

An Empirical Investigation into the Feasibility of a Smoked Fish Enterprise Utilising Liquid Smoke Technology in Central Maluku Regency

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ABSTRACT

The purpose of this research is to analyze the feasibility of liquid smoked fish businesses, especially tuna and skipjack, by utilizing liquid smoke technology in Tulehu Village and Waai Village, Central Maluku Regency. To find out whether this liquid smoked fish business is worth running or not. The research used a survey method with direct interview techniques with liquid smoked fish business actors in Tulehu Village and Waai Village regarding the liquid smoked fish production process, marketing, sales and profits obtained. The data obtained was then analyzed for business feasibility from a financial aspect. The analysis technique used is using investment criteria including: Payback Period, Net Present Value, Internal Rate of Return (IRR), and Profitability Index as well as investment risk using sensitivity analysis. The results of this research show that the liquid smoked fish business in Tulehu village and Waai village is considered feasible because the financial aspect is considered to meet the investment assessment criteria, the rate of return on investment (Payback Period) is faster than the project plan, namely 5 years, the Net Present Value has positive value, the Internal Rate of Return is above the expected profit level, and the Profitability Index /Benefit Cash Ratio Ratio is greater than one.

ABSTRACT

Tujuan dari penelitian ini adalah untuk menganalisis kelayakan usaha ikan asap cair khususnya ikan tuna dan cakalang dengan memanfaatkan teknologi asap cair di Desa Tulehu dan Desa Waai Kabupaten Maluku Tengah. Untuk mengetahui apakah bisnis ikan asap cair ini layak untuk dijalankan atau tidak. Penelitian ini menggunakan metode survei dengan teknik wawancara langsung kepada pelaku usaha ikan asap cair di Desa Tulehu dan Desa Waai mengenai proses produksi ikan asap cair, pemasaran, penjualan dan keuntungan yang diperoleh. Data yang diperoleh kemudian dianalisis kelayakan usaha dari aspek finansial. Teknik analisis yang digunakan menggunakan kriteria investasi antara lain: Payback Period, Net Present Value, Internal Rate of Return (IRR), dan Profitability Index serta risiko investasi menggunakan analisis sensitivitas. Hasil penelitian menunjukkan bahwa usaha ikan asap cair di Desa Tulehu dan Desa Waai dinilai layak karena dari aspek finansial dianggap memenuhi kriteria penilaian investasi, tingkat pengembalian investasi (Payback Period) lebih cepat dari rencana proyek, yaitu 5 tahun, Net Present Value bernilai positif, Internal Rate of Return diatas tingkat keuntungan yang diharapkan, dan Indeks Profitabilitas/Benefit Cash Ratio Ratio lebih besar dari satu. Kata Kunci : Kelayakan usaha ikan asap cair, Payback Period, Net Nilai Sekarang, Tingkat Pengembalian Internal, Indeks Profitabilitas/Manfaat Rasio Kas Rasio lebih besar dari satu



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INTRODUCTION

The potential of fish resources in Maluku Province is God's gift to the people of Maluku which must be managed properly for the progress and welfare of all Indonesian people and especially

local and small-scale fishermen in Maluku Province, based on the 1945 Constitution Article 33 paragraph 3 of the earth, water and natural resources contained therein are controlled by the state and used for the greatest prosperity of the people.

One of the fishery commodities in Maluku that is economically important is large pelagic fish such as tuna and skipjack. One way that fish can be utilized as much as possible is by processing. Asar fish is one of the famous processed fish in Maluku, whose processing is still carried out traditionally. Manufacturers are often exposed to smoke resulting from the smoking process. Processing processes that do not pay attention to sanitary and hygienic aspects and sales that do not use packaging, resulting in a short shelf life of this product. This asar fish is usually sold in whole form (one tail) or side (one tail divided by two) and sold in traditional markets or in the processed asar fish center in Galala Village.

Increasing consumer awareness of the need for hygienic products has led to liquid smoked fish being produced. Liquid smoked fish is a processed fish product that uses condensation technology with a liquid smoking method that corrects the weaknesses of traditional smoking, by obtaining a smoking process that is safe, free from pollution, more effective and efficient so that the purpose of the smoking process can be achieved properly (Apituley, et al, 2014).

