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An Investment Analysis of Private Student Hostel in Nigeria Tertiary Institutions: A Case of FUTA Campus

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Abstract: The expanding number of students in tertiary institutions in most Nigerian cities has prompted serious accommodation problems and on-campus hostels can no longer cope with the attendant demand. The establishment of private hostels, though very useful, requires huge capital for investment; hence investors need to have a fair idea of the likely return before committing their resource. Using the Federal University of Technology Akure, (FUTA) Nigeria as a case study, this study examines the effect of increase in on-campus hostel accommodation on the viability of off-campus private student hostel with a view to advice investors on their returns. Data for this study were elicited from FUTA students who are resident off campus, using a structured questionnaire. Out of 389 randomly distributed questionnaires, 374 (96.1%) were retrieved and found useful for analysis. Findings arising from sensitivity analysis indicated that a decrease of 35 percent in the demand for a room self-contain at a discounting factor of 25 percent shows that the project is not viable. The study identifies that investment in student hostel off-campus is very sensitive to student demand even at eight (8) percent reduction. It is recommended that investors should consider the option of investing on-campus rather than off-campus; a means towards this is Public Private Partnership.

Keywords: Investment Analysis, Private Student Hostel, Tertiary Institution

1. Introduction

The desire of many students to further their education in the public universities in Nigeria has put more pressure on the academic and residential facilities in the public universities. This has resulted into accommodation difficulties because available on-campus hostels can no longer cope with demands. The establishment of private hostels off-campus was perceived as a solution, therefore many landlords have taken advantage of the high demand by increasing their rent and students are reeling under the financial burden. They have turned to the government for help [1].

In [2], it was recorded that over 75 percent of the entire Nigerian student population live off-campus, while those students living on campus are put in four (4) in a room, meant for two (2) student. According to [3] in their study of private hostel investment in KNUST campus, Ghana, the concept of non -residence as a category of students became a reality in most of the tertiary institutions in Ghana because of the ever increasing student population resulting in the school authorities adopting a residential policy of In – Out – Out – Out policy, which was to make residential accommodation available for all fresh students while non-fresher seek accommodation themselves outside the University halls of residence.

In a study on students' satisfaction with hostel facilities in Federal University of Technology, Akure, Nigeria, [4] observed that increasing growth in student population over the years has resulted to majority of the students living off campus because of the insufficiency of the hostel accommodation within campus. Their study also reveals that there is no preferential treatment for allocating bed spaces to students in these residence halls, except for 100 level and 500 level students, disabled students and athletes who represent the university at various competitions. Students in 100 level

are considered because they are new on campus while 500 level students are also considered because of their final year project. Also, bed spaces are allocated based on students' promptness to apply at the beginning of each academic session.

In response to the shortage in accommodation provision and students' demand, private investors have seized the opportunity in providing accommodation for students. The demand for student accommodation has resulted in proliferation of private hostels around campuses. As private investors, their drive was the huge profit accruing from the venture, leading to so many investors rushing into the business overcharging and operating under poor conditions, all in the name of cutting down operational costs. However, the establishment of the private hostels, though very needful, requires huge capital outlay, hence investors need to have a fair idea of the expected returns before committing their resource. It is therefore pertinent that investors be guided, especially with the current proliferation of off-campus hostels investments and the on-going massive on-campus development embarked on by the FUTA management under different governmental interventions. Hence, this paper aims at examining the effect of provision of more hostel accommodation on-campus, on the viability of private student hostel off-campus with a view to advising investors on their returns.

2. Literature Review

2.1. Private Sector Participation (PSP) in Housing Provision

The use of Public-Private Partnerships (PPPs) to replace and complement the public provision of housing has become common in recent years [5]. Projects that require large upfront investments, such as accommodation, highways, light rails, bridges, seaports and airports, water and sewage, hospitals and schools are now often provided by a way of Public Private Partnerships. The construction of the project is usually financed and managed by a group of private investors, then operates and maintains the facilities for a long period of usually 20 to 30 years, and at the end of the contracting period, transfers the assets to the government. [5] During the operation of the project, the private partner receives a stream of payments as compensation. These payments cover both the so-called capital expense which is also known as the initial investment, and also the operation and maintenance expenses. Depending on the project and type of infrastructure, these revenues are obtained from user fees (as in a toll road), or from payments by the government's procuring authority. [5]

2.2. Government Policies in the Provision of Student Accommodation in Public Universities

Hostel accommodation in tertiary educational Institutions has not been receiving adequate attention in the past as observed by [6]. In his analysis, students' population was rapidly increasing while infrastructural amenities were declining in supply and their housing stock depreciating. [7] refers to policy change as an incremental shift in existing structures or new innovative policies. However, many governments today require Private Sector Participation (PSP) as a major means in accomplishing policies in bringing about sustainable improvements in enterprise. The reasons for PSP vary from country to country. One reason however stands out: State Owned Enterprises (SOEs) have generally posted disappointing results. Also, another important reason for this is that most governments find themselves facing deep budget deficits and public finance crises.

