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Driving Factors of Community Empowerment and Development through Renewable Energy for Electricity in Indonesia

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ABSTRACT

Yogyakarta Special Region (DIY) is one of the provinces in Indonesia which does not have fossil energy potential. Almost all of the energy needs in DIY such as fuel oil (BBM) is supplied from outside the area with increasing use every year. Therefore, this research aims to find out and analyze the driving factors of empowerment and development of rural communities through the development of electrical energy derived from Hybrid Power Plants in Pantai Baru, DIY, Indonesia. Data are analyzed by employing structural equation modeling based partial least square (SEM-PLS). The results reveal that the driving factors of empowerment and development of rural communities are influenced by individual characteristics, environment, and group support.

Keywords: Fossil energy, Hybrid power plants, Community empowerment
JEL Classifications: P18, Q30, Q35

1. INTRODUCTION

Yogyakarta Special Region (DIY) is one of the provinces in Indonesia that does not have fossil energy potential. Almost all of the energy needs in DIY such as fuel oil (BBM) is supplied from outside the area with increasing use every year. Electricity is also supplied from the Java-Madura-Bali (JAMALI) interconnection network because there are no power plants that meet the electricity demand of the DIY community. This means that all community activities in the DIY region are highly dependent on the stability of energy supply from other regions. On the other hand the pattern of energy consumption in DIY is a consumptive energy consumption pattern. The energy that has been used as much as hen large is not used to support the growth of the economy. This can be seen from the biggest energy use in the household and transportation sectors, which accounted for 28.5% and 59.45% of the total energy used in 2013, the rest is the energy used in the commercial and industrial sectors.

The composition of the type of energy used in DIY is still very much dominated by the type of energy from BBM which reached more than 60% of the total energy use in 2013. While the elasticity of the growth of energy use towards GRDP growth in the same period was 1.16. This elasticity value shows that the use of energy in DIY is still wasteful because to run the activity sector with a growth of 1% per year, it needs energy with a growth of 1.16% per year. However, due to the depletion of non-renewable energy reserve sources, the Government and national and private research bodies and academics have begun to focus attention on the utilization of energy from renewable energy sources, such as the development of electricity in Hybrid Power Plants conducted at Pantai Baru use the potential of energy derived from solar energy and wind energy. The effort to develop electric energy Hybrid Power Plant conducted at Pantai Baru in 2008 is a series of Regional Innovation System activities carried out by the local government of Bantul Regency in collaboration with the central government and academics whose aim is to increase the diversification of regional electricity management by utilizing the

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potential local energy through 3 (three) framework approaches, namely: technology, institutions and village community empowerment.

In conceptual, empowerment is an effort to improve the dignity of the people to escape from poverty and underdevelopment. In other words, empowering means enabling and empowering the community, through empowering the community through enhancing the potential capabilities they have (Prijono and Pranarka, 1996; Sumodiningrat, 1999). In the concept of empowerment, humans are the subject of themselves (Udin, 2020). The empowerment process emphasizes the process of providing the ability for the community to become empowered, encourage, or motivate individuals to have the ability or empowerment to determine their life choices. Empowerment must be aimed at groups or layers of society (Prijono and Pranarka, 1996).

Chambers (1995) explains that empowerment as an economic concept that encapsulates social values. This concept reflects a new paradigm in development, namely "people centered, participatory, empowering, and sustainable." In this definition the concept of empowerment is broader than merely meeting basic needs or providing mechanisms to prevent further impoverishment. This concept developed further developed by Friedman (1992) with what is referred to as alternative development that requires inclusive democracy, appropriate economic growth, gender equality, and intergenerational equity.

Mubyarto (2002) emphasizes that empowerment is closely related to community economic empowerment. Furthermore, in the process of community empowerment in rural areas, it is directed at programs that can create business opportunities that are suitable to the needs of rural communities. The village community determines the type of business, taking into account the potential of the area they have, to create institutions and service systems from, by, and for the community.

