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Influence of education and acculturation on communication modernization of Akit isolated tribe fishermen in Riau, Indonesia: Government support as a mediator

Ridar Hendri^{1,*}, Eni Yulinda²¹ Fisheries Community Development Lab., Department of Fisheries Socioeconomics, Faculty of Fisheries and Marine, University of Riau, Pekanbaru 28293, Indonesia² Fisheries Development Lab., Department of Fisheries Socioeconomics, Faculty of Fisheries and Marine, University of Riau, Pekanbaru 28293, Indonesia* **Corresponding author:** Ridar Hendri, ridar.hendri@lecturer.unri.ac.id

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Abstract: The Akit tribe fishermen on Rupert Island, Riau, Indonesia, are a remote indigenous community with a low level of education. They have experienced cultural acculturation after the influx of outsiders and the government built road infrastructure to break the isolation. The government also provides internet facilities to speed up the process of modernizing communications between them. The research aim is to analyze the role of government support as a mediator in the influence of education and acculturation on communication modernization among Akit fishermen. The research used a survey method, involving 165 of the 763 Akit fishermen as respondents. This number determine used the Sample Size Calculator technique. Respondents were selected using a purposive random sampling technique. The variables studied consisted of education, acculturation, government support (as mediator), and communication modernization. Data collection was carried out through a closed questionnaire containing statements, which were measured with a 5-point Likert scale. The data were analyzed using the Structural Equation Modeling method with the help of SmartPLS 4 software. The research results show that acculturation and government support have a positive and significant influence on communication modernization, while education plays a negative influence. Government support as a mediator plays a positive and significant role in the influence of education on communication modernization, while it does not play any role in the influence of acculturation. The most implication of this research is that the government must further increase its role in organizing the acculturation process for Akit fishermen to accelerate the communication modernization process.

Keywords: communication; isolated tribes; fishing industry; SEM method; traditional fishermen

1. Introduction

The Akit tribe is an isolated indigenous community in Riau Province, Indonesia. Therefore, they have limited knowledge, live in remote areas, and tend to maintain traditional systems (Bahtera Alam, 2021). They came from China hundreds of years ago, at the same time as the arrival of Chinese immigrants to Bagansiapiapi, a city inhabited by the majority of residents of Chinese descent in Riau (Zulfadli, 2018). Typically, the Akit people reside in Bengkalis Regency, north of Rupert Island. There are 5000 people living there (848 households), which makes up 30% of the island's population total. They are distributed throughout several settlements, including Titi Akar (70 percent), Tanjung Medang, Tanjung Punak, Tanjung Rhu, and Hutan

Panjang (Bengkalis Regency Government, 2019). Akit comes from the word rakit (raft), which is a series of wooden beams floated on the sea. The Akit tribe community uses rafts as homes and places for daily activities. Therefore, 90% of the Akit tribe population (763 families) work as fishermen (Bahtera Alam, 2021). The Rupert Island water is the spot where the currents of the South China Sea and Indian Ocean meet, making it fertile and abundant in fish. The island is one of the marine fish export centres from Riau to Malaysia because it is close, only 90 minutes by speedboat (Warningsih et al., 2021). Akit tribe fishermen are a vital part of the marine fish supply chain system on Rupert Island (Batubara et al., 2017). As an isolated community, the Akit tribe fishermen employ traditional communication when interacting with others. According to Manurat et al. (2020), traditional communication is characterized by the use of folk media, such as sound instruments (clappers, gongs, and drums); reminder tools (betel leaf); tales, proverbs, folk songs, and signs. Faisal and Sari (2019) found the use of traditional communication by Akit tribe fishermen as seen in the Bedekheh ritual, namely the treatment of nonmedical illnesses, which is full of magical nuances. During this treatment, Bomo (shaman) is believed to be able to communicate ritually with supernatural beings (jinn) who cause unnatural illnesses. He communicated by using gestures, namely shaking a miniature of the Akit tribe's traditional house above the patient's head. However, in the last 20 years, Akit tribe fishermen have experienced modernization (Harahap et al., 2020), namely the change from traditional to modern communication, which is characterized by the use of more modern communication tools (Ilham et al., 2021). Modern communication is supported by advances in information technology so that it can disseminate information quickly, reach a larger audience, be interactive, and have low costs. This communication is also non-hierarchical so that all audiences can become communicators (Setiawan, 2018). Therefore, people tend to abandon traditional communication (Manurat et al., 2020).

Many factors can influence the communication modernization among Akit tribe fishermen, including fishermen education (Anderson, 2018; Neeru and Sheetal, 2018), cultural acculturation (Andriyus et al., 2021; Rozida, 2011), and government support (Loving, 2020; Ramdayanti et al., 2021). Government support, apart from being able to provide a direct influence, can also act as a mediator variable in the influence of education and cultural acculturation on communication modernization among the Akit isolated tribe fishermen (Azharuddin and Al-kahtani, 2024; Dasli et al., 2015).

