

# **Financial Analysis And Factors Influencing The Revenue Of Broiler Plasma Breeding In Open House System Partnership With Pesona Ternak Gemilang, Ltd Of Kediri Indonesia**

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**Abstract :** *The objective of research is to understand financial analysis methods such as BEP and R/C Ratio and factors influencing the revenue of broiler farming. Research starts from June to July 2015. Method of research is case study. Data collection technique includes observation and interview. The interview is conducted with 30 broiler farmers selected through total sampling and also with Pesona Ternak Gemilang Ltd. Data analysis tool involves descriptive analysis, economic analysis and regression analysis with SPSS16. Result of research indicates that various strata can be arranged based on chicken ownership (breeding capacity), respectively 3,000-12,000 chickens for Strata I, 12,000-27,000 chickens for Strata II, and > 30,000 chickens for Strata III. The average rates of production cost for these three strata are IDR 164,864,491, IDR 365,354,346, and IDR 583,418,013. The average rates of revenue per period for these three strata are IDR 18,471,124, IDR 41,342,258, and IDR 85,419,930. Production cost, revenue and profit in Strata III are greater than those in Strata I and II. Factors influencing the revenue of breeder on period 1-6 include feed cost, broiler sale and bonus. Based on financial analysis against broiler breeding, the breeding is profitable and also reliable pursuant to what has been shown by financial result.*

**Keywords:** *financial analysis, broiler breeding, partnership, feed cost, bonus, broiler turnover*

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## **I. Introduction**

Breeding work sustainability can be estimated from the description of its financial aspects. The capacity of breeding work in developing the capital is usually measured from the parameters of investment such as work capacity in developing initial capital greater than bank interest, work profit in future years, and others. In other words, breeding work can be said as sustainable itself if profit is greater than cost expended. Therefore, all matters must be ensured as financially reliable (Fatah, 1994). Some factors influencing the revenue of broiler breeding are DOC price, feed price, medicine & vaccine cost, breeder age, and breeding experience. This background has encouraged the author to conduct a research entitled with "Financial Analysis and Factors Influencing The Revenue of Broiler Plasma Breeding in Open House System Partnership with Pesona Ternak Gemilang, Ltd of Kediri Indonesia" in order to understand the financial analysis against broiler plasma breeding in open house system partnership with Pesona Ternak Gemilang, Ltd in Kediri Regency.

Every breeding work has been oriented toward the achievement of maximum profit. Some methods of financial analysis are used such as Break Even Point (BEP) and Revenue Cost Ratio (R/C Ratio). Factors influencing the revenue of broiler breeder are understood. Financial analysis helps breeders to obtain information about how far is their work to become successful business.

## **II. Material And Methods**

Method of research is case study, whereas data collection involves observation and interview.

### **Data Collection Method**

Data source involves primary and secondary. Primary data are obtained from interfacial meeting and dialog. Questionnaire is distributed to respondents, respectively broiler breeders who participate into partnership program with Pesona Ternak Gemilang, Ltd in Kediri Regency Region, Indonesia. Secondary data are derived from scientific reports, notes and documents in related institutions, and also acquired from any references relevant to this research.

Research location is determined by purposive sampling whereas sample population is determined through total sampling. The sample includes broiler breeders who participate into partnership program with Pesona Ternak Gemilang Ltd in Kediri Regency Region, Indonesia. The type of partnership is Open House System involving 30 broiler breeders. The breeders are assigned

into three strata based on their chicken ownership, respectively Strata I (3,000-12,000 chickens), Strata II (12,000-27,000 chickens), and Strata III (> 30,000 chickens).

### Data Analysis

Data analysis is a descriptive analysis to understand the condition of broiler farming works, the characteristic of farmers, the implementation of core-plasma, partnership and the counting of the composition, the analysis of production and profit and the analysis of finance and SPSS16 software regression.

