

# TOWARDS A PREFERRED HOUSING ENVIRONMENT: EXAMINING SATISFACTION ELEMENTS OUTSIDE A DWELLING UNIT AMONG AHMADU BELLO UNIVERSITY (KONGO CAMPUS) STAFF, NIGERIA

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## ABSTRACT

*In this paper, we built upon findings from a housing satisfaction study (considering largely those elements which are external to the dwelling unit) among two categories of university staff (academic and non-academic). Responses are gathered from university owned housing developments at four (4) different locations as well as private accommodations. 224 households (that is 20% of the entire staff population as at July 2011) were studied by selecting one out of five houses in each of the identified clusters. The study found that, the macro environmental effects of safety and security positively affects occupants' overall satisfaction. However, although soft exterior landscaping is found to be generally poor in all the studied housing developments, it has no effect on the overall satisfaction. The scenario reflects the contextual level of socio-economic development; hence the study highlights the need to emphasize basic elements, particularly in response to the growing interest in fostering sustainable development through reduced material consumption.*

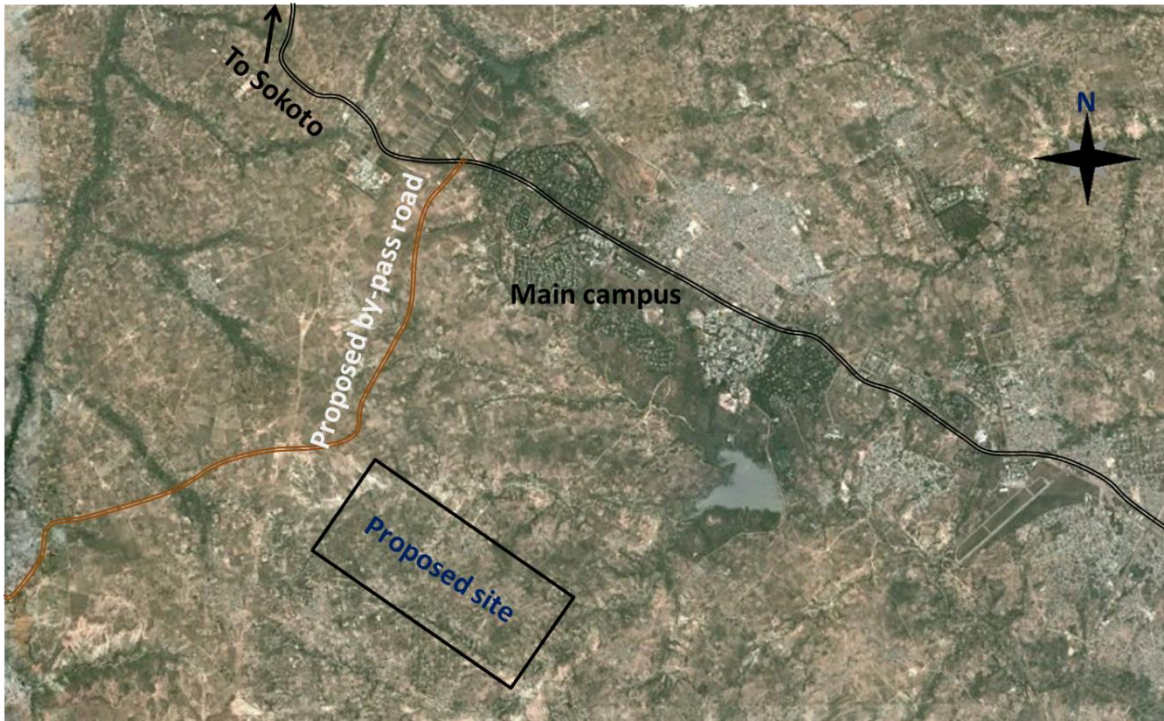
**Keywords:** Institutional housing, housing satisfaction, dwelling unit, sustainable development

## 1 INTRODUCTION

This study is triggered by the on-going efforts by the Ahmadu Bello University (ABU) chapter of the Academic Staff Union of Nigerian Universities (ASUU) towards a staff housing programme that is aimed at providing affordable housing to university's academic staff. As at the time of this study, a site has already been acquired from the Kaduna state government along the proposed Sokoto-Kaduna road by-pass in Zaria.

