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COSMOPOLITAN COMMUNICATION BEHAVIOR AMONG AGRICULTURAL EXTENSION WORKERS IN THE DIGITAL ERA

Atikah Dewi Utami

Institut Agama Islam Negeri Syaikh Abdurrahman Siddik Bangka Belitung, Indonesia

Email : atikah.dewiutami@gmail.com

Prastowo Alrajabi

Dinas Perikanan Kabupaten Bangka Tengah, Indonesia

Email : prastowo.alrajabi@gmail.com

ABSTRACT : *The digital era has fundamentally brought changes to various agricultural extension activities in carrying out communication activities. The process seeking extension agent information is related to the media used and the cosmopolitan of the extension agents in dealing with information sources outside the village. This paper that the result of research that aims to describe the cosmopolite communication behavior of agricultural instructors and analyze the factors related to the cosmopolitan communication behavior of agricultural instructors in the digital era. The research location is in Cianjur District North Region, West Java. Data collection used questionnaires as primary data and in-depth interviews with related agencies as secondary data. The score calculation uses by analyzing the data to measure the level of cosmopolite communication behavior of the extension agents and the factors related to the cosmopolitan communication behavior of the extension agents. The results showed that the cosmopolite communication behavior of the extension agents in seeking information outside the village was still moderate. Then, age and years of service negatively correlated with the cosmopolitan communication behavior of the extension agents. It proves that the longer the extension worker works and the older the extension worker is, it does not indicate a cosmopolitan position of the extension agent in seeking information outside the village. Print media and electronic media are still the means of extension agents seeking information through the media, which is indicated by the research results that the accessibility of print and electronic media that positively correlated with the instructor's cosmopolite communication.*

Keywords : *Communication Behavior, Agricultural Extension, Digital Era*



1. INTRODUCTION

The digital era creates new literacy in everyday life, namely data literacy, technology literacy, and human literacy. It requires humans to continue to innovate. Advances in information and communication technology have brought changes to how information is collected, changed, and then disseminated. The development of information and communication technology in agriculture using the internet opens up new opportunities for extension activities to meet farmers' needs (FAO 2005). The digital age makes current information easily accessible.

The urgency of agricultural development requires the presence of extension agents who act as extension agents of the government to deal directly with farmers. As it is known, the source of credible information that is preferred by farmers is extension workers. This situation requires extension workers to have broad insight and complete information because the role of extension agents is as a good innovator,

facilitator, consultant, communicator and information manager and reflected in the instructor's communication behavior (Mardikanto 2009 and Rolling 1988).

Communication behavior is an activity that aims to seek and obtain information from various sources in meeting daily needs (Fuady et al. 2012). Furthermore, communication behavior is human behavior in communication activities to create and convey information to others with specific goals through efforts both verbal and non-verbal communication that will then become a person's habitual behavior in seeking information Wardhani (2005); Nur (2017); and Berlo (1960).

Information seeking activities in the current digital era are related to the use of media, especially the internet. The results of research by Elian et al. (2014) and Veronice (2013) state that the use of the internet by agricultural extension agents is still weak, the use of television and radio by extension workers is also. The extension's ability to find

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information using various media should be able to increase the extension's knowledge so that the information obtained is always up to date.

The demand that extension workers must be able to find various information quickly and accurately regarding the agricultural sector indirectly requires extension workers to be able to follow developments in technology and information through the use of ICT (Elian et al. 2014). According to Andriaty and Setyorini (2011), the dissemination of information through print and electronic media is increasing, and two media have great potential for extension workers and farmers to obtain agricultural information.

However, the availability of this media does not guarantee that information is used by farmers or extension workers, even though the improvement of information services to farmers will accelerate the technology transfer process that has been produced by research institutions. Agricultural development is inseparable from the

strategic role of agricultural extension agents as part of the system's function in facilitating access of key players and business actors to sources of information, technology and other resources to develop their business (Law Number 16 of 2006).

Agricultural instructors play a role in disseminating information related to efforts to improve farming methods and farming to achieve increased productivity, farmer income, and improvement of community or family welfare (Mardikanto 2010). To perform this role effectively and efficiently, agricultural extension agents must have stable access to agriculture information (Omotesho et al 2012). Agriculture information is a primary component in increasing the agriculture production sector and linking it to the market so that it affects the livelihoods of rural communities, food security, and the national economy. In this case, the availability of information via the internet can help the agricultural

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extension process become faster and most effective (Ahuja 2011).