Empowerment in the context of society is the ability of individuals who are united in the community and build community empowerment. Community empowerment is a basic element that enables the community to be able to survive in dynamic typing to develop themselves and achieve progress. Community empowerment is a source of political insight called national resilience. This means that if people have the economic capacity, national security can be achieved. In this framework, efforts to empower the community are very important, and must first be started by creating a conducive climate to develop the potential of the community. At this stage our foundation is that each individual has potential that can be developed.

Empowerment is an effort to build the power itself, by encouraging, motivating, raising awareness of the potential that is owned, and facilitating the community. An understanding of community empowerment is a strategy that focuses on how to provide a proportional role so that the community can play an active role in social activities. Utami (2007) examines the empowerment of craftsmen towards the progress and sustainability of businesses in the districts of Sidoarjo and Magetan. In the context of the study, he explained that individual and environmental characteristics factors significantly affected entrepreneurial behavior. Some of these individual characteristics include education, business motivation, and gender aspects through the intensity of communication and meeting needs. And the factors of individual characteristics, business support, environmental support, and entrepreneurial behavior have a positive effect on business independence.

Sihaloho (2004) explained that in general the effectiveness of member empowerment can be seen from the perspective of increasing the capacity of members of the Small Entrepreneur Group (KPK) which is influenced by the physical environment, the cosmopolitan KPK members, group needs, the strength of mentoring, and the business progress of the KPK. And in general the effectiveness of empowering KPK members from the perspective of social benefits for KPK members is influenced by the involvement of the Regional Government, KPK members' cosmopolitanism, business dimensions of KPK members, group needs, the strength of mentoring and business progress of KPK members.

Arevin (2014) revealed that variables such as age, level of cosmopolitanism, roles of figures, communities, and cultural value systems were taken into consideration in the counseling process to improve work competency and entrepreneurial behavior, to further enhance the empowerment and success of the Pondok Wisata Business Owners (UPW) business owners. The empowerment models for UPW owners are individual characteristics (reflected by age, and the level of cosmopolitanism) and environmental characteristics (which are reflected by the role of community leaders, and cultural value systems).

The results of Maad et al. (2014) showed that external factors of farmers that were evident to the independence of farmers in a row were: farmer accessibility to farming inputs, farmer accessibility to markets, quality of extension, farmer accessibility to information/ innovation resources, physical environment natural resources, penetration of other products into the needs of farm households, insistence on the development of the sector outside agriculture, towards the agricultural and rural sectors, implementation of local agricultural development policies. Several internal factors have also been shown to have a significant effect on the level of independence of farmers, such as (1) characteristics of farmers 'relatively open communication behavior, (2) quality of farmers' personalities, (3) farmers 'socioeconomic status, and (4) farmers' motivation.

On the other hand, the results of other studies indicate that the factors that influence the low empowerment of the community are the low level of participation of farmers in the group, inappropriate empowerment patterns, lack of physical and socio-economic environmental support, low characteristics of farmers and lack of agricultural information following farmers' needs (Purnomo et al., 2020; Sadono, 2014). Aminah et al. (2015) state that the determinants of low empowerment of small farmers are low quality: program quality, farmers 'access to the business environment, the accuracy of the learning process, and the conditions of characteristics of farmers' resources, especially in the aspects of business experience, age, income level, and level of land tenure.

Perkins and Zimmerman (1995) formulate a community empowerment model based on the inputs used, the outputs and outcomes obtained. The input used is in the form of resources involved in the empowerment, including: (1) Owners of tourism businesses (communities), (2) stakeholders (central and local governments, NGOs, investors, tourism driving groups, and academics), (3) facilities and infrastructure, (4) counseling and research, (5) communication technology, and (6) market demand and business networks. The output obtained is all activities obtained from empowerment through partnership patterns, which include: (1) Empowering stakeholder institutions, (2) instructors, (3) building a community of tourism business owners, (4) building appropriate institutional systems, (5) improvement in managerial capabilities, (7) ability to access technology, capital, market information, and business networks. While in the outcome obtained all positive conditions created by the process of community empowerment, namely, among others: (1) The level of empowerment of UPW owners, (2) the success and sustainability of tourism businesses, (3) the welfare of family owners of tourism businesses, (4) preservation of art, culture and environment, (5) positive image of national tourism.