It has been observed that dwelling that is adequate from a physical point of view may not necessarily be adequate or satisfactory from the users' point of view (Onibokun, 1973 and Oladapo, 2006; cited in Jiboye, 2010). A combination of physical dwelling character, social context (in terms of the residents, tenure and the neighbourhood), quality of surrounding environment as well as how the residential environment is managed are therefore important combinations for housing satisfaction as identified by a number of studies (Amole, 2009; Mohit et al, 2010; Mohit and Nazzzydah 2011; Buys and Miller, 2012). Jiboye (2010) however, examined the correlation between the various satisfaction determinants. Of importance also, is how the factors or determinants were viewed and analysed in various studies which is often a reflection of the context. Ethnicity was viewed by Jiboye for example as the

geopolitical zoning which may not necessarily be an indicator of strong ethnic similarity in other places.



*Figure 1: Location of the proposed site for ABU-ASUU housing project*

The need for information about the adequacy and success of housing designs, once they are built, has dominated the minds of not only professionals in the built environment but also the policy makers. In fact, one of the task confronting policy-makers, planners and housing developers is to identify relevant factors or parameters which determine users' satisfaction with their housing.

Individuals and families want to stay in places where they feel comfortable in carrying out their daily interactions. Where residential deficits exist, housing satisfaction is affected which consequently triggers the tendency to adjust housing. According to Alalade (1978), housing adjustment is achieved either in Residential mobility or Residential adaptation, which refers to tendency of residents to move from one residential area to another within a local area or a

situation where residents engage in alteration of their dwellings in an attempt to make it more liveable respectively.

Alterations usually take the form of addition of rooms, conversion of use and demarcation of spaces. An earlier study of housing condition within the Ahmadu Bello University (main campus) staff housing revealed clear evidences of residential adaptation (Dawen et al. 2001). This study therefore sets out to determine the perspectives of housing satisfaction among staff in Ahmadu Bello University (Kongo campus). This will subsequently guide housing projects (private and public) particularly those targeted at middle class and the low income. A good example can be the Ahmadu Bello University Academic Staff Housing initiative currently in process.

The study is concerned with factors which are external to dwellings but combine with those of dwellings to provide satisfaction. The housing units studied are the on-campus and the off-campus staff housing (including university accommodation and private accommodation). The residential areas studied are the on-campus staff quarters, Banzazzau quarters, staff white house and dwellings on 2, western way, GRA.

## 2 METHODOLOGY

### 2.1 The Kongo Campus

Ahmadu Bello University, Kongo Campus is situated at Tudun Wada. Kongo campus is bounded to the north by river Kubanni, to the west by Kamasha stream and to the south by Banzazzau quarters and the New Jos road. Kongo Campus is located on latitude 11°30'N and longitude 7°50'E on an elevation of about 686m above sea level.

