

Research Article

The Effect of Farmer Factors on Doing the Partnership System Growth of Beef Cattle Business

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ABSTRACT

The beef cattle breeding business partnership system has been applied a long time ago by breeders in Bone Regency, better known as the *teseng* system. The objectives of this study are: (1) to describe the factors of breeders conducting a beef cattle business partnership system; (2) to describe the growth of beef cattle business through a partnership system; and (3) analyzing the influence of breeder factors in implementing a partnership system on the growth of beef cattle breeding business. This type of research is descriptive and explanatory research. The number of samples were 150 breeders spread in Libureng, Patimpeng, and Kahu Districts of Bone Regency of South Sulawesi Province which were carried out by simple random sampling. Data collection was carried out through interviews with the help of questionnaires and analyzed using descriptive statistics and path analysis. This study shows the results that: (1) breeders agree to the implementation of the beef cattle business partnership system; (2) there is a difference in the growth of beef cattle business through a partnership system for each farmer; (3) internal factors of breeders, external factors of breeders, and factors of the partnership system have a significant effect on the growth of beef cattle farming business both directly and indirectly; and (4) internal factors of breeders are more dominant in determining the growth of beef cattle breeding business in Bone Regency.

Keywords: Internal factors, External factors, Partnership systems, Business growth, Breeders, Beef cattle**INTRODUCTION**

The development of the livestock world today has been very rapid along with the development of science and technology. Animal husbandry business as one of the fields of agriculture is able to sustain the economic activities of the community. Every year the community's need for livestock products is always increasing, this is due to increasing public awareness of the importance of nutritional value for health, especially animal protein. Beef cattle farming is one of the businesses that has the potential to produce meat as a relatively higher source of protein. The need for beef is currently supplied from community farms which are the main focus, so efforts are needed to increase beef cattle population and productivity. Most beef cattle farms in Indonesia consist of small-scale smallholder farming, but have a significant contribution to the lives of farmers. Smallholder breeding business is still dominated by small farmers and has not yet reached an economically oriented business. The low level of livestock productivity is more due to lack of venture capital or lack of opportunities to obtain capital in developing their business.^[1] Livestock business in Indonesia is dominated by small-scale smallholder farms. Livestock business is still a side business that is not balanced with adequate capital and

management. Some beef cattle breeders conduct livestock business in partnership^[2]. The profit sharing system leads to business partnership, in accordance with Government Regulation of the Republic of Indonesia Number 06 of 2013 "Business partnership is a mutually beneficial and mutually reinforcing cooperation between small businesses and medium/large businesses in the field of animal husbandry and animal health. Farmers can conduct business partnerships in the field of animal husbandry based on agreements that need each other, strengthen, benefit, respect, take responsibility, dependence, and be fair. In the event of loss of livestock or death of livestock due to neglect of grazing caused by the act of human crime outside the grazing land owned by farmers, farmers must compensate the owners of capital.^[3] According to Rohani et al., 2020, that one of the efforts to protect and improve smallholder livestock business, the government encourages farmers to collaborate through partnerships with capital owners through partnership patterns to increase farmer's incomes.^[4] In South Sulawesi, the beef cattle breeding business partnership system better known as the *teseng* system is one of the local institutions that prevails in the community. One of the districts in South Sulawesi that is still implementing the *teseng* system is Bone Regency,

which is one of the districts which is the center of beef cattle development. Many breeders in Bone Regency who want to do livestock business but are constrained in capital, so they find a way to do the test system. *Teseng* system is a pattern of profit sharing between the owner of the capital and the breeder. The capital owner (*Ma'teseng*) provides capital in the form of cattle to the breeder (*pa'teseng*) who wants to raise cattle with an agreement that has been agreed in advance, from the agreement both parties can be said to get the same or balanced profit. The test system that was carried out there was no written agreement or contract that was mutually agreed upon, between the capital owner and the farmer only made a verbal agreement in cooperation without a contract. The collaboration is based on the principle of mutual trust, and usually the breeder is a person who is well known by the owner of the capital or introduced by relatives.