The magnitude of the challenges faced by extension workers in the middle of the digital information era requires the need for in-depth research on the communication behavior of agricultural instructors. Based on the current situation and conditions of extension, Cianjur District was chosen as the research location with the assumption that Cianjur District is one of the areas with the potential for agribusiness development in West Java, especially food crops and horticultural commodities. Therefore, the role of extension workers and their skills in seeking information by connecting to various existing sources of information are important competencies that agricultural instructors must possess. Based on the problems that it described, the purpose of this study is to identify the cosmopolitan communication behavior of agricultural instructors in Cianjur District and to analyze the factors related

to the cosmopolitan communication behavior of instructors.

Agricultural Extension in The Digital Era

At present the specific conditions and needs of the community are seen as relevant to a participatory-based approach and information system development. The development of communication technology using mass media and the internet has the benefit of being able to reach people in remote areas so that it is possible to expand cooperation networks between extension participants. Technological progress is running very fast and almost everyone who knows it wants to do activities with the facilities provided by this technology. Various information can be accessed via the internet. Along with the development of information technology (IT), agricultural extension activities carried out by extension workers currently do not only utilize conventional media. The results of research by Fangohoi et al (2017) state

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that advances in information technology have been felt in West Papua where extension workers and farmers have used the internet as a medium of information via computers and smartphones as a form of agricultural innovation synergy needed by extension workers and farmers to support the development of sustainable innovation in the future. in the future without having to meet directly with extension workers and farmers and business actors in buying and selling agricultural commodities. According to Rowlands et al (2008), the results of their research show that the internet has become the first place used to find information that has replaced libraries and is mainly used for communication among the under 30s (Cabral 2011).

Cosmopolit Communication Behavior

Cosmopolitan communication behavior talks about the types of communication channels used to communicate between individuals from the social system to information sources outside the system. Cosmopolitical

communication behavior can be in the form of responses, actions and behavior of a person in responding and dealing with environments outside the existing social system and communication situations. A person's cosmopolitan communication behavior can be seen from their communication habits that involve sources of information outside their social system. In general, behavior is an action that is concrete and can be measured. Meanwhile, communication is a way for someone to convey information to other people. Cosmopolit is the intensity of a person in dealing with communication channels outside their social system which is characterized by communicating more, using the media, attending more conferences, and being more aware of the external environment than members in their own social system.

The more often a person deals with interpersonal communication channels, the more information that can be collected (Adi 2002). The communication process that occurs is a means of approach to building

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relationships between companions. Communication activities are a way for assistants to approach, understand, discuss problems that occur in the field, collect and share information. The communication process that occurs is a means of approach to building relationships between companions. Communication activities are a way for assistants to approach, understand, discuss problems that occur in the field, collect and share information. In communication activities, assistants or extension agents must be able to build and maintain communication. The usual way for extension workers to start building relationships is to approach both superiors and other co-workers as well as farmers by conducting two-way dialogue and communication in order to equalize perceptions (Mukhlisah 2014).

2. RESEARCH METHOD

The research was designed as a descriptive correlational survey research. By describing the data obtained from respondents through

questionnaires and interviews. The research was conducted at five (5) UPTDs divided into 16 Agricultural Extension Centers in North Cianjur District. The number of samples was determined following the Slovin provisions with a tolerance limit of 5 percent, so that 80 samples were obtained from 100 populations. The variables assessed were individual characteristics, accessibility of communication media and communication behavior. The data used in this research include primary data and secondary data. Primary data in the form of the main variables to be studied are obtained directly by interviewing respondents using the questionnaire provided. In-depth interviews and focus group discussions with several respondents were conducted to obtain qualitative data to support quantitative data. Secondary data related to the focus of the study were obtained from recording data from related agencies. Data analysis was performed using descriptive statistics using frequency

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and percentages, and inferential statistics using the Spearman Rank correlation test to see the level of

3. RESULTS

Communication on the Cosmopolitan Behavior of Agricultural Extension in the Digital Era

The problem that comes to the surface regarding agricultural extension agents in the digital era is how is the ability of an extension officer to apply current information technology in everyday life. Agricultural instructor communication behavior variables refer to the components of communication behavior proposed by Rogers (2003) including: relationships with sources outside the

The results showed that cosmopolitan communication showed that the source of information was related to business actors regarding seeds (superior seeds) and marketing. Supporting this, the World Bank (2003) states that current information on market prices for agricultural production is needed by farmers and extension

closeness of the relationship between variables using SPSS version 23.

