

Response of Agricultural Extension Agents in Yogyakarta Special Region Towards Social Media Application as the Agricultural Extension Media

Alia Bihrajihant Raya, Diah Fitria Widhiningsih*, Mesalia Kriska

The Department of Agricultural Socio-economics, Faculty of Agriculture, Universitas Gadjah Mada

**Corresponding author. Email: diah.fitria.w@ugm.ac.id*

ABSTRACT

In order to improve communication effectiveness, the performance of source, message, channel, and receiver is necessary. In agricultural extension and communication, the channels become very important that the extension agent as a source can carry out the technology transfer successfully. Not only mass communication, group communication also requires media in increasing the interaction to learn together in groups. Moreover, nowadays digitalization has been widely used by the extension agents and farmers, for example social media are used as tools of extension and further discussion. Therefore, this study aims (1) to determine the use of social media by the extension agents and (2) to explain the extension agents' response to social media in agricultural extension, and (3) to determine factors influencing extension agents' response. This research was conducted quantitatively with a survey method. It applied simple random sampling and employed 200 extension agents in Yogyakarta Special Region as the respondents. The primary data were analysed to find out the preferences for using social media in extension and the extension agents' response to social media. In addition, a regression analysis was applied to determine the factors that significantly influence the extension agents' response. The results showed that social media used by the extension workers respectively are Whatsapp, Facebook, Youtube, and agricultural applications. Not many of them use Instagram and very few of them use Twitter as the medium of extension. Some extension agents use social media according to their needs. Their response to social media including cognitive, affective, and behaviour responses is quite good but still needs to be improved. They have not really mastered the features existing in social media. They also considered that social media are less useful in giving information about price and strengthening groups. In addition, it is perceived less useful for coordinating with other stakeholders but benefits for coordinating among other extension agents. They recognized that social media can help their task in conducting extension. The response is influenced by their age, education level, perception, experience of using social media, social media features, and accessibility that all factors play a role as supporting factors. To increase their response to social media, the extension agents need to study in more detail regarding the features based on their needs in extension. This will also increase the experience of the extension agents in using social media regardless of how long they have used it.

Keywords: *social media, extension agent, response*

1. INTRODUCTION

The implementation of extension in Indonesia tends to lead to the transfer of technology. Therefore, it is necessary to shift towards empowering farmers by providing technology and information to improve the ability of farmers [3]. The ability and literacy of farmers

in selecting information is an important aspect for increasing the success of their farming. Various agricultural information can be easily obtained through the media such as mass media, internet, social media, and other platforms or applications.

In the development of information technology, the emerge of social media that can be used for discussion,

interaction, and information sharing is an innovation which is not limited by space and time. [5] stated that in Nigeria, there is an increase use of social media among researchers, extension workers, private sector, and other stakeholders in exchanging information in agricultural sector. Furthermore, [4] added that both active and passive user can benefit from the use of social media for extension and communication. Therefore, everybody has the same opportunity to access information from social media. In addition, social media supports the access of data and information and makes it more efficient in terms of funding and collaboration involving various parties.

[1] identified several types of social media based on their functions such as social media for networking (Facebook, Google+), blogs and vlogs, micro-blogs (Twitter, Instagram), socially integrated messaging platforms (WhatsApp, Facebook Messenger, Line), Professional Networking (ResearchGate, LinkedIn), content communities (Youtube, Instagram, Photo), and discussion forum/groups (Google hangouts, digital apps). Based on the type of social media, extension workers can use it in various outreach activities. [2] stated that in Nigeria, the use of Facebook and WhatsApp are suitable for communicating the agricultural information such as crop commodity prices, land use, awareness, and participation of the community in agricultural programs and have benefits in increasing access to agricultural information. The use of social media in agriculture helps the extension workers able to communicate to their target audience at a lower cost.

In the digital era today, all information dissemination activities will always involve an element of digitalization. It hopefully makes the process of information dissemination can be carried out quickly with the wider reach. Many new methods regarding the social media have emerged in the field of agricultural extension and it takes the advantage of using technological advances, one of which is the use of agricultural applications as a means of information dissemination. However, the problem of extension workers in Indonesia arises with the decline in the quality and skills of the extension workers in conducting the extension services. Many of them are not as proficient as the previous extension workers in the previous decade. They sometimes do not carry out their function as assistants to farmers in the field properly. Therefore, their capacity in following the trend and needs in recent era should be developed.