- a. Cost is all expenses used for production. It is a result of the addition between fixed cost and variable cost. Systematically, it is written as follows:

$$TC = TFV + TVC$$

Note:

- TC = Total Cost (IDR)  
TFV = Total Fixed Cost (IDR)  
TVC = Total Variable Cost (IDR)

- b. Total Revenue is the result of multiplication between the number of the sold unit and the price per the sold unit. Ahyari (1987) describes this income with equation as following:

$$TR = (p.Q) + \text{Wet Husk Sale (IDR)} + \text{Feed Sack (IDR)} + \text{FCR Bonuses (IDR)} + \text{Mortality Bonuses (IDR)} + \text{Transport Replacement (IDR)} + \text{Feed Discount (IDR)}$$

Note:

- TR = Total Revenue of farmers (IDR)  
Q = The harvest of maintenance result (kg)  
P = Sale price per kg of broiler weight (IDR/ kg body weight)  
FCR = Feed Consumption Rate

- c. Profit is the difference between total revenue and total cost expended by breeders. Ahyari (1987) describes the profit systematically as follows:

$$\pi = TR - TC$$

Note:

- $\pi$  = Profit (IDR)  
TR = Total Revenue of farmers (IDR)  
TC = Total Cost (IDR)

- d. Break Even Point (BEP) is a condition where every company does not suffer the loss or obtain the profit (Prawirokusumo, 2001). Systematically, it is written as follows:

$$BEP_{\text{price}} = \frac{\text{Total Cost Production (IDR)}}{\text{Broiler Work Harvest (Kg)}}$$
$$BEP_{\text{product}} = \frac{\text{Total Cost Production (IDR)}}{\text{Sale Price per Kg Body Weight}}$$
$$BEP_{\text{chicken}} = \frac{BEP_{\text{product}}}{BB \text{ per chicken}}$$

- e. A certain work can be said as profitable if the comparative resultant between Revenue and Cost (R/C) is more than one. Revenue Cost Ratio (R/C Ratio) is comparing between revenue and cost (Soekartawi, 2000). The equation is systematically written as follows:

$$RC \text{ Ratio} = \frac{\text{Revenue (IDR)}}{\text{Cost (IDR)}}$$

Criteria:

- If RC Ratio < 1, the work is loss.
- If RC Ratio = 1, the work is break even (not profit, not loss)
- If RC Ratio > 1 = the work is profitable

- f. Research variables in this research are:

- (1) Revenue of Breeders (Y1) = revenue of breeders on period 1 (rupiah/head).
- (2) Revenue of Breeders (Y2) = revenue of breeders on period 2 (rupiah/head).
- (3) Revenue of Breeders (Y3) = revenue of breeders on period 3 (rupiah/head).
- (4) Revenue of Breeders (Y4) = revenue of breeders on period 4 (rupiah/head).
- (5) Revenue of Breeders (Y5) = revenue of breeders on period 5 (rupiah/head).
- (6) Revenue of Breeders (Y6) = revenue of breeders on period 6 (rupiah/head).
- (7) Feed on Period 1 (Feed 1) = cost expended by breeders to purchase the feed on period 1 (rupiah/head).
- (8) Feed on Period 2 (Feed 2) = cost expended by breeders to purchase the feed on period 2 (rupiah/head).