A typical example is the private sector participation in residential accommodation for tertiary students in Ghana. According to [3], the universities in Ghana considered partnering with some private developers to come out with a jointly own hostel, so as to regulate the activities of unfair business practice by shylock landlords and also serves as an additional source of generating revenue. Their research was based on financial analysis of private hostels. In their financial analysis of private hostels at Knust campus, Ghana, it was realized that with 20% discounting factor none of the private hostels is viable to recoup the amount invested within 30 years but when the discounting factor was reduced to 12 percent, three out of the four hostels became worthy of investing.

Also, in Malawi, the government through the Ministry of Education, Science and Technology explored provision of comprehensive accommodation facilities (hostels) and associated services to students in Public Universities through a Public Private Partnership (PPP) Framework. The Government of Malawi (GoM) recognizes the importance of tertiary education as a tool for social economic development in Malawi. [8] It is a fact that the provision of quality tertiary education must always be accompanied by appropriate and sufficient enabling facilities including student accommodation. However, in recent times, the student enrollment in Public Universities has increased without a corresponding expansion in decent accommodation facilities, a situation that has forced some University students to find their own private accommodation. Unfortunately, such accommodation has in most cases tended to be substandard and typically located very far from the University.

The Federal Government of Nigeria has also launched a private-public partnership scheme in 2009 to develop affordable and decent accommodation for the rising number of university students in the country, with the inauguration of a committee on University Hostels Build, Operate and Transfer Projects.

The former Minister of State for Works, Housing and Urban Development, charged members of the committee to seriously pursue the objective of the PPP model, noting the tremendous growth experienced by Nigerian universities in the last two decades in students' population without a corresponding increase in bed spaces had resulted in acute shortage of rooms in halls of residence, thereby over-stretching the capacity of the existing structures [9]. Thus,

the committee was implored to evolve a cost effective, efficient and viable mechanism that will ensure facilitation of collaboration between the government, private sector and universities in the provision of hostel accommodation. The committee is also to see to the establishment of guidelines for execution and management of the hostels and creating an enabling environment for operation of the scheme without direct financial involvement of the government.

Aside from government effort in partnering with private sector, some societies in some tertiary institutions are also making effort in answering to the demand of student accommodation by providing accommodation even though their primary aim may be to maximize profit occasioned by the situation. For instance, ASUU Cooperative Hostel in FUTA. This hostel was built by the Cooperative of the Academic Staff Union of Universities in FUTA to accommodate three hundred student on-campus. Also, University of Ilorin (UNILORIN) Scientific Multipurpose Cooperative Hostel.

Sequel to the above discussion, it is therefore expected that there is every tendency of provision of more hostel accommodation on-campus since most tertiary institutions possesses vacant expanse of land on which these hostels could be built as analyzed by [10].

3. Study Area

The Federal University of Technology, Akure (FUTA) is located in Akure, a city in south-western Nigeria and is the largest city and capital of Ondo State. FUTA can be located at latitude of 7.2972 and longitude of 5.1461. The school was founded in 1981 under a drive by the government of Nigeria to create universities that specialize in producing graduates with practical as well as theoretical knowledge especially to cater for the technological development of the nation. The first students were admitted in 1982 to a five-year degree program. Students' enrolment for undergraduate programmes for 2016/2017 academic session was sixteen thousand seven hundred and twenty -five out of which only two thousand two hundred and twenty- two students (approximately 13 percent) were officially accommodated in the hostels. FUTA had embarked on a residential policy of first come, first serve. Hence, bed spaces are allocated based on students' promptness to apply at the beginning of each academic session but more consideration is given to the 100 level and 500 level students with the remaining students finding accommodation elsewhere mostly in private hostels. Over the years, there has been increasing development of private hostels off the University Campus up to more than five kilometres to the University.

