



Feasibility Analysis of Smallholder Beef Cattle Farming in Subang Regency, Indonesia

Nurul Mukminah¹, Fitri Suciati^{1*}, Rita Purwasih¹, Fenny Aprilliani¹, Muhammad Gilang Ramadhan^{1,2}

¹ Department of Agroindustry, Politeknik Negeri Subang
Jl. Brigjen Katamso No. 37 Subang, Jawa Barat, 41211 Indonesia

² School of Food Science and Nutrition, University of Leeds
Leeds, LS2 9JT, United Kingdom
E-mail : fitrisuciati@polsub.ac.id

Abstract – This study aimed to determine the feasibility of the beef cattle farming business and the factors that affected the number of beef cattle ownership in Subang Regency, Indonesia. The collected data in this research were qualitative and quantitative data. Primary data was collected through observation, interviews, and questionnaires. The number of respondents was 60 beef cattle farmers located in Padamulya and Wanasari Village (Cipunagara District) and Sumur Barang Village (Cibogo District) determined by purposive sampling while the locations were determined by Location Quotient (LQ). The financial feasibility of the beef cattle farming business was analyzed based on Net Present Value (NPV), Total Revenue Cost Ratio (R/C), Benefit Cost Ratio (B/C), Internal Rate of Return (IRR), Payback Period (PP), and Break Event Point (BEP). Secondary data were collected from Statistics Indonesia and Dinas Peternakan dan Kesehatan Hewan in Subang Regency. Results found that the beef cattle farming business with 5-year payback period and 12% discount factor/year was feasible. Moreover, the number of beef cattle ownership was significantly affected by agricultural land ownership ($P < 0.01$), business experience, and the number of laborers ($P < 0.1$). Thus, the beef cattle farming business in Subang Regency is potentially to be developed.

Keywords: Beef cattle, Business feasibility, Smallholder farming.

I. INTRODUCTION

Subang is a regency in West Java Province, Indonesia. Subang has continued to improve its economic development. Agriculture is one of the sub-sectors that contribute to economic development and labor absorption in Subang Regency. Furthermore, agriculture feasibly becomes the main source of income as the other economic sub-sectors (BPS West Java Province, 2022).

Indonesia is known as an agrarian country which determines agriculture as one of the most important roles in the entire national economy including the Subang Regency. This could be determined by the labor population in the agricultural sector such as crop farming (horticulture and plantation), fisheries and aquaculture, forestry, and livestock. These indicate that the agriculture sector has an essential role in the Subang Regency economy (BPS Subang Regency, 2022).

The agriculture sector is successful in maintaining food availability providing employment opportunities and prosperity for the society in national development. One of the agriculture sub-sectors is livestock. The livestock sub-sector has a decisive role in Indonesia's economy, particularly in the Subang Regency. The role is conceivably determined through the contribution of Regional Gross Domestic Products (RGDP) in Subang Regency and West Java Province, where livestock is one of the agriculture sub-sectors that show the increase in performance improvement. The livestock sub-sector also acts as one of the sources of food production (Fathurohman & Baharta, 2020).

Beef cattle is one of high potential livestock commodities. This can be indicated by the high number of beef cattle meat and its processed products demand. On the other hand, up to this point, Indonesia has not been able to meet the total beef cattle meat demand, thus the government imports live beef cattle and beef cattle meat. The production of live beef cattle

in West Java Province is insufficient compared to its consumption level of beef cattle meat. However the beef cattle business is still profitable due to the beef cattle meat market demand continues to increase (Poetri et al., 2016).

Sentra-sentra Peternakan Rakyat or SPR (Farming Centre Communities) in Indonesia, West Java Province in particular, spread to several regencies such as Subang Regency, Purwakarta Regency, Cianjur Regency, Bogor Regency, Sukabumi Regency, Garut Regency, Tasik Regency, and Pangandaran Regency (BPS West Java Province, 2022). However, there are only 4 regencies that have well-established organization systems, namely Subang Regency, Purwakarta Regency, Bogor Regency and Sukabumi Regency. Subang Regency is one of West Province foundation bases that has several SPR that outspread into several subdistricts. The number of big ruminants population in Subang Regency 2017 – 2021 is shown in Figure 1:

