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ASSESSING USER SATISFACTION IN OFF-CAMPUS ACCOMMODATIONS AROUND KADUNA STATE UNIVERSITY, KAFANCHAN CAMPUS.

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ABSTRACT

The absence of resident student hostels in Kaduna State University, Kafanchan Campus (KASU KC) has spawned the unregulated development of privately owned off-campus accommodations in the communities surrounding the university. This research adopts the case study survey methodology to determine user satisfaction levels of the occupants from selected accommodations around KASU KC. Purposeful sampling is used to select the off campus accommodations as case studies, while convenience sampling is used to administer structured questionnaires to respondents. The Relative Satisfaction Index (RSI) based on Building Performance Attributes (BPAs) was used to measure user satisfaction*. Descriptive statistics was used to analyze the data from questionnaires. The results indicated a mean RSI of 3.4 – designated as Indifferent. This implied that private developer's focus on commercial profitability of the buildings without regard to standards required for user satisfaction. This research will hopefully add to the body of knowledge on* user satisfaction *in buildings, as well as provide architects/developers of student hostels/accommodations with useful information on the minimum standards for student housing.*

Keywords: *User Satisfaction, Off-campus Student Accommodations*

INTRODUCTION

Housing provides more than just shelter but also a setting for social and psychological development. Nigerian institutions of higher learning have struggled to meet this need for their students, as student housing continues to fall short of the rising student enrolment. Thus creating an avenue for private developers to cash in on the housing demand, (Agava et al., 2018; Ibok et al., 2018).

Research has shown that resident housing for tertiary students has been a challenge of governments in developing countries. In Nigeria, both government and management of the public institutions have not given priority to student housing. Thus leading to a rise in privately owned off-campus accommodations – often developed without adherence to design and construction standards favorable to student learning, (Agava et al., 2018, p. 75; Azeez et al., 2016; Nimako & Bondinuba, 2013).

These privately owned off campus accommodations are typically costly to rent, and also devoid of amenities and services required by students, (Agava et al., 2018). The quality of accommodation provided for students affects the quality of learning. Ideally, the hostel facilities would include ancillary facilities such as study area, communal lounge, laundry, toilets, and kitchens. This enables students to focus on their education, (Tajudeen et al., 2018, p. 411).

The problem of inadequate student housing is prevalent in the public institutions of the north central region of Nigeria,(Philip, Christopher, & Mukaila., 2018); which is also the case in Kaduna State University Kafanchan Campus (KASU KC). As such it is imperative to assess the preferences and needs of students as a guide to providing efficient hostel accommodations.

This research therefore aims to determine the level of user satisfaction from occupants of the off campus accommodations around KASU KC. The level of satisfaction is measured based on rating scale ranging from 1=Very Dissatisfied (VD), 2= Dissatisfied (D), 3 = Indifferent (ID), 4 = Satisfied (S), 5 = Very Satisfied (VS). This will be achieved by the use of a structured survey, designed to measure the Relative Satisfaction Index (RSI). Hopefully, this research will add to the existing body of knowledge on user

satisfaction in buildings, provide designers, and developers with useful information for efficient hostel design and development based on user preferences.

This paper consists of six sections; following this introduction is the literature review section which explores the theoretical concepts of service quality and user satisfaction. The section on the study area provides information on the environment in which the research is conducted. The case study section highlights the characteristics of the selected buildings to be studied. The research methodology section describes the population sampling technique, instrument of the research, data analysis, and presentation techniques. The paper concludes with the presentation and discussion of findings, and recommendations.

LITERATURE REVIEW

This section explores the associated theoretical concepts and factors associated with user satisfaction, and building performance – by highlighting the definitions of relevant terminologies relevant to the study. These are deduced from review of relevant literature and empirical studies on the subject of user satisfaction.

Service Quality

Service Quality (SQ) is the degree to which a service/product satisfies customer expectations, and is a key component of the student accommodation industry. SQ also involves core service products (facility) and supplementary service (support services) elements, (Nimako & Bondinuba, 2013). In the context of student hostel facilities, SQ is measured by evaluating the collective experiences of various students with facilities over time, (Iroham et al., 2017).

User Satisfaction

Satisfaction is defined as the quality or state of being content, a source or means of gratification, (Merriam-Webster, n.d.). User Satisfaction derived from using a facility varies depending on individual perceptions. Surveys on user satisfaction are significant indicators for determining the level of improvements required for facilities to meet user expectations, (Olushola, 2018). This implies that the survey may also indicate the condition/quality of a facility.

