

## RESEARCH ARTICLE

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## Financial Analysis of Capital Investment at Aspire Fire Solutions Limited, Coimbatore

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### ABSTRACT

#### Introduction to the Study

Capital budgeting can be used to analyze a wide variety of investments in capital assets. The investment decision is to allocate a limited amount of funds among a variety of potential investments. Because there is not enough money to fund all of the investments, a decision is required to determine which investments to fund.

Many formal methods are used in capital budgeting, including the techniques such as

- Payback period method
- Accounting rate of return method
- Net present value method
- Internal rate of return method
- Profitability index method

These methods use the incremental cash flows from each potential investment, or project techniques based on accounting earnings and accounting rules are sometimes used, though economists consider this to be improper.

#### Need for The Study

Capital budgeting is based on identifying the opportunities, threats and internal weaknesses. It also helps in setting long-term goals, formulating action plans and strategies, and monitoring them on a continuous basis. These decisions have to fulfill the criteria of creating positive net present value for the organization.

#### Scope of The Study

The Scope of this study is limited to the capital budgeting study of the Aspire Fire solutions project and with the following state line.

- Projection of cash flows for the first five years.
- Projections based on increasing sales and decreasing sales.
- Calculations considering different discounting rates.

#### Objectives of The Study

##### Primary Objectives:

To assess the firm's expenditures on the project and determine if it is worth continuing the Venture.

##### Secondary objectives:

1. To project the cash flow of the firm for five years.
2. To Find the Payback period for the project
3. To find the average rate of return of the project
4. To find the net present value of the project
5. To find the internal rate of return of the project
6. To find the profitability index of the project
7. To do sensitivity analysis considering different discount rates.

#### Limitations of The Study

- The study is limited with data pertaining to projections for a period of 5 years only
- The study is dependent on the projected data which has a possibility to show deviations from the actual data.
- Since there are no similar projects in Coimbatore, there is no possibility for benchmark values or comparisons of standard returns.

### Review of Literature

**James Jiambalvo** says the accounting rate of return project divided by the average investment in the (ARR) is equal to the average after-tax income from a project.

ARR = Average Net Income / Average investment

Unfortunately, this method also ignores the time value of money.

**N.Sundram & R.Jayachandran** says it is also a time-adjusted method of evaluating the investment proposals. Profitability index also called as Benefit-Cost (B/C) or 'Desirability factor' is the relationship between present value of cash inflows and the present value of cash outflows. Thus

Profitability Index = Present value of cash Inflows / Present value of Cash Outflows  
Or P.I. = PV of cash inflows / Initial Cash outlay

**Research Methodology**

**Research Purpose:**

As Redman and Moray define Research as a "systematized effort to gain new knowledge", the purpose of research is to discover answer to questions through the application of scientific procedure. The main aim of research is to find out the truth which is hidden and which has not been discovered yet. In this study the researcher chose to do research to enable decision making on capital Investment.

**Research Approach:**

This study is based on quantitative data collected, projected and analyzed based on capital budgeting techniques.

**Research Strategy:**

Since the analysis is intended to describe the position of ASPIRE FIRE SOLUTIONS, the strategy adopted could be descriptive research describes the present status of people, attitude, and progress.

**Data Collection:**

The data is collected from both primary and secondary sources. But the main sources of information are secondary data. Primary data is collected through discussion with the company officials in the office as well in the company.

**Secondary data sources:**

- Purchase, expenses and sales reports
- Books and journals
- Websites

Data Projection period: 2013 – 2017

**Tools Used For Data Analysis**

The tools used for this study are as follows

- Payback period
- Accounting rate of return
- Net Present Value
- Internal Rate of Return
- Profitability Index

**Data Analysis and Interpretation**

**Sensitivity Analysis**

It is the analysis of an investment's profitability according to various changes. To explain, sensitivity analysis considers potential changes to interest, rates, costs, and/or other variables and measures how this will affect the return on the investment.

**Scenario:** It is assumed that the sales and purchases remained unchanged for 5 years.

For this scenario, capital budgeting techniques are applied to assess the project viability.

**Pay-Back Period Method**

Years	Cash Outflow by trade	Cash outflow by Expenses	Cash Inflow	Tax @ 30%	Net cash flow	Cum Cash Flow
0	2262000				2262000	-2262000
1	78030166	2496000	81292291	229838	536288	-1725713
2	77782081	2545920	81352136	307241	716895	-1008818
3	77923336	2596838	81352136	249588	582373	-426445
4	77927036	2648775	81352136	232897	543427	116983
5	77927036	2701751	81352136	217005	506345	623327

**TABLE: 1 CONSTANT SALES SCENARIO: PARBACK PERIOD**  
Payback period = 3 years and 9.4 months

**Interpretation**

Considering the Initial Investment of Rs.2262000, Payback period is calculated. The cash inflows are from sales and cash outflows are in the form of purchases, expenses and tax at the rate of 30%. From the cumulative cash flow calculation we can identify that the company witnesses a positive net cash flow from third year onwards. To be more accurate the calculations give the payback period to be 3 year and 9.417 months.

