# FEASIBILITY ASSESSMENT FOR ESTABLISHMENT OF A NEW PROGRAM WITH CAPITAL BUDGETING ANALYSIS ON YPTK JEMBER

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**Abstract**

***This study tries to analyze the feasibility of investment plans for the establishment of 2 (two) new programs at YPTK Jember using capital budgeting analysis and to find out how investment decisions for the most feasible programs based on scenario analysis. The calculation of capital budgeting analysis uses Discounted Payback Period (DPP), Net Present Value (NPV) and Internal Rate of Return (IRR) methods. The opening of the Health Analyst Program is considered better than the Pharmacy Program. The calculation results show that the opening of Health Analyst Program has a DPP value of 10.04 years, NPV 4.113.196.389 and IRR 35%. While the opening of Pharmacy Program shows DPP value of 12.87 years, NPV of 4,007,540,562 and IRR of 20%. Scenarios analysis of the opening of the Health Analyst Program in pessimistic conditions showed DPP values of more than 20 years, NPV of 669,082,549 and IRR of 10%. In an optimistic condition, DPP value of 10,04 years, NPV is 5,238,274,461 and IRR 32%. Overall, the calculation results obtained have met the criteria for investment feasibility so YPTK Jember should decide to continue the plan to open a Health Analyst study program.***

***Keyword: Investment feasibility, Capital budgeting analysis, Scenario analysis, Health Analys program, Pharmacy program***

## 1.INTRODUCTION

Business competition makes companies engaged in industry, services, and trade must be able to compete to be able to maintain the company's business activities. Companies are required to be able to act quickly and carefully in utilizing existing business opportunities to be able to develop their business. Companies must be wise in making decisions for the sake of smooth operations that will come, one of which is the decision to invest. Investment is one way for companies to compete in the business world.

Companies that making investment means using existing funds in the hope of being able to generate cash inflows in the future that exceed the initial investment value. This large fund and the uncertainty factor in the time period of capital return that has been invested is something that needs to be carefully and appropriately considered in deciding on an investment. Therefore we need the right analysis and calculation

Analysis of the investment planning and decision making process can be done using capital budgeting calculation techniques. An assessment using the concept of capital budgeting needs to be done so that there are no mistakes in the decision making process so that decisions can be made whether to accept or reject an investment

YPTK is an organization engaged in the field of education services, was established on November 4, 1993 and has offices at Mastrip 25th. YPTK Jember has the aim of organizing institutions or educational institutions and the development of science and technology in the health sector. In April 1994,YPTK Jember for the first time attempted the establishment of a secondary school that would produce a Pharmacist Assistant who was ready to use (SMF Jember). In 2006, the YPTK established the Jember Midwifery Academy adnd followed by the Pharmacy Academy in 2009.

As a form of its commitment in achieving its goals, namely as an educational and technological development institution in the field of health, YPTK

Jember hopes to be able to establish a Health Polytechnic (Poltekkes), and therefore the YPTK Jember plans to increase its educational institutions or institutions by establishing a new program. The new program planned to be established by YPTK Jember is a Health Analyst program and a Pharmacy program. The selection of the study program is due to the lack of a Health Analyst program in Jember and besides that it wants to provide a means for Pharmacy graduates to be able to continue their education

This study tries to analyze the appropriateness of investment in the establishment of the Health Analyst Program and Pharmacy at YPTK Jember using capital budgeting analysis. In addition, it is also to find out how investment decisions are the most feasible study programs based on scenario analysis conducted

## 2.RESEARCH METHOD

This study aims to assess the investment feasibility to be carried out by YPTK Jember, namely the plan to establish two study programs, namely the Health Analyst program (project A) or the Pharmacy program (project B). Data analysis methods used in this study include:

### *2.1. Calculating Cash Flow (Proceeds)*

Cash flow (Proceeds) is calculated by separating between operating cash flow and investment cash flow. Operational cash flows are calculated by adjusting the estimated profit or loss prepared based on accounting principles and adding to costs that are non-cash (depreciation).

$$\text{Operasional cashflows} = \text{Earning after tax (EAT)} + \text{depreciation}$$

Earnings after tax (EAT) are obtained using the calculation:

$$\text{EAT} = \text{Revenue} - (\text{Operating cost} + \text{depreciation}) - \text{Taxes}$$

Revenue is derived from the amount of tuition fees paid by students each semester. Operational costs consist of salaries and allowances, honorarium costs, learning operational costs, general operational costs, human resource development costs, research & service costs and activity costs. Cash flows is made for 20 years, from 2018 to 2037, adjusting to the economic age of the building.