Even though the obstacles and risks of loss in the *teseng* system still exist, however, the *teseng* system is still implemented by farmers so that the beef cattle business can grow and develop until now. This is due to the factors that influence farmers to do the testing system. The objectives of this study are: (1) to describe the factors of breeders conducting a beef cattle business partnership system; (2) to describe the growth of beef cattle business through a partnership system; and (3) analyzing the influence of breeder factors in implementing a partnership system on the growth of beef cattle breeding business.

RESEARCH METHODS

This research was conducted in Bone Regency, especially in the Libureng, Patimpeng, and Kahu Districts. This type of research is descriptive and explanatory research. The sampling technique was carried out by simple random sampling of 150 breeders spread in Libureng, Patimpeng, and Kahu Districts. Data collection was carried out through interviews with the help of questionnaires. The data collected was analyzed using descriptive statistics and path analysis. The factors of breeders conducting a beef cattle breeding business partnership system as exogenous variables are as follows: (1) The internal factors variables are: breeder's age, breeder's education, experience of breeders, and behavior of breeders; (2) External factor variables consist of: beef cattle business opportunities, farmer group support, agricultural

extension support, and natural resource support; and (3) Variable factors of partnership system consist of: mechanism and implementation of partnership system, partnership request from the capital owner, trust and responsibility to maintain beef cattle, and interdependence between the capital owner and the breeder. The measurement of the independent variable uses a Likert scale, namely score 1 to 3 with category 1 = disagree; 2 = less agree; and 3 = agree as measured by class ranges are as follows:

Highest score = Highest weight x number of respondents x number of questions

$$(3) \times (150) \times (4) = 1800$$

Lowest score = Lowest weight x number of respondents x number of questions

$$(1) \times (150) \times (4) = 600$$

$$\text{Class Range} = \frac{\text{Highest score} - \text{The lowest score}}{\text{Number of Classes}} = \frac{1800 - 600}{3} = 400$$

The class range is created as a value category as follows:

$$\text{Agree} = 1400 - 1800$$

$$\text{Less agree} = 1000 - 1400$$

$$\text{Disagree} = 600 - 1000$$

The growth variable of beef cattle farming as an endogenous variable is the number of beef cattle obtained from the partnership system, both male and female cattle. The hypothesis proposed structurally can be illustrated through the relationship between variables. In the diagram of internal factors (X_1), external factors (X_2), and partnership system factors (X_3) are influential on the growth of beef cattle business (Y). To find out how much exogenous variables can affect the growth of beef cattle business, then it is tested by statistical analysis of the pathway stated in the structural equation as follows: ^[5]

$$Y = P_{YX_1} X_1 + P_{YX_2} X_2 + P_{YX_3} X_3 + P_{Y\epsilon} \epsilon \dots\dots$$

(Sarwono, 2007).

Notes:

$$Y = \text{Growth of beef cattle business}$$

$$P_{YX_1} X_1 = \text{Path coefficient of internal factors}$$

$$P_{YX_2} X_2 = \text{Path coefficient of an external factor}$$

$$P_{YX_3} X_3 = \text{The path coefficient of the partnership system factor}$$

$$P_{Y\epsilon} \epsilon = \text{Path coefficient of residue}$$

$$\text{With operational } X \text{ is } H_0 = P_{X_1X_i} \leq 0 \text{ with } H_1 = P_{X_1X_i} > 0 ; i = 1,2,3$$

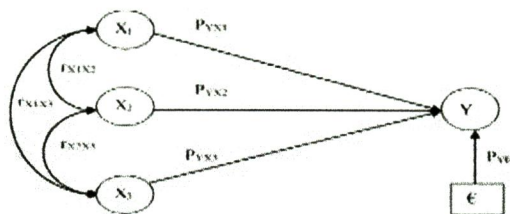


Fig.1: Structure of Relationships between Variables X₁, X₂, and X₃ with Variables Y

The structure of relationships between variables in Figure 1 is a path diagram consisting only of a sub-structure and is also a complete structure, which contains three exogenous variables namely X₁, X₂, X₃, and an endogenous variable namely Y.

