**Financial Analysis of Broiler Chicken Farmers on Partnership Pattern and Independent Pattern**

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**Abstract**. Broiler farm business continues to grow. Thisresearch aims to find out the income and feasibility reviewed from financial aspect of broiler chicken farmers partnership patterns and independent patterns in Tanjung Morawa Sub-district. The type of data used in this study is primary data obtained through observation and interviews and secondary data. Determination of samples with purposive samplingwith broiler chicken breeders partnership pattern as many as 9 people and broiler chicken farmer independent pattern as many as 3 people. Data analysis was observed by calculating revenue income and financial viability of Revenue Cost Ratio, Break Event Point, Return on Investman and Internal Rate of Return. The results showed that the average income per head breeder of partnership patterns with company A, company B and company C amounted to Rp 2,216, Rp2,407, Rp 2,310 and the average income of independent pattern farmers amounted to Rp 3,077. Broiler business farmers partnership obtained ROI of 63%-80%, IRR is greater than the interest rate, which is 22%-24% and R/C more than one. Based on the feasibility criteria of financial analysis of partner and independent pattern farms is feasible to run and develop.

**Keywords:** financial, broiler chicken, partnership pattern and self-reliance

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# Introduction

Broiler chicken farm business is not separated from some of the obstacles encountered. These constraints are quite serious obstacles in broiler chicken farming business, limited capital, simple technology and management that is still lacking. In addition, the obstacles faced by small breeders are the high level of input price risk, such as DOC, feed and medicines. The unclear market makes farmers unable to sell all the chickens that are kept so as to make the cost of production increase. The knowledge of farmers in terms of climate and disease is necessary to minimize the risks faced. The ability to manage good risk is indispensable to farmers, so as to get maximum profit and can develop their livestock business. In its implementation there is a difference between independent business patterns and partnerships that will affect the difference in income level of broiler chicken business.

One of the efforts to minimize the risk in the broiler chicken farm sector is by the absence of corporate partnership institutions through a pattern of core-plasma partnerships with the aim of increasing revenue, improving the quality of farmers' resources. In the implementation of partnership patterns the company and the people's farmers must be in the same position so that the vision of the partnership

can be achieved both in terms of income and production costs that are fully regulated by the company and agreed together with the farmer.

**Materials and Methods**

*Research and Sampling Methods*

The determination of the research used is a survey method that is interview and observation directly with the group of broiler chicken breeders. The interview uses a list*of questions (questionnaires).* Survey research to describe *broiler chicken farmers in* dehead from the objects studied, so that it is known financially in partnership patterns and independent patterns in Tanjung Morawa sub-district.

The sampling method is *purposive sampling* which is defined as the taking of the sample based on deliberateness. The selection of a group of subjects is based on a specific trait or trait that has a close relationship with a previously known trait or trait. Breeders pattern partnerships as many as nine breeders from three different companies, and independent patterns of as many as three breeders. The selected breeder has been raising *broiler chickens* for a minimum of two years.

# *Data Collection Methods*

The data collected in this study includes primary and secondary data. Primary data conducted using interviews and observations using a list of questions*(questionnaires)*that have been prepared. Primary data sources are various partnership breeders and broiler chicken independent breeders in Tanjung Morawa Sub-district. Secondary data is data taken from related agencies such as deli serdang agriculture office, Central Bureau of Statistics of Deli Serdang Regency. The data obtained includes population data, meat production and an overview of broiler chicken farm areas.

# *Data Processing and Analysis Methods*

Data analysis can provide information and various answers to the formulation of problems contained in this study. The method used in processing data and analyzing data in this study is a qualitative and quantitative method. Qualitative analysis uses descriptive methods to determine the business of broiler chicken plasma core patterns and self-contained patterns. Quantitative analysis is used to determine the income level of partner farmers and independent breeders using financial analysis. The data required in quantitative analysis is cost, revenue, revenue, and R/C, IRR, BEP, ROI data.