Housing satisfaction indicates both qualities of housing, and user contentment with the quality. This provides information to professionals on housing design and quality, (Formoso & Jobim, 2006; Mohit et al., 2010). Studies have revealed a correlation between 'satisfaction' and the 'quality' of the hostel environment, (Ifaturoti, 2017). Therefore, it is important that developers provide shelter that meets the needs and expectations of users.

Determining User Satisfaction

Factors indicating user satisfaction with housing include physical characteristics of the dwelling unit and its surroundings; and social/individual characteristics - feelings and perceptions of the users. The physical characteristics involves variables such as security, dwelling design and privacy, unit size, space adequacy, flexibility and adaptability, and satisfaction with surrounding environmental facilities, among others, (Azeez et al., 2016). Therefore in the case of students, the accommodations should provide a serene living and study environment.

User satisfaction can also be assessed based on the dwelling unit features, housing unit support services, public facilities, social environment and neighborhood facilities, (Mohit et al., 2010). A study on government residential buildings in India established a correlation between user satisfaction and building performance. The study also outlined three main components for measuring building performance - the physical, functional, and financial components. Therefore, the condition of the building fabric has a direct effect on user satisfaction, (S. Gopikrishnan & Virendra, 2018).

Empirical evidence based studies on user satisfaction in buildings have generally used as variables the physical attributes of buildings (design, quality and adequacy of

facilities), as well social factors related to user perception, and the immediate environment, (Ajayi et al., 2015; Berkoz et al., 2009; Day, 2000; Fang, 2006; Mohit et al., 2010). The studies have also adopted numerical rating scales to assign value to perceptions of satisfaction from users. Results have also been derived in the form of an index figure which gauges the satisfaction of users.

Building Performance Attributes (BPAs)

Physical and functional factors such as space, physical condition, safety, furniture, fittings, fixtures, lighting, air, noise, water, waste disposal and so on, are referred to as Building Performance Attributes (BPAs), (C. S. Gopikrishnan & Paul, 2017).

This study therefore focuses on the physical and functional components of the building fabric, and its relationship with its occupants/users as previously outlined. The Functional components of BPAs therefore provide a basis for developing subcategories, which will be used for measuring user satisfaction in this study.

STUDY AREA

Kaduna State University, Kafanchan Campus and Binzom Village

Located in Binzom village, Kafanchan, the Kaduna State University Kafanchan Campus (KASU KC) lies on Latitude 9.5848982 North, and Longitude 8.2924213 East (see figure 1). Boundaries of KASU KC and Binzom are highlighted in red and yellow. Two faculties – Environmental Sciences, and Agriculture, and the College of Basic Studies (CBS) comprise the academic units of the campus. While the student population just over 1600, as of the 2019/2020 academic session.