system. In this study, the communication behavior of the extension officers was described from the information sources they used when accessing the communication channel. The information observed in this study were seeds, pest control, commodity potential, cultivation technology, marketing, harvest and post-harvest, and fertilizers. The score was determined by: (0) those who answered no; (1) for those who answered occasionally, (2) for those who answered frequently. The distribution of scores related to communication behavior is shown in Figure 1 below.

workers to increase agricultural productivity. Agricultural extension agents play an important role in the agricultural production cycle (Sheba 1997 in Dulle 1999). This is a challenge for the implementation of agricultural extension, where the number of extension agents is not proportional to the number of villages and limited

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The characteristics of the extension agents in this study are the characteristics or traits inherent in individual agricultural extension workers which can be directly observed based on the attributes that differentiate them from others including age, formal education, non-formal education, years of service, number of assisted groups and media ownership.

b. Age Category

Based on the age category of extension workers in this study, they varied from 23-57 years. Referring to Purwatiningsih (2017) categorizes age into three, namely: young (23-35 years), adults (36-47 years) and old (48-60 years). Mostly young adults (23-46 years). Grouping of extension workers by age can be seen in Table 1.

Gambar 2. Distribution of Extension Cosmopolitan Communication Behavior Scores According to Information Source and Information Sources in Cianjur District

Factors Associated with Cosmopolitan Communication Behavior

a. Characteristics

Table 1 Age number and percentage of extension workers according to characteristics in Cianjur District

No	The (X1)	Characteristics Category	Total (orang)	Percentage (%)
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1.	Age	Young (23-34 tahun)	30	37.50
		Adult (35-46 tahun)	31	38.75
		Old Age (47-57 tahun)	19	23.75
2.	Formal Education	SMA	9	11.25
		Diploma	10	12.50
		Bachelor	61	76.25
3.	NonFormal Education	Low (0-2 kali)	49	61.25
		Medium (3-5 kali)	24	30.00
		High (6-7 kali)	7	8.75
4.	Years of Service	Recent (3-14 tahun)	18	22.50
		Medium (15-25 tahun)	52	65.00
		Long (26-36 tahun)	10	12.50
5.	Own Media	Low (1-2 unit)	26	32.50
		Medium (3-4 unit)	49	61.25
		High (5-7 unit)	5	6.25

Total n= 80

Based on Table 1, it can be seen that the extension workers are in adulthood (productive), namely between 23-50 years. There are only four respondents who are at the age of 50 who are included in the unproductive age and are about to enter retirement. Therefore, it can be said that extension workers are able to find as much information as possible and convey messages through good communication to farmers so that they can increase agricultural production which has implications for increasing farmer welfare.

Formal Education

Education is an important factor in determining human resource capacity. The higher the level of formal education of the instructor, the higher the ability of the instructor to solve problems. The level of formal education of extension agents in Cianjur District consists of Senior High School (SMA), Diploma and Undergraduate (Strata 1 and Strata 2). The percentage level of formal education of extension agents can be seen in Table 1.

Based on Table 1, it can be seen that the level of formal education of extension workers is high, this is indicated by the high percentage of instructors who have

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completed undergraduate degrees (Strata 1 and Strata 2) as many as 61 people or 76.25 percent, for Diploma graduates as many as 10 people or 12.50 percent. While the graduates with a low percentage were 9 people who graduated from Senior High School (SMA) or 11.25 percent. It can be concluded that the younger the instructor's age and the lower the level of formal education of the instructor, will affect the communication behavior of the instructor in adopting innovation.

Nonformal Education

In addition to formal education, this study also looked at extension workers 'non-formal education in the form of extension workers' participation in training. Based on Table 1, it can be seen that non-formal education is classified as low, as much as 0-2 times a year, followed by 49 extension workers or 61.25 percent. A total of 24 extension workers or 30 percent attended training in one year 3-5 times and the remaining 6-7 times a year followed by 7 extension

workers or 8.75 percent. Capacity building for extension agents is low due to the lack of opportunities from related agencies to participate in training activities. According to Mulyandari (2011) increasing the capacity of extension workers in accessing and implementing information technology is the key to developing effective ICT in the scope of agriculture. Mustika (2009) found that extension workers attended non-formal education (technical training) in the last three years was very low, less than 80 hours. It can be said that the low number of agricultural instructors who take part in training affects the level of knowledge of extension workers.