# *Cost, Revenue and Revenue Analysis*

A fixed cost is a fixed cost that does not depend on the amount of production produced. Variable costs are all costs incurred during the production process or when the business generates benefits. According to [10], production costs are distinguished into two kinds, namely fixed costs and variable costs. The total fixed cost and variable cost are entirely the total cost of production, with the following formulas:

TC = TFC + TVC

Description:

TC = Total production cost (Rp) TFC = Total fixed cost (Rp)

TVC = Total variable cost (Rp)

Acceptance is a multiplication between the resulting production and the current selling price. According to [8], to find out the reception of broiler chicken breeders, the following formulas are used:

TR = Q × P

Description:

TR = Total *revenue*/receipt (Rp) Q = Total production

P = Price (Rp)

Income is the difference between receipts and all costs. To find out the income of broiler chicken farmers used the following formula [8]:

Pd = TR - TC

Description:

Pd = Total income earned by farmers (Rp) TR = Total *revenue*earned by farmers (Rp)

TC = Total *cost*/ cost incurred by the farmer (Rp)

## Return Cost Ratio (R/C)

Farms can be said to be feasible to be developed if the R/C value is greater than one. The greater the R/C value, the more profiT the farm business. *Revenue Cost Ratio* (R/C), otherwise known as a comparison of the ratio between receipt and cost, with the formula:

R/C = TR

TC

Description:

TR = Total receipt (Rp)

TC = Total production cost (Rp) Criteria:

If R/C *Ratio* < 1, then the farmer's business is unprofitable and unfit for business If R/C *Ratio* = 1, then the farmer's business is not profitable and has nothing to lose (break even)

If R/C *Ratio* > 1, then the farmer's business is profitable and worth working on.

# *Break Event Point (BEP)*

*Break Event Point* (BEP) is a state that shows the company is not profitable and has nothing to lose. The variables used in the BEP analysis are fixed costs and variable costs[6]. Theoretically it can be written as follows:

BEP (Rp) =

Fixed Cost

Price per Unit −Variable Cost per Unit

BEP Unit =

Fixed Cost

1 Variable Cost Total

−

Sales Total

## Return on Invesmant (ROI)

ROI is the ability to be used to cover the investment spent. The profit used to measure the ratio is net profit after tax[ 9].

ROI = Net Profit Total × 100%

Total Aktiva

## Internal Rate of Return (IRR)

*The Internal Rate of Return* (IRR) is an interest rate that will make the NPV value of a project equal to zero. The value of IRR indicates the ability of a *project to generate a return of capital* or the level of profit it can achieve. IRR is calculated with formula [3].

IRR = i1+ (

NPV1

𝑁𝑃𝑉1−𝑁𝑃𝑉 2

) (i1-i2)

Description:

NPV1 = NPV at the highest *discount rate* NPV2 = NPV at the lowest *discount rate* I1 = *discount rate* NPV1

I2 = *discount rate* NPV2

The criteria often used in assessing an effort are determined by: IRR > *cost of capital then the* project is considered feasible.

IRR< *cost of capital then the* project is considered unworthy

# Results and Discussion

*Production Cost, Revenue and Income of Broiler Chicken Business with Partnership Pattern and Independent Pattern*

The total cost of production is the costs incurred by farmers in the business activities of broiler chicken farms and partnership patterns, consisting of variable costs and fixed costs. Variable costs are the costs incurred by farmers whose amount is influenced by the small amount of production the higher the production scale, the higher the variable cost that must be borne by the farmer during production. Included in the variable cost component for broiler chicken farming businesses are sapronak costs (feed, DOC and OVK) and operational costs. Fixed costs are costs that do not depend on the amount of production and do not change as a result of changes in the amount of produce obtained by farmers, including the cost of shrinking cages and equipment, UN costs, those costs remain incurred even if production is stopped.

