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Local Resources-Based Community Empowerment Model to Achieve Food Security in the Indonesian Border Community of North Sebatik

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ABSTRACT Many scholars now see border areas to have a srategic value. They are no longer seen as the backyard of a country but the front yard that must be seen well developed. Therefore border communities must be empowered to be independent from neighboring countries. These include efforts to increase these independence through community empowerment. Community empowerment can increase the independence and welfare of the community through increasing knowledge, attitudes/behaviors, skills, abilities, awareness, and utilization of resources. Through the process, it is expected that human resources capacity will increase in food security. How the efforts to empower border communities adopt local resources, instead of a top down approach, however needs forther exploration. This research aims to asses the effects of human and natural capitals in formulating local resources-based Community empowerment model in the sector of food security. This research was conducted in the North Sebatik district, Nunukan regency with 65 sample of farmers selected through simple random sampling techniques. Primary and secondary data were collected through field observations, direct interviews, questionnaire distribution, and information obtained from official government agencies. This research uses human capital, nature capital, and social capital as dependent variables, and community empowerment and food security as independent variables. The analysis method applied Partial Least Square (PLS) by using software WarpPLS 5.0. The results of the research showed that human capital must go through an empowerment process to increase human quality. Natural capital must also go through an empowerment process, as human quality without supported nature resources cannot improve capacity to achieve food security. Social capital must also go through an empowerment process. Community empowerment has an impact on food security, as it can manage existing resources to create and improve household income through locally-based agricultural activities to achieve food security.

Keywords: *Borders; Foods; Food Security; Local Resources; Social Empowerment.*

INTRODUCTION

The study of borders was no longer confined to the field of geography, but became a major field of study such as political science, anthropology, sociology, urban planning and environmental science. Each of these disciplines has a different concept of "boundary". The consensus, however, is that boundaries are human constructs created to control human behavior in a spatial context (Popescu, 2012). Borders are no longer where we expect them to be boundaries have disappeared, moved, redefined and redefined. Globalization has bent and changed national borders, creating new transnational spaces (Chen, 2005). Border areas are dynamic

because they are created, removed, moved, expressed and re-expressed through various material and social mechanisms conflict, trade, integration and exclusion all affect how borders between neighboring countries are expressed (Hataley & Leuprecht, 2018).

Border areas have strategic value because it has important effect for the country's sovereignty and affects on defense and security conditions. Border areas are experiencing tremendous development around the world and making a major contribution to global interactions (Konrad, 2014). Indonesia's border regions play an important role in economy, politics and national defense. The distribution of welfare to border communities is a primary duty to maintain national integrity (Mulyo et al., 2018). There are some issues, which develop in relation to food security at the borders, such as: socio-economic gap between communities at the Indonesian borders and the neighboring countries, relatively low agricultural productivities due to limited information and technological dissemination, inadequate infrastructures, means and infrastructures of production, as well as land distribution and inter-islands that could cover the whole areas, inability of the poor to fulfill foods in sufficient amount, so that the nutrition aspect and food security has not become the main concern (Syarief et al., 2014). It turns out that the Kalimantan border in Indonesia is still in a developing state. This condition is due to several factors, including: Geographic isolation, high poverty levels, high input costs, limited information from governments. These factors can impede progress when meeting food security goals as part of the common good (Mulyo et al., 2018). As stated by Nia & Sekar (2021), border areas are identical to locations that are far away and have limited access. The same problem occurs on the border of Indonesia and Malaysia, which is far from industrial centers or large companies. Therefore, Malaysian products are more dominantly used than Indonesian products. Malaysian products have long been used to meet people's needs and cannot be separated from people's lives on the border.

The implementation of local development must be parallel with local potentials and opportunity of development. The potential of local resources as food sources that must be explored optimally in order to increase food availability to meet quality, diverse, and affordable foods at the household level, raise income of the farmers, and support natural resources conservation. Community-based development has the meaning as development that leads to what is needed by the community. This need to be planned and implemented by the community through the utilization of potential resources such as natural, human, institutional, socio-cultural values that can be accessed by the local community (Mardikanto, 2014). The potential of community resources in community-based development can be interpreted as an effort to change potential resources into actual ones. This community resource potential must be interpreted as an effort to utilize or mobilize resources that have not been previously touched, but it can also mean increasing the usefulness or optimizing of resources that have not been previously worked on.

