Differences in characteristics of farmers who do and do not conduct a beef cattle business partnership system (teseng)

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Abstract. The character of farmers has an important role in running a beef cattle business with a teseng system carried out between farmers and capital owners who provide cattle for and are cultivated. This study aims to determine differences in the characteristics of farmers who do with those who do not do the teseng in Patimpeng District, Bone Regency. This research was conducted with a sample of 50 people beef cattle farmers. A simple random sampling technique was done through interviews and analyzed using descriptive statistics. The results showed that the characteristics of farmers who did the teseng aged from 39 to 47 years, all were male, the most recent education was high school/equivalent, the majority of family members numbered 4 to 6 people, most had cattle 4 to 6 tails, and have been raising for 10 to 15 years. The characteristics of farmers who do not do the teseng aged 48 to 56 years old, all are male, the most recent education is high school/equivalent, the number of family members is mostly 1 to 3 people, most have cattle from 4 to 6 tails and have been raising for 10 to 15 years.

1. Introduction
The development of the livestock sub-sector is currently faced with challenges as well as business opportunities with the increasing demand for beef caused by a growing population and increasing public awareness of nutritious food. On the other hand, the condition of the livestock sub-sector has not been able to meet the needs of the community, so the government is still importing feeder cattle and meat from several countries.

Beef cattle farming is one of the businesses in the livestock sub-sector that is expected to be able to meet the needs of beef and be able to improve the welfare of farmers and their families. Beef cattle can be used as an alternative engine driving the economy of the community in rural areas. Beef cattle farming business in rural areas is still largely a peoples farm that is traditionally raised together with food crops and plantations. In general, animal husbandry farmers have a low level of technology adoption[1], difficult and limited market access, low managerial ability, and have limited capital. In addition, community farms have a maintenance pattern consisting of two parts, namely breeding patterns as breeding and raising cattle to be fattened.

Efforts to harmonize community farms carried out by farmers, various efforts have been made both by the government through beef cattle population improvement programs and those carried out by
farmers and non-governmental organizations through a partnership system program. One of the efforts to protect and improve the people's livestock business, the government encourages farmers to collaborate through partnerships with capital owners through partnerships to increase farmers’ incomes. The partnership pattern in Patimpeng District, Bone Regency is better known as the teseng system. Teseng system applies the pattern of profit-sharing carried out between the capitalists and farmers. Capital providers provide capital in the form of beef cattle to farmers to be raised. The provision of capital in the form of beef cattle by the owner of the cattle to the farmer there is no written agreement or contract that is mutually agreed upon, between the giver of the capital and the farmer only makes a verbal cooperation agreement without a contract. The collaboration is based on the principle of mutual trust, and usually, the farmer is a person who is well known by the giver of capital or introduced by relatives. According to[2], that the teseng system is a revenue-sharing concept that is very easy to understand and apply because in addition to easy application it also does not require complicated requirements and this profit-sharing system has been around for a long time in the lives of farmers communities.

To increase their family income, the management of the beef cattle business in the teseng system is also expected to be able to increase the productivity of beef cattle which until now has not been able to meet the community need for beef which continues to increase from year to year[3]. The implementation of the teseng system has long been carried out by farmers in Patimpeng District, Bone Regency until now only with trust capital and the tendency of capital owners to see the character of individual farmers who uphold honesty in managing the beef cattle business. This study aims to determine the characteristics of farmers who do and do not do the teseng system in the beef cattle business in Patimpeng District, Bone Regency.

2. Material and methods
This research was conducted from May to July 2019 in Patimpeng District, Bone Regency. This research was conducted with a sample of 50 farmers consisting of 30 people who did and 20 people who did not do the teseng system. Simple random sampling techniques were collected through interviews and analyzed using descriptive statistics[4].

The variables of this study were the characteristics of farmers who do or do not do the teseng system consisting of: age, sex, level of education, number of family members, the scale of the beef cattle business, and experience of breeding.

3. Results and discussion
Differences in the characteristics of farmers who do and do not do the teseng systems in beef cattle business in Patimpeng District, Bone Regency are described as follows:

3.1. Age of farmers
Age is one of the factors that can affect the productivity of farmers. The ability to manage a livestock business, farmers are influenced by age, because with age there will be a decrease in productivity. Differences in the characteristics of farmers who do and do not do the teseng system based on age in Patimpeng District, Bone Regency are presented in table 1.

| Number | Age Classification of Farmers (Years) | Who Conducts the Teseng System (People) | Who Does Not Do The Teseng System (People) |
|--------|--------------------------------------|----------------------------------------|------------------------------------------|
| 1.     | 20 – 29                              | 1                                      | 2                                        |
| 2.     | 30 – 38                              | 2                                      | 1                                        |
| 3.     | 39 – 47                              | 18                                     | 5                                        |
| 4.     | 48 – 56                              | 6                                      | 10                                       |
Table 1 shows that farmers who do the *teseng* system are mostly between 39 and 47 years old, while farmers who do not use the *teseng* system are mostly 48 to 56 years old. It can be said that beef cattle farmers in Patimpeng District, Bone Regency are still in the productive age group to do work or run beef cattle farming business, both those that do and do not do the *teseng* system. The ability of farmers to work is greatly influenced by age factors, the range of productive age is 15-56 years and the old age of 57 years and above is closely related to the process of adopting innovations that are very important in efforts to increase productivity but does not affect the scale of the beef cattle business.

