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Post-occupancy evaluation of residential satisfaction in Lagos, Nigeria: Feedback for residential improvement

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Abstract

This study is a post-occupancy evaluation of residential satisfaction in Oniru Estate, Lagos, Nigeria. It conceived residents' satisfaction as a measure of people's attitudes towards certain aspects of their residential environment. The very important role of certain physical quality or characteristics of the environment as a dominant predictor of satisfaction is emphasized. Apart from the measurement of residential satisfaction through post-occupancy evaluation, it also utilized respondents' satisfaction scores as indices for evaluating the performance of residential development in the study area. Analysis was done using Chi-square statistics ($p=0.05$ with a level of significance of 0.000) to confirm the relationship between the quality of housing physical environment and level of residents' satisfaction. The results show and confirm that the quality of certain physical characteristics in the housing environment is imperative thereby influencing the level of residents' housing satisfaction. The need to consider relevant inputs emanating from the end-users or occupants of residential developments in the planning, design and development of satisfactory dwellings is highlighted.

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1. Introduction

It has been established that the failure of many public and private housing projects in most developing countries is the non-inclusion or lack of consideration for relevant inputs

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emanating from the end-users or occupants of residential developments. Often, the design of a new residential development has been patterned along designers' idea and perception (Jiboye, 2011). Also, the designers and all those responsible for such development devote considerable effort to anticipating how future residents will look like rather than considering its suitability towards ensuring a level of satisfaction to its occupants. Given that every facility occupies a unique place in meeting the set design aspirations, completed residential buildings should not only be fit for the purpose of the users, but also be able to perform their functions in such ways as to ensure relative residents' satisfaction (Liu, 1999).

Housing planners and developers, either private or public, are required to have an understanding of how a building is performing when providing service for clients. Comparing the building in use to their design intentions can provide useful feedbacks to guide future design decisions. Because a building is inherently complex, an evaluation of building performance can cover an overwhelming array of technical, functional, social and aesthetic issues.

The current and future prospects in the housing sector depend on the extent to which owners/occupiers are satisfied with the built facilities; consumer's satisfaction is not only a matter related to the hand-out of a freshly completed building, but a life-cycle issue which has to be taken into account right from the initial investment phase. It thus becomes imperative that developers understand and establish what the consumers' want in terms of their real and perceived needs, and only then could such expectations be met (Liu, 1999; Ilesanmi, 2010).

Despite the prevalence of research in the context of building performance, post-occupancy evaluation (POE) as a systematic method of collecting data on buildings in-use has not found wide usage for housing in Nigeria. This evaluation thus aims at providing valuable feedback on residential satisfaction studies as well as knowledge about aspects of housing design that warrant replication or improvement in future residential development.

1.1. Study objectives

This study seeks to evaluate certain performance characteristics of the residential environment which contribute to residents' satisfaction. The specific objectives of the study are to assess the physical characteristics of dwelling and their environments, examine residents' satisfaction, and determine the relationship between the physical characteristics of dwellings and residents' satisfaction.

2. Theoretical issues

Post-occupancy evaluation (POE) as defined by Baird (2001) is "a generic term for a variety of general programs and procedures as well as specific techniques for the evaluation of existing buildings and facilities". It involves systematic evaluation of opinions about buildings in use, from the perspective of the people who use them. It assesses how well buildings match users' needs, and identifies ways to improve building design, performance and fitness for purpose (Watson, 2003).

POEs are intended to compare systematically and rigorously the actual performance of buildings with explicitly stated performance criteria. The difference between the two constitutes the evaluation. When used appropriately, it communicates the effectiveness of building systems between the facility's users and the facility's management.

