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INVESTIGATING THE EMERGING TREND OF ACCOMMODATION CHARGES OF PRIVATE HOSTELS IN GHANA: A SURVEY AT KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY (KNUST), UNIVERSITY OF EDUCATION WINNEBA, KUMASI-CAMPUS (UEW-K) AND KUMASI TECHNICAL UNIVERSITY (KTU), GHANA

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Abstract:
The main purpose of this study was to investigate the emerging trend of private hostels' accommodation charges, its effect on students pursuing tertiary education. Annual accommodation charges from academic year 2010-2018 per student with 4 students in a single room were collected from the management of private hostels sampled at Kwame Nkrumah University of Science and Technology (KNUST), University of Education, Winneba, Kumasi–Campus (UEW-K) and Kumasi Technical University (KTU). Again, questionnaires were administered to 400 students who have rented rooms at the private hostels. 381 out of 400 questionnaires were usable. The accommodation charges were analyzed using MATLAB software to find out relative increase (trend) of charges from 2010-2018. Trend models to forecast future values were built. SPSS was used to analyze the completed questionnaires. It was found out that the relative increase of accommodation charges of private hostels at KNUST have been more than 100% (108.8%) between 2010-2018 academic years with 2010 as base year followed by that at UEW-K (44.0%). That of KTU has been the slowest (26.6%) between 2010-2018. Again, it was found from the study that there has been a rapid increase of accommodation charges which has led to higher charges. The trend model for forecasting the annual relative percentage increase of accommodation charges of the three universities was found to be $y = 1.0956 + 6.6850t$. The 6.6850% means that there has been an average increase of 6.6850% accommodation charge of the 3 universities every academic year

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from 2010 to 2018. The 3-year moving averages linear model to determine the affordable accommodation charges was found to be $y = GHs(388.4643 + 26.1925t)$. the slope GHs 26.1925 should have been the average annual increase of accommodation charges from 2010 to 2018.It was concluded that the hostels owners should use the 3-year moving averages to determine their accommodation charges.

Keywords: accommodation charges, relative increase, trend models, facilities and amenities

1. Introduction

The implementation of the educational reforms over the past years in Ghana has resulted in an increase in enrolment of students in the major tertiary institutions in the country (Asare-Kyire et al. 2016). Statistically, over 60 percent of students in most of the tertiary are non-resident (GESS, 2013). The availability of students' accommodation for students enables tertiary institutions to attract large number of students of different nationalities to pursue tertiary education (Kolawole & Boluwatife, 2016). In Ghana, the enrolment rate in tertiary education was estimated at 9.7% (Ghana Education Service performance report, 2010).

Due to the increasing number of students at tertiary level, most public universities in Ghana have adopted a residential policy of "In-out-out-out" for students pursuing four-year programmes. This means that all first-year students (freshers) are given accommodation by the university authorities while the continuing students look for private accommodation nearby.

This has led to the numerous establishments of private hostels by private individuals on and off the campuses. The private hostels management has therefore taken advantage of the government limited accommodation to control rental charges to suit them. The recent introduction of free SHS has also escalated the enrollment numbers at the tertiary level. Therefore, there is a need to have critical look at the emerging trend of the hostel charges for decision making by the opinion leaders. There are four objectives for the study:

1. To identify the relative increase of the accommodation charges of the private hostels overtime.
2. To find out whether the relative increase of the accommodation charges affect students' enrolment and performance.
3. To forecast future trend of hostels charges.
4. To determine the expected trend of the rental charges

The findings of the study will help government of Ghana to strengthen policies regarding private hostels' rental charges in Ghana.

2. Literature Review

Hijazi and Raza (2006) observed that the measuring of academic performance of students is challenging since student performance is a product of socio-economic, psychological and environmental factors. They argued that students' performance is associated with profile like attitude, class attendance, time allocation of studies, family income level, mother's age and mother's education. Ahmad et al. (2011) explained the need for university authorities to know their customer real needs and requirements. This can lead to a better future planning, design and management of student residences. Students living in residence are engaged in active learning and enriching experiences through interactions with staff, and environment (Coates, 2008).

Residential colleges or universities with residential facilities play a vital role in many of the best universities in the world (Nimako & Bondinuba, 2013). Intuitively, it seems clear that living in a university-affiliated residence would enhance students' educational involvement and outcomes. Campus residence provide a potentially powerful environment for encouraging openness to diversity because of extended opportunities for students to interact with peers and staff to implement programs that expose students to multicultural issues (Schudde, 2016). Not surprisingly, previous studies found that living on campus, as opposed to commuting from home, was related to increased tolerance and openness to diversity (Astin, 1977).

