DOING COUNSELING ONLINE: IS IT EFFECTIVE FOR FARMERS?

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ABSTRACT

The current online-based era is part of advanced technology powered by the internet and has brought many changes in result. This study aimed to discern how online-based counseling communication has developed in farmer groups, and determine the effect of online-based counseling communication improvement on the work volume of farmer groups. This research conducted from September 2021 to March 2022 in Telaga Subdistrict, Gorontalo Regency. Simple random sampling was used to collect the data and determined by Slovin formula. Data were analyzed using multiple linear regression analysis techniques, and hypothesis testing was carried out. The results of the study revealed that The right person, and The right communication tools partially had a positive and significant influence on the effectiveness of online-based counseling. This study found that location constraints were not a problem in online-based counseling activities, but extension support and the communication tools used greatly determined the effectiveness of online-based counseling.

Keywords: Communication; Extension support; Farmer; Improvement; Online counseling

INTRODUCTION

To realize domestic food security, the government is working on various projects. According to the Food Security Council (2006), food security will be achieved as long as sufficient and affordable food is available. Eksanika & Riyanto (2017) report that agricultural development focuses more on improving production quality. The ability of human resources to manage agricultural systems following advances in science and technology is one of the determinants of the success of agricultural growth. Therefore, Oktarina *et al.* (2019) state that the agricultural development initiative is related to the task of agricultural extension workers to convey or transfer the information as new knowledge to farming communities.

Data from Central Bureau of Statistics of Gorontalo province (2021) shows that the rice harvested area in Gorontalo province from 2019 to 2020 has increased. Rice harvested area of 49,010 ha in 2019 increased to 50,557 ha in 2020. In addition, during this period, lowland rice production in Gorontalo province increased from 23,211 tons in 2019 to 241,065 tons in 2020. In Telaga Subdistrict, Gorontalo Regency, the rice harvested area is around 431.45 ha, with a total annual production of 3,933. tons/year.

Due to the endless Covid-19 pandemic, agricultural and non-agricultural companies must "live with Covid-19". Extension workers and farmers must adapt to new attitudes and behaviors (new normal). The fundamental impact of Covid-19 is limited mobility due to large-scale social restrictions, reduced access to agricultural knowledge, infrastructure, and resources, and difficulties in communication and

assistance from agricultural extension workers. The Covid-19 outbreak had a broad impact, affecting various industries, including agriculture. Various activities, on-farm or off-farm, are not optimal (Elizabeth, 2021).

To increase rice yields, farmers rely not only on their abilities but also on the role of extension workers in developing their agricultural knowledge, one of which is through communication devices and information technology. Anwar & Rusmana (2017) explain that advances in digital technology have been facilitated by the availability of high-speed internet, which has resulted in various changes in the field of communication.

According to Liliweri (2017), the word "communication" comes from the Latin "comunicare," which means "to transfer or transmit." This definition explains the purpose of communication: to ensure that everyone has the same information and sentiments about something in general and in detail. Meanwhile, Suherman (2020) explained that communication between humans is essential to human life. In everyday life, people communicate with their social environment verbally and nonverbally.

Digital-based or online communication is direct interaction using digital communication tools. Anwar & Rusmana (2017) argue that advances in digital technology, aided by the power of the internet, have resulted in many amazing transformations, especially in communication. Developments in communication and digital technology have given rise to various communication media, from complex space and military communication devices to ordinary daily cell phones, from business-purpose uses to daily social interaction.

As a result, extension workers and farmers must be technology literate and able to use various media according to their needs. It does not prevent farmers from being cosmopolitan because they can communicate online by searching for information outside the system or using technology such as the internet. Anyone can access online-based information. Extension workers' needs for innovation can be met through various sources. One of them is the internet which can be accessed through various electronic devices. In helping farmers solve problems, extension workers often face innovation gaps. The application of information technology through computers and cellular phones in implementing cyber extensions in various countries can accelerate the learning process of the community (Oktarina *et al.*, 2019).

There are 1,098 extension workers and 103,168 farmers in Gorontalo Province, 329 extension workers and 33,104 farmers in Gorontalo Regency, and 9 extension workers and 16 farmers in Telaga Subdistrict. Therefore, it is interesting to see the growth in the use of online-based communication media as a source of information for lowland rice farmers in Telaga Subdistrict, Gorontalo Regency. The study aims to determine the improvement of online-based counseling communication and analyze its effect on the effectiveness of online-based counseling on lowland rice farmer groups in Telaga Subdistrict, Gorontalo Regency.