4. Methodology

The Case Study Approach was used as it provided insight into and information on the activities of private hostel accommodation off FUTA campus. Both probability and non-probability sampling designs were employed. Under probability sampling techniques, the stratified sampling method and simple random sampling technique were used. With the Non-probability sampling the purposive sampling technique was used. With stratified sampling, the sample population was divided into a number of strata based on the type of property and a sample was drawn from each stratum. This was used to stratify the hostels into types - self-contain and single - room accommodation. A self-contain accommodation is a room equipped with private toilet, bath and kitchenette whereas occupants of single-room accommodation share such facilities with other tenants.

With purposive sampling technique, subjects who, were thought to be relevant to the research topic where purposely chosen. This technique was therefore used in determining University authorities to be interviewed. The University authorities interviewed were; Office of the Dean of Students, Development Office, the Physical Planning Unit, and the Accommodation Unit. The simple random sampling was used in selecting respondent (interviewed) students from the various classes of hostels. The simple random sampling gave all students housed in each hostel surveyed an equal chance to be interviewed.

From the sample frame of 14,502 students who were unable to get bed spaces in the halls of residence (i.e. non-campus resident students) in 2016/2017 academic session, a sample size was derived using this formula as given by [11]:

$$n = N / [1 + N (e)^2] \quad (1)$$

Where: n: is the sample size for a finite population

N: size of population which is the number of non- resident students

e: margin of error considered is 5% for this study.

A 95% confidence level and P =.5 are assumed for this Equation.

$$n= 14{,}502/ (1+ 14{,}502 (0.05)^2)) =389$$

Therefore, a total of Three Hundred and Eighty-Nine (389) students were taken as the sample size for the study.

The registered hostels with the Office of the Dean of Students and located within FUTA South gate environs was Thirty-Three (33). Thus, the sample size of non- resident students (389) was drawn from various hostels understudy. Through the qualitative method the hostels were stratified into classes by considering the type of accommodation i.e. (A room self-contain, a single room apartment). Thirteen (13) were a room self- contain accommodated hostels while twenty (20) were a single room hostel accommodation. After which the ratio of each class to the number of students apportioned was done to get total number of students to be interviewed in each hostel as indicated in Table 1.

Havilla hostel was picked as a representative of a room self-contain while Bodkem hostel was also picked has a representative of a single room hostel for the analysis. These two hostels were picked because they have the average rental values and number of rooms.

Table 1. *Determination of the sample size.*

Hostel of student	Number of hostel	Sample size per hostel	Percentage
A room self- contain hostel	13	153	39.3
A single room hostel	20	236	60.7
Total	33	389	100

Source: Author's own construct 2017

5. Analysis and Discussion

5.1. Financial Analysis of the Hostels

Financial analysis refers to an assessment of the viability, stability and profitability of a business, sub-business or project.

There are three basic methods for calculating and analysing the financial viability of a project and these are the Benefit-Cost Ratio (BCR)/ Profitability Index Rate, Net Present Value (NPV) and the Internal Rate of Return (IRR). Since the various hostels are privately owned, it was worth undertaking a financial analysis to ascertain the financial viability or otherwise of these hostels. A discount rate of 25 per cent was used. The basis for the usage of 25 per cent was because the prevailing interest rate on mortgage loan in Nigeria is between 20-30 percent and at average 25 percent. All amounts are quoted in Naira.

The following assumptions were made;

i. Project life was assumed to be 25 years because by this time it is expected that an investment would have recouped its capital.
ii. That all hostels analysed were fully occupied.
iii. That the source of capital of the captured hostels were through mortgage loans which attracted an interest rate of 25 percent.
iv. That interest rate of 25 percent will remain constant throughout the project period.
v. Outgoings would be deducted from the total benefits. (management fee at 10% of gross rent, and repairs at 5% of net rent which will be deducted at every 3 years).
vi. That rents are reviewed after every five years

As can be observed from Table 2, financial viability of the hostels based on a discounting factor of 25 per cent (the average interest rate of banks on loans) only project A (A room self-contain accommodation) was found to be viable, while project B (A single room accommodation) was found not viable. The calculation was done for a period of 25 years which was assumed to be the project life. For the various Benefit Cost Ratios (BCR) of the hostels, project B was found to have a BCR of less than one (1) and when the BCR of a project is less than one (1), then that project is said not teNPV, while Bodkem Hostel had a negative NPV that is 869,267.26, and -995,022.36 for Havilla and Bodkem Hostel respectively.