Based on these outlined reasons, it is necessary to study the influence of education and cultural acculturation, both directly and mediated through government support, on the communication modernization among Akit tribe fishermen on Rupert Island, Riau Province, Indonesia. This research aims to analyze: (1) the influence of education on the communication modernization of Akit tribe fishermen; (2) the influence of cultural acculturation on their communication modernization; (3) the influence of education, mediated by government support, on their communication modernization; and (4) the influence of cultural acculturation, mediated by government support, on their communication modernization.

1.1. Literature review

1.1.1. Education and communication modernization

The education level can influence communication modernization through both formal and non-formal education (such as extension and training). According to Neeru and Sheetal (2018), the best way to modernize communication is through education, which is aided by information technology and modern educational facilities. Anderson (2018) found that people with low education tend to use traditional communication media; those with secondary school education prefer conventional media such as radio and television; and those with higher education (diplomas and bachelor's degrees) tend to use internet-based social media. On the other hand, Custers and Magalhães (2023) found that education currently serves as little more than a floating marker in many nations, meaning that it has little positive influence on communication modernization. However, according to Murad et al. (2020), education also cannot influence modernization. Their research results found that education can encourage the development of traditional culture, which is characterized by the use of traditional culture. In other words, education has no effect on encouraging communication modernization. Based on this description, we propose Hypothesis 1 (H1): Education has a positive and significant influence on communication modernization among Akit tribe fishermen.

1.1.2. Cultural acculturation and communication modernization

Cultural acculturation can also influence communication modernization, as experienced by the Nuhatan tribe community in Maluku, Indonesia. Those were able to change their communication form from traditional (without the use of media) to modern, which uses media. This happens because cultural acculturation can influence a person's thought patterns and behaviour, which they express through communication (Rozida, 2011). Nevertheless, cultural acculturation often has no influence on communication modernization. Especially if they still strongly defend their traditions and are worried that their ancestral culture will be lost. As a result, they limit interaction and communication with outsiders (Andriyus et al., 2021). Similar findings were also expressed by Butarbutar and Putra (2021), who found that obstacles to the acculturation process in isolated tribal communities include negative prejudice towards outsiders. The presence of a foreign culture can make them experience culture shock, anxiety, and stress. Obstacles to the acculturation process in isolated tribal communities, including the Akit tribe fishermen, include negative prejudice towards outsiders. Based on this description, we propose H2: Cultural acculturation has a positive and significant influence on communication modernization among Akit tribe fishermen.

1.1.3. Government support and communication modernization

Another factor that can influence communication modernization in a community group is government support, namely everything that the government provides to the community to empower them (Ramdayanti et al., 2021). This is because the government is an organization that has financial power. Forms of government support to encourage the modernization of public communications include providing information technology infrastructure (Lowing, 2020). However, government support

cannot always help the process of communication modernization in society. Research conducted by Bisen and Thakur (2021), for example, found that the program of ‘bringing’ isolated tribes closer’ to other more advanced social groups in India to accelerate the economic development of these tribes has actually produced the opposite output. Government support was in vain because these isolated tribes felt suspicious, uneasy, and distrustful of these more advanced social groups. In fact, they secretly harbor feelings of hostility. Thus, the government failed to modernize and develop the lives of these isolated tribes. Based on this description, we propose H3: Government support has a positive and significant influence on communication modernization among Akit tribe fishermen.

1.1.4. Government support as a mediator variable

Government support can also have an indirect influence on the development of society, including in modernizing communications towards them. In other words, government support is only a mediator variable or plays a role in the relationship between other variables that it mediates. In research by Azharuddin and Al-kahtani (2024), for example, government support as a mediator played a significant positive role in the influence of innovation and creative behavior on employees’ entrepreneurial interest in Saudi Arabian industrial companies. Similarly, research by Dasli et al. (2015) found that the mediating role of government support was proven to contribute to a relationship between entrepreneurial orientation and small-scale business performance in East Java, Indonesia. Based on this description, we propose H1a: Government support has a positive and significant role in the influence of education on the communication modernization among Akit tribe fishermen; and H2a: Government support has a positive and significant role in the influence of cultural acculturation on the communication modernization among Akit tribe fishermen.

Meanwhile, the conceptual framework model of this research is illustrated in **Figure 1**.

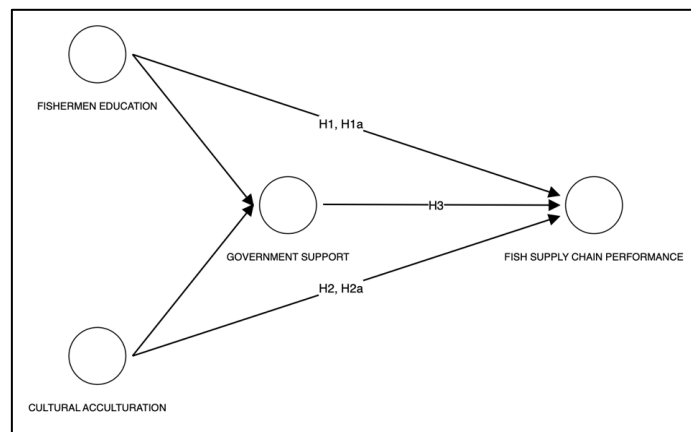


Figure 1. Research conceptual framework model.