- (9) Feed on Period 3 (Feed 3) = cost expended by breeders to purchase the feed on period 3 (rupiah/head).
- (10) Feed on Period 4 (Feed 4) = cost expended by breeders to purchase the feed on period 1 (rupiah/head).
- (11) Feed on Period 5 (Feed 5) = cost expended by breeders to purchase the feed on period 1 (rupiah/head).
- (12) Feed on Period 6 (Feed 6) = cost expended by breeders to purchase the feed on period 1 (rupiah/head).
- (13) Medicine & Vaccine on Period 1 (OVK 1) = cost expended by breeders to purchase medicine & vaccine on period 1 (rupiah/head).
- (14) Medicine & Vaccine on Period 2 (OVK 2) = cost expended by breeders to purchase medicine & vaccine on period 2 (rupiah/head).
- (15) Medicine & Vaccine on Period 3 (OVK 3) = cost expended by breeders to purchase medicine & vaccine on period 3 (rupiah/head).
- (16) Medicine & Vaccine on Period 4 (OVK 4) = cost expended by breeders to purchase medicine & vaccine on period 4 (rupiah/head).
- (17) Medicine & Vaccine on Period 5 (OVK 5) = cost expended by breeders to purchase medicine & vaccine on period 5 (rupiah/head).
- (18) Medicine & Vaccine on Period 6 (OVK 6) = cost expended by breeders to purchase medicine & vaccine on period 6 (rupiah/head).
- (19) Broiler Sale on Period 1 (Sale 1) = broiler that is sold on period 1 (rupiah/head).
- (20) Broiler Sale on Period 2 (Sale 2) = broiler that is sold on period 2 (rupiah/head).
- (21) Broiler Sale on Period 3 (Sale 3) = broiler that is sold on period 3 (rupiah/head).
- (22) Broiler Sale on Period 4 (Sale 4) = broiler that is sold on period 4 (rupiah/head).
- (23) Broiler Sale on Period 5 (Sale 5) = broiler that is sold on period 5 (rupiah/head).
- (24) Broiler Sale on Period 6 (Sale 6) = broiler that is sold on period 6 (rupiah/head).
- (25) Bonus on Period 1 (Bonus 1) = FCR bonus total, mortality bonus, transport compensation bonus, and feed discount bonus given by the core to each plasma on period 1 (rupiah/head).
- (26) Bonus on Period 2 (Bonus 2) = FCR bonus total, mortality bonus, transport compensation bonus, and feed discount bonus given by the core to each plasma on period 2 (rupiah/head).
- (27) Bonus on Period 3 (Bonus 3) = FCR bonus total, mortality bonus, transport compensation bonus, and feed discount bonus given by the core to each plasma on period 3 (rupiah/head).
- (28) Bonus on Period 4 (Bonus 4) = FCR bonus total, mortality bonus, transport compensation bonus, and feed discount bonus given by the core to each plasma on period 4 (rupiah/head).
- (29) Bonus on Period 5 (Bonus 5) = FCR bonus total, mortality bonus, transport compensation bonus, and feed discount bonus given by the core to each plasma on period 5 (rupiah/head).
- (30) Bonus on Period 6 (Bonus 6) = FCR bonus total, mortality bonus, transport compensation bonus, and feed discount bonus given by the core to each plasma on period 6 (rupiah/head).
- (31) Harvest Weight on Period 1 (Harvest Weight 1) = the average rate of harvest weight on period 1 (rupiah/head).
- (32) Harvest Weight on Period 2 (Harvest Weight 2) = the average rate of harvest weight on period 2 (rupiah/head).
- (33) Harvest Weight on Period 3 (Harvest Weight 3) = the average rate of harvest weight on period 3 (rupiah/head).
- (34) Harvest Weight on Period 4 (Harvest Weight 4) = the average rate of harvest weight on period 4 (rupiah/head).
- (35) Harvest Weight on Period 5 (Harvest Weight 5) = the average rate of harvest weight on period 5 (rupiah/head).
- (36) Harvest Weight on Period 6 (Harvest Weight 6) = the average rate of harvest weight on period 6 (rupiah/head).
- (37) Breeder Age (Age) = the age of breeders (year)
- (38) Education Level (Education) = education level that has been accomplished by breeders (elementary, secondary, high school, and college).
- (39) Breeding Experience (Experience) = the length of breeding work by breeders (year).
- (40) Number of Family Member (Number of Member) = number of family member in breeder household (person).
- (41) Land Mastery (Land Mastery) = the width of land used by breeders for breeding work, including land portion for the stall (Ha).
- (42) Work Scale = the grouping of work scale based on number of livestock.