Ausse (2008) observed, living in residence is positively related to learning and development outcomes. Pascarella and Terenzini (1991) noted that "*living on campus is perhaps the single most consistent within-college determinant of impact*". Such findings revealed the effects of living on campus were positive. Pascarella et al. (1994) explained, the strength of positiveness was due to substantial differences in the length and nature of the residential experiences.

According to Pike (2002) residential programs offers a range of enriching experiences that enhance the formal curriculum, and students' social life on the campus. Importantly, such programs have the capacity to link formal learning with community settings – supporting contexts that boost the relevance of study. Handler (2001), observed that every society is faced with the problem of producing human habitation in sufficient quantity, and obtaining the kind of quality desired, at prices that individuals and families can afford. He declared, the problem of housing exists in countries throughout the world. All over the world, accommodation hunt is never a thing of the past. Ghani & Suleiman (2016) expressed same and requested hostel accommodation should be been given adequate attention as it is critical component of individual student development.

Determinants of students' performance have been the subject of on-going debate among educators, academics, and policy makers. There have been many studies that point out hard work, discipline, previous schooling, parents' education, family income and self-motivation as factors that explain differences in students' grades. Siegfried and

Fels (1979) concluded that the student's attitude is the most important determinant of his/her learning. Romer (1993) found that class attendance reflected significantly on the students' GPA. Rissanen (2018) in their study on the factors affecting student performance in undergraduate biology course, found that the likelihood of a student making a grade of A or B significantly increases with taking all the credit hours provided in that course. Thus a higher GPA; and higher SAT scores was due to students present at all time in class.

Karemera et al (2003) found that students' performance is significantly correlated with satisfaction with academic environment and service received. He also found that the existence of professional development programs and internship opportunities are associated with better academic performance. With regard to background variables, he found a positive effect of high school performance and school achievement while there was no statistical evidence of significant association between family income level and academic performance. Devadoss and Foltz (1996) studied the effects of previous GPA, and financial status on the performance of students. They concluded that previous GPA and motivation affect positively the current GPA.

Moving averages involve replacing each value in the time series with the mean of that value and those values directly preceding it (Granger & Morris, 1976). This smoothes out the variation in the data so that you can see the trend clearly. The moving average method merely removes the fluctuations in the data. The n-order moving average is the means of each set of n consecutive observations. To calculate each successive n-order moving average, we drop the 1st observation from the n observations used to calculate the previous n-order moving average and include the available observations. Thus, given a set of numbers we define a moving average of order n to be given by the sequence of arithmetic means (DeFusco et al, 2015)

The sums in the numerators are called moving totals of order n. Each moving average value is associated with the mid-point of the time period it represents. The moving curves give a general idea of the trend. The larger the number of time periods in a moving average, the more pronounced the smoothing effect will be (Chatfield, 2016).

3. Material and Methods

3.1 Introduction

The study was an exploratory and survey research conducted at private hostels at the three main public universities in Ashanti region. They are Kwame Nkrumah Universities of Science and Technology (KNUST), University of Education, Winneba, Kumasi Campus (UEW-K) and Kumasi Technical University (KTU). The data was a sample from the following private hostels:

Shepherdsville, Guss, Canam and Royal gate from KNUST at Ayeduase, Telk area, Georges, Uzu triumphant, Eno Mary and Adom bi all at UEW-K within

Asuoyeboa-Tanoso area and White house, No weapon, New Franco, morning star at Kumasi Technical University, Amakom. These hostels were selected because the management was ready to give us the data.

Accommodation charges from 2010-2018 per person with 4 students in a room were collected. Private hostels of almost the same facilities, same room-size and almost the same distance from hostel to campus were considered even though there are other options such as 2 in a single room, 3 in a single room. There were also double-room and flats. 4 in a single room was considered for the study because that was the most affordable one in all the three universities and many students patronized. The rental charges from 2010-2018 academic years were collected from the management of the private hostels.

Additionally, questionnaire was administered to four hundred students who have rented the private hostels at the three universities.

3.2 Data Collection

Purposive sampling data collection technique was used to sample 400 students of which 381 of them completed the questionnaire. Based on our subjective judgement, we administered the 400 questionnaires to 400 students who would best give us good data to enable us to answer our research questions and to meet my objectives.

3.3 Analysis of Data

The accommodation charges data collected were analyzed using MATLAB software to find out relative increase of the accommodation charges from academic year 2010 to 2018 respectively using 2010 as base year. Furthermore, trend model to forecast future values of accommodation charges were built. Again, 3-year moving averages model was built to forecast the expected annual accommodation charges of the academic years ahead for the three universities.