2.1. Satisfaction theory and model

Residential satisfaction is a reflection of "the degree to which (the inhabitants) feel (that their housing) is helping them to achieve their goals". It refers to individuals' evaluation of the conditions of their current residential environment, subject to their needs, expectations and

achievements (Hui and Yu, 2009). According to Salleh (2008), theories on residential satisfaction are based on the notion that residential satisfaction is a measure of the difference between occupants' actual and desired housing and neighborhood situations whose judgments are based on their needs and aspirations. Satisfaction with their residential conditions indicates the absence of complaints as their needs meet their aspirations. Contrariwise, they are likely to feel dissatisfied if their housing and neighborhoods do not meet their residential needs and aspirations.

In the expectancy-value model of attitude proposed by Rosenberg (cited in Francescato et al., 1989), evaluations were seen as strongly dependent upon people's expectations or beliefs that the evaluated object furthered or hindered the attainment of their goals. To be more specific, Morris and Winter (cited in Salleh, 2008) introduced the notion of "housing deficit" to conceptualize residential satisfaction. Their housing adjustment theory contends that if a household's current housing meets the norms, the household is likely to express a high level of satisfaction with the housing and the neighborhood. An incongruity between the actual housing situation and housing norms results in a housing deficit which gives rise to residential dissatisfaction. Once their dissatisfaction with the current residence surpasses a certain level (the threshold level) they are likely to consider some form of housing adjustment (Salleh, 2008; Hui and Yu, 2009). The adjustment may be in the form of intention to relocate except for some socio-economic reasons.

Satisfaction as a process of evaluation between what was received and what was expected is the most widely adopted description of customer satisfaction in the current literature (Parker and Mathews, 2001). This strand of theory appears to have origins in the discrepancy theory (Porter cited in Parker and Mathews, 2001). Over the years, a number of authors have used some form of comparison to model satisfaction and early contributions include the contrast theory, which states that consumers would exaggerate any contrast between expectation and product evaluation (Parker and Mathews, 2001).

The most well-known descendant of the discrepancy theory is the expectancy disconfirmation paradigm (Oliver, 1981), which states that, if performance exceeds expectations, customers will be positively disconfirmed (satisfied). On the other hand, if performance fails to meet expectations, customers will be negatively disconfirmed (dissatisfied). Customer expectations are formed on the basis of buyers' past buying experience, statements made by friends and associates as well as marketer and competitor information and promises (Kotler et al., 1996). Oliver (1989) proposed that expectations could be exceeded in two different ways:

- (1) The level of performance is within a normal range (the product was better than expected).
- (2) The level of performance is surprisingly positive (one would not expect that the product would have performed so well) and delightful.

There is however strong support for the disconfirmation paradigm as a measurement of satisfaction (see for example Bearden and Teel, 1983; LaBabera and Marzursky, 1983; Patterson et al., 1997; Tse and Wilton, 1988). However,

Churchill and Surprenant (1982) have found some inconsistencies in the paradigm whereby neither disconfirmation nor expectations have any effect on consumer satisfaction with durable products. Satisfaction, according to them, is determined solely by the performance of the durable goods. Besides discrepancy theories, the equity theory has also been applied to customer satisfaction. This theory holds that individuals compare their input/output ratios with those of others and that the consumer will be satisfied if the net gain is perceived to be fair. More recently, renewed attention has been focused on the nature of satisfaction (Parker and Mathews, 2001).

Due to the wide variance in the nature and meaning of satisfaction, many firms are using different reference points as a benchmark to compare their own customer satisfaction figures. To resolve this, a number of methodologically harmonized national customer satisfaction indices have been developed (Hackl and Westlund, 2000). For example, the American Consumer Satisfaction Index (ACSI) and the European Customer Satisfaction Index (ECSI) represent the two major customer satisfaction indices for the United States and the European countries respectively (see Fig. 1).

Figure 1 presents the model used by ACSI to measure satisfaction with government agencies. In the ACSI model, customer expectations influence the evaluation of quality and forecast how well the product or service will perform. Perceived quality is the extent to which a product or service meets the customer expectation and this will have the greatest impact on customer satisfaction. Lastly, satisfaction has an inverse relationship to customer complaints, which is measured as the percentage of respondents who reported a problem with the measured product or service within a specified time frame.