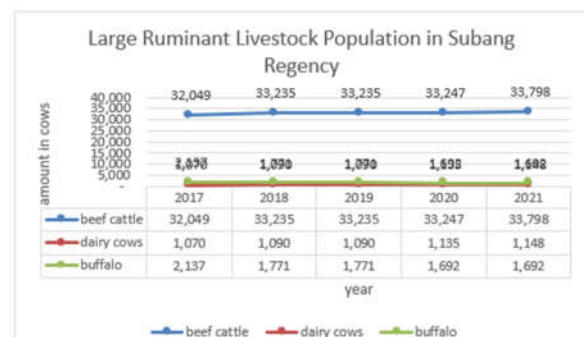


Figure 1. The Number of Population of Big Ruminants in Subang Regency 2017 – 2021 (Data diolah, 2022)

Based on Figure 1. The number of big ruminants

population in Subang Regency has increased. The domesticated water buffalo continue to decrease from 2018 to 2021. The dairy cattle population is relatively stable in Subang Regency. In the last 5 years, the population of beef cattle has never declined. This indicates the beef cattle livestock population continues to increase as this region has a large natural resource potential and the encouragement of the interest of the society in starting a beef cattle farming business (Fathurohman et al., 2017).

Subang Regency has the potential to develop a beef cattle farming business. In addition, the selling price of beef cattle livestock during Eid al-Adha/Qurban is relatively higher and the beef cattle livestock is relatively easy to raise using the pasture-raised system. These are the reason the farmers to run the beef cattle farming business. Apart from the pasture-raised system, beef cattle farming is also intensively farmed. In 2022, the number of beef cattle farmers reached 9.000 farmers in Subang Regency. Each farmer has 3-4 heads of beef cattle in average with selling prices in the range of 15.000.000 IDR to 20.000.000 IDR per head depending on the live weight and the quality of the beef cattle (BPS Subang Regency, 2021).

As of today, the farmers in Subang Regency still consider the livestock business as a side job from other agricultural businesses. Although the beef cattle farming business is still a side business, it needs a large investment, up until now there has never been a study or research that has determined the feasibility study of the beef cattle farming business in Subang Regency. Thus, the study of the feasibility of the beef cattle farming business in Subang Regency needs to be done, since it contributes in Regional Gross Domestic Product (RGDP). The business feasibility analyses in this study comprise *Net Present Value* (NPV), *Total Revenue Cost Ratio* (R/C), *Benefit Cost Ratio* (B/C), *Internal Rate of Return* (IRR), *Payback Period* (PP), further analyzed *Break Event Point* (BEP). Besides the feasibility study of beef cattle smallholder business, the information including the factors that affected the number of beef cattle ownership as incentive to develop the business. Theoretically, many factors affected the number of beef cattle ownership, namely, the age of the farmer, agricultural land ownership, education level, business experience, the number of laborers, and the availability of forages and concentrate feeds. This study aimed to determine the feasibility of the beef cattle farming business and the factors that affected the number of beef cattle ownership in Subang Regency, Indonesia.

II. RESEARCH METHOD

The Scope of The Research

This study determined the feasibility of the beef cattle farming business and its factors that affected the number of beef cattle ownership in Subang Regency, Indonesia. This study conducted in June – December 2022 in Padamulya and Wanasari Village (Cipunagara District) and Sumur Barang Village (Cibogo District).

The number of respondents is 60 beef cattle farmers located in Padamulya and Wanasari Village (Cipunagara District) and Sumur Barang Village (Cibogo District) determined by purposive sampling and the locations was determined by Location Quotient (LQ). The Location Quotient (LQ) based on scoring. Two farmer group which have the largest number of beef cattle population from each village were taken as sample. The respondents were chosen based on the ownership of beef cattle (min. 2 heads) and farming experience more than 2 years. The method used in

this research is a survey method using a questionnaire. Ordinal data obtained from the questionnaire was transformed into interval data using the Method of Successive Interval (MSI).

The data collected involved age, formal education level, main occupation, the number of productive family members, farming experience, land ownership (ha), and the other economic and technical parameters that affected income and cost. Analytical methods used in this research were *Net Present Value* (NPV), *Total Revenue Cost Ratio* (R/C), *Benefit Cost Ratio* (B/C), *Internal Rate of Return* (IRR), *Payback Period* (PP), and further analyzed using *Break Event Point* (BEP). Analysis of factors that affected the ownership of beef cattle analyzed using Multiple Linear Regression.