Food is a very important commodity that involves basic human needs. The SDGs (Sustainable Development Goals) or sustainable development goals are included in the second SDGs, namely no hunger, achieving food security and sustainable agriculture. The government through the food security agency has compiled various programs to achieve food independence, as well as diversify food consumption, as well as food diversification. The food security definition refers to Law no. 18/2012 on Food. The law states that food security is "a condition for the fulfillment of food for the state as well as for individuals, which is manifested in the availability of sufficient food, both in terms of quantity and quality, safe for consumption, of various types, high in nutrition, evenly distributed and affordable by the community and does not conflict with religion and belief, as well as the culture of the community, to lead a healthy, active and productive life in a sustainable manner". The first concern about the food crisis was raised by Thomas Robert Malthus (1766–1834). He refers to the rate of population growth was increasing on a geometrical basis, while food production was on an arithmetical basis. A geometric series in Malthus' understanding is defined as an increase based on multiples, namely: 1, 2, 4, 8, and so on. While the arithmetic series explains that the increase occurs based on a constant addition with the number of adding variables 1, namely 1, 2, 3, 4 and so on. It can be said that Malthus' theory reminds that naturally future generations will have more complex problems related to food availability, compared to previous generations (Winsdel et al., 2015).

Today, agricultural sector is still a dominant sector in Indonesia and most of the populations make their livings from this sector. The agricultural operations are mostly performed at the suburban, including North Sebatik District of Nunukan Regency, which is adjacent to Malaysia. The area has many local resource potentials, such as natural resources, human resources, and social resources, which can be utilized to support food security. Nevertheless, the available resources have not been well managed. There are several different and very important roles in food security in determining the success of social development, including agricultural facilities and infrastructure, which are rapidly increasing, which will affect the economy in each region, which will indirectly greatly affect the level of welfare of the local community (Uliantoro et al., 2021).

Local resources that are often found in rural areas are local community wisdom that has been formed for a long time and is passed down from generation to generation, In the field of agriculture, local wisdom is formed in the farming system. This local wisdom is a potential for managing existing resources, but in its development this local wisdom is starting to be abandoned. The concept of local wisdom in environmental management was explained by (Berkes, 1993) using the terminology of traditional ecological knowledge the term refers to a set of knowledge, practices, and beliefs passed down from generation to generation through culture and evolved through processes of adaptation related to the relationship between living organisms (including humans) and their surrounding environment. Traditional ecological knowledge belongs

collectively and can be conveyed in the form of stories, songs, cultural values, beliefs, rituals, customary rights, local languages, and the use of natural resources. As stated by Hendris and Sirait (2021), local wisdom can be maintained due to several factors, namely organic fertilizers which are widely available in nature, traditional tools used are cheaper, land conservation and respect for ancestral heritage, while the factors that cause local wisdom to be abandoned are changes in insight and knowledge and the development of modern technology.

It is important to increase human resources (HR) capacity in order to manage the available resources, so that it will create and raise the household's income through local resources-based agricultural operations. Along with the raising income, it will increase buying power of the household to access foodstuffs. Such buying power will offer discretion to them for freedom to choose various foods to fulfill the nutritional adequacy. According to Sulistyo et al. (2021), Women in the family have a very important role, apart from being a wife to their husbands but also as decision makers in household activities such as buying food and cooking. Likewise in determining the quality, quantity and place of purchase of rice. Traditional markets are still the main choice in buying food ingredients including rice for housewives; this is the impact of the price offered is cheaper and the types of goods sold are more than in the modern market.

Community empowerment is intended to increase the independence and welfare of the community through increasing knowledge, attitudes/behaviors, skills, abilities, awareness, and utilization of resources. Rural areas are actually rich in potential natural resources, social capital, cultural capital but lack quality human resources. Most youth in rural areas are more interested in finding work in the city, causing urbanization and social problems if they are not supported by the skills and expertise needed according to the field of work. On the one hand, in rural areas the regeneration of farmers slows down and is dominated by older farmers. The potential for social capital is very large and will get better if it is often used. Social capital can be seen as a process of interaction that occurs in local communities that are increasingly closely related to the existence of trust, norms and networks that are formed in a community. These social relations can be empowered as capital to obtain not only economic benefits but also social benefits (Usman, 2015). Through such process, human resources capacity in food security will increase. Objective of this research was to formulate local resources-based community empowerment model in order to achieve food security.