The following are the costs included in the total cost of farm production, among others:

* 1. *Doc Cost ( Day OldChick), feed and OVK*

The biggest expense for both breeders is the purchase of feed. Partner breeders spend Rp 20,786/head and independent breeders spend Rp 17,852/head. The cost incurred by partner breeders for doc purchases is also higher than that of independent breeders. This is due to the company's set DOC price higher than the doc price in the market purchased by independent breeders. Partner breeders are obliged to pay it if they have received payment for the harvest.

Another cost component is the cost of buyering vitamin and chemical drugs. Independent breeders use more ovk, because chickens cultivated by independent breeders are more often exposed to diseases that require more medicines. Partner breeders have standards and provisions in the administration of medicines for the treatment of diseases to increase income.

The highest cost of feed is partner breeders because the amount of use in each period is more than that of independent farmers. The needs of partner breeders are indeed less than independent breeders, but the price of sapronak purchased is mostly more expensive than self-sustaining breeders. So the cost of sapronak incurred by farmers is higher than that of partner breeders.

An area of 1 m2 is used for 12 chickens, but to increase the heavy production of chickens an area of 1 m2 is used for eight chickens so as not to interfere with the air circulation which causes chickens to be susceptible to disease and interfere with the growth of chickens. This provision is used by some respondents so that it does not differ between partner breeders and independent

* 1. *Operating Expenses*

The largest expenditure of the operating costs of partner and independent farmers is labor costs. Heating (gas solex) is used for cage temperature heaters. Some independent breeders still use traditional heaters that use furnaces. The needs and costs of partner and independent breeder husk are almost the same. The cost of capture wages is the cost prepared by partner and independent farmers to finance the implementation of the harvest.

* 1. *Depreciation costs*

The small cost of depreciation of cage equipment borne each period is influenced by the scale of the business. The cost of depreciation of equipment and cages of independent breeders is lower than the depreciation that partners must bear. Independent breeders only spend Rp. 393/head while partner breeders spend Rp. 412/head - Rp. 437/head. The large cost that partner farmers have to insend is due to the influence of the use of heating equipment, partner breeders use solex gas while some independent breeders still use artificial heaters or furnaces. Economic lifespan is also an influence in depreciation costs, while independent farmers save more on the use of production equipment. If the amount of equipment is reduced it

is feared that the feeding and drinking is uneven, thus inhibiting the growth of chicken weight.

* 1. UN Fees

The cost of UN incurred by partner farmers and independent breeders is almost the same, which is Rp. 5,2/head – Rp. 7,1/head. U.N. costs are incurred by partner breeders and are self-sustaining once a year despite no production activities.

The following is a table of production costs, receipts and income on broiler chicken business with partnership patterns and independent patterns per head/period.

**Table. 1** Matrix on broiler business with partnership pattern and independent per head/period

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Breeders Partnership** | |  | **Independent Breeders** |
| **Cost Type** | **Company A** | **Company B** | **Company C** |
| Acceptance  Chicken reception Acceptance of faeces and atal  Bonus | 31.776  310  339 | 31.573  225  411 | 30.374  352  320 | 29.351  267  0 |
| Total receipt (Rp) | 32.424 | 32.210 | 31.046 | 29.619 |
| Manufacturers  Feed (Rp) DOC (Rp) OVK (Rp)  Manpower (Rp) Electricity (Rp) Atal (Rp) Heater (Rp)  Capture wage (Rp) Depreciation (Rp) United Nations (Rp) | 20.786  7.500  416  410  145  252  145  51  437  5,2 | 20.429  7.541  323  429  143  229  134  54  424  7 | 19.744  7.250  300  520  93  240  140  47  412  7,1 | 17.852  6.500  750  520  93  247  135  50  393  5,8 |
| Total production cost  (RP) | 30.146 | 29.712 | 28.754 | 26.545 |
| Income (Rp) | 2.216 | 2.407 | 2.310 | 3.077 |
| Death rate (%)  Average chicken weight (kg) | 5,4  1,8 | 4  1,8 | 5  1,8 | 6,8  1,4 |