Years of Service

The working period is one of the factors in observing the length of service of an extension worker. Based on Table 1, it can be seen that the extension services in this study were categorized as new (3-14 years), moderate (15-25 years), and

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long (26-36 years). The results showed that the highest work period for extension workers was 15-25 years, namely 52 people or 65 percent, extension workers with a working period of 3-14 years, namely 18 people or 22.50 percent, and extension workers with a working period of 26-36 years, namely 10 people or 12.50 percent. The higher the extension worker tenure, the higher the extension's experience in extension activities. Extension experience is one of the factors influencing the success of extension agents in implementing extension activities. Extension workers who have worked for a long time will certainly have more understanding than extension workers who have just worked as extension workers and influence the decision-making process.

Own Media

Media ownership indicates the level of ownership of the ICT extension agent which will support the extension's work. Table 1 shows that on average, the extension agents have 3-4 units of ICT media, including regular cellular phones

(without internet) and smart phones (smartphones), laptops and computers. Ownership types for ordinary cell phones and smartphones are self-owned, laptops and some computers belong to the office. Salleh et al (2008) in Enwelu et al (2017) stated that the main network devices used by extension agents were smartphones and telephones. Media ownership for extension workers can assist in carrying out extension activities, such as watching YouTube to explain visually to farmers. This means that the use of ICT media today is very helpful. In the current digital era, extension workers are also required to continue to innovate using technology. However, the extension services such as an adequate internet network in the village are still not good. The complaint felt by the extension agents was that the internet signal was not always good in the village. In addition, the government has not provided wi-fi facilities in the extension center office so that in accessing the internet, extension agents still use their own data packages.

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Media Accessibility

Afrifa (2015) categorizes mass media into two parts, namely printed media (books, newspapers, magazines and posters, brochures) and electronic media (television and radio) because print and electronic media are the main forms of media used in everyday life. . Accessibility is measured by ownership or rights to this facility, briefly in Table 2. Based on Table 2, it can be seen that access to print media for extension agents is low as many as 33 people or 41.25 percent, access to print media for medium extension agents is 19 people or 23.75 percent. and access to print media with high extension agents as many as 28 people or 35 percent. It can be concluded that extension workers rarely read the printed media to seek information about agriculture. Meanwhile, 31 people or

38.80 percent had low electronic media access, 30 or 37.40 percent medium electronic media access, and 19 extension workers or 23.80 percent electronic media access. It can be concluded that extension workers almost never listen to the radio. Extension officers admitted that radio was not a place for extension workers to seek information about agriculture. The results in the field show that the Agriculture, Plantation, Food Crops and Horticulture Service provides facilities in the form of newspapers (Sinar Tani) and magazines (Trubus) which can be picked up by extension agents by coming directly to the Office which can then be stored at the Agricultural Extension Office (BPP) so that all extension agents have the same opportunity to read.

Table 2 Number and Percentage of Accessibility of Agricultural Extension Media in Cianjur District

No	Accessibility Media (X2)	Category	Total (orang)	Percentage (%)
1.	Print Media	Low	33	41.25

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	Medium	19	23.75
	High	28	35.00
2. Electronic Media	Low	31	38.80
	Medium	30	37.40
	High	19	23.80

Total n= 80

The print media and electronic media facilities have been provided by the relevant agencies. However, extension workers did not take advantage of this because of their flexible working hours so that their curiosity to seek information through print and electronic media was low. The results of the research by Anwas et al. (2009) show that the utilization of the media, especially newspapers, books, and radio by extension agents is low. In addition, the use of radio and television by extension workers was very rare. This is different from Onemlease and Adisa's (2006) statement that the continuous use of radio and television as agricultural communication media for extension workers is needed as a means to encourage the adoption of agricultural technology. It can be concluded that the

use of print media and electronic media is still the choice of extension workers in seeking information.

Relationship Between Extension Characteristics, Media Accessibility and Communication Behavior

Characteristics of extension workers that were significantly related to communication behavior were age and years of service (Table 3). The relationship between age and communication behavior is negatively and significantly correlated, which means that the younger the respondent is, the higher the ability to seek information both inside and outside the village. Meanwhile, the relationship between tenure and communication behavior has a positive and very real correlation to communication within the

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village. The higher the tenure of an extension worker, the higher the ability to find information in the village.

The work period is related to work experience. A person who has a long work experience will develop skills, abilities and competencies. Work experience is a determinant of a person's behavior (Gultom 2016). The longer a

person works in an organization, the more experienced that person will be, so that their work skills are getting better.

The media accessibility variable has a very significant relationship with communication behavior including access to print media and access to electronic media (Ranupendoyo and Saud 2005).