The development of electricity in Pantai Baru, which has been carried out since 2008, is a collaborative effort initiated by the central government in collaboration with local governments together with academics in order not only to electrify coastal areas but also to drive and encourage regional economies through sectors that have developed in the region The fisheries sector. The existence of electricity in this region has finally led to the emergence of new economic potentials and the potential to be developed by the local community, namely the tourism sector. Now the tourism sector in Pantai Baru has contributed to the growth of indigenous revenue in the Bantul Regency and the Government of the Special Region of Yogyakarta. In 2012 this sector contributed IDR 259,000,000/year, in 2018 it had increased to IDR 5,665,731,250/year, or during the last 6 years the sector had succeeded in contributing to local revenue of IDR 1,863,398,464/year.

In this research, what is wanted to be studied is identifying and analyzing what factors drive the empowerment of electricity beneficiaries after they obtain electricity from the hybrid power plant for business activities in Pantai Baru by using the structural equation modeling (SEM-) method approach. The benefits of conducting this research are: (1) Providing input to the regional government, especially the regional government of the Special Region of Yogyakarta in formulating policy directions and implementing development programs in the region, especially in the context of increasing community capacity and local village community development, (2) sharing information for other researchers who are interested in the study of utilization of renewable energy in rural areas. author hope, through this paper, can contribute to the development of science, especially the development of renewable energy in Indonesia.

2. MATERIALS AND METHODS

The data used in this study are primary data obtained from direct observations in the field, and structured and in-depth interviews with energy development electric hybrid (HEPP) electricity beneficiaries regarding aspects of the respondent's characteristics, the environment, and group support. The aim is to obtain information about what factors drive the level of empowerment of HEPP electricity beneficiaries in Pantai Baru. This research is survey research, with 68 respondents who are direct beneficiaries of HEPP electricity in Pantai Baru.

Data collection techniques in the field are a key activity of this study. Therefore it is necessary to organize time effectively to achieve maximum results. In collecting data, researchers used observation, interview, and research questionnaire techniques. This study proposes a model relationship between individual characteristics (X_1), environment (X_2), support group (X_3), empowerment of beneficiaries of electricity (Y_1), and rural community development (Y_2).

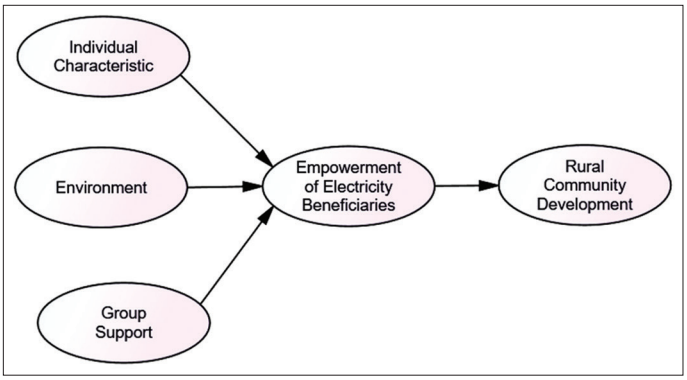
Based on Figure 1, the hypotheses proposed in this study include:

- H_1: Characteristics of individuals have a positive effect on community empowerment
- H_2: Environment has a positive effect on community empowerment
- H_3: Group support has a positive effect on community empowerment
- H_4: Empowerment has a positive effect on the development of village communities.

The constructs in this study include individual characteristics, environment, support groups, and level of empowerment beneficiaries HEPP electricity. Individual characteristics is composed of respondent age level of formal education, business experience, income derived from business travel, and motivation of respondents. Aspects of the environment consists of the affordability of electricity costs HEPP, ease of information, acceptability of hamlet residents to HEPP, and the ability of HEPP technicians. Support for strengthening group capacity consists of group leader leadership, training intensity, level of group participation, and suitability of training modules. Level of recipient empowerment electricity benefits consist of the ability to adapt, the ability to manage a business, the ability to make decisions, and the ability to work together. Indicators of rural community development consist of access to electricity, access to clean water, business opportunities, village labor absorption, women's involvement in household income, and the cultural traditions of the local community.