### *2.2. Capital Budgeting Analysis*

Capital budgeting analysis used is an analysis that takes into account the time value of money, including DPP, NPV and IRR. PI technique / method is not used because in this research the project or investment is mutually exclusive, where the study program chosen is the study program that is considered the most feasible.

Following is the definition table of the capital budgeting technique used in this study along with its acceptance criteria.

| No | Capital budgeting technique | Definition | Acceptance criteria |
|---|---|---|---|
| 1 | Discounted Payback Period (DPP) | Time required to repay investments made through discounted future cash inflows | If DPP < maximun period → project received<br>If DPP > maximun period → project rejected |
| 2 | Net Present Value (NPV) | The present value of net cashflow of an investment project is reduce by the initial cash outflow of the project | If NPV > 0 → project is received<br>If NPV < 0 → project is rejected |
| 3 | Internal Rate of Return (IRR) | The discount rate that equates the present value of the expected net cash flow with the initial cash outflow | If IRR > requested rate of return → project received<br>If IRR < requested Rate of return → project rejected |

**Table 1 Operational Definitions and Acceptance Criteria**

### *2.3. Scenario Analysis*

Scenario analysis is carried out for the selected project, the study program that is considered the most feasible. Scenario analysis is made by estimating three scenarios: pessimistic condition / worst scenario, normal condition / basic scenario and optimistic condition / best scenario. The assumptions underlying the scenario are:

a) Number of students
The number of students used as a reference is historical data from the number of students at educational institutions owned by YPTK Jember.
b) Amount of tuition fees
The amount of tuition fees received is obtained based on the determination of tuition fees determined by YPTK Jember.

## 3.RESULT AND DISCUSSION

### *3.1 Initial Investment*

a) The initial investment of the project is divided into 3 (three) parts of expenditure, including:
b) Preoperational investment, which is expenditure used for obtaining operational permits.
c) Investment in Fixed Assets, including providing infrastructure, purchasing office equipment (office inventory), library books, laboratory equipment and vehicles.
d) Working Capital Investment, used to meet the needs of projects that are routine before the project earns income. This investment is invested in cash and inventory.

The distribution of initial investment for Project A and B can be seen in Table 2

| No | Type of expenditures | Project A | Project B |
|---|---|---|---|
| 1 | Preoperational investment | 50.000,000,- | 50.000.000,- |
| 2 | Investment in Fixed Assets | | |
| | Infrastructure | 1.000.000.000,- | 750.000.000,- |
| | Laboratory Equipment | 500.000.000,- | 500.000.000,- |
| | Office Inventory | 300.000.000,- | 300.000.000,- |
| | Library book | 100.000.000,- | 100.000.000,- |
| 3 | Working Capital Investment | 600.000.000,- | 850.000.000,- |
| Total | | 2.550.000.000,- | 2.550.000.000,- |

### *3.2 Assumptions Used And Basis For Consideration*

#### *3.2.1. Project age and depreciation method*

The project life span is 20 years, adjusted to the economic age of the building. The depreciation method of fixed assets uses the straight-line method and the economic life is adjusted to the type of fixed assets, namely office equipment & electronics 5 years while laboratory equipment, vehicles and library books are 10 years.

#### *3.2.2. Number of Students*

YPTK assumes that the number of new students for the two study programs is the same for 20 years. The number of new students will increase in the first 5 years, constant in the second 5 years, decrease in the third 5 years and will rise again in the last 5 years with a percentage increase or decrease of 5% from the previous year.

#### *3.2.3. Inflation Rate*

To estimate the increase in costs or expenses over the life of the project, YPTK uses the average value of inflation in the last 10 years, which is 6%.

#### *3.2.4. Cost of Capital and Returns*

The cost of capital in this study uses the interest rate, with the consideration that the YPTK Jember will fund the project itself. The average annual interest rate of Bank Indonesia over the past 10 years is 7.56%, so the interest rate that will be used as a cost of capital and as a basis for decision making is 8%.