**Accounting Rate of Return Method**

Years	Cash Outflow by trade	Cash outflow by Expenses	Cash Inflow	Tax @ 30%	Profit after tax
	2262000				
1	78030166	2496000	81292291	229838	536288
2	77782081	2545920	81352136	307241	716895
3	77923336	2596838	81352136	249588	582373
4	77927036	2648775	81352136	232897	543427
5	77927036	2701751	81352136	217005	506345
Total	391851655	12989284.24	406700835	2597856.848	2885327.065

**Average investment** 848  
**Average Accounting Profit** 577065.4  
**ARR** 22.2

**TABLE: 2 Constant Sales Scenario: Accounting Rate of Return**

**Interpretation**

Accounting rate of return is found to be 22.2%. Though we are not using time value of money, ARR gives a rudimentary idea about the returns that may be expected out of a project. And in this case, ARR of 22.2% represents a expected return from the projects and signals that this project may be taken up.

**Net Present Value Method (NPV):**

		PV				18 %	
Years	Cash Outflow by trade	Cash outflow by Expenses	Cash Inflow	Tax @ 30%	Net cash flow	PV Factor @18%	Present Value
0	226200				- 226200	1	- 226200
1	7803166	2496000	81292291	229838	536288	0.847	454481
2	77782081	2545920	81352136	307241	716895	0.718	514862
3	77923336	2596838	81352136	249588	582373	0.609	354450
4	77927036	2648775	81352136	232897	543427	0.516	280294
5	77927036	2701751	81352136	217005	506345	0.437	221328
							- 436585
							<b>NPV</b>

TABLE: 3 constant Sales Scenario: Net Present Value Method

**Interpretation**

Using the projected cash flows Net Present Value (NPV) is calculated considering a project life of 5 years. The discounting rate considered for NPV calculation is 18%. It could be seen that from the calculations project gives out negative net] cash flows. And the NPV for the life of the projects is negative. This is an indication that the project will definitely fetch loss and hence should not be taken up.

**Internal Rate Of Return Method (IRR):**

TABLE: 4 constant Sales Scenario: Internal Rate Of Return

	PV		9%				
Years	Cash Outflow by trade	Cash outflow by Expenses	Cash Inflow	Tax @ 30%	Net cash flow	PV Factor @ 18%	Present Value
0	226200				- 226200	1	- 226200
1	78030166	2496000	81292291	229838	536288	0.918	492230
2	77782081	2545920	81352136	307241	716895	0.842	603944
3	77923336	2596838	81352136	249588	582373	0.773	450312
4	77927036	2648775	81352136	232897	543427	0.710	385678
5	77927036	2701751	81352136	217005	506345	0.651	329837

**NPV 0**

**Interpretation**

The Internal rate of return considering the time value of money is calculated to be 9%. The expected rate of return on the money invested was taken to be 18%. Compared to that and considering the risk involved in this business, 9% is a much less return. Hence this also signals that the project cannot be taken up.

**Profitability Index Method:**

TABLE: 5 Constant Sales Scenario: Profitability Index

YEARR	CASH OUTFLOWS	CASH INFLOW S Rs.	PV Factor @18%	present value Rs.
0	2262000			
1	78030166	536288	0.847	454481
2	77782081	716895	0.718	514862
3	77923336	582373	0.609	354450
4	77927036	543427	0.516	280294
5	77927036	506345	0.437	221328
	cash inflows			1825415
less:	cash outflows			2262000
	NPV			-436585
	PI			0.806991741

**Interpretation**

The Profitability Index which gives the proportion of Cash Inflow to Cash Outflow is 0.81 which mean that there is going to be lesser cash inflow compared to cash outflow. Thus it is definitely a not good project to venture in since the profitability index is less than 1.

**Findings**

- Considering the constant sales 3 years and 9.4 months.
- Considering the constant sales Accounting rate of return is 22.2%.
- Considering the constant sales net present value is -Rs. 436589.
- Considering the constant sales internal rate of return is 9%.
- Considering the constant sales profitability index is 0.8.
- It is understood from the results that the company should operate strictly with increasing sales of at least 5%.
- It is also favorable to operate with a 10% increasing sales.
- But Constant sales and decreasing sales are a threat to this project.

**Suggestions**

- The company can do future market analysis and do introduce new range of products to keep the sales increasing in the future.
- The company can look forward to expand its distribution across other states as well and hence increase the sales.
- Customer retention is a very important strategy that would give repeat business from old customers and contribute to the company's sales.
- The company also should keep in tight sales targets in order to drive in green zone and not land in red zone.
- The company can also work on the payment terms that would help them promote their sales.

## Conclusions

The study on CAPITAL BUDGETING was conducted on ASPIRE FIRE SOLUTIONS, various tools like PAYBACK PERIOD, ACCOUNTING RATE OF RETURN, NET PRESENT VALUE, INTERNAL RATE OF RETURN & PROFITABILITY INDEX were used to analyze the data. Sensitivity Analysis was performed to assess the profitability of this business in varying sales scenarios. It is found that the company operates well in growing sales scenarios but not in constant or decreasing sales scenarios. The company can go ahead with this project if measures to constantly increase the sales could be implemented. If the company is not sure of increasing the sales, it is better to drop the project at this stage.

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