An Empirical Enquiry into the Attributes of Residential Satisfaction that Predict Students' Satisfaction in Public Halls of Residence in Technical Universities in Ghana

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Abstract
This study aim at identifying the attributes of residential satisfaction that predict students' satisfaction in public halls of residence in Technical Universities in Ghana, and to establish the relative significance level of each of the attributes, using Takoradi Technical University as a case study. The study adopted a questionnaire survey approach; and questionnaires were self-administered to 558 students. Data were analysed using RSI and percentages, and were presented in tables. The study revealed that, in order of relative significance, Building quality, Owners' maintenance culture, Social, Neighbourhood, Management, and Dwelling unit features with corresponding RSI values of 0.80871, 0.80753, 0.80172, 0.79345, 0.79313, and 0.78374, respectively, were the main residential satisfaction attributes that predict students' satisfaction in public halls of residence in Takoradi Technical University. The inclusion of Owners' maintenance culture in predicting students' satisfaction in public halls of residence gave the study a more holistic approach. This study will inform management of Takoradi Technical University, and Technical universities in general about the attributes that holistically define students' satisfaction in public halls of residence.
Keywords: Technical University, Public, Hall, Satisfaction, Students

1 Background

The conversion of Polytechnics into Public Technical Universities in Ghana has triggered the need for some infrastructure developments and expansions across some campuses of Technical universities. Typical of such developments is the development of another satellite campus for Takoradi Technical University at Akatakyie in the Ahanta West District of Ghana. The project suit makes provisions for lecture rooms, students' and staffs' accommodation, among others. As a result, a fair view of the residential satisfaction attributes that predict students' satisfaction in public halls of residence will inform management about the residential satisfaction features they have to incorporate in the design and construction of students' halls of residence.

Some literatures over the years have established a positive correlation between students' academic performance and students' residential satisfaction (Omole, 2001; Price et al.,2003;Singh, 2006;Thornton, 2006;Oladiran, 2013; Oladiran, 2013; Ajayi et al.2015).However, there is a dearth of studies that give a holistic definition of the attributes that constitute students' satisfaction in public halls of residence in Technical Universities in Ghana. It is against this backdrop that this study seeks to identify the attributes of residential satisfaction that predict students' satisfaction in public halls of residence in Technical Universities in Ghana, and to establish the relative significance level of each of the attributes, using the Takoradi Technical University as a case study. The findings will inform management and stakeholders about the attributes that holistically constitute students' satisfaction in public halls of residence; as well as the attributes they should consider when undertaking renovations or developing new halls of residence for students. Students' satisfaction in this research is synonymous with students' residential satisfaction.

Over the years, several definitions have emerged as to what satisfaction is. However, in quite recent studies, two definitions appear to be dominating in literature as to what satisfaction is, Kotler (2000), and Hoyer and MacInnis(2001) definitions of satisfaction. According to Kotler (2000), satisfaction is a feeling of a pleasure or disappointment, a person experiences as a result of comparing the perceived performance (outcome) of a product to his or her expectations. Similarly, Hoyer and MacInnis (2001) informed that, satisfaction is associated with, the feelings of acceptance, happiness, excitement, delight and relief. Thus, inferring from these definitions of satisfaction, satisfaction has to do with a person's feeling(s), perceived performance or outcome of a product and a person's expectations of a product; hence making satisfaction a very subjective and relative concept (Guney, 1997; Ajayi et al.,2015). However, Aigbavboa (2014) and Ajayi et al. (2015), informed that, influencing a person's satisfaction are array of factors including a person's demographics, culture, experience, maintenance and friends(Aigbavboa,2014;Ajayi et al.2015). In view of this, this study adapted the definition of satisfaction by Kotler (2000).Hence, residential satisfaction is a feeling of pleasure or disappointment, a person experiences as a result of comparing the perceived performance of a residence to his or her expectations. In consonance, Galster and Hesser (1981) opined that, residential satisfaction largely measures the difference between residents' actual

and expected housing features and neighbourhood conditions (Galster & Hesser, 1981).Time and again, studies on residential satisfaction largely used post occupancy approach to investigate residential satisfaction(see Adewunmi, et al., 2011;Najib, et al., 2011;Ajayi,2015); whiles little is known of studies that use (pre-occupancy approach) to determine the attributes that predicts students satisfaction in public halls of residence. Aigbavboa (2014) strongly advocated for the later approach when the researcher stressed on the need for beneficiary's participation in the development of public housing in the republic of South Africa. The later(pre-occupancy approach),inform developers to design it right and build it right at the first instance; and when students are satisfied with their residence, it impacts on their learning as well as the social, health and general wellbeing (Omole, 2001;Singh, 2006;Thornton, 2006;Oladiran, 2013;Ajayi et al.2015).It is against this backdrop that this study seeks to identify the attributes of residential satisfaction that predict students' satisfaction in public halls of residence in Technical Universities in Ghana, and to establish the relative significance level of each of the attributes, using the Takoradi Technical University as a case study. The specific objectives of this present study were:

- To identify the attributes of residential satisfaction, and to ascertain if the attributes that determines residential satisfaction in other cultural context predict students' satisfaction in public halls of residence in Takoradi Technical University's main campus.
- To determine the relative contribution of each of the attributes of residential satisfaction in predicting students' satisfaction in public halls of residence on Takoradi Technical University's main campus.

2 Theoretical Perspectives

Generally, residential satisfaction chiefly measures the difference between residents' actual and expected housing needs and aspiration (Galster & Hesser, 1981).The origin of satisfaction theories could be traced to the Discrepancy Theory (1961); and over the past decades, several researchers have used some form of comparison, according to Aigbavboa (2014), to model satisfaction in various disciplines (Parker & Matthews, 2001); example include, customer satisfaction, job satisfaction, housing satisfaction and residential satisfaction (Yiping, 2005;Aigbavboa, 2014).

This study has its theoretical basis in the Expectancy Disconfirmation Paradigm or Theory (Oliver, 1981) and the Negativity Theory (Anderson, 1973).These theories have largely been used and extensively critiqued in several literature on residential satisfaction, a quite recent example of such literature is Aigbavboa (2014).

2.1 Expectancy Disconfirmation Theory

This theory appears to be the most dominant theory used in most satisfaction research. This theory informs that, users are positively disconfirmed or satisfied whenever performance exceeds expectation; however, whenever performance does not meet expectations, users are negatively disconfirmed or dissatisfied. And in the event that performance matches expectation zero disconfirmation occurs; and according to Harris (1998) zero disconfirmation is considered a as satisfaction. Hence, largely a user is satisfied or dissatisfied as expectations are related with performance. The theory further informed that, a user's expectation originates from the beliefs about the level of performance that a product or service will provide (Oliver, 1981;Hoyer and MacInnis,2001).Thus, Kotler (2000) opined that, difference in perceived or expected performance of a service or product with the actual performance or service received indicates ones' satisfaction (Kotler, 2000).

2.2 Negativity Theory (Anderson, 1973)

The negativity theory opines that, when user's expectations are strongly held by them, any disconfirmation between expected or perceived performance/service and actual performance or service provided will result negative response form users (Anderson, 1973; Carlsmith & Anronson, 1963). According to Morris and Winter (1978) disconfirmation between expected or perceived performance/service and actual performance or service provided will result in negative response from users; and it could trigger mobility from one product/service/residence to another (Morris & Winter, 1978).In relation to residential satisfaction, Aigbavboa(2014) informed that, a resident's negative response could be moving to another residence that will give him or her satisfaction (Aigbavboa, 2014).In relation to students' residential satisfaction, Ajayi et al.(2015) informed that, halls of residence, among other things, informs a person's decision to further his or her education in a particular institute of higher learning (Ajayi, et al., 2015).

Thus, from a synthesis of the two theories, this study conceptualize that students' satisfaction in public halls of residence in Technical Universities in Ghana, is determined by attributes of residents' expectations or perceived performance (pre-occupancy attributes) and actual performance/satisfaction obtained (occupancy attributes) in using the residence; and any time there is differences in the two, it triggers satisfactions or dissatisfaction which informs relocation to another facility or not.

However, it is only when the attributes that constitute or predict students' expectation (perceived performance) in /of public halls of residence are known that, meaningful correlation could be drawn to determine

the extent of satisfaction, measured against the actual performance. Thus, this present research, focus on the attributes of residential satisfaction that constitute or predict satisfaction among students in Public halls of residence in Technical Universities in Ghana, using Takoradi Technical University as a case study. Takoradi Technical university was chosen as a case study because, the university is undertaking infrastructure expansion and development inclusive of students' accommodations, both at its city campus and the new satellite campus at Akatakyie in the Ahanta West District of Ghana; and a fore knowledge of the attributes of residential satisfaction that predict students' satisfaction in public halls of residence, will inform management's decisions in the design and development of the halls of residence, both in the present and in the future.