### *3.3. Projected Revenue and Expenditure*

Revenue are obtained from tuition/education fees paid by students each semester. Determination of the amount of education costs for both projects takes into account the amount of education costs of similar study programs in East Java (Table 3)

| Period | Project A | Pproject B |
|---|---|---|
| | Education fee /student | Education fee /student |
| Year 1to 5 | 4.000.000,- | 3.500.000,- |
| Year 6 to 10 | 4.500.000,- | 4.000.000,- |
| Year 11 to 15 | 5.000.000,- | 4.500.000,- |
| Year 16 to 20 | 5.500.000,- | 5.000.000,- |

**Table 3 Amount of Education Costs**

Expenditures are divided into operational and investment cost. Operational cost consist of :

a. Salary and Allowances, consist of the basic salary for teaching staff and education staff, the amount of which is adjusted to the regulations of the YPTK Jember and will increase every two years with a percentage increase of 2.5%.
b. Honorarium fee, include the honorarium and transportation of teaching, as well as the final project honorarium. The amount of the teaching honorarium and transportation per meeting are the same for the two projects. As for the final assignment guidance and final examiner salary per student, the project A fee is lower than Project B.
c. Learning Operational consists of fees for using laboratory materials, manufacturing teaching materials and using Office Stationery for classes & laboratories. These costs will increase every year based on an average inflation rate of 6%
d. General operational include electricity costs, telephone and internet costs, building maintenance costs and infrastructure facilities as well as other general operational costs such as consumption, stationery for office use, fuel (BBM), copying / photocopying. This fee will also increase annually by 6%.
e. HR Development consists of the costs of training, seminars or workshops to be attended and the cost of accommodation and transportation to attend the training, seminars or workshops.
f. Research and Community Service cost consists of research funding, community service funding and scientific publications on the results of research / management of IPR. The amount of research and community service funds per lecturer will increase every 2 years.
g. Activity costs are costs incurred to finance student activities while being a student. The amount of activity costs is determined the same for both study programs.

Investment cost consist of :

a. Standardization / Accreditation.

In the world of education is an acknowledgment of educational institutions that guarantees minimum standards so that graduates can meet the specified qualifications. Expenditures for accreditation are done every 5 (five) years, namely in the 5th, 10th, 15th and 20th of Rp. 75,000,000

b. Addition to Fixed Assets. Addition of fixed assets except for building development is budgeted at 10% of the initial investment value. The addition of fixed assets will be carried out in the 6th year, 11th year, and 16th year.

For income tax, the amount of income tax is adjusted with Article 25 income tax (PPh), where there are 3 (three) tariff classifications:

a. If gross income is less than Rp. 4.8 billion, the tax rate is 1% multiplied by gross income (gross circulation);
b. If the income is more than Rp. 4.8 Billion to Rp. 50 billion, the calculation is 0.25 - (0.6 billion / gross income) x PKP;
c. If more than Rp 50 billion, the calculation is 25% x PKP

### *3.4 Cash Flow Calculation*

Based on the assumptions that have been set and projections of revenue and expenditures that occur then the calculation of cash flows for both projects can be done. Calculation of Cash Flow for both project contained in Table 4 & Table 5.

### *3.5. Capital Budgeting Analysis*

#### *3.5.1. Analysis of the Discounted Payback Period Method*

Based on the calculation of the discounted payback period method, project A has a DPP value of 11.35 years and for project / program B, the value of the discounted payback period is 12.87 years. These results when compared with the specified project age, it can be concluded that the opening of study program A and study program B is feasible to run.