METHOD

The study took place in Telaga Subdistrict, Gorontalo Regency, from September 2021 to March 2022. This type of research is explanatory research using a statistical approach. The types of data collected are primary and secondary. Primary data are collected directly from farmers through questionnaires, including a collection of questions or statements addressed to farmers, while secondary data come from relevant agencies in the villages.

The population of farmers in the research location is 719 rice farmers. The sampling technique used is simple random sampling which is described by Fitria & Ariva (2018) as a simple technique since it is done randomly without regard to similarities or strata in the population. The number of samples was determined by the Slovin formula. Based on results of calculations using the Slovin formula with an error tolerance of 15%, the sample size obtained is 42.

$$n = \frac{N}{1 + N(e)^2}$$

Information :

n   : Sample Size
N   : Population Size
e^2 : Margin of Error (error tolerance)

$$n = \frac{719}{1 + 719 (0.15)^2}$$

$$n = 42$$

Data Quality Analysis

Testing the quality of instrument data using validity and reliability tests. The validity test aims to determine the validity of a measuring instrument in measurement. The validity of the prepared statements can be determined by comparing the score of each statement with the total score. The data is said to be valid if the correlation value is ≥ 0.3. Because the questionnaire used in this study did not contain an incorrect or zero score, the reliability test used the Cronbach Alpha formula. It is considered reliable if the Cronbach Alpha score is more than 0.6.

Classic Assumption Test

The classical assumption test uses the data normality test, multicollinearity test on the independent variables and the heteroscedasticity test. The normality test is a residual test that determines the normal distribution of the dependent and independent variables in the regression model. Successful regression models have normal or near-normal residual distributions (Halid *et al.*, 2018). Likewise the linear relationship between the independent variables X in the multiple regression model is called multicollinearity or multiple collinearities. These variables are multiple collinear if the linear relationship between the independent variables X in the multiple regression model is perfectly correlated. Variance Inflation Factors can be used to determine multicollinearity (VIF). If the VIF is less than ten, then there is no multicollinearity between the independent variables, and if the total VIF value is greater than 10, the model is assumed to contain multicollinearity (Basuki & Prawoto, 2017). Furthermore, the variance inequality in the residuals for all data in the regression model was tested for heteroscedasticity. The test aims to determine deviations from the classical assumption requirements in the regression model, which is the absence of heteroscedasticity (Basuki & Prawoto, 2017).

Multiple Linear Regression Analysis

This test calculates the effect of the right person, the right location, and the right communication tools on the effectiveness of online-based counseling using a formula model according to the study objectives as follows:

$$\hat{Y} = \alpha + \beta_1 . X_1 + \beta_1 . X_1 + \beta_1 . X_1 + e$$

Information :

$\hat{Y}$: Effectiveness of Online-Based Counseling (Beta (β))
α : Constant
$\beta_1, \beta_2, \beta_3$: Coefficients of Variable
X_1, X_2, X_3 : The right person; The right location;
            The right communication tools
e   : Error term

Hypothesis Testing

This test determines the effect of developing online-based counseling communication on the effectiveness of online-based counseling on farmers as follows:

H_1 : The right person has a significant effect on online-based counseling

H_2 : The right location has a significant effect on online-based counseling.

H_3 : The right communication tools has a significant effect on online-based counseling

Statistical t-test (Partial Test)

The t-test assessed the significant effect of each independent variable on the dependent variable. The test is carried out by comparing t-count and t-table or based on a probability or significance value of 0.05.

Statistical F-test (Simultaneous Test)

The F-test determines the significant effect of all independent factors on the dependent variable. The test is carried out by comparing the f-count with the f-table or based on the probability value (significance value) of 0.05.

Coefficient of Determination (R^2)

Moroki *et al*. (2018) explain that the coefficient of determination test (R2) aims to determine the effect of the independent variable. A small or close to zero R2 score indicates that the ability of the independent variable to explain the variation of the dependent variable is relatively limited. An R2 score close to one indicates that the independent variable provides almost all the information needed to predict the dependent variable.

