of 571 was pro-rated on the sampled estates. The result as shown in the Table 2 below came up to 572 households because of rounding-off exercise.

Table 2 Schedule of research samples

S/no	Name of estate	Classification	Number of Households	sample size @ 0.276
1	Northern Foreshore	Private estate	206	57
2	MKO Gardens	Public Estate	350	97
3	Grace Courts	Private Estate	44	12
4	Anchorage Estate	Private estate	54	15
5	Oba Oyekan II	Public Estate	112	31
6	Femi Okunnu II	Public Estate	127	35
7	Femi Okunnu IV	Public Estate	32	9
8	County Estate	Private Estate	174	48
9	TOS Benson Estate.	Public Estate	287	79
10	TajudeenOlanrewaju	Public Estate	71	20
11	LSDPC Ebute Meta	Public Estate	528	146
12	Romay Gardens	Private Estate	82	23
Total			2,067	572

The research utilised structured questionnaires and structured interview for the collection of primary data. In respective cases, the respondents were given options to select from hosts of possible responses instead of open self-styled responses. The main advantage of this approach was that it enabled the researcher to obtain information in the direction of pre-determined research goals. The structured form also ensured the avoidance of responses which would be difficult to code for computer-aided analysis. There was, however, a possibility too that the structured form could restrict the scope of responses. In order to cushion any possible effect of the restriction, a few open-ended questions were provided about any other information the respondent was willing to supply. Secondary data were sourced from

records of the housing authorities and developer-groups with the use of information proforma which entailed a design of purpose-fit tabulations into which required information extracted from available records were entered.

■4.0 RESULTS AND DISCUSSION

The retrieval of 291 questionnaires from the served 572 recorded a nominal response rate of 51%. However, the retrieved questionnaires were centrally edited for completeness and consistency after which a total of 283 were considered good and coded for analysis. This represented an effective response rate of 49.5%. The effective response rate of 49.5% was considered adequate enough for analysis in this work. In fact, Idrus and Newman (2002) expressed the view that a response rate of about 30% was good enough in construction industry, even in the UK where respondents could be more cooperative.

Data was collected to capture the history of the individual household's housing experience. The quest delved into their prior accommodation type and setting of the environment as well as a comparison of former housing with the present and the level of satisfaction enjoyed there, before moving into the present housing estate. The summary of information gathered in this respect was as given in Table 3 below:

Table 3 Housing experience of respondents

Characteristics	n	%
A. Prior accommodation		
Mini flat	26	9.2
2-bedroom flat/bungalow	88	31.1
3-bedroom flat/bungalow	148	52.3
Maisonette	4	1.4
Duplex/ detached house	17	6
Total	283	100
B. Prior housing environment setting		
Public low-income estate	24	8.5
Public medium income estate	22	7.8
Public high-income estate	13	4.6
Private estate setting	66	23.3
Non-estate setting	158	55.8
Total	283	100
C. Comparison of prior setting with the present		
Worse than present	220	77.7
Better than present	12	4.2
About same as present	39	13.8
Undecided	12	4.2
Total	283	100
D. Satisfaction with prior housing		
Very dissatisfied	2	0.7
Dissatisfied	73	25.8
Just okay/neutral	164	57.9
Satisfied	39	13.8
Very satisfied	5	1.8
Total	283	100

The table highlights the variables of housing experience and respective response options on the first column with recorded frequency on the second column. The percentage equivalence for the level of response was given in the third column.

4.1 Appraising Elements of Housing Experience

The bulk (83.4%) of the respondents came in from middle level (2-bedroom and 3-bedroom) accommodations. A close look at the table also shows that majority (55.8%) of the respondents were from 'non-estate setting' environments. Such environments are usually of

informal settings with individual houses not specifically conforming to any uniform setting in design, construction or layout as others. On the other hand, ‘estate setting’ in which the study was carried out, comprise properties in special schemes of better formal layout, infrastructure and building typology. Most of these are usually gated communities. Also, from the table, 77.7% of respondents claimed that the erstwhile housing environments were worse than the present. This is a pointer to upward mobility in housing consumption by these respondent-users in the current estates. Eventually, on the assessment of satisfaction with prior housing, a total of 84% of the respondents did not express outright positive satisfaction. These comprise those who were either dissatisfied or just neutral. The adverse implications of this on users’ subjective well-being and satisfaction with quality of life before moving into the current estate cannot be overemphasised.

