

Analysis of Characteristics Extension Workers to Utilization of Information and Communication Technology

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Abstract— The science and technology is developing rapidly with the demands of changing times. The development of information and communication technology, especially since the advent of internet technology has led to major changes in society. Information technology products are relatively cheap and affordable facilitate access to information beyond the national borders and cultural boundaries. This condition has penetrated to all levels of human life, including farmers in the villages. Therefore, the extension becomes important role as a facilitator in developing the potential of farmers. Consequently extension is required to adjust to the changes and demands of the growing community. The objectives of the research is the analysis of characteristics extension workers to utilization of information and communication technology in Limapuluh Kota regency West Sumatera. This study is a descriptive-correlational survey-based study with the sample consisting of government employee as well as freelance extension workers in 8 Extension Agency of Agriculture Fisheries and Forestry Extension (BP3K) in Limapuluh Kota regency, West Sumatera province. Based on the results obtained, the results of different test (t-test) is known that there are significant differences between the characteristics of the civil servants and THL-TBPP especially in the aspect of age and length of employment.

Keywords— competence, extension workers, information and communication technology

I. INTRODUCTION

Weakness of extensions workers are not only in the aspect of quantity, but also quality is quite alarming. The results of research related to the competence of extension showed weak agricultural extension competence [5] [8] [10]. The low quality of extension workers also confirmed by [16] that ideally it should also be field extension professionals who are able to improvise in a responsible manner to the circumstances facing the field, but the professional staff who are such do not currently sufficiently available. This condition indicates the need for various stakeholders to examine how to improve the quality of the extension. In connection with this extension of competence, to address the challenges of education today is to develop qualified human resources, which makes the extension professional in providing satisfactory services to farmers, so that the extension needs to improve their competence.

Essential competencies that must be owned by an extension is the ability to access Information and Communication Technology (ICT) in agriculture to support its role in providing information services according to the needs of farmers and to follow the development of science and communication technologies are rapidly dividing. have

sufficient competence, the agent can search for and access to sources of current information relating to agriculture and transmit the information to farmers to improve the competitiveness of their farm. This effort is consistent with Law No. 16 in 2006 about the Extension System of Agriculture, Fisheries and Forestry supports the achievement of the extension's ability to access the information.

Agricultural extension role to assist farmers in determining the choice of technology to be used by giving consideration for the consequences the use of something technologies, such as consideration of costs and revenues, market risk and channels of distribution as well as the quality and quantity of product required consumers. Extension in carrying out their functions and roles need to constantly follow the development of science and technology in accordance with the information needed by the farmer clients. The development of science and technology can be obtained among others by a wide variety of media available. Information needed for each extension varies according to location-specific problems, the information needs of farmers, as well as the conditions and needs of the extension workers in supporting the implementation of the tasks and their professional development.

ICT development as one of the alternatives to ensure speed and accuracy of information dissemination of new

technology in agriculture has also become one of the considerations on the effectiveness and efficiency of extension services [13] even the use of ICT is also inseparable from the improvement of the quality of resources farmers and agricultural development, the advancement of information and communication technology as well as consideration of the effectiveness and efficiency of information dissemination. [13] mentions one of the solutions being offered in order to address the issue of transfer of technology and knowledge by providing terms of the use of ICT for agricultural extension that call as cyber extension.

Based on the state of the art and some of the background of this research activity, problems that need to be answered by this study is the extent to which Analysis Of Characteristics Extension Workers To Utilization Of Information And Communication Technology Limapuluh Kota regency, West Sumatera Province.

II. METHODS

The study was designed as a descriptive correlational research survey, which was observed by quantitative analysis approach that is supported by descriptive and inferential statistical analysis. The study was conducted in Limapuluh Kota Regency, West Sumatera. The study was conducted over two months, in May and June 2015 from the start test and then proceed with the implementation of the research. The population is agricultural extension workers PNS and THL - TBPP known as agricultural extension or contract in Limapuluh Kota Regency of West Sumatera Province. Sampling technique in this study performed using Slovin formula, in order to Obtain a total sample of 62 respondents.

The Data collected in this study consisted of data of primary and secondary data. Primary Data is taken from the main variables studied in the form of extension characteristics, Level of Information and Communication Technology, through the respondent Obtained directly by using the instrument in the form of a questionnaire.

Secondary Data were collected with regard to the general state, supporting the data regarding actual or potential geographic conditions that can be Obtained from the parties or related institutions such as the Executive Agency of Agriculture Fisheries and Forestry Extension (BP4K), the Central Statistics Agency (BPS) Limapuluh Kota regency or other agencies.

III. RESULT AND DISCUSSION

Characteristic of the extensions worker consist of : age, formal education, non-formal education, length of employment, the level of ownership of ICT, and the extension status. Age counselors are mostly over 48 years old with a percentage of 46.15 percent. The distribution percentages show that the extension characteristics of extension workers aged between 49 to 58 years took second place with a percentage of 34.62 percent. This proves that the agents whose age is above 48 years is the age of most of the civil servants who are already approaching retirement age.