| | YR 1 | YR 2 | YR 3 | YR 4 | YR 5 | YR 6 | YR 7 | YR 8 | YR 9 | YR 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Revenue | 640.000.000 | 1.312.000.000 | 2.016.000.000 | 2.120.000.000 | 2.224.000.000 | .438.000.000 | 2.612.000.000 | 2.754.000.000 | 2.754.000.000 | 2.754.000.000 |
| Operatinal Cost | 1.445.250.000 | 1.560.786.000 | 1.827.970.220 | 1.849.548.075 | 1.894.790.149 | 1.887.720.115 | 1.933.182.963 | 1.962.045.209 | 1.997.747.835 | 2.010.634.097 |
| Tax | 6.400.000 | 13.120.000 | 20.160.000 | 21.200.000 | 22.240.000 | 24.380.000 | 26.120.000 | 27.540.000 | 27.540.000 | 27.540.000 |
| Investment cashflows | | | | | (75.000.000) | (90.000.000) | | | | (75.000.000) |
| Earning after Tax (EAT) | (811.650.000) | 261.906.000) | 167.869.780 | 49.251.925 | 306.969.851 | 525.899.885 | 652.697.037 | 764.414.791 | 728.712.165 | 715.825.903 |
| Depreciation | 170.000.000 | 170.000.000 | 170.000.000 | 170.000.000 | 170.000.000 | 122.000.000 | 122.000.000 | 122.000.000 | 122.000.000 | 122.000.000 |
| Cashflows (Proceeds) | (641.650.000) | (91.906.000) | 337.869.780 | 419.251.925 | 401.969.851 | 557.899.885 | 774.697.037 | 886.414.791 | 850.712.165 | 762.825.903 |
| | **YR 11** | **YR 12** | **YR 13** | **YR 14** | **YR 15** | **YR 16** | **YR 17** | **YR 18** | **YR1 9** | **YR 20** |
| Revenue | 2.806.000.000 | 2.808.000.000 | 2.770.000.000 | 2.630.000.000 | 2.500.000.000 | 2.533.000.000 | 2.660.000.000 | 2.871.000.000 | 3.014.000.000 | 3.168.000.000 |
| Operatinal Cost | 2.005.837.107 | 2.014.412.062 | 2.040.014.868 | 2.036.311.033 | 2.060.312.245 | 2.078.450.768 | 2.115.653.131 | 2.155.966.928 | 2.220.374.574 | 2.262.377.519 |
| Tax | 28.060.000 | 28.080.000 | 27.700.000 | 26.300.000 | 25.000.000 | 25.330.000 | 26.600.000 | 28.710.000 | 30.140.000 | 31.680.000 |
| Investment cashflows | (90.000.000) | | | | (75.000.000) | (90.000.000) | | | | (75.000.000 |
| Earning after Tax (EAT) | 772.102.893 | 765.507.938 | 702.285.132 | 567.388.967 | 414.687.755 | 429.219.232 | 517.746.869 | 686.323.072 | 763.485.426 | 873.942.481 |
| Depreciation | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 |
| Cashflows (Proceeds) | 750.102.893 | 833.507.938 | 770.285.132 | 635.388.967 | 407.687.755 | 407.219.232 | 585.746.869 | 754.323.072 | 831.485.426 | 866.942.481 |

**Table 4. Calculation of Cash Flow (Proceeds) for Project A**

| | YR 1 | YR 2 | YR 3 | YR 4 | YR 5 | YR 6 | YR 7 | YR 8 | YR 9 | YR 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Revenue | 560.000.000 | 1.148.000.000 | 1.764.000.000 | 2.415.000.000 | 2.534.000.000 | 2.762.000.000 | 2.962.000.000 | 3.127.000.000 | 3.264.000.000 | 3.264.000.000 |