The respondents of this study are HEPP electricity beneficiary households located in Pantai Baru, Yogyakarta. They use HEPP

Figure 1: Research framework



electricity as a Tourism Cottage Business (UPW), culinary stall traders, clothing traders, and souvenirs typical of Pantai Baru, as well as the tourism service sector that has developed rapidly since Pantai Baru was developed as a tourist development area in Bantul Regency. Because the unit of analysis of this study is HEPP electricity beneficiary households, each respondent was asked to answer the questionnaire as a direct recipient of HEPP electricity benefits and know the process of developing HEPP electricity in Pantai Baru. The number of respondents involved in this study was 68 respondents, with a 4-point Likert scale (very low-high).

Before processing the data processing with PLS, confirmatory factor analysis with the SPSS program using Varimax rotation is done first. This is done to reduce the number of indicators. The results are obtained, for the individual characteristic construct variable (X_1) there are 1 valid indicator, the constructed variable (X_2) with 4 valid indicators, the constructed support variable group (X_3) with 4 valid indicators, the constructed variable for beneficiary empowerment electricity (Y_1) with 4 valid indicators, and construct variable of village community development (Y_2) with 2 valid indicators.

3. RESULTS

The SEM-PLS model built in this study consisted of 5 variables, namely individual, environmental, empowerment, village community development, and 1 exogenous variable, group support. Furthermore, in Figure 1 there is an intervening variable or intermediating, that is the variable level of empowerment of beneficiaries of electricity which has predecessor variables (previous variables), namely: Individual characteristics, the environment, and group support, and has one consequent variable (variable afterward) namely village community development. In the latent variables of individual characteristics, motivation indicators are indicators that have the highest loading factor values, so this indicator has the highest contribution. In the latent environment variable, the indicator that has the highest contribution is the ease of information and awareness of hamlet residents in adopting HEPP electricity. Furthermore, in the latent variable of group support, the indicator that has the highest contribution is the ability of group training providers.

The latent variable is the level of empowerment, an indicator of interactional ability is the indicator that has the highest contribution. In the latent variable the level of empowerment, the indicator that has the highest contribution is interpersonal ability. The latent variable of rural community development, the indicator that has the highest contribution is the business opportunity.

In the model of this study, structural equation of the factors that influence the level of empowerment of HEPP electricity beneficiaries (Y_1) = $-0.025X_1+0.336X_2+0.676X_3$ has an R^2 value of 0.963 indicating that 96.3% of the power beneficiary empowerment is influenced by the variables examined in this study, while the remaining 3.7% is influenced by other variables outside this study. Based on the value of R^2 is then generated models included in the category of "very good." With such a model built has met the evaluation criteria better evaluation reflexive measurement and structural models.

Based on the results of structural equation modeling based partial least square (SEM-PLS), it shows that all variables used in the study have a value of average variance extract (AVE) >0.5, composite reliability (CR) >0.6 and loading factor value >0.7. This shows that the indicators used in this study are variables that can be said to have sufficiently good reliability or in other words this variable has been able to measure its construct. Therefore, it can be concluded that this model has met the requirements of convergent validity (Ghozali, 2014) (Table 1).

4. DISCUSSION

4.1. Factors Driving the Empowerment of HEPP Electricity Beneficiaries

Factors driving the level of empowerment and development of rural communities were analyzed using SEM-PLS. Based on the results, support groups proved to have a direct and significant effect on the individual characteristics, environment, and level of empowerment with a path coefficient value of 0.150, 0.912, and 0.676. Group support also indirectly affects the development of village communities by 0.754. Group support variables have a positive relationship with individual characteristics, the environment, and the level of empowerment. This means that if group support is improved, individual characteristics, the environment, and the level of empowerment of electricity beneficiaries will also be better.

Individual characteristic variables have a negative relationship to the level of empowerment, with a path coefficient of 0.025, but when seen from the statistical t-value of the variable <t-table (=1.96), this indicates that the relationship does not significantly affect the level of empowerment at the level of α = 5%. The influence of individual characteristics in this study is reflected by indicators: age, formal education, business experience, income, and motivation. The weakness of individual characteristic in this study can be caused by the lack of indicators that reflect the formation of latent variables of individual characteristics (X_1). Of all these indicators, there is only one indicator which is the most powerful indicator of the latent variable of individual characteristics, namely the motivation indicator. Because there is only 1 indicator left in the evaluation of the reflexive measurement model, this causes the effect to make a very small contribution and the effect is not significant to the level of empowerment which is only 0.025. The value of R^2 the individual characteristics X_1 of 0.266 means that there is only a 26.6% rate is influenced by the empowerment of the individual characteristic variables, while the remaining 73.4 percent is influenced by other variables outside the research.

