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Measurement of Educational Feasibility Using Cost and Benefit Analysis at STAINU Temanggung

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ABSTRACT

Current social reality produces a conclusion that the purpose of education is inseparable from employment. Therefore, the feasibility of Indonesian education needs to be considered in terms of the benefits obtained by its graduates. Management Discipline has a formula regarding profit and loss. This formula can be adopted in education management. Furthermore, in this study this formula is referred to as a cost and benefit analysis. Adoption of this formula requires a reinterpretation of all the components in it. Net benefit (NB) is the result of reduction and direct benefit and indirect benefits with costs (C) and depreciation (D). This research uses research and development methods Data collection was carried out by interview method and questionnaire. Sampling is carried out by random sampling technique The results of this calculation are then consulted with the range that has been made in the form of a percentage. The trial conducted on the feasibility of education at STAINU Temanggung University showed that the educational feasibility level at the faculty was 29.72%. This means that the university has an enough feasible meaning in implementing education if analyzed from a cost and benefit analysis.

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A. INTRODUCTION

When education is interpreted as an investment, there must be benefits that can be raised as a measurement barometer (Benni Setiawan, 2008, hlm. 47). The value used as a barometer must represent the whole aspect of education measured. Values in the context of education can be broadly meaningful, because the value of benefits in education can be material or non-material values. In the science of business management this value is referred to as direct benefit and indirect benefit (Ayu Laila Rahmiyati', 2018, hlm. 130). Furthermore, in management science, the feasibility measurement of a program is measured by referring to the calculation of the benefits obtained after deducting costs (C) and depreciation (D)(Camphel, H & Brown, 2003, hlm. 34).

The urgency of measuring feasibility in education is due to the importance of measuring feasibility as an effort to improve(Nelly Budiyarti, t.t., hlm. 129) the quality (Raka Aryo Kinanthi,

2017, hlm. 339) of educational programs that have been implemented. The feasibility of a program is the basis for determining the sustainability and cessation of an education program.

In its implementation, the success of Cost and Benefit (CB) analysis is very much determined by the perspective of the education manager (Husna Nashihin, 2019, hlm. 45). Therefore, the perspective of education managers must assume that education is an investment in the future (Agus Irianto, 2010, hlm. 87). This means that benefit (B) that is judged materially in this analysis is not necessarily received directly in the near future. In fact, indirect benefits in this analysis are not in the form of material such as social benefits.

Educational feasibility analysis was conducted twice, namely analysis at the planning and analysis stage at the post implementation stage (Nanang Fatah, 2012, hlm. 247). Analysis carried out in the planning stage as an effort to measure the feasibility of a plan (Nuryadi, 2014, hlm. 52). The database used in the analysis of the planning stage is still predictive so that the data is speculative. Estimated data obtained based on the scale of project projection and interviews. Then based on projections and interviews, estimates can be made predictive that approach reality after the implementation of education.

Furthermore, this analysis was also carried out at the post implementation stage as an evaluation material for the program that had been implemented. Analysis at this stage uses a definite database. Costs and depreciation that have been obtained from the implementation of the program are analyzed using the cost and benefit analysis.

In management disciplines, every activity (project) must be carried out through the stages of planning, implementation and monitoring (Erich A.Helfert, 1997, hlm. 14). In the planning stage of a project, an analysis is needed in order to evaluate the costs incurred with the benefits to be obtained. This evaluation can be done by using cost and benefit analysis. Cost and benefit analysis (cost and benefit analysis) can provide estimates of the implementation of an activity (project) that will be implemented (Radiks Purba, 1997, hlm. 5).

Cost and Benefit Analysis that applies to companies about profit and loss is a good thing to be adopted to measure the feasibility of education. The urgency of adopting this analysis lies in the feasibility of education analyzed in terms of the investment that is incurred with benefitsobtained, both indirect benefits and indirect benefits.

There are many approaches that can be used in designing an educational plan. Among others, social demand-based education planning and man-power based education planning. At this time it will be explained how the concept of education planning is based on cost and benefit analysis and at the same time the possibility of its application in Indonesia, although in this study limited to the cost and benefit analysis at Temanggung STAINU.

STAINU Temanggung is a university that has long been established in 1970 as the Decree of Establishment Dd / I / PTA / 3/118/1548/1970. For this reason, this university has graduated many students. Ironically, even though many students have graduated, this university has never conducted an internal feasibility analysis other than accreditation from BAN PT. For that reason, it is urgent to do a cost and benefit analysis at this university to find out the amount of education costs and benefits obtained, so that the level of educational feasibility can be known if viewed from a perspective of profit and loss.