| | YR 1 | YR 2 | YR 3 | YR 4 | YR 5 | YR 6 | YR 7 | YR 8 | YR 9 | YR 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Operatinal Cost | 1.610.950.000 | 1.708.397.000 | 1.885.612.120 | 1.958.687.182 | 1.996.993.900 | 1.978.897.271 | 2.023.558.002 | 2.039.977.967 | 2.084.286.947 | 2.097.616.886 |
| Tax | 5.600.000 | 11.480.000 | 17.640.000 | 24.150.000 | 25.340.000 | 27.620.000 | 29.620.000 | 31.270.000 | 32.640.000 | 32.640.000 |
| Investment cashflows | | | | | (75.000.000) | (90.000.000) | | | | (75.000.000) |
| Earning after Tax (EAT) | (1.056.550.000) | (571.877.000) | 139.252.120) | 432.162.818 | 511.666.100 | 755.482.729 | 908.821.998 | 1.055.752.033 | 1.147.073.053 | 1.133.743.114 |
| Depreciation | 157.500.000 | 157.500.000 | 157.500.000 | 157.500.000 | 157.500.000 | 104.500.000 | 109.500.000 | 109.500.000 | 109.500.000 | 109.500.000 |
| Cashflows (Proceeds) | (899.050.000) | 414.377.000) | 18.247.880 | 589.662.818 | 594.166.100 | 769.982.729 | 1..018.321.998 | 1.165.252.033 | 1.256.573.053 | 1.168.243.114 |
| | YR 11 | YR 12 | YR 13 | YR 14 | YR 15 | YR 16 | YR 17 | YR 18 | YR1 9 | YR 20 |
| Revenue | 3.321.000.000 | 3.333.000.000 | 3.309.000.000 | 3.240.000.000 | 3.078.000.000 | 3.080.000.000 | 3.158.000.000 | 3.321.000.000 | 3.570.000.000 | 3.750.000.000 |
| Operatinal Cost | 2.094.866.043 | 2.104.878.117 | 2.137.568.623 | 2.147.135.059 | 2.176.303.389 | 2.204.569.791 | 2.244.804.163 | 2.266.737.429 | 2.328.635.576 | 2.364.529.310 |
| Tax | 33.210.000 | 33.330.000 | 33.090.000 | 32.400.000 | 30.780.000 | 30.800.000 | 31.580.000 | 33.210.000 | 35.700.000 | 37.500.000 |
| Investment cashflows | (90.000.000) | | | | (75.000.000) | (90.000.000) | | | | (75.000.000) |
| Earning after Tax (EAT) | 1.192.923.957 | 1.194.791.883 | 702.285.132 | 567.388.967 | 414.687.755 | 429.219.232 | 881.615.837 | 1.021.052.571 | 1.205.664.424 | 1.347.970.690 |
| Depreciation | 55.500.000 | 55.500.000 | 55.500.000 | 55.500.000 | 55.500.000 | 55.500.000 | 55.500.000 | 55.500.000 | 55.500.000 | 55.500.000 |
| Cashflows (Proceeds) | 1.158.423.957 | 1.250.291.883 | 1.193.841.377 | 1.115.964.941 | 851.416.611 | 810.130.209 | 937.115.837 | 1.076.552.571 | 1.261.164.424 | 1.328.470.690 |

**Table 5. Calculation of CashFlow (Proceeds) for Project B**

### *3.5.2. Analysis of the Net Present Value Method*

The calculation results obtained NPV value for project / program A of Rp.4,113,196,389, - and project / program B of Rp.4,007,540,562, -. Both projects / programs produce a positive NPV value indicating that both projects / programs are feasible or acceptable.

3.5.3 Analysis of the Internal Rate of Return Method

Based on IRR calculations for project / programs A and B, the rate of return for project / program A is 35%

and project / program B is 20%. Both project/program have IRR values that are greater than the expected rate of return by YPTK Jember which is 8%. This means that both project / program are declared feasible or able to run.

### *3.5.4 Comparison between projects / programs*

Calculation of investment feasibility to be carried out by YPTK Jember on the opening of 2 (two) new programs using capital budgeting analysis can be seen in Table 6. Based on the table, it can be seen that both the projects / programs provide decent or acceptable results. The DPP value of project A is smaller than B, which means the time needed to return a capital is faster. Likewise, the value of NPV and IRR of project A is greater than project B. This means that project A is more feasible than project B.

| Analysis method | Result | | Standarts |
|---|---|---|---|
| | Project A | Project B | |
| DPB | 11,35 years | 12, 87 years | Project age 20 years |
| NPV | 4.113.196.389 | 4.007.540.562 | NPV + |
| IRR | 35% | 20% | IRR > 8% |

**Table 6. Summary of Capital Budgeting analysis results**

### *3.6. Scenario Analysis*

There are 3 (three) scenarios in calculating the feasibility of project A, including:

a. The worst scenario / pessimistic condition is a condition where the number of students is in the worst / lowest range, namely 40-79 students with the amount of education costs in the range of Rp. 4,000,000 to Rp. 6,000,000
b. The best scenario / optimistic condition is a condition where the number of students is in the highest range of 120-159 students with a range of Rp. 3,000,000 to Rp. 5,000,000
c. The basic scenario / normal condition is a condition where the number of students is in the most reasonable / normal range of 80-119 students with the amount of tuition fees of Rp. 3,500,000 to Rp. 5,500,000

### *3.6.1. Analysis of Optimistic Condition Scenarios*

Cash flow calculations for Optimistic conditions are in Table 7. Based on the calculation results of the capital budgeting analysis, the discounted payback period is 10.04 years. NPV calculation obtained positive results in the amount of 5,238,274,461 and from the IRR side, the rate of return was 32%. From the results of these calculations, the optimistic condition of Project A / opening of the Health Analyst program can still be carried out or accepted.