**Regression Equations:**

Multiple Regression Analysis on Period 1:

$$Y_1 = a + b_1 \text{feed}_1 + b_2 \text{OVK}_1 + b_3 \text{sale}_1 + b_4 \text{bonus}_1 + b_5 \text{harvest weight}_1 + b_6 \text{age} + b_7 \text{education} + b_8 \text{experience} + b_9 \text{number of member} + b_{10} \text{land mastery} + b_{11} \text{work scale} + e$$

Multiple Regression Analysis on Period 2:

$$Y_2 = a + b_1 \text{feed}_2 + b_2 \text{OVK}_2 + b_3 \text{sale}_2 + b_4 \text{bonus}_2 + b_5 \text{harvest weight}_2 + b_6 \text{age} + b_7 \text{education} + b_8 \text{experience} + b_9 \text{number of member} + b_{10} \text{land mastery} + b_{11} \text{work scale} + e$$

Multiple Regression Analysis on Period 3:

$$Y_3 = a + b_1 \text{feed}_3 + b_2 \text{OVK}_3 + b_3 \text{sale}_3 + b_4 \text{bonus}_3 + b_5 \text{harvest weight}_3 + b_6 \text{age} + b_7 \text{education} + b_8 \text{experience} + b_9 \text{number of member} + b_{10} \text{land mastery} + b_{11} \text{work scale} + e$$

Multiple Regression Analysis on Period 4:

$$Y_4 = a + b_1 \text{feed}_4 + b_2 \text{OVK}_4 + b_3 \text{sale}_4 + b_4 \text{bonus}_4 + b_5 \text{harvest weight}_4 + b_6 \text{age} + b_7 \text{education} + b_8 \text{experience} + b_9 \text{number of member} + b_{10} \text{land mastery} + b_{11} \text{work scale} + e$$

Multiple Regression Analysis on Period 5:

$$Y_5 = a + b_1 \text{feed}_5 + b_2 \text{OVK}_5 + b_3 \text{sale}_5 + b_4 \text{bonus}_5 + b_5 \text{harvest weight}_5 + b_6 \text{age} + b_7 \text{education} + b_8 \text{experience} + b_9 \text{number of member} + b_{10} \text{land mastery} + b_{11} \text{work scale} + e$$

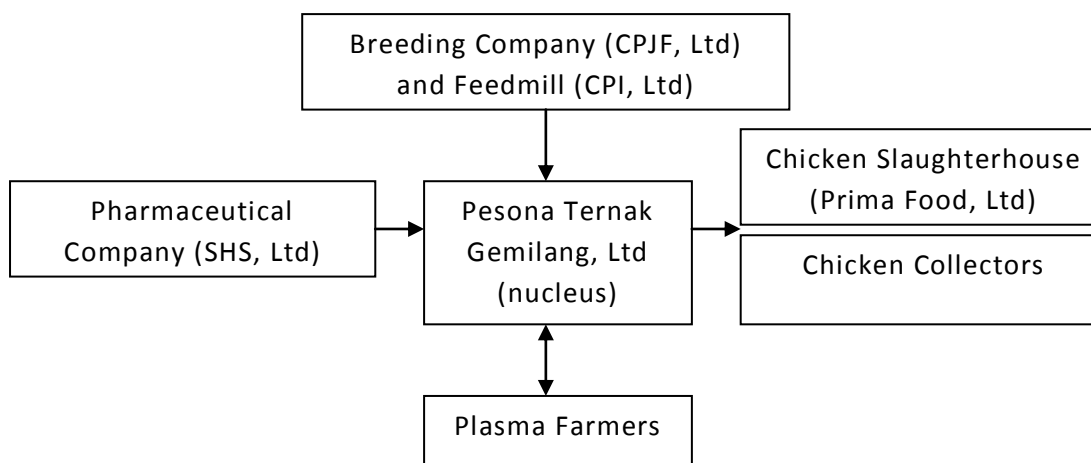
Multiple Regression Analysis on Period 6:

$$Y_6 = a + b_1 \text{feed}_6 + b_2 \text{OVK}_6 + b_3 \text{sale}_6 + b_4 \text{bonus}_6 + b_5 \text{harvest weight}_6 + b_6 \text{age} + b_7 \text{education} + b_8 \text{experience} + b_9 \text{number of member} + b_{10} \text{land mastery} + b_{11} \text{work scale} + e$$