2. Materials and methods

2.1. Research location and respondents

This research was conducted in February 2024 on Rupert Island, Bengkalis Regency, Riau Province, Indonesia. Data collection focused on four fishing villages on the island: Tanjung Medang, Titi Akar, Kubu, and Kador (**Figure 2**).

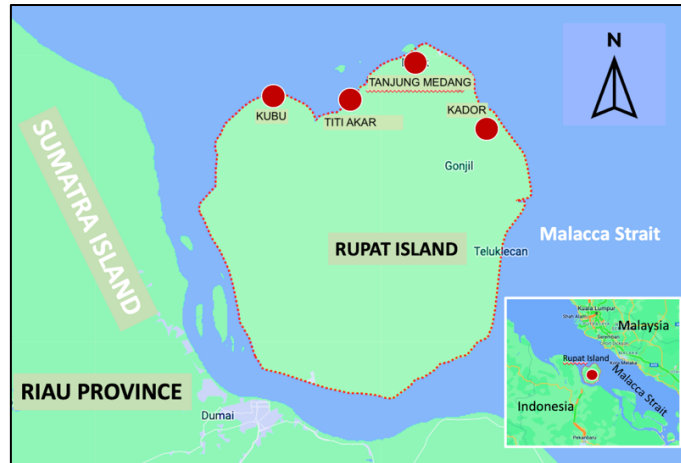


Figure 2. Research location map.

This research uses a survey method with a quantitative approach (Creswell and Creswell, 2018). A total of 165 out of the 763 Akit tribe fishermen were involved as respondents. Determining the number of respondents uses the Sample Size Calculator (SSC) method with the help of SSC computer software (Survey Monkey, 2022), which calculates it based on the Equation (1):

$$Sample\ size = \frac{(z^2 \times p(1-p))/e^2}{1 + (z^2 \times p(1-p))/(e^2 N)} \quad (1)$$

where: N (population); e (margin of error); and z (deviation score, which is set at 95%). The selection of respondents used the purposive random sampling method (Akbar, 2020).

2.2. Data collection

The data collected consists of latent variable data (constructs), or data that cannot be measured directly, and observable variable data (indicators), or data that can be measured. There are four latent variables with nine dimensions and 28 indicators studied: the Fisherman Education variable (two dimensions, seven indicators); Cultural Acculturation (three dimensions, six indicators); Government Support (two dimensions, eight indicators); and Communication Modernization (two dimensions, seven indicators), as shown in **Table 1**. Data were collected using a closed questionnaire, containing statements measured using a 5-point Likert scale, respectively: 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree) (Hendri, 2022).

Table 1. Latent variables, dimensions, and indicators studied.

Latent Variable (Construct)	Dimension	Indicator	Code
Fishermen Education (FED):	Formal education	• Availability of school infrastructure	FED2
		• Availability of educational facilities	FED3
		• Completion of junior high school	FED4
	Competencies Possessed	• Participation in fisheries extension programmes	FED5
		• Attendance at fisheries training sessions	FED6
		• Participate in fisheries cyber extension training	FED7
Cultural Acculturation (CAC)	Rejection	• Rejection of foreign culture	CAC1
	Substitution	• Replacement of native cultural elements with foreign culture	CAC2
		• Replacement of native culture with foreign culture	CAC3
	Origination	• The complete transformation of native culture by foreign culture	CAC4
	Syncretism	• Blending of native and foreign cultures	CAC5
		• Blending of native and foreign cultures in fishing industries	CAC6
		• Incorporation of native cultural values and foreign cultures	CAC7
Government Support (GSP):	Internet facility availability	• Building an internet infrastructure	GSP1
		• Building internet network	GSP2
		• Provides free internet facilities	GSP3
		• Helps digital communications equipment	GSP4
		• Help with internet usage costs	GSP5
	Internet training for fishermen	• Internet usage training	GSP6
		• Training on the use of social media	GSP7
		• Digital literacy training	GSP8
Communication Modernization (CMD):	Use of conventional media	• Use of communications radio (handy talkie)	CMD1
		• Search for information about fisheries via radio and television.	CMD2
		• Use of mobile phones to communicate with fishermen and fish agents	CMD3
	Use of social media	• Use of fisheries extension websites	CMD4
		• Use of WhatsApp	CMD5
		• Searching for information about fisheries on Instagram and Facebook	CMD6
		• Watching fishing videos on YouTube.	CMD7