Source: Processed Secondary Data (2020)

# *Total Production Cost*

The total cost of production is obtained by summing up the entire cost of production during a period of both independent breeders and partner breeders. From table 14 obtained that there is a difference in total production cost between the farmer partnership pattern and the independent pattern, where the lowest total production cost is found in independent breeders which is Rp 26,545/head and the highest is found in farmers who partner with Company A which is Rp 30,146/head. This is due to the difference in the number of production cost factors incurred for the purchase of sapronak, cages and equipment, the cost of vaccines

and medicines, as well as operational costs that support the business activities of broiler chickens. The largest cost of all production costs incurred by partnership and independent pattern breeders are feed, DOC, medicine, and labor costs. In the initial cost partnership pattern sapronak cost is borne in advance with partner companies and the price given is also higher compared to independent pattern breeders who provide their own sapronak. This is in accordance with the statement

[5] which states that the largest variable cost component incurred from partner and independent business patterns is feed costs as well as DOC procurement and costs will increase as the chicken population grows.

# *Acceptance*

The highest average receiving was in farmers who partnered with Company A at Rp 32,424/head from Company B and Company C, while the lowest in the self- contained pattern was Rp 29,619/head. This is due to the higher weight of chickens and the difference in the selling price of livestock. The selling price of chicken with partner patterns is determined based on the contract of body weight and the price per kg of living weight while the independent pattern is determined by the farmer. independent farmers face a higher risk of price fluctuations than business partnership breeders. This is in accordance with the statement [5] which states that the selling price of independent pattern livestock is determined by the farmer while the partner pattern is determined based on body weight and price per kg of life. [2] it states that the difference in receipts is due to the rate of chicken death and the awarding of bonuses by the company. Partner breeders have relatively fewer chicken mortality rates and higher chicken weight than self-sustaining breeder chickens. The acceptance of broiler chicken business with partnership patterns and independent patterns there are differences. The acceptance of farmer partnership patterns is obtained from the sale of chickens, sales of manure, sales of atal, and bonuses (achievement fees and market subsidies from the company). The acceptance of independent pattern breeders is obtained from the sale of chickens, the sale of manure and the sale of atal.

# *Income*

Income is the difference between total receipts and the total cost of production incurred. The average independent farmer earned the highest income of Rp 3,077/head and the lowest income of farmers who partnered with Company A at Rp 2,216/head compared to company B of Rp 2,407/head and company C of Rp 2,310/head. This is because the amount of costs incurred by partner breeders is greater than that of independent breeders. The selling price of chickens on independent pattern breeders is greater than the farmer's partner pattern. This is in accordance with research[1] which states that the income earned by partner breeders is smaller than that of independent breeders, as the amount of cost incurred by mitrra breeders is greater than that of independent breeders. However, partner farmers benefit greatly from participation in partnerships such as capital assistance, guidance and counseling and product marketing.

# *Financial Analysis of Chicken Livestock Business Partnership Pattern and Independent Pattern*

Financial analysis is necessary to determine the feasibility of a business reviewed from the financial aspect, namely by calculating the cost flow and receipt flow of financial eligibility analyzed using methods such *as: Revenue Cost*

*Ratio* (R/C), *Break Event Point* (BEP), Return *on Investmen* (ROI) and *Internal Rate of Return* (IRR).