2.2. Factors affecting housing or residential satisfaction

Housing satisfaction is defined by Galster (1987, p. 93 cited in Varady and Preiser, 1998) as the “perceived gap between

a respondent’s needs and aspiration and the reality of the current residential context”. McCray and Day (1977) refer to housing satisfaction as the degree of contentment experienced by an individual or a family member with regard to the current housing situation. Housing satisfaction is a complex attitude (Satsangi and Kearns, 1992). It encompasses satisfaction with the dwelling unit and satisfaction with the neighborhood and the area (Onibokun, 1974). According to Ogu (2002) the concept of housing or residential satisfaction is often employed to evaluate residents’ perceptions of and feelings for their housing units and the environment. The concept of housing satisfaction has been used as a key predictor of an individual’s perceptions of general “quality of life” (Djebarni and Al-Abed, 2000).

Some scholars have argued that residents’ perception of their environment defines the quality of their lives (Andrews and Whitney cited in Ogu, 2002). There is considerable evidence in the literature that shows that housing satisfaction is influenced by a broad array of objective and subjectively perceived conditions (Theodori, 2001). Habitability of a house, according to Onibokun (1974), is influenced not only by the engineering elements, but also by social, behavioral, cultural, and other elements in the entire societal-environmental system. The house is only one link in a chain of factors that determine people’s relative satisfaction with their accommodation.

Overall, the concept of housing does not lie on the individual’s dwelling. It is a composite of the overall physical and social components that make up the housing system (Francescato, et al., 1989). Further, housing satisfaction is influenced by the numerous components in the system and the background characteristics of the occupants. Factors that have been found related to housing satisfaction include age (for example Varady and Preiser, 1998; Varady et al., 2001), marital status (Tan and Hamzah, 1979), the number of children and family size (Miller and Crader cited in Theodori, 2001), socio-economic status—income, education, employment and welfare (Brown and Freeman cited in

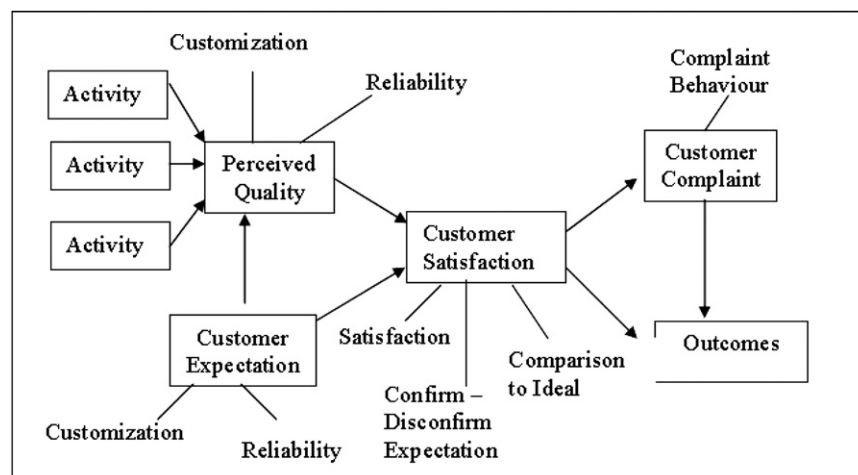


Figure 1 ACSI model for government agencies.

Source: The American Consumer Satisfaction Index (ACSI). The ACSI Model for Most Government Agencies <http://www.theacsi.org/government/govt-model.html>

Varady et al., 2001), length of residency (Marans and Rogers cited in Theodori, 2001; Varady & Preiser, 1998), housing physical characteristics (Yeh, 1972), satisfaction with housing physical condition and management services (Varady and Carrozza, 2000), social participation and interaction (Varady and Preiser, 1998), past living conditions, as well as residential mobility and future intention to move (Morshidi, et al., 1999; Yeh, 1972).