3 Attributes of residential satisfaction

In relation to the attributes that predict residential satisfaction, several views have been conceptualized in some cultural and national context (Aigbavboa, 2014; Ajayi et al., 2015).According to Galster (1987), Lu (1999) and Aigbavboa (2014), neighbourhood features and dwelling unit features are the attributes that predict residential satisfaction. Furthermore, Ajayi et al.(2015) opined that management factors, physical factors, social factors as well as   persons' characteristics predict residential satisfaction. More so, Price et al. (2003) found management factor to be an attribute that predicts residential satisfaction; the researchers further informed that, good management of halls of residence could increase students' satisfaction in their resident halls. The management factor was explained by sub attributes including, the manner hall allocation is done, enforcement of hall rules and laws, maintenance practices in the residence, security measures in the residence, hygiene measures in the residence, as well as management-student relations (Price, et al., 2003).In addition, Ubong (2007) found building quality features as the most important attribute in predicting residential satisfaction. Similarly, the study by Amole (2009) suggested that, social features, demographic features and dwelling units' features such as availability of kitchenette, bathroom and storage facilities predict residential satisfaction (Amole, 2009).

Informed by existing   literatures that this study reviewed, there is no single study that is self-sufficient in holistically explaining the attributes that predicts residential satisfaction. Affirming similar opinions advanced in some previous studies (see Price et al., 2003;Ubong, 2007; Oladiran, 2013;Aigbavboa, 2014; Ajayi et al.2015).Again, attributes predicting residential satisfaction are influenced by the age, experience or exposure as well as culture of the individual (Ajayi, et al., 2015).Hence, this present study gives a more holistic view on attributes of residential satisfaction that predict students' satisfaction in public halls of residence by studying the relationship between Neighbourhood feature, Social feature, Building quality feature, Management feature, Dwelling unit feature, and Owners' culture of maintenance in predicting students' satisfaction in public halls of residence in Technical universities in Ghana in a single study, using Takoradi Technical University as a case study. Owners' culture of maintenance is the new attribute that this study adds to the already existing attributes. Owners' culture of maintenance, though have been mentioned in some earlier studies, it has not been considered as a main construct in predicting residential satisfaction. Furthermore, though the rest of the attributes have been studied in earlier literatures; they have not been studied together in a single study that seeks to predict students' satisfaction in public halls of residence. Hence, the novelty of this study is that, it studies holistically, the organized relationship between Neighbourhood feature, Social feature, Building quality feature, Management feature, Dwelling unit feature and, Owners' culture of maintenance in relation to students' satisfaction in public halls of residence in a single study.

In addressing the gap of owners' culture of maintenance, the theory of cognitive dissonance was drawn upon. According to cognitive dissonance theory, individuals seek consistency in their cognition (i.e. beliefs, perceptions, opinions, among others);and as such, any element of inconsistency breeds (dissonance),and it is when dissonance are eliminated that satisfaction is obtained (Festinger, 1957; Brehm & Cohen, 1962).Thus, having a culture of maintenance consistently restores a building to its function ability within the life cycle of the building (Sani, et al., 2011);as it removes any dissonance, it sustains the beliefs/perceptions of occupants and limits occupants' mobility(Aigbavboa,2014).It essentially improves the reliability of the structure over time (Nakagawa, 2005), and ensures safe environment for occupants (Sani, et al., 2011) .More so, owners' culture of maintenance in this study, is a combination of all administrative ,technical, and managerial actions, practices, and/or attitudes during the life cycle of a building, its equipment, and/or its systems, intended to retain it in, or to consistently restore it to a state in which it can perform the required function (Wordsworth, 2001;Chan, 2010). It embodies culture of replacement, culture of preventive maintenance and culture of inspection (Sani, et al., 2011).Thus, Owners' culture of maintenance in public halls of residence concerns the administrative, technical, and/or managerial behaviour or attitude towards replacement, preventive maintenance and inspections, with the aim of maintaining, preserving and/or protecting public halls of residence together with their systems and equipment. This may include: promptness in replacing faulty sanitary appliances, electrical devices, fire fighting gadgets; routine or regular inspection of fire detectors, electrical appliances to ascertain function ability; regular/routine painting of the hall of residence, disposal of generated waste, cleaning of kitchen, floors, bath and toilet of the hall; promptness in replacing damaged doors, windows, louvers, among others, so as to improve the

reliability and function ability of the hall of residence. According to   Ramly (2002),a positive attitude towards maintenance culture brings maximum benefit to both occupants and owners. Owners get maximum performance at a lower cost, especially public-owned buildings as well as providing comfort and peace building, especially to building occupant (Ramly, 2002)**.**