According to Swastawati et al (2017), smoked fish is one of the traditional processed products that is very preferred by the people of Indonesia because of its distinctive taste and specific pleasant aroma. Various types of fish can be processed into smoked fish are tuna, skipjack fish, and other palagic fish. Liquid smoked fish products have high prospects, because in addition to being consumed by local people, it is also often a souvenir for travelers or people who want to travel outside Ambon City. The opportunity for product development is very large, it can be seen from the strength of the product, among others, taste quality, guaranteed hygiene and long durability. The increasingly tight market competition conditions encourage producers to compete to provide products according to consumer needs and market them with good marketing strategies. Understanding the shortcomings of a product to be corrected will increasingly make the product superior to compete not only at the local, national, regional and even international levels.

Based on the background description above, this feasibility study is needed in order to assess the feasibility of the liquid smoked fish business in terms of various aspects both non-financial aspects (technical aspects of production, market and marketing aspects, and socio-economic aspects), and financial aspects to assess whether this liquid smoked fish business is feasible.

RESEARCH METHODS

The method used in this study is quantitative method. Quantitative analysis was conducted a feasibility study of liquid smoked fish business in Tulehu Village and Waai Village, Central Maluku Regency.

Data Collection Process

The data collection process was carried out by observation in the research area then unstructured interviews and various other sources obtained in the form of reports from related agencies such as from the Fisheries Service / Fisheries Training and Extension Center (BPPP), Central Statistics Agency (BPS) both in the Province and Ambon City. Observations were made on the process of making liquid smoked fish and then conducted in-depth interviews (*interviews*) to

find a comprehensive picture of the development of the liquid smoked fish business. Literature studies are carried out from literature, the internet, and other writings related to the research conducted.

In addition, in each sample village, *focus group discussions* were carried out, involving related agencies, banks, NGOs, universities and liquid smoked fish business actors.

Research Location

This research was conducted by taking samples on several smoked fish business actors, especially (Tulehu Village and Waai Village) Central Maluku Regency.

Analysis Methods

The analytical methods used in this study include analysis of non-financial aspects and financial aspects to see the feasibility of liquid smoked fish business, which includes 4 (four) groups of analysis models that can be done, namely:

Analysis of Non-Financial Aspects

Analysis of non-financial aspects aims to ensure that the products sold are of good quality and in accordance with market needs. Non-financial aspects in the form of technical aspects concerning the production process, raw material inventory (fish), fish production capacity, layout, determination of types of machinery and equipment as well as market and marketing aspects.

Financial Aspect Analysis (Business Feasibility Assessment)

After all financial data is summarized and compiled in the form of project cash flow, then an analysis is carried out to assess whether the liquid smoked fish business is feasible or not. The valuation should also consider the *Time Value Of Money*. Various analysis techniques used include: *Payback Period (PP)*, *Net Present Value (NPV)*, *Internal Rate Of Return (IRR)*, and *Profitability Index (PI)*.

Break Event Point (BEP)

Break Even Point or break-even point is the point where total production costs equal revenue. The break-even point indicates that the level of production is equal to the production costs incurred. According to Kasmir and Jakfar (2012), the relationship between fixed costs and variable costs can be presented in the following formula.

Acceptance

$$BEP \square \frac{BiayaTetap}{1 - (BiayaVariabel / TotalPenerimaan)} \times 100\%$$

Production

$$BEP \square \frac{BEP Penerimaan}{H arg a} \times 100\%$$

Price

$$BEP \square \frac{BiayaTotal}{Pr oduksi} \times 100\%$$

Sensitivity Analysis

Sensitivity analysis is carried out to determine the extent of sensitivity if there is a change in several variables of *cashflow* components to the company's revenue and profits. The variables used for this analysis are changes in production volumes and increases in production costs. These variables have a major effect on income or profit because they are both outputs and main inputs in production activities (Simanjuntak, 2018).

Acceptance

$$\text{Toleransi} \square \frac{\text{PenerimaanMinimum}}{\text{PenerimaanDirencanakan}} \times 100\%$$

Production

$$\text{Toleransi} \square \frac{\text{Pr oduksMinimum}}{\text{Pr oduksiDirencanakan}} \times 100\%$$

Price

$$\text{Toleransi} \square \frac{\text{H arg aMinimum}}{\text{H arg aDirencanakan}} \times 100\%$$

DISCUSSION

Financial Aspect Analysis

Financial Analysis Calculation Assumptions

Projections of revenues and costs over the project period are based on assumptions and data on the liquid smoked fish business. Analysis of the financial aspects of this business using 5 years of project life. This business has 25 working days every month and 300 working days in a year. The cost of maintaining machinery and equipment is 2% of the price of machinery and equipment (Caessara, 2011). The business capital of liquid smoked fish is planned to be 100% derived from own capital with the expected profit from the business is 50%, thus the *discount factor* determined in the financial analysis is 50%.