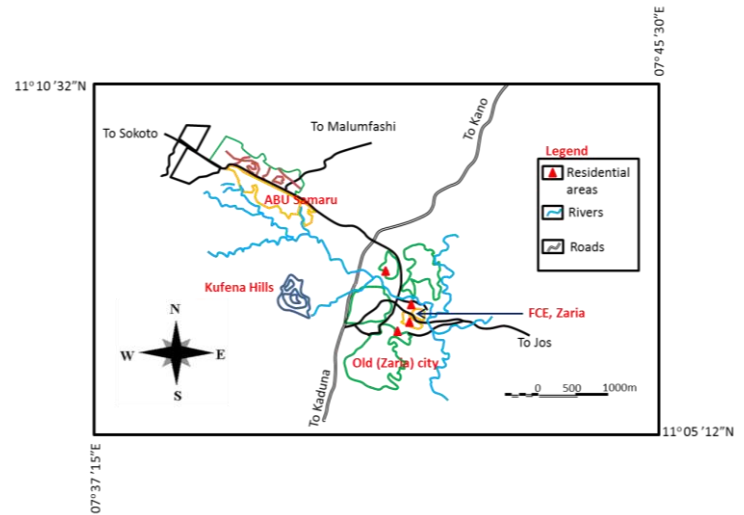


Fig 2: Location of the residential areas in Zaria

Ahmadu Bello University, Kongo campus is in Zaria urban area and therefore falls within the Savannah climate, according to Koppen's world climate classification. It has a mean annual rainfall of about 1000mm (Ati et al, 2009). The mean maximum temperature occurs in April and minimum temperature occurs between December and January. Tudun Wada also has the natural vegetation of the Northern Guinea Savannah.

### 2.2 Data assembly

A survey was carried out in July 2011, covering two broad categories of residential areas; the university accommodation (both on-campus and off-campus) and the non-university accommodation (off-campus). Questionnaire was administered to obtain the responses from residents in the various residential areas.

Several visits were also made to some residences to pry out some information informally which otherwise could be impossible to obtain by the use of formal

means such as questionnaire and to make physical observation of these residential areas.

Consultations were held with some members of Estate Department to help in categorizing staff occupancy status and the different residential areas.

At the time of this study, there were 1120 members of staff at the ABU (Kongo campus) Zaria, 274 occupying university housing (both on-campus and off-campus) and 846 staying on non-university housing. The survey was carried out on 224 households. The approach involved administering a questionnaire to one out of every five household with their individual housing unit in both the university and non-university residential areas. Altogether the number of questionnaire administered in all the residential areas, both on-campus and off-campus, constitute 20% of the total staff population.

Table 1: Breakdown of Questionnaire Administered

Residential Area	Number of Household/ Staff	Number of questionnaire administered	Total number of returned questionnaire	Percentage of returned questionnaire
<b>On-campus staff qtrs</b>				
Staff white house	178	36	34	94
Banzazzau qtrs	8	2	2	100
2western way, GRA	77	15	15	100
PrivateAccommodation	11	2	2	100
	846	169	160	95
<b>TOTAL</b>	1120	224	213	

Although several attributes related to housing satisfaction were examined, the focus of this study was on those elements that are considered external to the dwelling unit. They include safety and security of the neighbourhood,

accessibility to other activity centres, as well as external facilities for refuse disposal and landscape elements.

### 3 RESULTS AND DISCUSSION

#### 3.1 Characteristics of Residential Areas

Ahmadu Bello University, Kongo Campus was founded in 1947 as a clerical centre and was incorporated into Ahmadu Bello University on the 4th of October, 1962. This was the oldest institution of higher learning in West Africa devoted to teaching of Administration, Finance and Law. The institution houses the University's faculty of Law, faculty of Administration together with department of Local Government Studies and Centre for Islamic studies.

##### 3.1.1 On-Campus Staff Quarters

###### • Nature and Type of dwelling

The staff quarters comprised of 178 dwelling units. These dwelling units are categorized into 4 types: The 4-bedroom type; 3-bedroom type; 2-bedroom type and 1 bedroom type. The structures are mainly built with cement (hollow) block, but very few are found to have been built with both cement blocks and mud bricks. The 4 bedrooms and 3 bedrooms are occupied by senior staff. The 4 bedroom types are 16 in number and are mainly professorial units. While the 3 bedroom type are 70 in number and are detached units. The 2 and 1 bedroom types are 70 and 22 in numbers respectively. These units are meant for university staff in the lower cadre.

###### • Facilities and Utilities

All the dwelling units have been provided each with a toilet and kitchen, although some residents are found to cook outside. The units have adequate access to power and pipe borne water supply. The street pattern here follows the grid iron concept with most streets tarred.



*Plate 1: 2 Storey Apartment Comprising 6 Units and a Duplex*



*Plate 2: Detached and semi-detached units*

### 3.1.2 Staff White House, Gyallesu

- **Nature and type of dwelling**

The staff white house is a two storey building rented off-campus by the university. It covers a land area of 0.08 hectare (970m<sup>2</sup>). It is located north of the university. It comprises eight units including units that are built close to the storey. Each of the apartments is a 2-bedroom type; the structure is built with cement block and reinforced concrete.

