

# A STUDENT DORMITORY AS AN EDUCATIONAL SUPPORTING FACILITY: AN ENTERPRISE BUDGET ANALYSIS

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## Abstract

*The availability of student dormitories has become a major attraction for universities in Indonesia since many universities have provided this facility. In this study, we examine the potential of a student dormitory development at the Budi Luhur University, especially in terms of finance for student interests and education providers. Primary data were collected from 185 students and were analyzed by employing feasibility test of Net Present Value (NPV), Internal Rate of Return (IRR), Net Benefit Cost Ratio (Net B/C), Profitability Index (PI) and Pay Back Period (PP). Sensitivity analysis was also carried out both in terms of cost and income to anticipate the uncertainty that may occur. The findings indicated that the total investment required in the construction of the student dormitory was Rp 155,857,800 with an average revenue per annum of Rp 58,314,741,732. The results of the investment valuation analysis of net cash flows for 30 years indicated the NPV value of Rp 187,355,802,592, IRR of 21%, Net B/C of 10.57, PI of 2.20, and PBP 6.45 years. This proved that the investment in the student dormitory construction was considered feasible. Finally, from the sensitivity analysis of changes in occupancy rate, rental rates and operational costs, it was concluded that the investment in dormitory construction would be unfeasible when occupancy rates and rents were at the level of 80% down. Further managerial implications were discussed.*

## Keywords

student dormitory; investment; investment feasibility test; sensitivity analysis.

## JEL Classification

I22

## 1. Introduction

Students are young generation with a lot of potential who are expected to be able to utilize the quality of knowledge they have in society (Baharuddin & Makin, 2007). To gain the greatest benefit in the learning process, the students are trying to get the best university, according to their interest which is often not provided in their own cities. This resulted in some students must move to other cities to get a higher quality education. In addition to academic quality, immigrant students often also consider the availability of adequate and affordable logistics. Demographics of the students origin, distribution which spread throughout Indonesia and the concentration of university locations in certain cities in Indonesia requires the availability of adequate shelter for

students who do not live with their parents. Boekaerts (2002) stated that there are several factors that influence the success of students to achieve the optimal achievement, those are intelligence, personality, university environment, and living environment (family, boarding house or boarding house). In addition, the provision of physical facilities significantly affects the level of student satisfaction towards the university (Leonnard et al., 2014). Therefore, student dormitory is an alternative that can provide a sense of security and comfort for students who are not familiar with the surrounding environment.

Competition among public and private universities to get the best students nowadays is not only analyzed from academic achievement, but also considering the affordability of education and accommodation costs. In Jakarta, several universities have provided student dormitories for students, including University of Indonesia, Multimedia Nusantara University, Pelita Harapan University, Prasetya Mulya University, Bina Nusantara University, Bunda Mulia University, President Univesity etc. Student dormitories in addition to helping students in terms of residence can also be the main attraction of a university. In this study, we analyze the potential of student dormitory development at Budi Luhur University seen from the financial aspect. The results of this study are expected to be beneficial to the interests of students and education providers. Budi Luhur University is considered very prospective because currently has an active student number of 11.188 people, has 5 faculties consisting of undergraduate and postgraduate programs. Of the number of students is estimated about 61.70% comes from outside Jakarta and need a place to live during their education. In addition, Budi Luhur University has more than 3,200 m<sup>2</sup> of vacant land that has the potential to be developed as a student dormitory.

Previous studies have analyzed feasibility analysis (Mahyudin et al., 2014; Nikki et al., 2014; Winantara et al., 2014; Dikareva & Voytolovsky, 2016) and others have analyzed the feasibility of building public facilities (Smith et al., 2014; Juwitaningtyas et al., 2015; Figueiredo, Nunes & Brito, 2017) and housing (Prastiwi & Utomo, 2013; Maulina & Utomo, 2016; Munawaroh & Utomo, 2017) but feasibility analysis in the effort of providing educational facilities is still limited. Thus, this study contributes to the literature by providing a new perspective on the potential of providing student dormitory, not only from the aspects of educational quality, but also from the university's profitability as a provider of educational services.

## **2. Methodology**

### **2.1 Data Sources**

This study employed primary and secondary data. The primary data were collected from 185 students of Budi Luhur University, while the secondary data were collected from books, journals and papers related to student dormitories, enterprise budget, and investment analysis. Data collection was carried out through direct interview by questionnaires with students and others systematically according to the research objectives.