4.2 Overall Housing Satisfaction and HRSI Rating in the Estates

The summary of overall housing satisfaction in the respective estates is compiled and presented in Table 4 below. The assessment utilised both the mean scores and the Housing Relative Satisfaction Index (HRSI). The (HRSI) represents the sum total of the various component satisfaction indices in the respective estates. The components were the identified domains of the housing environment which in this case were limited to ‘dwelling unit features’, ‘neighbourhood features’, ‘environmental facilities’ and ‘management services’. The calculation of HRSI is given mathematically as follows:

$$\text{HRSI} = \frac{\sum_{i=1}^{N1} di + \sum_{i=1}^{N2} ni + \sum_{i=1}^{N3} ei + \sum_{i=1}^{N4} mi}{\sum_{i=1} Di + \sum_{i=1} Ni + \sum_{i=1} Ei + \sum_{i=1} Mi} \times 100$$

where HRSI is the satisfaction index of a respondent with the overall housing situation or environment; N1, N2, N3, and N4 are the respective numbers of variables selected for scaling under each component of housing satisfaction in the study area. Also d_i , n_i , e_i , and m_i represent the actual score of a respondent on the i th variable in the components of ‘dwelling unit features’, ‘neighbourhood factors’, ‘environmental facilities’ and ‘management services’ respectively. Similarly, D_i , N_i , E_i , and M_i are the maximum scores for the i th variable in the components. It is possible to group outcomes into regions of satisfaction. This interpretational grouping of the analysis, however, appeared hinged on convenience. Onibokun (1974) delineated three regions of satisfaction as framework for interpretation as follows:

80% +	=	High level of Residential Satisfaction (RS)
70 % - 79%	=	Medium level of RS
< 70%	=	Low level of RS

However, Ogu (2002) re-organised this into four groups as follows:

20 – 39%	=	Very low RS
40 – 59%	=	Low RS
60 – 79%	=	Moderate
80 – 100%	=	High RS

The Ogu model was adopted in this research because of its relative modernity and logicity in terms of Likert-scale positioning.

The HRSI though worked out from this separate principle invariably approximated to the percentage representation of the achieved satisfaction means over the maximum (expected) achievable. While both can then be used interchangeably, the HRSI from literature additionally entailed a ranking of levels. The summary of these could be seen in Table 4 below.

Table 4 Overall housing satisfaction and HRSI rating in the estates

Name of current estate	Mean score	Satisfaction as HRSI in %	Type of Estate	Overall ranking
Romay Gardens	4.14	82.81	Private	1
Grace Courts Ebute Metta	3.97	79.29	Private	2
Northern Foreshore Estate	3.93	78.57	Private	3
MKO Abiola Gardens	3.78	75.52	Public	4
Anchorage Estate	3.73	74.53	Private	5
County Estate	3.57	71.43	Private	6
Femi Okunnu Estate II	3.48	69.64	Public	7
Oba Adeyinka Oyekan Est.	3.34	66.83	Public	8
Femi Okunnu Estate IV	3.26	65.23	Public	9
Tajudeen Olanrewaju Estate	3.06	61.11	Public	10
LSDPC Ebute Metta	2.81	56.10	Public	11
TOS Benson Estate	2.69	53.86	Public	12

HRSI scaling: 20-39% = very low; 40-59% = Low; 60-79% = Moderate; 80-100% = High

From the table, Romay Gardens ranked topmost with satisfaction means of 4.14 (i.e. HRSI of 82.81%) followed by Grace Courts with a means figure of 3.97 (i.e. HRSI of 79.29%). This first set of estates was developed by private organisations. The MKO Abiola Gardens,

a public estate, came up in the fourth position with a means figure of 3.78 (i.e. HRSI of 75.52%) while Femi Okunnu II, another public estate recorded a means figure of 3.48 (i.e. HRSI of 69.64%) to come in the seventh place. At the lower segment of the table also were public estates including Tajudeen Olanrewaju Estate, Yaba (M = 3.06; HRSI = 61.11%) developed by the Federal Ministry of Housing and Urban Development at the tenth position, with LSDPC Estate, Ebute Metta (M =2.81; HRSI = 56.10%) at eleventh position. At the bottom of the table was TOS Benson Estate, a public estate with a means figure of 2.69 (i.e. HRSI of 53.86%) in the twelfth position.