Based on the explanation above, there are some backgrounds that make this research urgent to do, first, the need for a new analytical method to determine the feasibility of an educational institution. Second, the paradigm of the Indonesian people who still view education as an effort to get work or benefits. Third, a method of education feasibility analysis is needed that considers benefits. Fourth, Cost and Benefit Analysis is a new method that can be adopted as an analysis of

the feasibility of an educational institution. Fifth, STAINU Temanggung is a decent place to be used as a place for cost and benefit analysis. Sixth, there is no field research using Cost and Benefit Analysis.

Based on the background above, there are two important things to be studied in depth, first, the concept of cost and benefit analysis in education. Second, the feasibility of education at STAINU Temanggung.

B. METHODS

This research was conducted at STAINU Temanggung, Centra of Java. The type of its research is field research. The data analysis used is qualitative analysis approach. This research uses research and development methods. This research uses 232 respondent at STAINU Temanggung, it consist of 130 respondent of Faculty of Tarbiyah and 102 respondent of Faculty of Syaria STAINU Temanggung. The researcher adopted a profit and loss analysis formula found in management science, then the formula was used as a new analytical method related to the analysis of educational feasibility. The trial of education feasibility analysis was carried out at Temanggung STAINU. Data collection was carried out by interview method and questionnaire. Sampling is carried out by random sampling technique (Sugiyono, t.t., hlm. 45–67).

C. RESULT AND DISCUSSION

1. The Concept of Cost and Benefit Analysis in Education

Cost and benefit analysis (Cost and Benefit Analysis) is a methodology used to analyze education investment in order to help decision makers in making choices among alternatives. This analytical method is economic in nature and stems from the concept of Investment in Human Capital or investment in human resources (AgusIrianto, 2010, hlm. 67). Basically the theory of Human Capital, which is a flow of expenditure which considers that humans are a form of capital as other forms of capital, such as machinery, technology, land, money, material that determines productivity growth through investment itself. One can expand alternatives to choose a profession or occupation which in turn will improve welfare. In this view, every investment must bring profits that can be measured by the value of money.

The way of thinking contained in the theory of Human Capital is similar to "technological functionalism"(AgusIrianto, 2010, hlm. 71). This theory emphasizes the technological functions of education and efficient use of human resources. Education has a very decisive role in the development of a society. Education has an influence on increasing economic growth. The linkages between education and the economy can be explained by factors that influence economic growth and development, such as labor, knowledge and technology. Other evidence that can be explained in explaining the relationship between education and the economy is that countries with strong economic levels are supported by people with high educational backgrounds, whereas countries with weak economies are low. Another proof is the relationship between the level and type of education with employment. Someone's income is influenced by the type and level of education he gets. Therefore increasing human resources through education is absolutely necessary. Then the development of human resources must be based on the following principles (Benni Setiawan, 2008):

1. Limitation and expansion of education must be created together. With this, efforts are made to increase the relevance of education more evenly and extensively in various types, levels, and paths of education.
2. Development and utilization of science and technology that makes it possible to become a driving force for the expansion of employment motivation.
3. Reformation in the field of education in developing countries, where the economic dimension has advanced with industry-based, then the strategy of human resource development is directed to the education theorists of the function and development of research and technology to encourage the creation of science and technology in accordance with industrial needs.
4. In developed countries there needs to be innovation in each field so that the strategy of human resource development is more focused on improving the quality of higher education
5. Based on the results of a complete labor analysis that covers the needs of the workforce, the formal and non-formal education systems, and the structure of labor and the use of quality educated labor.
6. Investment in labor needs in the short term based on the estimation of labor requirements in a long-term perspective.

Benefit Concept (Benefit) In Cost and Benefit Analysis (Cost and Benefit Analysis) are:

1. Permanent Benefits and Variables.

   Benefit is a benefit or benefit obtained or produced from a productive activity, such as development or rehabilitation or expansion to obtain large results. In planning the construction of a project (Radiks Purba, 1997, hlm. 45), for example mining projects, plantations, and so on, it is necessary to examine the level of benefits to be obtained each period (year) as a whole during the project's economic technical life.
2. Direct and Indirect Benefits.

   Benefit is the benefit of a productive activity, such as development and rehabilitation or expansion of an agricultural, mining, plantation, factory, and so on projects. In this case, it can happen that besides the benefits that are the main goal (direct benefits), there are also additional or side benefits (indirect benefits), benefits that are not the main goal. Makadikenal there are 2 kinds of benefits, namely direct benefits (direct benefits), and indirect benefits (indirect benefits)(Radiks Purba, 1997, hlm. 48).