Data Analysis

Location Quotient (LQ)

LQ Analysis was used to study economic conditions, leading to identify specialization/basis economic activities. Thus, the LQ score is frequently used to determine basis sectors, in other words, sectors that can encourage the growth and development of the other sectors and its impact on the job creation (Tarigan, 2017). The LQ value used the following formula:

$$LQ = \frac{ei/e}{Ei/E} \dots\dots\dots (1)$$

Where,

- LQ = Location Quotient Beef Cattle Farm in Subang Regency Index
- ei = Total Production value of beef cattle in village level in Subang Regency (kg)
- e = Total Production value of livestock in village level in Subang Regency (kg)
- Ei = Total Production value of beef cattle in Subang Regency Level (kg)
- E = Total Production Value of livestock in Subang Regency Level (kg)

If $LQ > 1$, it implies the beef cattle commodity becomes a basis or a source of growth and beef cattle has comparative primacy, and if $LQ < 1$ it implies that the beef cattle is mon basis and do not have comparative primacy.

Net Present Value (NPV)

NPV is an analysis to understand the value of an investment by considering changes in currency values. NPV is a comparison of the difference between the present value of profit and cash outflows over some time (Fathurohman, 2016). NPV can be formulated as follows:

$$NPV = \sum_{t=0}^n \frac{(Bt - Ct)}{(1+i)^t} \dots\dots (2)$$

Where,

- Bt = Total cash inflows at time t
- Ct = Total cash outflows at time t
- i = Discount rate
- t = time of the cash flows
- n = economic lifetime

Feasibility indicator as follows: if $NPV > 0$, then the business is feasible to run, if $NPV < 0$ the business is not feasible to run, and if $NPV = 0$ it implies that the business

returns the same amount of money invested.

Revenue Cost Ratio (R/C)

The data analysis method uses the R/C (Revenue Cost Ratio) approach in this research to analyze the feasibility of a beef cattle farming business, whether it is feasible or not. R/C (Revenue Cost Ratio) is a comparison between total revenue and total costs with the following formula (Suratiyah, 2015).

$$R/C = \frac{TR}{TC} \dots\dots\dots (3)$$

Where,

R/C : Total Revenue Cost Ratio
TR : Total Revenue
TC : Total Cost

TR (Total Revenue) in the research was taken from all revenues obtained from the sale of beef cattle. Meanwhile, TC (Total Cost) is all costs incurred during the maintenance process.

Decision criteria,

R/C > 1 : The beef cattle farming business is feasible to run
R/C < 1 : The beef cattle farming business is not feasible to run
R/C = 1 : The beef cattle farming business is at the break-even point

Benefit Cost Ratio (Rasio B/C)

The B/C ratio is obtained by dividing the present value (benefits) by the present value (costs), which aims to determine the comparison between the total costs and the benefits to be obtained. According to Kasmir and Jakfar (2013) B/C is one of the financial aspects to assess a business's ability to obtain net income/profits as well as the amount of costs incurred. B/C can be analyzed using the following formula:

$$B/C = \frac{TB}{TC} \dots\dots\dots (4)$$

Where,

B/C : Benefit Cost Ratio
TB : Total Benefit
TC : Total Cost

In this study, the beef cattle farming business on TB (Total Benefit) represents all the net income obtained from the sales of beef cattle. Meanwhile, TC (Total Cost) is all costs incurred during the maintenance process.

Decision criteria,

B/C > 1 : The beef cattle farming business is profitable
B/C < 1 : The beef cattle farming business is not profitable (loss)
B/C = 1 : The beef cattle farming business is at the break-even point

Internal Rate of Return (IRR)

IRR is the maximum interest rate that can recover the costs incurred (Fathurohman, 2016). IRR can be formulated as follows:

$$IRR = i + \frac{NPV_1}{NPV_1 - NPV_2} \times (i_1 - i_2) \dots\dots\dots (5)$$

Keterangan:

i1 = higher interest rate chosen
i2 = higher interest rate chosen
NPV1 = Positive NPV
NPV2 = Negative NPV

