



# The Relationship between Communication Behavior and Agricultural Extension Facilities Equipment in the Digital Era in South Bangka Regency

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Received: December 20, 2024

Revised: February 25, 2025

Accepted: April 25, 2025

Published: April 30, 2025

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DOI: [10.29303/jppipa.v11i4.10741](https://doi.org/10.29303/jppipa.v11i4.10741)

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**Abstract:** Connection behavior communication extension worker with equipment facility extension worker agriculture used extension worker in give related information with behavior communication very important for extension workers in operate task and its function. However, until moment This fulfillment need the For extension worker agriculture with behavior communication in search Not yet have optimal relationship for implemented. This study aims to analyze the relationship between the communication behavior of extension workers and the equipment of extension facilities in South Bangka Regency, Bangka Belitung Islands Province. The method used in study This is method descriptive quantitative with test correlation Spearman's Rank Results field research show that the relationship between the variables of extension facility equipment and the communication behavior of extension workers is positively correlated. Extension teaching aids are positively correlated with both local and cosmopolitan communication behavior. Likewise, extension aids are positively correlated with both local and cosmopolitan communication behavior.

**Keywords:** Behavior; Communication; Equipment; Extension facilities

## Introduction

The challenge in developing a technology-based agricultural system that allows extension workers to access information on demand at the right time and in a localized format is important. The system must offer a communication network to facilitate the flow of information between farmers and other actors in the value chain such as agribusiness, public service providers, policy makers and researchers (Bahtera et al., 2020; Hayati et al., 2022). In this case, according to Gatingsih (2022) the internet allows people in remote villages to access regular and widely reliable information and the availability of technological information via the internet can help the agricultural extension process become faster and more effective.

Thus, increasing access of extension workers to the internet plays an important role in the lives of farming communities to create awareness and knowledge. Furthermore, the more often extension workers use the internet in compiling reports, creating materials, compiling programs, and designing extension methods, the more effective the performance of extension workers in preparing agricultural extension activities, implementing agricultural extension activities, and evaluating agricultural extension activities will be (Elmasari et al., 2023).

A study conducted by experts, namely Sianturi (2019) said that technology allows extension workers to access the internet and other electronic information technology. The internet has been in almost every aspect of our lives where people use it for communication, entertainment, education and trading opportunities

### How to Cite:

Yulia, Atmaja, E. J. J., & Swandhi, M. K. The Relationship between Communication Behavior and Agricultural Extension Facilities Equipment in the Digital Era in South Bangka Regency. *Jurnal Penelitian Pendidikan IPA*, 11(4), 166-172. <https://doi.org/10.29303/jppipa.v11i4.10741>

(Rusito, 2021; Yulia et al., 2024). The next challenge is to ensure that extension workers are able to independently and accurately handle the various diversity of problems that arise where extension workers' skills in processing information are needed to keep up with every advance that technology has offered (Yulia et al., 2024).

This is related to a person's behavior in seeking and using information which is called communication behavior (Purnama, 2021). Communication behavior is an activity that aims to seek and obtain information from various sources in fulfilling daily needs. Communication behavior can be seen from several variables, namely participation in social activities, relationships with interpersonal networks in the social system, cosmopolitans, contact with agents of change, exposure to mass media, exposure to interpersonal communication channels, efforts to seek information, the amount of information about innovation (Abdurrohman et al., 2024; Suharyat et al., 2021).

South Bangka Regency is a center for food crops, horticulture and plantations where the employment of the population of South Bangka Regency is in agriculture and the agricultural sector is the largest contributor to the Gross Regional Domestic Product (GRDP). Thus, the role of extension workers is needed to help farmers increase the productivity of agricultural businesses. However, data in South Bangka Regency shows that there is still a lack of extension workers, low ability of extension workers to seek information, and low ability of extension workers to utilize technology in implementing extension in the current digital era. Based on the explanation above, it is important to conduct more in-depth research on the communication behavior of extension workers. Extension workers in South Bangka Regency are more dominant in seeking information through interactions with fellow extension workers, either during meetings held every week or interacting informally in the office.

In addition, extension workers also get information via the internet either from Whatsapp groups (social media) or through sites that provide information including cyber extensions although rarely used. In addition, extension workers also get information from available brochures and magazines distributed by the district agricultural service, both central and regional. Extension workers seek information for agricultural needs by accessing it directly through social or print media or personal interaction (Lestari et al., 2024). Based on this explanation, the purpose of this study is to analyze the relationship between communication behavior and the characteristics of agricultural extension workers with the accessibility of extension media in South Bangka Regency.

