

The Relationship of Population's Knowledge, Attitudes, and Communication with Population's Participation in the Mangrove Rehabilitation Program in Pulau Cawan Village, Mandah District, Indragiri Hilir District, Riau Province

Hubungan Pengetahuan, Sikap dan Komunikasi Penduduk dengan Partisipasi Penduduk dalam Program Rehabilitasi Mangrove di Desa Pulau Cawan Kecamatan Mandah Kabupaten Indragiri Hilir Provinsi Riau

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Abstract

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This research was conducted in December 2023 in Pulau Cawan Village, Mandah District, Indragiri Hilir Regency, Riau Province. This research aims to analyze residents' knowledge, attitudes, and communication toward mangrove rehabilitation programs; analyze residents' participation in the mangrove rehabilitation program; analyze the relationship between residents' knowledge, attitudes, and communication with residents' participation in the mangrove rehabilitation program in Pulau Cawan Village. The research method used was a quantitative survey. Respondents of this study amounted to 30 households. To answer the research objectives, researchers used Likert Scale data analysis to answer the second objective, while for the third objective, researchers used Spearman Rank data analysis. The study results were population knowledge at a score of 1.178, population attitudes at a score of 1.178, and population communication at a score of 1.176, meaning that population knowledge, attitudes, and communication were outstanding. Good in the Mangrove rehabilitation program. Meanwhile, resident participation obtained a score of 1.492, which means that resident participation is quite good in the Mangrove rehabilitation program. The relationship between population knowledge and population participation is 0.529, population attitudes and population participation is 0.401, and the relationship between population communication and population participation is 0.422, so it can be interpreted as a moderate level of relationship closeness. If the sig value (2-tailed) <0.05, it can be considered significant.

Keywords: Knowledge, Attitudes, Communication, Participation, Mangroves

Abstrak

Penelitian ini dilaksanakan pada bulan Desember 2023 di Desa Pulau Cawan, Kecamatan Mandah, Kabupaten Indragiri Hilir, Provinsi Riau. Penelitian ini bertujuan untuk: 1) Menganalisis pengetahuan, sikap, dan komunikasi warga terhadap program rehabilitasi mangrove; 2) Menganalisis partisipasi penduduk dalam program rehabilitasi mangrove; 3) Menganalisis hubungan pengetahuan, sikap dan komunikasi warga dengan partisipasi warga dalam program rehabilitasi mangrove di Desa Pulau Cawan. Metode penelitian yang digunakan

adalah survei kuantitatif. Responden penelitian ini berjumlah 30 Kepala Keluarga (KK). Untuk menjawab tujuan penelitian, peneliti menggunakan analisis data Skala Likert untuk menjawab tujuan kedua, sedangkan tujuan ketiga peneliti menggunakan analisis data Spearman Rank. Hasil penelitian adalah pengetahuan penduduk berada pada skor 1,178, sikap penduduk pada skor 1,178, dan kemudian komunikasi penduduk pada skor 1,176, artinya pengetahuan, sikap dan komunikasi penduduk berada pada kategori sangat baik. baik dalam program rehabilitasi Mangrove. Sedangkan partisipasi penduduk memperoleh skor 1,492 yang berarti partisipasi penduduk cukup baik dalam program rehabilitasi Mangrove. Hubungan pengetahuan penduduk dengan partisipasi penduduk sebesar 0,529, hubungan sikap penduduk terhadap partisipasi penduduk sebesar 0,401, dan hubungan komunikasi kependudukan dengan partisipasi penduduk sebesar 0,422 sehingga dapat diartikan tingkat keeratan hubungan sedang. Apabila nilai sig (2-tailed) < 0,05 maka dapat dikatakan signifikan.