   Direct benefit is a benefit obtained as a direct benefit from the project in question (is the main goal). Indirect benefits are benefits that are obtained as indirect benefits from the project concerned (the main objective). For example the construction of an agricultural project by building a dam so that the rice field area can be expanded and also with sufficient and regular water supply, harvesting can be done twice a year, so that rice production increases. The direct benefit of the development is the increase in rice production, while the indirect benefits are the maintenance of fish and dam areas as recreational areas.
3. Net Benefits (Net Benefit).

   Net benefit (NB) is the difference between benefit (B) and cost (C). therefore in this case regarding the value of benefits, then the cost is taken into account depreciation (depreciation), which is depreciation (D) which is calculated every period (year) of the investment in the project concerned. Thus, NB = B- (C + D)(Radiks Purba, 1997, hlm. 34).

2. The Feasibility of Education at STAINU Temanggung

a. Analysis of Sample Data.

Substantially there are three data that will be analyzed in this study, namely data relating to education costs (cost), data relating to the benefits of education (benefits), and data relating to depreciation costs (depreciation). Data relating to education costs (cost) are the sum of three types of costs, namely tuition, living costs, and incidental costs. Data related to the benefits of education (benefits) are the sum of the direct benefits and indirect benefits. The data relating to depreciation costs (depreciation) is the cost incurred while waiting for work (unemployed). Depreciation costs (depreciation) are the sum of the living costs and incidental costs incurred while waiting for work. Each data, both data regarding cost (cost), data regarding benefits (benefits), and data regarding depreciation (depreciation), all of which consist of points of description which contains details of costs and benefits.

Data analysis is done by finding the average of the data on each known point. Based on the average of each point, the average (cost) will be known about costs (costs), benefits (benefits), and also depreciation (depreciation).

b. Analysis of S1 Education Costs at the Faculty of Tarbiyah.

Educational Program Cost Analysis is done by looking at the average of all sample data that has been obtained. Before the avarage of tuition fees is carried out, it is first necessary to know the description points which contain details of the S1 education costs of the Faculty of Tarbiyah and Teacher Training. The following are the description points along with the average of the details of the S1 education costs of the Faculty of Tarbiyah and Teacher Training:

Study Costs

After the data on the details of the tuition fees of all the samples are obtained, then a calculation is made to find the average of each point for the description of the tuition fees, living costs, and incidental costs. The following are the results of calculating the average breakdown of the costs of undergraduate students of the Faculty of Tarbiyah and Teacher Training:

Table 1. Study Cost of the Faculty of Tarbiyah and Teacher Training

No.	Variable	Average 4 year cost
1	**Cost**	
	A. Study Costs	
	1) Money in	Rp. 225,000
	2) Education Support Funds (DPP)	Rp. 600,000
	3) Ospek Fees	Rp. 150,000
	4) Cost of Sospem	Rp. 150,000
	5) Purchasing Ospek Devices	Rp. 82,000
	6) Costs of familiarity	Rp. 40,000
	7) User Education Costs	Rp. 400,000
	8) Fees for meeting guardians	Rp. 40,000
	9) SPP	Rp. 4,800,000
	10) Class contributions	Rp. 160,750
	11)PPL I Costs	Rp. 150,000
	12) PPL-KKN Fees	Rp. 600,000
	13) Fees for courses / tutoring	Rp. 1,150,000
	14) Buy stationery (pens, notebooks, etc.)	Rp. 3,180,000
	15) Buy lecture books and readings	Rp. 1,625,000
	16) Costs of intra-campus activities	Rp. 123,000

	17) Costs for extra campus activities	Rp. 670,000
	18) College transportation fees	Rp. 1,655,000
	19) Print and copy	Rp. 151,000
	20) Purchase shoes for college	Rp. 55,000
	21) Purchase bags for college	Rp. 115,000
Average Amount		**Rp. 16,123,250**

Table 2. Living Cost of the Faculty of Tarbiyah and Teacher Training

No	Variable	Average 4 year cost
1	**Cost**	
	B. Living Cost	
	1) Costs of eating and drinking	Rp. 19,800,000
	2) Rent of residence	Rp. 2,750,000
	3) Buy clothes and sandals	Rp. 2,050,000
	4) Buy a mobile phone	Rp. 755,000
	5) Buy mobile phone credit	Rp. 1,440,000
	6) Refreshing costs	Rp. 2,100,000
Average Amount		**Rp. 28,895,000**

Table 3. Insidental Cost of the Faculty of Tarbiyah and Teacher Training

No	Variable	Average 4 year cost
1	**Cost**	
	C. Incidental Cost	
	1) Cost of medical treatment / illness	Rp. 2,380,000
	2) Costs for accidents	Rp. 4,000,000
Average Amount		**Rp. 6,380,000**