- **Facilities and Utilities**

The Apartments have been provided each with kitchen and a toilet. These units are enclosed with a fence. This provides a secure parking space for residents. The apartments have access to pipe borne water supply and power supply. However, water supply here is not regular. The apartments are provided with two large water storage tanks to supplement the pipe borne water supply.

The building is linked with an un-tarred access road which is fair in condition but the main road linking the access road is tarred but is in a poor with numerous pot holes. The drainage channels along these roads are fair in condition.

### 3.1.3 Ban-Zazzau Quarters

- **Nature and Type of dwelling**

The Banzazzau quarters are located south of the university. It covers an area of 3.02 hectares (30, 151m<sup>2</sup>) and comprising 77 houses built with cement block. Two types of units are found in the area the 2-bedroom and 1-bedroom types. 54 of the units are 2-bedrooms types and the 23 units are the 1-bedroom type. The units are semi-detached houses.

- **Facilities and Utilities**

The houses are built with courtyards with a kitchen and toilets. The street pattern follows the linear concept. The roads in this area are untarred and in

very bad state due to erosion, making streets narrow and steep. The drainages are also in bad condition due mainly to lack of maintenance.



Plate 3: Staff White House

The houses have access to power and pipe borne water supply. However, the taps remain dry and can stay in that state for a period of six weeks as disclosed by some residents. As such therefore, use of well as a source of domestic water supply is resorted to.

### 3.1.4 Western Way, G.R.A

- **Nature and Type of dwelling**

Eleven (11) of the houses on 2 Western Way GRA Zaria have been allocated to staff of A.B.U Kongo campus. These comprises of individual dwellings and also a compound setting.



*Plate 4: Ban-zazzau Quarters*

The compound consists of 5 detached units while the remaining 6 units are outside the compound along the street. The dwellings are built with cement mainly. Seven of the dwellings are 3 bedroom types and four are 2 bedroom types.

- **Facilities and Utilities**

The dwellings all have access to power and pipe borne water supply. Each dwelling consists of a kitchen and toilet including the units in the compound. Residents in the compound make use of water from well in the compound since pipe borne water supply is not consistent and readily available. The street linking these units is untarred but fair in condition.



*Plate 5: The GRA Quarters*

### 3.1.5 The Private Accommodation

These private dwellings found off-campus are differently located and occupied by staff of ABU (Kongo campus) Zaria, without the university's intervention. The houses found in these areas can be broadly categorized into

- Single detached house
- Semi-detached house
- Compound
- Duplex

### 3.2 Household Size

Three categories of household sizes were recognised in the residential areas, large, medium and small household sizes. 22.5% of the total sampled household in the university residential area are large, with more than 7 persons, 46.5% are medium size households with 5-6 persons, while 31% constitute the small household size with 3-4 persons. In the non-university residential areas 55% of the total sampled household are large with more than 7 persons, 35% are medium size households with 5-6 persons, while 10% constitute the small household size with 3-4 persons. Figure 3 below shows the percentage distribution of household by sizes in the residential areas.