According to [5], the age of the farmer has no effect on the scale of the business because the farmers of productive age pay more attention to their farming than the livestock business. Meanwhile, according to [6], productive farmers usually have a dynamic mindset and excellent physical abilities in managing their livestock business.

### 3.2. Gender

The difference between the sexes of farmers and their characteristics is the natural condition and nature of the creator. Man and women have different physical strengths that differently impact work outcomes. Differences in the characteristics of farmers who do and do not do the *teseng* system based on sex in Patimpeng District, Bone Regency are presented in table 2.

Table 2. Differences in characteristics of farmers who do and do not perform a *teseng* system based on gender

| Number | Gender | Who Conducts the *Teseng* System (People) | Who Does Not Do The *Teseng* System (People) |
|--------|--------|-----------------------------------------|--------------------------------------------|
| 1.     | Male   | 30                                      | 20                                         |
| Total  |        | 30                                      | 20                                         |

Source: Processed Research Result Data, 2019.

Table 2 shows that there is no difference in the characteristics of farmers who do and do not do the *teseng* system in the beef cattle business in Patimpeng District, Bone Regency, all of them are male. This condition can occur because the beef cattle business in its management requires more energy and decision making in the family is decided by the head of the family, which is predominantly male. However, the implementation sometimes involves family workers from women. According to [7], the right handling and the right placement of work positions will also increase the effectiveness and productivity as a trigger for the success of a business and the work productivity of men is higher when compared to women. This is supported by the opinion [8], the right handling and the right placement of work positions will also increase the effectiveness and productivity as a trigger for the success of a business.

### 3.3. Level of education

One indicator that can reflect the ability of farmers to be able to complete work is the level of education. The education factor is expected to be able to help farmers in efforts to increase production and productivity of livestock. A high level of education will certainly have an impact on the ability of beef cattle business management. Differences in the characteristics of farmers who do and do not use a *teseng* system based on their level of education in Patimpeng District, Bone Regency are presented in table 3.
Table 3. Differences in characteristics of farmers who do and do not perform a teseng system based on the education level

| Number | Level of Education           | Who Conducts the Teseng System (People) | Who Does Not Do The Teseng System (People) |
|--------|-----------------------------|----------------------------------------|-------------------------------------------|
| 1.     | Elementary school / Equivalent | 0                                      | 1                                         |
| 2.     | Middle school / Equivalent   | 8                                      | 5                                         |
| 3.     | High School / Equivalent     | 19                                     | 12                                        |
| 4.     | Higher Education / Equivalent| 3                                      | 2                                         |
|        | Total                        | 30                                     | 20                                        |

Source: Processed Research Result Data, 2019.

Table 3 shows that the majority of farmers are in the education level of high school/equivalent, both those who do and those who do not do the teseng system. Beef cattle farmers in Patimpeng District, Bone Regency still assume that the livestock business does not need a high level of education. In adopting, the farmers only rely on experience and see existing livestock businesses. This shows that farmers’ awareness of the importance of education is still low, but does not limit them to adopt innovations. Farmers in Patimpeng District, Bone Regency who carry out the teseng system assume that to carry out the teseng system they do not have to go through higher education. It is enough to rely on the experience and view of beef cattle improvement. It can be seen from the research results obtained by farmers who do the teseng system without going through a bunch of higher education. Based on their assumption, it needs to be given an explanation that the importance of education can affect farmers in their attitude, having perspective and ability and is one of the supporting factors in developing beef cattle business. According to [9], that education greatly influences one's mindset, especially in decision making and management regulators in managing a business.

3.4. Number of family members

The number of family members is the number of family members owned and the responsibility of the farmer. A large number of family members can have a positive impact on the business of raising beef cattle because family members owned can be used as labor. Differences in the characteristics of farmers who do and do not do a teseng system based on the number of family members in Patimpeng District, Bone Regency are presented in table 4.