Table 1: Test results for the goodness of the reflexive measurement model

Latent variable	AVE	CR	Conclusion
Group support	0.814	0.945	Fit
Individual characteristics	1.000	1.000	Fit
Environment	0.855	0.959	Fit
Village community development	0.929	0.963	Fit
Level of empowerment	0.867	0.963	Fit

Source: Primary data processed with smart PLS

4.2. Group Support

Based on the results of the analysis, group support is a factor that directly affects the level of empowerment of HEPP electricity beneficiaries in Pantai Baru. This is inseparable from the collaboration of all parties from the central government, regional governments, academics and the local community in disseminating this activity at the beginning of the program of developing renewable hybrid electric energy in Pantai Baru through community empowerment activities that have motivated and directed groups of activities that have in Poncosari Village, namely the Activity group (POKGIAT) and the Tourism Awareness Group (POKDARWIS). Community activity groups (POKGIAT) include (1) farmer groups, (2) livestock groups, (3) fishermen groups, (4) culinary mothers groups, (5) sand mining groups, and (6) youth group. In general there are 15 groups of farmers in Poncosari Village, with the types of plants developed by the community that is planted: rice, shallots, and secondary crops.

There are 34 Animal Groups in Poncosari Village. Farm animals developed by the village community include cattle, camels, free-range chickens, and ducks. The member of Fishermen Fish in Dusun Ngentak established in 1997 and was named Group of Fishermen Fish Pandan Mino. At present the number of members has reached 105 people and has 17 units of Outboard Motorboats (PMT). In 2007 the Mina Asih Fish Processing and Traders Group were formed, with a membership of around 50 people, with 20 active members. Processed products produced include fried fish/grilled fish, shredded (manyung sharks), and fish crackers (Tengiri, Manyung). Supply of raw materials is obtained directly from Pantai Baru, with producing capacity between 5-7 kg of shredded and 1-2 kg of crackers which are generally sold in kiosks at Pantai Baru comestible.

The process of approaching the community is done through a dialogue forum with local community group activists. This is done so that the activities to be implemented are based on the needs of the local community, not based on the wishes of the government. Right from the start, the background to the development of hybrid electric energy activities in Pantai Baru was to accommodate the wishes of Ngentak hamlet residents after the RX 100 rocket launch on Pandansimo Beach on December 9, 2007, through a charge test rocket competition for students, which was held in collaboration with LAPAN, the Government Bantul Regency, and Gadjah Mada University. Starting from there then the idea to facilitate the needs of hamlet residents for access to electricity in coastal areas that have not yet been electrified, began the initiative to create hybrid electrical energy development activities in Pantai Baru.

In the 2013 period HEPP focused on developing production techniques driven by LAPAN, improving the ability of MSMEs driven by academics, and economic empowerment of coastal communities driven by the Ministry of Maritime Affairs and Fisheries. While for 2014, the main focus of HEPP was the formation of an institution engaged in the repair of windmills or a kind of workshop for improving the skills of HEPP technicians and students in engineering. The existence of this workshop is important, because in addition to functioning as a workshop but there is also a mission to disseminate renewable energy to the wider community. The local government at that time carried out synergies and collaborations with various parties in the socialization of the Regional Innovation System (SIDa) development of hybrid energy conducted by UGM students through the Community Service Program (KKN) - Community Empowerment Learning (KKN - PPM) in Poncosari Village.

In addition to capacity building activities carried out in the workshop room, other activities are also carried out to the surrounding community, including educational tours conducted by elementary school students. Various kinds of socialization activities carried out by students in the KKN-PPM program include: beach promotion, making tourist maps and Tabligh Akbar activities in the Ketupat Festival. Also, there were also several supporting activities in the agriculture and animal husbandry sectors, such as the demonstration of peanut plant demonstration in sandy land, training in making polybags as well as training in making organic fertilizer produced from cattle farmer waste in Poncosari Village.