This research was conducted in North Sebatik District, Nunukan Regency. The location of North Sebatik District is at the eastern end of Nunukan Regency, Indonesia. This location is divided into two regions, namely the Sebatik Island region in Indonesia and the Sabah region of Malaysia.

This study has used data from various sources derived from primary data and secondary data, including the following: (1) The primary data was obtained through questionnaires and interviews with farmers, ranchers, and fishermen, as well as in-depth interviews with community leaders, farmer group leaders, extension workers, and village

heads. (2) The secondary data has been obtained through information available at official government agencies in accordance with research needs, such as: Central Statistics Agency, Regional Development Agency, Ministry of Agriculture, Livestock and Plants, and the Department of Fisheries and Marine Affairs, as well as other official agencies that have related data.

Research data was collected through several types of methods, such as direct observation in the field, direct interviews, and by distributing questionnaires to respondents. The data documentation process has been carried out in the form of written documentation and audio recordings to ensure the validity of the data.

The populations of the research were members of farmer group at the North Sebatik Sub district, which comprised of 195 farmers. Samples were taken by using Simple Random Sampling, a sample determination method that was taken randomly regardless of the members' strata (Sugiyono, 2012). The number of samples that have been used to obtain data and information on the implementation of this research is 65 farmers.

Analysis method used Partial Least Square (PLS) by using software WarpPLS 5.0. In general, Partial Least Square (PLS) is very suitable to predict application and build theory, analyze small sample, and examine overall model fit (Gefen, 2019)specifically that data, or at least correlation or covariance matrices, should be made public so that others can attempt to falsify at least the statistical analyses. Doing so could provide a semblance of the direction of what might constitute the desired Positivist aspects of intellectual integrity in science: making your claims and putting your data in the public domain so others may put its propositions to the test and try to falsify or improve on them. Part 2 demonstrates the importance of such disclosure. The demo begins with replicating the model in Structural Equation Modeling and Regression: Guidelines for Research Practice (Gefen et al., 2000. PLS has superiority in comparison with ordinary regression due to PLS may examine some variables simultaneously. PLS is a component-based Structural Equation Modeling (SEM) method to make prediction. Partial Least Square (PLS) method is mostly used for causal-predictive analysis, which is complicated, and less supported by the theory for exploration (Hartono, 2008; Solihin & Ratmono, 2013). WarpPLS 5.0 was applied due to it has some superiorities, such as examining the moderating variable directly (Solihin & Ratmono, 2013). Therefore, this software is very suitable with the model in the research.

Following are the steps in the analysis with partials least square (Yamin, 2021). (1) Designing the Structural Model (inner model) at this stage, the researcher formulates the relationship model between constructs (2) Designing the Measurement Model (outer model) at this stage, the researcher defines and specifies the relationship between the latent construct and its indicators whether it is reflective or formulative (3) Constructing the Path Diagram The main function of constructing a path diagram is to visualize the relationship between indicators and their constructs and between the constructs that will make it easier for researchers to see the model as a whole (4) Model Estimation at

this step, there are three weighting selection schemes in the model estimation process, factor weighting scheme, centroid weighting scheme, and path weighting scheme (5) Goodness of Fit or model evaluation includes evaluation of measurement models and structural model evaluations (6) Hypothesis testing and interpretation

