The KUB chicken farming technologies for the household in West Nusa Tenggara

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Abstract. In Indonesia, there are various serious efforts have been conducted by the government to fight against the poverty until recently. One of the leading projects recommended by the Indonesian Agricultural Development Research Agency was the assisted KUB chicken farming packages that has been carried out through the 2018-2019 BEKERJA Program. The KUB chicken was recommended because it has various advantages such as being able to be harvested at the age of 70 days and high egg production (180 eggs/year). Meanwhile, to assess the effectiveness of the program, especially in behavior and perceptions of poor households (participant of the program) involved towards farming of KUB chicken, an in-depth study was conducted in two sub-districts in Central Lombok district. There are 200 respondents randomly selected from 20 villages. The required data was gathered with structured questionnaire. It uses 13 indicators of KUB chicken farming technology as an instrument. Furthermore, the data, then analyzed using of descriptive analysis, regression and t-test with SPSS software. The result shows that gender, age, education and experience of respondents did not have a significant effect (P> 0.05) on their perception about KUB chicken farming technology. In contrary, the knowledge that taught through technical assistance has significant impact (P<0.05) on it. Amongst 13 components of technology that has disseminated and known by respondents, 38% of it has been applied. Moreover, the total score of respondent’s perception on farming of KUB chicken was 3.57. It means that the poor household involved in the program has accepted the technology for farming of KUB chicken that has been disseminated.

1. Introduction
A household can be categorized into a poor household (RTM) if and only if their income is below the poverty line. With this income, the household will not be able to fulfill their basic needs for living [1]; [2]. In Indonesia, however, the number of households in this category (RTM) are still high and being a major problem that must be resolved as soon as possible. Meanwhile, West Nusa Tenggara is the province with the third largest poverty in Indonesia [3].

The government of Indonesia has been carried out a lot of serious action fighting against the poverty. The Poverty Elimination for Prosperous People Program (BEKERJA program) conducted by the Indonesian Government through the Agricultural Research and Development Agency is one example of the efforts. The program is primarily intended for poor households that is working in the agricultural sector and other informal sectors [4]. In this program, the superior native chickens (KUB
chickens) developed by the Research and Development Agency are selected to be given to recipient families that have been selected using poverty data from the Indonesian government. The KUB chicken is recommended because it has many advantages compared to its type. The KUB chickens can be farmed as broilers or laying hens. As broilers, The KUB chicken requires a short farming period and can be harvested at the age of 70 days. As a laying hen, the KUB chicken can produce up to 180 eggs / year [5]; [6]; [7]. The KUB chicken farming technology implemented through the BEKERJA program is new knowledge for RTM. For this reason, in-depth studies are needed to determine changes in perceptions of RTM to the introduction of new KUB chicken farming technologies. This information is very useful as a basis for creating and implementing new policies to solve future poverty problems in Indonesia

2. Materials and method
This study was conducted in two sub-districts namely West and East Praya sub-districts, in Central Lombok District in June-August 2019. Respondents were representatives of 20 villages from those sub-districts. The villages and sub-districts selected as samples were the villages receiving the BEKERJA program.

In this study, the collection of data and information required was done using of structured interview method that uses a questionnaire as the main instrument. Respondents were randomly selected. There are 10 respondents who are the RTM that got KUB chickens aids from the BEKERJA program, in each selected village. The total respondents were 200 people. In addition, The RTM respondents not only received infrastructure facilities and assistance for KUB chickens farming but also got technical guidance and supporting by village facilitators, field assistants and related local government / institutions. The indicators that measured for determination of the level of application of KUB chicken farming technologies consist of 13 components, namely:

a. Technologies for KUB chicken DOC farming
   1. Using a drinking water container that added a marble / gravel (1 43)
   2. Giving sugar water when the new DOC arrives (2 44)
   3. Using a newspaper sheets over husks pad (3 46)
   4. Cleaning the husks pad every time it wet (4 47)
   5. Cleaning the drinking container every day (5 48)
   6. Feeding at least 5-6 times a day (6 49)
   7. Monitoring of room temperature of the cardboard cage by looking at the position of the chick distribution (7 50)

b. Technology for raising KUB chickens above 2 weeks old:
   8. Uses a curtain / enclosure (8 53)
   9. The cage is enough sunlight and not stuffy (9 55)
  10. The location of the cage is not in the passing lane (10 57)
  11. Adding a perch in the cage (11 59)
  12. Cleaning the feeding and drinking containers every day (12 62)
  13. Restricting visitors to the KUB chicken coop (13 64)