Kata kunci: Pengetahuan, Sikap, Komunikasi, Partisipasi, Mangrove

1. Introduction

Mangroves are plants that live in coastal areas which will form forests. According to [Rahmad et al. \(2020\)](#), mangrove forests can grow in coastal areas or forests close to river estuaries. This forest is a forest that is influenced by the presence of sea tides. This plant can be found in tropical and subtropical areas protected from waves, such as Pulau Cawan Village, Mandah District, Indragiri Hilir Regency, and Riau Province. Pulau Cawan Village, Mandah District, Indragiri Hilir Regency, Riau Province, is one of the villages with the potential for mangrove forests. Based on the results of a field survey in 2023, the mangrove forest area in Pulau Cawan Village experienced the most significant damage in Mandah District. In the past, the lush mangrove forests in this area were a paradise for wild animals. So do not be surprised if we can quickly meet Bondol eagles, sea eagles, Tongtong storks, and monkeys hanging behind the mangrove forests. Mangrove forests have various ecological, economic, social, and institutional benefits. Mangrove planting aims to prevent abrasion. Therefore, rehabilitation efforts or actions must be taken to increase conservation and restore the benefits of the mangrove ecosystem.

The existence of mangroves is a strategic asset that can be developed based on economic activities to improve the prosperity of coastal communities and increase the generation of original regional income ([Purnama et al., 2017](#)). Residents live in the area, meaning people who are legally entitled to live, in other words, people who have official documents to live there. [Kuncoro \(2013\)](#) explains that residents have been domiciled in the geographical area of the Republic of Indonesia for six months or more, and those who have been domiciled for less than six months but aim to stay. [Adioetomo et al. \(2010\)](#) said that a population that is too large would pressure people's living standards, primarily if the population is related to the area of land or agricultural land available to meet the population's needs. Furthermore, [Suparmoko \(2000\)](#) stated three dominant factors in population growth: birth, birthdate, and migration rate or population movement.

The knowledge possessed by humans is the result of efforts made by humans in searching for the truth or problem they face. Activities or efforts made by humans to seek the truth or problem they face are the nature of humans themselves, better known as desires. The desires that humans have will encourage them to get everything they want. The difference between one human being and another is humans' effort to get their desires. In a narrower sense, knowledge is something that only humans can possess. Attitude is the most crucial concept in social psychology, and it discusses elements of attitude both as individuals and groups. Many studies have been conducted to formulate the meaning of attitude and the process of attitude formation and change. Much research has also been carried out on attitudes and their role in forming character and relationship systems between groups, as well as choices based on the environment and their influence on change. This attitude has been widely researched in the last fifty years in social psychology, from theory, structure, and concept to measurement. In everyday life, we often use the word 'attitude,' but it is difficult to understand what 'attitude' really is. Therefore, this paper discusses the meaning of attitudes and behavior, the process of forming attitudes and behavior, and attitude theory ([Nuruliah, 2015](#)).

Leading psychologists have defined human attitudes in various ways. Operationally, the meaning of attitude is the connotation of appropriate reactions to specific stimulus categories, and in practical use, attitudes are often confronted with social stimuli and emotional reactions. Attitudes can also be interpreted as thoughts and feelings that encourage us to behave when we like or do not like something. Meanwhile, attitude contains three

components: cognition, emotion, and behavior, and may or may not be consistent. It depends on what problems they face (Nuruliah, 2015).

Communication is the process of passing or conveying information that contains meaning from one party (person or place) to another party (person or place) to gain mutual understanding. It is difficult to blame an incorrect classification because each party has a reasonable source. The American communication scholars who wrote the book *Human Communication* divided communication into five types: interpersonal (Oktavia, 2016).

Participation is participation, attention, and contributions provided by participating groups, in this case, the community. To grow and mobilize the spirit of participation, prerequisites are needed to generate social energy in society. Participation is very diverse, not just a community gathering in one place to listen to explanations about what is prohibited from above. However, there are general participation patterns in elections (electoral participation), group participation, contact between citizens and the government (citizen government contracting), and direct citizen participation within the government environment. Participation is a form of mental involvement/thoughts and emotions or feelings of a person in a group situation that encourages him to contribute to the group to achieve goals and take responsibility for the business concerned (Herman, 2019). This research aims to analyze the knowledge, attitudes, and communication of residents regarding the mangrove rehabilitation program; analyze population participation in the mangrove rehabilitation program; analyze the influence of knowledge, attitudes, and communication of residents with resident participation in the mangrove rehabilitation program in Pulau Cawan Village.

2. Material and Method

2.1. Time and Place

This research was carried out in December 2023 in Pulau Cawan Village, Mandah District, Indragiri Hilir Regency, Riau Province. This research location was determined purposively because it was previously dense with mangrove forests. This location has experienced the greatest damage to mangrove forests in Riau Province, so local institutions or the regent of Indragiri Hilir carried out a mangrove rehabilitation program there.