2.3. Data analysis

Data analysis used the Structural Equation Modeling (SEM) method, which was carried out with the help of SmartPLS version 4 software (Hair et al., 2021). This

method was chosen because it is appropriate for analyzing latent variables (constructs) that cannot be measured directly, and comprehensively analyzing direct and indirect relationships between variables (Sekaran and Bougie, 2020). Both analyzes are needed in this research. The SEM analysis technique is carried out by carrying out two stages of evaluation, namely: (1) Measurement Model (Outer Model) which aims to test the validity and reliability of the research instrument; and (2) Structural Model (Inner Model) which aims to test hypotheses (Sholiha and Salamah, 2015). The Measurement Model was analyzed using the PLS Algorithm procedure, which specifically, aims to determine indicator validity, variable validity, and variable reliability. Research indicators are declared valid if the factor loading value is > 0.6 . A variable is declared valid if the average variance extracted (AVE) value is > 0.5 and is declared reliable if the composite reliability value is > 0.7 and Cronbach's alpha is > 0.6 (Syahrir et al., 2020). Meanwhile, Structural Model analysis, specifically, is carried out to test the ability of variables to predict the model, the ability of independent variables to explain the dependent variable, and the hypotheses (influence between variables). The predicting ability of the variable was analyzed using the Blindfolding procedure in SmartPLS. A variable is considered capable of predicting the model well if the resulting predictive relevance value (Q^2) is > 0 . Next, the ability of the independent variable to explain the dependent variable and hypothesis testing are analyzed using the Bootstrapping procedure in SmartPLS. The ability of the independent variable to explain the dependent variable can be seen from the resulting R^2 value, while the hypothesis will be accepted if it has a P -value > 0.05 (Memon et al., 2019).

3. Results and discussion

3.1. Results

3.1.1. Validity and reliability test results

Table 2. PLS Algorithm analysis output for validity and reliability.

Latent Variable (Construct)	Dimension	Indicator Code	Factor Loading
Fishermen Education (FED): • Average Variance Extracted = 0.722; • Composite Reliability = 0.940; • Cronbach's Alpha = 0.923.	Formal education	FED2	0.821
		FED3	0.842
		FED4	0.797
	Competencies possessed	FED5	0.835
		FED6	0.884
		FED7	0.914
		Rejection	CAC1
Cultural Acculturation (CAC): • Average Variance Extracted = 0.804; • Composite Reliability = 0.966; • Cronbach's Alpha = 0.955.	Substitution	CAC2	0.885
		CAC3	0.923
	Origination	CAC4	0.900
		CAC5	0.858
	Syncretism	CAC6	0.896
		Addition	CAC7

Table 2. (Continued).

Latent Variable (Construct)	Dimension	Indicator Code	Factor Loading
Government Support (GSP): • Average Variance Extracted = 0.759; • Composite Reliability = 0.962; • Cronbach's Alpha = 0.955.	Internet facility availability	GSP1	0.896
		GSP2	0.923
		GSP3	0.913
		GSP4	0.901
	Internet training for fishermen	GSP5	0.907
		GSP6	0.919
		GSP7	0.678
		GSP8	0.805
Communication Modernization (CMD): • Average Variance Extracted = 0.783; • Composite Reliability = 0.962; • Cronbach's Alpha = 0.954.	Use of conventional media	CMD1	0.879
		CMD2	0.860
		CMD3	0.928
	Use of social media	CMD4	0.885
		CMD5	0.921
		CMD6	0.902
		CMD7	0.815

The results of Measurement Model evaluation for test indicator validity, variable validity, and research variable reliability are presented in **Table 2**.

Table 2 shows that all 28 indicators tested had a loading factor value of > 0.6 with the lowest value being 0.678 (GSP 8). Thus, all indicators are declared valid for use as research instruments. The table also shows that the Average Variance Extracted value for the four variables (FED, CAC, GSP, and CMD) is > 0.5 with the lowest value being FED of 0.722. This means that the four variables are valid for use as research instruments. Furthermore, the four variables have a composite reliability value of > 0.7 , with the lowest value being 0.962 (GSP and CMD). Likewise, the Cronbach's alpha value for the four variables is > 0.6 , with the lowest value being 0.923 (FED). Thus, the four variables are considered reliable enough to be used as research instruments.

3.1.2. Hypothesis test results

The results of Structural Model evaluation for the independent variable ability to explain the dependent variable's are presented in **Table 3**.

Table 3. PLS Algorithm analysis results for R square.

Latent Variable (Construct)	R Square	R Square Adjusted
Communication Modernization	0.396	0.385
Government Support	0.121	0.110

The table shows that the R^2 value for the CMD variable is 0.396 and the GSP variable is 0.121. This means that the ability of the FED and CAC factors to explain GSP is 12.1%, while another 88.99% is explained by other factors not discussed in this study. The ability of the FED, CAC, and GSP factors to explain CMD is 38.5%, while another 61.5% is influenced by other factors not discussed in this study.