### **2.2 Data analysis**

Data analysis was carried out by evaluating the feasibility of investment through Net Present Value (NPV), Internal Rate of Return (IRR), Net Benefit Cost Ratio (Net B/C), Profitability Index (PI), Pay Back Period (PBP), and sensitivity analysis. NPV is the current equivalent value of the expected cash flows taking into account the cost of capital minus the initial cost of the project. An investment will be accepted if the NPV from the investment is positive. The formula for calculating NPV is as follows (Bosma et al., 2017):

$$NPV = \sum_{t=0}^n [(B_t - C_t)/(1 + r)^t]$$

In which:  $B_t$ = benefits/year;  $C_t$ = cost/year;  $r$  = discount rate;  $n$  = project length;  $t$ = project year

IRR is the discount rate that causes the present value of the cash flow to equal the initial cost of the project. An investment is considered feasible if the IRR value is greater than the minimum interest rate of Attractive Rate of Return (MARR). The formula for calculating IRR is as follows (Munawaroh & Utomo, 2017):

$$IRR = i_l + \frac{(i_u - i_l)(NPV_l)}{(NPV_l - NPV_u)}$$

In which:  $i_l$ = Discount rate (+);  $i_u$ = discount rate (-);  $NPV_l$  = NPV (+);  $NPV_u$  = NPV (-)

Net B/C is another type to measure the size of the project, where the present value of the benefit stream is divided by the present value of the cost. An investment is considered feasible if the net value of B/C is positive. PI is the cash flow NPV ratio to the investment value of the project. An investment is considered feasible if the value of PI is positive (Prastiwi & Utomo, 2013). The formula for calculating PI is as follows (Prastiwi & Utomo, 2013):

$$PI = \frac{\sum \text{Present value of net cash}}{\sum \text{Present value of investment}}$$

PP is a way to calculate the length of time it takes to generate a sufficient net cash flow to pay for the initial expenditure. An investment is considered feasible if the PP give a faster return time (Umar, 2001). The formula for calculating PP is as follows (Munawaroh & Utomo, 2017):

$$PP = \frac{I}{Ab}$$

In which:  $I$  = Investation value ;  $Ab$  = Net profit/year  
All of the analyses were calculated by employing Ms. excel.

### 3. Result And Discussion

#### 3.1 Enterprise Budget

Several assumptions employed in the enterprise budgeting of student dormitory are as follows: 1) the investment is planned for 30 years, according to the highest depreciation in the construction of middle class building, 2) total rooms to be built are 1,493 units, with a foundation of 8,000 m<sup>2</sup>, total building area of 32,000 m<sup>2</sup>, the other facilities (aisles, stairs, etc.) of 9,600 m<sup>2</sup>, and room size of 15 m<sup>2</sup> each, 3) inflation rate is determined by average inflation of consumer price index from 2012 to 2016, 4) the discount rate employed is 18 %, and 5) the rental price assumed is able to compete with competitors around the university, especially with competitors who have come first, ie gateway apartment and boarding house. Unit price employs the reference of the cost of boarding house rent with monthly payment scheme (Table 1).

**Table 1 Standard for student dormitory rental price**

Type of rooms	Facility	Rent
Single room	Bathroom inside	1,100,000
	Sharing kitchen	
	Electricity	
	Water	
Single room	Bed	1,350,000
	Wardrobe	
	Air Conditioner	
	TV	
	Desk and chair	
	Bathroom inside	
Double room	Bed	1,750,000
	Wardrobe	
	Air Conditioner	
	TV	
	Desk and chair	
	Bathroom inside	

### 3.2 Investment cost

Investment costs are costs incurred at the beginning of the project. The initial investment cost for the construction of the student dormitory requires funds of Rp 155,857,800.00, - where the compliance for funds is assumed to be fulfilled by university. These initial investment costs consist of costs for land, buildings, interiors and furniture (Table 2).

**Table 2 Projected investment cost of student dormitory**

No	Investment types	Unit	Price/unit	Total
1	Land	10,000	5,000,000	50,000,000
2	Building	32,000	3,000,000	96,000,000
3	Building permit	4 floors	4,000,000	4,000,000
4	Furniture dan interior			
	Number of unit x cost of furniture dan interior for single room	597	6,000,000	3,583,200,000
	Number of unit x cost of furniture and interior for double room	896	7,000,000	6,270,600,000
	Total			155,857,800,000

### 3.3 Operational cost

Operational costs are routine expenses incurred annually at the project age. The operational costs of the student dormitory consist of fixed and variable costs. Fixed costs consist of salary of a head of dormitory, an admin staff, securities, and cleaning services (Table 3).

