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Community Attitudes towards Mangrove Management in Teluk Sulaiman Village, Berau Regency, Indonesia

Sikap Masyarakat dalam Pengelolaan Mangrove di Kampung Teluk Sulaiman, Kabupaten Berau, Indonesia

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ABSTRACT

This research aims to determine the value of community attitudes in Teluk Sulaiman in mangrove management and the factors that influence attitudes. This is a descriptive research using questionnaire and observation as data collection methods. Attitude measurement uses cognitive, affective, and conative aspects. To assess attitudes a Likert scale with SPSS processing is used. The results of the study obtained that the attitudes of the people in this village were positive with a value of 4.15, where the cognitive aspect value was 4.13, affective aspect 4.35 and conative aspect 3.96. The factor that influences attitude values is income. Meanwhile, other factors, such as age, and number of family members do not have a significant effect. Length of stay factor has a sufficient relationship with attitude value. The attitude scores seen from the gender segment do not have a significant difference, although in general the attitude scores of men are higher than women. The attitude scores of immigrants and native residents do not have a significant difference, although in general the attitude scores of immigrants are higher than those of native residents.

Keywords: community attitudes, community based mangrove management, mangrove

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INTRODUCTION

Mangroves have many functions. Ecologically, mangroves can guarantee the maintenance of physical environments, such as waves, wind and seawater intrusions, as well as breeding grounds for various types of marine life such as fish, shrimps, crabs, shellfish, snails, and other types of animals. Mangrove forests play an important role in stabilizing coastlines and helping to reduce the impact of natural disasters such as tsunamis and hurricanes (Nurdin et al., 2015). The biological function of mangrove forests is as a hatchery for fish, shrimp, shellfish and other types of biota, nesting places for birds and natural habitats of aquatic biota species.

Mangrove forest is a plant community or an individual type of plant that forms a community in tidal areas. Mangrove forest is part of the coastal ecosystem area that has distinctive characteristics and has the potential for biological wealth (Kusmana & Sukwika, 2018). Mangrove forests are one of the coastal ecosystems that experience a high level of degradation due to their utilization patterns that do not pay attention to aspects of their sustainability (Rizal et al., 2018). Land use change is influenced by natural factors (climate, topography, soil or natural disasters) and the human factor in the form of human activity on a piece of land (Yusuf et al., 2018). A total of 25% of mangrove loss in Indonesia is caused by the conversion of mangrove forests into ponds and another 75% comes from land conversion into agricultural areas, land degradation due to overexploitation, and erosion of coastal areas. Another threat received by mangrove ecosystems is the reclamation of areas on the coast of Indonesia (Ilman et al., 2016).

In Berau Regency, in 1991 its land area reached 87.3%, and in 2010 it became 80%, and in 2020 it became 72.6%. From 1990 to 2000, deforestation turned into agricultural land and shrubs. Almost 80% of deforestation occurs in the other land use (OLU). In the period of 2000-2010, most of the deforested forests turned into shrubs, plantations, agriculture, and plantation forests. Currently, about 60% of deforested forests are in OLU, and 37% occur in production forests. During 2010-2020, around 65% of deforestation occurred in OLU and 27% in production forests. The largest deforestation is plantations that mostly occur in OLU, in addition to agriculture and logging in OLU or encroachment in forest areas (Cameron et al., 2019). Stopping mangrove deforestation and preserving the remainder is the most effective and cost efficient action to reduce CO2 emissions and mitigate climate change (Arifanti et al., 2021). The important role of mangroves in climate change is the reason why the regional government has included it in the strategic plan for the Berau Forest Carbon Program (Wahyulianto, 2021).

Community-based conservation (CBRM) is the most important endeavor and has been widely used lately in natural resource management especially in managing the sustainability of protected areas, restoring ecosystems and reducing poverty in rural areas (Ward et al., 2020). This approach is a conservation strategy that emphasizes the role of local communities in decision-making and is actively involved as a partner in the management of protected areas (Buncag, 2021). Community participation can help ensure sustainability, make development activities more effective and build local capacity. Local community participation also ensures equitable distribution of the benefits of diverse interest groups in a population and ensures effective service management. This is partly because people often have better knowledge and expertise in local resource management than industrial government/private agencies (Máñez et al., 2014). Dominant government involvement will cause a decrease in public interest in participating (Depari, 2023). One of the factors that influences the level of participation is the level of perception (Setiawan, 2016). CBRM of marine resources is one of the management strategies that can be carried out to improve efficiency and fairness in the use and management of natural resources. In addition, this strategy can bring positive ecological and social influences. Community-based natural resource management is very appropriate to be applied in Indonesia, in addition to the positive effects as well as the consideration that local communities in Indonesia have strong attachments so that their management will be pursued for the good of the region and not the other way round (Raj et al., 2020).