Marginal Average Revenue Return (MARR) is an indicator to state the feasibility of a business if IRR > MARR. MARR can be calculated with the following formula (Fathurohman, 2016):

$$MARR = (1+i) (1 + f) - 1 \dots\dots\dots (6)$$

Where,

i = investment interest rate
f = highest inflation

Payback Period (PP)

PP is the expected period of time to return the initial investment. Feasibility indicator is when the PP <= the business period. PP can be formulated as follows: (Fathurohman, 2016).

$$PP = \frac{Ia}{It} \times 1 \text{ year} \dots\dots\dots (7)$$

Where,

PP = Payback Period
Ia = Initial investment
It = Annual cash flow

Break Even Point (BEP)

Fathurohman (2016) stated that BEP is a point where the amount of production or sales that must be carried out so that the costs incurred are equal to the income obtained or the value at which the profit or profit received is zero. In other words, the point at which the amount of income will be equal to the total amount of expenditure. The formulation of BEP is as follows:

$$BEP \text{ Units} = \frac{FC}{P-VC} \dots\dots\dots (8)$$

Where,

FC = Fixed cost
P = Selling price per unit
VC = Variable cost per unit

Regression Analysis

The equation model for this research can be seen from the following equation:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e \dots\dots\dots (9)$$

Where,

X1 = Agricultural land area
X2 = Farming experience
X3 = The availability of labor
Y = The ownership of livestock
a = Intercept or constant
b1,2 = Regression coefficient
e = Standard Error

The T statistical test was also carried out to show how much influence an explanatory variable individually has in explaining variations in the dependent variable. The statistical formula for the t-test is as follows:

$$t_h = \frac{b_1}{SE(b_1)} \dots\dots (10)$$

Keterangan :

- th = calculated t value
b1 = Regression coefficient
SE (b1) = Standard error in regression coefficient

Hypothesis testing steps:

- H0 : $t_s < 0$: Shows that no influence between area, business experience and labor availability with livestock ownership
H1: $t_s > 0$: shows that there is an influence between land area, business experience and availability of labor on livestock ownership.

Decision criteria :

- If t-value > t table, and sig < 0,05 then H0 rejected and H1 accepted;
- If t-value < t table, and sig > 0,05 then H0 accepted and H1 rejected;
- Significance level = 5 %;
- distribution freedom (df) = n - 3.

III. RESULT AND DISCUSSION

Location Quotient (LQ) Analysis Result

The results of the LQ analysis using Formula (1) for the last 5 years (2017-2022) carried out in 30 sub-districts in Subang Regency, it was found that 2 sub-districts were the bases for beef cattle production, namely Cibogo District and Cipunagara District. From these 2 sub-districts, 3 villages were obtained, namely Padamulya Village and Wanasari Village in Cipunagara District and Sumur Barang Village in Cibogo District. Padamulya Village, Cipunagara District with an LQ value of 2.38, Wanasari Village, Cipunagara District with an LQ value of 3.26 and Sumur Barang Village, Cibogo District with an LQ value of 2.29. These three villages have an LQ value greater than 1 so these villages become the base and beef cattle have a competitive advantage compared to other livestock commodities.

Technical Parameters

Based on the results of interviews and discussions in 6 community beef cattle groups, the average type of cattle raised is Ongole crossbreed (PO) 91%, other types of cattle (Simental, limousine) 9% with an average maintenance period of 4.5 months. Forage is given twice a day, at 8-10 am and at 3-5 pm. The types of forage usually given are king grass, elephant grass, field grass, and "odot" type grass with an average of 19.87 kg/head/day with a price of around Rp. 500.00/kg (estimated from the amount of expenditure and labor wages), corn cobs as much as 2.3 kg/head/day with a price of around Rp. 400.00/kg, rice straw as much as 9.1 kg/head/day with a price of Rp. 250.00/kg. Concentrate feed is given in the afternoon or evening after giving 7 kg of grass/head/day at a price of around IDR 2,800.00/kg. The size of the pen owned for the fattening business is 20 m² with an average livestock ownership of 3-4 heads.

Economic Parameters:

a. Fixed Cost Analysis

Fixed costs in this study consist of depreciation costs, barn construction and barn maintenance. Depreciation costs

consist of the depreciation of concentrate feed equipment and spray equipment. The average depreciation costs can be seen in Table 1.

