



(RESEARCH ARTICLE)



Financial feasibility of swallow business in Selerong Village, Kutai Kartanegara Regency

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Abstract

This study aims to analyze the financial feasibility of the swallow business in Selerong Village, Kutai Kartanegara Regency. This research uses quantitative methods. Sample withdrawal with nonprobability sampling technique. This research uses financial analysis, namely Net Present Value (NPV), Net Benefit Cost Ratio (Net B/C Ratio), Internal Rate Return (IRR), and payback period (PP). This research uses financial analysis with a discount factor of 18% showing Net Present Value (NPV) of Rp. 114,583,479, Net Benefit Cost Ratio (Net B/C) of 2.19, Internal Rate Return (IRR) of 32%, and payback period (PP) showing that the return on investment is 3.7 or 3.7 years. Based on this analysis, the swallow business is financially feasible.

Keywords: Swallow Business; Financial Feasibility; Net Present Value; Internal Rate Return; Payback Period.

1. Introduction

Kutai Kartanegara Regency (Kukar) is the third largest regency in East Kalimantan with an area of 23,601.91 km² (BPS Kukar, 2023). Kukar is dominated by land so it is very strategic for agricultural cultivation in a broad sense. Geographically, Kukar has the potential to carry out agricultural cultivation activities (broadly), this is because it is supported by geography as well as supported by adequate climate and environment.

Swallows as one of the biological resources have high economic value and long-term prospects. Since the last few decades, swiftlets have been widely cultivated, but building a swiftlet business requires large capital. Swallows produce saliva and become swallow nests. Swallow nests contain a lot of calcium, iron, protein, carbohydrates, and phosphorus (Dewi, 2020). Swallow's Nest is a traditional Chinese medicine and has high economic value.

Swallow business activity is one of the businesses that has potential prospects to be developed in Kutai Kartanegara (Kukar). Ideally, swallow nest cultivation is carried out in rural areas with conditions that are far from noise. With a quiet place, swallows can settle down and make nests in the place that has been provided.

Selerong Village is located on the banks of the Mahakam River, surrounded by hills and swamps. The village has the potential to run a swallow business. The swallow business in Selerong Village started in 2009 and has grown quite rapidly since then, as evidenced by the increasing number of people in Selerong Village who are interested in and own swallow businesses. To date, 27 swallow buildings in Selerong Village are producing. Some villagers even own more than one swallow business building. Running a swallow business is not as easy as one might think, as special techniques are needed to manage the business so that the swallows want to produce their nests.

Running a swallow business, cannot be separated from various problems, including rarely calculating the costs incurred in detail. In addition, swallow farmers do not record the revenue they get. The amount of costs and revenues of swallow

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farmers are still minimally recorded and have never even calculated the small and large R / C of the swallow business whether it is feasible or not worth running a swallow business. Based on the background description, the author examines the title "Analysis of the Financial Feasibility of Swallow Business in Selerong Village, Kutai Kartanegara Regency".

2. Materials and methods

2.1. Time and Place

This research was conducted from September 2022 to October 2022. The location of the research was Selerong Village, Sebulu District. The object of this research is swallow nest farmers.

The research location was *purposive*. The research location is Selerong Village because it is one of the swallow's nest producers in Sebulu Sub-district, Kutai Kartanegara Regency.

2.2. Tools and Materials

Population is the whole of objects/subjects from an area that has the quality of characteristics that have been determined by researchers, which can then be studied to be able to conclude. In this study, the population is the people of Selerong Village who have a swallow business.

This study uses non-probability sampling techniques with saturated sampling (census), which is a sampling method in which all members of the population are used as samples. The sample of swallow farmers in Selerong village was 27 people (Pre-survey results, 2022).

2.3. Analysis Tool

This research uses Revenue analysis, Net Present Value (NPV), Net Benefit Cost Ratio (Net B/C Ratio), Internal Rate Return (IRR), and Payback Period (PP). After the data is processed and tabulated with descriptive qualitative.