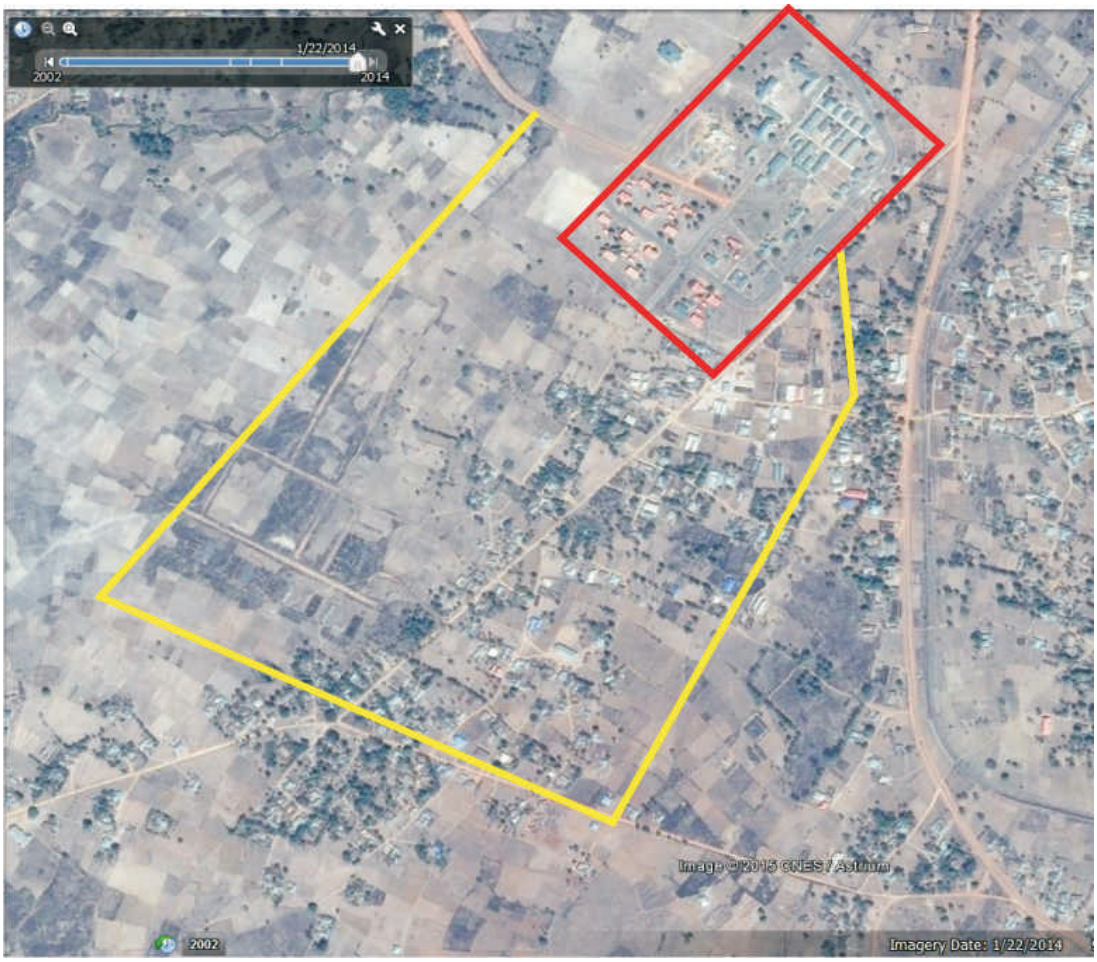


Figure 1: Location of KASU KC and Binzom. (Source: Adopted from Google Earth)

Binzom community is characterized by small residential compounds (mostly mud buildings roofed with zinc sheets) enclosing a yards/courtyard. Parcels of farmlands surround the compounds. The establishment of KASU KC in 2013 has spawned the transformation of Binzom. Even as rural houses and parcels of farmlands are remodeled, and developed respectively into student lodges. These developments are usually carried out without due diligence to/from the Kaduna State Urban Development Authority. Access to the off campus accommodations is characterized foot paths, with limited vehicular access. There is also inadequate electricity supply, and no pipe borne water in the community, (Musa & Shamang, 2016).

CASE STUDIES

Case studies of privately owned off campus accommodations were chosen using purposeful sampling techniques. The characteristics of the buildings are outlined in Tables 1 and 2. Outlined in the tables are observations/remarks corresponding to the Building Performance Attributes (BPAs).

Table 1: Case studies of some select off campus accommodations in Binzom.

	BUILDING SURVEY 1	
	BPA	**Remarks**
1	Type of development	New development
2	Number of rooms	11
3	Facilities	Single room, kitchen, and bath
4	Size of plot	900 m2



Plate 1: A new development of 11 fully en-suite rooms. (Source: Authors Field Work)

	BUILDING SURVEY 2	
	BPA	**Remarks**
1	Type of development	New development
2	Number of rooms	8
3	Facilities	Single room, kitchen, and bath
4	Size of plot	600 m2



Plate 2: A new development of 8 fully en-suite apartments on a farmland. (Source: Authors Field Work)

	BUILDING SURVEY 3	
	BPA	**Remarks**
1	Type of development	New development
2	Number of rooms	6
3	Facilities	Single room, kitchen, and bath
4	Size of plot	450 m2



Plate 3: A new development of 6 fully en-suite apartments on a farmland. (Source: Authors Field Work)

BUILDING SURVEY 4		
	BPA	**Remarks**
1	Type of development	New development
2	Number of rooms	10
3	Facilities	Single room, kitchen, and bath
4	Size of plot	450 m2



Plate 4: A compound of 10 fully en -suite rooms, in a residential area. (Source: Authors Field Work)

BUILDING SURVEY 5		
	BPA	**Remarks**
1	Type of development	New development
2	Number of rooms	16
3	Facilities	Single rooms
4	Size of plot	450 m2



Plate 5: A compound of 16 single rooms (Source: Authors Field Work)

Source: Author's Field Work

Table 2: Case studies of some select off campus accommodations in Binzom.