Tabel 3 Correlation Coefficient of Instructor Characteristics and Media Accessibility on Cosmopolitan Communication Behavior of Agricultural Extensions in Cianjur District

Sub peubah	Cosmopolit Communication (Y1.2)
Age (X1.1)	-0.238*
Formal Education (X1.2)	-0.049
Nonformal Education (X1.3)	0.040
Years of Service (X1.4)	-0.125
Own Media (X1.6)	0.200
Accessibility Print Media (X2.1)	0.332**
Accessibility Electronics Media (X2.2)	0.269*

The higher the accessibility of the media by the extension agents, the better the communication skills of the extension agents both inside and outside the village. The communication system

will not run well without the use of certain media (Nurudin 2010). Extension officers also use the internet to find information because of the ease of accessing the internet which can be done

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anytime and anywhere. However, the availability of the internet network has not been facilitated by the central government and extension workers tend to seek information face-to-face. It can be concluded that the agricultural extension agents in Cianjur District still use traditional methods in their daily life.

The government should provide internet services to support extension services, because the availability of information via the internet can help the agricultural extension process more

quickly and effectively (Ahuja 2012). The elements of the implementation of the extension personnel refer to MOA 91/2013 concerning Guidelines for Evaluating the Performance of Extension

Officers. The communication factor is important in every activity process that involves how to communicate and can be seen from its behavior (Eswandi 2017). Purwatiningsih (2017) states that the more often extension workers use the internet in compiling reports, making materials, compiling programs, and designing extension methods, the performance of extension agents in preparing agricultural extension activities, implementing agricultural extension activities, and evaluating agricultural extension will be better. The implementation performance of the extension agents was high with a percentage of 36.25% (Table 4).

Tabel 4 Number and Percentage of Respondents Based on Implementation Performance in Cianjur District

Performance	Total (n)	Percentage (%)
Low	25	31.25
Medium	26	32.50
High	29	36.25



Total n=80

Extension worker performance is related to extension agent communication behavior in terms of completing farmer information needs and implementing agricultural extension appropriately. The agricultural extension's performance is determined at the level of achievement of the objectives set by the agricultural extension organization within a predetermined time limit. Extension workers are required to continue to add input in the form of knowledge about the latest extension sciences through training or seminars, papers or scientific works and books that can increase the capacity of these extension agents (Sapar et al. 2012).

The implementation of extension can not be separated from the cosmopolitan communication behavior of the extension agents. The results of the research show that the cosmopolitan communication behavior of the instructors is not related to the

implementation performance of the instructors.

Conditions in the field indicate that extension activities in extension activities are more often located inside the village than outside the village. In line with this (Johansson et al. 2011) states that a person's communication behavior is related to performance in carrying out their duties. Given the large number of extension assisted groups, extension workers are more often in the village than outside the village, because extension workers spend more time on visits inside the village. The role of extension agents in bringing agricultural innovation makes communication needs of extension agents important (Okojie et al. 2013). However, extension workers rarely look for information outside the village because extension workers are focused on extension activities in the village so that their farming is successful and as expected. The research results can be seen in Table 5.

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Tabel 5 Correlation Coefficient of Cosmopolitan Communication Behavior on the Implementation Performance of Agricultural Extension in Cianjur District

Sub Peubah	Implementation Performance (Y2)
Komunikasi Kosmopolit (Y1.2)	-0.031

The implementation performance component shows how extension workers understand extension materials and extension methods carried out in the field. Extension material is the material prepared by the agricultural extension agent in the framework of the implementation of extension, while the extension method is a method or technique of delivering material in the form of the content of extension messages from the extension agent to farmers, either directly or indirectly. Extension methods include visits, face-to-face / anjangsana, field tests (applied studies), demonstrations of methods or results, field meetings, technical meetings, talks, work meetings, business meetings, farming courses, field schools, action reviews, and lectures.

4. Conclusion

The cosmopolitan communication behavior of the extension agents shows that the extension agents outside the village are business actors and the information they are looking for is seeds (superior seeds) and marketing. Factors related to agricultural extension agents' communication behavior are individual characteristics including age and years of service. The relationship between age and communication behavior has a negative correlation. Service tenure is negatively correlated with cosmopolitan communication behavior. Media accessibility has a positive correlation with cosmopolitan communication behavior. The unavailability of wi-fi in the extension center office that can support extension activities in seeking information and the low activity of

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extension agents in seeking information outside the village.

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Email : jurnalmediova@gmail.com