Table 2. *Financial viability of the hostels with 25 percent discount rate.*

Year	PROJECT A (A ROOM SELF- CONTAIN)					PROJECT B (A SINGLE ROOM)				Present Value (₦/M)
	Cash Inflow (₦/M)	Out-Flow '000'	Net Cash Flow (₦/M)	PV@ 25%	Present Value (₦/M)	Cash Inflow (₦/M)	Out-Flow '000'	Net Cash Flow (₦/M)	PV@ 25%	
0	-11.00		-11.00	1.000	-11.00	-3.50		-3.50	1.000	-3.500
1	3.20	320	2.88	0.800	2.304	0.68	68	0.61	0.800	0.486
2	3.20	320	2.88	0.640	1.843	0.68	68	0.61	0.640	0.389
3	3.20	464	2.74	0.512	1.400	0.68	98	0.58	0.512	0.296
4	3.20	320	2.88	0.409	1.179	0.68	68	0.61	0.409	0.249
5	3.20	320	2.88	0.328	0.943	0.68	68	0.61	0.328	0.199
6	3.52	526	2.99	0.262	0.784	0.74	108	0.63	0.262	0.166
7	3.52	352	3.17	0.209	0.664	0.74	74	0.67	0.209	0.140
8	3.52	352	3.17	0.168	0.531	0.74	74	0.67	0.168	0.112
9	3.52	526	2.99	0.134	0.401	0.74	108	0.63	0.134	0.085
10	3.52	352	3.17	0.107	0.340	0.74	74	0.67	0.107	0.072
11	3.87	387	3.48	0.086	0.299	0.82	82	0.74	0.086	0.063
12	3.87	561	3.31	0.069	0.227	0.82	118	0.70	0.069	0.048
13	3.87	387	3.48	0.055	0.191	0.82	82	0.74	0.055	0.040
14	3.87	387	3.48	0.044	0.153	0.82	82	0.74	0.044	0.032
15	3.87	561	3.31	0.035	0.116	0.82	118	0.70	0.035	0.025
16	4.26	426	3.83	0.028	0.107	0.90	90	0.81	0.028	0.023
17	4.26	426	3.83	0.023	0.086	0.90	90	0.81	0.023	0.018
18	4.26	618	3.64	0.018	0.065	0.90	130	0.77	0.018	0.014
19	4.26	426	3.83	0.014	0.055	0.90	90	0.81	0.014	0.012
20	4.26	426	3.83	0.012	0.044	0.90	90	0.81	0.012	0.009
21	4.69	679	4.01	0.009	0.036	0.99	143	0.84	0.009	0.008
22	4.69	469	4.22	0.007	0.031	0.99	99	0.89	0.007	0.007
23	4.69	469	4.22	0.006	0.024	0.99	99	0.89	0.006	0.005
24	4.69	679	4.01	0.005	0.018	0.99	143	0.84	0.005	0.004
25	4.69	469	4.22	0.004	0.015	0.99	99	0.89	0.004	0.003
					11.869					2.505

Year	PROJECT A (A ROOM SELF- CONTAIN)					PROJECT B (A SINGLE ROOM)				Present Value (₦/M)
	Cash Inflow (₦/M)	Out-Flow '000'	Net Cash Flow (₦/M)	PV@ 25%	Present Value (₦/M)	Cash Inflow (₦/M)	Out-Flow '000'	Net Cash Flow (₦/M)	PV@ 25%	
				NPV=	0.8693					-0.9950
				BCR=	1.0790					0.7157

Source: Analysis of Survey Data, 2017.

Table 3 shows the averages of both the BCR (0.8974) and the NPV (-62,877.55) proved that the projects were not viable at the 25 percent discount rate. This indicates that, the economic environment in the country, even though has been getting better, is still not very conducive to encourage private investment in University accommodation provision. This is basically due to the high interest rates being charged by the Banks in Nigeria. A further reduction in interest rates needs to be done for the private sector to be encouraged to perform its function as the engine of growth through the key policies for the private sector.

Table 3. *Summary of Financial Viability of the Hostels with 25 Percent Discount Rate.*

Name of Hostel	Discount Rate	Benefit-Cost Ratio (BCR)	Net Present Value (NPV)	Extent of Viability
Havilla Hostel	25	1.0790	869,267.26	Viable
Bodkem Hostel	25	0.7157	-995,022.36	Not Viable
Averages		0.8974	-62,877.55	Not Viable

Source: Analysis of Survey Data, 2017.