2.2. Methods

The research method used was a survey. Kriyanto & Rahmat (2006) said that the survey method is used as research using a questionnaire as a data collection instrument to obtain information about many respondents who represent a specific population. In the research, observations were made using a qualitative approach. According to Kalen (2016), the quantitative approach refers to the word quantity itself. Quantity means the amount or amount of something. A quantitative approach is an approach that is accumulating or collecting. In social research, statistical methods are the clearest representation of quantitative methods because there is a quantification process in this method, namely giving numbers to the quality of something.

2.3. Sampling Method

The population is all research subjects in the form of events as a data source with specific characteristics in a study. This study's population was Pulau Cawan Village residents with 199 Family Cards (KK). Furthermore, Arikunto (2019) explained that if the population is less than one hundred people, the total population will be taken as a whole; however, if the population is more significant than one hundred people, 10-15% or 20-25% is taken. From this explanation, the researcher took 15% of the 199 Heads of Families (KK), and the results can be drawn from 15% of the 199 Heads of Families (KK), namely 29.85, so the total sample for this research is 30 Heads of Families (KK) and will be used as respondents in research. In this research, the determination of respondents was carried out by sample. Retnawati (2017) explains that determining respondents by sample is one way to take a portion of the total objects to be researched or evaluated with specific characteristics from a population. Determining respondents by sample is called a sampling technique.

2.4. Data Analysis

A Likert scale was used to answer the first and second objectives regarding residents' knowledge, attitudes, and communication with resident participation in the mangrove rehabilitation program in Pulau Cawan Village. Sugiyono (2019) explains that the Likert Scale measures attitudes, opinions, and perceptions of a person or group of people regarding phenomena that occur in social life. The Likert Scale used in this research is a Likert Scale that has been modified into five levels.

Table 1. Administration of Likert scale

No	Alternative knowledge, attitudes, and communication with population participation	Scale (+)	Scale (-)
1	Strongly agree	5	1
2	Agree	4	2
3	Simply agree	3	3
4	Disagree	2	4
5	Strongly disagree	1	5

Knowledge, attitudes, and communication among residents who participated in the Mangrove rehabilitation program in Pulau Cawan Village were assessed using a positive and negative scale. Giving a positive scale to the statement is strongly agree (5), agree (4), somewhat agree (3), disagree (2), strongly disagree (1). Giving a negative scale to statements, namely strongly agree (1), agree (2), simply agree (3), disagree (4), strongly disagree (5). In this research, researchers determined a scale based on a positive scale, which aims to provide answer choices from respondents.

For the knowledge, attitudes, and communication of residents in the mangrove rehabilitation program, there are five responses: a) very poor: If the score is 270-485, it means that the population's knowledge of the mangrove rehabilitation program is very poor. b) Not good: If the score is 486-701, the population's knowledge of the Mangrove rehabilitation program is not good. c) Fairly good: a score of 702-917 indicates that the population's knowledge of the mangrove rehabilitation program is quite good. d) Good: a score of 918-1.133 indicates that the population is well-informed about the mangrove rehabilitation program. e) Very good: a score of 1,134-1,349 indicates that the population's knowledge of the mangrove rehabilitation program is very good.

Meanwhile, for population participation in the mangrove rehabilitation program, there were five responses, namely: a) very poor: a score of 360-647 indicates very low population participation in the mangrove rehabilitation program. b) Not good: a score of 648-935 indicates low population participation in the mangrove rehabilitation program. c) Fairly good: a score of 936-1,223 indicates that population participation is quite good in the mangrove rehabilitation program. d) Good: a score of 1,224-1,511 indicates good population participation in the mangrove rehabilitation program. e) Very good: a score of 1,512-1,799 indicates very good population participation in the mangrove rehabilitation program.