Furthermore, the analysis results for the variable’s ability to predict the model show that the Q² value of the CMD variable is 0.302 and GSP is 0.302 (**Table 4**). Both variables Q² values are > 0, so it can be concluded that the data and variables used in this research can predict the model well.

Table 4. Blindfolding analysis results for Q square.

Latent Variable (Construct)	SSO	SSE	Q ² (=1-SSE/SSO)
Communication Modernization	1155.000	806.261	0.302
Cultural Acculturation	1155.000	1155.000	
Fishermen Education	990.000	990.000	
Government Support	1320.000	1210.588	0.083

Note: SSO = Sum Square Observation; SSE = Sum Square Error.

Finally, the hypothesis testing results (direct and indirect influence between variables) are shown in **Table 5**.

Table 5. Bootstrapping analysis results for the hypothesis test.

Influence Between Variables		Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Decicion
Direct Influence	FED → CMD	-0.286	-0.286	0.066	4.304	0.000	Significant
	CAC → CMD	0.354	0.355	0.061	5.830	0.000	Significant
	GSP → CMD	0.341	0.342	0.061	5.551	0.000	Significant
Indirect Influence	FED → GSP → CMD	-0.119	-0.121	0.032	3.656	0.000	Significant
	CAC → GSP → CMD	0.000	0.001	0.027	0.007	0.994	Not significant

Note: FED = Fishermen Education, CAC = Cultural Acculturation, GSP = Government Support, and CMD = Communication Modernization.

H1: Influence of fishermen education on communication modernization among Akit tribe fishermen. **Table 3** shows that in the direct influence of the fishermen education variable on communication modernization, the resulting P values are 0.00 or < 0.05 (significant), with an original sample value of -0.286. This means that the fisherimen education factor has a negative and significant influence on communication modernization, so hypothesis 1 (H1) is accepted.

H2: Influence of cultural acculturation on communication modernization among Akit tribe fishermen. The direct influence of the cultural acculturation variable on communication modernization, the resulting P values are 0.00 or < 0.05 (significant), with an original sample value of 0.354. This means that the cultural acculturation factor has a positive and significant influence on communication modernization, so hypothesis 2 (H2) is accepted.

H3: Influence of government support on communication modernization among Akit tribe fishermen. Likewise, on the direct influence of the government support variable on communication modernization, the resulting P values are 0.00 or < 0.05 (significant), with an original sample value of 0.341. This means that the government

support factor has a positive and significant influence on communication modernization, so hypothesis 3 (H2) is accepted.

H1a: The influence of fishermen education through government support on communication modernization among Akit tribe fishermen. Meanwhile, in the indirect influence of fishermen education variable through government support on communication modernization, the P values are 0.00 or < 0.05 (significant), with an original sample value of -0.119 . This means that the fishermen education factor through government support has a negative influence on communication modernization. In other words, government support plays a significant role in the influence of fishermen education on communication modernization, so hypothesis 1a (H1a) is accepted.

H2a: The influence of cultural acculturation through government support on communication modernization among Akit tribe fishermen. In the indirect influence of cultural acculturation variables through government support on communication modernization, the P values are 0.99 or > 0.05 (not significant). This means that the cultural acculturation factor through government support has no influence on communication modernization. In other words, government support doesn't play a significant role in the influence of fishermen education on communication modernization, so hypothesis 1a (H1a) is rejected.

3.2. Discussion

The education of Akit tribe fishermen has a negative and significant influence on communication modernization among them. This means that the better the quality of fishermen's education, the less willing they are to modernize communications. This could happen because of their high concern about the threat of the extinction of traditional culture. Education can make people more critical (Putranto et al., 2023), including the Akit tribe fishermen. The higher the quality of a person's education, the more likely it is to encourage them to modernize communication, especially in using conventional media and social media (Neeru and Sheetal, 2018). This can increase the awareness of Akit tribal fishermen, that uncontrolled communication modernization can threaten the preservation of their traditional culture (Shobah et al., 2022). The Akit tribe fishermen are known as a community that firmly maintains their culture. This can be seen from their cultural richness, which is difficult to erode by external cultural influences (Harahap et al., 2020). The anxiety of the Akit tribe fishermen is quite reasonable, because several researchers have found that communication modernization has proven to threaten the sustainability of isolated tribal communities. Intahchomphoo (2018) found that the presence of social media disrupts the preservation of the traditional culture of indigenous tribes in America, Canada, and Australia. In line with this, Lupien (2020) found that, although social media can be used to help the development of indigenous culture, in Latin America the opposite is true.