**Table 3 Projected fix cost of student dormitory**

No	Type of costs	Unit	Price/unit	Total
1	Salary of head of dormitory	1	3,350,000	3,350,000
2	Salary of admin staff	1	2,500,000	2,500,000
3	Salary of security	6	2,000,000	12,000,000

4	Salary of cleaning service	5	1,500,000	7,500,000
	Total			25,350,000

While variable costs consist of electricity, water, telephone and others (Table 4).

**Table 4 Projected variabel cost of student dormitory**

No	Type of costs	Allocation	Price/unit	Total
1	Electricity and water	1493 unit rooms	100.000	149,300,000
		Service area		2,500,000
2	Phone		500.000	500,000
3	Others	T		10,000,000
	Total			162,300,000

### 3.4 Cash flow projection

The cash flow projection to build the student dormitory includes the flow of benefits or an overview of the incoming money and the flow of costs spent during the investment period after it is accounted for the inflation factor. The projected cash inflows of student dormitory investment are indicated in Table 5.

**Table 5 Projected cash flow of student dormitory**

Year	Capital	Fix cost	Variable cost	Income	Cash flow	Cum. CF
0	155,857,800,000				(155,857,800,000)	(155,857,800,000)
1		328,901,040	2,105,745,120	28,486,440,000	26,051,793,840	(129,806,006,160)
2		328,901,040	2,105,745,120	28,486,440,000	26,051,793,840	(103,754,212,320)
3		328,901,040	2,105,745,120	28,486,440,000	26,051,793,840	(77,702,418,480)
4		328,901,040	2,105,745,120	34,183,728,000	31,749,081,840	(45,953,336,640)
5		328,901,040	2,105,745,120	34,183,728,000	31,749,081,840	(14,204,254,800)
6		328,901,040	2,105,745,120	34,183,728,000	31,749,081,840	17,544,827,040
7		328,901,040	2,105,745,120	34,183,728,000	31,749,081,840	49,293,908,880
8		328,901,040	2,105,745,120	41,020,473,600	38,585,827,440	87,879,736,320
9		328,901,040	2,105,745,120	41,020,473,600	38,585,827,440	126,465,563,760
10	10,445,028,000	328,901,040	2,105,745,120	41,020,473,600	28,140,799,440	154,606,363,200
11		328,901,040	2,105,745,120	41,020,473,600	38,585,827,440	193,192,190,640
12		328,901,040	2,105,745,120	49,224,568,320	46,789,922,160	239,982,112,800
13		328,901,040	2,105,745,120	49,224,568,320	46,789,922,160	286,772,034,960
14		328,901,040	2,105,745,120	49,224,568,320	46,789,922,160	333,561,957,120
15		328,901,040	2,105,745,120	49,224,568,320	46,789,922,160	380,351,879,280
16		328,901,040	2,105,745,120	59,069,481,984	56,634,835,824	436,986,715,104
17		328,901,040	2,105,745,120	59,069,481,984	56,634,835,824	493,621,550,928

18		328,901,04 0	2,105,745,1 20	59,069,481,98 4	56,634,835,82 4	550,256,386,7 52
19		328,901,04 0	2,105,745,1 20	59,069,481,98 4	56,634,835,82 4	606,891,222,5 76
20	10,445,028,0 00	328,901,04 0	2,105,745,1 20	70,883,378,38 1	58,003,704,22 1	664,894,926,7 97
21		328,901,04 0	2,105,745,1 20	70,883,378,38 1	68,448,732,22 1	733,343,659,0 18
22		328,901,04 0	2,105,745,1 20	70,883,378,38 1	68,448,732,22 1	801,792,391,2 38
23		328,901,04 0	2,105,745,1 20	70,883,378,38 1	68,448,732,22 1	870,241,123,4 59
24		328,901,04 0	2,105,745,1 20	85,060,054,05 7	82,625,407,89 7	952,866,531,3 56
25		328,901,04 0	2,105,745,1 20	85,060,054,05 7	82,625,407,89 7	1,035,491,939, 253
26		328,901,04 0	2,105,745,1 20	85,060,054,05 7	82,625,407,89 7	1,118,117,347, 150
27		328,901,04 0	2,105,745,1 20	85,060,054,05 7	82,625,407,89 7	1,200,742,755, 047
28		328,901,04 0	2,105,745,1 20	102,072,064,8 68	99,637,418,70 8	1,300,380,173, 755
29		328,901,04 0	2,105,745,1 20	102,072,064,8 68	99,637,418,70 8	1,400,017,592, 464
30	10,445,028,0 00	328,901,04 0	2,105,745,1 20	102,072,064,8 68	89,192,390,70 8	1,489,209,983, 172
Tot al	187,192,884, 000	9,867,031, 200	63,172,353, 600	1,749,442,251, 972	1,489,209,983, 172	