Based on the above, it is deemed necessary to know the community's attitude towards mangrove management. A positive attitude will influence community participation. This approach emphasizes the role of local communities in decision making and being actively involved as partners in protected area management (Dimitrakopoulus et al., 2010). The theory used to answer the question above is the theory developed by Dimitrakopoulus et al., (2010). Azwar (1995) On-prom (2014) and Máñez et al. (2014) which emphasize attitudes and community participation in natural resource management. Knowledge (cognitive aspect) influences changes in attitudes about preserving mangrove ecosystems. The attitude

towards preserving the mangrove ecosystem influences behavior (conative) in preserving the mangrove ecosystem, so that community attitudes, one of the social variables of the community, need to be known in community-based management (Talakua, 2016).

METHODS

Sampling Method

The study was conducted in Teluk Sulaiman Village, Berau Regency, East Kalimantan Province. The location of this study was determined by purposive sampling, which is a village that has mangroves managed by the community and is located in the Other Land Use (OLU). This research took approximately three months for literature study and preparation, three months for data collection and three months for data processing and analysis.

To measure the community attitudes, a purposive sampling technique is used, namely determining the segment of respondents to be measured. The number of respondents is determined in the leader segment (village head, village secretary, or other non-formal), interest group segments (empowerment institutions, mangrove managers (non-governmental groups), business entities that manage mangroves, household segment (head of family), female segment, and youth segment (age < 30 years).

From the existing community groups, strata (stratified random sampling) were made, namely: (1) leaders, (2) interest groups, (3) all households (heads of families) and (4) women. The determination of this stratum was based on several considerations, mainly related to the representation of the diversity of communities in the village in relation to participation in the management of mangrove ecosystems, namely: social elements (individuals and groups), social structure (leaders and residents), and gender. The total number of informants involved in this study was 67 people, where the percentage was proportional according to the population in the village.

Likert Scale

The aspects of community's attitudes assessed include cognitive aspect, affective aspect and conative aspect through questionnaires (Azwar, 1995). The statements in the questionnaire are made based on the theme of mangroves and management. The attitude statement is then scored using a Likert Scale on a scale of 1-5. The criteria and score weights can be seen in Table 1 below:

Table 1. Criteria and Scoring for Attitude Statement

No.	Criteria	Scoring scale	Attitude score
1	Strongly disagree (know, happy, support) (STS)	1	1 - 1.8
2	Disagree (know, happy, support) (TS)	2	1.9 - 2.7
3	Doubtful (R)	3	2.8 - 3.6
4	Agree (know, happy, support) (S)	4	3.7 - 4.5
5	Strongly agree (know, happy, support) (SS)	5	> 4.6

The analysis of attitude measurement results uses the Statistical Program for Social Science (SPSS) version 25 application. Based on the village profile data, Teluk Sulaiman has 1.600 people. As an additional material, 63 respondents are also classified in the segments of age, education, number of family members, income, gender, length of stay in the village, kind of job, income, involvement in institutions (in office). The number of respondents was 5 leaders, 3 interest groups, 25 women and 22 youth.

Table 2. Criteria correlation coefficient

Correlation coefficient	Correlation relationship
0	No relationship between the 2 variables
$0 < r \leq 0.25$	The relationship is very weak
$0.25 < r \leq 0.50$	The relationship is sufficient
$0.5 < r \leq 0.75$	Strong relationship
$0.75 < r < 1$	The relationship is very strong
1	Perfect correlation

To compare differences in attitude scores per segment, the Kruskal-Wallis test was used. Differences in attitude values are considered significantly different if the p value <0.05. Meanwhile, to see the relationship between attitude values and attitude factors, correlation analysis is used. The correlation coefficient criteria are explained in the following Table 2.

Based on the method above, the hypothesis that can be conveyed is that the attitude value (cognitive, affective and conative aspects) of the community in Teluk Sulaiman is positive, because the mangroves have been managed on a community basis. Apart from that, there is a positive relationship between several factors that influence attitude values, namely age, education, number of family members, income, and gender, length of stay in village, job type, income, and involvement in institutions.