The production process for one month uses 160 skipjack fish / tuna with an average weight per head of 1-2 kg, the average price per head is Rp. 60,000, up to Rp. 75,000, - where 1 fish is made filet into 6 pieces with a selling price of Rp. 20,000, - per piece (filet) Accumulated total number of products produced in one year as much as (960 x 12 = 12,480) pieces.

Investment Cost Structure and Operating Costs of Liquid Smoked Fish

Cost of Investment

The investment cost of liquid smoked fish business is the capital cost of purchasing machinery and equipment. The investment cost has an average period of 5 years of project life with the total planned cost being Rp 13,430,000,-.

Fixed Costs

Fixed costs of liquid smoked fish business are costs that are fixed amounts every unit time period that are not affected by changes in the level of activity and the number of products. These costs include equipment maintenance costs, as well as equipment depreciation costs. The total planned cost is Rp 6,409,600,-.

Variable Costs

The irregular cost of liquid smoked fish business is a variable cost whose amount depends on the number of fish produced. These costs are in the form of raw material and supporting material costs, electricity costs, water costs, production costs and labor costs. This non-fixed cost covers the entire cost of producing liquid smoked fish. The total planned cost in one year is Rp 209,475,000,-.

Production and Revenue Projections

Revenue (sales) is anything that can increase the revenue of a business. The assumption of the flow of benefits from the liquid smoked fish business is the overall receipt of constant sales of liquid smoked fish during the five years of the project, which is 12,480 pieces of filet per year with a selling

price of Rp. 20,000 / piece of filet, then the annual revenue of Rp. 249,600,000, - with the total income obtained in running this business for 5 (five) years is Rp. 1,248,000,000, - .

Projected Profit (Profit/Loss)

Profit projection is to see the difference between receipts and expenses. The greater the difference between revenue and expenditure, the more profitable a business is. The difference is called net income on net cash from liquid smoked fish business activities. Profit projection (Profit/Loss).

Table 1. Cash Flow Projections

No	URAIAN	Periode Proyek (Tahun)					
		0	1	2	3	4	5
A	Arus Kas Masuk						
1	Penerimaan Penjualan		249,600,000	249,600,000	249,600,000	249,600,000	249,600,000
2	Kredit						
	a. Investasi						
	b. Modal Kerja						
3	Modal Sendiri						
	a. Investasi	20,230,000					
	b. Modal Kerja		6,180,000				
4	Nilai Sisa						
5	Total Arus Kas Masuk	20,230,000	255,780,000	249,600,000	249,600,000	249,600,000	249,600,000
6	Arus Kas Masuk Perhitungan IRR	-	249,600,000	249,600,000	249,600,000	249,600,000	249,600,000
B	Arus Kas Keluar						
1	Biaya Investasi	20,230,000					
2	KI + KMK		26,410,000				
3	Bunga (KI + KMK)						
4	Biaya Variabel		209,475,000	209,475,000	209,475,000	209,475,000	209,475,000
5	Biaya Tetap Produksi		480,000	4,526,000	4,526,000	4,526,000	4,526,000
6	Pajak		5,339,850	5,339,850	5,339,850	5,339,850	5,339,850
7	Total Arus Kas Keluar	20,230,000	241,704,850	219,340,850	219,340,850	219,340,850	219,340,850
8	Arus Kas Keluar Perhitungan IRR	(20,230,000)	215,294,850	219,340,850	219,340,850	219,340,850	219,340,850
C	Arus Kas Bersih (Net Cash Flow)	-	14,075,150	30,259,150	30,259,150	30,259,150	30,259,150
1	Arus Kas Bersih Perhitungan IRR	(20,230,000)	14,075,150	30,259,150	30,259,150	30,259,150	30,259,150
2	Discount Factor (DF 50%)	1.0000	0.6667	0.4444	0.2963	0.1975	0.1317
D	Present Value	(20,230,000)	9,383,433	13,448,511	8,965,674	5,977,116	3,984,744
	NPV (50%)	21,529,479					
	IRR	104,51%					
	Net B/C	2.06					
	PBP	1.20	Tahun				

Source : Calculation Results

Venture Eligibility Analysis

In the calculation of business feasibility, it is assumed that the expected profit from the liquid smoked fish business is 50% per year.