Management feature include: sanitation around halls, availability and adequacy of security measures; availability and adequacy of fire prevention and fighting measures, maintenance and repairs services, handling of residents' complaints, consistent water supply, consistent electricity supply, noise levels in the residence as well as levels of overcrowding in the residence (Najib, et al., 2011; Oladiran, 2013; Aigbavboa, 2014; Ajayi et al., 2015).

The neighbourhood feature include: availability and function ability of public phone service operations, Automated Teller Machines(ATM) services and banking services; CCTV surveillance system(Najib, et al., 2011; Oladiran, 2013);availability of clinics, shops, school, community halls, security services, availability of fire fighting services and facilities, transportation services, location of the residence in the community, cleanliness of the neighbourhood, availability and function ability of street lights at night, quality landscape of the neighbourhood, proximity to disable facilities, availability and proximity of parking lots, closeness to lecture halls, closeness to workshop or lab(Galster,1987;and Lu,1999; Najib, et al., 2011; Aigbavboa,2014; Ajayi et al.,2015);whiles the Building quality feature include: location and number of bedrooms, kitchens, toilet and bath facilities in the residence; the general appearance of the residence, quality of ventilation, quality of floor levels, availability and reliability of lighting, thermal comfort ability in the residence, water pressure, the quality of walls, quality of ventilation and natural light, amount of privacy in the residence, availability and size of study rooms(Galster,1987;and Lu,1999; Najib, et al., 2011; Aigbavboa,2014; Ajayi et al.,2015)and availability and size of television rooms (Najib, et al., 2011; Oladiran, 2013).

The dwelling unit feature include: size and number of bedrooms, kitchens, toilet and bath facilities in the residence; availability of ventilation and natural light, size of balcony, availability and size of study room, availability and location of common room, special requirements for the disable(Galster,1987;and Lu,1999; Oladiran, 2013;Aigbavboa,2014; Ajayi et al.,2015).Social feature include: interaction with neighbours, neighbourhood security, social network, anticrime measures, population density (Galster,1987;and Lu,1999; Aigbavboa,2014; Ajayi et al.,2015);positive roommates' relationship (Najib, et al., 2011; Oladiran, 2013).

4 Methodology
Since residential satisfaction is a subjective and relative concept (Guney, 1997); and that, it is influenced by a persons' demographic characteristics including, age, experiences and culture (Guney, 1997; Ajayi et al.,2015); this study captured some relevant demographics of the respondents (students),so as to situate the study in context. The demographics covered: the age, gender, nationality, and the period the respondent has stayed in the hall. In categorizing the age groupings of the respondents, the age categorization of the Central Intelligence Agency (Central Intelligence Agency World Fact Book, 2017) was adopted. Takoradi Technical University was chosen as case study because, it is one technical university that is developing a satellite campus at Akatakyi in the Ahanta West District of Ghana and, a thorough knowledge or view on residential satisfaction attributes that predict students' satisfaction in public halls of residence will aid the Directorate of Physical and Development Planning (DPDP) of the university, to come out with physical and development schemes, that incorporate features that will ensure students' satisfaction in halls of residence; since students' satisfaction in halls of residence impact positively on academics as well as students' social, health and general wellbeing (Omole, 2001;Singh, 2006;Thornton, 2006;Oladiran, 2013;Ajayi et al.2015).Since the University has only three halls of residence at its city campus, all the three halls of residence were used for the study; and only students who resided in the halls were used for the study. This is because, they have had experience in staying public halls and as a result, may be in better position to tell the researcher of residential satisfaction attributes that will predict students' satisfaction in public halls of residence.