RESULTS AND DISCUSSION

Description of Research Variables

The description of the research variables is explained by describing each variable both

exogenous variables (X₁, X₂, and X₃) and endogenous variables (Y) are described as follows.

Internal Factors of Farmers

Internal factors of breeders are the responses expressed by farmers to the partnership system in Bone Regency based on the conditions of the breeders themselves. Description of the internal variables of breeders conducting a partnership system consisting of: age of breeders, breeder’s education, experience of breeders, and breeder behavior described as in Table 1 below.

Table 1: Response to Internal Factors of Farmers Conducting Beef Cattle Business Partnership System in Bone Regency.

o	Internal Factors of Farmer Factors	Score	Frequency (Person)	Percentage (%)	Weight (score x frequency)
1.	Age of breeders				
	Agree	3	114	76	342
	Less agree	2	36	24	72
	Disagree	1	0	0	0
Total			150	100	414
2.	Farmer education				
	Agree	3	102	68	306
	Less agree	2	48	32	96
	Disagree	1	0	-	0
Total			150	100	402
3.	Breeding experience				
	Agree	3	113	75	339
	Less agree	2	37	25	74
	Disagree	1	0	-	0
Total			150	100	413
4.	Behavior of breeders				
	Agree	3	107	71	321
	Less agree	2	43	29	86
	Disagree	1	0	0	0
Total			150	100	407
Total Score					1636

The results of the study in Table 1 show that the response of farmers to internal factors in conducting a partnership system consisting of age of farmers, education of farmers, experience of farmers, and behavior of farmers with a total score of 1636 are in the agreed category value (1400-1800). With the results of this study it can be said that beef cattle breeders do a partnership system because of the encouragement from within the breeders themselves. Internal factors of breeders in

the beef cattle business partnership system in Bone Regency have good entrepreneurial skills in developing their beef cattle business. Internal factors for breeders are very much needed in managing and developing beef cattle business, which in turn gives benefits to farmers. Farmers as a resource must develop their abilities in managing beef cattle businesses effectively and efficiently. ^[6]

External Factors of Farmers

External factors for farmers are the responses expressed by farmers to the partnership system in Bone Regency based on the environmental conditions around the farmers. The description of the external variables of the breeder doing a

partnership system consisting of: beef cattle business opportunities, farmer group support, agricultural extension support, and natural resource support are described as in Table 2 below.

Table 2: Response to External Factors Farmers Conduct Beef Cattle Business Partnership System in Bone Regency.

No	Farmer External Factor Variable	Score	Frequency (Person)	Percentage (%)	Weight (score x frequency)
1.	Beef cattle business opportunities	3	95	63	285
	Agree	2	55	37	110
	Less agree	1	0	0	0
	Disagree				
Total			150	100	395
2.	Support of livestock farmer groups	3	120	80	360
	Agree	2	30	20	60
	Less agree	1	0	-	0
	Disagree				
Total			150	100	420
3.	Support of agricultural extension workers	3	78	52	234
	Agree	2	72	48	144
	Less agree	1	0	-	0
	Disagree				
Total			150	100	378
4.	Natural resources	3	120	80	360
	Agree	2	30	20	60
	Less agree	1	0	-	0
	Disagree				
Total			150	100	420
Total Score					1613

The results of the study in Table 2 show that the response of farmers to external factors conducting a partnership system consisting of beef cattle business opportunities, support of farmer groups, support of agricultural extension workers, and support of natural resources with a total score of 1613 are in the agreed category value (1400–1800). With the results of this study it can be said that beef cattle breeders do a partnership system because of the support of the environment around the farmers. Supporting external factors for farmers is very much needed by farmers as positive drivers to start their beef cattle business. Farmers often get inspiration to start a beef cattle business from seeing the success that has been achieved by other farmers. With the support from external factors, it is expected that beef cattle breeding business is expected to provide new hope for increasing farmer's income. According to Hoddi et al. (2011), that the current development of livestock business is a positive thing and a new

hope for improving the welfare of livestock farmers, of course, with increased income. This of course must be accompanied by an appropriate management of farm business management, both on the technical side and in marketing management.^[7]

Partnership System Factors

The partnership system factor is the response expressed by farmers to the partnership system prevailing in Bone Regency based on the mechanism and implementation of the beef cattle business partnership system. The description of the partnership system variable consists of: the mechanism and implementation of the partnership system, the partnership request from the capital owner, the trust and responsibility of raising beef cattle, as well as the interdependence between the capital owner and the breeder, which is described as in Table 3 below.