Net cash flow accumulated during the 30 year is Rp 1,490,983,667,972. Benefits gained from the construction of student dormitory are inflow obtained for 30 years that amounted to Rp 1,749,442,251,720. Outflow obtained for 30 years is Rp 185,419,200,000 which consists of fixed costs of Rp 9,867,031,200 and variable costs of Rp 63,172,353,600.

### 3.5 Assessment of investment feasibility

The analysis of investment criteria is derived from the the cash flow analysis for 30 years, by looking at the total income, and then deducting it with fixed and variable costs arising from the lease transactions. Cash flows are calculated based on 100 % occupancy rate, 100 % operational cost, 6 % inflation, 18 % discount rate, a 20 % increase in rent per four years, a 2 % operational increase per year, with single room rent for Rp 1,350,000 and double room for Rp 1,750,000. The room size is 15 m<sup>2</sup> with 4 floors and a total of 1,493 units as indicated in Table 6.

**Table 6 Value of investment feasibility**

No	Criteria of investment feasibility	Value
1	Net Cash flow	1,490,983,667,172
2	Total investment	155,857,800,000
3	Net Present Value (NPV)	187,355,802,592
4	Internal Rate of Return (IRR)	21 %
5	Pay Back Period (PBP)	6.45
6	Net Benefit Cost Ratio (Net B/C)	10.57
7	Profitability Index (PI)	2.20

Based on the table 6, the value of NPV is greater than 1. Similarly, the value of Net B/C and PI. The IRR calculation indicated an IRR of 21 %. The findings denote that the internal rate of return generated from boarding investment is greater in value

than the 18 % discount rate. The value of PBP is 6.45 years. Based on the assessment criteria of the payback period, this dormitory investment is acceptable because the amount of investment cost can be returned with a payback period of 6.45 years, with a 100% occupancy rate. From the overall findings, it can be summarized that the construction of student dormitory is feasible to be constructed.

### 3.6 Sensitivity analysis

In this study, the sensitivity analysis to be tested is used to find out how sensitivity changes in occupancy rate, rental price, and operational cost. Changes are created gradually in percentage form until it is known that the criterion value is not feasible. The results of the sensitivity analysis of the occupancy rate indicate that the project is feasible to be applied at an occupancy rate of 90 % and 100 %, but at the time of occupancy rate down to 80 %, 70 %, 50 %, 25 % and 13 %, the project becomes not feasible anymore, because the investment criterion indicates an improper result, which is pointed from the IRR value which is lower than the reference discount rate (Table 7).

**Table 7 Sensitivity analysis of changes in occupancy rate**

Investment criteria							
Occupancy rate	Net cash flow	Total investment	NPV	IRR	PBP	PI	Net B/C
100 %	1,489,234,224,920	155,857,800,000	187,152,704,159	21 %	6,45	10,56	2,20
90 %	1,314,289,999,723	155,857,800,000	166,842,860,879	19 %	7,05	9,43	2,07
80 %	1,139,345,774,526	155,857,800,000	146,533,017,600	17 %	7,81	8,31	1,94
70 %	958,278,501,447	155,857,800,000	125,512,329,805	15 %	8,70	7,15	1,81
50 %	614,513,098,934	155,857,800,000	85,603,487,761	11 %	11,99	4,94	1,55
25 %	171,029,488,059	155,857,800,000	34,118,035,048	4 %	21,38	2,10	1,22
13 %	(39,778,303,303)	155,857,800,000	9,644,673,896	-1 %	31,00	0,74	1,06

While the result of the calculation of sensitivity analysis of the rental price, it is indicated that the higher the presentation of the rental price, the greater the profit and the investment is feasible to be applied. At the present level the rental price of 80 % down the investment is not feasible to be applied because the NPV and IRR will decrease further. In addition, when the rental price of 13 % net cash flow is negative Rp 39,996,983,585, - with an IRR of -1 % (Table 8).

