IDENTIFY THE CHARACTERISTICS OF LIVESTOCK IN DETERMINING THE SELLING PRICE OF BUFFALO IN SIBORONGBORONG SUBDISTRICT TAPANULI NORT DISTRICT

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Abstract. This study objective was to determine the effect of livestock characteristics in determining the selling price of buffalo in the Subdistrict Siborongborong, North Tapauli District, starts from April to May 2017. The sampling method used is Proportional Stratified Random Sampling. This study used primary data obtained from observation and interview respondents and secondary data obtained from the relevant agencies such as the Institution Central Bureau of Statistics and the Department of Agriculture of North TapanuliDistrik. Respondent of decide snowball sampling method that has 74 respondents obtained from the Villagesuch us : Pohan Jae 18 respondents, Village Siborongborong II 12 respondents, Village LobuSiregar II 17 respondents, Village Siaro 12 respondents, Village Silaitlait 8 respondents, Village SitabotaboDolok 3 respondents, Village sitabotaboToruan 4 respondents. The parameters studied were the characteristics of livestock that is horn, the location of feather vortex and the amount of vortex of feathers to the selling. Data analysis in this study is to see the relation of the selling price and characteristics of buffalo, in using multiple linear regression analysis.The result of research indicates that the habit of Batak Tribe society in using buffalo as one of the ceremony of traditional ceremony gives influence to the difference of buffalo selling price mast influence amoung parameters to selleng price buffalo is horn , The location of the feather vortex and the amount of feather vortex in Siborongborong Sub-district, North Tapanuli regency North Tapanuli District.
Keywords : buffalo, livestock, characteristics

1. Introduction

Development of livestock in Indonesia, especially ruminant livestock is expected to be one of the locomotives of development, especially in the provision of animal protein sources in the form of meat and milk in order to increase food consumption of the community. One of the livestock commodities owned by Indonesia is buffalo cattle.

Buffalo cattle is one of the animal-producing animal livestock can be used as an alternative to meet the needs of the community, because buffalo cattle in addition to easy to maintain also able to utilize low-quality grass and produce carcass weight. Buffaloes are highly valuable ruminant animals, where buffaloes easily adapt to harsh geographical environments, have a high capability in digesting crude fiber than other ruminants. Maintaining buffalo can improve life and improve the nutritional level of the farmers and their families [1].

In Indonesia, buffalo (Bubalusbubalis) is a livestock that is used for meat and especially in certain ethnic groups in Indonesia, buffalo is considered important in the social life of the culture. One of them is the socio-cultural life of the Toba Batak Tribe in North Tapanuli, North Sumatra.
KabupatenTapanuli Utara is one of the regencies in Sumatera Island. The district that has the highest buffalo population in the regency is Siborongborong. The buffaloes population in Siborongborong sub-district, North Tapanli regency, is the highest buffalo population of 2813 heads (North Tapanuli BPS 2015).
In Kecamatan Siborongborong High the value of buffalo depends on the quality of buffalo according to the generally accepted assessment of buffalo body weight. But there are interesting things
when buffalo is sold for indigenous party purposes. In addition to the buffalo body weight, pricing is also determined based on the characteristics of livestock. Because these characteristics can affect and determine the selling price of the buffalo. The characteristics are horns, sex, number and location of feather vortex, and buffalo color. According to Kotler and Armstrong [2], which states that the theory in determining the selling price of a product based on the cost incurred, the availability of supply / supply supplies, competitor ability and price competitors. However, the buffalo sellers in Siborongborong Sub-district of North Tapanuli Regency use the theory in determining the selling price and influenced by the characteristics of buffalo.
Based on this, researchers are interested in conducting research on "Identification of Livestock Characteristics in Buffer Price Determination in Siborongborong District of North Tapanuli Regency". The purpose of this research is to prove that in addition to buffalo body weight, the influence of livestock characteristics such as horn, sex, number and location of feather vortex, and buffalo color to the selling price of buffalo in KecamatanSiborongborongKabupatenTapnuli Utara.

2. Materials and Methods

2.1. Place and time of research

This research was conducted in Siborongborong District, North Tapanuli Regency. The study was conducted from April 2017 to May 2017.

2.2. Types and Data Sources

This study uses primary and secondary data that are qualitative and quantitative. Primary data was obtained by direct observation and direct interviews using questionnaires (questionnaires) to the respondents ie ranchers or buffalo sellers in Siborongborong District, North Tapanuli District.
Secondary data were collected through various literatures used as reference material to support the primary data during the research process. Secondary data used by daritext book, scientific journal, research report (thesis), internet site, and data obtained through related institutions such as Central Bureau of Statistics (BPS) and Agriculture Office of North Tapanuli Regency of North Sumatra.