The whole models has been tested. The test is done to see the models as a whole. Values used as standard, which show that indicators of the model fit have been fulfilled, is APC (average path coefficient) and ARS (average R-squared) significant (p<0,05), while AVIF (average variance inflation factor) value < 5 and full colinearity VIF (variance inflation factor) below 3.3 (Solihin & Ratmono, 2013). The first is Reliability Test. This test was conducted to ensure that instrument of the research will be able to present the conceptual measurement consistently without any bias. It can be said that the results were consistent if some measurements against the same subject did not show different results (Hartono, 2008). This study used Cronbach's Alpha Coefficient (Cronbach, 1970, in Hartono, 2008) as the reliability test tool. Cronbach's Alpha values ranged from 0.50 to 0.60 are sufficient for reliability. Variable will be reliable if it has Composite Reliability above 0.60 or close to 1. The second is Validity Test. According to Hartono (2008), validity is done to indicate that the questioning instruments really measure what it should be. In this study, validity is a measuring instrument test to measure the goal significantly and correctly. The measuring instrument is valid if it could measure the goal significantly and correctly. In contrast, it is invalid if it could not measure the goal significantly and correctly. The validity test in this study applied the construct validity, which included discriminant and convergent validities. This validity test showed suitability of each indicator with the applied theories to define a construct (Hartono, 2008). The convergent validity was evaluated using loadings factor criteria by value more than 0.50 and average variance extracted (AVE) by value beyond 0.50. By the value, it brings about higher convergent indicator probability, above 50% (Solihin & Ratmono, 2013). Discriminant validity has a principle that measures in the same construct should have high correlation. The measured parameter was comparing AVE's roots of a construct should be higher than correlation between latent variables by considering the cross loading (Solihin & Ratmono, 2013).

The third Hypothesis Test. This test meassures at the level of confidence used in this research is 5%. The hypothesis is accepted if p < 0.05. Path coefficient values were used to determine direction of the correlation coefficient. Positive correlation coefficients show positive correlation among constructs, and vice versa. Models of the research will be tested by considering the determinant coefficient values (R2). These values describe variations against the dependent variables. R2 value is between zero and one. If the value is zero, it cannot explain any variation against the dependent variable, and if the value is one, it indicates that the independent variable describes a hundred percent of variation against the dependent variable.

DISCUSSION

Test the Research's Model

Test the research's model was conducted to see suitability of model in the research. Excellent model of the research will be able to describe correlation suitability between variables of the research. The application of WarpPLS 5.0 has presented results of calculation, which showed the applied criteria to assess whether the model is appropriate or not.

The p value for APC (average path coefficient) and ARS (average R-squared) must be smaller than 0.05 or significant. Besides that, AVIF (average variance inflation factor) as multicollinearity indicator should be smaller than 5. Results of output showed the criteria goodness of fit model has been fulfilled by APC value 0.313 and ARS value is 0.231, and p APC (<0.001) value is smaller than 0.05 and p value of ARS (0.013) is smaller than 0.05, so that it is significant. AVIF value is 1.041 smaller than 5, so that the data has no multicollinearity.

Result of Reliability Test

The composite reliability and Cronbach's alpha values are used to find out reliability of the research's instrument. Based on the output above, it shows that composite reliability > 0.70 for all variables, which means that all variables have met the reliability requirements

Table 1.
Table Composite Reliability

Variable	Composite Reliability	Description	Cronbach's Alfa	Description
X1	0.876	Fulfilled	0,807	Reliable
X2	0.710	Fulfilled	0,750	Reliable
X3	0.906	Fulfilled	0,867	Reliable
Y1	0.840	Fulfilled	0,609	Reliable
Y2	0.955	Fulfilled	0,815	Reliable

Source: Processed Data, 2018

Full collinearity VIF is the result of full collinearity test that includes lateral and vertical multicollinearities. Criteria for full colinearity test should have values, which are lower than 3.3 (Kock, 2014)as well as the social and health sciences. The use of the PLS method has been primarily in the context of PLS-based structural equation modeling (SEM. Full collinearity VIF value of human capital (X1) is 1.057, nature capital (X2) 1.136, social capital (X3) 1.124, community empowerment (Y1) 1.340 and food security (Y2) 1.272 show full collinearity VIF values less than 3.3, so that the model is free of vertical collinearity, lateral, and common method bias.

Result of validity Test

Output average variance extracted (AVE) was also used to evaluate convergent validity and the criteria must be above 0.50 (Fornell & Larcker, 1981). Output of human capital (0.648) > 0.50 is fulfilled, nature capital (0.405) < 0.50 is not fulfilled, social capital (0.664) > 0.50 is fulfilled, community empowerment (0.300) < 0.50 is not fulfilled, and food Security (0.355) < 0.50 is not fulfilled.