## Method

Field data collection was carried out on agricultural extension workers in South Bangka Regency, Bangka Belitung Islands Province. Geographically, South Bangka Regency is a center for food crop, horticulture and plantation production in the Bangka Belitung Islands Province. Determination of the research location was carried out by purposive sampling. Data collection was carried out from April to June 2024.

The number of respondents in this study were all extension workers registered at the Department of Agriculture and Plantations in South Bangka Regency, specifically for extension workers totaling 50 agricultural extension workers from the South Bangka Agricultural Extension Center. Sampling was carried out by accidental sampling considering that the number of samples taken was representative of the existing population (Lecoutere et al., 2023; Yulia & Setiawan, 2018). The instrument in this study was a questionnaire containing both closed and open questions. The questions presented in the questionnaire are questions that are directly related to the research objectives. The questionnaire in this study is divided into 2 parts, namely

The first part is the communication behavior of extension workers which is seen based on the local communication level and the cosmopolitan communication level.

The second part is the extension facility equipment which consists of extension aids and extension demonstration tools. Communication behavior (Y) analyzed in a way inferential use test correlation Rank Spearman according to Wollney et al. (2024), that shown in Formula 1.

$$r_s = 1 - 6 \sum_{i=1}^n d_i^2 / n^3 n \quad (1)$$

Information:

$r_s$  : Spearman's rank correlation value

$d_i$  : Difference every install level

$n$  : Number of pairs level for Spearman

The decision-making rules for the results of Spearman's Rank correlation analysis according to Ellis (2010) are as follows: If  $r_s$  count  $\geq r_s$  table or if sig. (2-tailed)  $\leq \alpha/2$ , then the hypothesis is accepted, at  $(\alpha) = 0.05$  meaning there is a relationship between the two variables tested; and If the calculated  $r_s$  is  $< \alpha/2$ , then the hypothesis is rejected, at  $(\alpha) = 0.05$  meaning there is no relationship between the two variables tested.

## Result and Discussion

Measurement of communication behavior by looking at individual characteristics and media accessibility used by extension workers. According to Rafitri (2024) said that the communication behavior referred to in this study is local interpersonal communication, cosmopolitan interpersonal communication and media communication (internet). Measurement of the relationship between communication behavior and individual characteristics and media accessibility was tested using the Spearman Rank statistical test, each communication behavior variable will be seen in its relationship with individual characteristics and media accessibility.

### *Behavior Communication*

The communication behavior variables of agricultural extension workers refer to the components communication behavior put forward by Purnama (2021) includes: relationships with system social that is source localite and source cosmopolitan. In study this behavior communication extension worker depicted from source which they use when accessing communication channels include: communication localite (in in village); communication cosmopolitan (in outside village). As for information Which observed in study This is seeding, control pests and diseases, potential commodities, cultivation technology, marketing, harvest and post-harvest, and fertilizer. Scoring is done in the following manner: (0) for those who answer No; (1) For which answer sometimes, (2) For Which answer often.

Behavior communication can explained with see definition from behavior that Alone And understanding communication (Sianturi, 2019). Behavior is experiences as well as factor- factors outside the person (environment) both physical and non-physical, where these experiences and environments are then known, perceived, believed and so on, so that cause motivation for act which gives rise to manifestations in the form of behavior (Priadi, 2020). Furthermore, explaining the meaning of communication can see from component important from communication that is communicator ability, message accuracy, encoding process, channel accuracy and the recipient of the message and ultimately aims to give and receive information to influence others, help others, solve problems, make decisions and evaluate behavior effectively. The agricultural extension system can be defined as a system of exchange agricultural information showing actors, people and institutions, interactions and communication networks between these actors to coordinate the process. related information (Astuti, 2019; Prestiana et al., 2023).

It can be concluded that the communication behavior of agricultural extension workers is action extension worker as communicator Which connected to various source information (people and institutions, interactions and communication networks between for actor) in give and accept information Which used for influence others, solve problems, and make decisions eventually become a habit in communicating. Basically, communication behavior is human behavior in communication activities. Furthermore, communication behavior is an action or response in the environment. and the existing communication situation, such as ways of thinking, knowledge and insightful, feel and act or take action which is adhered to by somebody, family or public in look for and spread information (Lundgren & McMakin, 2018).