2.3. Method of Collecting Data

This research was conducted by using primary data which was done by observation and interview by using questionnaire. The questionnaire contains open and closed questions (structured). Open questions include questions whose answers are descriptions or are not provided while closed questions contain questions whose answers have been provided. The questionnaire is addressed to the respondents and marketing agencies involved during the marketing process. Proportionate Stratified Random Sampling (Sugiyono, 2008) is a method of determining samples by classifying the population into several levels and randomly selected to be a sample. There are 21 villages in SiborongborongSubdistrict. According to Gay and Diehl [3], a descriptive study of a minimum sample size of 30% of the population. In this study the selection of samples based on the number of buffalo cattle. And that will be the sample in this research are: Pohan Jae, Siborongborong II, LobuSiregar II, Siaro, Silait-lait, SitabotaboDolok, SitabotaboToruan.
In determining the respondent method used is snowball sampling. Snowball sampling is a sampling technique with the help of informants, and from this informant will develop as directed. In this case

the researcher only reveals the criteria as a requirement to be sampled [4]. According to Gay and Diehl [3], the number of respondents in this study minimum 30% of the population of buffalo breeders in one village / kelurahan used as a sample

2.4. Method of Processing and Data Analysis

Data analysis used in this research is descriptive analysis is used to identify the selling price and characteristics of buffalo in determining the selling price in District Siborongborong North Tapanuli Regency. Characteristics in this study consist of horn, Sex, Number and location of feather vortex, buffalo color and set price range.

Based on the results obtained, then to see the factors that affect the selling price can be seen using the approach model of econometric technique by using multiple linear regression analysis with Statistical Package for Social Sciences (SPSS 19) software tool. According to Lutfi and Syafrizal (2014) estimation model used:

$$\hat{Y} = a + b_1X_1 + b_2X_2 + b_3X_3 + \mu$$

Information:

$\hat{Y}$: is the selling price of buffalo (Y: hat) which is influenced by several factors in determining the selling price

a: is the intercept coefficient (constants)

b_1, b_2, b_3: is the regression coefficient

X_1: is the horn

X_2: is the location of the feather vortex

X_3: is the amount of feather vortex

μ: is another variable that is not researched

The variables in the hypothesis are tested simultaneously and partially to determine whether the variable has a dominant influence or not.

If the variable is influential simultaneously then used the test F namely:

$$F = \frac{r2 / k}{(1- r2) / (n - k - 1)}$$

Information:

r^2 = Coefficient of determination

n = Number of respondents n-k-1 = Free degrees of denominator

Test criteria:

F-hit F-table .... H0 accepted (H1 rejected)

F-hit F-table .... H0 rejected (H1 accepted)

According Lutfi and Syafrizal (2014) if partially influential variables can be tested by t test ie:

$$T\ hit = \frac{b1}{S2y123 = \frac{\Sigma (\hat{y} - y)\ 2}{n - k - 1}} \Big/ \frac{S2b1 = \frac{s2y123}{\Sigma Xi2\ (1 - Ri2)}}{}$$

Information:

B = Parameter (i = 1,2,3)

n-k-1 = degrees of freedom

S^2 = Standard error parameter b

S2y123 = Standard estimate error

x_i = Independent variable (i = 1,2,3) Criteria test:

t-hit> t-table ..... H0 accepted (H1 rejected)

t-hit> t-table ..... H0 rejected (H1 accepted)

Criterion of decision making:

t-table = (α; db)

(α = 5%; db = n - k - 1)

Information:

n = number of samples
k = number of independent variables (X)
a. t-count> t-table (significant level $\alpha \leq 0.010$): H0 rejected, means the regression coefficient of certain factors significantly affect the dependent variable.
b. t-count <t-table (significant level $\alpha \geq 0{,}100$): H0 accepted, means the regression coefficient of a certain factor has no significant effect on the dependent variable.

3. RESULTS AND DISCUSSION

3.1. Characteristics and Price of Selling Buffalo in District Siborongborong North Tapanuli Regency

3.1.1. The selling price of buffalo cattle

Determination of selling price of buffalo cattle in District Siborongborong North Tapanuli District conducted by the farmers themselves based on experience ever gained previously based on buffalo body weight. The selling price for the purpose of consumption of meat for 1 kg of estimated livestock weight is Rp 130,000 under certain conditions characteristic of buffalo cattle can influence in determining the selling price. This is in accordance with the literature [5] which states that in the agreed price determination still passes the bargaining process between the breeder and the buyer.