**Table 2.** Financial business of chicken broiler partnership pattern and independent pattern in Tanjung Morawa Sub-district

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Breeders Partnership** | |  | **Independent Breeders** |
| **Criteria** | **Company A** | **Company B** | **Company C** |
| R/C | 1,08 | 1,08 | 1,08 | 1,12 |
| Bep |  |  |  |  |
| Production Volume | 8.722 | 9.701 | 8.342 | 6.344 |
| (kg) | 16.781 | 16.582 | 16.951 | 18.828 |
| Production Price (Rp) | 68 | 66 | 63 | 80 |
| ROI (%) | 23 | 22 | 22 | 24 |
| IRR |  |  |  |  |

Source: Processed Secondary Data (2020)

*R/C (Revenue Cost ratio)*

R/C is a comparison between the receipt and the total cost of production used to determine the efficiency of the broiler chicken business. From table 15, the R/C *ratio obtained* shows that broiler chicken business in the farmer partnership pattern and independent pattern is quite efficient because each breeder shows R/C more than one, meaning that broiler chicken are already profitable. Every one rupiah of the total cost incurred by the partner farmer will provide an additional receipt of Rp 1.08 while the independent farmer gets an additional greater amount of Rp 1.12. Research conducted [1] R/C value on the total production cost of partnership pattern breeders and independent pattern breeders is greater than zero, i.e. for partnership pattern breeders Rp 1.27 and for independent pattern breeders Rp 1.35.

BEP (*Break Event Point*)

1. *BEP Production Volume (kg)*

Bep production volume in farmers partnering with Company A, Company B and Company C successively indicates that the capital point will be reached if the average weight of chickens is 8,722 kg, 9,701 kg and 8,342 kg and the independent breeder is 6,344 kg. This is in accordance with the statement [8], stating a situation in which the company cannot profit or lose/break even. BEP production volume is a safe point in chicken livestock business either partnership pattern or self- contained pattern with the lowest production that must be produced so as not to suffer losses.

1. *BEP Production Price (Rp)*

Bep production price of independent pattern farmers will be achieved if the price of life weight is Rp 18,828/head, and farmers who partner with Company A, Company B and Company C amounting to Rp 16,781, Rp 16,582 and Rp 16,951 so that the costs incurred can be returned. Research conducted [7] BEP production price of independent pattern breeder chicken life is Rp 14,143.88/head and partner breeder amounts to Rp 13,110.92/head. The higher the sales price at the farmer level from bep production price, then the farmer partnership pattern and independent pattern is more profitable so on the contrary, the lower the sales price at the farmer level from the BEP production price, then the farmer both the partnership pattern and the independent pattern will suffer losses.

*ROI (Return on Investman)*

The highest ROI rate is in independent pattern breeders at 80% while the lowest to highest roi values of farmers partnering with C companies, B companies and A companies are 63%, 66%, and 68%. Roi value compared to BRI bank loan rate of 16.75%. This means the broiler chicken business is both partner and independent able to generate profit from the investment invested so that the chicken business partnership pattern and independent pattern can be said to be financially viable. This is in accordance with the statement [4] which states that the ratio used as a tool for the ability of invested capital can generate a net profit. The higher the ROI value, the higher the capital investment that has been issued will quickly provide profit in a rapid period.

IRR (*Internal Rate of Return*)

Conditions at the time of bank interest rates were 16.75% and 21%. With the results of IRR farmers who partner with company A, company B, company C and independent pattern breeders by 23%, 22%, 22% and 34% shows that partner pattern farms and independent patterns in Tanjung Morawa sub-district can return loan capital up to a maximum interest rate of 22%-23% for partner pattern breeders and 24% for independent farmer patterns. The value of the IRR is greater than the bank's interest rate, this indicates that the partner and independent pattern farm business is worth running.

# Conclusion

The results showed that the average income per breeder pattern of partnership with company A, company B and company C amounted to Rp 2,216, Rp2,407, Rp 2,310 and the average income per head of independent pattern breeders amounted to Rp 3,077. Broiler chicken business in farmers partnership pattern and independent pattern shows that by using interest rate 16.75% obtained ROI of 63%-80%, R/C more than one and IRR greater than interest rate, namely 22%-24%. Based on the feasibility criteria of financial analysis of partner and independent pattern farms is feasible to run and develop.

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