Result of Hypothesis Test

The analysis method used in empirical test is structural equation model using Partial Least Square software. The trust level of the research is 5%. The hypothesis is accepted if $p < 0.05$. Results of calculation on WarpPLS 5.0 are as follow:

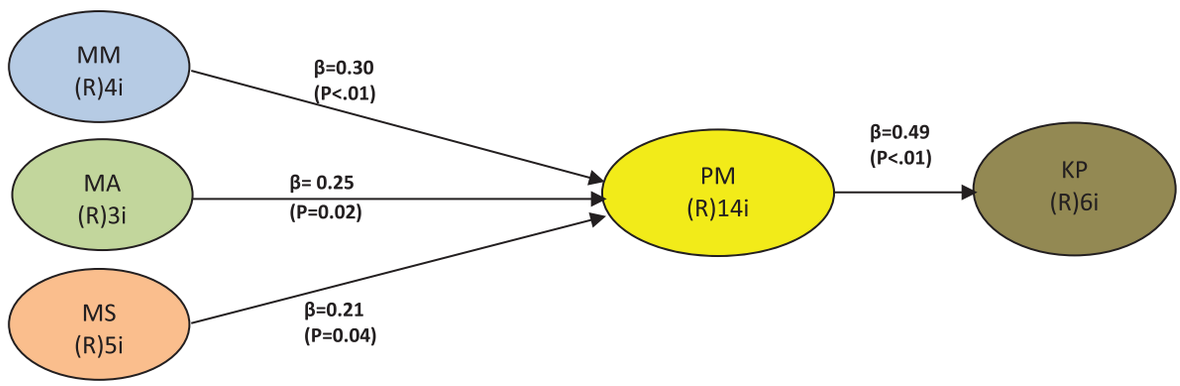

Figure 1. Path Analysis

Figure 1 is the testing result of direct effect model. The results show that human capital (X1) has positive effect on community empowerment (Y1) 0.30 and significantly affect by p value is 0.01 smaller than 0.05. Nature capital (X2) has positive effect on community empowerment (Y1) 0.25 and significantly affect by p value is 0.02 smaller than 0.05. Social capital (X3) has positive effect on community empowerment (Y1) 0.21 and significantly affect by p value 0.04 smaller than 0.05. Community empowerment (Y1) has positive effect on food security (Y2) 0.49 and significantly affect by p value is 0.01 smaller than 0.05. The effect among variances between coefficient of community empowerment (Y1) and human capital (X1), nature capital (X2), and social capital (X3) 0.22 and the percentage is about 22% and the rest is affected by other variances. The effect among variances between coefficient of food security (Y2) and community empowerment (Y1) 0.24 and the percentage is about 24% and the rest is affected by other variances.

Table 2.
Path Coefficient

Path Coefficient				
	Human Capital (X1)	**Nature Capital (X2)**	**Social Capital (X3)**	**Community empowerment (Y1)**
Community empowerment (Y1)	0.298	0.249	0.212	
Food Security (Y2)				0.493
P Values				
	Human Capital (X1)	**Nature Capital (X2)**	**Social Capital (X3)**	**Community empowerment (Y1)**
Community empowerment (Y1)	0.007	0.015	0.035	
Food Security (Y2)				0.001

Source: Processed Data, 2018

Based on Table 2, the columns show latent predictor variables and the rows show latent criterion variables. It describes that path coefficient of human capital (X1) effect on community empowerment (Y1) is 0.298 and significant on 0.007, nature capital (X2) has positive effect on community empowerment (Y1) for about 0.212 and significant on 0.016, social capital (X3) affects on PM for about 0.212 and significant on 0.036, and community empowerment (Y1) has positive effect on food security (Y2) for about 0.493 and significant on 0.001. However, 1 variation of standard deviation of human capital (X1) creates 0.298 variations of standard deviations of community empowerment (Y1), and so on.

Table 3.
Standard Errors of Path Coefficient

Standard Errors of Path Coefficient				
	Human Capital (X1)	Nature Capital (X2)	Social Capital (X3)	Community empowerment (Y1)
Community empowerment (Y1)	0.118	0.113	0.115	
Food Security (Y2)				0.116
Effect Sizes for Path Coefficient				
	Human Capital (X1)	Nature Capital (X2)	Social Capital (X3)	Community empowerment (Y1)
Community empowerment (Y1)	0.187	0.173	0.158	
Food Security (Y2)				0.243

Source: Processed Data, 2018

Based on Table 3, output standard errors for path coefficients present the estimation result of errors for each path coefficient. Standard errors are required if we want to test the effect of mediation by the approach of Sobel Baron and Kenny (1986), as well as Hayes and Preacher, 2010) for linear correlation.