The questionnaire data were entered into SPSS software for analysis. The data which have been already coded on the questionnaire were analyzed. Tables, graphs and charts on demographic characteristics of respondents; Effects of accommodation charges on students' residence and performances; relationship between hostel charges, rapid increases, increment affecting student's academics and student's ability to hire private hostels; extent of students' satisfaction with regard to available hostel facilities and utilities and impact of hostel facilities and environment on student's residency were generated for discussion and findings.

4. Results

This chapter started with the analysis of the data on annual accommodation charges collected from the management of private hostels at the three public universities in Ashanti region, KNUST, UEW-K and KTU. Again, completed questionnaire collected

from 381 students were also analyzed and discussed. It is opportunity to report the facts that the study found. This is where tables, figures and graphs that contain findings to the study are generated from the data.

Table 4.1: Average Rental Charges of Private Hostels at KNUST, UEW-K and KTU from academic year 2010 to 2018

Unit charge in GHc per person with 4 persons in a room

University	2010	2011	2012	2013	2014	2015	2016	2017	2018
KNUST	317.25	353.25	395.75	431.75	468.00	511.75	555.50	600.00	662.50
UEW-K	343.75	356.25	377.00	401.25	425.00	441.25	456.25	476.25	495.00
KTU	518.75	537.50	555.00	556.25	587.50	593.75	626.25	643.75	656.25
Overall Average	393.25	415.67	442.58	463.01	493.50	515.58	546.00	573.33	604.58

4.1 Analysis of Variance of Accommodation Charges at KNUST, UEW-K and Kumasi Technical University

The columns of the matrix data below represent the average accommodation charges of private hostels per person with 4 persons in a room from 2010-2018 at Kwame Nkrumah University of Science and Technology(KNUST), University of Winneba-Kumasi Campus (UEW-K) and Kumasi Technical University(KTU) respectively.

Null hypothesis (H_0): The differences of the charges of the three universities are not statistically significant

Alternative Hypothesis ($H_{1)}$: The differences of the charges of the three universities are statistically significant.

Table 4.2: Accommodation charges from 2010-2018

	KNUST	UEW-K	KTU
	317.2500	343.7500	518.7500
	353.2500	356.2500	537.5000
	395.7500	377.0000	555.0000
	431.7500	401.2500	556.2500
	468.0000	425.0000	587.5000
	511.7500	441.2500	593.7500
	555.5000	456.2500	626.2500
	600.0000	476.2500	643.7500
	662.5000	495.0000	656.2500
Statistics			
Means	477.3056	419.1111	586.1111]
df	24		
Standard Deviation	78.4743		

Kumasi Technical University private hostels average annual accommodation charge is the highest (average amount of GHc586.1111), followed by that of KNUST (GHc 477.3056) and then UEW-K(GHc419.1111) from 2010 to 2018.

4.3 The Anova Table

The ANOVA table below returned the p-value (probability of significance of the F-statistics occurring by chance only) of $0.0005 < 0.05$. This is a strong indication that the accommodation charges of the Universities are not the same and the differences are statistically significant. Therefore we reject H_0 *and accept* H_1.

Table 4.3: Anova Table

ANOVA Table

Source	SS	df	MS	F	Prob>F
Columns	129342.7	2	64671.4	10.5	0.0005
Error	147797	24	6158.2		
Total	277139.7	26			

4.2 Comparison of Relative increase of the accommodation charges of private hostels at KNUST, UEW-K and KTU from 2010-2018

To compare trends between the accommodation charges measured in different magnitudes, we use index numbers to compare the relative changes in the value of the indices rather than the actual figures. The base period is given the value of 100. A value greater than 100 would represent an increase relative to the base period and a value less than 100 a decrease.

$$\text{Index number for a case} = \frac{\text{data value for case}}{\text{data value for base period}} \times 100^*$$