BUILDING SURVEY 6		
	BPA	**Remarks**
1	Type of development	New development
2	Number of rooms	10
3	Facilities	Single room, kitchen, and bath
4	Size of plot	450 m2

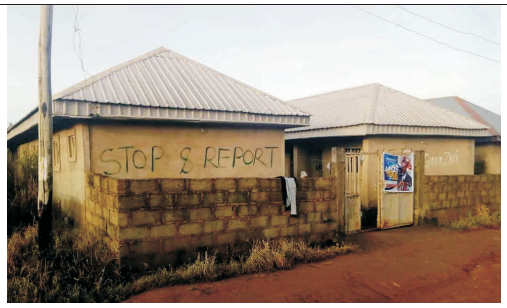


Plate 6: A compound of 10 fully en -suite rooms. (Source: Authors Field Work)

BUILDING SURVEY 7		
	BPA	**Remarks**
1	Type of development	Adaptive re-use
2	Number of rooms	14
3	Facilities	Single rooms
4	Size of plot	750 m2



Plate 7: A compound of 14 single rooms. (Source: Authors Field Work)

BUILDING SURVEY 8		
	BPA	**Remarks**
1	Type of development	Adaptive re-use
2	Number of rooms	6
3	Facilities	Single room, kitchen, and bath
4	Size of plot	400 m2



Plate 8: A compound of 8 single rooms, redevelopment, (Source: Authors Field Work)

BUILDING SURVEY 9		
	BPA	**Remarks**
1	Type of development	Adaptive re-use and Extension
2	Number of rooms	8
3	Facilities	Single rooms
4	Size of plot	450 m2



Plate 9: Case study 9, a compound of 8 single rooms, (Source: Authors Field Work)

BUILDING SURVEY 10		
	BPA	**Remarks**
1	Type of development	Adaptive re-use
2	Number of rooms	10
3	Facilities	Single room, kitchen, and bath rooms
4	Size of plot	750 m2



Plate 10: A compound of 10 fully en-suite rooms, (Source: Authors Field Work)

Source: Author's Field Work

RESEARCH METHOD

Study Population

The study population consists of the selected facilities and their users – which are categorized and targeted as follows:

a. Users: The students of KASU KC. The target population are students who are tenants in the privately owned off campus accommodations in Binzom community.
b. Facilities: The facilities mostly consisted of blocks of single units/rooms with provision of en-suite or separate bathroom and kitchen facilities.

Sampling Technique

Purposeful sampling, is the intentional selection of individuals and sites based on their potential for providing rich information aimed towards the understanding a central phenomenon, (Creswell, 2012).

This research therefore adopts the purposeful sampling technique to select specific sites/case studies of privately owned off campus accommodations. In order to eliminate bias in the selection of case studies, the criteria used for selection are as follows:

a. Close proximity to the university, based on a short walking distance

from the campus.
b. Occupancy consisting mainly of students.
c. Permission/access to the author from the owner.

Convenience sampling was used to administer questionnaires to the respondents. According to Creswell (2012), this technique allows the researcher to select participants that are willing and available to be studied.

Research Instrument

A self-administered, structured questionnaire based on Building Performance Attributes (BPAs) was developed for the study. The questionnaire consisted of three sections, which involve attributes of number of years lived in the unit; the characteristics of the unit; and rated responses to measure the respondent's satisfaction level based on the BPAs.

The numeric rating scale is a close ended response used to measure respondent feedback, it provides a means of conducting qualitative evaluation of a facilities performance, ("Rating Scale," 2018). A five point numeric rating scale was used to gauge the responses of each variable/BPAs, thus determining user satisfaction levels, and the level of importance which respondent's associate to the BPAs.

Therefore, the responses for level of satisfaction are coded as 1=Very Dissatisfied (VD), 2= Dissatisfied (D), 3 = Indifferent (ID), 4 = Satisfied (S), 5 = Very Satisfied (VS).

Data Analysis and Presentation

Descriptive statistics is used for data analysis and presentation showing the percentage frequencies of responses, and RSI. The computation was carried out using Microsoft Excel 2016. The following procedure was used to determine the RSI for each variable (RSIv):

a. Multiply each coded response value (according to the 5 point NRS) by the number of responses to obtain the Weighted Value (WV)
b. Sum up the Weighted Values (Σ WV).
c. Sum up the responses (n)
d. Divided the sum of the WV by n.
e. Thus RSI v= ΣWV/n

Consequently the overall user satisfaction index .i.e. Average RSI (RSIa) was by obtained by the following procedure:

a. Sum up the RSIv of each variable.
b. Divide by the total number of RSIv (RSIn)
c. Thus RSIa= ΣRSIv/RSIn

The above procedure has been successfully used in previous studies to measure user satisfaction based on a relative satisfaction index in accordance to specific building performance attributes, (Amole, 2009; Azeez et al., 2016; Djebarni & Al-Abed, 2000).

