



## ***The Farmers Willingness to Pay on Artificial Insemination in Bali Cattle***

***Lydia Devega Bahar<sup>1</sup>, Indrianty Sudirman<sup>1</sup>, Sitti Nurani Sirajuddin<sup>1</sup>***

*<sup>1</sup>Agribusiness Studies Program, Magister Program, University of Hasanuddin Makassar, Indonesia.*

### **ABSTRACT**

*Willingness to pay is the willingness of farmers to pay for inseminator services to improve the quality of the result of artificial insemination of livestock and economic revenue. This study aims to determine the factors that encourage willingness to pay farmers in applying artificial insemination in Bali cattle. Research conducted on April - October 2017 in Balusu District, Barru Regency, South Sulawesi with the total population 548 people. The sample selection using Slovin method produces a sample of 85 people. Data were collected by questionnaire at 6 villages. Analysis used the question as an open method to calculate the value of willingness to pay and using factorial analysis. The result study showed that the willingness to pay consisted of inseminator costs, transportation costs, the farmers pay inseminator after the calf is born, but there are also farmers who pay gradually. There are two factors that affect farmers in paying implementation of AI is a major factor form of knowledge about the payment, location and attitude, psychology, personal satisfaction, knowledge of the AI, extension, families as labor, and cement and other factors such as social care, business scale, income and dependents of the family.*

**Keywords:** Inseminator, encouraging factors, analysis factorial, major obstacle, other obstacles

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**Corresponding author:** Lydia Devega Bahar  
e-mail✉

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One of them is in the Balusu District. Balusu district

### **INTRODUCTION**

The problems faced in the field of animal husbandry in Indonesia are still low productivity and genetic quality of cattle. Artificial insemination is the alternative technology that are being developed in an effort to increase productivity of the local Indonesian cattle biologic through breeding technology which results relatively quickly and was satisfactory and has expanded implemented is the cattle livestock took a superior import [1]

Barru Regency is a district that is central purification Bali cattle in the province of South Sulawesi, meaning in Barru should not evolved species other than Bali cattle. Barru become a purification center because it has the potential of land that supports the development of Bali cattle, in addition to the desire of high society for raising beef cattle [2]. Artificial insemination technology has been developed in seven districts in Barru.

selected as research areas based on an initial survey shows farmers are willing to pay and they already feel the results AI's resale value. A short distance from the location of the researcher is also a consideration.

Since 1993, artificial insemination has been carried out in the District Balusu. Many government programs that support the development of artificial insemination in District Balusu. The program is Artificial insemination program held annually by the Department of Animal Husbandry and Animal Health of the Province, snapping Lust Artificial Insemination (GBIB) in 2015 and UPSUS SIWAB (The Cow must be pregnant) in 2017.

In Barru there are 20 officers inseminator, three are civil servants and 17 are self inseminator. The inseminator obtain operational reports they send to the Animal Husbandry and Health Department South Sulawesi Province, and usually also gets operational from farmers but these operations in a number of voluntary, there

is no nominal officially specified in the payment, so sometimes what inseminator do not according to what they earn. The adoption rate of farmers could affect the willingness to pay because there are farmers who have long adopted the AI technology and there are also new. Farmers who has long been aware of this probably will pay inseminator seeing the benefits already earned.

These days the inseminator encouraged to participate in the mobilization inseminator hygiene. In the formation course requires no small cost. Such costs can be obtained from the intensive inseminator given. Inseminator usually gets operational from government programs, but such payments generally given all at once.

Research that has been done before, there are several factors that can influence the people to pay for services in order to improve the environmental quality that are the scale of business, age, income, formal education, family responsibility, knowledge of the payment [3], information from other farmers, extension, the location and attitude [4], social awareness [5], cement [6] and knowledge of farmers on artificial insemination [7].

Based on the factors above willingness to pay question in this research is homoeconomis and sustainable. Homoeconomis is the factors related to the economic advantage gained by the farmers. Sustainable is a factor related to the quality of environment that will be repaired or maintained, in the form of plasma nutfa Bali cattle. Efforts are being made to preserve it is to optimize the adoption of artificial insemination in Bali cattle. Based on the description, this study aims to identify factors that encourage willingness to pay farmers in applying artificial insemination in Bali cattle.

## 2. METHODE AND RESULT

Research on the farmers willingness to pay to adoption of artificial insemination technology implemented in April-October 2017. This research was conducted in the Balusu District, Barru Regency, South Sulawesi. The types of research used descriptive exploratory study non hypotheses.

The population in this research is the entire Bali cattle farmers who adopt the technology of artificial insemination that reside in Balusu district as much as 548 people spread in six subdistricts/villages. Calculation based on Slovin then it can be known to the minimum amount of sample used, namely 85 people respondents. The sampling technique is proportioned according to the number of population. The population of the

Takkalasi village total of 18 respondents, 24 respondents in Kamiri Village, 4 respondents in Madello Village, 17 respondents in Lampoko Village, 12 respondents in Binuang Village and Village Balusu as 10 respondents. The source data used in this study are the primary data and the secondary data. Methods of data collection consisted of observation and interviews. To measure the research variables was measured by means of indicators outlining the variables in the form of items arranged questions in the questionnaire with the weight value (score) answers 1-5.