Table 4.4: Index numbers of accommodation charges from 2010 t0 2018

Year	KNUST	UEW-K	KTU
2010	100.00	100.00	100.00
2011	$\frac{353.25}{317.25} \times 100 = 111.3$	$\frac{356.25}{343.75} \times 100 = 103.6$	$\frac{537.50}{518.75} \times 100 = 103.6$
2012	$\frac{395.75}{317.25} \times 100 = 124.7$	$\frac{377}{343.75} \times 100 = 109.7$	$\frac{555}{518.75} \times 100 = 107.0$
2013	$\frac{431.75}{317.25} \times 100 = 136.1$	$\frac{401.25}{343.75} \times 100 = 116.7$	$\frac{556.25}{518.75} \times 100 = 107.2$
2014	$\frac{468}{317.25} \times 100 = 147.5$	$\frac{425}{343.75} \times 100 = 123.6$	$\frac{587.50}{518.75} \times 100 = 113.3$
2015	$\frac{511.75}{317.25} \times 100 = 161.3$	$\frac{441.25}{343.75} \times 100 = 128.4$	$\frac{593.75}{518.75} \times 100 = 114.5$
2016	$\frac{555.50}{317.25} \times 100 = 175.1$	$\frac{456.25}{343.75} \times 100 = 132.7$	$\frac{626.25}{518.75} \times 100 = 120.7$
2017	$\frac{600}{317.25} \times 100 = 189.1$	$\frac{476.25}{343.75} \times 100 = 138.5$	$\frac{643.75}{518.75} \times 100 = 124.1$
2018	$\frac{662.5}{317.25} \times 100 = 208.8$	$\frac{495}{343.75} \times 100 = 144$	$\frac{656.25}{518.75} \times 100 = 126.5$

Table 4.4 above shows the relative increase of accommodation charges of private hostels of the three public universities relative to the 2010 (base year) charge. The annual charge of private hostels at KNUST has increased by GHc345.25 from 2010-2018 on

average compared with an increase of GHc151.25 at UEW-K and GHc137.50 at Kumasi Technical University. However, the proportional increase in rental charges has been rapid and greatest for that at KNUST followed by those at UEW-K and then Kumasi Technical University.

Using the 2010 as base period, the index for KNUST private hostel charges is now 208.8 indicating an increase of 108.8% from 2010 to 2018 academic years while the index for UEW-K is now 144 indicating an increase of 44% and that of Kumasi Technical University is now 126.5 indicating rise of 26.5% between 2010-2018.

Table 4.5: Average annual accommodation charges of private hostels at KNUST, UEWK and KTU

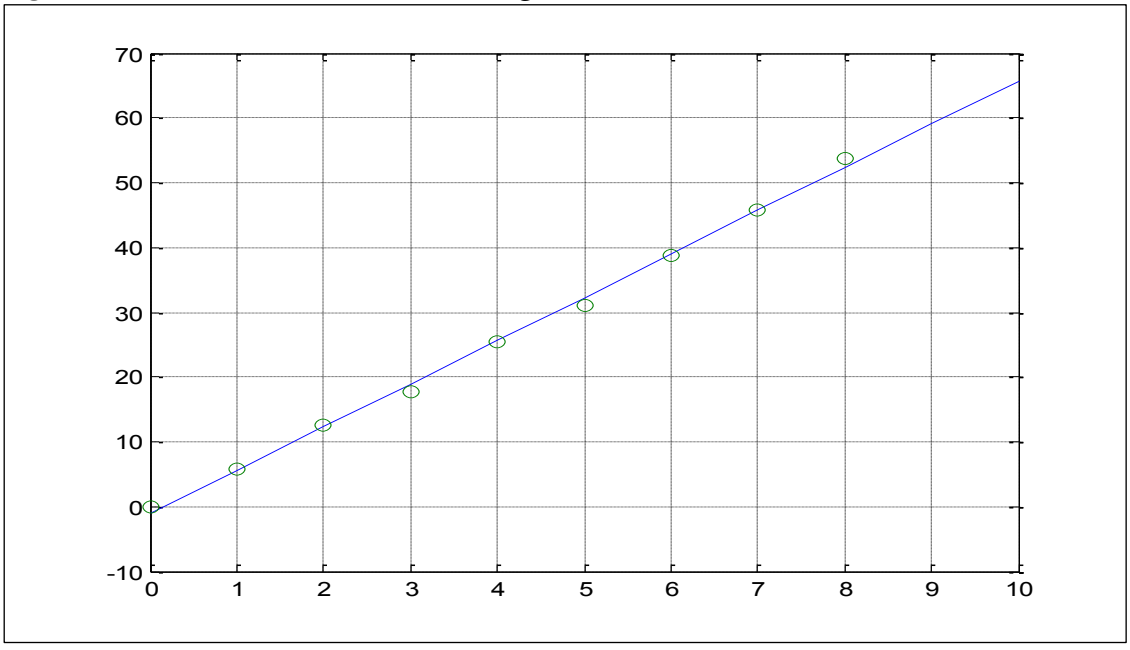
Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Annual charge	393.25	415.67	442.58	463.01	493.50	515.58	546.00	573.33	604.58

Table 4.6: Index numbers of the average annual accommodation charges of private hostels at KNUST, UEW-K and KTU