Again, once the BCR and the NPV points to the fact that the project is viable or otherwise, the result of the IRR would not change the story. Therefore, only the BCR and the NPV analysis were undertaken considering the financial viability of the hostels in Tables 2 and 3. This finding confirms the earlier works of Asare-Kyire et al, 2016. The result of their finding shows all the hostels under study not to be viable as a result of high interest rates charged by Banks in Ghana.

5.2. Sensitivity Analysis

Every project is sensitive to changes in the economic indices of a country. More so, the benefits of a project are always subject to changes within the investment environment therefore, it became imperatives to analyse the viability of these hostel after changes has occurred in the benefit streams. Here, the possibility of provision of more on-campus hostels was considered and the students' possible decision expressing their willingness to go for on-campus hostel accommodation against retaining off-campus private hostel was taken. Therefore, the viability was the checked on its sensitivity to changes that could occur as a result of increase in on-campus accommodation.

Table 4. *Students Willingness to Quit Off-Campus Hostel for On-Campus Hostel.*

Accommodation	No. of student willing to go back to school hostel (%)	No. of student not willing to go back to school hostel (%)
A room self-contain	35	65
A single room	49	51

Source: Analysis of Survey Data, 2017.

From table 4, 35 percent of student living in a room self - contain apartment are willing to go back to school hostel accommodation if there are provision while the remaining 65 percent are not willing. Also, 49 percent of the students living in a single room apartment were willing and eager to go back to school hostel accommodation if there are provisions. Consequent upon this possible decision, a decrease of 35 percent in the demand for a room self-contain at a discounting factor of 25 percent shows the project not viable, while a 49 percent decrease in demand for a single room accommodation at a discount rate of 25 percent worsened the situation. Thus, the investment will be affected by a 35 percent and 49 percent decrease in student demand for private hostel accommodation as shown in Table 5 and 6.

Table 5. *Sensitivity Analysis with 35 Percent Decrease in Demand.*

SENSITIVITY ANALYSIS FOR PROJECT A						
Year	Cash Inflow	Decreased Cash Flow @ 35%	Out-Flow	Net Cash Flow	PV@25%	Present Value
0	-11,000,000	-11,000,000		-11,000,000	1.0000	-11,000,000
1	3,200,000	2,080,000	208,000	1,872,000	0.8000	1,497,600
2	3,200,000	2,080,000	208,000	1,872,000	0.6400	1,198,080
3	3,200,000	2,080,000	301,600	1,778,400	0.5120	910,541
4	3,200,000	2,080,000	208,000	1,872,000	0.4096	766,771
5	3,200,000	2,080,000	208,000	1,872,000	0.3277	613,417
6	3,520,000	2,288,000	331,848	1,956,152	0.2621	512,794
7	3,520,000	2,288,000	228,800	2,059,200	0.2097	431,846
8	3,520,000	2,288,000	228,800	2,059,200	0.1678	345,476

SENSITIVITY ANALYSIS FOR PROJECT A						
Year	**Cash Inflow**	**Decreased Cash Flow @ 35%**	**Out-Flow**	**Net Cash Flow**	**PV@25%**	**Present Value**
9	3,520,000	2,288,000	331,848	1,956,152	0.1342	262,550
10	3,520,000	2,288,000	228,800	2,059,200	0.1074	221,105
11	3,872,000	2,516,800	251,680	2,265,120	0.0859	194,572
12	3,872,000	2,516,800	364,936	2,151,864	0.0687	147,875
13	3,872,000	2,516,800	251,680	2,265,120	0.0550	124,526
14	3,872,000	2,516,800	251,680	2,265,120	0.0440	99,621
15	3,872,000	2,516,800	364,936	2,151,864	0.0352	75,712
16	4,259,200	2,768,480	276,848	2,491,632	0.0281	70,133
17	4,259,200	2,768,480	276,848	2,491,632	0.0225	56,107
18	4,259,200	2,768,480	401,430	2,367,050	0.0180	42,641
19	4,259,200	2,768,480	276,848	2,491,632	0.0144	35,908
20	4,259,200	2,768,480	276,848	2,491,632	0.0115	28,727
21	4,685,120	3,045,328	441,573	2,603,755	0.0092	24,015
22	4,685,120	3,045,328	304,533	2,740,795	0.0074	20,223
23	4,685,120	3,045,328	304,533	2,740,795	0.0059	16,179
24	4,685,120	3,045,328	441,573	2,603,755	0.0047	12,296
25	4,685,120	3,045,328	304,533	2,740,795	0.0038	10,354
						7,719,069.76
					NPV=	-3,280,930
					BCR=	0.7017

Source: Analysis of Survey Data, 2017.