Table 4. Differences in characteristics of farmers who do and do not perform a teseng system based on the number of family members

| Number | Number of Family Members (People) | Who Conducts the Teseng System (People) | Who Does Not Do The Teseng System (People) |
|--------|----------------------------------|----------------------------------------|-------------------------------------------|
| 1.     | 1 – 3                            | 7                                      | 14                                        |
| 2.     | 4 – 6                            | 16                                     | 3                                         |
| 3.     | 7 – 9                            | 5                                      | 3                                         |
| 4.     | 10 – 12                          | 0                                      | 0                                         |
| 5.     | 13 – 15                          | 2                                      | 0                                         |
|        | Total                            | 30                                     | 20                                        |

Source: Processed Research Result Data, 2019.

Table 4 shows that farmers who carry out the teseng system in Patimpeng District, Bone District, which has the majority of family members between 4 to 6 people, are 16. Meanwhile, the farmers who do not carry out the teseng system have the majority of family members between 1 to 3 people, which are 14. Beef cattle digestion business management requires labor. Farmers in Patimpeng District, Bone Regency mostly use family members as labor. Family members can help as workers because if there are many family members, the farmers are lighter in conducting livestock business because they are
assisted by family labor. The number of family members can reduce labor costs because family members can help in managing their beef cattle business. According to the principle of the beef cattle business is looking for benefits or profits from the business. Beef cattle business performance is also presented through the income component of farmers [9,10]. Meanwhile according to [11] which says the number of family members will influence farmers in making decisions. Because the more the number of family dependents the more the burden of life that must be borne by a farmer. The number of family dependents is one economic factor that needs to be considered in determining income in meeting needs.

3.5. The scale of the beef cattle business
The beef cattle business is currently developed in Patimpeng District, Bone Regency both as the main business and as a side business. The scale of beef cattle business can be influenced by the economic demands of farmers. Differences in the characteristics of farmers who follow and do not follow the teseng system based on the scale of the beef cattle business in Patimpeng District, Bone Regency are presented in Table 5.

Table 5. Differences in characteristics of farmers who do and not do teseng systems based on the scale of the beef cattle business

| Number | The scale of Beef Cattle Business (Tail) | Who Conducts the Teseng System (People) | Who Does Not Do The Teseng System (People) |
|--------|-----------------------------------------|----------------------------------------|-------------------------------------------|
| 1.     | 1–3                                     | 1                                      | 3                                         |
| 2.     | 4–6                                     | 12                                     | 11                                        |
| 3.     | 7–9                                     | 8                                      | 4                                         |
| 4.     | 10–12                                   | 9                                      | 2                                         |
| Total  | 30                                      | 20                                     |                                            |

Source: Processed Research Result Data, 2019.

Table 5 shows that farmers in Patimpeng District, Bone Regency mostly have a scale of 4 to 6 beef cattle business, both those who do and those who do not do the teseng system. The results of this study can be said that the scale of beef cattle farms owned by farmers is still relatively small and is a small-scale community farm, the low scale of the beef cattle business in Patimpeng District, Bone Regency is because most of the farmers also have food crop farming businesses. According to [12], farmers who have 1-2 beef cattle are traditional beef cattle business. Meanwhile, according to [13], 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).

In addition, farmers assume that raising beef cattle as a side business has the potential to be developed to add to their family income. According to [13], there are several considerations of the need to develop beef cattle business, namely: (a) beef cattle cultivation is relatively independent of the availability of land and high-quality labor; (b) has a broad and flexible business and technological flexibility; (c) beef cattle products have a high elasticity to income changes; (d) can open jobs. This opinion is reinforced by [14], beef cattle is one of the producers of meat which has high economic value and is important in the life of the community.

3.6. Breed experience
The length of the beef cattle business that is cultivated by the farmer can determine the success of the farmer in managing the beef cattle business, the longer the cattle farmer manages the beef cattle business, the more experience is gained in knowing things related to the beef cattle business such as the maintenance system, disease prevention, disease treatment, and decision making. The many lessons that can be obtained from the length of raising livestock can be used as knowledge capital in trying beef cattle. Differences in the characteristics of farmers who do and do not do the teseng system
based on the experience of raising livestock in Patimpeng District, Bone Regency are presented in table 6.

**Table 6. Differences in characteristics of farmers who do and do not perform teseng systems based on farmer experience**

| Number | Breed Experience (Years) | Who Conducts the Teseng System (People) | Who Does Not Do The Teseng System (People) |
|--------|--------------------------|------------------------------------------|-------------------------------------------|
| 1.     | 10 – 15                  | 12                                       | 8                                         |
| 2.     | 16 – 20                  | 11                                       | 6                                         |
| 3.     | 21 – 25                  | 1                                        | 1                                         |
| 4.     | 26 – 30                  | 4                                        | 2                                         |
| 5.     | 31 – 35                  | 2                                        | 3                                         |
| Total  |                          | 30                                       | 20                                        |

Source: Processed Research Result Data, 2019.