**Table 8 Sensitivity analysis of changes in rental rates**

Investment criteria							
Rental price	Net cash flow	Total investment	NPV	IRR	PBP	PI	Net B/C
200 %	3,236,927,034,640	155,857,800,000	390,048,038,521	39 %	3,86	21,77	3,50
150 %	2,363,080,629,780	155,857,800,000	288,600,371,340	30 %	4,72	16,16	2,85
100 %	1,489,234,224,920	155,857,800,000	187,152,704,159	21 %	6,45	10,56	2,20
90 %	1,312,717,251,13	155,857,800,000	166,660,275,38	19 %	7,06	9,42	2,0

	8	0	8	%			7
80 %	1,139,695,662,976	155,857,800,00	146,573,637,286	17 %	7,81	8,31	1,94
50 %	613,640,127,250	155,857,800,00	85,502,141,643	11 %	12,00	4,94	1,55
20 %	90,905,207,863	155,857,800,00	24,816,147,135	2 %	24,78	1,58	1,16
13 %	(39,996,983,585)	155,857,800,00	9,619,286,592	-1 %	31,00	0,74	1,06

Furthermore, from the calculation of the sensitivity analysis of the change in operational cost, it is indicated that the lower the operational cost of the presentation, the higher the NPV value will be, in this case indicates that this investment is feasible to be applied and not affected to operational cost of 13 % (the lowest percentage) and 200 % (the highest percentage) (Table 9).

**Table 9 Sensitivity analysis of operational costs**

Investment criteria							
Operational costs	Net cash flow	Total investment	NPV	IRR	PBP	PI	Net B/C
200 %	1,416,194,840,120	155,857,800,00	173,721,233,735	20 %	6,91	10,09	2,11
150 %	1,452,721,836,459	155,857,800,00	180,438,312,094	20 %	6,67	10,32	2,16
100 %	1,489,234,224,920	155,857,800,00	187,152,704,159	21 %	6,45	10,56	2,20
90 %	1,496,611,202,785	155,857,800,00	188,509,282,672	21 %	6,41	10,60	2,21
80 %	1,503,842,101,880	155,857,800,00	189,838,998,244	21 %	6,37	10,65	2,22
50 %	1,525,826,956,705	155,857,800,00	193,881,870,841	22 %	6,25	10,79	2,24
20 %	1,547,665,732,760	155,857,800,00	197,897,880,498	22 %	6,14	10,93	2,27
13 %	1,552,778,489,696	155,857,800,00	198,838,083,428	22 %	6,11	10,96	2,28

Then the results of further data processing indicate that the investment will not be feasible at the 50 % occupancy rate for the rental price of 13 %, with a negative NPV value of RP -3,213,035,045. The results also indicate that the value of NPV negative at occupancy rate of 25 % to the rental price 25 %, occupancy rate of 25 % to rental price 13 %, occupancy rate 13 % to rental price 50 %, occupancy rate 13 % to rental price 25 %, and occupancy rate 13 % to rental price 13 % (Table 10).

**Table 10 Sensitivity analysis of occupancy rate and rental price to NPV**

Occupancy rate							
Rental price	100 %	90 %	80 %	70 %	50 %	25 %	13 %
100 %	186,811,139,238	166,521,605,801	146,232,072,365	125,232,405,259	85,363,472,056	33,929,504,796	9,480,617,005
90	166,521,60	148,263,05	130,004,50	111,106,90	75,228,86	28,943,43	6,941,886,



%	5,801	6,693	7,585	9,258	0,260	8,270	595
80 %	146,232,072,365	130,004,507,585	113,776,942,804	96,981,413,257	65,094,248,463	23,957,371,745	4,403,156,185
70 %	125,232,405,259	111,106,909,258	96,981,413,257	82,361,524,896	54,604,925,254	18,796,792,892	1,775,570,211
50 %	85,363,472,056	75,228,860,260	65,094,248,463	54,604,925,254	34,690,413,074	8,999,172,170	(3,213,035,045)
25 %	33,929,504,796	28,943,438,270	23,957,371,745	18,796,792,892	8,999,172,170	(3,640,506,471)	(9,648,716,634)
13 %	9,480,617,005	6,941,886,595	4,403,156,185	1,775,570,211	(3,213,035,045)	(9,648,716,634)	(12,707,886,778)

The calculation of sensitivity analysis of occupancy rate and operational cost to NPV also indicates that the investment is feasible to be applied. The NPV value is always positive on the change of occupancy rate to operational cost starting from 100 % to 13 % percentage (Table 11).