Table 1. Average Depreciation Cost

Cost Type	Value (Rp)
Concentrate feed equipment	9.540
Spray equipment	2.450
Total	11.990

Source: Primary data, processed (2022)

Based on Table 1, Shows that the average depreciation of concentrate feed equipment is IDR 9.538 and spray equipment is IDR 2.450. Hence, the average total depreciation cost is IDR 11.990. The total fixed costs can be seen in Table 2. As follows:

Table 2. Fixed Cost

Cost Type	Value (Rp)
Depreciation cost	11.990
Barn constructing cost	650.750
Barn maintainance cost	600.500
Total	1.263.240

Source: Primary Data, processed (2022)

Table 2. Shows that the average depreciation cost is IDR 11.990 and the cost of building the barn is IDR 650.750, and the cost of maintaining the barn is IDR 600.500, resulting in a total fixed cost of IDR 1.263.240.

b. Variable Cost Analysis

The variable costs in this research are based on the results of interviews and discussions as well as looking at the available data in each group. Variable costs include the costs of medicines and vaccines, animal feed costs, and labor costs. Details of costs can be seen in Table 3.

Table 3. Variable Cost

Cost Type	Value (Rp)
Vaccines and medicines costs	3.250.000
Feed cost	2.250.000
Labor cost	1.450.000
Total	6.950.000

Source: Primary Data, processed (2022)

Table 3 shows that the average cost of medicines and vaccines is IDR 3.250.000, the average feed cost is IDR 2.250.000, and the average labor cost is IDR 1.450.000. Thus it can be seen that the average total variable costs are IDR 6.950.000.

c. Revenue

Revenue of beef cattle farmers in 6 community beef cattle livestock groups in Subang district based on the average total of 2 head of cattle sold/year with an average total selling price of beef cattle of IDR 15.000.000/head with a profit per head of IDR 3.000.000 to 5.000.000 per head depending on the quality and weight of the cow. Thus, the average revenue received is IDR 30.500.000/year.

Investment costs are the costs incurred by farmers when starting a beef cattle fattening business. Investment costs include building a barn at the amount to IDR 7.100.000 while equipment costs amount to IDR 125.000 in the form of hoes, shovels, rakes, buckets, hoses and other construction equipment. Feeder cattle are obtained from direct purchases

from animal markets or from breeders in other groups and groups. Average ownership of 3 beef cattles with livestock maintenance costs of IDR 6.950.000.

The average feed cost is IDR 8.500.000. The feed given is in the form of king grass, elephant grass, field grass, and "odot" grass for IDR 500/kg, straw IDR 250/kg, corn cobs IDR 400/kg, and concentrate IDR 2.800/kg. The health costs incurred by the farmer depend on the expenses of the need for medicines and the costs of calling animal health personnel. The average total costs incurred are IDR 75.000 per person/year.

Labor costs are varied, consisting of providing forage, providing concentrate, providing water, cleaning the pen, bathing the cow, and hunting the forage. Each farmer carries out activities that require different amounts of time. Table 3. Shows the average feed costs incurred in the business amounting to IDR 2.250.000. The cost of repairing and maintaining the barn for beef cattle fattening businesses is IDR 600.500 per year.

Equipment costs are the costs of purchasing equipment incurred in one year when the business is running. The average equipment cost is IDR 69.000. The electricity costs incurred by farmers at the research location are IDR 120.000/month. Electricity is used to light the barn using lamps and other electronic equipment that supports the beef cattle farming business.

Financial Feasibility Criteria for Beef Cattle Business

Revenue from the beef cattle business is obtained from the sales of by-products in the form of wet feces and livestock waste products. The residual value of the barn is the final value of the barn after being used during maintenance for 5 years and is presented in Table 4.

Table 4. Projection of total business revenues

Year to-	Main Product revenue	By-Product revenue	Total Revenue
0	108.053.600	3.657.300	111.711.200
1	108.053.600	3.657.300	111.711.200
2	108.053.600	3.657.300	111.711.200
3	108.053.600	3.657.300	111.711.200
4	108.053.600	3.657.300	111.711.200
5	108.053.600	7.194.600	115.248.200

Source: Primary Data, processed (2022)

Beef cattle fattening business revenue is the difference between total revenue minus total costs. The estimated income from beef cattle fattening businesses from year to year in 6 groups in Subang Regency is presented in Table 5.