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Index numbers	100	105.7	112.5	117.7	125.5	131.1	138.8	145.8	153.7

Table 4.5 shows that in 2011, the rental charge of the three universities was 5.7% higher than it was in 2010(the base year). Similarly, the increases for 2012 to 2018 are 12.5%, 17.7%, 25.5%, 31.1%, 38.8%, 45.8% and 53.7% respectively as shown in figure 4.1 below. Figure 4.1 of table 4.6

Figure 4.1: linear trend of rental charge of the three universities between 2010-2018



The relative increase of the accommodation charges of the three universities is a linear trend over time y=-1.0956 + 6.6850t where y is percentage increase in accommodation charges and t is time in years. This means that there is an average of 6.6850% increase of accommodation charge of the three universities between 2010-2018 academic years**.**

4.3 Testing for the usefulness of the model

Table 4.7: Correlation Analysis of response variable y and regressor t

	t	**y**
t	1.0000	0.9989
y	0.9989	1.0000

The table 4.7 above shows that there is a stronger linear relationship between y and t with correlation coefficient(r) of 0.9989.

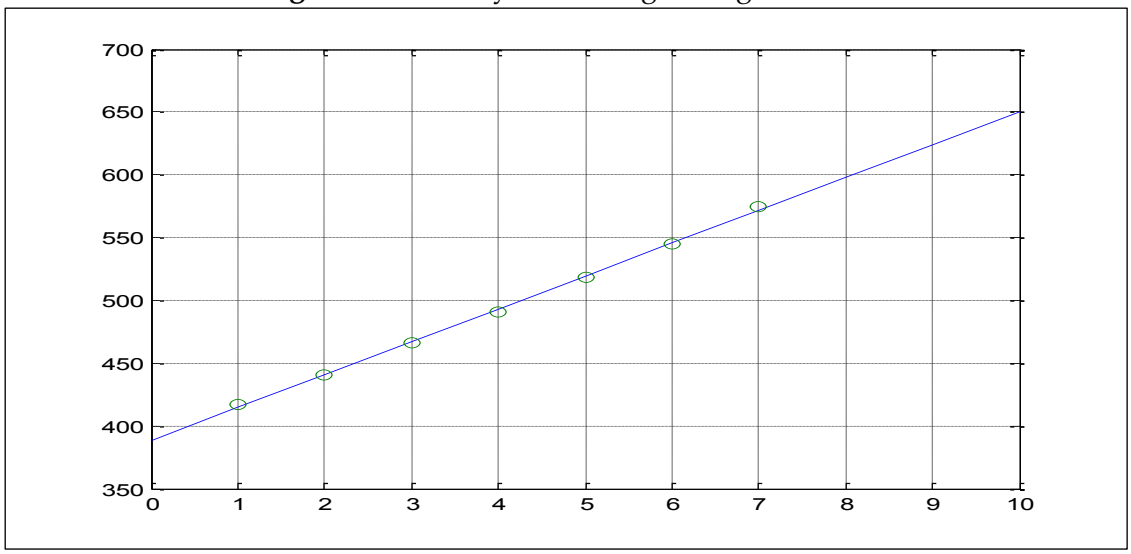
4.4 Coefficient of Determination

Therefore, the coefficient of determination (r^2) is then given by $r^2 = 0.9989^2 = 0.9978$. That is 99.8% of the variability of the accommodation charges of the three universities is accounted for by t of the linear model $y = 1.0956 + 6.6850t$

Table 4.8: 3-year moving averages

Year	**Original charge**	**3-year moving totals**	**3-year moving average**
2010	393.25		
2011	415.67	1251.5	417.2
2012	442.58	1321.26	440.42
2013	463.01	1399.09	466.36
2014	493.50	1472.09	490.70
2015	515.58	1555.08	518.36
2016	546.00	1634.91	544.97
2017	573.33	1723.91	574.63
2018	604.58		

Figure 4.2: Three-year moving averages model



The three-year moving averages model is $y = 388.4643 + 26.1925t$. The slope 26.1925 means that there should be an average increase of GHc26.1925 of accommodation charge every academic year.

4.5 Model adequacy

Table 4.9: Correlation Analysis of response variable y and regressor t

	t	y
t	1.0000	0.9994
y	0.9994	1.0000

The table above shows that there is a stronger linear relationship between y and t with correlation coefficient(r) of 0.9994.

4.6 Coefficient of Determination

Therefore, the coefficient of determination (r^2) is then given by $r^2 = 0.9994^2 = 0.999$. That is 99.9% of the variability of the accommodation charges of the three universities is accounted for by the 3-year moving averages linear model $y = 388.4643 + 26.1925t$.