3.1.2. Characteristics and Price of buffalo stock

Based on the results of the research can be found that the price of buffalo with a range of 80 kg body weight is Rp 14,000,000. the price of buffalo perkilogram to Rp 175.000 / kg characteristics of male long horn bulls, black color, the number of three vortices located on the nose, shoulders, waist, hips.
Based on the research results can be seen that there are 3 respondents selling buffalo with a weight range of 100 kg with the selling price is Rp 13,000,000 with the same characteristics, namely the number, location of the vortex and male sex. And have differences in age and horn models. In this case the characteristics of livestock does not affect the change in selling price because the price set in accordance with the selling price of Rp. 130,000.
weight of 110 Kg. 10 people sell buffalo with a price of Rp 15.000.000. with different characteristics on horns, age, velvet feather location with price Rp 136.000 / Kg. 4 respondents who sell buffalo with the same weight with the characteristics of big horn, black and brown color, male, age 3 years, four velvet feathers on the shoulders and hips at a price of Rp 145.000 / Kg so the selling price to Rp 16.000.000. 1 respondent sells buffalo with price Rp 154.000 / Kg with long horn characteristics, male, black color, age 3 years four velvet feathers on nose, shoulders, hips and set price is Rp 17.000.000.
Based on the results of research on it can be seen that there are 12 respondents selling buffalo with a range of 120 kg body weight. 4 respondents sell buffalo with price Rp 133.000 / Kg with different characteristic on horn, age and location of feather vortex and similarity on color, klamin type, and the amount of feather vortex, the set price is Rp 16.000.000. 7 people sell buffalo with price Rp 141.000 / Kg with characteristic of four velvet feathers and sex of male and difference of characteristic on horn, color, age, velation location of feather price determined is Rp 17.000.000. 1 respondent sell buffalo with price Rp 150.000 / Kg with characteristic big horn, black and brown color, male, age 3 years, four velvet feathers on shoulder and hip and the price specified is
Based on the results of the research can be seen that there are 29 respondents selling buffalo with a range of weight 130 Kg. 1 respondent sells buffalo with price Rp 123.000 / Kg This price is lower than market price this is caused by the respondent sell with pressing condition so that the price determined is Rp 16.000.000. 6 respondents sell at Rp 130.000 / Kg and the price of Rp 17.000.000 this price is the price determined in accordance with the usual price range and the characteristics of livestock has no effect on the determination of the selling price. 15 respondents sell buffalo with price Rp. 138.000 / Kg with black color characteristic, male, have four velvet feathers and set price is Rp. 18.000.000. 7 respondents sell buffalo with price Rp 146.000 / kg with characteristic of age, big long horn, black, males, age 2 years, has four velvet feathers on shoulder and hip and set price is Rp

19.000.000.the set is Rp16.000 .6 respondents sell at Rp 130.000 / Kg and the price of Rp 17.000.000 this price is the price determined in accordance with the usual price range and the characteristics of livestock has no effect on the determination of the selling price. 15 respondents sell buffalo with price Rp. 138.000 / Kg with black color characteristic, male, have four velvet feathers and set price is Rp. 18.000.000. 7 respondents sell buffalo with price Rp 146.000 / kg with characteristic of age, big long horn, black, males, age 2 years, has four velvet feathers on shoulder and hip and set price is Rp 19.000.000.

Based on the research results can be seen that there are 9 respondents selling buffalo with a range of 140 kg weight. 8 respondents sell buffalo with price Rp 135.000 / Kg with long horn characteristic, black males, 3 years old and has four velvet feathers and the set price is Rp 19.000.000. 1 respondent sells Rp 142.000 / Kg with long horn characteristics, black male, 3 years old, has four velvet feathers on shoulder and hip, set price is Rp 20.000.000.

Based on the research results can be seen that there are 2 respondents selling buffalo with a range of 150 kg body weight. the respondent sells for Rp 133.000 / Kg. with long horn characteristics, a black male, has four velvet feathers that are stuck on the shoulders and hips, the set price is Rp 20,000,000.

Based on the research results can be seen that there are 2 respondents selling buffalo with a range of weight 160 Kg. 1 respondent sells Rp 131.000 / Kg in this condition the characteristics of livestock has no effect in determining the set price is Rp 21.000.000. 1 respondent sells buffalo with price Rp 156.000 / Kg with big horn characteristic, black males, age 3 years, has six velvet feathers in nose, shoulder and hip, selling price set is Rp 25.000.000.

3.2. Factors affecting buffalo selling price

Testing of factors influencing the determination of the price of buffalo ual in Siborongborong District of Tapanuli Utara Regency is used multiple linear regression analysis, where the independent variable is tanduktanduk (X1), feather velocity location (X2), the amount of feather vortex (X3) while the dependent variable is the selling price (Y).