**Table 11 Sensitivity analysis of occupancy rate and operational cost to NPV**

		Occupancy rate						
Operatio nal costs	100 %	90 %	80 %	70 %	50 %	25 %	13 %	
100 %	187,027,466,042	166,717,622,763	146,407,779,483	125,387,091,689	85,478,249,645	33,992,796,931	9,519,435,779	
90 %	188,370,613,085	168,060,769,805	147,750,926,526	126,730,238,731	86,821,396,687	35,335,943,822	10,862,582,822	
80 %	189,713,760,127	169,403,916,848	149,094,073,568	128,073,385,774	88,164,543,730	36,679,091,016	12,205,729,864	
70 %	191,103,917,316	170,794,074,037	150,484,230,757	129,463,542,963	89,554,700,918	38,069,248,205	13,595,887,053	
50 %	193,743,201,254	173,433,357,975	153,123,514,695	132,102,826,901	92,193,984,857	40,708,532,143	16,235,170,991	
25 %	197,148,079,007	176,838,235,727	156,528,392,448	135,507,704,653	95,598,862,609	44,113,409,896	19,640,048,744	
13 %	198,766,571,193	178,456,727,913	158,146,884,634	137,126,196,840	97,217,354,795	45,731,902,082	21,258,540,930	

Finally, the results of the sensitivity analysis of changes in rental rates and operational costs to NPV indicate that as the rental prices rise, NPV will begin to rise as operational costs fall, conversely as the rental prices fall and the operational costs rise, NPV will decline. Investment will become unfeasible when the rental prices decrease by 13 % against the operational cost up to 200 % generating NPV with negative value Rp. -3,925,466,115, - (Table 12).

**Table 12 Sensitivity analysis of rental prices and operational costs to NPV**

Operatio nal costs	Rental prices							
	200 %	150 %	100 %	90 %	80 %	50 %	20 %	13 %
200 %	376,884,095,376	275,334,878,979	173,785,662,581	153,272,720,869	133,165,976,002	72,033,347,751	11,286,606,501	(3,925,466,115)
150 %	383,599,830,588	282,050,614,191	180,501,397,793	159,988,456,081	139,881,711,234	78,749,082,962	18,002,341,713	2,790,269,097
100 %	390,315,565,800	288,766,349,403	187,217,133,005	166,704,191,293	146,597,446,446	85,464,818,174	24,718,076,925	9,506,004,309
90 %	391,672,144,313	290,122,927,915	188,573,711,518	168,060,769,805	147,954,024,959	86,821,396,687	26,074,655,438	10,862,582,822
80 %	393,001,859,885	291,452,643,487	189,903,427,090	169,390,485,377	149,283,740,531	88,151,112,259	27,404,371,010	12,192,298,394
50 %	397,044,732,483	295,495,516,085	193,946,299,687	173,433,357,975	153,326,613,128	92,193,984,857	31,447,243,608	16,235,170,991
20 %	401,062,085,286	299,512,868,889	197,963,652,491	177,450,710,779	157,343,965,932	96,211,337,661	35,464,596,411	20,252,523,795
13 %	402,068,102,421	300,518,886,023	198,969,669,626	178,456,727,913	158,349,983,067	97,217,354,795	36,470,613,546	21,258,540,930

#### 4. Conclusion and Recommendation

Construction of student dormitory as a supporting educational facility is feasible to be applied in terms of financial, student interests and educational providers. The total investment required is Rp. 155,857,800,000. The student dormitory is projected to generate an average income per year of Rp 58,314,741,732 and the average cost per year is Rp 2,434,646,160. The average net cash flow per year is Rp 49,699,455,572 and the net cash flow generated during 30 years is Rp.1,490,983,667,172. The result of investment assessment of the student dormitory in the net cash flow for 30 years obtained NPV value of Rp.187,355,802,592, IRR of 21 %, Net B/C of 10.57, PI of 2.20, and PBP 6.45 years. This proves that the investment development of the student dormitory is feasible because it will be profitable in the long term for 30 years.