4.7 Demographic Information of the Respondents

Table 4.10: Demographic characteristics of Respondents

Variable	Option	Frequency	Valid percent
Gender	Male	233	61.2
	Female	148	38.8
Age	18-25	248	65.1
	26-30	111	29.1
	Above 30	22	5.8

Education	Diploma	197	51.7
	Degree	167	43.8
	Sandwich	17	4.5
Marital status	Single	338	88.7
	Married	43	11.3
Institution	KNUST	130	34.2
	UEW-K	115	30.2
	KTU	136	35.7

Table 4.10 above represents the demographic background of respondents. Out of 381 respondents, 233 students (61.2%) were male and 148 (38.8%) were female. The majority of the respondents were ranged from 18 to 25 years old (65.1%) and the minority aged above 30 years old (5.8%). The greatest number of the respondents were from Kumasi Technical University (35.7%) followed by KNUST (34.2%) and then UEW-K (30.2%). 51.7% of the respondents are pursuing diploma. 43.8% degree and 4.5% sandwich programme respectively. 88.7% are single and 11.3% married.

Table 4.11a: Effect of Accommodation charges on students' residence and performance (Frequency distribution and chart)

Table 4.11a1: Private hostel charges are higher

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	68	17.8	17.8	17.8
	Disagree	56	14.7	14.7	32.5
	Neutral	38	10.0	10.0	42.5
	Agree	98	25.7	25.7	68.2
	Strongly Agree	121	31.8	31.8	100.0
	Total	381	100.0	100.0	

Figure 4.3: Private hostel charges are higher

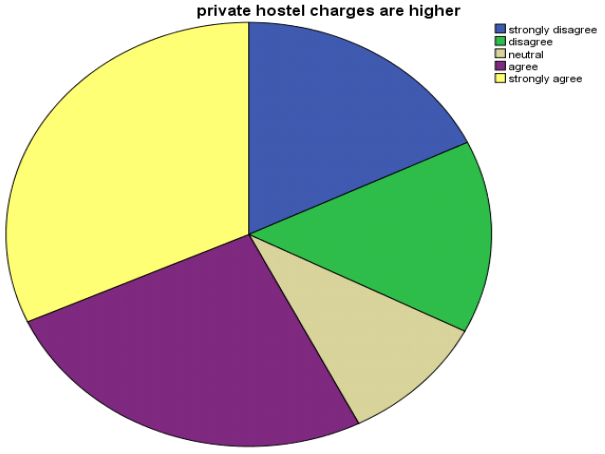


Table 4.11a1 and Figure 4.3 showed the proportion of students disagreeing, neutral and agreeing that private hostel charges are higher. These emphasized that majority of the

students strongly agreed (31.8%) and agreed (25.7%) that private hostel charges are higher. That is the number of students strongly agreeing and agreeing are higher.

Table 4.11a 2: Hostel owners increase their prices rapidly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	41	10.8	10.8	10.8
	Disagree	51	13.4	13.4	24.2
	Neutral	66	17.3	17.4	41.6
	Agree	115	30.2	30.3	71.8
	Strongly Agree	107	28.1	28.2	100.0
	Total	380	99.7	100.0	
Missing	System	1	.3		
Total		381	100.0		

Figure 4.4: Hostel owners increase their prices rapidly

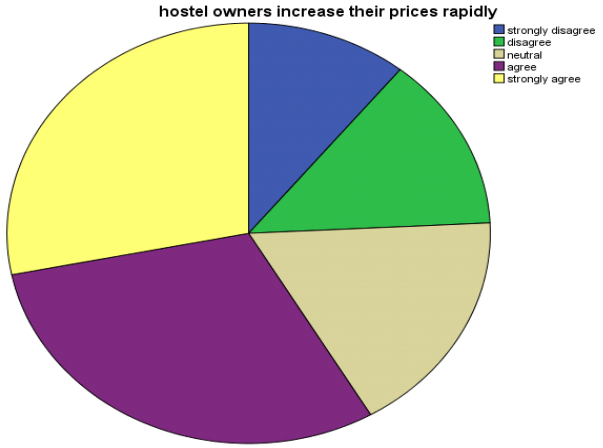
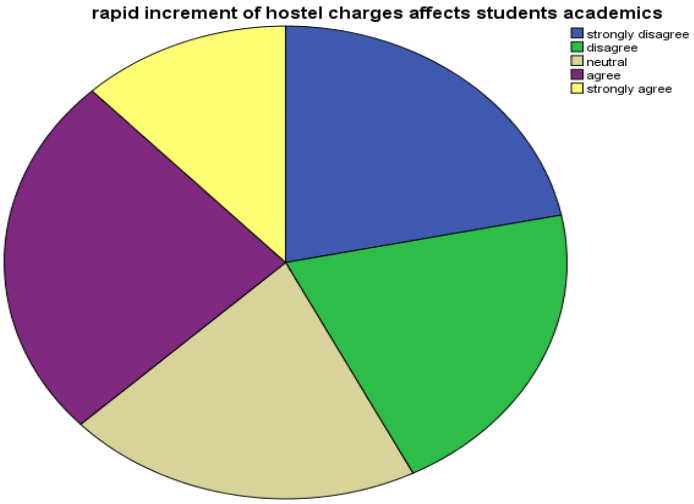