Table 3: Farmers Response to Beef Cattle Business Partnership System Factors in Bone Regency.

No	Partnership System Factor Variables	Score	Frequency (Person)	Percentage (%)	Weight (score x frequency)
1.	Mechanism and application of the partnership system				
	Agree	3	127	85	381
	Less agree	2	23	15	46
	Disagree	1	0	0	0
Total			150	100	427
2.	Partnership requests from capital owners				
	Agree	3	104	69	312
	Less agree	2	37	25	74
	Disagree	1	9	6	9
Total			150	100	395
3.	Trust and responsibility of raising beef cattle				
	Agree	3	114	76	342
	Less agree	2	30	20	60
	Disagree	1	6	4	6
Total			150	100	408
4.	Mutual dependence between capital owners and farmers				
	Agree	3	96	64	288
	Less agree	2	49	33	98
	Disagree	1	5	3	5
Total			150	100	391
Total Score					1621

The results of the study in Table 3 show that farmer's responses to the factors of the partnership system which consisted of the mechanism and implementation of the partnership system, requests for partnerships from the owners of capital, trust and responsibility for raising beef cattle, as well as the interdependence between the owners of capital with the farmers with a total score of 1621 are in the agreed category value (1400-1800). With the results of this study it can be said that the prevailing beef cattle business partnership system in Bone Regency is in accordance with the wishes of the beef cattle breeders. The mechanism applied to the *teseng* system is very easy and mutually beneficial between livestock owners and breeders. *Teseng* system is a concept of agreement based on aspects of trust between livestock owners and breeders in raising their livestock. Beef cattle breeders in Bone Regency feel the *teseng* system is very appropriate to be applied in the lives of farmers. The characteristics of the Bugis community who uphold the attitude of mutual trust are very influential in

the successful implementation of the *teseng* system, moreover the *teseng* system can be said as a social investment for livestock owners to those who maintain their livestock. According to Rohani et al., 2019 that the result sharing system is a concept of profit sharing that is very easy to understand and apply because in addition to easy application because it does not require complicated requirements it is also very easy to accept because this system can be said to be rooted in local community life and is very beneficial between livestock owners and breeders or people who care for livestock.^[8]

Growth of Beef Cattle Business

The growth of beef cattle farms is beef cattle that are received or produced by breeders during a partnership system in the form of both male and female beef cattle. Business growth through beef cattle received by farmers during the partnership system is described in the following Table 4.

Table 4: Beef Cattle Received by Farmers Perform a Partnership System in Bone District.

No	Beef Cattle Received by Breeders (Tail)	Frequency (Person)
1.	3 – 4	27
2.	5 – 6	105
3.	7 – 8	18
Total		150

The results of the study in Table 4 show that the number of beef cattle produced by farmers through a partnership system is different for each farmer. Depending on the number of cattle cooperated with the capital owner. The more livestock are cooperated, the greater the potential for sharing of livestock. Beef cattle farming business is growing rapidly in Bone Regency, aside from being a main business as well as a side business. Even among the breeders who at the beginning of their business were only a side business, they gradually became the main business along with the development of the beef cattle business. In general, beef cattle breeding business in Bone Regency is a people's farm. Generally, farmers have beef cattle populations ranging from 1-7. According Siregar (2009) that farmers who have 1-2 beef cattle are traditional beef cattle business.^[9] Meanwhile, according to Bessant (2005) that the scale of ownership of beef cattle farmers-breeders who have the status as community farms, are grouped into 3 parts, namely small scale (1-5 tails), medium scale (6-10 tails) and large scale (> 10 tails).^[10]

Effect of Factors on Farmers Conducting a Partnership System on the Growth of Beef Cattle Business