Table 6. *Sensitivity analysis with 49 percent decrease in demand.*

SENSITIVITY ANALYSIS OF PROJECT B						
Year	**Cash Inflow**	**Decreased Cash Flow @ 49%**	**Out-Flow**	**Net Cash Flow**	**PV@25%**	**Present Value**
0	-3,500,000	-3,500,000		-3,500,000	1.0000	-3,500,000.00
1	675,000	344,250	34,425	309,825	0.8000	247,860.00
2	675,000	344,250	34,425	309,825	0.6400	198,288.00
3	675,000	344,250	49,916	294,334	0.5120	150,699.01
4	675,000	344,250	34,425	309,825	0.4096	126,904.32
5	675,000	344,250	34,425	309,825	0.3277	101,523.46
6	742,500	378,675	54,908	323,767	0.2621	84,873.58
7	742,500	378,675	37,868	340,807	0.2097	71,472.41
8	742,500	378,675	37,868	340,807	0.1678	57,177.93
9	742,500	378,675	54,908	323,767	0.1342	43,455.27
10	742,500	378,675	37,868	340,807	0.1074	36,593.87
11	816,750	416,543	41,654	374,889	0.0859	32,202.68
12	816,750	416,543	60,398	356,145	0.0687	24,474.06
13	816,750	416,543	41,654	374,889	0.0550	20,609.71
14	816,750	416,543	41,654	374,889	0.0440	16,487.77
15	816,750	416,543	60,398	356,145	0.0352	12,530.72
16	898,425	458,197	45,820	412,377	0.0281	11,607.37
17	898,425	458,197	45,820	412,377	0.0225	9,285.90
18	898,425	458,197	66,439	391,758	0.0180	7,057.28
19	898,425	458,197	45,820	412,377	0.0144	5,942.98
20	898,425	458,197	45,820	412,377	0.0115	4,754.38
21	988,268	504,017	73,083	430,934	0.0092	3,974.66
22	988,268	504,017	50,412	453,605	0.0074	3,347.01
23	988,268	504,017	50,412	453,605	0.0059	2,677.61
24	988,268	504,017	73,083	430,934	0.0047	2,035.03
25	988,268	504,017	50,412	453,605	0.0038	1,713.67
						1,277,548.67
					NPV=	-2,222,451
					BCR=	0.3650

Source: Analysis of Survey Data, 2017.

With regards to how sensitive the project is, a further decrease was made on the demand for a room self -contain since it was the only project viable under normal circumstance at NPV of (₦869,267.26) and BCR (1.0790) as shown in table 3. A decrease of 30%, 25%, 20%, 15%, 10%, 9%, 8%, 7%, 6%, 5% was made to see how sensitive this project was to decrease in population of students of- campus. Table 7 shows that if there is a 35 percent reduction in the population of students staying off campus, investing in self-contain accommodation will not be viable. For a further reduction of 30, 25, 20, 15, 10, 9, and 8 percent, the investment will not be viable. This implies that the investment is very sensitive to student demand. However, a seven (7) percent reduction in student population, will not affect the investment viability.

Table 7. *Sensitivity analysis of Havilla Hostels to decrease in demand at 25 Percent Discount Rate.*

Decrease in demand	Discount rate	Benefit-Cost Ratio (BCR)	Net Present Value (NPV)	Extent of Viability
At 35% Decrease	25	0.7017	-3,280,930.24	Not Viable
At 30% Decrease	25	0.7557	-2,687,118.05	Not Viable
At 25% Decrease	25	0.8097	-2,093,340.78	Not Viable
At 20% Decrease	25	0.8637	-1,499,563.50	Not Viable
At 15% Decrease	25	0.9177	-905,786.21	Not Viable
At 10% Decrease	25	0.9716	-312,008.94	Not Viable
At 9% Decrease	25	0.9824	-193,253	Not Viable
At 8% Decrease	25	0.9932	-74,498	Not Viable
At 7% Decrease	25	1.004	44,257	Viable

Source: Analysis of Survey Data, 2017.