4.3 Evaluation of Prior Housing

The extent to which respondents' prior housing experience was significant in influencing satisfaction in the current estate was ascertained first with Spearman's Rank order correlation test of hypothesis and a later confirmation with one-way ANOVA chart.

4.3.1 Spearman's Rank Order Correlation Test

In the quest to show the impact of prior housing experience on the level of overall satisfaction with the domains of housing environment, the research tested the following hypothesis:

H₀: Households' prior housing does not significantly affect satisfaction in the current housing estate

H₁: Households' prior housing significantly affects satisfaction in the current housing estate

The outcome shows the extent to which the (prior) housing experience of the households affects their satisfaction in the current estates. This test explored the extent to which the housing experience of the household, encapsulated in Satisfaction with Prior Housing Environment (SATPRIORHSE), affected its Overall Housing Relative Satisfaction (OVERALLHRSAT) in the current estates. The result obtained from the use of Spearman's Rank order correlation as contained in the Table 5 below showed a positive correlation of though, low coefficient of +.281. This was significant at the 0.01 (2-tailed) level. This entails a significant relationship between the respondents' prior housing and the recorded level of housing satisfaction in the current estates.

Table 5 Prior housing (SATPRIORHSE) and current satisfaction (OVERALLHRSAT) correlation

			SATPRIORHSE	OVERALLHRSAT
Spearman's rho	SATPRIORHSE	Correlation Coefficient	1.000	.281(**)
		Sig. (2-tailed)	.	.000
		N	283	283
	OVERALLHRSAT	Correlation Coefficient	.281(**)	1.000
		Sig. (2-tailed)	.000	.
		N	283	283

**Correlation is significant at the 0.01 level (2-tailed)

4.3.2 ANOVA with Chart Enablement

A further test was carried out using one-way ANOVA with chart enablement. The comparison of the means of the summary of respondents' prior housing as indicated by SATPRIORHSE with OVERALLHRSAT in the estates produced the chart identified as Figure 1 below:

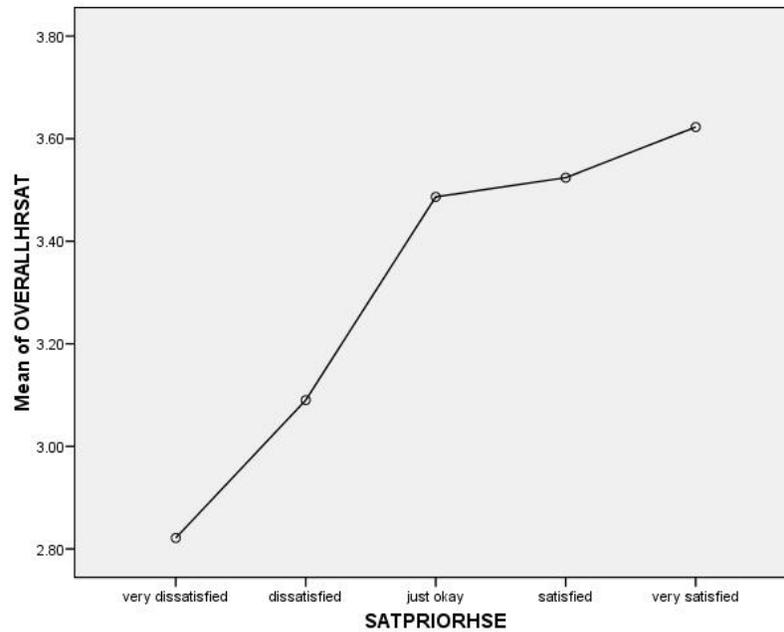


Figure 1 Satisfaction with Prior Housing (SATPRIORHSE) related with Overall Housing Satisfaction (OVERALLHRSAT)