Cost is calculated for four years, because ideally the S1 students of the Faculty of Science Tarbiyah and Teacher Training can graduate after studying for four years or eight semesters. After the breakdown of costs on all description points is obtained, then the average of each point is searched. The total cost is the sum of the three types of costs, namely (A) tuition fees, (B) living expenses, and (C) incidental costs. Following is the calculation of the average total cost:

Total Cost = Cost A + B + C
= Rp. 16,123,250 + Rp. 28,895,000 + Rp. 6,380,000
= Rp. 51,398,250

Based on the calculation of the total average cost (cost) above, it is known that the total average cost (cost) of S1 student education at the Faculty of Tarbiyah and Teacher Training is Rp. 51,398,250. The search for the average cost of education at each point is different, there are points of explanation that the details of the costs between students with each other are the same and there are different. Points of description that have the same details of costs include; Education Support Funds (DPP), OSPEK Costs, Sospem Costs, Familiarity Fees, User Education Costs, PPL I Fees, and PPL KKN Fees. As for the description of the points other than those mentioned above, have detailed costs that differ between students. The range of differences in costs between students with one another differs. This is due to the different backgrounds of students.

c. Analysis of S1 Education Benefits of the Faculty of Tarbiyah

The benefits of this analysis are divided into two, namely direct benefits and indirect benefits. What is meant by direct benefit in this analysis is the benefits resulting from linear work with the education taken. The meaning of indirect benefit (indirect benefit)

in this analysis is the benefits generated from work that is not linear or linier with the educational background that has been taken. Based on the S1 education background in the Faculty of Tarbiyah and Teacher Training, the idealized and linear work is the teaching profession or education staff. In this benefit analysis, the professional standards of Civil Servants will be used. The benefits in this analysis are redefined, so the benefits are interpreted more as profits. The following analysis of benefits, both benefits or benefits directly (direct benefit) and benefits or benefits indirectly (indirect benefit) in more detail:

Table 4. Direct Benefit of the Faculty of Tarbiyah and Teacher Training

No	Variable	Average 4 year cost
1	**Direct Benefit**	
	A. Salary	
	1) Basic Salary	Rp. 96,000,000
	2) Functional Allowances	Rp. 3,600,000
	3) Professional Allowances	Rp. 24,000,000
	4) Holidays Allowance	Rp. 4,000,000
	5) Thirteenth salary	Rp. 8,000,000
	6) Honorarium of activities	Rp. 10,000,000
Average Amount		**Rp. 145,600,000**
	B. Living Cost	
	1) Costs of eating and drinking	Rp. 43,200,000
	2) Rent of residence (boarding / contract)	Rp. 26,000,000
	3) Buy clothes and sandals	Rp. 12,000,000
	4) Buy a mobile phone	Rp. 3,000,000
	5) Buy mobile phone credit	Rp. 4,800,000
	6) Refreshing costs	Rp. 2,000,000
Average Amount		**Rp. 91,000,000**
	B. Insidental Cost	
	1) Cost of medical treatment / illness	Rp. 2,380,000
	2) Costs for accidents	Rp. 4,000,000
Average Amount		**Rp. 6,380,000**

Analysis:
DB = A - (B + C)
= Rp. 145,600,000 - (Rp. 91,000,000+ Rp. 19,200,000)
= Rp. 145,600,000 - Rp. 110,200,000
= Rp. 35,400,000
Indirect Benefit
Rp. 48,000,000
Rp. 2,100,000
Rp. 50,100,000

Table 5. Indirect Benefit of the Faculty of Tarbiyah and Teacher Training

No	Variable	Average 4 year cost
1	**Indirect Benefit**	
	1) Entrepreneur	Rp. 48,000,000
	2) Educational Scholarships	Rp. 2,100,000
Average Amount		**Rp. 50,100,000**

The advantage in this analysis consists of two things, namely direct benefits and indirect benefits. So, total profits are also the sum of direct profits and indirect profits.