Formal education instructor grouped into high school education level / SPMA, diploma (D3) and Bachelor (D4, S1 and S2) . Most of extension workers (42.31 %) respondents have become educated at the scholar even around 0.9 % already education master degree (S2). This means that the general level of formal education is relatively high extension. Extension education level is a prerequisite for promotion to become an expert instructor. In accordance expressed [1] which revealed that the use of the media is influenced by the level of formal education, information and communication media ownership, motivation extension, extension support family members, and the demands of clients. The same is also expressed [11] that the level of education affect the use of radio and television in Nigeria.

TABLE I
DISTRIBUTION OF THE PERCENTAGE OF THE CHARACTERISTICS OF
EXTENSION WORKERS AND COEFFICIENT T-TEST BETWEEN PNS AND
THL-TBPP

Characteristics Extension	PNS	THL	Percentage (%)	Coefficient Value T-Test
Age				
a.29 - 38 Years	15.38	30.77	46.15	3.213**
b.39 -48 Years	3.85	15.38	19.23	
c.49 - 58 Years	30.77	3.85	34.62	
Formal education				
a. High School /SPMA	5.77	17.31	23.08	1.296
b. Diploma	19.23	15.38	34.61	
c. Bachelor	25.00	17.31	42.31	
Non-formal education				
a. Unprecedented	7.69	7.69	15.38	0.673
b. 1-2 Times	28.85	34.62	63.47	
c. 3-4 Times	13.46	7.69	21.15	
Length of Employment				
Short (1-17 Years)	23.08	50.00	73.08	0.4111**
Long (18-35 Years)	26.92	0.00	26.92	
Ownership levels				
a. 1 -3 ICT	9.26	11.54	20.80	0.651
b. 4 -6 ICT	13.46	21.15	34.61	
c. 7 -9 ICT	26.92	17.31	44.23	

Note: **) significant at $p < 0:01$

The results showed that counselors who have been trained in the past year amounted to 15:38%, and the instructor in the training as much as 1-2 times by 63.47%, while the counselors were trained between 3-5 times of 21:15%. Extension that has not been trained sufficiently balanced between civil servants and THL-TBPP. This suggests the policy taken by the office of the Executive Agency of Agriculture Fisheries and Forestry Extension (BP4K) has tended to give the same opportunities and chances for training for the field of competence.

The period of extension work is grouped into two categories: new (1-17 years old) and old (18-35 years). The period of extension work which most are in the range between one to 18 years amounting to 73.08 percent. This is caused by age-TBPP THL relatively young and relatively short tenure. If the extension is associated with age are also approaching retirement age (old), the length of employment is directly proportional to lifespan extension. That is, the older the extension, it is also the longer tenure.

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The level of ownership of ICT (television, radio, computers, internet, mobile phones, CD/DVD) by extension mostly classified in the high category as many as 7-9 types of ICT owned. This shows that the extension has begun to take advantage of ICT in the daily activities and in supporting their main task and functions, in particular to make the extension materials. This is supported by research results [15] revealed that the technical information is needed by extension in designing extension materials.

Extension areas of competence vary widely, but is dominated agricultural areas of competence of 55.77%, followed by livestock and fisheries with a percentage of 25.00% and fishery by 11:54%. From the results of the deepening of the interview, there is a correspondence between areas of expertise are controlled when starting into extension with the field work that occupied by the extension so that the extension more easily deliver technology innovations to farmers built.

The results of different test (t-test) is known that there are significant differences between the characteristics of the civil servants and THL-TBPP especially in the aspect of age and length of employment. Research shows that the average age of civil servants classified in the category of older adults (48-60) years at 30.77%, while the THL-TBPP have averaged a relatively young age (29-38 years) with the same percentage that is equal to 30.77 %. The average age of THL-TBPP tend to be younger and have shorter working lives still ranging 1-17 years when compared with the age of civil servants who tend to be older and have a long working life ranged 18-35 years.

Another thing that found that the majority of civil servants have a level of ownership of ICT as much as 7-9 types of ICT that is equal to 26.92%, while the THL-TBPP have 7-9 types of ICT that is equal to 17:31%. Differences in the level of ICT ownership is due to the civil servants who have the ability to make a purchase, especially computer and ICT use is more likely to be used by children, while the THL-TBPP financial constraints and rewards become problems. The research hypothesis that says there is a real difference between the characteristics of the civil servants and THL-TBPP in the use of ICT is accepted that in the aspect of age and length of employment result is in line with research [9] that the age of farmers have a negative relationship with all aspects of behavior in the utilization of information technology, The older the age of the farmer, tends to lower the level of knowledge, attitudes, and skills in using information technology.

IV. CONCLUSIONS

Analysis Of Characteristics Extension Workers To Utilization Of Information And Communication Technology Limapuluh Kota regency in the West Sumatera province Consist of age, formal education, non-formal education, length of employment, the level of utilization of ICT. Based on the research there is a difference between the status of civil servants and THL-TBPP primarily on age and length of employment.

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