Cultural acculturation has a positive and significant influence on communication modernization among the Akit tribe. This can happen because they gradually accept foreign culture and process it into their own culture without losing the previous culture. The reason is that there are three cities on Rupal Island that have their own community

characteristics, namely Bengkalis and Sinaboi, which are dominated by Malay ethnic residents, and Dumai, which has a heterogeneous population. Butarbutar and Putra (2021) discovered that cultural acculturation could be caused by close locations, mixed marriages, and open spaces for interaction with other cultures (Hendri et al., 2018). The interaction of Akit tribe fishermen with outside communities has been going on for quite a long time, so the cultural acculturation that has occurred is quite deep. There are six forms of cultural acculturation, namely: substitution, addition, origination, syncretism, and rejecting the new culture (Sari and Rizki, 2021). Substitution is the replacement of old cultural elements by new cultural elements because they are considered more modern. Addition is a combination of old and new cultures because it is considered more efficient and provides many conveniences. Furthermore, origination is the entry into a completely new culture (the first time this has occurred), so it will cause various spectacular changes in the social system. Syncretism is a combination of two cultural elements: new (modern) culture and old (traditional) culture. Meanwhile, rejection is the process of rejecting foreign cultures because society is not ready to make social changes (Vasquez-Praga and Valencia, 2017).

Government support has significant influence on communication modernization, because the government supports the development of information and communication technology, and facilitates the availability of modern communication equipment on the island. According to the Bengkalis Regency Government (2019), over the last 10 years, the government has facilitated the construction of 19 BTS (base transceiver station) units. BTS is a teleinfrastructure that facilitates wireless communication between communication devices and operator networks. The presence of the BTS makes it easier for the people of Rupa Island, including the Akit tribe fishermen, to use internet-based communication media. Field observations show that almost all Akit tribe fishermen have smartphones and use social media, especially WhatsApp. Another modern communication tool they use is the Handy Talky (HT), which is a sound frequency-based communication radio. They use HT as a communication tool when catching fish in the sea, both between fellow fishermen and with fish collectors and exporters. The government also facilitates the sale of smartphones, credit, and HT on the island. According to Kapur (2020) and Siebert (2020), the use of modern equipment and media (especially social media) is an important characteristic of modernization. In the current era of information technology, the use of social media has become a necessity in the wider community (Ilham et al., 2021), including among Akit tribe fishermen. This is because social media can convey messages more quickly and effectively and can reach a wider audience (Adamu et al., 2018).

Government support factors have an important role in the influence of education on communication modernization among Akit tribe fishermen. The support even strengthens the direct influence of fishermen education on communication modernization. The significant role of government support in the influence of education on communication modernization can occur because the government realizes that educating Akit tribe fishermen requires special methods that are different from those of the Rupa Island community in general. This is because the Akit tribe fishermen are an isolated community that strongly adheres to traditional customs. The characteristics of a society like this are that it is not difficult to accept new innovations, and they are often suspicious of people outside their environment. Therefore, the

government must be creative in choosing education systems and methods for them. Currently, the Rupert regional government is organizing a ‘literacy and equality education program’ for the frontier, outermost, and underdeveloped regions. According to Setiawan et al. (2017), the program includes eradicating illiteracy, providing free education equivalent to primary and secondary schools, and offering life skills education. Bengkalis Regency Government has provided assistance with facilities and infrastructure in the fields of education, social protection, environmental development, and advocacy (Andriyus et al., 2021). On the other hand, government support factors do not influence the impact of cultural acculturation on the communication modernization process among Akit tribe fishermen. This indicates that, so far, the government has not encouraged the cultural acculturation process to realize communication modernization for Akit tribal fishermen. The government has not implemented any programs to achieve communication modernization for them through cultural acculturation. This policy was implemented because the government wanted the cultural acculturation process on Rupert Island not to disrupt the preservation of the culture of the Akit tribe fishermen. Because, according to Suroyo et al. (2017), the culture of this tribe is one of Indonesia’s unique cultural treasures that must be preserved. Therefore, the government periodically provides guidance for the sustainability of this culture (Faisal and Sari, 2019).

4. Conclusion

This research concludes that the factors of fishermen education, cultural acculturation, and government support partially have a significant influence on the communication modernization among Akit isolated tribe in Indonesia. Furthermore, government support factors play a role in the influence of fishermen education and cultural acculturation on communication modernization. All forms of influences are positive, except for the influence of fishermen education on communication modernization, which is negative.

The most implication of this research is that the government must further increase its role in organizing the acculturation process for Akit fishermen to accelerate the communication modernization process.