Based on the estimated cash flow in the table above, business feasibility will be calculated using investment criteria including *payback period*, *net present value (NPV)*, *internal rate of return (IRR)*, and *profitability index (PI)* which are calculated as follows:

Payback Period (PP)

One measure of feasibility that is widely used by investors is the *payback period*, which is the period of time needed to return the investment that has been issued with the total present value of cash flows to be generated. For investment of Rp. 20,230,000, - can be met with the first year's cash inflow and the remaining (Rp. 20,230,000 - 14,075,150 = 6,172,850) divided by the second year's cash flow (6,172,850/30,259,150) multiplied by 1 year = 1.20 years. Thus the return on investment (*Payback Period*) = 1 Year 2 months.

Net Present Value (NPV)

The NPV value obtained from the calculation of the liquid smoked fish business plan using the assumption of an expected profit of 50% for 5 years is Rp 21,529,479 which means that this business will provide a profit of Rp 21,529,479 for 5 years according to the current time.

Internal Rate Of Return (IRR)

From the calculation, the IRR value in the liquid smoked fish business was 104.51% (percent). This can be interpreted as the rate of return generated from this liquid fish business investment is greater in value than the expected profit rate of 50%.

$$IRR \square 104\% \square \frac{108.486}{102.369} \times 1\% = 104.51\%$$

A. Profitability index/Net Benefit-Cost Ratio (Net B/C)

$$PI \square \frac{41.759.479}{20.230.000} \square 2,06$$

Table 2. PP, NPV, IRR, and PI Analysis Results

Indicator	Value	Conclusion
Payback Period (Years)	1,2	Proper
NPV (Rp)	21.529.479	Proper
IRR (%)	104,51	Proper
B/C Racing (PV)	2,06	Proper

Based on the results of the calculation of the feasibility of liquid smoked fish business mentioned above, it can be explained as follows:

1. Value *Payback Period* Or the return on investment time is shorter than the target return on investment where the return on investment only takes 1 year 2 months, meaning that this liquid smoked fish business investment is feasible.
2. By using the required profit rate of 50%, a positive NPV of Rp. 21,529,479 is obtained, meaning that the liquid smoked fish business investment is feasible.
3. Result The calculation of IRR which is 104.51% greater than the required profit of 50% means that this effort is feasible.
4. Value *Profitability Index* greater than 1 means that the total investment can be covered by *Total Present Value of Cash Flow*. Which means that this effort is worth implementing.

Break Event Point (BEP)

Break Even Point or break-even point is the point where total production costs equal revenue. The break-even point indicates that the level of production is equal to the production costs incurred. According to Kasmir and Jakfar (2012), the relationship between fixed costs and variable costs can be calculated as follows.

Known:

Fixed costs:Rp. 4.526.000,-

Variable Costs : Rp. 209.475.000,-

Total Cost : Rp. 214.001.000,-

Acceptance

$$BEP \square \frac{BiayaTetap}{1 - (BiayaVariabel / TotalPenerimaan)} \square \times 100\%$$

$$= \frac{4.526.000}{1 - 209.475.000 / 249.600.000} \times 100\%$$

$$= 28,287,500$$

Production

$$BEP \square \frac{BEP \text{Penerimaan}}{H \text{ arg } a} \times 100\%$$

$$= \frac{28.287.500}{20.000} \times 100\%$$

$$= 1,414$$

Price

$$BEP \square \frac{Biaya \text{Total}}{Pr \text{ oduksi}} \times 100\%$$

$$= \frac{214.001.000}{12.480} \times 100\%$$

$$= 17,148$$

At the revenue level of Rp. 28,287,500 per year the liquid smoked fish business is at the break-even point, then at the production level of 1,414 pieces of filet per year the liquid smoked fish business is at the breakeven point and at the price level of Rp. 17,148 the liquid smoked fish business is at the break-even point.

Sensitivity Analysis

After the feasibility analysis, it is necessary to conduct a sensitivity analysis to determine the extent of sensitivity if there is a change in several variables of the cashflow component to the company's revenue and profits. The variables used for this analysis are changes in production volumes and increases in production costs. These variables have a major effect on income or profit because they are both outputs and main inputs in production activities (Simanjuntak, 2018).