The literature is replete with analyses of many variables that are strongly related to residential satisfaction and the occupiers' evaluations of the variables. Some of these are building features (such as number of bedrooms, size and location of kitchens, and quality of materials, etc.) and neighborhood facilities (like schools, hospitals, shops, recreational facilities, etc. Salleh, 2008). The study of Ukoha and Beamish (1997) indicated that residents in public housing in Abuja, Nigeria, were satisfied with neighborhood facilities such as closeness to schools, hospitals/clinics and shops/markets. They were however dissatisfied with their overall housing situation (structure types, building features, housing indications and housing management). Kowaltowski et al. (2006) reported that the population of low-income housing in the region of Campinas, Brazil, preferred houses to apartments and satisfaction with their housing conditions was high despite low feeling of security in the neighborhood. Satisfaction rates in general terms were high but were not directly related to physical elements of the home and its neighborhood.

The work of Westaway (2006) in Soweto, South Africa, revealed that the group from the squatter camp had the lowest levels of satisfaction with their personal and environmental quality of life. The group was found to be the most disadvantaged in this regard when compared with the relocated, the awaiting relocation and the site tenure allocated groups. Kowaltowski et al. (2006) opined that quality of life was related to feelings of security, physical safety, protection from the elements (wind, rain, lightning) and environmental comfort (thermal, acoustic, visual, and functional space). According to them, security and safety feelings were related not only to crime rates and the quality of policing, but also to street lighting and visibility of movements in public areas.

In the survey carried out by Ha (2008), the residents of social housing estates in South Korea were satisfied with neighborhood amenities (health clinics, stores, banks, post office, etc.) but highly dissatisfied with parking facilities and landscape architecture. A total of 51% of the residents were satisfied with their accommodation while about 11% expressed their dissatisfaction. The balance was between the two opinion groups. The findings of Salleh (2008) about private low-cost housing in Malaysia revealed that satisfaction levels are generally higher with dwelling units and services provided by the developers than neighborhood facilities and environment. The contributing factors for the low level of satisfaction with neighborhood facilities and environment were poor public transportation and lack of children playgrounds, community halls, car parks, security and disability facilities. The development of housing, being in the hands of profit-motivated private sector who gives less attention to the provision of neighborhood facilities and environment, was given as a reason for this level of dissatisfaction.

3. Study area: Oniru estate, Lagos, Nigeria

Oniru estate emerged as a residential location of choice over a decade ago as a result of the expansion of Victoria Island. The estate used to be part of the isolated beach areas of Victoria Island's exit towards Lekki-Epe expressway, situated approximately on Latitude 6° 39'N and Longitude 3° 46'E. The entire Oniru estate land which today covers a land mass of 732 acres after several acquisitions from both the state and federal governments is under the authority of His Royal Majesty Oba Idowu Oniru.

Located at a "midpoint" between Victoria Island and Lekki phase I, current landmarks in Oniru estate include British International School, Shoprite Mall, Military Formations, Banks, Embassies, Oniru private beach, as well as the royal family settlement scheme. Although not all parts of Oniru estate have tarred roads, over half of the estate has well-drained roads paved with interlocking stones. Most houses get portable water from privately dug boreholes and rely on generators to provide alternative power to the epileptic supply.

Currently, Oniru estate accommodates a number of luxury privately developed mini estates. Notable among them are the Kyalami Meadows, Kyalami Groove, Kyalami Mews, Savoy Luxury Estate Homes, Millennium Homes Estate, Sharon's Court Apartments, Royal Estate, Shoreline Estate, Covenant Estate, and Princely Court Estate. Development in Oniru estate includes block of flats, terrace houses, duplexes and detached houses. However, an important factor peculiar to Oniru Estate is the well coordinated type of developments. Although the condition of infrastructure in the estate cannot be said to be totally excellent, Oniru estate is a well laid out neighborhood with attractive beach front and scenery. The Oniru Private Beach is already a notable relaxation spot for both non-residents and residents of the estate. The Beach is currently rated as the neatest and most well kept beach front in Lagos.