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References

- Adamu, H., Ayangbekun, O. J. and Aliyu, M. (2018). Impact of Modern Communication Media. *International Journal of Innovative Research and Creative Technology*, 1(2), 207-11.
- Akbar, Y. R. (2020). *Quantitative Analysis: Statistical Data Processing Using SPSS and Google Form Survey Data Collection/Survey Monkey*, 1st ed. Purwokerto, Indonesia: CV. Pena Persada.
- Anderson, B. (2018). Influence of Education, Income and Age on Newspaper Use and Platform Preference. *Elon Journal of*

- Undergraduate Research in Communications, 9(1), 108-14.
- Andriyus, A., Febrian, R. A., Handrisal, H., et al. (2021). Pemberdayaan Komunitas Adat Terpencil (KAT) Oleh Pemerintah Daerah Kabupaten Bengkalis. *KEMUDI: Jurnal Ilmu Pemerintahan*, 6(01), 63–74.
<https://doi.org/10.31629/kemudi.v6i01.3660>
- Azharuddin, S. & Al-Kahtani, S. M. (2024). The effect of entrepreneurial intention, innovation, and perceived creative behavior on entrepreneurship: Government support is a mediating variable. *International Journal of Science and Research Archive*, 11(1), 1089–1105. <https://doi.org/10.30574/ijrsra.2024.11.1.0201>
- Bahtera Alam. (2021). Life of the Akit Tribe Indigenous People and Local Wisdom. Available online: <https://bahteraalam.org/> (accessed on 2 May 2024).
- Batubara, S. C., Maarif, M. S., Marimin, et al. (2017). Model manajemen rantai pasok industri perikanan tangkap berkelanjutan di propinsi maluku (The Ideal Model of Supply Chain Management of Sustainability Industrial Capture fisheries in Maluku Province). *Marine Fisheries: Journal of Marine Fisheries Technology and Management*, 8(2), 137–148.
<https://doi.org/10.29244/jmf.8.2.137-148>
- Bengkalis Regency Government. (2019). Profile of North Rupal District. Available online: <https://bengkalis.kab.go.id/> (accessed on 7 January 2023).
- Bisen, D. and Thakur, L. (2021). Appraisal of Tribal Development Efforts by Government of India – A Case Study. *AGPE The Royal Gondwana Research Journal of History, Science, Economic, Political and Social Science* 02(02): 46-51.
- Butarbutar, E. A. and Putra, A. (2021). Communication Patterns of Cultural Acculturation in Indigenous Tribe Who Leave Their Community (Indonesian). In: *E-Proceeding of Management*, Bandung: Universitas Telkom, 4080-89.
- Creswell, J. W. and Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 5th ed. Thousand Oaks, California: SAGE Publications Inc.
- Custers, B., & Magalhães, A. M. (2021). Problematizing ‘education’ in the Modernisation Agenda for Higher Education: The onset of language(s) of education. *European Educational Research Journal*, 22(1), 58–76.
<https://doi.org/10.1177/14749041211047334>
- Dasli, A. P. E., Muljono P. and Djoko S. (2015). Utilization of Cyber Extension via Mobile Phones by Farmers in Ragunan Orchid Park, South Jakarta. *Jurnal Penyuluhan*, 11(2), 103-15.
- Faisal, G., & Sari, G. G. (2019). Bentuk arsitektur sebagai media komunikasi ritual pengobatan suku Akit di pulau Rupal. *Jurnal Kajian Komunikasi*, 7(1), 73. <https://doi.org/10.24198/jkk.v7i1.16621>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., et al. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R. In Classroom Companion: Business*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-80519-7>
- Harahap, A. E., Oksana, O., Solfan, B., et al. (2021). Empowerment of Farmers in the Akit Tribe through the Utilization of Local Feed Raw Materials Fermented Rubber Seed Flour as a Pellet Ration for Laying Quail (Indonesian). *Menara riau*, 14(1), 11. <https://doi.org/10.24014/menara.v14i1.12494>
- Hendri, R. (2022). *Mixed Methods for Fisheries Research*, 1st ed. Pekanbaru: Taman Karya.
- Hendri, R., Yulinda, E., & Hamid, H. (2020). Analysis of Fish Export Management in Panipahan, Rokan Hilir, Riau Province. *IOP Conference Series: Earth and Environmental Science*, 430(1), 012018. <https://doi.org/10.1088/1755-1315/430/1/012018>
- Lham, R., Ariesa A. P., Ayu R. M., and Elisa K. D. (2021). Utilization of Modern Communication in the Covid-19 Pandemic Era in 'Taman Banten Lestari' Environment. In: *Proceedings UIN Sunan Gunung Djati*, Bandung: UIN Sunan Gunung Djati. pp 91-101.
- Intahchomphoo, C. (2018). Indigenous Peoples, Social Media, and the Digital Divide: A Systematic Literature Review. *American Indian Culture and Research Journal*, 42(4), 85–111. <https://doi.org/10.17953/aicrj.42.4.intahchomphoo>
- Kapur, R. (2020). *Communication in the Modern Era*. Available online: https://www.researchgate.net/publication/344135576_Communication_in_the_Modern_Era. (accessed on 2 May 2024).
- Lowling, T. (2020). Analysis of Skipjack Tuna Supply Chain Management at the Tumumpa Fish Auction Manado City. *Jurnal Riset Ekonomi, Manajemen, Bisnis dan Akuntansi (EMBA)*, 8(1), 575-85.
- Lupien, P. (2020). Indigenous Movements, Collective Action, and Social Media: New Opportunities or New Threats? *Social Media + Society*, 6(2), 205630512092648. <https://doi.org/10.1177/2056305120926487>
- Manurat, S. W., Nicolas M. and Anita R. (2020). The Role of Traditional Communication Media in Conveying Information to the People of Mala Village, Melonguane District, Talaud Islands Regency. *Jurnal Acta Diurna Komunikasi*, 2(3), 1-13.
- Memon, M. A., Cheah J-H., Ramayah, T. et al. (2019). Moderation Analysis: Issue and Guidelines. *Journal of Applied Structural*