Output effect sizes for path coefficients, effect size is categorized into three categories, such as weak (0.02), medium (0.15), and strong (0.35) (Hair et al., 2013; Kock, 2014)as well as the social and health sciences. The use of the PLS method has been primarily in the context of PLS-based structural equation modeling (SEM. The effect size value below 0.02 shows that the effect of latent predictor variable is very weak from practical point of view, even it has significant p value. Results of estimation showed the effect size of human capital (X1) against community empowerment (Y1) is 0.187 and nature capital (X2) against community empowerment (Y1) is 0.173, and social capital (X3) against community empowerment (Y1) is 0.158. The results are categorized as medium effect size, which indicate that human capital (X1), nature capital (X2), Social Capital (X3) play medium roles from practical point of view in improving community empowerment (Y1). As well as the effect size of community empowerment (Y1) on food security (Y2) 0.243 is included in medium category.

Based on the analysis result of indirect effects, it showed that human capital (X1) has indirectly affected on food security (Y2) and has passed through community empowerment (Y1) for about 0.147 by

significant coefficient of p value 0.015 smaller than 0.05. Nature capital (X2) has indirectly affected on food security (Y2) and has passed through community empowerment (Y1) for about 0.123 by significant coefficient of p value 0.028 smaller than 0.05, while social capital (X3) has indirectly affected on food security (Y2) and has passed through community empowerment (Y1) for about 0.104 by significant coefficient of p value 0.035 smaller than 0.05.

Based on result of output WarpPls 5.0, it is presented briefly in result of hypothesis test in Table 4.

Table 4.
Result of Estimation and Hypothesis Test of the Model

Hypothesis	Path	B	p-value	Ideal	Description
H1	X1 to Y1	0.30	< 0.01	< 0.05	Significant
H2	X2 to Y1	0.25	0.02	< 0.05	Significant
H3	X3 to Y1	0.21	0.04	< 0.05	Significant
H4	Y1 to Y1	0.49	< 0.01	< 0.05	Significant

Source: Processed Data, 2018

Based on the Table 4, results of estimation and hypothesis test showed that Hypothesis 1, path coefficient of human capital (X1) to Y1 > 0.100 (β = 0.30) by p < 0.05 (p-value < 0.01), so that human capital (X1) affects on community empowerment (Y1). According to Widjajanti (2011), the role of human capital becomes the base in developing empowerment and mediation in improving community empowerment from physical capital. Therefore, sharing knowledge is the requisite to improve creativity and innovation. Community will be optimal in developing the empowerment if it is supported by the process of improving human quality. The role of the empowering agents will improve their competence, both knowledge and expertise in order to become the determinant of activity implementation to create a competitive community. Empowerment is a process that gives power to the community to be more empowered and have the ability to access and utilize resources to be more independent and not dependent on other parties, such as government assistance.

Hypothesis 2, path coefficient from nature capital (X2) to Y1 > 0.100 (β = 0.25) by p < 0.05 (p-value 0.02), so that nature capital (X2) has affected on community empowerment (Y1). The natural resources owned by the community are utilized in the empowerment process, but their sustainability is also considered so that the balance of natural resources is maintained.

Natural resources are the natural environmental elements, both physical and biological, which are required by human beings to fulfill their needs and to increase their welfare (Nurkartika, 2001).

Hypothesis 3, path coefficient from social capital (X3) to Y1 > 0.100 (β = 0.21) by p < 0.05 (p-value 0.04), so that social capital (X3) has affected on community empowerment (Y1). social capital is the realization of social dynamic in community, such as mutual trust, contribution to organization, active participation in organization, and positive

perception against community (Putra et al., 2017). Positive impacts of the social capital, particularly for farmers, include availability of information with low cost, facility in decision-making along with the implementation, and declining opportunist behaviors (Grootaert et al., 2004).