**III. Result And Discussion**

**General Description of Pesona Ternak Gemilang Ltd Indonesia**

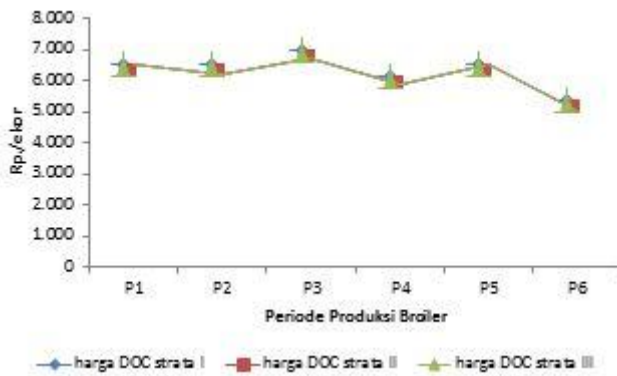
Pesona Ternak Gemilang, Ltd (PT. Pesona Ternak Gemilang) is a business unit of Pokphan Indonesia, Ltd. Indeed, Pesona Ternak Gemilang, Ltd specializes on the cultivation of final stock broiler and also develops a certain type of cooperation with local breeders. This cooperation is called as core-plasma partnership. This partnership contains price contract on which the company acts as the core whereas the breeders represent the plasma.



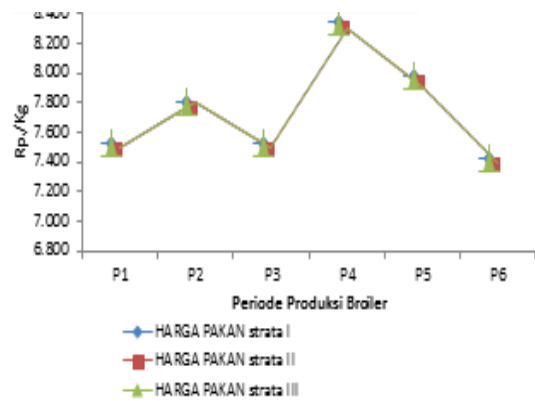
**Picture 1. Implementation of the Partnership in the Procurement of Livestock Production Facility**

Agribusiness System	Broiler Breeding Work of Pesona Ternak Gemilang, Ltd
1. Upstream Subsystem	1. Feed material is continuously supplied by Charoen Pokphan Indonesia (CPI Ltd). 2. Seed (DOC) is also continuously supplied by Charoen Pokphan Indonesia (CPI Ltd). 3. Medicine and vaccine are continuously provided by SHS Ltd.
2. Livestock Cultivation Subsystem (On-Farm)	1. Broiler is bred within population of 3,000-30,000 chickens to fulfill the demand of consumer and market.
3. Downstream Subsystem	1. The marketing of production output is done by Pesona Ternak Gemilang, Ltd around Kediri and Jombang Regions.

**Subsistem Hulu**



**Picture 2. Price of Day Old Chicken per period**

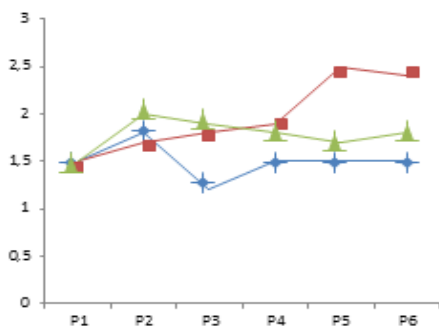


**Picture 3. Price of feed cost**

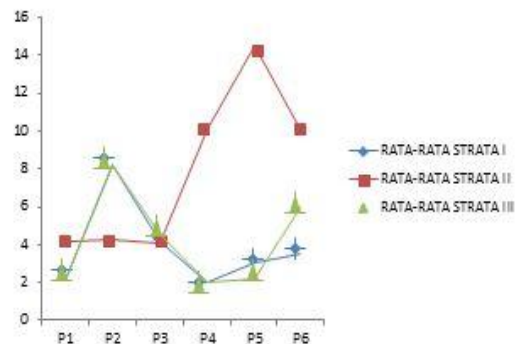
Picture 2 illustrates the fact that DOC price given to plasma breeders may differ in every period. However, the price given to plasma breeders in Strata I, II and III is similar because breeders accept DOC supply from similar core. Pesona Ternak Gemilang, Ltd of Kediri determines the contract price for DOC sold by the company. DOC price on Period 3 in the partnership is the highest price of all other production periods because DOC availability in hatchery is few and the available DOC has been given with gumboro and AI (*Avian Influenza*) vaccines. Partnership on Period 3 has set DOC price at Rp.6,700/head. Price fluctuation is relatively stable during the partnership with Pesona Ternak Gemilang, Ltd. The lowest DOC price is observed on Period 6 because DOC in hatchery is not yet vaccinated and is sold at the price of Rp. 5,050/head.