To find out the third objective, namely the relationship between knowledge, attitudes, and communication of the population on population participation in utilizing the mangrove rehabilitation program, we used rank spearman and correlation analysis in the research. [Sugiyono \(2019\)](#) states that the sperm rank correlation test is used to see the relationship or influence between the independent and dependent variables. The influence of knowledge, attitudes, and communication of residents on population participation in utilizing the mangrove rehabilitation program using the Spearman rank correlation formula:

$$r_s = \frac{6 \sum_{i=1}^n d_i^2}{N^2 - N}$$

Description:

- rs = Correlation coefficient rank spearman
- in = Different ranking
- n = Number of samples of fishing groups

Table 2. Spearman rank analysis

No	Correlation coefficient	Level of relationship closeness
1	0.000-0.199	Very low
2	0.200-0.399	Low
3	0.400-0.599	Currently
4	0.600-0.799	Strong
5	0,800-1,000	Very strong

Using the Spearman rank correlation coefficient will determine whether or not each variable has a strong relationship, not each variable has a strong relationship. To make calculations more accessible, the data is processed using a computer using SPSS software. In this program, the criterion for significant decision-making by examiners is if $p < 0.01$, then the variable does not have a significant relationship with a confidence level of 0.99, and if $P > 0.01$, then the variable does not have a significant relationship or influence. Correlation values range from -1 to +1; values close to -1 or +1 indicate a more substantial relationship or influence, while values close to zero are said to have a weak relationship or influence. A positive value states that the direction of the relationship is in the same direction (if x goes up, then y goes up). In contrast, if the resulting value is negative, then it shows that the direction of the relationship is inverse (if x goes up, then y goes down) ([Sugiyono \(2019\)](#)).

3. Result and Discussion

3.1. Population Knowledge in the Mangrove Rehabilitation Program

Table 3 shows that the total knowledge score of the population in the Mangrove rehabilitation program is 1,178, meaning that the population's knowledge is excellent in the Mangrove rehabilitation program. In line with research by [Ritohardoyo & Bayu \(2014\)](#), the population's knowledge about the benefits of Mangrove forests shows that the majority (71.4%) of the community understands well enough or is included in the moderately knowledgeable (medium) category. Judging from the proportion of the population who know about mangrove forest destruction, the majority (53.5%) are in the high category or have much knowledge. Community knowledge about the need to prevent damage to Mangrove forests is high (84.5%). It is in the relatively high category, judging generally from the residents' knowledge about mangrove forests.

Table 3. Population knowledge in the mangrove rehabilitation program

No	Population knowledge in the mangrove rehabilitation program	Total score	%
1	Understand the use of the mangrove rehabilitation program	376	33
2	Understand the Mangrove rehabilitation program	401	33
3	Conduct analysis of the Mangrove rehabilitation program	401	33
Total score		1,178	100

3.2. Population Attitudes in the Mangrove Rehabilitation Program

The population's attitude toward the mangrove rehabilitation program is variable X in this study. The results of variable X can be seen on the total average Likert Scale in Table 4.

Table 4. Population attitudes in the mangrove rehabilitation program

No	Population attitudes in the mangrove rehabilitation program	Total score	%
1	Personal experience in the mangrove rehabilitation program	401	33
2	The influence of other people is considered important in the mangrove rehabilitation program	401	33
3	The influence of culture on the mangrove rehabilitation program	376	33
Total score		1,178	100

The total score of the population's attitude in the Mangrove rehabilitation program is in Table 2, namely 1,178. This means the population's attitude is excellent in the Mangrove rehabilitation program. According to [Gerald \(2016\)](#), the attitude of residents who support the management of the mangrove ecosystem will be behavior that supports the management of the mangrove ecosystem. Conversely, the attitude of people who do not support the management of the mango ecosystem will lead to behavior that does not support the management of the mango ecosystem. Factors that influence the attitude of the community in four villages in Teluk Ambon District in managing the Mangrove ecosystem are community knowledge about managing the Mangrove ecosystem, affiliation with the group implementing Mangrove ecosystem management, and age.

3.3. Population Communication in the Mangrove Rehabilitation Program

Community communication in the mangrove rehabilitation program is variable X in this study. The results of variable X can be seen in the total average Likert Scale in Table 5.

Table 5. Population communication in the mangrove rehabilitation program

No	Population Attitudes in the mangrove rehabilitation program	Total score	%
1	Fun in the mangrove rehabilitation program	385	34
2	Social relations in the mangrove rehabilitation program	399	33
3	Actions in the mangrove rehabilitation program	392	34
Total Score		1,176	100

Resident communication in the Mangrove rehabilitation program has a total score of 1,176, which is excellent. [Naomi et al. \(2023\)](#) explain that environmental communication has two functions: pragmatic and constitutive. Pragmatically, environmental communication is educational and can help us resolve environmental communication problems; environmental communication also helps represent nature and environmental problems, where we view forests and rivers as threats or abundant wealth and life support systems that must be respected.