Despite the geographical location and physical quality ascribed to Oniru estate, there exist some shortcomings: the place is highly prone to flooding just as in many parts of Victoria Island and Lekki. The rising water level in the axis has been a common occurrence each time it rains; consequently, the road and drainage condition has deteriorated considerably. Also, various types of commercial activities exist along major roads in the estate, and these have had adverse effect on the flow of traffic. Due to the high level of commercialization in the estate, the number of commercial properties and those used for purposes other than residential are already eroding the serene nature of the estate. This scenario, apart from creating a noisy and congested outlook for Oniru estate, has also made the traffic situation an unbearable experience.

4. Data collection

A field survey was carried out using questionnaires to elicit information from the residents in Oniru estate. The questionnaire provided information on the following subjects: demographic characteristics of respondents, residential satisfaction, and dwellings' physical characteristics. Residents' satisfaction level was assessed on a 3-item rating

scale indicated as (1) dissatisfied, (2) neutral, and (3) satisfied; meanwhile, the evaluation of dwellings' physical characteristics and residential environment was done using a 10 performance criteria (see Ilesanmi, 2010). These include functional issues of housing type, accessibility, car parking provision, adequacy and efficiency of services, building density, landscape and children playing spaces, aesthetic issues of visual quality and spatial configuration, technical issues of structural soundness, behavioral issues of privacy and level of security, and sense of community. These performance variables were scored in terms of whether they were evidenced in good state (three points), in fair state (two points), or in poor state (one point). The summation gave the value of the total physical characteristics (TPC).

Using a systematic sampling method, 120 (20%) housing units were surveyed from a total of 600 units in Oniru estate. Only 100 (83%) copies of the questionnaire were retrieved from the respondents and used for analysis. The data were analyzed by use of descriptive statistics and the Pearson Chi-square test in determining the significance of identified physical characteristics on residential satisfaction (with probability level $p < 0.05$).

5. Results and discussion

5.1. Demographic characteristics of respondents

Table 1 presents a brief illustration of respondents' demographic characteristics in the study area. The variables assessed include gender, age, marital status, employment, education and housing tenure status. The data show that 73% of the respondents were male, while 27% were female. Of these proportions, 40% of the respondents were between the ages of 25 and 30, while 60% were above 35 years of age. Also, 10% of the respondents were single, 73% married, while 13% and 4% were divorced and widowed, respectively. The employment status indicates that as much as 33% of the respondents were public servants, 16% were private employees, while 33% were self employed and 18% retiree. Considering the level of education of the respondents, 72% of them have attained up to the post-graduate level, while others, constituting 28%, attained up to the graduate level. Also, considering the housing tenure status of the respondents, 17% were original owners who purchased their dwellings, while a significant proportion of 83% were tenants who rented their apartments from the original allottees.

This survey shows the predominance of married, male household heads who were either public servants or in self-employment. A significant proportion of these categories of respondents belonged to the middle age group as their modal age range ranks above 35 years. The survey also indicates that most of the respondents were well educated, having attained up to post-graduate level of education. However, regardless of respondents' high level of education and employment status, information on housing tenure status indicates that less than one-fifth were original purchasers of the housing units, while a significant proportion of the units was occupied on rental basis. This result is at variance with Ilesanmi (2010), whose finding indicated that most self employed and public servants occupying

Table 1 Demographic characteristics of the respondents. Source: Field work (2011).