Sensitivity Indicator (SI)

This compares percentage change in NPV with percentage change in a variable i.e. effect of 1% change in the input variable on NPV

$$S.I = \frac{NPV_b - NPV_1}{NPV_b} \quad (2)$$

$$= \frac{X_b - X_1}{X_b} \quad (3)$$

Where X_b - value of variable in the base case
X_1 - value of the variable in the sensitivity test
NPV_b - value of NPV in the base case
NPV_1 - value of the variable in the sensitivity test
Using SI,

$X_b = 100$, $X_1 = 65$, $NPV_b = 869{,}267.26$, $NPV_1 = (-3{,}280{,}930.24)$

$$\frac{869{,}267.26 - (-3{,}280{,}930.24)}{\frac{869{,}267.26}{\frac{100 - 65}{100}}}$$

SI = 13.64

From the SI of 13.64 above, there is a strong indication that a unit change in the level of demand for self-contain apartment at Havilla hostel will result in 13.64-unit changes in the Net Present Value (NPV) realisable.

From table 3, investment in a single room accommodation was not viable at NPV (-995,022.36) and BCR (0.7157) at a discount rate of 25 percent it became necessary to determine the actual rate at which the two investments will be viable. Therefore, table 8 shows the NPV at various decreased interest rate. At the rate of 24 percent to 19 percent, the investment was still not viable. But at the rate of 18 percent, the two investments were viable. This implies that for the investment to be viable, the interest rate should not be higher than 18 percent.

Table 8. *Summary of Financial Viability of Bodkem Hostels with Decreased Discount Rates.*

Decreased Discount rate	Benefit-Cost Ratio (BCR)	Net Present Value (NPV)	Extent of Viability
24%	0.7468	-886,172.26	Not Viable
23%	0.7806	-767,893.64	Not Viable
22%	0.8174	-638,976.41	Not Viable
21%	0.8577	-498,040.55	Not Viable
20%	0.9019	-343,480.33	Not Viable
19%	0.9505	-173,420.94	Not Viable
18%	1.0041	14,334	Viable

Source: Analysis of Survey Data, 2017.

5.3. Focus Group Discussion

In line with the result from focus group discussion held with six students, three from a room self -contain accommodation and a single room accommodation, the major reason for student staying off-campus was because they have varied options of choosing a room of their choice in terms of convenience, space, facilities and privacy and also to prevent the stress of moving their loads up and down from the hostel after every session. From the group in a single room accommodation, most of them really do not see the difference between where they are staying off-campus and the school hostel hence they are of the opinion of moving back to school hostel if there is provision of more hostel on-campus. On the other hand, (student from a self -contain apartment) gave their condition as to going back to school hostel only if there will be provision of hostel of self- contain apartment on-campus that will satisfy their taste of what they have been experiencing off-campus.

6. Conclusion and Recommendation

The study attempted to examine the effect of provision of more hostel accommodation on campus, on the viability of private student hostel off-campus. Through the sensitivity test on changes in demand, it is established that investment in private student hostel is highly sensitive to a percentage change in demand even at the current interest rate charged by

banks on loan which is too high for private investors to invest their resources. The reason why a room self-contain accommodation was viable was as a result of high rent charged on students which have effect on their parent or guardian. Therefore, investors need to be more careful to study their environment in other not to run at loss because of the sensitivity of the investment to changes in student demand for private hostel.

From the discussion so far, the following recommendations were made.

i. Reduction in interest rates: Interest rates determine the viability of the projects. The government could consult with domestic financial institutions to help reduce the interest rates on loans for the good of all the parties. It is therefore, incumbent on the government to implement prudent fiscal and monetary policies that would result in a further reduction of the existing interest rates to like 18 percent and ultimately a single digit as practiced in some developed nations.
ii. Investors should consider the options of investing on-campus rather than off-campus because of a percentage reduction that could occur on student demand for off-campus accommodation when there is more provision of hostel accommodation on-campus.
iii. The FUTA management should consider partnering with private investors under Public Private Partnership (PPP) in building more hostel on-campus which will reduce the burden on the academic and residential facilities in the university.
iv. Thorough market studies should be undertaken before embarking on this type of investment.
v. Investors should be aware that for their investment to be viable, the decrease in demand should not be more than eight (8) percent. A decrease in demand by 8 percent decrease in students' population off-campus will affect the viability of a room self-contain accommodation. Therefore, investors need to be sensitive to this

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