Internal factors of breeders (X_1), external factors of breeders (X_2), and factors of partnership systems (X_3) are influential on the growth of beef cattle breeding business (Y). To find out the magnitude of the influence of exogenous variables on endogenous variables, a statistical test of the path analysis is stated in the following equation:

$$Y = P_{YX_1} X_1 + P_{YX_2} X_2 + P_{YX_3} X_3 + P_{Y\epsilon} \epsilon$$

Notes :

- Y = Growth of beef cattle business
- $P_{YX_1} X_1$ = Path coefficient of internal factors
- $P_{YX_2} X_2$ = Path coefficient of an external factor
- $P_{YX_3} X_3$ = The path coefficient of the partnership system factor
- $P_{Y\epsilon} \epsilon$ = Path coefficient of residue

With operational X is $H_0 = P_{X_1 X_i} \leq 0$ dengan $H_1 = P_{X_1 X_i} > 0 ; i = 1,2,3$

To prove this hypothesis an analysis of the research data is presented in Table 5.

Table 5: Statistical Test Results for Path Analysis of Influence of Variables X_1 , X_2 and X_3 on Y Variables

Parameter Structure	Path coefficient	Correlation coefficient (r)	T_{count}	Sig.	Decision
X_1 with respect to Y	0,460	0,468	3,968	0,000	Significant
X_2 with respect to Y	0,401	0,416	3,410	0,001	Significant
X_3 with respect to Y	0,440	0,449	3,838	0,000	Significant
Multiple R = 0,878; R Square = 0,792; Sign = 0,000; F Count = 49,781					
Residue Path = 0,208.					

Note: Significant at $\alpha = 0.05$.

Table 5 shows that the statistical test results of the path analysis of the influence of variables X_1 , X_2 and X_3 on the Y variable can be explained as follows:

1. Internal factors of breeders (X_1) significantly influence the growth of beef cattle breeding business (Y) which is shown at a significant value (sig.) of 0,000. This value is smaller than $\alpha = 0.05$ ($0.000 < 0.05$). This means, that the growth of beef cattle business is due to internal factors within the breeders themselves. According to Rohani et al. (2018), that the internal factors of farmers are needed in managing and developing beef cattle business, which in turn gives

benefits to farmers. Farmers as a resource must develop their abilities in managing beef cattle businesses effectively and efficiently.

2. External factors of farmers (X_2) significantly influence the growth of beef cattle breeding business (Y) which is shown at a significant value (sig.) of 0.001. This value is smaller than $\alpha = 0.05$ ($0.001 < 0.05$). This means, that the growth of beef cattle breeding business is due to external factors from the environment around farmers who provide encouragement to further improve their beef cattle farming business. Supporting resources both human resources (family labor, capital owners, and agricultural

extension workers) and natural resources (pasture and forage sources of animal feed) play an important role in developing beef cattle business. According to Rohani et al. (2020), various approaches have been carried out in an effort to align with the business activities of farmers and operationally demanded to be able to optimally utilize the potential of natural resources to sustain the acceleration and synchronization of various aspects of development programs that have been carried out. Various attempts have been made both from the government in the form of beef cattle population improvement programs and those carried out by farmers themselves through a partnership system.^[11] The partnership system factor (X₃) significantly influences the growth of beef cattle business (Y) which is shown at the significant value (sig.) of 0.000. This value is smaller than $\alpha = 0.05$ ($0.000 < 0.05$). This means, that the growth of beef cattle breeding business occurs because farmers are aware and able to take advantage of this partnership system in which the mechanism and its application can be accepted by farmers. The beef cattle business partnership system pays attention to the principle of mutual need, mutual benefit between the capital owner and the breeder. In addition, the beef cattle business partnership system is intended to increase the empowerment of beef cattle breeders, and help breeders's capital. According to Amrullah et al. (2018), that one alternative effort to overcome obstacles in beef cattle business can be done through a partnership system. The application of the teseng system is based on mutual trust and mutual assistance between the capital owner and the farmer who verbally enters into a cooperative agreement without a cooperation contract, so an informal norm is needed that allows for cooperation between the capitalist and the farmer.^[12] To determine which variable is most influential among the variables X₁, X₂ and X₃ against the Y variable, an analysis method is used that compares the magnitude of the path coefficients between each variable X₁, X₂ and X₃. From the results of the path coefficients of each