Satisfaction rating, rather than being an absolute statement of ‘yes’ or ‘no’ obtains on a continuum the width of which, depends on the researcher’s motives. Thus, the x-axis of the chart shows the various 5-point Likert-scale options utilised in the study. These range from ‘very dissatisfied’ to ‘very satisfied’ in ordinal scaling of the assessment of satisfaction with prior housing environment. These were weighed against the mean ratings of overall housing relative satisfaction by the respondent-users on the y-axis. From this chart, no category of respondents agreed to any outright negative experience in housing satisfaction in the current estates. Furthermore, the respondents who were ‘very dissatisfied’, ‘dissatisfied’ or ‘just okay’ (i.e. indifferent) with their former housing recorded a higher degree of satisfaction than others in the current housing estate. These were the category, which in Table 3 above, did not indicate positive satisfaction with their former housing. Then, those who claimed they were ‘satisfied’ or ‘very satisfied’ with former housing recorded yet an improvement in overall satisfaction but at a lower rate than those in earlier groups. It showed that while the respondents had moved up on the satisfaction ladder from their former rung in gross satisfaction assessment, the rate at which their levels of satisfaction had increased vary. This latter group recorded satisfaction at lower rates than the earlier group. These rates were depicted by the gradient of the line graph at the respective segments in the chart. To this latter group, the level of satisfaction recorded in the current housing environment was not at a spectacular rate as those in other groups who probably were not as exposed to good housing conditions in their prior housing environment. This finding corroborated the opinion of Varady and Carrozza (2000) that those who received low levels of service in the past housing environment would, as a result, have low expectations. This, in turn, would make them more satisfied with levels of current services less than which would have impressed those with better experience.

5.0 CONCLUSION

Users’ prior housing experience was encapsulated in the statement of their satisfaction with prior housing environment given the acronym SATPRIORHSE in this study. The approach to its determination and extent to which it had become relevant in the determination of housing satisfaction was focused on. The study revealed that the respondents with different levels of housing experience as summarised by respective SATPRIORHSE rating had generally engaged in enhanced qualitative mobility into the current estates. Notwithstanding what the push factors had been, there was no response of outright dissatisfaction in the current estates. As such, they had conformed to a major need for housing mobility; housing improvement. Subjective well-being and/or improvement in quality of life, as engendered by improved housing, would have been recorded in the process. Aggregate satisfaction levels differed for the varying categories of respondents based on the rate of increase from erstwhile levels of satisfaction as shown in Figure 1. This underscores the relevance of users’ prior housing experience in the determination of current ratings in the studied housing estates.

The importance of housing satisfaction cannot be overemphasised. It is a post-occupancy evaluation matching pre-purchase expectations with achieved housing. At this point, all impacts of shortcomings in the earlier stages of housing value chain (upstream and downstream) come into reckoning. Thus, all factors affecting housing satisfaction including the erstwhile and much relegated housing experience should be brought into focus. Assessment of user satisfaction as post occupancy evaluation could be done for several purposes some of which might be more sensitive than others. The sensitivity of each case determines the depth of enquiry and the accuracy with which the analysis should be carried out. When rigorous financial analysis is involved, any underplay of such variable as housing experience could lead to wrong conclusions the misapplication of which research outcomes, would usually be accompanied by serious financial implications. In the formulation of virile housing or relocation policy, a study of users’ housing experience is expedient in design and production, distribution and consumption, and especially in housing management. For proactive housing development or/and

management for instance, an understanding of users' prior experience would mark out clientele's sensitivity along the housing value chain. Bearing in mind housing experience as foundation for the rate at which eventual satisfaction will be attained, the job of the property manager, as perhaps the last man standing in the housing value chain, is not fully done until he is acquainted with the prospective users' housing experience.