Acceptance

$$Toleransi \square \frac{Penerimaan \text{Minimum}}{Penerimaan \text{Direncanakan}} \times 100\%$$

$$= \frac{28.287.500}{249.600.000} \times 100\%$$

$$= 11\%$$

Production

$$Toleransi \square \frac{Pr \text{ oduksi} \text{Minimum}}{Pr \text{ oduksi} \text{Direncanakan}} \times 100\%$$

$$= \frac{1.414}{12.480} \times 100\%$$

$$= 11\%$$

Price

$$Toleransi \square \frac{H \text{ arg } a \text{Minimum}}{H \text{ arg } a \text{Direncanakan}} \times 100\%$$

$$\begin{aligned}
 &= \frac{17.148}{20.000} \times 100\% \\
 &= 85\%
 \end{aligned}$$

The results of the sensitivity analysis of liquid smoked fish business with the achievement of revenue of 100%, but after sensitivity analysis is carried out, it is known that the results have an acceptance tolerance of 11%, which means that investment is feasible if revenue drops $\leq 89\%$ so that investment is worth continuing. The initial revenue plan of Rp. 249,600,000 can only decrease to a maximum of Rp. 222,144,000.

This variable production liquid smoked fish business has a production tolerance of 11% of the planned production target which means that production volume has decreased by $\leq 89\%$ so that investment is feasible to continue. The initial production plan of 12,480 pieces of filet should only decrease by a maximum of 11,107 pieces of filet.

This variable price of liquid smoked fish business has a sensitivity level of 85% of the planned product price which means it is feasible if the value of the selling price decrease $\leq 15\%$ so that the investment is worth continuing. The initial selling price plan of Rp. 20,000 per piece of filet can only decrease to a maximum of Rp. 17,000 per piece of filet.

CONCLUSION

Based on the results of the research conducted, it can be concluded that liquid smoked fish is a processed fish product that uses liquid smoking condensation technology that corrects the weaknesses of traditional smoking, by obtaining a smoking process that is safe, free from pollution, and longer durability. The results of the feasibility analysis of the financial aspects of the liquid smoked Tuna/Skipjack fish business are feasible to be carried out. It is necessary to increase socialization to smoked fish business actors regarding the advantages of using liquid smoke in producing smoked fish whose results are more qualified and hygienic. Government intervention is needed in building cooperation with other regions in order to market the production of liquid smoked fish.

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Appendix 1. Assumptions of Financial Analysis of Liquid Smoked Fish Business

NO	VARIABEL	NILAI	SATUAN
1	Umur Proyek	5	Tahun
2	Hari Kerja Per Bulan	25	Hari
3	Bulan Kerja Per Tahun	12	Bulan
4	Jumlah hari kerja Per tahun	300	Hari
5	Biaya Pemeliharaan per satu kali produksi	10.000	Rupiah
6	Keuntungan Yang Diharapkan	50	%
7	Jumlah Produksi Yang Dihasilkan Per Bulan	960	Potong/Filet
8	Jumlah Produksi Yang Dihasilkan Per Tahun	12.480	Potong/Filet
9	Harga Ikan Asap Cair	20.000	Potong/Filet
9	Sumber Pembiayaan Modal Sendiri	100	%

Appendix 2. Investment Fund and Working Capital Needs

No	Peralatan	Unit	Satuan	Harga (Rp)	Jumlah
A	INVESTASI AKTIVA TETAP				
1	Kompor	3	Unit	600,000	1,800,000
2	Oven	3	Unit	750,000	2,250,000
3	Vacum Selear	1	Unit	5,750,000	5,750,000
4	Freezer	1	Unit	9,500,000	9,500,000
5	Baskom (1 Lusin)	1	Unit	600,000	600,000
6	Keranjang Penirisan (1 Lusin)	1	Unit	180,000	180,000
7	Talenan, Pisau (1 Set)	1	Unit	150,000	150,000
8	Jumlah Aktiva Tetap				20,230,000
B	MODAL KERJA				
1	Minyak Tanah	375	Liter	4,000	1,500,000
2	Listrik	1	Bulan	200,000	200,000
3	Plastik Kemasan	10	Bulan	100,000	1,000,000
4	Upah Karyawan	3	Bulan	1,000,000	3,000,000
5	Biaya Pemeliharaan Alat	1	Tahun	480,000	480,000
7	Jumlah Modal Kerja				6,180,000
8	Total A + B				26,410,000

Appendix 3. Fixed Cost of Liquid Smoked Fish Business

Peralatan	Harga	Satuan	Umur Ekonomis	Biaya Penyusutan
Kompor	1,800,000		5	360,000
Oven	2,250,000		5	450,000
Baskom	600,000		5	120,000
Keranjang Penirisan	180,000		5	36,000
Telenan, Pisau	150,000		5	30,000
Vacum Selear	5,750,000		5	1,150,000
Freezer	9,500,000		5	1,900,000
Jumlah Biaya Penyusutan Per Tahun				4,046,000
Biaya Pemeliharaan Alat Rp 10.000,- (1 kali Produksi)				480,000
Total Biaya Tetap per tahun				4,526,000