The result of factors influencing the determination of buffalo selling price in Siborongborong sub-district of North Tapanuli Regency can be seen in table 8.

Table 8. Multiple linear regression analysis the effect of body weight estimation, horn, color, location of feather vortex and the amount of vortex of buffaloes to buffalo selling price Based on the above table obtained the following equation:

3.3. Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	116703	33856.6		34.47	0,000
Horn	1564.54	489.664	0.278	3.195	0.002
the location of the vortex _feather	2709.41	579.179	0.458	4.678	0,000
the amount of feather vortex	4436.1	1779.94	0.232	2.492	0.015

a. Dependent Variable: PRICE

$\hat{Y}$ = 116702.629+1564.543**X1** +2709.406**X2** + 4436.099**X3**+ μ

Information:
Ŷ: Selling price (tail)
X1: horn
X2: the location of the feather vortex
X3: the amount of feather vortex
μ: Undesirable variables

The above linear regression equation can be explained as follows:
1. The regression coefficient X1 (horn) is 1564,543, meaning that if it increases as much as one unit it will cause the price increase of Rp 1564,543, assuming other variable is constant.
2. Regression coefficient X3 (feather velvet location) is worth 2709.406, meaning that if increased by one unit it will cause price increase equal to Rp 2709.406, assuming other variable constant.
3. Regression coefficient X4 (number of velvet feathers) is worth 4436.099, meaning that if an increase of one unit it will cause an increase in price of Rp 4436.099, assuming other variables are constant.
4. If the variables X1, X2 and X3 in the analysis are ignored (not doing the activity), then the buffalo breeder will still receive income of Rp 116702.629.

a. KoefisienDeterminasi (R2)
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.725[a]	0.525	0.505	4.985.216	1.356

a. Predictors: (Constant), Number of Whirls, Horns, Whirlwind Places
Dependent Variable: PRICE
Coefficient of determination (R2) function to see how far the ability of model in explain variation of dependent variable. Based on the results of the output shows that the value of coefficient of determination (R2) of 0,525.
This means that 52% variation of independent variables age, sex, horn, the location of the vortex, the amount of vortex, the estimated weight and color can explain variations of dependent variables buffalo selling prices, while the remaining 48% can be explained by variations of other independent variables that are not examined in this research.
b. Variable Significance Test Simultaneously (Test F)
The statistical test F basically shows whether all the independent variables included in the model as a whole have an influence on the dependent variable. From the regression results obtained value of significance F is 0,000 (≤ 0.05) using 95% level ($\alpha = 5\%$) it can be concluded that the independent variables of horns, the location of feather vortex and the amount of vortex fur simultaneously significantly affect the selling price of buffalo .
c. Individual Parameter Significance Test (t-Test)
This test is done to know the significance of independent variables individually to the dependent variable. The hypothesis on t test is as follows:
H0: $\beta 1 = 0$ (No Effect)
H1: $\beta 1 \neq 0$ (Influence)
Criteria for decision making as follows:
If probability> 0.05, then H0 is accepted and H1 is rejected
If probability <0.05, then H0 is rejected and H1 is accepted
Based on the regression results obtained probability value of each variable independent, namely:
a. Horn (X1): 0,002 <0,05 then H1 accepted, meaning horn have real effect to selling price of buffalo.
b. The location of the feather vortex (X3): 0.000 <0.05 then H1 is accepted, meaning the location of the feather vortex effect on the buffalo sale price.
c. Number of feather velocity (X4): 0,015 <0,05 then H1 is accepted, it means that the amount of feather vortex significantly affect buffalo selling price.
Based on the research results can be seen that the characteristics of cattle kebau horn, the location of feather vortex and the amount of feather vortex affect the selling price of buffalo in District Siborongborong North Tapanuli regency. This can happen because of the culture of tribal people who use buffalo batak as one of the infrastructure for traditional ceremonies. This is in accordance with the statement of Sitomorang [6]. Usually the buffaloes to be congenital or sacrificial animals in both Saur Matua and MangokkalHoli ceremonies have several requirements including male, horned round, young, have four vortex hairs.These conditions above has certain purposes based on custom and belief. Having four vortices indicates the direction of the wind and the middle, young continent

means still pure, untainted and still sacred so as to expel the evil forces of the whole universe. Horned round shows the totality of the Batak community.

4. Conclusion

The habit of Batak tribe society in using buffalo as one of the ceremony of traditional ceremony influence to the difference of buffalo selling price which influenced by buffalo selling price parameter is horn, feather velvet location and the amount of feather velvet in SiborongborongSubdistrict, North Tapanuli Regency North Tapanuli Regency

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