Revenue is the result of gross sales of swallow nests. Revenue can be calculated using the following formula:

$$TR = JP \times P$$

Description:

TR : Total Revenue
 JP : Production Quantity
 P : Production Price

To obtain the Net Present Value value using the following formula (Umar, 2009):

$$NPV = \sum_{t=1}^n \frac{CFt}{(1+i)^t} - i^0$$

Description

NPV = Net Present Value (Rp)
 CFt = Cash flow per year in period t
 I = Interest rate (*discoun rate*)
 I₀ = Initial investment
 t = Year t
 n = Number of years

The following are indicators of feasibility from the results of the NPV calculation:

NPV > 0, then a business is profitable and feasible to run
 NPV < 0, then a business is detrimental and not worth running
 NPV = 0, then a business is able to return capital

To obtain the Net Benefit Cost Ratio (Net B/C) value using the following formula (Gray *et al.*, 2007):

$$\text{Net B/C} = \frac{\sum_{t=0/1}^n \frac{B_t - C_t}{(1+i)^t}}{\sum_{t=0/1}^n \frac{B_t - C_t}{(1+i)^t}}$$

Description:

B_t = benefit in year t
 C_t = cost in year t
 I = discount factor
 t = project life

Net B/C assessment criteria:

Net B/C > 1, business is viable

Net B/C < 1, the business is not viable.

Internal Rate of Return (IRR) is an interest rate that shows the net present value (NPV) is equal to the sum of all initial investments. To calculate the value of the Internal Rate of Return (IRR) can be formulated as follows (Umar, 2009):

$$IRR = i_1 + \frac{NPV}{NPV_1 - NPV_2} \times (i_2 - i_1)$$

Description :

IRR = Internal Rate of Return
 NPV¹ = Positive Net Present Value
 NPV² = Net Present Value which is negative
 I₁ = The interest rate used when the final NPV is positive
 I₂ = Interest rate used when the final NPV is negative

Internal Rate of Return (IRR) assessment criteria:

- If the IRR is greater than the prevailing interest rate, the business is viable.
- If the IRR is less than the prevailing interest rate, the business is not viable.
- If the IRR is equal to the prevailing interest rate, the business is break-even.

According to Umar (2009), the Payback Period method is an assessment technique for the period of return on investment in a project or business. This calculation can be seen from the calculation of net cash obtained each year. To calculate it, use the following formula as :

$$\text{Payback Period} = n + \frac{(a-b)}{(c-b)} \times 1 \text{ year}$$

Description :

n = the last year the amount of cash flow is negative or cannot cover the initial investment
 a = initial investment amount
 b = cumulative sum of cash flows in year n
 c = cumulative amount of cash flow in year n+1

3. Results and discussion

Costs in swallow business are costs incurred during the production of swallow business operations. For the measurement of this business using investment costs and operational costs. The total average cost of swallow nest business investment in Selerong Village, Kutai Kartanegara Regency is Rp.104,322,278. The following details the investment costs that must be incurred for swallow nest business in Selerong Village, Kutai Kartanegara Regency in Table 1:

Table 1 Average Investment Cost of Swallow Business

No.	Cost Type	Average
1	Building	96.296.296
2	Building equipment	7.852.463
3	Harvesting equipment	173.519
	Total	104.322.278

Primary Data Processed, 2022

The average cost of making a swallow building is Rp. 96,296,296 where the cost is from the cost of labor, and building materials.

The cost of building equipment is Rp. 7,852,463 which consists of the cost of purchasing cables, *small tweeters*, *large tweeters*, *amplifiers*, *flashdiscs*, batteries, solder, soldering tin, staples, staple contents, basins, sarlons, padlocks, swallow fog machines, carpets, tepals, digital temperatures, and battery chargers.

The cost of harvesting equipment is Rp. 173,519 which consists of the cost of a flashlight, *scraper/kape*, plastic holder.

3.1. Operational Costs

Operational costs are costs incurred when the swallow's nest business takes place. The operational costs incurred in the swallow's nest business include the cost of purchasing fin perfume, room perfume, battery water, electricity, and incense. The following table shows the operational costs incurred. The following details the operational costs that must be incurred for the swallow nest business in Selerong Village, Kutai Kartanegara Regency in Table 2:

Table 2 Average Operating Costs

Year	Fin Perfume (Rp)	Room Perfume (Rp)	Battery Water (Rp)	Electricity (Rp)	Incense (Rp)
0	191,852	154,333	305,778	4,333,333	75,000
1	191,852	154,333	305,778	4,333,333	75,000
2	191,852	154,333	305,778	4,333,333	75,000
3	191,852	154,333	305,778	4,333,333	-
4	191,852	154,333	305,778	4,333,333	-
5	191,852	154,333	305,778	4,333,333	-
6	191,852	154,333	305,778	4,333,333	-
7	191,852	154,333	305,778	4,333,333	-
8	191,852	154,333	305,778	4,333,333	-
9	191,852	154,333	305,778	4,333,333	-
10	191,852	154,333	305,778	4,333,333	-

Primary Data Processed, 2022

Based on table 2. the average total cost incurred by entrepreneurs is obtained from the summation of the cost of purchasing fin perfume, room perfume, battery water, electricity, and incense. The explanation of the details of operational costs is as follows:

- Fin Perfume and Room Perfume: One of the ways to lure swallows into the swallow building is through aromatic techniques. That is, spreading perfume or swallow scent in the swallow building room. This scent will stimulate their sense of smell and attract them to enter the building.
- Battery Water: Battery water serves to store and deliver electrical power inside the battery...
- Electricity: Every swallow building requires electricity to light the building, turn on the speakers and pump water.
- Incense: In addition to using fin perfume and room perfume, burning incense can also attract swallows into the building as the incense emits a therapeutic fragrance.

3.2. Reception

Revenue is the result of swallow nest production multiplied by the production price. The greater the production and the higher the selling price, the greater the revenue received. The selling price used in this study, namely using the selling price of mixed swallow nests, because the average business owner sells swallow nest production in a mixture of perfect and imperfect swallow nests. To see the results of the swallow's nest business revenue can be seen in table 3 as follows:

Table 3 Swallow Nest Revenue

Year	Production (Kg)	Price (Rp)	Revenue (Rp)
0			
1			
2	4	IDR 7,500,000	IDR 30,000,000
3	5	IDR 7,500,000	IDR 37,500,000
4	5.33	IDR 8,500,000	IDR 45,305,000
5	5.75	IDR 8,500,000	IDR 48,875,000
6	7.25	IDR 8,000,000	IDR 58,000,000
7	7.50	IDR 8,000,000	IDR 60,000,000
8	7.25	IDR 11,500,000	IDR 83,375,000
9	8.58	IDR 11,500,000	IDR 98,670,000
10	9	IDR 14,000,000	IDR 126,000,000
11	9.47	IDR 14,000,000	IDR 132,580,000
12	12.54	IDR 11,500,000	IDR 144,210,000
13	12.19	IDR 8,500,000	IDR 103,615,000
14	12.19	IDR 8,500,000	IDR 103,615,000
15	12.19	IDR 8,500,000	IDR 103,615,000
	Total Revenue		IDR 1,175,360,000

Primary Data Processed, 2022

Table 3 above explains, in 0 - 1 year the swallow business has not yet received revenue, because in that year the Swallow Bird House (RBW) building was just completed, usually the Swallow Bird House (RBW) still has the smell of building materials. This business began to gain revenue in year 2 with a production of 4 kg at a price of Rp. 7,500,000 / Kg and revenue of Rp. 30,000,000. In year 8, the swallow business gained more revenue, with a production of 7.25 Kg at a price of Rp. 11,500,000/Kg and revenue of Rp. 83,375,000. In years 10 and 11, revenues increased during Covid-19, due to the increasing number of Swallow's Nest (SBW) exports, one of which was to China, where in that year the price of SBW

reached Rp. 14,000,000/Kg. Revenue in year 10 amounted to Rp. 126,000,000 and revenue in year 11 amounted to Rp. 132,580,000.

In year 12 swallow nest production increased but the price decreased from Rp. 14,000,000/kg to Rp. 11,500,000/kg. Years 13 to 15 swallow nest production declined, due to the migration of swallows to other places. Swallow migration to other places is caused by population density due to the increasing number of swallow cultivation, causing swallow chicks to have difficulty meeting their feed needs. Therefore, swallows try to find food in places where the swallow population is not dense. And the price of swallow's nest is declining, from Rp. 11,500,000/Kg to Rp. 8,500,000/Kg, due to reduced market demand abroad, especially exports to China.