Appendix 4. Variable Cost of Liquid Smoked Fish Business

No	Komponen	Satuan	Volume	Harga (Rp)	Jumlah Harga (Rp)
1	Ikan Tuna/Cakalang	Ekor	2,080	60,000	124,800,000
2	Asap Cair	Botol	200	50,000	10,000,000
3	Garam	Kg	25	15,000	375,000
4	Minyak Tanah	Liter	4,500	4,000	18,000,000
5	Plastik Kemasan + Kemasan	Pak	125	100,000	12,500,000
6	Pemakaian Listrik	Bulan	12	350,000	4,200,000
7	Air	Bulan	12	150,000	1,800,000
8	Biaya Transportasi	Bulan	12	250,000	3,000,000
9	Biaya Promosi	Bulan	12	500,000	6,000,000
10	Gaji Karyawan	Orang/Bulan	3	800,000	28,800,000
	Biaya Variabel per Tahun				209,475,000

Appendix 5. Projected Revenue and Revenue

Rata-Rata Produksi Per Ekor (Bulan)	Jumlah (Filet)	Harga/Filet (Rp)	Jumlah (Rp)
160	960	20,000	19,200,000
160	960	20,000	19,200,000
160	960	20,000	19,200,000
160	960	20,000	19,200,000
160	960	20,000	19,200,000
160	960	20,000	19,200,000
160	960	20,000	19,200,000
160	960	20,000	19,200,000
160	960	20,000	19,200,000
160	960	20,000	19,200,000
160	960	20,000	19,200,000
160	960	20,000	19,200,000
160	960	20,000	19,200,000
160	960	20,000	19,200,000
2,080	12,480		249,600,000

Appendix 6. Projected Revenue (Profit/Loss)

Uraian	T a h u n				
	1	2	3	4	5
Penerimaan					
Penjualan	249,600,000	249,600,000	249,600,000	249,600,000	249,600,000
Total Penjualan	249,600,000	249,600,000	249,600,000	249,600,000	249,600,000
Pengeluaran					
Biaya Variabel	209,475,000	209,475,000	209,475,000	209,475,000	209,475,000
Biaya Tetap Produksi	480,000	480,000	480,000	480,000	480,000
Biaya Penyusutan	4,046,000	4,046,000	4,046,000	4,046,000	4,046,000
Total Pengeluaran	214,001,000	214,001,000	214,001,000	214,001,000	214,001,000
EBIT	35,599,000	35,599,000	35,599,000	35,599,000	35,599,000
BUNGA					
EBT	35,599,000	35,599,000	35,599,000	35,599,000	35,599,000
Pajak 15%	5,339,850	5,339,850	5,339,850	5,339,850	5,339,850
EAT	30,259,150	30,259,150	30,259,150	30,259,150	30,259,150
Profit Sales	12.12%	12.12%	12.12%	12.12%	12.12%

Lampiran 7. *Net Present Value (NPV)*

Tahun	Cash Flow (Rp)	DF (50%)	PV of Cash Flow (Rp)
1	14,075,150	0.6667	9,383,433
2	30,259,150	0.4444	13,448,511
3	30,259,150	0.2963	8,965,674
4	30,259,150	0.1975	5,977,116
5	30,259,150	0.1317	3,984,744
Total PV of Cash Flow			41,759,479
Total Investasi			20,230,000
NPV			21,529,479

Lampiran 8. *Internal Rate Of Return (IRR)*

Tahun	Cash Flow (Rp)	DF (104%)	PV of Cash Flow (Rp)
1	14,075,150	0.4902	6,899,583
2	30,259,150	0.2403	7,271,038
3	30,259,150	0.1178	3,564,234
4	30,259,150	0.0577	1,747,174
5	30,259,150	0.0283	856,458
Total PV of Cash Flow			20,338,486
Total Investasi			20,230,000
NPV			108,486

Lampiran 9. *Internal Rate Of Return (IRR)*

Tahun	Cash Flow (Rp)	DF (105%)	PV of Cash Flow (Rp)
1	14,075,150	0.4878	6,865,927
2	30,259,150	0.2380	7,200,274
3	30,259,150	0.1161	3,512,329
4	30,259,150	0.0566	1,713,331
5	30,259,150	0.0276	835,771
Total PV of Cash Flow			20,127,631
Total Investasi			20,230,000
NPV			(102,369)