RESULTS

Survey Profile

A total of 77 questionnaires were issued and returned; from which 58 questionnaires representing 75% were valid, while 19 questionnaires representing 25% were invalid. Creswell (2012) suggests that a high response rate of 75% - as obtained is adequate for further analysis. Empirical studies have previously used a high/significant rate of return to further analysis. Examples include - Kasimu, (2016), in a study on cost management of Nigerian infrastructure successfully conducted statistical analysis using 107 (71%) out of 150 survey questionnaire responses. Umar & Ibrahim, (2016), in a study on financial risk associated with housing estate development, successfully used 20 (50%) out of 40 survey questionnaires responses for statistical analysis. Other examples are Olubajo et al., (2016), with 68.15% response rate; Bajere et al., (2016), with 71% response rate; and (Hamma-Adama et al., (2018), to mention a few. The questionnaires were invalidated due to errors and incomplete entries.

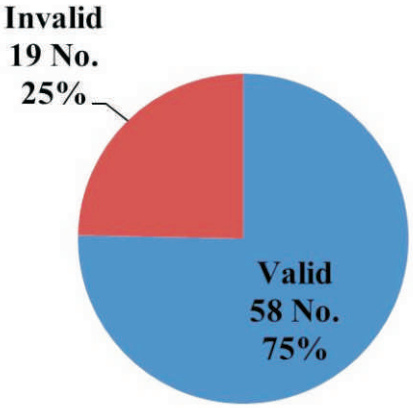


Figure12: Statistics of administered questionnaires.
(Source: Author)

Facilities and Category of the Buildings

The off campus accommodations studied consisted of two categories, those consisting of single rooms with bathroom and kitchen facilities attached (3 in number), and those with separate bathroom and/or kitchen facilities (7 in number) as shown in Figure 13. As shown in Figure 14, the study categorized the buildings studied as 'New' developments .i.e. purpose made for student accommodation, and 'Redeveloped' .i.e. buildings converted from their original purpose to student hostels. Six of the buildings are new developments representing 60%, while 4 are redeveloped representing 40%.

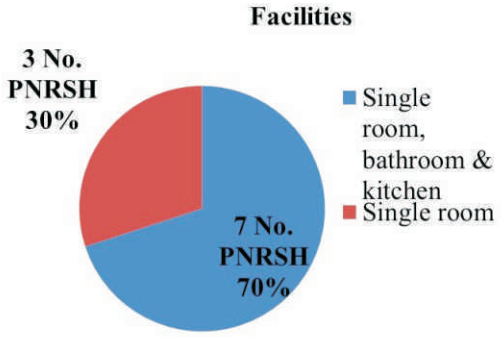


Figure 13: Types of buildings studied.
(Source: Author)

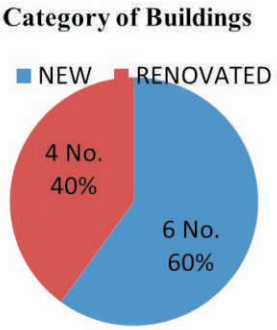


Figure 14: Category of buildings.
(Source: Author`s field work)

User Satisfaction Index

The results of this study (as shown in table 3) reveals that the average RSI of the off campus accommodations studied is 3.4 - which falls between the numerical rating ranges of 'Indifferent' to 'Satisfied'. This implies that the users are not quite satisfied with their living conditions.

Table 2: User Satisfaction Index. (Source: Author's Field work)