Table 5. Revenue of Beef Cattle Farming Business in Subang Regency

Year to-	Main Product revenue	By-Product revenue	Total Revenue
0	111.711.200	32.863.400	-32.863.400
1	111.711.200	93.590.200	18.121.000
2	111.711.200	94.740.700	16.970.400
3	111.711.200	94.740.700	16.970.400
4	111.711.200	94.740.700	16.970.400
5	111.711.200	94.740.700	20.507.500

Source: Primary Data, processed (2022)

Financial Feasibility of Beef Cattle Farming Business

The results of the feasibility analysis show using Formula (2) that a beef cattle fattening business with an ownership scale of three head per period and three head per year has an NPV value of IDR 31.250.000. This means that the present value received for 5 years at an interest rate of 12% is positive. From the NPV value, it can be concluded that this business is worth running. The feasibility indicator is if $NPV > 0$ then the business is worth running, if $NPV < 0$ then the business is not worth running, and if $NPV = 0$ then the business returns the same amount of money invested.

The results of the study using Formula (3) showed that the R/C ratio value is 3.6. When the R/C Ratio is below 1, the revenue received is greater than the costs incurred. Therefore, the beef cattle business is worth continuing to cultivate and run.

In the feasibility analysis of the B/C ratio (Formula 4), the B/C ratio value accounted for 2.5 and indicates that the received profits are greater than the costs incurred. Hence, the Beef cattle farming business is feasible and profitable to continue to develop.

The IRR value after calculating using Formula (5) and Formula (6) obtained in a beef cattle fattening business with ownership of three heads is 19.87% and the IRR value is greater than MIRR. It points out that the rate of return when investing capital in the business is greater than the prevailing interest rate, which is an average reference interest rate of 12%. From the IRR value obtained, it can be concluded that the business is feasible to run.

The payback period value from the calculation results using Formula (7) is 1.87 years, while the investment period is 5 years. A project or business will be better if the payback time for investment costs is faster. Furthermore, the amount of livestock sales is IDR 30.500.000. At this value, the breeder experiences a profit and also does not experience a loss.

The BEP value based on livestock units is based on calculations using Formula (8) resulting in 2.55 head. Farmers will gain profits if the farmers keep more than 2.55 head of livestock or the equivalent of 2.55 adult bulls, while the average ownership of smallholder farmers in Subang Regency is 3 head. The results of the financial feasibility analysis of beef cattle farming businesses in Subang Regency are shown in Table 6.

Table 6. Analysis of the financial feasibility of beef cattle farming in Subang Regency.

No	Description of financial feasibility analysis	Analysis Result
1	(NPV)	Rp. 31.250.000
2	R/C ratio	3.6
3	B/C ratio	2.5
4	(IRR)	19.87 %
5	(PP)	1.87 year
6	(BEP)	2.55 heads

Source: Primary Data, processed (2022)

The results of the financial feasibility analysis of the business shows that the beef cattle fattening business in Subang Regency with a business period of 4.5 months with a discount factor of 12% when viewed from all aspects shows that the beef cattle business is feasible to continue and develop. This research is in line with research (Fathurohman, 2020) which states that group-scale cattle farming

businesses in Subang Regency are still worthy of continuing to be developed by paying attention to policy and feed aspects.

Factors that Affected the Number of Beef Cattle Ownership

The results of multiple analyses (F Test) show that simultaneous testing of the independent variables, namely agricultural land area, level of education, business experience, and the number of available workers has a real influence on the dependent variable of number of livestock ownership. It can be seen that at a confidence level of 0.05, all independent factors together have a significant effect on the dependent variable with an R^2 of 0.341. The R Square value of 0.341 or 34.1% shows that 34.1% of the independent variables analyzed can explain the dependent variable, namely the number of livestock ownership, while the remaining 65.9 is explained by other factors outside the model which are not included in the analysis. The t-test shows a partial test of each factor or independent variable on the dependent variable.

The farmer age variable (X1) had no significant and negative effect on the number of livestock ($P < 0.01$). The regression coefficient value is -0.326, meaning that if age increases by one year, the number of livestock will decrease by 0.326 units. This can also be explained that when the age of the farmer increases, the number of livestock will decrease because the intensity and attention of the farmer begin to decrease in raising livestock.