	Frequency	Percent
Gender		
Male	73	73.0
Female	27	27.0
Total	100	100.0
Age		
Below 25	0	0.0
Between 25 and 30	40	40.0
Above 35	60	60.0
Total	100	100.0
Marital status		
Single	10	10.0
Married	73	73.0
Divorced	13	13.0
Widowed	4	4.0
Total	100	100.0
Employment		
Public servant	33	33.0
Private employee	16	16.0
self employed	33	33.0
Retiree	18	18.0
Total	100	100.0
Education		
Illiterate	0	0
Secondary	0	0
Post-secondary	28	28.0
Post-graduate	72	72.0
Total	100	100.0
Tenure status		
Original purchasers	17	17.0
Transferred ownership	0	0
Inheritance	0	0
Tenancy	83	83.0
Govt. allottee	0	0
Total	100	100.0

public housing estates in Lagos, Nigeria, were original purchasers of their units. The finding of this present study thus attests to the low wage structure and poor financial status of most Nigerians who are in public service employment, and they therefore could not afford to own a house.

5.2. Evaluating residential satisfaction

Table 2a presents the cumulative score on the rating of residential satisfaction in the study area. Based on a 3-item rating scale ranging from 1—dissatisfied, 2—neutral, to 3—satisfied, respondents indicated their degree of satisfaction with the dwelling units and estate environment. The results, however, show that barely more than half (59.9%) of those sampled expressed satisfaction with the housing estate, while 25.9% of the respondents indicated their level

of residential satisfaction as being neutral. Only 14.2% were generally dissatisfied with their housing estate.

Considering the ratio of those who actually expressed a high level of residential satisfaction relative to others, there are indications that certain factors influenced respondents' assessment of their estate. While substantiating Hui and Yu (2009), Salleh (2008) and Rosenberg (cited in Francescato, et al., 1989), this result indicates that certain expectations and needs of the residents were not met regarding their estate. This finding thus aligns with the notion of "housing deficit" by Morris and Winter, cited in Salleh (2008), which contends that "if a household's current housing meets the norms, the household is likely to express a high level of satisfaction with the housing and neighborhood; an incongruity between the actual housing situation and housing norms results in a housing deficit which gives rise to residential dissatisfaction".

5.3. Assessing housing physical characteristics

Table 2b also presents the cumulative score on the rating of housing physical characteristics. This was obtained based on the ten performance criteria used in the survey. The result is comparable to and reinforces earlier finding on residential satisfaction, as barely more than half (58.1%) of the respondents indicated that the physical aspect of their housing were in good state. Also, 30.3% of them rated the physical aspect of dwellings as average or neutral; while 11.6% of the respondents rated it as poor in terms of quality. By substantiating the findings of Yeh (1972), Kowaltowski et al. (2006) and those of Salleh (2008), and Ha (2008); this result indicates that certain performance criteria or housing

Table 2 Cumulative scores of responses.
Source: Field work (2011).

(a) Residential satisfaction	Dissatisfied	199	14.2%
	Neutral	362	25.9%
	Satisfied	839	59.9%
	Total	1400	100.0%
(b) Total physical characteristics (TPC)	Poor state	116	11.6%
	Fair state	303	30.3%
	Good state	581	58.1%
	Total	1000	100.0%

attributes determine the level of quality in residential development.

The result thus confirms the relevance of the Consumer Satisfaction Index Model presented in Fig. 1; which indicates that "customer expectations influence the evaluation of quality and forecast how well the product or service will perform". Also, that "perceived quality is the extent to which a product or service meets the customer expectation and this will have the greatest impact on customer satisfaction".

5.4. Relationship between residential satisfaction and housing physical characteristics

From the Chi-square statistics presented in Table 3, the calculated value is 1095.505^a yielding a *p* value of 0.000, with degree of freedom (*df*) of 285. This result shows that the *p* value is less than 0.05 probability level, therefore implying that Pearson Chi-square test is significant for the relationship between measurement of satisfaction and the evaluation of physical characteristics by the respondents. While corroborating earlier findings (Yeh, 1972; Onibokun, 1974; Varady and Carrozza, 2000; Salleh, 2008), the test thus confirms and establishes the level of relationship between the measurement of residential satisfaction and the evaluation of housing physical characteristics in the estate. In other-words, the quality of houses' physical appearance plays a significant role in determining residents' satisfaction level in the study area. This result further reinforces the relevance of the Consumer Satisfaction Index Model, which shows that "perceived quality is the extent to which a product or service meets the customer expectation and this will have the greatest impact on customer satisfaction".