### *3.6.2. Pessimistic Condition Scenario Analysis*

Calculation of cash flows for pessimistic conditions can be seen in Table 8. Calculation of capital budgeting analysis for pessimistic conditions obtained discounted payback period of more than 20 years, NPV of 669,082,549, and rate of return (IRR) of 10%. From these results, it can be said that in the pessimistic condition of Project A it is said to be feasible when viewed in terms of NPV and IRR, but if viewed from the DPP it is not feasible because the time needed to return capital is more than the project life span (20 years).

### *3.6.3. Scenario Analysis for all condition*

The results of the calculation of capital budgeting analysis of all scenarios or conditions that might occur in project A (plan to open a Health Analyst program) to be carried out by YPTK Jember can be seen in Table 9.

| | YR 1 | YR 2 | YR 3 | YR 4 | YR 5 | YR 6 | YR 7 | YR 8 | YR 9 | YR 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Revenue | 840.000.000 | 1.722.000.000 | 2.646.000.000 | 2.779.000.000 | 2.919.000.000 | 3.219.000.000 | 3.470.000.000 | 3.672.000.000 | 3.672.000.000 | 3.672.000.000 |
| Operatinal Cost | 1.860.500.000 | 2.030.870.000 | 2.425.834.940 | 2.455.490.897 | 2.517.893.259 | 2.524.877.552 | 2.589.193.021 | 2.628.127.076 | 2.675.090.262 | 2.690.902.829 |

| | YR 1 | YR 2 | YR 3 | YR 4 | YR 5 | YR 6 | YR 7 | YR 8 | YR 9 | YR 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Tax | 8.400.000 | 17.220.000 | 26.460.000 | 27.790.000 | 29.190.000 | 32.190.000 | 34.700.000 | 36.720.000 | 36.720.000 | 36.720.000 |
| Investment cashflows | | | | | (75.000.000) | (90.000.000) | | | | (75.000.000 |
| Earning after Tax (EAT) | (1.028.900.000) | (326.090.000) | 193.705.060 | 295.719.103 | 371.916.741 | 661.932.448 | 846.106.979 | 1.007.152.924 | 960.189.738 | 944.377.171 |
| Depreciation | 170.000.000 | 170.000.000 | 170.000.000 | 170.000.000 | 170.000.000 | 122.000.000 | 122.000.000 | 122.000.000 | 122.000.000 | 122.000.000 |
| Cashflows (Proceeds) | (858.900.000) | (156.090.000) | 363.705.060 | 465.719.103 | 466.916.741 | 693.932.448 | 968.106.979 | 1.129.152.924 | 1.129.152.924 | 991.377.171 |
| | **YR 11** | **YR 12** | **YR 13** | **YR 14** | **YR 15** | **YR 16** | **YR 17** | **YR 18** | **YR 19** | **YR 20** |
| Revenue | 3.762.000.000 | 3.780.000.000 | 3.735.000.000 | 3.546.000.000 | 3.384.000.000 | 3.445.000.000 | 3.620.000.000 | 3.910.000.000 | 4.110.000.000 | 4.320.000.000 |
| Operatinal Cost | 2.701.478.775 | 2.710.275.448 | 2.741.461.635 | 2.730.728.898 | 2.757.366.173 | .780.164.559 | 2.828.779.299 | .878.921.397 | 2.966.110.653 | 3.024.916.970 |
| Tax | 37.620.000 | 37.800.000 | 37.350.000 | 35.460.000 | 33.840.000 | 34.450.000 | 36.200.000 | 39.100.000 | 41.100.000 | 43.200.000 |
| Investment cashflows | (90.000.000) | | | | (75.000.000) | (90.000.000) | | | | (75.000.000) |
| Earning after Tax (EAT) | 1.022.901.225 | 1.031.924.552 | 956.188.365 | 779.811.102 | 592.793.827 | 630.385.441 | 755.020.701 | 991.978.603 | 1.102.789.347 | 1.251.883.030 |
| Depreciation | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 |
| Cashflows (Proceeds) | 1.000.901.225 | 1.099.924.552 | 1.024.188.365 | 1.115.964.941 | 851.416.611 | 810.130.209 | 937.115.837 | 1.076.552.571 | 1.261.164.424 | 1.328.470.690 |