RESULTS AND DISCUSSION

Improvement of Online-Based Counseling Communication

In Telaga Subdistrict, Gorontalo Regency, lowland rice is wetland agriculture. Farming activities in this area cannot be separated from the role of extension workers in providing helpful information and knowledge. Based on the interviews, almost all farmers in Telaga Subdistrict, Gorontalo Regency, need a lot of information and knowledge from the extension workers. However, the limitations in participating in agricultural extension activities resulted in a lack of proper farming knowledge among farmers. Therefore, the online-based extension makes it easier for farmers to obtain new information or knowledge in farming.

The Multiple Linear Regression Test Results

One of the analyzes to determine the direction of the correlation between the independent and dependent variables is multiple linear regression analysis. Following the conventional assumption test, multiple linear regression testing is required to determine the effect of the independent variable on the dependent variable. Table 1 summarizes the multiple linear regression test.

Based on Table 1, multiple linear regression analysis results try to measure the effect of two or more variables. The analysis of the effect of the independent variable on the dependent variable to obtain the results of the regression effect is carried out with the following conditions :

$$\hat{Y} = 0{,}680 + 0{,}292X_1 - 0{,}057\ X_2 + 0{,}688\ X_3$$

Table 1. Multiple Linear Regression Test Results

Variable	Coefficient	t-value	sig.	F-statistic (sig.)	Adjusted R^2
(Constant)	0.680				
The right person	0.292	2.995	0.005	41,021 (0.000)	0.745
The right location	-0.057	-0.646	-0.522		
The right communication tools	0.688	5.560	0.000		

Source: Data After Processing with SPSS 21, 2021

The constant value of 0.680 is a fixed value. It means that if the right person, the right location, and the right communication tools have no effect, the average score obtained remains at 0.680. The value of the right person coefficient for the X1 variable is 0.292 or 29.2%. It means that for every 1% increase in the right person's score, the effectiveness of online-based counseling will increase by 29.2%. The value of the right location coefficient for the X2 variable is 0.057 with a percentage of 5.7%, which means that for every 1% increase in the right location score, the effectiveness of online-based counseling will is going down by 5.7%. The coefficient value of the right communication tools for the X3 variable is 0.688 or 68.8%. It means that for every 1% increase in the right communication tools score, the effectiveness of online-based counseling will increase by 68.8%.

Statistical t-test result

In Table 1, the significant value of the right person is 0.05. Variable X1 has a value of t-count = 2,995 and t-table = 2,024. Since t-count > t-table, it can be said that the variable X1 has a contribution to Y. The positive t-count (+) indicates that the right person has a unidirectional correlation with the effectiveness of online-based counseling. Thus, it can be concluded that the right person has a significant effect on the effectiveness of online-based counseling.

The significant value of the right location is -0.522. The sig value is greater than the probability value of 0.05 or -0.522 > 0.05, so H1 is rejected, and Ho is accepted. Variable X2 has a value of t-count = -0.646 and t-table = 2.024. Since t-count < t-table, it can be said that the X2 variable has no contribution to Y. Thus, it can be concluded that the exact location has no significant effect on the effectiveness of online-based counseling.

Furthermore, the significance value of the right communication tools is 0.000 (Tabel 1). The significance value is smaller than the probability value of 0.05 or 5.560 > 0.05. Variable X3 has a value of t-count = 5.560 and t-table = 2.021. Since t-count > t-table, it can be said that the X3 variable has a contribution to Y. A positive t-count (+) indicates that the right communication tools has a unidirectional correlation with the effectiveness of online-based counseling. Thus, it can be concluded that the right communication tools has a significant effect on the effectiveness of online-based counseling. The summary of the questions and the t-count value from hypothesis testing can be seen in Table 2.

Table 2. Summary Results of the Hypothesis Testing

	Hypothesis	Scores	Information
H_1	The right person has a significant effect on online-based counseling	2,995	Accepted
H_2	The right location has no significant effect on online-based counseling.	-0,646	Rejected
H_3	The right communication tools has a significant effect on online-based counseling	5,560	Accepted

Source: Data After Processing with SPSS 21, 2021

Statistical F-test result

The t-test is part of hypothesis testing. The basis of decision making is if the value of significance < 0.05 or F-count > F-table, the X variable has a simultaneous effect on the Y variable, while if the significance value > 0.05 or F-count < F-table, variable X has no simultaneous effect on variable Y. Determination of F-table is using the following formula: F_{table} = 2,839. Based on Table 1, the significance value for the simultaneous effect of the right person, the right location, and the right communication tools on the effectiveness of online-based counseling is 0.000 < 0.05, and the F-count is 41.021 > F-table 2.839. Thus, it can be concluded that the right person, the right location, and the right communication tools simultaneously affect the effectiveness of online-based counseling so that the hypothesis in this study is accepted.