References

- Abidin, N. Z., Abdullah, M. I., Basrah, N., & Alias, M. N. (2019). Residential satisfaction: Literature review and a conceptual framework. *IOP Conference Series: Earth and Environmental Science*, 385, 012040.
- Aga, M., & Safakli, O. V. (2007). An empirical investigation of service quality and customer satisfaction in professional accounting firms: Evidence from North Cyprus. *Problems and Perspectives in Management*, 5(3), 84-98.
- Agbola, T., & Adegoke, S. A. (2007). Economics of housing. In T. Agbola, L. Egunjobi, & C.O. Olatubara (Eds.), *Housing development and management: A book of readings* (pp. 107-149). Ibadan, Nigeria: Department of Urban and Regional Planning, University of Ibadan.
- Amerigo, M., & Aragones, J. I. (1997). A theoretical and methodological approach to the study of residential satisfaction. *Journal of Environmental Psychology*, 17(1), 47-57.
- Amole, B. (1989). Residents' assessment of the university housing estate in Ile-Ife, Nigeria. *Journal of Studies in Environmental Design in West Africa*, 8, 19-32.
- Amole, D. (2009). Residential satisfaction in students' housing. *Journal of Environmental Psychology*, 29(1), 76-85.
- Bartlett, J. E., II., Kotrlík, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal*, 19(1), 43-50.
- Beamish, J. O., Goss, R. C., & Emmel, J. (2006). Influences on Housing Choice and Behaviors. In J.L. Merrill, S.R. Crull, K. R. Tremblay Jr., L. L. Tyler, & A. T. Carswell (Eds.), *Introduction to housing* (pp. 25-53). Upper Saddle River, NJ: Pearson Education.
- Berkoz, L., Turk, S. S., & Kellekci, O. L. (2009). Environmental quality and user satisfaction in mass housing areas: The case of Istanbul. *European Planning Studies*, 17(1), 161-174.
- Chee, L. M., & Peng, N. K. (1996). Customer orientation and buyer satisfaction: The Malaysian housing market. *Asia Pacific Journal of Management*, 13(1), 101-116.
- Cho, S. H., & Lee, T. K. (2010, May). *Indoor environment related on residential satisfaction in old multi-family housing*. Paper presented at the 3rd International Symposium on Sustainable Healthy Buildings, Seoul, Republic of Korea.
- Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). New York, NY: John Wiley & Sons.
- Deng, Z., Lu, Y., Wei, K. K., & Zhang, J. (2010). Understanding customer satisfaction and loyalty: An empirical study of mobile instant messages in China. *International Journal of Information Management*, 30(4), 289-300.
- Djebarni, R., & Al-Abed, A. (2000). Satisfaction level with neighbourhoods in low-income public housing in Yemen. *Property Management*, 18(4), 230-242.
- Forrest, J., Hermes, K., Johnston, R., & Poulsen, M. (2013). The housing resettlement experience of refugee immigrants to Australia. *Journal of Refugee Studies*, 26(2), 187-206.
- Forsythe, P. J. (2007). A conceptual framework for studying customer satisfaction in residential construction. *Construction Management and Economics*, 25(2), 171-182.
- Hanif, M., Hafeez, S., & Riaz, A. (2010). Factors affecting customer satisfaction. *International Research Journal of Finance and Economics*, (60), 44-52.
- Hui, E. C. M., & Zheng, X. (2010). Measuring customer satisfaction of FM service in housing sector: A structural equation model approach. *Facilities*, 28(5/6), 306-320.
- Ibem, E. O., & Amole, O. O. (2011). Assessment of the qualitative adequacy of newly constructed public housing in Ogun State, Nigeria. *Property Management*, 29(3), 285-304.
- Ibem, E. O., & Amole, D. (2013). Residential satisfaction in public core housing in Abeokuta, Ogun State, Nigeria. *Social Indicators Research*, 113, 563-581.
- Idrus, A. B., & Newman, J. B. (2002). Construction related factors influencing the choice of concrete floor systems. *Construction Management and Economics*, 20(1), 13-19.
- Ikurekong, E. E. (2009). Determinants of housing satisfaction in residential localities within Uyo, Nigeria. *FUTY Journal of the Environment*, 4(1), 28-35.
- Jiboye, A. D. (2009). Evaluating tenants' satisfaction with public housing in Lagos, Nigeria. *Town Planning and Architecture*, 33(4), 239-247.
- Jiboye, A. D. (2010). The correlates of public housing satisfaction in Lagos, Nigeria. *Journal of Geography and Regional Planning*, 3(2), 017-028.
- Johnston, R. J., Trlin, A.D., Henderson, A. M., North, N. H., & Skinner, M. J. (2005). Housing experience and settlement satisfaction: Recent Chinese, Indian and South African skilled immigrants to New Zealand. *Housing Studies*, 20(3), 401-421.
- 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.
- Kellekci, O. L., & Berkoz, L. (2006). Mass housing: User satisfaction in housing and its environment in Istanbul, Turkey. *European Journal of Housing Policy*, 6(1), 77-99.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.
- Lee, H.-J., & Parrott, K. (2004). Cultural background and housing satisfaction. *Housing and Society*, 31(2), 145-158.
- Lu, M. (1999). Determinants of residential satisfaction: Ordered logit vs. Regression models. *Growth and Change*, 30(2), 264-287.
- Marans, R. W., & Rodgers, W. (1975). Toward an understanding of community satisfaction. In A. H. Hawley, & V. P. Rock (Eds.), *Metropolitan America in Contemporary Perspective* (pp. 299-352). New York, NY: Halstead Press.
- Merrill, J. L., Crull, S. R., Tremblay, K. R., Jr., Tyler, L. L., & Carswell, A. T. (Eds.). (2006). *Introduction to housing*. Upper Saddle River, NJ: Pearson Education.
- Mohammed, Y., Magaji, A., Ogenyi, O., Olaokun, K., & Ukim, U. (1991). Move over, Lagos. *Newswatch*, 14(26), 28-33.
- Mohit, M. A., Ibrahim, M., & Rashid, Y. R. (2010). Assessment of residential satisfaction in newly designed public low-cost housing in Kuala Lumpur, Malaysia. *Habitat International*, 34(1), 18-27.
- Mohit, M. A., & Nazyddah, N. (2011). Social housing programme of Selangor Zakat Board of Malaysia and housing satisfaction. *Journal of Housing and the Built Environment*, 26, 143-164.
- Mohit, M. A., & Raja, A. M. M. A.-K. (2014). Residential satisfaction- concepts, theories and empirical studies. *PLANNING MALAYSIA: Urban Planning and Local Governance*, 3, 47-66.
- Muhammad, Z., Rostam, K., & Yusoff, Y. M. (2010). Residential satisfaction with housing in the Malaysian context. *The International Journal of Interdisciplinary Social Sciences: Annual Review*, 5(2), 379-396.
- Mustafa, A., & Ghazali, M. (2009, November). *A conceptual framework on house buyers' satisfaction of housing projects*. Paper presented at the Australian & New Zealand Marketing Academy (ANZMAC) Conference, 2009: Sustainable Marketing and Management, Melbourne, Australia.
- Mustapha, F., Al-Abed, A., & Wild, S. (1995). A model for assessing the effectiveness of public Housing in Sana'a (Republic of Yemen). *Construction Management and Economics*, 13(6), 457-465.
- Ogu, V. I. (2002). Urban residential satisfaction and the planning implications in a developing world context: The example of Benin City, Nigeria. *International Planning Studies*, 7(1), 37-53.
- Oladapo, A. A. (2006). A study of tenants' maintenance awareness, responsibility and satisfaction in institutional housing in Nigeria. *International Journal of Strategic Property Management*, 10(4), 217-231.
- Onibokun, A. G. (1974). Evaluating consumers' satisfaction with housing: An application of a systems approach. *Journal of the American Institute of Planners*, 40(3), 189-200.