3.4. Population Participation in the Mangrove Rehabilitation Program

Population participation in the mangrove rehabilitation program is variable Y in this study. The results of variable Y can be seen in the total average Likert Scale in Table 6.

Table 6. Population participation in the mangrove rehabilitation program

No	Population participation in the mangrove rehabilitation program	Total score	%
1	Decision-making in the mangrove rehabilitation program	371	25
2	Implementation of the mangrove rehabilitation program	381	26
3	Utilization in mangrove rehabilitation programs	385	26
4	Evaluation of the mangrove rehabilitation program	355	24
Total Score		1,492	100

Population participation in the Mangrove rehabilitation program received a score of 1,492, which means that population participation is quite good in the Mangrove rehabilitation program. [Sulistiyowati et al. \(2021\)](#) Basically, participation is divided into self-motivation and immobilization. Self-initiated participation means participation based on awareness and will, while mobilized participation is based on other people's influence. In reality, community participation in development can be vertical or horizontal. Vertical participation occurs when

the community participates in a program from above, and the community's position is that of subordinates or followers. Meanwhile, horizontal participation is when the community can take the initiative. That is, each community member horizontally participates with each other in development activities.

3.5. The Relationship between Knowledge, Attitudes, and Communication of Residents on Resident Participation in Utilizing the Mangrove Rehabilitation Program

Relationship between Population Knowledge and Population Participation (Table 7), the relationship between resident attitudes toward resident participation (Table 8), and the Relationship between Resident Communication and Resident Participation (Table 9).

Table 7. Relationship between Population Knowledge and Population Participation

		Population knowledge	Population participation
Spearman's rho	Population Knowledge	Correlation Coefficient	1,000
		Sig. (2-tailed)	,529**
		N	30
Population Participation		Correlation Coefficient	,529**
		Sig. (2-tailed)	1,000
		N	30

** . Correlation is significant at the 0.01 level (2-tailed).

Table 8. Relationship between resident attitudes towards resident participation

		Population attitudes	Population participation
Spearman's rho	Population Attitudes	Correlation Coefficient	1,000
		Sig. (2-tailed)	.401*
		N	30
Population Participation		Correlation Coefficient	.401*
		Sig. (2-tailed)	1,000
		N	30

*. Correlation is significant at the 0.05 level (2-tailed).

Table 9. Relationship between resident communication and resident participation

		Population communication	Population participation
Spearman's rho	Population communication	Correlation Coefficient	1,000
		Sig. (2-tailed)	.422*
		N	30
Population participation		Correlation Coefficient	.422*
		Sig. (2-tailed)	1,000
		N	30

*. Correlation is significant at the 0.05 level (2-tailed).

The relationship between knowledge, attitudes, and population communication towards population participation is 0.529, meaning that the level of closeness of the relationship between knowledge, attitudes, and population communication towards population participation is moderate because the correlation value is at 0.400-0.599, which means the level of closeness of the relationship is moderate. Meanwhile, the correlation coefficient sign shows that the relationship is in the same direction, and the sig (2-tailed) value is 0.02, meaning that the relationship between population attitudes towards population participation is correlated or significant because the value is <0.05. According to [Widjarjono \(2010\)](#), if the significance value is >0.05, then H0 is accepted, and Ha is rejected, and if the significance value is <0.05, then H0 is rejected, and Ha is accepted. A sig (2-tailed) value of 0.05 means that the relationship between knowledge, attitudes, and residents' communication toward population participation is correlated or significant because the value is <0.05.

4. Conclusions

Based on the research results that have been obtained, the conclusions of this research are: 1) the population's knowledge score was 1,178, the attitude score was 1,178, and the communication score was 1,176, meaning that the population's knowledge, attitudes, and communication were very good in the Mangrove rehabilitation program in Pulau Cawan Village. 2) Population participation received a score of 1,492, meaning that population participation was quite good in the Mangrove rehabilitation program in Pulau Cawan Village.

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