In the field of tourism, the culinary group also received training in food processing skills from fisheries from the Ministry of Maritime Affairs and Fisheries in collaboration with tourism students. Through this empowerment, perceived by shopkeepers who sell in Pantai Baru as increasing skills One energy field seconded in HEPP also there that has got the opportunity of training to Germany through collaborative research through HEPP in order pe enhancing the HEPP HR capacity. Opportunities and opportunities that subsequently born from these activities and then encourage the villagers to always eager, enthusiastic, innovative, and open with various parties to continue to widen their access to social and economic life are better.

In the Fishermen group, counseling or skills regarding fishing or fisheries technology are obtained by the Ministry of Maritime Affairs and Fisheries and the local government. In the Farmer Group, the activities generally take the form of direction on plants developed by the village community under the Agricultural Leading Program and the potential of the local area. Whereas in the Livestock group, the activities that have been carried out are in the form of processing livestock waste for agricultural fertilizer which is managed at the front towards the entrance to Pantai Baru. Training and skills in processing livestock waste are obtained by farmers from the local Environment Agency.

Besides the Activity Group (POKGIAT), in Pantai Baru there is also the Tourism Awareness Group (POKDARWIS). it is a non-profit (voluntary) institution, which bases its core in coaching and ensuring Human Resources members, while perpetrators are profit travel services and should contribute to shared prosperity in the member. POKDARWIS has the legality of tourism decree as a community initiator. The development of facilities on the beach has just been designed to revitalize the building. POKDARWIS members should build synergies among institutions, non-governmental, and spontaneous Pokdarwis services. Service activities carried out include:

1. Empowerment of tourism awareness groups and conducting inter-village POKDARWIS Communication Forums manifested in strengthening institutional aspects in the form of POKDARWIS

competitions and training to improve Tourism Awareness to develop the potential of POKDARWIS. This training was provided by tourism practitioners such as from The Indonesian Guides Association (HPI), the Association of Travel Agencies (ASITA), and the Indonesian Restaurant Association (PHRI) Association of Yogyakarta Special Region

2. The visit was carried out in the context of the introduction and promotion of tourism villages in other regions in Indonesia, such as: in the Dieng Tourism Village in Banjarnegara, Central Java, Jasri Tourism Village, and Panglipuran Tourism Village in Bali
3. The implementation of Sapta Pesona in the development of tourism areas in collaboration with higher education institutions and tourism academies in the Yogyakarta Special Region.

4.3. Drivers of Village Community Development

Chambers (1993, 2013) derived the concept of rural development based on the World Bank's definition that rural development is seen as a strategy to enable certain groups of people, women, and men in the village to get what they need in the village. So that the perspective used in this study is the perspective of development according to people both men and women in the village.

The village community development indicators constructed in this study refer to the results of previous studies which agreed to use several development indicators, namely: economic (van Zeijl and Martens, 2010; Mascarenhas, 2010; Michalek and Zarnekow, 2012; Sánchez-Zamora et al., 2014; Ramos, 2009; Caschili et al., 2015), social (van Zeijl and Martens, 2010; Michalek and Zarnekow, 2012; Sánchez-Zamora et al., 2014; Yilmaz, 2010) and infrastructure availability (van Zeijl and Martens, 2010; Mascarenhas, 2010; Yilmaz, 2010; Ramos, 2009). Then through these indicators, the author, in this case, adjusts the definition of the theoretical study to the context of the problem examined in this study, namely community development in the perspective of villagers after utilizing HEPP electricity access in Pantai Baru which then develops into a tourist area in Bantul Regency, Special Region of Yogyakarta.