Table 6 shows that the majority of farmers have 10 to 15 years of experience raising both those who do and those who do not have a teseng system. The results showed that the experience of breeding can influence the scale of beef cattle business because the more experienced a farmer, the more knowledge is known that can encourage the development of livestock business. Farmers who carry out the production sharing system in Patimpeng District, Bone Regency are generally farmers who have experience in conducting a production sharing system (ranging from 10-15 years).

According to [16], livestock is a part-time business, namely farmers working on agricultural commodities especially food crops. Meanwhile, livestock is a part-time business to meet the needs of the family (as a subsystem). The same opinion stated by [6], the length of the variable raising livestock is not significant because the livestock business carried out is only partial so that over time there has not been much increase in livestock business activities. Whereas according to [7], that the experience of raising beef cattle is a variable that is very instrumental in determining the success of farmers in improving the development of cattle business as well as efforts to increase the income of farmers. The experience of raising livestock is a good teacher, with the experience of raising enough cattle, the breeders will be more careful in trying and can fix the deficiencies in the past.

**4. Conclusion**

From the results and discussion above, it can be concluded that the characteristics of farmers who carry out the teseng system aged from 39 to 47 years old are all male. The most recent education is high school/equivalent. The number of family members is mostly 4 to 6 people whose cattle from 4 to 6 cows and have been raising for 10 to 15 years. The second characteristic of farmers who do not carry out a teseng system aged from 48 to 56 years old is all male. The most recent education is high school/equivalent. The majority of family members are 1 to 3 people whose 4 to 6 cattle and have been raising for 10 to 15 years.

**References**

[1] Ako A, Baba S, Fatma J and Rusdy M 2016 Effect of Complete Feed Silage Made from Agricultural Waste on Milk Yield and Quality of Dairy Cows *Online J. Biol. Sci* **16** 159–64

[2] Sugiyono M 2014 Educational Research Methods Quantitative, Qualitative Approach and R&D *Bandung Alf.*

[3] Sugiyono 2014 *Statistics for Research. 24th Print.* (Bandung: Publisher CV Alfabeta.)

[4] Andarwati S, Haryadi T, Guntoro B, Sulastri E, Putra R A R S and Gunawan G Relationship Between Farmer’s Characteristics with the Motivation of Goat Milking in the Girikerto Village Turi District Sleman Regency *Bul. Peternak.* **42**

[5] Wahyono 2013 *Differences in Men and Women in Employment*
[6] Rohani, Puspitasari I and Abdullah A 2014 Characteristics of Beef Cattle Farmers with Production Sharing Systems in Lempang Village, Tanete Riaja District, Barru Regency. Department of Social Economics of Animal Science. Faculty of Animal Science. Hasanuddin University, Makassar.

[7] Murwanto A G 2008 Characteristics of Farmers and Technology Input Levels of Beef Cattle in Prafi Valley Manokwari Regency (Farmer Characteristics and Level of Technology Inputs of Beef Husbandry at Prafi Valley, Regency of Manokwari) J. Anim. Sci. 3 8–15

[8] Risqina. 2011. Analysis of Income of Beef Cattle and Karapan Feeding Cattle Farmers in Sapudi Sumenep Regency. JITP Journal Vol.1, No.3. Diponegoro University, Semarang.

[9] Guntoro, B., and R. Riyadi. 2012. Motivation and Performance of Beef Cattle Smallholder Farmers in Central Java Indonesia. Research Journal Of Animal Science. 6(4-6):85-89.

[10] Lestari T D, Ismudiono I, Sardjito T, Yamato O, Takagi M, Yabuki A and Srianto P 2019 Breeding performance of Indonesian beef cattle as recipients for embryo transfer J. Vet. Med. Sci. 81 1688–91

[11] Sumbayak, J.B. 2006. Material, Methods, and Media Counseling. Faculty of Agriculture. University of Northern Sumatra. Field.

[12] Siregar, P. 2009. Beef Cattle Feed Material. Faculty of Animal Husbandry, Diponegoro University, Semarang.

[13] Bessant, W. 2005. Beef Cattle Business Analysis in Relation to Farmer's Welfare in Regency and City of Bogor. Thesis Proceeding. Management and Business Approval Program, IPB.

[14] Mersyah, R. 2005. Design of Sustainable Beef Cattle Cultivation Systems to Support the Implementation of Regional Autonomy in South Bengkulu Regency. Dissertation. Graduate School. Bogor Agricultural Institute. Bogor.

[15] Sudarmono, A.S and Sugeng, Y.B. 2008. Beef cattle. Self-Help Publishers. Jakarta.

[16] Suryana. 2009. Analysis of Beef Cattle Farmer Income in Stabat District, Langkat Regency. Thesis of the Faculty of Agriculture. University of North Sumatra, Medan.