Hypothesis 4, path coefficient from community empowerment (Y1) to Y2 > 0.100 ($\beta = 0.49$) by $p < 0.05$ (p-value < 0.01), so that community empowerment (Y1) has affected on food security (Y2). According to Suryana *et al.* (2015), food security will be achieved through community empowerment if such process may lead to behavioral changes. Such behavioral changes are characterized by the changes of knowledge, skills, and attitudes in providing, accessing, and absorbing foods. According to Sugiyanto (2010), results of the learning process in community empowerment process will cause some behavioral changes that include some aspects, such as knowledge (cognitive), skills (affective), and attitudes (psychomotoric). Changes in behavior that occur as a result of the empowerment process will be sustainable if it is supported by social capital owned by the community. Social interactions and networks that are formed are strengthened by empowerment. In addition, local community participation can be seen from increasing participation according to (Arnstein, 1969), namely manipulative participation, therapy, informing, consulting, placation, partnership, delegated power and citizen control.

It conformed to Jejeebhoy (1996), who suggested that behavioral changes, which include knowledge, skill, and attitude that are mediated by education, may improve individual empowerment.

CONCLUSIONS

The results of this study shows confirms the view on the importance of local resouces for empowering communities in border areas. This research identifies four patterns of the effect of different types local resources.

The first is human resources or human capital, which may not directly improve food security, but it must pass through empowering process that could improve human quality. Human capital plays the change of social resources to reach success of the empowering process. Such empowering improvement is the determinant of success in improving social empowerment.

The second is natural resources or nature capital, which may not directly improve food security, but it must pass through empowering process because without the support of natural resources/nature capital, human quality would not be able to improve the empowerment in achieving food security.

The third is social resources or social capital, which may not directly improve food security, but it must pass through empowering process because without mutual trust, contribution to organization, active participation in organization, and positive perception against community, which can be established through community empowerment process, food security will be difficult to be achieved.

The fourth pattern shows that community empowerment affects food security because it could manage the available resources at the local community. In this way, it can create and increase income of the household through local resources-based agricultural activities to reach food security.

BIBLIOGRAPY

Arnstein, S. R. (1969). A Ladder of Citizen Participation. *Journal of the American Institute of Planners*, 35(4), 216–224. https://doi.org/10.4324/9780429261732-36

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.

Berkes, F. (1993). Traditional ecological knowledge in perspective. In J. T. Inglis (Ed.), *Traditional ecological knowledge: Concepts and cases* (pp. 1–9). TRIUS Design.

Chen, X. (2005). *As Borders Bend: Transnational Spaces on the Pacific Rim*. Rowman and Littlefield Publishers.

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39–50. https://doi.org/https://doi.org/10.2307/3151312

Gefen, D. (2019). A post-positivist answering back. part 2: A demo in R of the importance of enabling replication in PLS and LISREL. *The Data Base for Advances in Information Systems*, 50(3), 12–37. https://doi.org/10.1145/3353401.3353404

Grootaert, C., Narayan, D., Jones, V. N., & Woolcock, M. (2004). *Measuring Social Capital: An Integrated Questionnaire* (No. 18).

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance. *Long Range Planning*, 46(1–2), 1–12. https://doi.org/10.1016/j.lrp.2013.01.001

Hartono, J. (2008). *Metodologi Penelitian Sistem Informasi*. Andi Offset.

Hataley, T., & Leuprecht, C. (2018). Determinants of Cross-Border Cooperation. *Journal of Borderlands Studies*, 33(3), 317–328. https://doi.org/10.1080/08865655.2018.1482776

Hayes, A. F., & Preacher, K. J. (2010). Quantifying and Testing Indirect Effects in Simple Mediation Models When the Constituent Paths Are Nonlinear. *Multivariate Behavioral Research*, 45(4), 627–660. https://doi.org/https://doi.org/10.1080/00273171.2010.498290

Hendris, H., & Sirait, S. (2021). Identifikasi Dan Strategi Penguatan Kearifan Lokal Usahatani Padi Sawah Tadah Hujan Di Desa Long Midang. *J-PEN Borneo : Jurnal Ilmu Pertanian*, 4(1), 11–16. https://doi.org/10.35334/jpen.v4i1.1921

Jejeebhoy, S. J. (1996). Womens Education Autonomy and Reproductive Behavior: Assessing What We Have Learned. *The Status of Women and Demographic Change Assessing What We Have Learned*.