- Pawson, H., & Sosenko, F. (2012). Tenant satisfaction assessment in social housing in England: How reliable? How meaningful? *International Journal of Consumer Studies*, 36(1), 70-79.
- Potter, J., & Cantarero, R. (2006). How does increasing population and diversity affect resident satisfaction? A small community case study. *Environment and Behavior*, 38(5), 605-625.
- Rosenberger, I. K. (2003). *Sustainable low-cost housing – A review of three low-cost housing developments in Gauteng Province* (Master's mini-thesis). Rand Afrikaans University, Johannesburg, South Africa.
- Salleh, A. G., & Yusof, N. (2006). Residential satisfaction in low-cost housing in Malaysia (Report of Research Funded by Universiti Sains Malaysia (USM) Short Term Research Grant). Penang: USM. Retrieved from http://eprints.usm.my/10534/1/residential_satisfaction_in_low_-_cost_housing_in_malaysia.pdf.
- Torbica, Z. M., & Stroh, R. C. (2000). HOMB SAT - An instrument for measuring home-buyer satisfaction. *Quality Management Journal*, 7(4), 32-44.
- Torbica, Z. M., & Stroh, R. C. (2001). Customer satisfaction in home building. *Journal of Construction Engineering and Management*, 127(1), 82-86.
- Ukoha, O. M., & Beamish, J. O. (1997). Assessment of residents' satisfaction with public housing in Abuja, Nigeria. *Habitat International*, 21(4), 445-460.
- Universal Accreditation Board. (2003). Accreditation Study Course: Random sample size (table) - Handout #16. Retrieved from <http://www.praccreditation.org/secure/documents/coachHO16.PDF>.
- Varady, D. P., & Carrozza, M. A. (2000). Toward a better way to measure customer satisfaction levels in public housing: A report from Cincinnati. *Housing Studies*, 15(6), 797-825.
- Varady, D. P., & Preiser, W. F. E. (1998). Scattered-site public housing and housing satisfaction: Implications for the new public housing program. *Journal of the American Planning Association*, 64(2), 189-207.
- Watson, J. (2001). *How to determine a sample size: Tipsheet #60*. University Park, PA: Penn State Cooperative Extension. Retrieved from <http://www.extension.psu.edu/evaluation/pdf/TS60.pdf>.