Each indicator is given a P code for knowledge and a T code for the application of the technology that has been disseminated. Furthermore, the data obtained were analyzed with descriptive analysis, simple linear regression and t-test using of the SPSS 17.0 software.

3. Results and discussion
The results of the analysis of RTM’s characteristics are presented in table 1. Based on Table 1, it shows that the number of male RTMs is greater than that of female RTMs, with percentages of 69.08% and 30.91%, respectively. Also, the average age characteristic of RTMs is 44.29 years. While, based on the results of statistical analysis, it shows that gender and age did not have a significant impact on the perception of RTMs (P> 0.05). Meanwhile, according to [8], the age of 44 years is the
productive age range. Productive age is very much related to productivity [9]. Age is also an indicator that determines individual behavior [10]. Furthermore, the education level of the respondents has barely significant effect (P > 0.05) on the disseminated technological innovation. The average level of respondent’s education was level of elementary school. In general, the education level of a person will determine a person characteristic in accepting and responding to such innovation [11]. In this study, the innovation provided is the KUB chicken farming technologies, which uses an intensive system with various technological components. Likewise, the respondents experience also has no significant effect (P > 0.05) on KUB chicken farming. This occurs because the RTMs have had long experience (12.56 years) of farming the local native chickens with extensive systems. In addition, the technological innovation disseminated to the RTMs are very different from the RTMs existing experience.

**Table 1. The characteristics of RTM**

| No | Respondent’s Characteristics | Average |
|----|-------------------------------|---------|
| 1  | Gender                        | Male: 138 respondents<br>Female: 62 respondents |
| 2  | Age                           | 44.29 years old |
| 3  | Education                     | Primary school |
| 4  | Chicken farming experience     | 12.56 years |
| 5  | The type of chicken farm so far | Local native chickens |

Based on table 2, it can be seen that the RTM’s knowledge that has a significant effect (P < 0.05) on the application of technological components for DOC KUB chicken farming was using of newspaper pads over the husk, cleaning the husk pads when it wet and feeding at least 5–6 times a day. Meanwhile, the technological components for farming KUB chickens after 2 weeks old which have significant influence were: the cage has sufficient sunlight and was not stuffy, and the location of the cage was not in the path of passersby. These results indicate that among 13 technological components given only 5 technological components was implemented by the RTMs. Furthermore, only 38% of knowledge that given to RTMs for increase their capacity through technical guidance and assistance was applied.

**Table 2. The Results of Statistical Analysis of Knowledge and Application of KUB Chicken Farming Technology of by the RTMs**