RESULTS AND DISCUSSION

General description of Teluk Sulaiman Village

Currently Teluk Sulaiman is an independent village and has five RT, and has an area of 8,560.93 hectares which is bordered to the north by Giring-giring Village, to the east by the Makassar Strait, to the south by Teluk Sumbang Village and to the west by East Kutai Regency). The population of Teluk Sulaiman Village in 2021 is 1,551 people with 385 heads of families divided into six RTs. In general, people's livelihoods are fishermen, farmers, teachers, medical personnel, traders, local government employees and others. The economic condition of the people of Teluk Sulaiman Village generally consists of households with moderate and poor incomes, especially those who work in the non-formal sector, fishermen and farmers. The Bajau tribe is an indigenous population that lives in Teluk Sulaiman Village, while the majority of immigrants are the Mandar tribe and the Bugis tribe. The majority of the population adheres to Islam (99%) because the intermingling of natives and immigrants has been going on for a long time (Forlika, 2020).

Mangrove conditions in Berau Regency

Berau Regency is one of the districts that has an extensive mangrove ecosystem with forest cover that is generally still relatively good. The area of the mangrove ecosystem per sub-district can be seen in the following table:

Table 3. Mangrove Area per District

No	District	Mangrove Vegetation Area (hectare)	Pond Area (hectare)
1	Pulau Derawan	18.791	7.900,00
2	Gunung Tabur	394	-
3	Sambaliung	14.174	868,00
4	Tabalar	8.039	634,16
5	Biatan	3.887	60,00
6	Talisayan	716	24,90
7	Batu Putih	7.509	-
8	Biduk-biduk	1.682	-

Based on Table 3, of the 13 sub-districts in Berau Regency, mangrove areas are located in 8 sub-districts. The largest area of mangroves is in Derawan Island District with an area of 18,791 hectares of mangrove vegetation, while ponds cover an area of 7,900. Mangroves in Berau Regency are found in Forestry Areas (KBK) and OLU. Based on the distribution of functions of mangrove areas in Berau Regency, the majority are OLU (70%), with some still clear and clean status and several areas already included in plantation and mining permit concessions. Based on the Regional Spatial Plan (RTRWP) of East Kalimantan Province (Regional Regulation Number 1 of 2016), the mangrove ecosystem area is distributed into spatial patterns: Production Forest (HP), Convertible Production Forest (HPK), Industrial Area, Land Tourism Area, Fishing Areas, Residential Areas and Food Crop and Horticultural Areas. Apart from these three functions, several mangrove areas have also been designated as part of the Berau Regency Coastal and Island Conservation Area (Hamzah et al., 2017). Mangrove management in OLU which already contains community ponds is to encourage the sustainable revitalization of ponds and restoration of ponds that can no longer be developed. Coastal Conservation Areas and Small Islands

will be managed through conservation areas whose management design will be integrated with the institutional management plan to be established by the East Kalimantan Provincial Government (Dey et al., 2020).

Mangrove management in Teluk Sulaiman

The mangrove forest area in Teluk Sulaiman is known as "Sigending Area" which was determined through the Regent's Decree Number 474 of 2016 concerning Sigending Mangrove Protected and Ecotourism Area covering an area of 1,500 hectares in Teluk Sulaiman, Biduk-Biduk District. This area is operationally managed by the KSM Forum Peduli Kelestarian Alam (FORLIKA) through the decision of the Village Head, SK No. 1 of 2019 concerning Penunjukan Badan Pengelolaan Kawasan Lindung Ekowisata Sigending Kampung Teluk Sulaiman Kecamatan Biduk-biduk Kabupaten Berau.

Based on the institutional assessment carried out by the POKJA PKHB, FORLIKA has a good management predicate, where the prerequisite criteria have the highest score, followed in sequence by the protection, social and production criteria. However, of the four criteria, the criterion of production is considered as the very least value. Based on the implementation criteria for production, implementation forest utilization is still not in accordance with the business plan (around 50-80%). Meanwhile, the realization of profits from investment in goods and services, the break-even value is only 25%. In addition, FORLIKA's funding sources only come from village fund allocations and other sources are only 50-75% of investment needs (Gunawan et al., 2022). For this reason, FORLIKA needs to pay attention to these criteria so that in the future, institutional values will be improved.

In the mangrove forest and lowland forests in Sigending, a total of 26 individuals were found belonging to 22 species, 11 families and 5 orders. These types of mammals were found based on direct observations in the field as many as 14 species, while the results of information and interviews with people who often enter and exit of the forest obtained information on 8 mammal species. The three families with the dominant number of species are Cercopithecidae, Viverridae and Cervidae. Of the 22 mammal species discovered, 17 species are included in the IUCN Red-list, of which 8 species have near threatened status, 1 species has threatened status, and 2 species have data deficient status (Anonymous, 2015).