Communication behavior is an activity that is carried out repeatedly. by involving communication in it whose aim is to obtain information and seen from how extension workers search for information based on the source of information being referred to with the assumption that the source of information is credible for extension workers (Toniolo et al., 2024). Field data shows that extension workers are looking for information their needed by farmers. Besides that, extension worker also renew information through Internet. Acknowledged extension worker, in look for information the first thing to do is to access the internet on smartphone. However, conditions in the field show that the internet network not evenly distributed throughout the villages. This is what then makes the extension workers not can look for information in a way direct through Internet when currently make visits to farmer group lands. However, there is already a program from the government in the form of an open camera which requires extension workers to upload all activity visit which done through whatsapp with objective transparency and to improve the capabilities of extension workers in the digital era moment this.

Behavior communication localite show source information extension worker in in the village the highest is the extension worker colleague with information regarding fertilizer (Akudugu et al., 2023). Sources of information that are rarely encountered by extension workers are village heads, farmer figures, and religious figures. Conditions in the field show the need information Fertilizer is considered most important for farmers which includes information about nutrient requirements, fertilization techniques and various information support becomes important. Based on the results of interviews in the field, the extension workers communicate more often with fellow extension workers in one office counseling Rias village farm.

Fellow extension workers are the most reliable people in matter exchange information internal extension worker (One profession). Extension worker consider fellow extension workers as the most reliable people when the extension worker needs information (Maunder, 1972). If new material is found regarding agriculture will be discussed first with fellow extension workers. Interpersonal sources of extension workers consist of colleagues, farmers, researchers, and senior officers. Factors external extension worker Which correlated positive that is status extension worker and connection interpersonal between extension workers and fellow extension workers where extension workers help each other in carrying out extension activities and are full of family (Abboud et al., 2022).

Extension workers regularly searching for information to carry out the work their daily lives through communication with various sources of information not only for knowledge they Alone, but for fulfil need farmers. Supporting this is the latest information about price market production agriculture very needed by farmer and extension worker for increase productivity agriculture. Extension worker agriculture plays an important role in the agricultural production cycle (Toniolo et al., 2024). the become challenge for implementation counseling agriculture where the number of extension workers is not comparable to the number of existing villages And cost operational Which limited show the decline support government in the form of decreasing levels of funding from the government.

Extension workers have a low tendency to visit sources of information such as agricultural centers, agricultural agencies, universities and library. Counseling agriculture is not a matter Which Can handled in a way independent However need relatedness and cooperation between agricultural institutions, not only researchers and extension workers but also between officer extension worker with perpetrator business agriculture like perpetrator marketing, transportation, storage and related institutions rural development.

**Table 1.** Extension Worker Activities According to the Type of Activity Participated in South Bangka Regency

Activities	No Once	Sometimes
Conference	20	30
Workshop	15	35
Studies Appeal	20	30

Based on Table 1, agricultural extension workers in South Bangka conduct seminars, workshops and comparative studies. On average, these extension activities sometimes have a high number of activities carried out by agricultural extension workers in the

field. In addition to contacting information sources, extension workers also search for information via the internet (smartphones). Use Internet highest when extension workers seek information about marketing. The situation in field show not yet availability facility wifi for support work extension worker and lack of means infrastructure support for extension activities in the field. Matter this can hindering extension workers in carrying out their duties. In today's digital era should be supported by the existence of an internet service network that is evenly distributed all villages in the Regency and in office facilities to create agricultural extension services integrated by internet services.

The potential of the Internet to serve the purposes of educational exchange and information No can neglected from agricultural extension activities. Cosmopolitanism extension worker can interpreted as an extension activity to increase insight and meet needs information related with agriculture (Groot Koerkamp & Bos, 2008). Need information is something which it is hoped that someone will achieve satisfaction with the information. reflected from behavior communication (Wollney et al., 2024). Behavior communication extension worker in fulfil need information in level cosmopolitan related with sources information which considered credible by extension workers. This shows that extension workers rarely visit institutions outside their work environment to obtain information or consult with experts to resolve the problems encountered in support their tasks. Extension activities cannot be separated from the use of media in counseling to help extension worker in field.

**Table 2.** Total Tool Help Counseling in South Bangka Regency

Tool help counseling	Amount (n)
Low	14
Currently	20
Tall	16
Total	50

Based on Table 2, it can be seen that the use of extension tools classified as currently with total 20 people. Matter This show almost all extension workers when carrying out extension activities or providing extension using tools extension aids such as curriculum, preparation sheets (handouts), exposure maps, paper plenary, whiteboard marker, LCD projector, And etc. Acknowledged extension worker use media in on help extension worker for to explain material to farmer. Obtained as big as 16 people extension worker use curriculum in activity counseling. Curriculum help extension worker in to design activity counseling which will implemented. Handouts used extension worker for work of 14 extension workers. Paper plenary, marker,



infocus, hardener the voice that most used by extension workers amounting to 20 people. Matter this show that extension worker in do activity counseling in digital era moment This Still using conventional media. Conventional media is still the choice extension workers in carrying out extension activities because farmers prefer with the media compared to other media because of the type of media used. media relate with understanding farmers (Sirajuddin et al., 2021). Regency South Bangka as area center plant food and horticulture with type commodity crop needs an extension worker which competitive.