Picture 3 describes a fact that DOC price offered by Pesona Ternak Gemilang, Ltd may differ in every period but similar price is given to plasma breeders in Strata I, II and III because feed supply derives from similar core. Feed price on Period 4 is higher because in this period, Pesona Ternak Gemilang, Ltd has scaled up the contract price for the feed to Rp. 8,300/kg such that the company can take benefit of feed price from breeders because feed price is always determined from the core to the plasma.

**On Farm Subsystem**



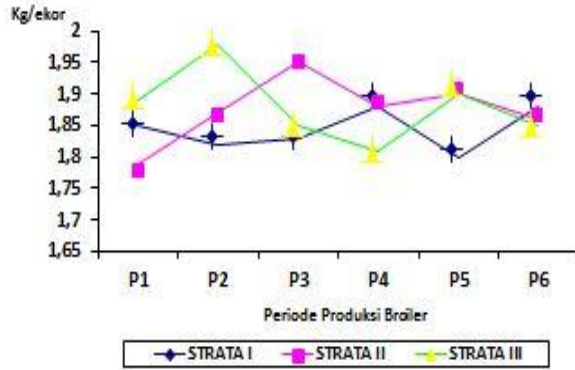
**Picture 4. Feed Conversion Ratio Broiler Breeding**



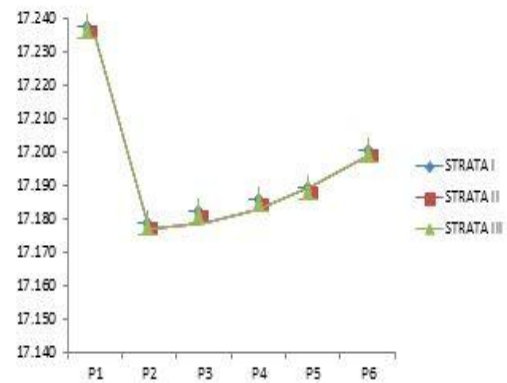
**Picture 5. Mortality per periode**

Picture 4 indicates that FCR average rate at three strata on every production period is different to each other. Picture 5 shows that every period of broiler breeding work has different mortality rate. The high mortality rate during rearing management is bad indicator for broiler. As shown in Picture 5, Strata II has a high mortality rate on Period 5, counted for 13.5 %. This rate emerges because number of harvested chicken is fewer than number of chicken incoming for the first time. The death chicken on Period 5 is 898 heads, and thus, mortality rate is considered as high.