	Building Performance Attributes	Rating & Weighted Variables - Satisfaction VD 1	D 2	ID 3	S 4	VS 5	Σ Variables n	Σ WV	RSIv
1	Room size	0	2	15	16	25	58	238	4.1
2	Kitchen space	6	10	14	12	16	58	196	3.4
3	Bathroom space	2	10	14	18	14	58	206	3.6
4	Internal arrangement of room	3	2	14	15	24	58	229	3.9
5	Size of door/s and windows	1	3	7	17	30	58	246	4.2
6	Visual privacy in the room	4	6	9	15	24	58	223	3.8
7	Parking space	15	12	11	10	10	58	162	2.8
8	Open spaces in the compound	8	6	13	13	18	58	201	3.5
9	Wardrobe and kitchen cabinets	18	4	6	14	16	58	180	3.1
10	Plumbing: Water supply, toilet, taps, bath etc.	11	9	7	8	23	58	197	3.4
11	Electricity: Power supply, light fittings, fan, sockets etc.	10	7	15	12	14	58	187	3.2
12	Security of the premises	17	9	17	12	3	58	149	2.6
13	Fire safety equipment/provisions	32	8	8	4	6	58	118	2.0
14	Adequacy of natural light in the room	5	9	6	23	15	58	208	3.6
15	Adequacy of windows/cross ventilation	4	7	7	19	21	58	220	3.8
16	Adequacy of ventilation/natural fresh air	2	9	10	19	18	58	216	3.7
17	Air purity	5	9	13	18	13	58	199	3.4
18	Room temperature in the day time	4	10	13	18	13	58	200	3.4
19	Room temperature at night	6	10	9	16	17	58	202	3.5
20	Noise level in the building	10	13	12	10	13	58	177	3.1
21	Waste disposal	14	12	13	12	7	58	160	2.8
22	Cleanliness of the surroundings	6	3	17	18	14	58	205	3.5
23	Drainage system	10	9	14	13	12	58	182	3.1
24	Location of the building	3	6	9	15	25	58	227	3.9
25	Nearness to school	3	1	2	14	38	58	257	4.4
26	Nearness to shops or market	8	10	12	17	11	58	187	3.2
27	Accessibility to vehicles	10	13	17	12	6	58	165	2.8
							TOTAL ΣRSIv		92.0
							MEAN RSIa		**3.4**

Ranking of Building Performance Attributes (BPA)

The ranking of the BPAs by RSI index revealed that students most valued proximity to the school (RSI of 4), and openings (RSI of 4.2). Also, electricity supply, cross ventilation, water supply and security ranked among the top five BPAs. While they least valued kitchen space, night temperature, open space in the compound, noise level in the building, and parking space. These ranked among the bottom five (see Table 5 and 6). This implies that students prefer hostels to be inside the university campus, with functional design, and efficient ergonomics. Also, accommodations should have sufficient natural ventilation and lighting, with clean environment among others.

The ranking of the RSI revealed that students were most satisfied with the nearness of the accommodations to the school, size of openings, and room size; while students were least satisfied with waste disposal, security, and fire safety.

Table 3: Ranking BPAs by Relative Satisfaction Index (Source: Author)

	Building Performance Attributes	RSIv	RANK
1	Nearness to school	4.4	1
2	Size of door/s and windows	4.2	2
3	Room size	4.1	3
4	Internal arrangement of room	3.9	4
5	Location of the building	3.9	5
6	Visual privacy in the room	3.8	6
7	Adequacy of windows/cross ventilation	3.8	7
8	Adequacy of ventilation/natural fresh air	3.7	8
9	Adequacy of natural light in the room	3.6	9
10	Bathroom space	3.6	10
11	Cleanliness of the surroundings	3.5	11
12	Room temperature at night	3.5	12
13	Open spaces in the compound	3.5	13
14	Room temperature in the day time	3.4	14
15	Air purity	3.4	15
16	Plumbing: Water supply, toilet, taps, bath etc.	3.4	16
17	Kitchen space	3.4	17
18	Electricity: Power supply, light fittings, fan, sockets etc.	3.2	18
19	Nearness to shops or market	3.2	18
20	Drainage system	3.1	20
21	Wardrobe and kitchen cabinets	3.1	21
22	Noise level in the building	3.1	22
23	Accessibility to vehicles	2.8	23
24	Parking space	2.8	24
25	Waste disposal	2.8	25
26	Security of the premises	2.6	26
27	Fire safety equipment/provisions	2.0	27

CONCLUSION AND RECOMMENDATIONS

This study has revealed a low level of satisfaction of users with the privately owned off campus accommodations. This reflects the quality of the facilities, provided by private developers. The results also revealed that the service quality of the facilities falls short of the user expectations for satisfaction. An indication of profit-oriented focus of developers as against quality and comfort of users.

The results of this study have established that building performance attributes can be used to gauge user satisfaction, and also measure the service quality of facilities. Also, the ranking of the building performance attributes based on the relative satisfaction index indicates areas of needed attention. Therefore, it is recommended that designers and developers make use of this as a guide to determine the quality, and quantity of facilities to provide in future developments.

A limitation of the study is the absence of a correlation study of the RSI based on facilities provided, and category of the buildings (between new and old/redeveloped buildings). This limitation presents an opportunity for further research on the subject.

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