Kock, N. (2014). Advanced Mediating Effects Tests, Multi-Group Analyses, and Measurement Model Assessments in PLS-Based SEM. *International Journal of E-Collaboration*, 10(1), 1–13. https://doi.org/10.4018/ijec.2014010101

Konrad, V. (2014). Borders and Culture: zones of Transition, Interaction and Identity in the Canada-United States Borderlands. *Eurasia Border Review*, 5(1), 41–58.

Mardikanto, T. (2014). *Corporate Social Responsibility=Tanggung Jawab Sosial Korporasi*. Alfabeta.

Mulyo, J. H., Irham, Jumeri, Widodo, A. H., Wirakusuma, G., & Perwitasari, H. (2018). Food Security of Farm Households in Indonesia's Border Area, Sebatik Island. *International Journal of Engineering & Technology*, 7(3.30), 314–319. https://doi.org/10.14419/ijet.v7i3.30.18269

Nia, K. S., & Sekar, I. M. (2021). Decision Purchasing Malaysian Rice at Border Region. *IOP Conference Series: Earth and Environmental Science*, 748(1). https://doi.org/10.1088/1755-1315/748/1/012012

Nurkartika. (2001). *Intisari Biologi* SMU. PT Aksarindo Primacipta.

Popescu, G. (2012). *Bordering and ordering the twenty-first century: Understanding borders*. Rowman and Littlefield Publishers.

Putra, R. A. R. S., Ariyadi, B., Kurniawati, N., & Haryadi, F. T. (2017). Pengaruh Modal Sosial Terhadap Tingkat Kesejahteraan Rumah Tangga Peternak: Studi Kasus Pada Kelompok Peternak Ayam Kampung Ngudi Mulyo, Gunungkidul. *Buletin Peternakan*, 41(3), 349–354. https://doi.org/10.21059/buletinpeternak.v41i3.18135

Solihin, M., & Ratmono, D. (2013). *Analisa SEM-PLS Dengan Warp PLS 3.0 Untuk Hubungan Nonlinear Dalam Penelitian Sosial dan Bisnis*. Penerbit Andi.

Sugiyanto. (2010). *Pemberdayaan Masyarakat dalam Pembangunan*. Fakultas Pertanian Universitas Brawijaya.

Sugiyono. (2012). *Metode Penelitian Kuantitatif Kualitatif*. CV Alfabeta.

Sulistyo, A., Mubarak, A., & Hendris, H. (2021). A Hedonic Pricing Model of Rice in Traditional Markets. *IOP Conference Series: Earth and Environmental Science*, 748(1). https://doi.org/10.1088/1755-1315/748/1/012022

Suryana, N. K., Sugianto, Suksesi, K., & Yulianti, Y. (2015). Alternatives Of Food Security Model On The Farmer's Household Through Social Empowerman In Tarakan. *Global Journal of Agricultural Research*, 3(1), 15–26.

Syarief, R., Sumardjo, & Fatchiya, A. (2014). Kajian Model Pemberdayaan Ketahanan Pangan di Wilayah Perbatasan Antar Negara (Assessment of Food Security Empowerment Modelin Inter-State Border). *Jurnal Ilmu Pertanian Indonesia (JIPI)*, 19(1), 9–13.

Uliantoro, W. G., Nurliawati, N., Ramdani, E. M., Valenita, S., & Cahyawijaya, A. A. (2021). Farmer Community Empowerment as a Result of a Regional Food Security Policy in Purwakarta Regency. *2nd International Conference on Administration Science 2020 (ICAS 2020)*, 564(Icas 2020), 121–124. https://doi.org/10.2991/assehr.k.210629.023

Usman, S. (2015). *Esai-Esai Sosiologi Perubahan Sosial*. Pustaka Pelajar.

Widjajanti, K. (2011). Model pemberdayaan masyarakat. *Jurnal Ekonomi Pembangunan*, 12(1), 15–27.

Winsdel, K., Pieris, D., & Airlangga, U. (2015). Ketahanan dan Krisis Pangan dalam Perspektif Malthus , Depedensi dan Gender (Women in Development). *Jurnal Hubungan Internasional*, VIII(1), 1–13.

Yamin, S. (2021). *SmartPLS 3, AMOS & STATA: Olah Data Statistik (Mudah & Praktis) (Vol.1)* (A. Rasyid (ed.)). PT Dewangga Energi Internasional.