2. RESEARCH METHODS

This research was conducted quantitatively with a survey method. It applied simple random sampling and employed 200 extension agents in Yogyakarta Special Region as the respondents. The primary data were analyzed to find out the preferences for using social

media in extension and the extension agents’ response to social media. Regression analysis was applied to determine the factors that significantly influence the extension agents’ response.

3. RESULTS AND DISCUSSION

3.1. The Use of Social Media

The following is the percentage of use of social media by the extension agents in D.I., Yogyakarta as shown in Figure 1.

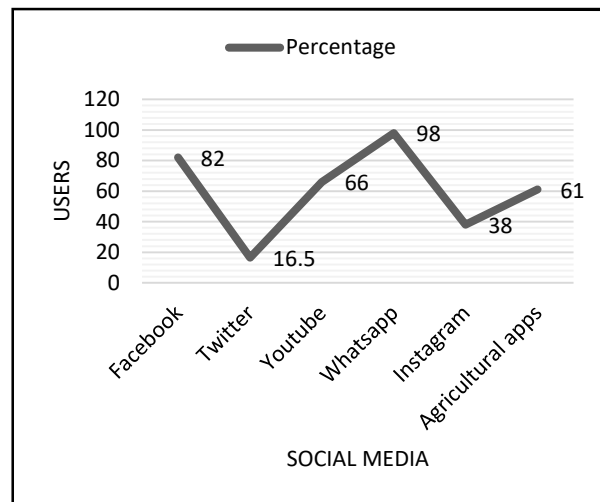


Figure 1. The use of social media by agricultural extension agent

Figure 1 shows that WhatsApp becomes the dominantly used social media among the extension agents. Besides, Facebook is also the application used by 82% of extension workers because it has simple features to use. Some extension workers have started to take advantage of agricultural application although the use is still very limited. Hence, it can be seen that for the extension workers, the use of social media is not only limited to entertainment and communication, but also to occupation in assisting the farmers.

3.2. The Response of Agricultural Extension Agents to the Use of Social Media for Agricultural Extension

The development of the current digital era brings easy access to it for agrarian community. The community such as extension agents can access the information, communication, and education to support agricultural activities. However, not all agricultural agents in D.I. Yogyakarta show an attitude that supports the existence of social media and use it to help their working. Table 1 describes the response of extension agents of the use of social media for agricultural extension.

Table 1. The Response of Agricultural Extension Agents to the Use of Social Media for Agricultural Extension

| No | Aspects | Score | Average | St. Dev |
|---|--|------------|-------------|---------|
| Cognitive | | | | |
| <i>The extension agents understand that social media gives advantages in:</i> | | | | |
| 1 | Giving extension and coordinating with other extension agents | 0-5 | 4.16 | 0.73 |
| 2 | Interacting with farmers to solve their problems | 0-5 | 3.92 | 0.82 |
| 3 | Sharing information about the materials and production | 0-5 | 4.06 | 0.71 |
| 4 | Sharing information about weather | 0-4 | 2.46 | 0.92 |
| 5 | Sharing information about cultivation | 0-4 | 3.03 | 0.79 |
| 6 | Sharing information about price | 0-4 | 2.01 | 0.97 |
| 7 | Developing relationship with The Department of Agriculture and stakeholders | 0-5 | 3.92 | 0.92 |
| 8 | Developing relationship with other farmers in other areas | 0-4 | 2.09 | 0.96 |
| | Average | 0-4 | 3.03 | |
| Affective | | | | |
| <i>The extension agents are interested in social media because:</i> | | | | |
| 1 | It gives easy access to conduct extension for farmers | 0-5 | 3.90 | 0.68 |
| 2 | It facilitates the interaction between the extension agents and the experts and government | 0-5 | 3.99 | 0.81 |
| 3 | It makes the extension more effective and efficient | 0-4 | 2.47 | 0.94 |
| 4 | Most farmers have already used social media | 0-4 | 2.38 | 0.94 |
| 5 | Most farmers understand the information independently through social media | 0-4 | 2.31 | 0.99 |
| | Average | 0-4 | 3.03 | |
| Conative | | | | |
| <i>The extension will use social media to:</i> | | | | |
| 1 | Communicate with farmers and other extension agents | 0-5 | 3.97 | 0.94 |
| 2 | Make farmers interact each other to solve their difficulties | 0-5 | 4.05 | 0.74 |
| 3 | Share information about materials and production | 0-5 | 4.02 | 0.81 |
| 4 | Share information about weather | 0-5 | 3.90 | 0.71 |
| 5 | Share information about cultivation | 0-5 | 2.67 | 0.84 |
| 6 | Share information about price | 0-5 | 2.49 | 0.85 |
| 7 | Develop relationship with The Department of Agriculture and stakeholders | 0-5 | 3.90 | 0.82 |
| | Average | 0-4 | 3.56 | |