**Downstream Subsystem**



**Picture 6. average body weight**

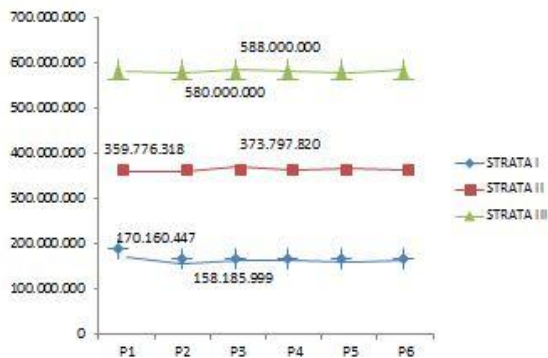


**Picture 7. Price of broiler**

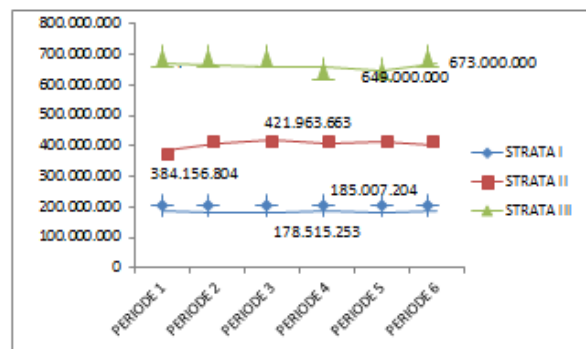
Picture 6 has shown that Strata III produces the highest average body weight (ABW) on Period 2, counted for 1.98 kg/head, but in next period, this ABW rate decreases but stable. The ABW in Strata III is the highest because harvest weight total is higher than harvested chicken total. Picture 7 shows that the price used in the partnership with Pesona Ternak Gemilang, Ltd can differ across strata but not so much far from market price. However, market price is fluctuated (unstable) and tends to increase with market demand rate.

**Production Cost, Revenue and Profit**

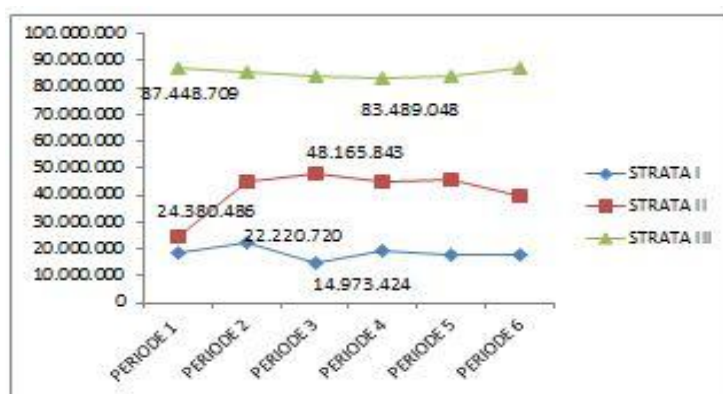
Production cost and revenue may change over period. The change of production cost is caused by the difference across strata in terms of feed quantity, medicine and DOC quality. The percentage of production cost across strata is ordered as follows: 74.55% for Strata I, 76.29 % for Strata II, and 75.44 % for Strata III. The highest revenue is obtained from chicken sale and FCR bonus. The following is pictures for production cost, revenue and profit.



**Picture 8. Production cost over periode**



**picture 9. Revenue over periode**



Picture 10. profit over periode

Total revenue of broiler breeding in open house system partnership with Pesona Ternak Gemilang, Ltd is fluctuated. It occurs because the sale of the living broiler is always fluctuated over period either for its price or quantity. Different revenue obtained may be caused by the difference of mortality rate, Food Consumption Rate (FCR), and bonus standard. Siregar (2009) has stated that the lower FCR means smaller cost expended to purchase the feed. In contrast, the higher FCR means the higher cost to buy the feed. Such difference is also caused by different harvest weight and also triggered by the fact that the harvest price of every weight can also be different.

**Break Even Point (BEP) Analysis**

Break Even Point Analysis is conducted to understand one-year minimum production, minimum price per kilogram of life weight, and one-year maintenance expense needed to avoid from loss but also not to have a profit. The following is break even point table.

Table 2. Average Rate of Break Even Point Analysis

Strata	Total Cost (IDR)	Broiler Work Harvest 1 Year (Kg)	Chicken Price (IDR/ Kg BW)	Body Weight per Chicken	BEP price (IDR)	BEP product (kg)	BEP chicken (chickens)
I	989.186.946	63.131	17.192	1,84	15.700	57.545	31.122
II	2.192.126.077	141.061	17.300	1,87	15.537	128.159	68.388
III	3.500.508.082	236.720	17.230	1,85	14.906	207.714	112.278

One of BEP results (Strata III) can be interpreted as follows. BEP of the price remains at IDR 14.906/kg of life weight with harvest weight average of 1,85 kg/chicken. It means that the sale price will not breeders into the loss but also not give them profit. BEP of the product remains at 207.714kg of life weight, meaning that by one-year minimum harvest weight, breeders do not suffer the loss. BEP of broiler is 68.952 boilers per annum, meaning that at minimum capacity of maintenance at harvest weight of 1,88 kg and also with 11% mortality rate, it seems that breeders will not suffer the loss.