The land area variable (X2) has a real and positive effect ($P < 0.01$). The regression coefficient value is 0.440, it is indicated that if the land area increases by 1 ha, the number of livestock will increase by 0.440 head. The land is an important factor as a source of feed. Farmers with large areas of land will try their best to increase the number of livestock because the carrying capacity of the land is sufficient and there is an adequate amount of feed for additional livestock.

The education level variable (X3) has an insignificant and positive effect. This means that being a breeder does not require a high level of formal education because low education is complemented by non-formal education and a breeder will become a superior breeder.

The farming experience variable (X4) has a real and positive effect on the number of livestock ($P < 0.01$). The regression coefficient value is 0.413, meaning that if farming experience increases by one year, the number of livestock will increase by 0.413 head, but additional business experience has a real effect on the number of livestock owners. Saleh et al., (2016) believe that beef cattle breeders have not made positive changes to improve the fattening operations that have been carried out. Lots of adequate experience but still manages the business with the same old habits from when he started the business until the present time.

The variable amount of family labor availability (X5) has a significant and positive effect ($P < 0.05$) on the number of livestock owners. This is because people's farms only use family labor. Mukson et al., (2018) said that the labor used in beef cattle farming generally still uses family labor and is mostly used for foraging activities which are usually carried out together with agricultural activities.

IV. CONCLUSION

The beef cattle fattening business in Subang Regency using a business period of 5 years with a discount factor of 12% is feasible and has the potential to continue to be developed by keeping a minimum of 3 heads. The results of the business financial analysis have an NPV value of Rp.

31.250.000,-, R/C ratio value of 3.6, B/C ratio value of 2.5, IRR value of 19.87%, payback period value of 1.87 years, and BEP value of 2.55 years beef cattle. Factors that have a real and positive influence on the number of livestock ownership are the area of agricultural land, farming experience, and labor. The results of all analyses of the financial feasibility of beef cattle farming businesses in Subang Regency are feasible to run and develop. The factors of agricultural land ownership, business experience, and the availability of family labor are factors that need to be considered to calculate the number of cows kept in smallholder livestock businesses. Suggestions from this research include beef cattle breeders continuing to work on and intensifying their beef cattle farming business and starting to make it their main business because the beef cattle farming business in Subang Regency has a high level of income so it is worth developing and can be used as their main job. It is hoped that the Subang Regency Government can assist in intensifying the beef cattle business so that it is feasible to develop and has better prospects in the future.

REFERENCES

- Bawinto, A., Mokoagouw, D. R., Elly, F. H., & Manese, M. A. . (2016). Break Even Point Analysis of Beef Cattle Livestock "Source of Life" Farmer Groups in Bintauna District, North Bolaang Mongondow Regency. *Zootec*, 36(2), 262-270. <https://doi.org/10.35792/zot.36.2.2016.11477>
- BPS Subang Regency. (2021). *Subang in Figures 2021*. <https://doi.org/10.17605/OSF.IO/8MBZ3>
- BPS Subang Regency. (2022). *Subang in Figures 2022*. <https://doi.org/32130.1601>
- BPS West Java Province. (2022). *West Java Province in Figures 2022*. <https://doi.org/0215-2169>
- Diatmojo, N., Emawati, S., & Sari, A. I. (2022). Financial Analysis of Fattening Male Holstein Friesian Cattle (PFH) in Selo District, Boyolali Regency. *Tropical Animal Husbandry*, 1(1), 43-51. <https://doi.org/10.17969/TAH.v1i1.21122>
- Fathurohman, F. (2016). *Introduction to Business. Perspective of Agroindustry and Agricultural Economics*. Tiga Maha. <https://doi.org/10.17605/OSF.IO/SJW97>
- Fathurohman, F. (2018). Analysis of Regional Development of Beef Cattle Farms in Subang Regency. *Jurnal Ilmiah Ilmu Dan Teknologi Rekayasa*, 1(2), 57-62. <https://doi.org/10.31962/jiitr.v1i1.34>
- Fathurohman, F. (2020). Pengembangan Agribisnis Sapi Potong Dalam Sistem Usahatani Tebu. *Jurnal Ilmiah Ilmu Dan Teknologi Rekayasa*, 3(1), 17-26. <https://doi.org/10.31962/jiitr.v3i1.65>
- Fathurohman, F., & Baharta, R. (2020). Feasibility Analysis of Complete Animal Feed Manufacturing Business with Group Scale Mechanization in Subang Regency. *Jurnal Agribisnis Terpadu*, 13(1), 58. <https://doi.org/10.33512/jat.v13i1.6774>
- Fathurohman, F., Bahata, R., Mukminah, N., & Purwasih, R. (2020). Feasibility Analysis of Concentrate Feed Business in Beef Cattle Corporation, Subang Regency. *Jurnal Pertanian Agros*, 22(1), 6-12. <https://doi.org/10.17605/OSF.IO/PW6MZ>
- Fathurohman, F., Sobari, E., & Mukminah, N. (2017). Human Resources Development Strategy In Brucellosis Diseases Monitoring at Sentra Peternakan Rakyat Cinagarabogo, Subang. *Advances in Health Sciences Research (AHSR), Volume 5 1st International Conference in One Health (ICOH)*