| Paired Samples Test | Paired Differences | 95% Confidence Interval of the Difference | t | df | Sig. (2-tailed) |
|---------------------|--------------------|------------------------------------------|---|----|----------------|
| Mean                | Std. Deviation     | Std. Error Mean                          | Lower | Upper |    |
| Pair 1 P_43 - T_43 | .010               | .200                                      | .014 | -.018 | .038 | .706 | 199 | .481 |
| Pair 2 P_44 - T_44 | -.010              | .141                                      | .010 | -.030 | .010 | -1.000 | 199 | .319 |
| Pair 3 P_46 - T_46 | -.020              | .140                                      | .010 | -.040 | .000 | -2.015 | 199 | .045 |
| Pair 4 P_47 - T_47 | -.020              | .140                                      | .010 | -.040 | .000 | -2.015 | 199 | .045 |
| Pair 5 P_48 - T_48 | -.005              | .158                                      | .011 | -.027 | .017 | -4.466 | 199 | .656 |
| Pair 6 P_49 - T_49 | .045               | .337                                      | .024 | -.002 | .092 | 1.889 | 199 | .060 |
| Pair 7 P_50 - T_50 | -.005              | .213                                      | .015 | -.035 | .025 | -3.333 | 199 | .740 |
In addition the results of the analysis of RTM's perceptions on KUB chicken farming technology are shown in table 3. From table 3, it can also be seen that the RTM's cognitive attitude has score more than 3.5. This score shows that the RTM believes that farming of the KUB chickens can increase the fulfillment of animal protein consumption, income and household welfare as well as open as a new businesses. In fact, the KUB chicken farming has a high R/C ratio up to 1.14 - 2.41% [12]; [13] and very feasible to be developed as a micro business.

Likewise, the RTM’s affective attitude shows that their preferences for farming the KUB chickens not only aged of 0-2 weeks but also those above 2 weeks. The RTM has an attitude which agrees that the KUB chicken is a fast-growing chicken, laying eggs a lot and resistant to disease. This is in accordance with the advantages of the KUB chickens including the ability to produce eggs up to 160-180 eggs / year with a body weight reaching 900 grams in 10 weeks [14].

Furthermore, the RTM doubt about the state that farming the KUB chickens need a lot of feed and factory-made food. And they are not sure that the KUB chickens have a cannibalism. This is in line with [15], feed is a large component of chickens farming and the solution to reduce the feed cost by mixing the factory-made concentrate with ground corn and bran with a ratio of 1: 2: 3, this mixing will reduce about 35.5% of cost chicken’s feeds.

Finally, the RTM states that they will continue to farm the KUB chickens, increase it number and develop current KUB chicken business. Based on table 5, it can also be concluded that the perception of RTM on KUB chicken farming has a score of 3.57 that means the RTM agrees with the technology of KUB chicken farming disseminated.

**Table 3. The Score of RTM's Perception on KUB Chicken Farming Technology.**

| No. | Statements                                                                 | STS 1 | TS 2 | RR 3 | S 4 | SS 5 | Total |
|-----|-----------------------------------------------------------------------------|-------|------|------|-----|------|-------|
| **Cognitive aspects** | KUB chicken farming will increase the consumption of animal protein in the family | 0.0   | 0.1  | 0.2  | 3.4 | 0.1  | 3.9   |
|     | KUB chicken farming will increase the RTM’s income                           | 0.0   | 0.1  | 0.2  | 3.2 | 0.3  | 3.9   |
|     | KUB chicken farming will improve the RTM’s welfare                           | 0.0   | 0.1  | 0.3  | 3.3 | 0.1  | 3.8   |
|     | KUB chicken farming will add new business for RTM                           | 0.0   | 0.1  | 0.3  | 3.2 | 0.2  | 3.8   |
| **Affective Aspects** | I love to farm chicks aged 0-2 weeks                                        | 0.0   | 0.0  | 0.2  | 3.6 | 0.2  | 3.9   |
|     | I love to farm chicks aged over 2 weeks                                     | 0.0   | 0.0  | 0.0  | 3.7 | 0.3  | 4.0   |
|     | I love KUB chicken because it's growing fast                                | 0.0   | 0.0  | 0.0  | 3.7 | 0.3  | 4.0   |
|     | I love farming KUB chickens because they produce lot of eggs                | 0.0   | 0.1  | 0.6  | 3.0 | 0.2  | 3.8   |
|     | I love farming KUB chickens because they                                  | 0.0   | 0.4  | 0.3  | 2.8 | 0.1  | 3.5   |
4. Conclusion

The perceptions of poor households toward KUB chicken farming technologies only can be changed through knowledge provided throughout technical guidance. Among third teen technological components, 38% of those has accepted and implemented by the RTMs with the score of 3.57.

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