5.5. Summary of findings

From the evaluation of residential satisfaction, the study showed that a relatively significant proportion of residents in Oniru estate was generally satisfied with their dwellings and estate neighborhood in terms of functionality, accessibility, spatial adequacy and efficiency, aesthetics, security, privacy and sense of community among several others (see Table 2a). Also in terms of quality of the Total Physical Condition (TCP) in the estate, the ratings indicated that this was relatively in good state, as shown in Table 2b. This

Table 3 Test of significance between the measurement of satisfaction and the evaluation of physical characteristics by respondents.
Source: Computer output data.

Chi-square model	Chi-square tests value	<i>df</i>	Asymp. sig. (2-sided)
Pearson Chi-square	1095.505 ^a	285	.000
Likelihood ratio	335.513	285	.021
Linear-by-linear association	97.666	1	.000
No. of valid cases	100		

χ^2_c value 1095.505^a, *df* value=285, *p*-value=0.000.

^a318 cells (99.4%) have expected count less than 5. The minimum expected count is .01.

implies that aspects of the estate regarding external visual quality, maintenance quality, structural quality, detailing quality, quality of services, quality of estate roads, quality of landscape, quality of open spaces, quality of environmental layout, quality of location were generally in good condition and conformed with the expectations of most residents.

By examining the relationship between residents' satisfaction and the quality of dwellings' and neighborhood's physical condition, the result of the Chi-square test in Table 3 confirms that residents' satisfaction level has been significantly influenced by the quality of their dwellings and housing environment.

Two main reasons can therefore be given for the high quality of housing in the estate. The first relates to the initial design conception and construction of the buildings in which attention was paid to precision, fitness, aesthetics, balance and harmony in the use of design elements. The second explanation relates to the socio-economic status and sense of value of the residents in terms of high level of education and ability to afford housing maintenance. Although this study revealed that most of the occupants were not the original owners of their dwellings, residents were however more concerned with the quality of housing rather than any other issues. Compared with other neighboring communities occupied mainly by low-income residents, the disparity in quality was necessitated by the fact that many of the residents in the estate appreciated the importance of maintaining and improving their dwelling environment, whereas those in the low-income communities could barely afford a decent livelihood.

6. Conclusions

This study sets out on a post-occupancy evaluation of residents' satisfaction with their dwellings and residential environment in Oniru estate, Lagos, Nigeria. In this regard, the study examined certain performance characteristics of the residential environment in terms of its physical quality and functional adequacy; it also examined the residents' satisfaction level; and determined the relationship between the physical characteristics of the buildings and residents' satisfaction.

The study revealed that a larger proportion of residents in the study area are generally satisfied with their dwellings and estate neighborhood. The study also revealed that the quality of housing area is generally high. Of significance to this study is the role of residents' perception in mediating between the objective physical characteristics of the environment and residential satisfaction. The study thus showed existing relationships between users' responses on residential satisfaction and the physical characteristics of their dwellings. The thrust of all these findings is that the physical characteristics of residences are significant parameters in determining the levels of residents' satisfaction in the housing estate.

Although an important aspect of every residential design or development should be to make a positive contribution to the appearance of towns and streets. In addition, a good design also needs to function effectively and provide fitness for purpose, thereby designers should aim to achieve the

best possible buildings. Nonetheless, it is likely if not inevitable that some design issues will emerge in completed buildings, with some becoming apparent only after the building has been in use for a period of time. It is imperative therefore that planners and policy makers with respect to housing delivery recognize the place of the end-users—the residents, in the delivery process. Policy issues on housing development should make the people its focus; in this regard, planning and development decisions should be made with the people rather than for them.

This study is deemed significant, as it thus provides valuable feedback on residential satisfaction studies as well as knowledge about aspects of housing design that warrant replication or improvement in any future residential development.

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