Both primary and secondary data were used for the study. Questionnaire survey approach was adopted. Primary data were collected with the aid of questionnaire. Secondary data relevant to the study were obtained from books, journals, articles, reports, the internet, thesis as well as conference and working papers. In all, 558 students were used for the study and the questionnaire was self-administered from November, 2016 to March, 2017. The data collected from the field were cross-checked and edited to ensure that there were no mistakes in the responses and that, the information given were relevant. A case study research design was used for this study, because it is commonly associated with a particular set of phenomena in a location such as campuses of Takoradi Technical University. Furthermore, case studies are preferred when the focus is on contemporary phenomenon within some real-life context and the researcher has little control over events; and the use of multiple sources of evidence make case study design one of the most powerful research designs (Yin, 2003;Creswell, 2007;Somiah, et al., 2015). Analysis on the demographics were done using frequencies and percentages and shown in a table form; whiles on each of the 67 variables, organized under 6 main attributes, respondents were asked to indicate

the extent to which each of the variables predicts students' satisfaction in public halls of residence, based on a five-point scale where: 1-Highly insignificant,2- Insignificant, 3-Neither, 4-Significant and 5-Highly significant. In order to empirically ascertain the level of significance of each of the attributes in predicting students' satisfaction in public halls of residence, both by itself and in combination with the other attributes, the Relative Significance Index or Weight (RSI), also known as Index of Relative Significance/Importance, according to Adebowale & Ojo (2009), was employed to analyse the data. According to Ojo (2002) and Adebowale & Ojo (2009), attribute that has an   RSI of at least 0.5 is considered to be significant in RSI analysis.In some literatures too, the RSI is referred to as Relative Importance Index (RII) (see Johnson & LeBreton,2004;Badu, et al.,2013;Somiah, et al., 2015). The Relative Significance Index or Weight is a type of relative importance analyses (Johnson & LeBreton,2004;Adebowale & Ojo, 2009). RSI was used for the analysis because it best fits the purpose of this study. According to Johnson and LeBreton (2004), RSI aids in finding the contribution a particular variable makes to the prediction of a criterion variable both by itself and in combination with other predictor variables.

In the calculation of the Relative Significance Index (RSI), the formula below was used (see Adebowale & Ojo,2009; Badu, et al., 2013):

$$RSI = \frac{\Sigma W}{A * N}$$

Where, *W: weighting given to each statement by the respondents and ranges from 1 to 5;A – Higher response integer (5), and N – total number of respondents.*

It worth emphasizing that, though the findings of this study may be a true representation of residential satisfaction attributes that predict students' satisfaction in all public halls of residence in Technical Universities; this research does not seek to generalize it findings. It is limited to the views of students in public halls of residence in Takoradi Technical University. Accordingly, **Table 1** presents the population characteristic in the three halls of residence in Takoradi Technical University's city campus:

Table1: Population characteristics in the three halls of residence in Takoradi Technical University, Ghana

Hall	Period of stay in the hall		Students residing in the hall	Number of respondents	Percentage of Ghanaian residents
	below 1 year	at least 1 year			
Ghacem	30%	70%	134	134	100
Nzema Mensah	25%	75%	292	292	100
Ahanta	40%	60%	132	132	100
Total			558	558	

Source: Authors' Field Survey, 2016/2017

The census of the population was used for the study and questionnaires were self-administered over a specific time period (November, 2016 to March, 2017).

5 Results and Discussions
5.1 Demographic characteristics:
5.1.1 Age
Age is an important variable to consider in residential satisfaction research as it influences individual's level of satisfaction (Ajayi, et al., 2015). According to **Table 2,** 82% of the respondents aged from 15 years to 24 years whiles, 18% aged from 25-54.This informs that, higher percentage of the respondents fall within the age bracket for tertiary students in relation to the educational structure in Ghana. The 2010 population and housing census found tertiary enrolment age among Ghanaians to be at least within the age range of 18-21 years (Ghana Statistical Service, 2012).Thus, the students engaged for the current study were within the age bracket of tertiary enrolment age.

Table 2: Age distribution of respondents

Age(years)	Frequency	Percentage (%)
0-14	0	0
15-24	460	82
25-54	98	18
55-64	0	0
65-above	0	0

5.1.2 Nationality:
According to Aigbavboa (2014) and Ajayi et al.(2015), attributes of residential satisfaction are influenced by cultural and/or national characteristics. As a result, the nationality of the respondents were determined so as to discuss the findings of this study within a particular national context. The study revealed that, all the respondents

engaged were Ghanaians. Thus, suggesting that, the attributes of residential satisfaction that predict students' satisfaction in public halls of residence in Takoradi Technical University, that this study has revealed represent the views of Ghanaian students in public halls of residence.