variable X₁, X₂ and X₃, the internal factors of breeders (X₁) which have the highest path coefficient of 0.460 and then followed by the variable system partnership (X₃) of 0.440 and the external factors of breeders (X₂) of .401. Thus the internal factors of farmers have a large and significant influence on the growth of beef cattle farms in Bone Regency. The strong influence and magnitude of the contribution of exogenous variables to endogenous variables together can be seen in the values of R and R². Table 5 shows that the R value of 0.878, this means that the internal factors of breeders (X₁), external factors of breeders (X₂) and partnership system factors (X₃) have a significant influence on the growth of beef cattle business. While R² value of 0.792 means that the influence or magnitude of the percentage contribution of variables X₁, X₂ and X₃ together affect the ups and downs of beef cattle business growth of 79.2%, while the remaining 20.8% is influenced by other factors outsider the model used in this study. To find out the effect of variables X₁, X₂ and X₃ on the Y variable together, an F (F.Test) test was performed in this analysis by comparing the value of F_{count} with the value of F_{table}. If the F_{count} is greater than the F_{table} value, the variables X₁, X₂ and X₃ together have a very significant effect on the Y variable. Table 5 shows that the F_{count} value is 49.781 while the F_{table} value is 1.58, meaning the F_{count} is greater than F_{table} ($49.781 > 1.58$) or significant value ($0,000 < \text{confidence level value } (0.05)$). This shows that the variable internal factors of farmers (X₁), external factors of farmers (X₂) and factors of the partnership system (X₃) together have a significant effect on the growth of beef cattle breeding business in Bone Regency. So that the path analysis equation can be formed as follows:
 $Y = 0,460X_1 + 0,401X_2 + 0,440X_3 + 0,208\epsilon$

Calculation of Influence

To find out which exogenous variables contribute the most dominant influence in determining the increase in endogenous variables, it can be seen from the magnitude of the total influence contribution given by each exogenous variable as presented in Table 6.

Table 6: The magnitude of the effect of Variables X1, X2, and X3 on the Y variable.

Exogenous Variables	The Amount of Contribution of Influence of Variables X ₁ , X ₂ , and X ₃ to Variable Y				Total
	Direct	Through X ₁	Through X ₂	Through X ₃	
X ₁	0,460	-	0,468	0,449	1,377
X ₂	0,401	0,468	-	0,416	1,285
X ₃	0,440	0,449	0,416	-	1,305

Table 6 shows that the magnitude of the influence exerted by the internal factors of breeders (X₁) of 1.377 is relatively greater compared to the

influence of the factors of partnership (X₃) of 1.305 and external variables of farmers (X₂) of 1.285. Thus the internal factors of breeders are more

dominant in determining the growth of beef cattle farms in Bone Regency. Furthermore, the results of

the path analysis can be described as in Figure 2 below.

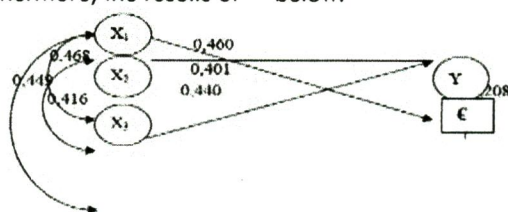


Fig.2: Results of Variable Path Diagrams X1, X2, and X3 with Y Variables

CONCLUSION

The conclusions of this study are: (1) breeders agree to the implementation of a partnership system consisting of variables (a) internal factors, (b) external factors, and (c) beef cattle business partnership system factors; (2) there is a difference in the growth of beef cattle business through a partnership system for each farmer; (3) internal factors of breeders, external factors of breeders, and factors of the partnership system have a significant effect on the growth of beef cattle farming business both directly and indirectly; and (4) internal factors of breeders are more dominant in determining the growth of beef cattle breeding business in Bone Regency.

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