Similarly, the average profit. But in the analysis of direct profits, there are other things that need to be observed. While looking for profit, of course requires living expenses or other incidental costs. For this reason, total direct profits must also be reduced by living costs and incidental costs. Following is the calculation of the average total profit in this analysis:

Direct Benefit = Rp. 35,400,000
Indirect Benefit = Rp. 50,100,000
Total Benefit = Rp. 85,500,000

Professional standards used in this profit analysis use the standards of Civil Servants. For this reason, expenditure costs during work, both living costs and incidental costs must also be equivalent, namely the standard cost of Civil Servants. As for the analysis of indirect benefits (allinier) carried out based on the dreams or ideals of each sample, especially at the entrepreneurial point.

d. Analysis of Waiting Costs (Depreciation)

Actually in theory, depreciation is the cost of depreciation of goods. However, this meaning needs to be redefined when this analysis is used in calculating the cost of education. The redefinition has changed the meaning of depreciation into a waiting period for work. For this reason, we need a standard depreciation time to carry out depreciation analysis. The standard is obtained by finding the average of the waiting time for work put forward by all samples. Based on sample data, it is found that the average waiting period of work put forward by the sample is during (1) one year. The following is a detailed depreciation analysis:

Table 6. Analysis of Waiting Costs of the Faculty of Tarbiyah and Teacher Training

No	Variable	Average 4 year cost
1	**Depresiasi**	
	A. Living Cost	
	1) Costs of eating and drinking	Rp. 5,400,000
	2) Rent of residence (boarding / contract)	Rp. 1,200,000
	3) Buy clothes and sandals	Rp. 600,000
	4) Buy a mobile phone	Rp. 600,000
	5) Buy mobile phone credit	Rp. 360,000
	6) Refreshing costs (walking)	Rp. 500,000
	7) Costs of looking for work	Rp. 2,000,000
Average Amount		**Rp. 10,660,000**
	B. Insidental Cost	
	1) Cost of medical treatment / illness	Rp. 500,000
	2) Costs for accidents	Rp. 500,000
Average Amount		**Rp. 1,000,000**

Analysis:

D = A + B
= Rp. 10,660,000 + Rp. 1,000,000
= Rp. 11,660,000

S1 Education Feasibility Faculty of Tarbiyah and Teacher Training

Feasibility or feasibility of education is measured by comparing the cost of education issued with benefits or benefits that will be obtained. In this feasibility analysis, Cost and Benefit analysis or cost and benefit analysis will be used. This analysis has two different

functions, which can function as predictive analysis and evaluative analysis. As a predictive analysis, Cost and Benefit analysis can predict the feasibility of an education program to be implemented. As for an evaluative analysis, this analysis can be used as a method of evaluating educational programs that have been implemented.

Cost and Benefit analysis using the formula Nett Benefit (NB). To find Nett Benefit (NB), it requires total profits (total benefits), total costs (total costs), and total depreciation (total depreciation). In this analysis, all total profits, costs, and depreciation are done by looking for an average. The following is the calculation of Net Benefit (NB) using the average profit, cost, and depreciation:

Known :

B (Benefit) = Rp. 85,500,000

C (Cost) = Rp. 51,398,250

D (Depreciation) = Rp. 11,660,000

Formula:

NB = B - (C + D)

= Rp. 85,500,000 - (IDR 51,398,250 + IDR 11,660,000)

= Rp. 85,500,000 - Rp. 63,058,250

= Rp. 22,441,750

Furthermore, after knowing the Net Benefit (NB), a calculation will be made to find the percentage of educational feasibility. Feasibility (feasibility) of education is seen from the percentage value of Nett Benefit (NB), the amount of which is considered by referring to the amount of capital issued. Calculation of the feasibility percentage of education can be done using the following formula:

P = NB: B x 100

= Rp. 22,441,750: Rp. 75,500,000 x 100

= 29.72%

Based on the calculation of the feasibility percentage above, it is known that the level of S1 educational feasibility of the Faculty of Tarbiyah and Teacher Training is 29.72%. In order to interpret these results further, these results will be consulted with a benchmark in the form of the following range;

Table 7. Educational Feasibility of the Faculty of Tarbiyah and Teacher Training

No	Procentase	Note
1	75% - 100%	Very Feasible
2	50% - 74%	Feasible
3	25% - 49%	Enough Feasible
4	1% - 24%	Not Feasible

D. CONCLUSION AND SUGGESTIONS

Education Feasibility can interpreted with cost and benefit analysis as a measurement barometer.Cost and Benefit Analysis that applies to companies about profit and loss is a good thing to be adopted to measure the feasibility of education. The urgency of adopting this analysis lies in the feasibility of education analyzed in terms of the investment that is incurred with benefitsobtained, both indirect benefits and indirect benefits. Based on the above standard, it can be seen that the S1 educational feasibility level of the Faculty of Tarbiyah of 29.72% has an

enough feasible meaning. Based on these results, it is necessary to improve the quality of education and also the quality of the professional salary.

In the end as a recommendation material that the feasibility of education is needed toimprove the quality of education. So, for the next research, the researcher can adopt this analysis method at the other places.

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