The distribution of proboscis monkey (Nasalis larvatus) habitat in Teluk Sulaiman mangrove landscape is in 5 locations. This habitat distribution is thought to be related to foraging activities, where proboscis monkeys generally choose the leaves of Aegiceras sp and Bruguriea sp as food. The characteristics of the Sigending mangrove forest area, which is a transitional area of lowland rainforest and coral islands with land that continues to the seashore, provides access for mammals to find food (Anonymous, 2015).

The community of Teluk Sulaiman was involved in the process of establishing FORLIKA. This institution was formed as a manager for the mangrove which consists of the community itself. In implementing activities, FORLIKA involves the community, such as socializing the importance of protecting mangroves, managing ecotourism (arranging tourist boats including visitor guides), creating track routes, mapping mangrove tourism potential, planting mangroves and including mangrove management plans in the village development plan. Community involvement in Teluk Sulaiman was also carried out with mangrove planting activities.

FORLIKA's organizational structure is based on Articles of Association established by the village head and has sections, such as marketing, environment, development and ecotourism (Anonymous, 2021). FORLIKA was formed because it is one of the outputs of the Tropical Forest Conservation Act (TFCA) program (Anonymous, 2016). According to Meister (1984 in Sardjono, 2004), this typology includes participation in provocation (instigated participation), which is a new group whose formation is carried out externally with a voluntary formation mode when there is a strong provocation.

The mangrove management plan in Teluk Sulaiman has been included in the village's medium-term development plan, namely: increasing and developing natural resources based on sustainability, which have the potential to become tourist attractions and can support the community's economic improvement; increasing supervision of natural resources, against disturbances and threats of damage; development of basic infrastructure for the agriculture, plantation, fisheries and tourism sectors on a village scale; facilitating cooperation between community groups and other third parties in developing village tourism destinations; development of tourism management groups and training for parties involved in village tourism; exploring tourism potential and cultural values; improving local facilities and tourist attractions; fostering ecotourism community involvement; fostering local cultural diversity (Forlika, 2020).

The beauty of the Teluk Sulaiman Village mangroves is a tourist attraction. The Teluk Sulaiman Village government formed village enterprises Pasir Putih Indah in 2017 which specifically manages ecotourism, for example regulating the use of ships or boats that serve tourists. The tourism manager has created tour packages, namely: 1.2 hour package with 1 of 3 tourist destination options: Muara Turtle and Sigending Besar Island, Mangrove Park and Salo Buaya, and Salo Kompa and Sigending Cave. This package has facilities: life jacket, local guide, snack/coffee/lunch; caping hats; and ketinting boats. The price for first package is IDR. 250,000/package/person (for a minimum of 5 people). For second package, 6 hour visiting all the destinations above is at a cost of IDR. 300,000 per person (and the minimum is 5 people). Each tourism income is IDR. 25,000,- is included in the village enterprises treasury. The tourist destinations of this package consist of: Mangrove Park, Sigending River (Salo Buaya), Fish Hole, Salo Kompak, Muara Turtle/Inset, Sigending Besar Island and Sigending Estuary with the same facilities as Package 1. To strengthen Sigending tourism promotion, an account has been created. Instagram that shows the beauty of tourism. Community-based mangrove management has had an economic impact on some residents.

Community attitudes assessment

The calculation of the value of community attitudes can be seen from the following Table 4.

Table 4. Community attitude in mangrove management

No	Aspect Attitude	Scoring	Remark
1	Cognitive	4.13	Know
2	Affective	4.35	Happy
3	Conative	3.96	Support
	Average	4.15	

Based on the Table 4, the community's attitude towards mangrove management is positive, namely 4.15, where it is considered that the community knows, likes and supports it. In detail, the cognitive aspect value is 4.13 (knowing), the affective aspect value is 4.35 (liking) and the conative aspect value is 3.95 (supporting). Based on the Kruskal-Wallis test on differences in 3 attitude aspects scores, the H statistic is 16.6478 (2, N = 189). The p value is 0.00024 (the result is significant at $p < 0.05$), where it is known that the attitude values in these 3 aspects are significantly different.

Attitude value per segmentation

The results of measuring community attitudes in mangrove management are based in detail on the segmentation of existing factors. To see the value of people's attitudes based on segmentation, can be seen in the following Table 4.