**Revenue Cost Ratio (R/C Ratio) Analysis**

Chicken breeding work always needs to be efficient. Efficiency is achieved by increasing the production and minimizing the production cost. Successful work can be measured from work efficiency and the tool is R/C Ratio.

Tabel 3. Result of R/C Ratio Farmers

Strata	Jumlah TR (Rp.)	Jumlah TC (Rp.)	R/C Ratio
I	1.100.013.692	989.186.946	1,11
II	2.440.179.623	2.192.126.077	1,11
III	4.025.796.640	3.500.508.082	1,15

Related to R/C Ratio, farmers have R/C Ratio above 1, meaning that their work is efficient and profitable. The biggest R/C Ratio is found at Strata III, which reaches 1,15. The production cost is IDR 100.000.000 which gives profit for IDR 12.000.000. The bigger maintenance capacity is the more efficient production cost. Revenue cost ratio can be increased by improving the efficiency of production cost and by boasting up broiler production.

Factors influencing the revenue are arranged as follows:

$$Y_1 = -7,494,477 - 1,822 \text{ feed}_1 + 2,498 \text{ sale}_1 + 0.57 \text{ bonus}_1$$

### **Feed**

Result of regression against feed on Period 1 indicates that coefficient of regression is shown by  $\beta = -1.822$ , meaning that the decrease of feed price for 1 unit will increase revenue of breeders to 1.822. Feed cost variable in this research is the cost expended by breeders to procure the feed for all livestock they breed. Within the context of broiler breeding work, feed cost is the biggest cost because it represents 70 % of production cost total. It is supported by Rasyaf (2001) through a claim that feed is a factor that influences the change of broiler growth rate. In broiler breeding work, feed plays very important role in securing the feasibility of the work. Feed is always important, but more important issue is feed price.

### **Broiler Sale**

Result of regression against broiler sale on Period 1 has shown that coefficient of regression is shown by  $\beta = 2.498$ , meaning that every broiler sale increase on Period 1 to one unit will increase revenue of breeders to 2.498. This fact is supported by Widodo (2001) in analysis of regression which indicates that revenue from broiler breeding has a significant effect on the income of broiler breeders and also has a positive relationship with it, as shown by  $\beta = 2.976$ . The result of meat/chicken sale is the biggest component of revenue because sale result can suppress production cost and also maximize profit as what breeders expect.

### **Bonus**

Result of regression against bonus on Period 1 indicates that coefficient of regression is shown by  $\beta = 0.571$ , meaning that every bonus increase on Period 1 to one unit will increase revenue of breeders to 0.571. The so called bonus may include FCR bonus, food discount bonus, transport bonus, and mortality bonus. It is supported by Saleh (2006) who says that FCR bonus, food discount bonus, transport bonus, and mortality bonus can influence revenue of broiler breeders for 12.9 %.

## **IV. Conclusion**

Based on the result and discussion previously stated, it is concluded that:

1. a. For production cost at Strata I, II and III, the order is arranged as follows: IDR 989,186,946, IDR 2,192,126,007, and IDR 3,500,508,082.  
b. For revenue at Strata I, II, III, and IV, the order is arranged as follows: IDR 943,116,780, IDR 1,553,636,211, IDR 1,908,201,667 and IDR 2,461,892,374.  
c. For profit at Strata I, II, III, and IV, the order is arranged as follows: IDR 83,327,588, IDR 122,905,847, IDR 166,139,085, and IDR 223,574,152.
2. a. BEP at Strata I, II, and III are relatively good, as proved by the contract price interval.  
b. R/C Ratio at Strata I, II, III and IV are favorable because it is  $> 1$ . The best ratio is 1.15 and it is shown by Strata III/
3. Factors influencing the revenue in every period are feed cost, revenue of broiler sale and bonus.

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