Table 4.11a2 and figure 4.4 showed the proportion of students disagreeing, neutral and agreeing that hostel owners increase accommodation prices rapidly. These emphasized that majority of the students strongly agreed (28.1%) and agreed (30.2%) that hostel owners increase prices rapidly.

Table 4.11a3: Rapid increment of hostel charges affects students' academics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	83	21.8	21.8	21.8
	Disagree	79	20.7	20.7	42.5
	Neutral	78	20.5	20.5	63.0
	Agree	95	24.9	24.9	87.9
	Strongly Agree	46	12.1	12.1	100.0
	Total	381	100.0	100.0	

Figure 4.5: Rapid increment of hostel charges affects students' academics

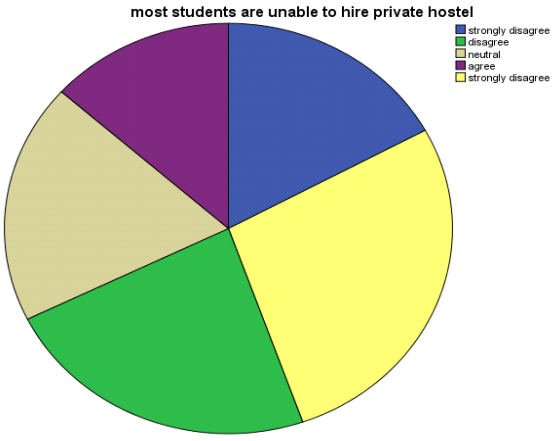


From table 4.11a3 and Figure 4.5, majority of the students strongly disagreed (21.8%), disagreed (20.7%) and neutral (20.5%) with the statement that rapid increment of hostel charges affect students academics.

Table 4.11a4: Most students are unable to hire private hostel

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	65	17.1	17.1	17.1
	Disagree	88	23.1	23.1	40.2
	Neutral	72	18.9	18.9	59.1
	Agree	51	13.4	13.4	72.4
	Strongly agree	105	27.6	27.6	100.0
	Total	381	100.0	100.0	

Figure 4.6: Most students are unable to hire private hostel



From table 4.11a.4 and Figure 4.6 above, most students were not of the view that many of them are unable to hire private hostels.

Table 4.11b: Relationship between hostel charges, rapid increases, increment affecting students' academics and students' ability to hire private hostels

Correlations

		Private hostel charges are higher	Hostel owners increase their prices rapidly	Rapid increment of hostel charges affects students academics	Most students are unable to hire private hostel
Private hostel charges are higher	Pearson Correlation	1	.571**	.110*	.146**
	Sig. (2-tailed)		.000	.032	.004
	N	381	380	381	381
Hostel owners increase their prices rapidly	Pearson Correlation	.571**	1	.318**	.315**
	Sig. (2-tailed)	.000		.000	.000
	N	380	380	380	380
Rapid increment of hostel charges affects students academics	Pearson Correlation	.110*	.318**	1	.370**
	Sig. (2-tailed)	.032	.000		.000
	N	381	380	381	381
Most students are unable to hire private hostel	Pearson Correlation	.146**	.315**	.370**	1
	Sig. (2-tailed)	.004	.000	.000	
	N	381	380	381	381

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

*. Correlation is significant at the 0.05 level (2-tailed).

Table 4.11b shows that there is a statistically significant strong positive relationship between the item "private hostel charges are higher" and "hostel owners increase their prices rapidly" (r=0.57, p=0.000).

The emphasis here is that, rapid increment of accommodation charges is a determining factor of high accommodation charges and vice-versa. There is significant weaker relationship between "private hostels charges are higher" and "rapid increment affects students academics" (r=0.110, p=0.032) and "most students are unable to hire private hostel" (r=0.146, p=0.004). Similarly, there is significant weak relationship between "hostel owners increase their prices rapidly" and "rapid increment affects students academics" (r=0.318, p=0.000) and "most students are unable to rent private hostel accommodation" (r=0.315, p=0.000).