**Table 3.** Number of Extension Workers Using Tools Props Counseling in Regency South Bangka

Tool props Number of Counseling	Amount (n)
Medium	40
Height	10
Total	50

In addition to the tools counseling, media the usual used by extension workers when conducting extension activities are demonstration tools. Table 3 shows amount use tool props counseling by extension worker is at on category currently of 40 people. The teaching aids used by the instructors are in the form of objects (samples/examples, models/imitations), printed materials (pamphlets, leaflets, brochures, flipcharts, pictures), images which projected (movies/videos), symbol graphics (map). Condition in The field shows that extension workers do not always use teaching aids when enlighten. Tool props which classified as often used that is in the form of samples/examples, pamphlets, leaflets, brochures and video screenings using mobile phones and maps. But if the extension worker makes a visit, namely by visiting the farming field of the group leader or group members, extension workers does not use props and is more of a face-to-face conversation between extension worker with farmer. Matter That done extension worker for more to weave connection Which nature family so that farmer can more open to extension worker (Sianturi, 2019).

Characteristics extension worker which relate real with behavior communication is age and time Work. Connection between age and behavior communication correlated negative and real, Which It means the more young age respondents then the ability to search for information both within the village and outside the village will be higher. The average formal education of extension workers is bachelor's degree, which means that the higher the formal education, the lower the willingness extension workers in seeking information because they feel they already have the knowledge Which Enough.

Non-formal education for extension workers supports extension workers in implementing counseling Which Good, It means the more extension worker in facilitation with existence Technical training activities will increase the capabilities of extension workers in the field. Furthermore, status extension worker show No existence connection with communication behavior. This means the willingness of extension workers to seek information both within the village and outside the village is not based on his status as extension workers (ASN and Non ASN).

Meanwhile, the relationship between work period and behavior communication correlated positive and very real on communication in in the village. The longer the length of service of an extension worker, the more capable he is of look for information in in village also will the more tall. Time Work related to work experience. Someone who has experience Work which long will develop in skills, ability and competence. Work experience is a determinant of a person's behavior in extension activities to farmers.

**Table 4.** Relationships Each Variable in Regency South Bangka

Sub variable	Communication	Communication
	Localite	Cosmopolitan
Tool props counseling (X2.1)	0.249*	0.026
Tool help counseling (X2.2)	0.230*	0.176

The longer a person works in an organization, the more they will experienced person the, so that his work experience the more Good. Variables teaching aids and related extension aids very real (positive) with behavior communication. Media counseling as a teaching aid and aid in counseling which functions as a trusted intermediary connecting the extension worker with the target so that the message or information will more clearly and real to the farmers.

An extension worker must play a role in arousing the interest of the community to learn more. study hard using various learning methods, extension media and techniques counseling (Abboud et al., 2022). Knowledge and These skills must be applied by extension workers so that the community is interested in adopting new technologies in extension activities. The more tall extension media facilities by counseling increase ability communication of extension workers both within and outside the village. Communication system No will walk with Good without using media.

Extension worker also utilise Internet for look for information because the existence of convenience in access the internet which can done at any time and in where just. Will but, availability network Internet not yet facilitated by the central government and extension

workers tend to seek information through face-to-face advance. So in matter this, facility which provided the government should covers service Internet use support counseling, because availability Information via the internet can help the agricultural extension process more fast and effective

## Conclusion

The relationship between the variables of extension facility equipment and the communication behavior of extension workers is positively correlated. Extension teaching aids are positively correlated with both local and cosmopolitan communication behavior. Likewise, extension aids are positively correlated with both local and cosmopolitan communication behavior

## Acknowledgments

We would like to thank the Institute for Research and Community Service University of Bangka Belitung which has done a lot of this research as well as all parties who have supported and helped in research activities.

## Author Contributions

This article was written by three authors, namely A., E. J. J. A., and M. K. S. All authors contributed to each stage of the research.

## Funding

This research did not receive external funding.

## Conflict of Interest

There is no conflict of interest research.

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