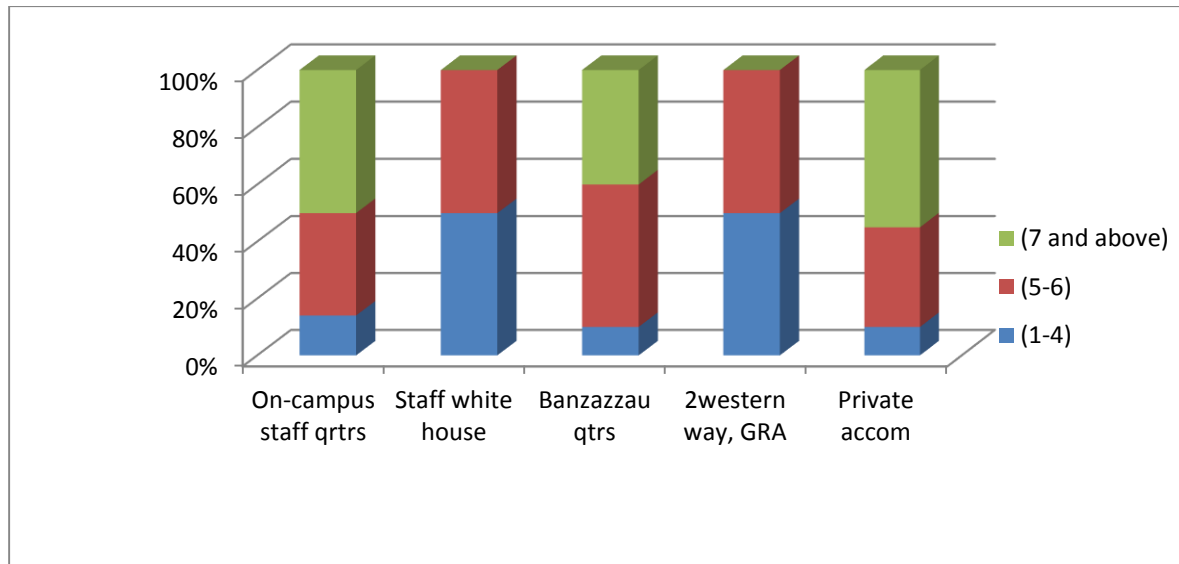


Fig 3: Distribution of Households by Sizes



There is an inverse relationship between household size and overall level of satisfaction of residents (keeping other variables constant). The level of satisfaction decreases among larger households in all the areas. The reason being that the larger the household size, the more inadequate the facilities and space in housing are likely to be.

### 3.3 *Indicative analysis using multiple regressions*

Six variables were considered in the analysis that follows as elements that were examined being external to the dwelling unit. They are neighbourhood safety, neighbourhood social interaction, refuse collection system, children play ground, accessibility to place of work and exterior (common) landscape.

*Table 2: Variables used for multiple regressions in indicative analysis*

<b>Variable</b>	<b>Measurement level</b>	<b>Categories</b>
<b>Housing satisfaction (dependant variable)</b>	Ratio (ordinal)	1 = Not satisfied at all 5 = Very satisfied
<b>Neighbourhood safety</b>	Nominal	0 = comfortable with locating near a police post 1 = Fear of locating near a police post
<b>Neighbourhood social interaction</b>	Nominal	0 = no social contacts with other residents 1 = there is social contacts
<b>Refuse collection</b>	Nominal	0 = poor 1 = good
<b>Children play ground</b>	Nominal	0 = inaccessible 1 = Accessible
<b>Access to work place</b>	Nominal	0 = difficult 1 = easy
<b>Exterior (common) landscape</b>	Nominal	0 = generally poor 1 = generally good

We ignored the fact that formal conditions for a linear multiple regressions are not completely met. For indicative analysis, such a problem is of minor importance (Elsinga and Hoekstra, 2005).

For the different residential locations, a separate multiple regression analysis was conducted. Following a phased methodology, neighbourhood safety was considered in the first phase while other variables such as neighbourhood social interaction, access to work place and exterior landscape were subsequently taken into account.

In the first phase of the analysis, only the ‘neighbourhood safety’ variable was introduced. The beta coefficient is positive for all the five residential areas. This indicates a positive relationship between the dummy variable ‘neighbourhood safety’ and the variable ‘overall housing satisfaction’ (without controlling for other relevant variables).

Subsequently, the variable ‘neighbourhood social interaction’ is introduced into the model. The introduction of this variable results in a (substantial) reduction in the values of beta coefficients for the first variable ‘neighbourhood safety’ though positive and statistically significant in all the residential areas.