Table 3: Residential satisfaction attributes predicting students' satisfaction in public halls of residence in Takoradi Technical University, Ghana

Attributes	1	2	3	4	5	W	RSI	Rank
Neighbourhood feature							**0.79345**	4th
Proximity of health facility	40	20	15	245	238	2295	0.82258	
Proximity of mini malls	20	30	6	258	244	2350	0.84229	
Availability of security services	6	6	4	222	320	2518	0.90251	
Availability of fire station	15	15	1	112	415	2571	0.92151	
Availability of shuttle services	50	60	10	338	100	2052	0.73548	
Function-ability of street lights	25	18	2	386	127	2246	0.80502	
Availability of disable facilities	65	74	21	280	118	1986	0.71183	
Quality neighbourhood landscape	44	33	1	284	196	2229	0.79892	
Availability of parking lots	33	27	12	389	97	2164	0.77563	
Proximity of residence to lecture halls	45	58	2	384	69	2048	0.73405	
Cleanliness of neighbourhood	22	49	1	340	146	2213	0.79319	
Closeness of hall to workshop	1	75	2	387	93	2170	0.77778	
Availability of banking services	45	59	5	327	122	2096	0.75125	
Availability of public phone services	50	61	78	239	130	2012	0.72115	
Availability of CCTV surveillance system	17	32	8	354	147	2256	0.8086	
Building quality feature:							**0.80871**	1st
Location of bedrooms	45	72	1	286	154	2106	0.75484	
Location of kitchens	88	82	1	209	178	1981	0.71004	
Location of toilet and bath	22	78	20	310	128	2118	0.75914	
Aesthetics of the residence	15	12	6	222	303	2460	0.88172	
Quality of ventilation	80	5	8	257	208	2182	0.78208	
Quality of floor levels	15	12	2	225	304	2465	0.88351	
Reliability of lighting	12	4	7	222	313	2494	0.89391	
Floor levels water pressure	10	12	2	222	312	2488	0.89176	
Quality of walls	8	70	35	227	218	2251	0.80681	
Quality of natural light	7	88	2	231	230	2263	0.81111	
Privacy levels in the hall	8	25	7	285	233	2384	0.85448	
Location of study rooms	39	87	8	290	134	2067	0.74086	
Location of disable facilities	55	57	2	322	122	2073	0.74301	
Dwelling unit feature:							**0.78374**	6th
Size and number of kitchens in each floor	39	28	33	320	138	2164	0.77563	
Bedrooms sizes	18	15	9	258	258	2397	0.85914	
Size and number of toilet and bath facilities in the hall	44	38	15	347	114	2123	0.76093	
Size and number of study rooms in the hall	22	27	8	354	147	2251	0.80681	
Size of balcony	40	87	1	332	98	2035	0.72939	
Common room size	12	15	45	175	311	2432	0.87168	
Size of living rooms in the hall	99	88	8	251	112	1863	0.66774	
Availability of special facilities for the disable	9	68	1	320	160	2228	0.79857	
Social feature:							**0.80172**	3rd
Neighbourhood security	32	68	1	272	185	2184	0.7828	
Avenue for social network	15	9	2	302	230	2397	0.85914	
Anticrime measures	12	29	2	362	153	2289	0.82043	
Population density	2	80	2	322	152	2216	0.79427	
Avenue to interact with neighbours	54	74	1	252	177	2098	0.75197	
Management feature:							**0.79313**	5th
Controlled noise levels	7	45	10	252	244	2355	0.84409	
Adequacy of security measures	7	55	2	392	102	2201	0.78889	
Adequacy of fire prevention measures	28	76	4	340	110	2102	0.75341	
Adequacy of fire fighting measures	5	77	5	319	152	2210	0.79211	
Professionalism in handling of residents' complaints	33	89	71	212	153	2037	0.73011	
Provision of alternative water sources	4	78	3	322	151	2212	0.79283	
Provision of alternative power sources	11	58	3	311	175	2255	0.80824	
Adequacy of directional signs	11	10	3	320	214	2390	0.85663	
Enforcement of hall rules and laws	52	114	5	237	150	1993	0.71434	
Management-student relations	18	89	5	258	188	2183	0.78244	
Transparency in room allocation system	38	90	40	287	103	2001	0.7172	
Waste management culture in the hall	12	11	2	215	318	2490	0.89247	
Overcrowding levels in the hall	12	28	2	316	200	2338	0.83799	
Owners' culture of maintenance:							**0.80753**	2nd
Promptness in repairing or replacing faulty electrical lines and devices	15	16	5	302	220	2370	0.84946	
Promptness in repairing or replacing faulty sanitary appliances and fittings	22	15	8	318	195	2323	0.83262	
Promptness in replacing faulty fire fighting gadgets	15	45	6	316	178	2277	0.81613	
Routine inspection of existing fire fighting gadgets	45	50	5	300	158	2150	0.77061	
Routine inspection of electrical lines and devices	38	45	15	295	165	2178	0.78065	
Routine inspection of sanitary appliances and fittings	27	40	7	320	164	2228	0.79857	
Repetitive painting of the hall	22	31	9	334	1062	2257	0.80896	
Promptness in replacing damaged doors and windows fixtures and fittings	19	36	9	370	124	2218	0.79498	
Consistence in waste management practice	32	68	1	272	185	2184	0.7828	
Routine keeping of landscape	15	22	10	375	136	2269	0.81326	
Routine cleaning of floors	14	23	9	385	127	2262	0.81075	
Routine cleaning of sanitary wares	12	19	5	355	167	2320	0.83154	