- 2017), 169–173. <https://doi.org/10.2991/icoh-17.2018.33>
- Herawati, M., Anwarudin, O., & Rumabuan, J. (2022). Feasibility Analysis of Beef Cattle Farming in Masni District, West Papua. *Prosiding Seminar Nasional Pembangunan Dan Pendidikan Vokasi Pertanian*, 3(1), 290–300. <https://doi.org/10.47687/snppvp.v3i1.313>
- Muhammad, A., & Yekti, G. I. A. (2019). Feasibility Analysis of Beef Cattle Cattle Business in Working Youth Groups li (Case Study in Kendit Village, Kendit District, Situbondo Regency). *Agribios*, 17(2), 51. <https://doi.org/10.36841/agribios.v17i2.616>
- Mukson, Marzuki, S., Sari, P. I., & Setiyawan, H. (2018). Factors Influencing the Development Potential of People's Beef Cattle in Kaliore District, Rembang Regency, Central Java. *Agric. Indonesian Journal Animal Tropic*, 33(4), 305–312. <https://doi.org/10.25157/ijat.v30i4.305312>
- Poetri, N. A., Basith, A., & Wijaya, N. H. (2016). Feasibility Analysis for the Development of KUNAK Dairy Farming Business (Case Study of Livestock Business Lot 176, Pamijahan Village, Bogor Regency). *Jurnal Manajemen Dan Organisasi*, 5(2), 122. <https://doi.org/10.29244/jmo.v5i2.12147>
- Ramdhani, E. F., Wulandari, S. Z., Darmawati, D., & Subur. (2022). Feasibility Study Analysis of Village Fund Business in Cattle Fattening Business in Karanglewas Kidul Village, Banyumas Regency. *Rural Tourism and Creative Economy to Develop Sustainable Wellness* 2022, 1, 600–612. <http://jp.feb.unsoed.ac.id/index.php/myc/article/viewFile/3073/2049>
- Sahala, J., Widiati, R., & Baliarti, E. (2016). Feasibility Analysis of Simmental Ongole Crossbred Cattle and Factors Influencing on Cattle Ownership of Small Scale Farm in Karanganyar District. *Buletin Peternakan*, 40(1), 74. <https://doi.org/10.21059/buletinpeternak.v40i1.9823>
- Saleh, E., Yunilas, & Sofyan, Y. H. (2016). Income Analysis of Beef Cattle Farmers in Hamparan Perak District, Deli Serdang Regency. *Jurnal Agribisnis Peternakan*, 12(1), 36–42. <https://doi.org/10.26257/JAP.v12i1.3642>
- Steflyando, R., Abubakar, & Saleh, A. (2014). Feasibility Analysis of Beef Cattle Business Using Zero Waste Farming Method. *Jurnal Teknik Industri Itenas*, 4(1), 226–237. <https://doi.org/10.21157/jtii.v4i1.22856>
- Taek, T. S. R., Lole, U. R., & Keban, A. (2021). Feasibility Analysis of Beef Cattle Business in Raimanuk Sub-District of Belu. *Nukleus Peternakan*, 8(1), 14–22. <https://doi.org/10.17969/nukleus.v8i1.21322>