The emphasis is that though rapid increment or high charges is not satisfactory but that does not necessarily mean that students' academic work are affected or most students are unable to rent private hostel accommodation.

4.8 Extent of students' satisfaction with regard to available hostel facilities and utilities

Table 4.12: Descriptive Statistics

Item	N	Minimum	Maximum	Mean	Std. Deviation
Room Size	381	1	4	2.03	.699
Privacy	381	1	5	2.27	1.033
Sanitation	381	1	5	2.04	.957
Serenity of Environment	381	1	5	2.14	1.041
Security	381	1	5	2.02	1.065
Utility	381	1	5	2.10	.868
Fun	381	1	5	1.50	.829
Socket	381	1	5	1.82	.697
Bed	381	1	5	1.87	1.016
Mattresses	381	1	5	2.16	1.103
Wardrobe	381	1	5	2.31	1.218
Lighting System	381	1	4	2.00	.945
Toilet	381	1	5	1.41	.726
Bathroom	381	1	4	1.85	.671
Waste Disposal	381	1	4	1.91	1.000
Neatness	381	1	5	2.04	.995
Satellite TV(DSTV)	381	1	5	2.26	1.437
Water Supply	381	1	5	1.90	.756
Stand-By-Generators	381	1	5	2.89	1.364
Electricity	381	1	5	1.97	.922
Cafeteria	381	1	5	2.74	1.274
Potter	381	1	5	1.94	.799
Valid N (listwise)	381				

Preference scale: 1(very much), 2 (much), 3 (somehow), 4 (Not at all), 5 (facility absent)

The study also aimed to investigate the students' satisfaction with the available hostel facilities and amenities. Mean and standard deviation of the students' satisfaction for each item is reported in the table 4.12 above. Almost all the items revealed a mean score below 3 but above 2 or closed to 2 indicating that the students are much satisfied with the services of the available facilities and utilities. The few items in which the students were not all that much satisfied with the services are stand-by-generators (mean= 2.89, SD =1.364) and cafeteria (mean=2.74, SD=1.274).

Toilet facility reported as the most satisfactory item (mean=1.41, SD=0.726). The availability of "FUN(S)" inside rooms (mean=1.50, SD=0.829) was reported as the second highest most satisfactory facility. The next seven items students are much satisfied with services are sockets (mean=1.82, SD=0.697), bathroom (mean=1.85, SD=0.671), bed (mean=1.87, SD=1.016), water supply (mean=1.90, SD=0.756), waste disposal (mean=1.91, SD=1.001), potters (mean=1.94, SD=0.799) and electricity (mean=1.97, SD=0.9221).

5. Discussion

The relative increase of accommodation charges of private hostels at KNUST has been more than doubled (108.8%) compared to that of base year 2010 academic year. The relative increase of private hostels accommodation charges at Kumasi Technical University (KTU) has been the slowest (26.6%) relative to that of the base year 2010 comparatively even though their charges were higher compared to that of KNUST and UEW-K between 2010-2018. There has been rapid increase of accommodation charges which has led to higher accommodation charges. The rapid increment or higher charges does not necessarily affect the students' academics or stop most students to rent rooms at private hostels since they do not have any alternative. Students are not much satisfied with services of stand-by-generators and cafeteria if there is any. Four persons are most often in a single room and that is the most affordable. The relative percentage increase of the accommodation charges of the three universities is a linear trend over time given by $y = 1.0956 + 6.6850t$. This means that there has been an average of 6.6850% annual increase of accommodation charges of the three universities every academic year. The three-year moving averages accommodation charge is $y = 388.4643 + 26.1925t$. The slope 26.1925 means that there should be an average annual increase of GHs26.1925 accommodation charge every academic year.

5.1 Recommendations

1. The government should put up more affordable high quality standard halls of residence and hostels for students since enrolment figures will rise up due to free SHS implementations.
2. Students' degree of preferences for hostels and halls of residence facilities and amenities must be further studied.

5.2 Conclusion

The owners of the private hostels at the universities should use the three-year moving averages accommodation charge model $y = 388.4643 + 26.1925t$ to increase their rent charges every academic year. The services of the management of the cafeteria and stand-by-generators at the hostels are not satisfactory. The social vices such as rape etc must be dealt with by the management of the hostels. The students do not have any alternative but to go by the rapid increment of accommodation charges schedules even though the hostels are of average standard but not high-quality standard.

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