Based on the Table 4, all education segments have positive scores, where the diploma and bachelor segments have the highest scores, namely 5.00 and 4.50, respectively. The lowest education segment is the no-school segment, namely 3.63. Based on the Kruskall test, the H statistic value is 14.1164 (14 N = 59). The p value is 0.0069. The results are not significant at $p < 0.05$. So the difference in attitude scores in education segmentation is significant. According to Leasa et al. (2016), public knowledge is one of the factors that influences attitude values. So based on the data above, it is very natural that the diploma and undergraduate segments have high attitude scores, because they are considered to have higher knowledge than other segments.

Based on the gender segmentation, the attitude value of men is higher than women (4.19 and 4.08). However, based on Kruskall's analysis, there is no significant difference between these two segments. Mangrove management involves women as one of important stakeholders. Women also become FORLIKA administrators. In the process of palm oil management planning, mangrove implementation, benefit sharing and monitoring, FORLIKA is involved. With this involvement, women's role is quite significant in mangrove management. Apart from that, almost all of the food booth managers at the port are women. The more tourist visits to Teluk Sulaiman, the more people will visit the stalls, so that it can improve the economy of women, especially stall managers. According to (Leasa et al., 2016), if the community is affiliated with a mangrove management group, the community's attitude will have an influence.

Based on the age segmentation, the highest attitude value is for those aged 50 years and over, namely 4.34. Meanwhile, the lowest value is segment > 40 old; < 50 old is 3.93. Based on length of stay, the

Table 4. Community attitudes based on segmentation

No	Segment	Attitude			
		Cognitive	Affective	Conative	Average
Education					
1	Elementary School	3.84	4.08	3.80	3.91
2	Middle School	3.95	4.15	3.88	3.99
3	High School	4.22	4.46	4.10	4.26
4	University Student	4.44	4.68	3.96	4.36
5	Diploma	5.00	5.00	5.00	5.00
6	Bachelor	4.77	4.73	4.00	4.50
7	No School	3.50	3.80	3.60	3.63
Age					
1	≤ 30 year old	4.17	4.30	3.92	4.13
2	> 30 year old; < 40 year old	4.23	4.37	3.74	4.11
3	> 40 year old; < 50 year old	3.76	4.18	3.86	3.93
4	≥ 50 year old	4.33	4.37	4.33	4.34
Gender					
1	Male	4.12	4.35	4.11	4.19
2	Female	4.14	4.34	3.74	4.08
Length of stay					
1	< 10 year	4.06	4.14	3.91	4.04
2	> 10 year; < 20 year	3.96	4.24	3.80	4.00
3	> 20 year; < 30 year	4.12	4.37	4.03	4.17
4	> 30 year; < 40 year	4.33	4.45	3.73	4.17
5	> 40 year	4.15	4.44	4.24	4.27
Income					
1	> 1 million; < 2 millions	3.95	4.13	3.84	3.97
2	> 2 million; < 3 millions	4.00	4.27	4.04	4.10
3	> 3 million; < 4 millions	4.44	4.63	3.99	4.35
4	> 4 millions	4.67	4.67	4.67	4.67
Sum of family members					
1	≤ 2 members	3.69	3.84	3.69	3.74
2	3 members	4.00	4.03	3.67	3.90
3	4 members	4.17	4.51	4.05	4.24
4	5 members	4.17	4.32	3.81	4.10
5	6 members	4.10	4.30	3.97	4.12
6	> 7 members	4.00	4.26	4.06	4.10
Kind of job					
1	Village staff	5.00	4.84	4.20	4.68
2	Labour	3.70	4.00	3.65	3.78
3	Trader	3.70	4.00	3.50	3.73
4	House wife	3.80	4.04	3.64	3.83
5	University student	4.50	4.80	4.00	4.43
6	Entrepreneur	4.50	4.85	4.45	4.60
7	Fishman	4.15	4.48	4.33	4.32
8	Civil staff	4.20	4.90	4.20	4.43
9	Student	4.40	4.60	3.93	4.31
10	Private	4.53	4.50	4.17	4.40
11	Un-employment	3.80	4.00	3.70	3.83
12	Others	4.47	4.53	4.33	4.44
Institutional					
1	Village representation	4.33	4.93	4.27	4.51
2	Village enterprises	5.00	5.00	5.00	5.00
3	Young Group	5.00	5.00	5.00	5.00
4	Mangrove Manager	5.00	4.73	3.67	4.47
5	Village staff	4.45	4.65	4.50	4.53
Ethnic group					
1	Native	4.04	4.26	3.92	4.07
2	Immigrant	4.15	4.38	3.98	4.17

highest attitude value for residents who have lived for more than 40 years is 4.27. Based on income segmentation, the highest attitude value for residents who have an income of more than 4 million rupiah is 4.67. Based on the sum of family members, the highest attitude value for residents who have a family member is 4.24.