3.3. Financial Feasibility

The swallow business was built since the beginning of 2009, which means that it has been running for approximately 15 years. Usually a business that is run in the long term needs to know the feasibility of its business by using analytical tools including Net Present Value (NPV), Net Benefit Ratio (Net B/C Ratio), Internal Rate of Return (IRR), and Payback Period (PP).

The source of funds for swallow business owners comes from their own capital. In determining the amount of the research interest rate using BRI interest rates kapedes credit 18% per year. To determine whether the business is feasible or not, it can be seen in Table 4 of the business financial feasibility analysis as follows:

Table 4 Results of Financial Feasibility Analysis of Swallow Business

No.	Description	Great
1	NPV at DF 18%	114.583.479
2	Net B/C Ratio	2,19
3	IRR	32%
4	Payback Period	3,7

Primary Data Processed, 2022

3.3.1 Net Present Value (NPV)

NPV (*Net Present Value*) is calculated based on the difference between the present value of the net revenue received minus the present value of the costs incurred during the swallow nest business period based on a discount factor of 18%. So that the calculation is carried out, an NPV of Rp 114,583,479 is obtained from the investment invested. The NPV value is positive or $NPV > 0$, NPV (*Net Present Value*) which is positive means that the swallow business in Selerong Village is feasible.

Irsan (2020), with a research entitled Feasibility Study Analysis of Swallow House Business in Lalan District, Musi Banyuasin Regency. Based on the results of calculations on the RBW business, the NPV shows Rp 231,901,674 and is positive. At an interest rate of 12% from the NPV results which are greater than zero, the business is said to be feasible to implement.

3.3.2 Net Benefit Ratio (Net B/C Ratio)

The Net B/C Ratio is a comparison of a positive NPV value with a negative NPV value, and is said to be feasible if the value is greater than one. The results of the calculation of the Net B / C value obtained are 2.19 at a discount factor of 18%. In other words, it can be explained that every current expenditure of Rp. 1 will provide benefits (benefits) of Rp. 2.19 times the *cost* incurred. This Net B / C ratio value > 1 , so the swallow business is feasible to run.

Caesar and Nuswantara (2020), with a study entitled Financial Feasibility of Swallow Nest Cultivation in West Malinau District, Malinau Regency. The result of the Net B/C Ratio analysis of the swallow's nest business at a discount factor of 8% is 2.70. Every current expenditure of Rp. 1 will provide benefits of Rp. 2.70 times the costs incurred. From this value, it is known that the Net B / C Ratio of 1, the swallow's nest business is profitable and feasible.

3.3.3 Internal Rate of Return (IRR)

The IRR generated from the swallow nest business is 32%, which means that the swallow business can generate a profit of 32% of the business capital that has been spent so that at the specified time it can return all the capital that has been spent in the business. A business can be said to be feasible if the IRR is greater than the discount factor, which is more than 18%, so it can be concluded that the swallow business in Selerong Village is feasible because the IRR result of 32% is greater than the discount factor of 18%.

Sumardi *et al*, (2018) with a study entitled Evaluation of the Feasibility of Swallow Nest Business in Telaga Antang District, East Waring City Regency (Case Study: Mr. Suwaji's Swallow Nest Business). The result of the calculation of the IRR of the swallow's nest business is 39.86%. This value is greater than the interest rate of 10%, because the IRR value is greater than the interest rate, the swallow's nest business is declared feasible.

3.3.4 Payback Period (PP)

PP will be obtained after all investment costs can be returned. From the results of data processing obtained from the field with an interest rate of 18%, the payback period in this study is 3.7 or 3.7 years.

Azis *et al*, (2019), with a study entitled the feasibility of a swallow's nest business in the benua kayong district of Ketapang Regency. The results of the Payback Period (PP) analysis show that it takes 4 years to return the investment value. This means that the return on investment can take place quite quickly within 4 years. And this business is considered good / feasible for business.

4. Conclusion

Based on the results of the research on the financial feasibility of swallow business in Selerong Village, Kutai Kartanegara Regency, it can be concluded that the swallow business in Selerong Village is feasible. With NVP RP. 114,583,479 which is more than zero or Positive NPV, Net B / C Ratio 2.19 where this value is > 1, IRR 32% the value is greater than the value of the interest rate used which is 18%, and PP is 3.7 or 3.7 years.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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