Analysis data using 2 methods. The Method of calculating the value of Willingness to Pay using open-ended questions (an Open-Ended Question) and use the konfirmatori factor analysis. Analysis of konfirmatori factor where the factor analysis techniques that are formed based on theory and concepts that are already known or previously specified along with any variables can measure each factor are established. Characteristics of respondents in the District Balusu in this study visits of several things including age, education level, income level, and ownership of livestock. Classification of respondents by age showed that respondents level of technology adopted Bali cattle artificial insemination belong to the age produkrive in Balusu district Barru regency which have a range of ages between 15-64 years. Based on educational level of the obtained results that the education level of respondents in Balusu District Barru regency at primary school level is the most, the lowest is the level of D3. This indicates that the level of education of farmers who do not adopt the AI technology in Bali cattle is still very low. Livestock ownership highest in 1-7 heads. The Farmers who do not adopt these technologies have a small number. According to the average level of income each month, most respondents have Rp2,000,000.00 - Rp5,000,000.00 income.

## RESULT AND DISCUSSION

This study shows the farmer assessment activity of artificial insemination can be seen based on the results of interviews that have been done by using a questionnaire. The farmers only inseminated one of their cow for an average of 1-11 livestock ownership head consisting of the cow, male, bull, steer and calf. Most of the farmer were began to inseminated their cattle was from 2010 to 2017. However, there are three farmers who had long been implementing AI which began in 1996.

According to farmers, artificial insemination is

better than natural mating. The Farmers think like that because it already knows the benefits and disadvantages of artificial insemination. the farmers more feel the benefits of artificial insemination than its disadvantages.

The Value Willingness to Pay On average respondents who adopted AI

The average WTP of each group and the average WTP of respondents inseminated their cow can be seen in Table 4. There were 68 farmers paid Rp250,000,-. The payments are usually paid after the AI's cow were born. The payments are also usually paid after the calf is one years old. For cost Rp100,000, - the farmers pay just as a thank-you note because the farmer do not know the payment nominal in general. The farmers do not want to pay for their known AI's program is the government free program. There are also farmers who just gave the transportation money, about Rp50,000 - Rp100,000. There were four farmers who usually paid Rp 300,000, -.

Based on the results of research there are farmer who differentiate payment method between calves born males and females. For steers paid Rp250,000, - and Rp 200,000,- for heifers. There are some farmers who paid in gradually, The farmers pay Rp50,000,- after the cows are given hormone stimulation and Rp250,000. after the cow born, the rate should be taken by the farmer is Rp250,000,-, in order to increase the service to run well so that the quality and quantity of AI's be better.

That value is expected to be a consideration for the Government to make policies of AI's tuition regulation. According to the farmer who should pay the program of artificial insemination is the farmers themselves rather than the Government. The farmers are feeling the benefits of the artificial insemination technology, the government only as a facilitated the AI's activity.

#### Factor Analysis

Extraction of variables in research using factor analysis conducted after grouping the answers to statements given to the respondents through the questionnaire. After conducting a series of extraction processes, from 14 variables have been extracted then obtained two factors formations, then subsequently carried out the process of naming the factors that have been formed. The naming of these factors depend on the variable name into one group, thus giving the name actually is subjective, and there is no definite provisions regarding the naming. Variables included in the factor of 1 (one) is the variable knowledge of the payment (X3), the location and attitude (X4), psychological (X5), personal satisfaction (X6), knowledge of the AI (X8), extension (X12), family as labor (X13), and

cement (X14). Variables included a factor of 2 (two) is a social concern (X7), the scale of business (X9), income (X10), and dependents of the family (X11). The twelve of these variables have real influence on willingness to pay farmers to adoption of AI technology in Bali cattle in District Balusu Barru regency.

Local governments have the most inherent knowledge, but could also be the most susceptible to the misallocation of funds that were targeted for conservation [8]. Payments for environmental services (PES) are often promoted as a mechanism for alleviating poverty and providing environmental benefits [9].

[10] thinks that the psychological behavior of the farmers influenced the adoption of new technologies. It means, their propensity adopt new technology to follow the trend, and imitate each other. Socioeconomic factors including age, education, experience, principal occupation and the number of cattle ownership will affect the maintenance management that ultimately affected the revenue [11].

Availability of family labor has been found to be an important determinant of many decisions of participation and adoption of the technology program [12]. Cement quality is very influenced by processing way and preserving semen in liquid and frozen. In the frozen semen sperm quality is also influenced by the shelter, dilution, equilibrasi, freezing and re-thawing process (thawing) before inseminated into the female animal [13].

The variables included to the 2 (two) factors, there are social care (X7), the scale of business (X9), income (X10), and family dependents (X11). ESA payment rates have been set to reflect costs of capital structures and income forgone in following particular management practices [14]

In addition to the one described earlier, these factors may also affected the willingness of farmers to pay AI's adoption technology at Bali cattle in the Balusu district Barru regency. Extending the size of the field margins have a greater impact on agricultural performance of the program used garden courtyard, while the second provides a more personal benefit to farmers, which states that personal satisfaction affects the farmer's decision to participate [15]

#### Conclusion

The Value of Willingness to Pay farmers who adopt AI consists of inseminator costs, transportation costs, farmers pay inseminator after the calf is born, but there is also gradually payment. There are two factors that affect farmers in paying implementation of AI are the major factors (knowledge of the payment, the location and attitude, psychology, personal

satisfaction, knowledge of the AI, extension, family as labors, and cement and other factors (social care, business scale, income and dependents). The factors influencing that age and formal education. The farmers expected to be aware and understand the importance of the AI's program payments in order inseminator can work optimally and obtained satisfactory results.

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