Source: Primary data 2020

A response towards stimulus or information obtained from the surroundings is reflected in knowledge or cognitive, feelings or affective, and propensity to behave or conative. Based on the standard deviation values on Table 1, there is no significant gap in attitudes of each extension agents in the use of social media. All extension agents have a uniform response towards social media that they strongly agree that social media has a main function to coordinate with partners and to disseminate information related to production inputs. To support the completeness of information of extension materials, the extension agents will also use the social media to access information from farther assisted location. In addition, they have tendency to increase their knowledge both

related to agriculture and non-agriculture through social media.

Agricultural Extension Agents to the know that social media can support their activities such as coordinating with extension workers, getting information about agriculture, establishing relationships both with stakeholders and farmers, and using it for agricultural needs. However, the use of internet is still limited to communication purpose during working.

The results of the affective response research show that agricultural extension workers feel that the use of social media is affective for agricultural extension. They can do their job easily as extension agents and can

interact with many people such as farmers, local agencies, and stakeholders. Nevertheless, they added that farmers still find difficulty in utilizing social media so that this will limit them from being able to connect with those farmers through social media.

In terms of tendency to behave, the extension agents show good response of the benefits of using social media in enhancing the media of agricultural extension. There are capable and have tendency to use social media to interact with the department, seek information about innovations in other areas, and develop insight related to their job. They also prepare the materials properly due to the information accessed from social media. Hence, they will use the social media in long-term process of extension. Furthermore, to optimize the use of social media, this research also presents the factors influencing their response.

3.3. The Factors Influencing the Use of Social Media by Agricultural Extension Agents

Response as an act on a stimulus is influenced by the information in the environment that supports the action and also affected by the obstacles that hinder the sustainability of the response. The information and barriers are the factors that influence a response of extension agents like what they know, feel, and tend to behave towards the use of social media to give an agricultural extension. Table 2 is presented to describe the influencing factors.

Overall, the factors that influence the response of the extension agents to use social media is formulated to this regression equation:

$$Y = 17,213 + 0,267 X_1 + 0,705 X_3 + 0,835 X_4 + 0,375 X_5 + 0,283 X_6 + 0,375 X_7 \tag{1}$$

Note:

Y = The response of extension agents of using social media for agricultural extension

X₁—X₇ = Factors influencing the response (See Table 1)

Based on the regression analysis results, there are six factors influencing the response of extension workers. Age, education level, perception, and experience of using social media as internal factors give significant influence to the extension agents’ response. Additionally, social media feature and accessibility are the external factors influencing their response significantly. The result also shows the value of Adjusted R Square of 0.373 indicating that the existing factors affect the response of the extension agents to use social media to support an agricultural extension only by 37.3%, while the other 62.7% of influence is given by the other factors which are not measured in this research.

All of the factors with significant influence also shows positive impact on the response. As they get older, the extension agents respond less well to the use of social media in giving the extension. However, the Indonesian Government Regulation Number 11 year 2017 concerning the management of Civil Servants states that the working age limit for intermediate expert (or *ahli madya*) extension agents is 60 year old. Therefore, after they reach the age limit and get retired as agricultural extension worker, they may show different response like what they perform now.