Based on the results, the factors driving the development of rural communities with the use of electricity access from HEPP are proven to have a direct and significant effect on the $\alpha = 5\%$ level, namely the empowerment variable of HEPP electricity beneficiaries with a path coefficient of 0.776. Besides, it can also be seen that the relationship between the level of empowerment and rural community development is positive. This means that if the level of empowerment of electricity beneficiaries increases, the development of rural communities will be better. Also, the results of the analysis showed that the group support variable also proved to have a significant effect and had a direct relationship to the level of empowerment of electricity beneficiaries with a path coefficient value of 0.971 and group support also had an indirect relationship to the development of rural communities with a path coefficient value amounted to 0.754 and has a positive relationship. This means that if group support increases, the level of empowerment of HEPP electricity beneficiaries will also increase. If the level of empowerment of HEPP electricity beneficiaries increases, it is predicted that rural community development will also get better.

The findings of this study are also strengthened by the results of the study of Riva et al. (2018); Winther et al. (2017); Colombo et al. (2013); Khandker et al. (2013); Bastakoti (2003); Kanagawa and Nakata (2008) which show that the provision of access to electricity in the village usually always goes hand in hand with other community empowerment activities so it is very possible to contribute to improving education, business opportunities, gender equality, increasing income, and benefits other social and economic aspects obtained by the village community. Thus the ultimate goal of community empowerment is the achievement of rural community development goals. Furthermore, from results of other analyzes a value of R-Square (R^2) community development variables (Y_2) 0.603, indicating that 60.3 percent of rural development is influenced by variables examined in this study, while the remaining 39.7% is influenced by variables others outside this study. The value of R^2 is categorized as "very good" (Akter et al., 2017).

Ife (1995) notes that one of the successes of community empowerment is to integrate as fully as possible all components of the community's social environmental factors into the empowerment process. Environmental variables have a positive relationship and affect indirectly on rural community development. However, statistically no significant effect on the level of $\alpha = 5\%$, with a path coefficient value of 0.253. That is, environmental variables do not significantly influence rural community development. Yet when we compare it to the value of R-square (R^2) environment variable has a value of R^2 of 0.832 means to have a value of R^2 in the category of "very good" or in other words indicates that there are 83.2% of the environment is affected by the variables studied in this study, while the remaining 16.8% is influenced by other variables outside this study. It is possible this could happen.

Further analysis shows that indicators built-in environmental variables cannot reflect environmental variables to other latent variables built in this study, this can be seen in the cross-loading value of environmental variables to other variables, namely the individual characteristic variables, such as indicators: The affordability of HEPP electricity costs has the lowest cross-loading value to the latent variable of individual characteristics of 0.449, the indicator of ease of information has the smallest cross-loading value to the latent variable of individual characteristics that is 0.568, so it is the case with other environmental variables namely the HEPP technician's skills have the value of cross loading very low against the latent variables of individual characteristics, namely 0.400.

5. CONCLUSION

Based on the analysis of SEM-PLS showed that the drivers of the level of empowerment of beneficiaries electric HEPP made the development of electric energy HEPP in Pantai Baru is the support group. Support groups are directly influential and significant to the individual characteristics, environment, and empowerment of HEPP electricity beneficiaries in Pantai Baru. The group support is also an indirect driving factor towards rural community development and has a significant effect on rural community development. While the indirect and known driving factor is significant towards rural community development, namely the empowerment of HEPP electricity beneficiaries. So that rural community development

increases, what needs to be done is to increase community empowerment through improving the environment that exists in the community through empowerment programs so that their self-capacity also increases. By increasing community self-capacity, based on the results of this study it can be concluded that this can increase rural community development. Thus, from the results of this study, it knows that the presence of HEPP can trigger and encourage increased capacity and development of rural communities.

The limitation of this study is that it cannot explain further the relationship and influence of individual characteristics on village community development director, because in the research model the researcher has not found a literature review that states that there is a direct relationship between individual characteristics on village community development. So the authors in this study cannot explain in detail and comprehensively the relationship and influence of these variables further on the variables of rural community development. On the other hand, the limitation of this study is an individual characteristic variable has a value of R-square (R^2) is very weak is 0.266 so that only 26.6% of the variable characteristics of individuals affected by variables examined in this study, and the rest are 73. 4% is influenced by other variables that have not been examined in the model built in this study. Therefore, input for further researchers who want to study the same topic as this research can use other indicators on individual characteristic variables, so they can reflect significant relationships and influences on the response variables that they want to study.

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