**Table 7. Calculation of Cash Flow (Proceeds) for Project A in Optimistic condition**

| | YR 1 | YR 2 | YR 3 | YR 4 | YR 5 | YR 6 | YR 7 | YR 8 | YR 9 | YR 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Revenue | 360.000.000 | 738.000.000 | 1.134.000.000 | 1.188.000.000 | 1.251.000.000 | 1365.000.000 | 1.461.000.000 | 1.530.000.000 | 1.530.000.000 | 1.530.000.000 |
| Operatinal Cost | 1.030.000.000 | 1.090.702.000 | 1.230.105.500 | 1.243.142.049 | 1.271.837.040 | 1.248.462.678 | 1.279.631.608 | 1.295.963.341 | 1.320.405.408 | 1.330.365.365 |
| Tax | 3.600.000 | 7.380.000 | 11.340.000 | 11.880.000 | 12.510.000 | 13.650.000 | 14.610.000 | 15.300.000 | 15.300.000 | 15.300.000 |

| | YR 1 | YR 2 | YR 3 | YR 4 | YR 5 | YR 6 | YR 7 | YR 8 | YR 9 | YR 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Investment cashflows | | | | | (75.000.000) | (90.000.000) | | | | (75.000.000) |
| Earning after Tax (EAT) | (673.600.000) | (360.082.000) | (107.445.500) | (67.022.049) | (33.347.040) | 102.887.322 | 166.758.392 | 218.736.659 | 194.294.592 | 184.334.635 |
| Depreciation | 170.000.000 | 170.000.000 | 170.000.000 | 170.000.000 | 170.000.000 | 122.000.000 | 122.000.000 | 122.000.000 | 122.000.000 | 122.000.000 |
| Cashflows (Proceeds) | (503.600.000) | (190.082.000) | 62.554.500 | 102.977.951 | 61.652.960 | 134.887.322 | 288.758.392 | 340.736.659 | 316.294.592 | 231.334.635 |
| | **YR 11** | **YR 12** | **YR 13** | **YR 14** | **YR 15** | **YR 16** | **YR 17** | **YR 18** | **YR1 9** | **YR 20** |
| Revenue | 1.548.000.000 | 1.544.000.000 | 1.518.000.000 | 1.452.000.000 | 1.386.000.000 | 1.394.000.000 | 1.448.000.000 | 1.560.000.000 | 1.644.000.000 | 1.728.000.000 |
| Operatinal Cost | 1.310.195.439 | 1.318.548.677 | 1.337.840.662 | 1.342.143.168 | 1.362.612.679 | 1.379.745.600 | 1.406.626.962 | 1.430.448.904 | 1.472.388.495 | 1.501.788.067 |
| Tax | 15.480.000 | 15.440.000 | 15.180.000 | 14.520.000 | 13.860.000 | 13.940.000 | 14.480.000 | 15.600.000 | 16.440.000 | 17.280.000 |
| Investment cashflows | (90.000.000) | | | | (75.000.000) | (90.000.000) | | | | (75.000.000) |
| Earning after Tax (EAT) | 222.324.561 | 210.011.323 | 164.979.338 | 95.336.832 | 9.527.321 | 314.400 | 26.893.038 | 113.951.096 | 155.171.505 | 208.931.933 |
| Depreciation | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 | 68.000.000 |
| Cashflows (Proceeds) | 200.324.561 | 278.011.323 | 232.979.338 | 163.336.832 | 2.527.321 | (21.685.600) | 94.893.038 | 181.951.096 | 223.171.505 | 201.931.933 |

**Table 8. Calculation of Cash Flow (Proceeds) for Project A in Pessimistic condition**

| Scenario | Discounted Payback Period | NPV | IRR |
|---|---|---|---|
| Optimistic condition | 10.04 year | 5.238.274.461 | 32% |
| Normal condition | 11,35 year | 4.113.196.389 | 35% |
| Pesimistic condition | More than 20 year | 669.082.549 | 10% |

**Table 9. Capital Budgeting analysis all condition**

## 4.CONCLUSION

1. Based on the results of calculations and discussions regarding the appraisal of the investment plan for the opening of a new Program to be carried out by YPTK Jember, the following conclusions can be concluded:
2. The opening of the Health Analyst Program is acceptable or feasible to run and can have a positive impact or add value. The plan to open this program has a DPP value of less than 20 years, namely 10.04 years, a positive NPV of 4,113,196,389 and an IRR of greater than 8%, 35%.