Table 2. Factors influencing response of the extension agents towards social media for agricultural extension

| Variables | Coefficient of Regression (B) | Sig. | Result |
|--|-------------------------------|-------|--------|
| Internal Factors | | | |
| Age (X ₁) | 0.267 | 0.002 | * |
| Gender (X ₂) | -0.633 | 0.665 | NS |
| Education (X ₃) | 0.705 | 0.037 | * |
| Perception (X ₄) | 0.835 | 0.000 | * |
| Experience of using social media (X ₅) | 0.375 | 0.021 | * |
| External Factors | | | |
| Social media feature (X ₆) | 0.283 | 0.001 | * |
| Accessibility (X ₇) | 0.375 | 0.057 | * |
| Facility availability (X ₈) | 0.239 | 0.373 | NS |
| Constant | 17.213 | | |
| Adjusted R Square | 0.373 | | |

*: significant on α = 10%

Ns: Non-significant on α = 10%

Source: Primary data 2020

Other internal factors that also has positive influence are education level, perception, and their experience using social media which are closely related to each other. The higher their education level, the better the extension agents' response towards the use of social media. Also, they will also have better perception along with their increasing experience in using social media.

On the other hand, the external factors with significant influence such as features, accessibility, and facilities availability also show positive impact on extension agents' response. The better and more complete the features provided in social media, the better their response in using social media. They tend to choose social media that can meet all their needs in providing agricultural extension. In addition to features, another consideration is the accessibility of social media. When social media is difficult to access, both by the extension agents and farmers, the response of extension agents to social media will decrease, especially for the tendency to use it in their job. In contrast to features and accessibility which are important components in the selection and use of social media, the availability of facilities such as mobile phones, signals, and internet data are not the significant factors affecting the response. In this digital era, these are mandatory media for working for government employees including the agricultural extension agents so that there are the same supporting tools available in the office; as an example, there is computer to replace the use of mobile phone. In addition, they also use their time to meet farmers and other stakeholders in the field so that the existence of supporting facilities is not significant.

4. CONCLUSION

The social media used by the extension workers respectively are Whatsapp, Facebook, Youtube, and agricultural applications; and Whatsapps and Facebook are mostly chosen by the extension agents. The extension agents have good attitude towards social media use in agricultural extension. Gender, education, perception, experience using social media, social media feature, and accessibility significantly influence the response of extension agents towards social media. Age and facility do not give significant effect on the response of extension agents towards social media.

To increase their response to social media, the extension agents need to study in more detail regarding the features based on their needs in extension. This will also increase the experience of the extension agents in using social media regardless of how long they have used it.

ACKNOWLEDGMENTS

This research was supported by RTA Grant 2019 of Universitas Gadjah Mada.

REFERENCES

- [1] S. Bhattacharjee, and S. Raj, *Sosial Media: Shaping the Future of Agricultural Extension and Advisory Services*, Global Forum for Rural Advisory Services Forum Mondial Pour Le Conseil Rural Foro Global Para Los Servicios de Asesoría Rural (GFARS), <http://www.g-fras.org>, 2016
- [2] J. C. Iwuchukwu, O. G. Eke and C. E. Nwobodo, *Perception of Extension Personnel on Suitability and Benefits of Using Sosial Media in Communicating Agricultural Information in Enugu State, Nigeria*, *J. of Agricultural Extension* 23(3), 2019, doi: 10.4314/jae.v23i3.15.
- [3] K. S. Indraningsih, B. G. Sugihen, P. Tjiptoproanoto, P. S. Asngari, dan Wijayanto, *Kinerja penyuluh dari perspektif petani dan eksistensi penyuluh swadaya sebagai pendamping penyuluh pertanian*. *Analisis Kebijakan Pertanian* 8(4), 2010, doi: 10.21082/akp.v8n4.2010.303-321.
- [4] S. Raj, and S. Bhattacharjee, *Mobile phone and social media for agricultural extension: Getting closer to hype & hope?*, *International Conference on Extension Educational Strategies for Sustainable Agricultural Development: A Global Perspective 2013*, University of Agricultural Sciences, Bangalore, 2018
- [5] Sokoya, A. Abosede, A.O. Alabi, Fagbola, dan B. Oluyemisi, *Farmers Information Literacy and Awareness towards Agricultural Produce and Food Security: FADAMA III Programs in Osun State Nigeria*, <http://creativecommons.org/licenses/by/3.0/>, 2014