Based on kind of job segmentation, the highest attitude value for residents who have village staff, entrepreneur and private jobs is 4.67; 4.60 and 4.40. Based on the Kruskall test, the H statistic value is 26.69 (4, N = 49). The p value is 0.00002. The results are significant at $p < 0.05$. So the difference in attitude scores based on kind of job is significant. Village staff have a positive attitude score (high) because they are used to being involved in environmental management. Activities initiated by partners (NGOs) usually coordinate with village staff for permits and involve the community. Entrepreneurs and the private sector have high attitude scores, because they benefit from mangrove management. For example, after the Sigending mangrove area was opened as ecotourism as determined by the village government, new economic businesses emerged, such as the presence of food stalls, preparation of boats for transportation to the location, and the presence of tour guides.

Based on the institutional segmentation, the highest attitude value for residents in village enterprises and young groups is 5.00. And all segments have high value. This becomes important. Apart from that, other segments, such as Village representation, Mangrove Manager and Village staff have high (positive) attitude scores. This happens because in the process of managing mangroves in the field, this institution is usually involved in the planning process, program implementation, benefit distribution and supervision. For example, FORLIKA always carries out patrols involving other parties, such as village officials, Indonesian Navy posts and the community. FORLIKA as an institution that manages mangroves in villages, understands well how important mangroves are for the environment and society. They also carry out mangrove management, such as ecotourism management. The high attitude value of this institution is in accordance with the opinion of Nurrani et al. (2015), who stated that the participation of community leaders, international researchers, NGOs, village governments, religious institutions and formal educational institutions is an important aspect which is the main pillar and key to success in rehabilitation mangrove forest. Besides, the attitudes about preserving mangrove ecosystems also influence behavior in preserving mangrove ecosystems, so community attitudes and behavior as one of the social variables of society need to be known in community-based management (Gumilar, 2012).

Based on the ethnic group segmentation, the attitude value of immigrant residents is higher than the attitude value of native residents. But based on the Kruskall test, the H statistic value is 0.352 (1, N = 62). The p value is 0.55297. The results are not significant at $p < 0.05$. So the difference in attitude scores between immigrants and native residents is not significant. The indigenous tribes in Berau Regency consist of the Banua tribe, Bajau tribe and Dayak tribe. For the indigenous tribes in Teluk Sulaiman, the Bajau tribe is dominant, while the Banua and Dayak tribes are not found in this village. The immigrant tribes come from the Bugis, Javanese, Mandar, Khaili and other tribes.

Relation segmentation factor and attitude value

To see an overview of the relationship between segmentation factors and attitude values, we can see the results of the correlation regression analysis shown in the following table:

Table 5. Relation segmentation factor and attitude value

No	Segmentation factors	Correlation coefficient	Correlation relationship
1	Age	0.21	The relationship is very weak
2	Length of stay	0.26	The relationship is enough
3	Income	0.50	Strong relation
4	Number of family	0.02	The relationship is very weak

Based on the table of the relationship between segmentation factors and attitude values, it is known that the age segment and number of family members have a very weak relationship (<0.05). From Table 4 it can be seen that the attitude value fluctuates. The length of residence segment has a sufficient relationship, namely 0.26. Meanwhile, the income factor has a strong relationship with the attitude value, namely 0.50. Several segments of society, such as entrepreneurs, the private sector, women and mangrove managers, receive economic benefits from the emergence of new businesses that support mangrove management.

CONCLUSION

The attitude of the people of Teluk Sulaiman Village is positive towards mangrove management. The community knows about mangrove management activities, likes and supports them. This support is important so that the existence of mangroves can be maintained because of the residents' willingness to help. There are no significant differences based on factors of population origin (natives and immigrants), gender, number of family members and age class in attitudes. People who work in village institutions, such as village representatives, village business entities, youth groups, mangrove managers and village staff have high attitude scores. The youth group has higher attitude scores. Education, length of stay and income are factors that influence attitude scores.

To maintain the existence of mangroves in OLU, community involvement in CBRM is important. In order to be actively involved, it is necessary to increase community attitudes by increasing education and income levels. Youth group and people who work in village institutions can become role models for community involvement.

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