3. Opening of Pharmacy Program by YPTK Jember can also be accepted or feasible to run. The results of the calculation of capital budgeting analysis show a DPP value of 12.87 years, an NPV of 4,007,540,562 and an IRR of 20%.
4. Opening of Health Analyst Program is considered better than Pharmacy Program. The results of the calculation of capital budgeting analysis for Health Analyst shows a DPP value that is smaller than the DPP value of Pharmacy which means that the payback period for Health Analyst's capital is faster. In addition, the NPV and IRR values of Health Analyst are greater than Pharmacy calculations.
5. Scenario analysts on the opening of the Health Analyst Program made 3 (three) scenario assumptions namely optimistic, normal and pessimistic conditions. The DPP value in an optimistic and normal condition is obtained less than 20 years, whereas in a pessimistic condition the DPP value is more than 20 years. NPV values for all three scenarios / conditions obtained positive NPV results. Likewise with the IRR calculation results that show a higher rate of return than expected. Overall, the calculation results obtained have met the criteria for investment feasibility so YPTK Jember should decide to continue the plan to open a Health Analyst program.

## REFERENCES

[1] Ashley A, Robert, Stanley M Atkinson, dan Stephen M LeBruto. A survey of Capital Budgeting Methods Used by the Restaurant Industry. The Journal of Hospitally Financial Management Vol.8, Number 1, 2000.

[2] Baridwan, Zaki. Intermediate accounting. 8th Edition. Yogyakarta: BPFE Yogyakarta. 2004

[3] Blocher, Edward J at all. (2007). Cost Managements. 3th Editon. Jakarta : Salemba Empat.

[4] Brigham, Eugene F dan Phillip R Daves. Intermediate financial management. 9th Edition. USA. 2007

[5] Halim, Abdul. Bussiness Financial Management. Malang. Ghalia Indonesia. 2007

[6] Haming, Murdifin dan Basalamah Salim. Investment Feasibility Study:Project & Bussiness. Jakarta : Penerbit PPM. 2003.

[7] Hasan, Maruf. Capital Budgeting Techniques Used by Small Manufacturing Companies. Journal of Science and Management, 2013, 6, 38-45.

[8] Horne, James Van C and John M Wachowicz. Fundamental of financial management. 12th Edition. Jakarta : Salemba Empat. 2007.

[9] Husnan, Suad dan Suwarsono. Bussiness Feasibility Study. Yogyakarta: UPP AMP YKPN. 2000.

[10] Kasmir dan Jakfar. Bussiness feasibility Study. 2nd Edition. Jakarta: Kencana Prenada Media Group. 2007.

[11] Moeljadi. Quantitative and Qualitative Financial Management.. Malang : Bayumedia Publising. 2006.

[12] M.Leon, Farah, Mansor Isa dan Gorege W Kesler. (2008).Capital Budgeting Practices of Listed Indonesian Companies. Asian Journal of Business and Accounting 1(2)

[13] Nabradi, Andras dan Laszlo Szollosi. Key aspect of investment analysis. Applied Studies in Agribusiness and Commerce-APSTRACT

[14] Nazir, Mohammad. Research Method. Bogor : Ghalia Graha. 2011.

[15] Shinoda, Tomonari. Capital Budgeting Management Practices in Japan. Econ Journal of Hokkaido University Vol.39 pp.39-50. .2000

[16] Sudana, I Made. Corporate Financial Management:Theory & Practice.Surabaya:Erlangga. 2011.

[17] Tandelilin, Eduardus. Investment Analysis and Portfolio MAnagement. Yogyakarta. BPFE-Yogyakarta. 2001.

[18] Weston, J Fred dan Copeland, Thomas. Manajemen Keuangan, Terjemahan Edisi Kesembilan. Jakarta. Binarupa Aksara. 1995