According to Ojo (2002) and Adebowale & Ojo (2009), attribute that has an   RSI of at least 0.5 is considered to be significant in RSI analysis. Thus, the results from **Table 3** found all the variables to be significant in predicting students' satisfaction in public halls of residence. However, building quality feature emerged first with RSI value of 0.80871; with floor levels water pressure emerging the topmost individual variable, with RSI of (0.87176), among the individual variables that constitute building quality feature. This confirms the findings of Ubong (2007) that building quality feature significantly predict residential satisfaction. More so, Owners' maintenance culture with RSI value of (0.80753) was second; with promptness in repairing or replacing faulty electrical lines and devices emerging the topmost ranked individual variable to predict owners' maintenance culture in public hall of residence. In addition, social feature with RSI of (0.80172) ranked the third most significant residential satisfaction attribute in predicting students' satisfaction in public halls of residence; with avenue for social network being the topmost latent variable contributing to social feature. Hence, RSI value of social feature affirms the assertion by Ajayi et al. (2015) that, social feature significantly predict residential satisfaction. Neighbourhood feature with RSI value of (0.79345) ranked 4th; thus, confirms the study by Galster (1987), Lu (1999) and Aigbavboa (2014), that neighbourhood feature predict residential satisfaction. However, availability of security services ranked the topmost among the individual variables that constitute Neighbourhood feature with RSI value of (0.90251).Management feature ranked 5th and had RSI value of (0.79313); hence, supporting the assertion by Price et al. (2003) management feature significantly predict students' satisfaction in public halls of residence. However, waste management culture in the hall was the topmost contributor with RSI value of (0.89247) among Management feature variables. Dwelling unit feature, with RSI value of (0.78374), emerged the 6th significant contributor in predicting students' satisfaction in public halls of residence in Takoradi Technical University's city campus. Thus, confirming the findings of Amole (2009) and Aigbavboa (2014) that there is a significant relationship between residential satisfaction and dwelling unit feature. However, the topmost latent variable to Dwelling unit feature was bedroom sizes, with RSI of (0.85914).

6 Conclusions

This study concludes that Building quality, Owners' culture of maintenance, Social, Neighbourhood, Management, and Dwelling unit features significantly predict students' satisfaction in public halls of residence, using Takoradi Technical University as a case study. Owners' culture of maintenance, which was the new attribute this current study introduced, was found to be equally significant, with RSI value of (0.8753), in the midst of the other already existing residential satisfaction attributes. In order of relative significance, Building quality ranked 1st ,Owners' culture of maintenance was 2nd ,Social feature was 3rd ,Neighbourhood feature emerged 4th ,Management feature was 5th , and Dwelling unit feature emerged 6th.This affirm that attributes that predict residential satisfaction in other cultural context also predict students' satisfaction in public halls of residence; however, it was the relative contribution of each of the attributes that varied in the Ghanaian setting. Furthermore, the inclusion of Owners' culture of maintenance in predicting students' satisfaction in public halls of residence gave the study a more holistic approach. This study will inform management of Takoradi Technical University, and Technical universities in general about the attributes that holistically define students' satisfaction in public halls of residence.

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