In phase three, the variable ‘refuse collection’ was introduced. The beta coefficients remained positive and statistically significant for all the five residential areas. However, the relationship seems to be higher in 2, Western Way and the on-campus staff accommodation being seemingly more organized (physically) than other areas. The introduction of this variable does not bring about major changes in the coefficients for ‘neighbourhood safety’. In the fourth phase, the variable ‘children play ground’ was introduced. The relationship with independent variable is significant and positive in all the residential areas with the exception of Ban-Zazzau quarters and 2, Western Way. Beta coefficients for other variables remained positive and statistically significant.

Table 3: Beta parameters and explained variance in the five residential areas

Phase		OC	SWH	BZ	2, WW	Private
1	Neighbourhood safety; Neighbourhood social interaction; Refuse collection; Children play ground; Access to work place; Exterior (common) landscape; R <sup>2</sup>	0.28	0.17	0.29	0.12	0.15
		0.07	0.04	0.07	0.01	0.03
2	Neighbourhood safety; Neighbourhood social interaction	0.22	0.11	0.16	0.10	0.09
	Refuse collection; Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.33	0.20	0.19	0.29	0.24
3	Neighbourhood safety	0.19	0.09	0.19	0.10	0.10
	Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.35	0.19	0.15	0.12	0.23
4	Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.10	0.06	0.07	0.13	0.08
	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.26	0.13	0.27	0.27	0.21
5	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.19	0.10	0.17	0.11	0.10
	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.30	0.20	0.16	0.12	0.23
6	Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.09	0.06	0.08	0.13	0.07
	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.05	0.08	0.02*	0.01*	0.05
5	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.25	0.14	0.27	0.26	0.21
	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.20	0.11	0.15	0.10	0.09
6	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.26	0.18	0.17	0.09	0.12
	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.11	0.07	0.10	0.14	0.06
6	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.06	0.10	0.04*	0.01*	0.02*
	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.05	0.12	0.14	0.09	0.08
6	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.25	0.14	0.28	0.27	0.21
	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.19	0.10	0.16	0.09	0.11
6	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.23	0.19	0.15	0.08	0.10
	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.09	0.09	0.11	0.13	0.05
6	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.07	0.11	0.03*	0.01*	0.00*
	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.06	0.10	0.12	0.11	0.07
6	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.05	0.04*	0.02*	0.02*	0.02*
	Neighbourhood safety Neighbourhood social interaction Refuse collection Children play ground Access to work place Exterior (common) landscape R <sup>2</sup>	0.26	0.16	0.28	0.28	0.22

\*Not significant statistically (P < 0.05)

With the introduction of the fifth variable 'access to work place' in phase 5, the situation remained somehow unchanged in all the residential areas on all the preceding variables with the exception of 'children play ground' which additionally became statistically insignificant in private accommodation.

In the final phase, although 'exterior (common) landscape' was observed to be poor in all the residential areas, its relationship with 'overall housing satisfaction' is statistically insignificant in all the residential areas except the on-campus staff accommodation. Also, introduction of the variable had no effect on the beta coefficients of other variables in the model. Explaining only 14% (in staff white house) and 25% (in private accommodation) of the variance of the dependant variable, the model suggests that housing satisfaction is not dependant on the variables included but that other aspects (internal elements and psychological factors) also play a part.

#### 4 CONCLUSION

Although human needs and preferences are not static since they tend to respond to prevailing circumstances, some design elements for housing developments continued to show significant relevance to satisfaction over time. This study found that housing satisfaction is not dependant on the variables included (neighbourhood safety, neighbourhood social interaction, refuse collection system, children play ground, accessibility to place of work and exterior (common) landscape) but that other aspects (internal elements and psychological factors) also play a part. Issues relating to safety as well as presence of certain communal facilities and design concepts that may enhance social interaction are essential considerations in housing design process. Since most of the elements considered as external to the dwelling unit can be integrated into the design prior to occupation, overall satisfaction can be medium cost terrace houses where the semi-public spaces available in the forefront of the house areas had been changed as their 'Extended Garden' or additional area for landscaping. These finding shows that the size of green area (private and semi-public green area) in typical terrace houses layout in urban area are not appropriate and not achieve the occupant needs.

improved by such integration of components that can be captured even at the level of sites and services.

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