From the sensitivity analysis of the change of occupancy rate, the rental price and the operational cost are summarized that the investment of student dormitory will be unfeasible when the occupancy rate and the rental price are at the level of 80 % down, on the contrary with the result of the sensitivity analysis of the change in operational cost it indicate that the NVP will get higher. Taken together the occupancy rate and the rental price decreased by 50 %, 25 % and 13 % will cause the investment to be unfeasible in the long run. The operational costs will increase and NPV will fall when the rental prices decrease. The investment will also become unfeasible when the rental prices decrease by 13 % against the operational costs increase to 200 % cause NPV is negative of Rp. -3,925,466,115.

This study is expected to become one of the reference for the further studies, because there are still limited studies about financial feasibility analysis of student dormitory needs. Moreover, this study is expected to be able to include the economic aspect of student dormitory potential with BOT (Build Operate Transfer) system, operation management (using operator service), and Mudharabah.

#### References

- Baharuddin, Makin, M. (2007). *Pendidikan humanistik: Konsep, teori dan aplikasi praktis dalam dunia pendidikan*. Yogyakarta: AR Ruzz Media.
- Boekaerts, M. (2002). *Motivation to learn*. Brussel: IAE-IBE UNESCO.
- Bosma, R. H., Lacambra, L., Landstra, Y., Perini, C., Poulie, J., Schwaner, M. J., & Yin, Y. (2017), The financial feasibility of producing fish and vegetables through aquaponics, *Aquacultural Engineering*, 78, 146-154.
- Dikareva, V., & Voytolovskiy, N. (2016), The efficiency and financial feasibility of the underground infrastructure construction assessment methods, *Procedia Engineering* 165(2016), 1197-1202.
- Figueiredo, R., Nunes, P., & Brito, M.C. (2017), The feasibility of solar parking lots for electric vehicles, *Energy* 140(1), 1182-1197
- Juwitaningtyas, T., Ushada, M., & Purwadi, D. (2015), Financial feasibility analysis for moss greening material panel in Yogyakarta, *Agriculture and Agricultural Science Procedia* 3(2015), 159-162.
- Leonard, Daryanto, H.K.S., Sukandar, D., & Yusuf, E.Z. (2014), The loyalty model of private university student, *International Research Journal of Business Studies* 7(1), 55-68.
- Mahyuddin, I., Mahreda, E.S., Mustika, R., & Febrianty, I. (2014), Analisis kelayakan dan sensitivitas harga input pada usaha budidaya ikan lele dalam kolam terpal di Kota Banjarbaru Provinsi Kalimantan Selatan, *EnviroScienteeae* 10(2014), 9-17.
- Maulina, Z. P., & Utomo, C. (2015), Study Kelayakan Investasi Apartemen Gunawangsa Merr Surabaya, *Jurnal Teknik ITS*, 4(2), D91-D94.

- Munawaroh, A., & Utomo, C. (2017), Analisa Investasi The Akavia Indekost Residences Ngaliyan-Semarang, *Jurnal Teknik ITS*, 6(1), 68-72.
- Poetri, N. A., Basith, A., & Wijaya, N. H. (2014), Analisis kelayakan pengembangan usaha peternakan sapi perah kunak (studi kasus usaha ternak kavling 176, Desa Pamijahan Kab. Bogor), *Jurnal Manajemen & Organisasi* 5(2), 122-138.
- Prastiwi, A., & Utomo, C. (2013). Analisa Investasi Perumahan Green Semanggi Mangrove Surabaya, *Jurnal Teknik ITS*, 2(2), D191-D196.
- Smith, M. T., Goebel, J. S., & Blignaut, J. N. (2014), The financial and economic feasibility of rural household biodigesters for poor communities in South Africa, *Waste Management* 34(2), 352-362.
- Umar, Husein. (2001), *Studi Kelayakan Bisnis*, Gramedia Pustaka Utama. Jakarta.
- Winantara, I. M. Y., Bakar, A., & Puspitaningsih, R. (2014), Analisis kelayakan usaha kopi luwak di Bali, *Jurnal Teknik Industri Itenas* 3(2), 118-129.