- Equation Modeling, 3(1), 1-14. [https://doi.org/10.47263/JASEM.3\(1\)01](https://doi.org/10.47263/JASEM.3(1)01)
- Murad, R., Hussin, S., & Yusof, R. (2020). Educational Modernization Drives the Development of Culture and Innovation. *International Journal of Academic Research in Business and Social Sciences*, 10(11). <https://doi.org/10.6007/ijarbss/v10-i11/8054>
- Neeru, R. and Sheetal. (2018). Education as an Instrument for Modernization. *International Journal of Research and Analytical Reviews*, 5(3), 1680-82.
- Putranto, Y., Agnes P. S., and Mercy P. (2023). Influence of Factors of Age, Education, Number of Family Members Affecting Income Traditional Fishermen in Cilacap Regency. *Albacore*, 7(1), 23-35.
- Ramdayanti, E., Argenti, G., & Marsingga, P. (2021). The role of government in empowering fishing communities in ciparagejaya village, Karawang district (Indonesian). *Jurnal Ilmu Pemerintahan Suara Khatulistiwa*, 6(2), 194–201. <https://doi.org/10.33701/jipsk.v6i2.1895>
- Rozida, A. V. (2011). Communication Patterns of the Nuhatan Tribe as a Result of Cultural Acculturation. *Jurnal Reformasi*, 1(1), 42-52.
- Sari, W. P. and Menanti F. R. (2021). *Cross-Cultural Communication*. Solok, Sumbar, Indonesia: Insan Cendikia Mandiri.
- Sekaran, U. and Roger, B. (2020). *Research Method for Business: A Skill Building Approach*. 8th ed. Chichester, UK: John Wiley & Sons Ltd.
- Setiawan, D. (2018). Dampak Perkembangan Teknologi Informasi dan Komunikasi Terhadap Budaya. *Jurnal simbolika: Research and Learning in Communication Study*, 4(1), 62. <https://doi.org/10.31289/simbollika.v4i1.1474>
- Setiawan, Iskandar A., Yufriawati, et al. (2017). Cultural Acculturation: The Role of PKBM in Socio-Cultural Change in 3 T Regions (Frontier, Outermost, Disadvantaged). Jakarta: Puslit Kebijakan Pendidikan, Balitbang Kemdikbud RI.
- Shobah, M. I., Syahril M. I., Clara O. and Muh. F A. (2022). The Threat of Westernization on Local Indonesian Culture from a Mass Communication Perspective. In *Prosiding Seminar Nasional Ilmu-Ilmu Sosial*, Surabaya: Universitas Negeri Surabaya, 652-62.
- Sholiha, Eva U. N. and Mutiah S. (2015). Structural Equation Modeling-Partial Least Square for Modeling the Health Status of Districts/Cities in East Java. *Jurnal Sains dan Seni ITS* 4(2): 169-74.
- Siebert, William M. (2020). *Modern Communication Systems. Circuits, Signals, and Systems*.
- Suroyo, S., Wirata, G., & Kamaruddin, K. (2017). Cultural Tourism Management Strategy of Bedekeh Ritual of Akit Tribe in Rupert Island, Bengkalis Regency, Riau Province (Indonesia). *Proceeding TEAM*, 2, 33. <https://doi.org/10.23887/team.vol2.2017.153>
- Survey Monkey. (2022). *Sampel Size Calculator*. Available online: <https://www.calculator.net/sample-size-calculator.html> (accessed on 2 May 2024).
- Syahrir, Danial, Eni, Y. and Muhammad Y. (2020). *Application of the SEM-PLS Method in Coastal and Ocean Resource Management*. Bogor, Indonesia: IPB Press.
- Vasquez-Parraga, A. Z., & Valencia, H. (2017). Five-Stage Acculturation Process of Hispanic Consumers: Theory, Method, and Findings. *The International Trade Journal*, 31(2), 130–162. <https://doi.org/10.1080/08853908.2016.1272506>
- Winarngsih, T. (2021). Economic valuation of rupert island tourism in bengkalis district, Riau province using travel cost method. (Indonesian). *JFMR-Journal of Fisheries and Marine Research*, 5(3), 508–513. <https://doi.org/10.21776/ub.jfmr.2021.005.03.2>
- Zulfadli. (2018). *Role of the Bengkalis Regency Government in Managing Border Areas (Case Study of North Rupert District)*. Universitas Islam Riau.