Coefficient of Determination (R^2) result

Based on Table 1, the Adjusted R-Square value is 0.745 or with a percentage value of 74.5%. The result is close to 1, meaning that the right person, location, and communication tools provide almost all the information needed to predict variations in the effectiveness of online-based counseling. Extension communication is crucial in providing vital agricultural information for farmer and rice farmer organizations in Telaga Subdistrict. The information can provide new insights to farmers about managing lowland rice production.

Advances in internet communication can make it easier for extension workers to convey information simply by sending and disseminating it through various media. This web-based counseling communication benefits farmers, extension workers, and anyone who needs this technology. The development of online-based communication is an alternative for extension workers in facilitating communication.

The Effect of the Right Person on the Effectiveness of Online-Based Counseling on Lowland Rice Farmers

The effect of the right person on the effectiveness of online-based counseling has proven to be significant as shown in Table 2. The right person is farmers or those who work in the agricultural sector, especially in lowland rice farming. The role of farmers is to manage lowland rice farming. In the process, they always need any input or information. The higher farmers' knowledge in farming management, the better the results will be.

Helpful information can add insight to a farmer. Therefore, this online-based counseling communication is vital for farmers since they can still get information while working Sirajudin & Kamba, 2021; Moonti *et al.*, 2022; Hermawan, 2018). The test results show that the right person has a significant effect on the effectiveness of online-based counseling. This indication is shown by increasing scores on the "right person" questions answered by respondents, which can change the effectiveness of online-based counseling. The results of this study are in line with the findings of Prasetyo *et al.* (2022) which obtained an effectiveness score of 87%, and a satisfaction score of 80.5 regarding the use of extension media in educating farmers. Prasetyo *et al.* (2022) said that monitoring and counseling that is carried out well through application media according to the context and user needs has a positive impact on increasing farmer productivity and welfare.

The Effect of the Right Location on the Effectiveness of Online-Based Counseling on Lowland Rice Farmers

The statistical t-test results show that the right location has no effect on the effectiveness of online-based counseling (Table 2). The right location means the research location where the farmer lives. The right location acts as an indicator in determining the effect of location on the effectiveness of online-based counseling. The right location is Telaga Subdistrict, Gorontalo Regency. This area is strategically

located between the mountains and the lake, where the internet network is excellent. Therefore, it is inevitable that the location is suitable for conducting studies on the development of online-based communication.

However, the test results show that the right location has no significant effect on the effectiveness of online-based counseling. This conclusion can be seen in the decrease in scores on the right location question answered by respondents, which can change the effectiveness of online-based counseling. This means that any location can effectively carry out online counseling with the availability of media, internet and counseling support applications. These results in line with Moonti *et al.* (2022) findings that location can determine which counseling is carried out based on technological information.

The Effect of the Right Communication Tools on the Effectiveness of Online-Based Counseling on Lowland Rice Farmers

The effect of the right communication tools on the effectiveness of online-based counseling is proven to be significant as seen in Table 2. The right communication tools are technological tools used in online-based communication. Communication will only be carried out if there are communication tools. Thus, communication tools are the essential component in developing online-based communication.

The communication tools that most farmers in Telaga Subdistrict often use is a cellphone. They take advantage of the various media available in these communication tools. Communication media is a tools to convey messages from communicators to audiences. Communication media can be described as a means of producing, reproducing, managing, and distributing information.

Furthermore, the results of this research show a positive response from farmers where the use of appropriate communication tools can be effective in conducting online-based counseling. This research is in line with Prasetyo *et al.* (2022) research where using appropriate media and applications according to user convenience, counseling activities do not take a long time. By using the right communication tools, the monitoring and counseling process between farmers and extension workers can be carried out anytime and anywhere.

CONCLUSION

The implementation of online-based counseling in this research area has proven to be effective for farmers. This is indicated by the coefficient of determination regarding the effect of the right person, right location, and right communication tools on the effectiveness of online-based counseling of 74.5%. Thus, online-based counseling is considered necessary by farmers in Telaga subdistrict, Gorontalo regency. The effectiveness of online-based counseling activities can be carried out anywhere and anytime for farmers using the right communication tools. Doing online-based counseling by agricultural extension workers can be beneficial for farmers in increasing knowledge and information which can ultimately improve farmer performance.

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