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POVERTY ALLEVIATION MODEL IN SERAM BAGIAN TIMUR: A CASE STUDY OF KARAY, SALAS AND SUMBER AGUNG VILLAGES

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ABSTRACT

Poverty in the district of Seram Bagian Timur (SBT) is beyond the provincial poverty rate. Several poverty factors used a deductive approach. This study used an inductive approach of about 99 respondents from rural poor households. We gathered through in-depth interviews using questionnaire tools. Data analysis uses path analysis and the software SMARTPLS4.0. Research showed that most poor rural households are deprived of clear water, sanitation, education costs and access to higher education, housing, and energy. Second, the number of children and household dependency significantly influence education and health. Third, education and health significantly influence poverty. The higher the education and health level, the lower the poverty rate. Third, poverty significantly influences food consumption patterns. Poor households consume local sago food, while not-poor households consume imported rice. Research findings imply that population control through planning family is still crucial, including education and health, to reduce poverty. Poverty reduction needs to follow food security through sago palm and prime commodity industrialization program intervention.

KEYWORDS *Poor Households Characteristics, Poverty Reduction Model, Poverty Rate*

INTRODUCTION

The success of national development is to increase economic growth followed by income distribution (growth with equity), reduce poverty and unemployment (BPS, 2024; Kuncoro, 2014). East Seram has unemployment that tends to increase, which affects the poverty rate. Maluku Province is still the 4th poorest province out of 34 provinces since the 1990s, and will be the 8th poorest out of 38 provinces in 2023. The number of poor people as a percentage has decreased at a slower rate on average 0.8%/year, while the nominal number of poor people has remained relatively the same at around 300 thousand people over the past decade.

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In 2024, poverty in 2024 decreased by 0.33% points compared to 2024, and of the 25.2 million poor people, 54% were in villages and 46% in cities (BPS, 2024). mThe pattern of poverty remains the same from year to year, where MBD, Kep Tanimbar and Kep Aru districts always occupy the poorest districts (>20%). Ambon, Buru, South Buru and Central Maluku (5%-16%) have lower poverty rates. Kota Tual, East Seram and Southeast Maluku always occupy the middle position (17%-22%).

Table 1. Maluku: Poverty Conditions by district, 2023

District/City	Poverty					
	Poverty Line (IDR)		Number of Poor People (thousand)		Percentage of Poor Population (percent)	
	2022	2023	2022	2023	2022	2023
Maluku Tenggara Barat	546300	615768	26,94	27,64	23,88	24,47
Southeast Maluku	595041	669140	21,38	22,02	21,19	21,79
Central Maluku	542782	589125	65,73	67,22	17,46	17,84
Buru	530858	584277	23,6	25,19	15,82	16,53
Aru Islands	562416	626086	22,36	23,13	23,51	24,21
Seram Bagian Barat	449297	486747	38,57	38,87	22,25	22,39
Seram Bagian Timur	**421902**	**458176**	**23,71**	**24,26**	**20,73**	**21,08**
Southwest Maluku	586021	658036	20,36	21,23	27,64	28,78
South Buru	677044	743721	9,35	9,77	14,75	15,28
Ambon	661016	716560	22,58	25,87	4,68	5,25
Tual	640542	722498	16,01	16,41	20,56	20,68
Maluku	631326	684020	290,57	301,61	15,97	16,42

Source: BPS, Maluku Province in Figures, Year 2024

The central and local governments have tried to implement various policies and programs to reduce poverty, such as social assistance, PKH, livable programs, clean water, electricity, and so on, but they are still far from the main problem. Therefore, the government issued Presidential Regulation No. 15/2010 on the Acceleration of Poverty Reduction, to increase the effectiveness of government efforts in poverty reduction both at the national level namely TNP2K (National Team for the Acceleration of Poverty Reduction) and at the regional level TKPKD (Regional Poverty Reduction Coordination Team). The data shows that the rise and fall of the value of social assistance does not affect the number of poor people and the number of social assistance recipients is generally greater than the number of poor people. Therefore, the selection and targeting of the poor, by name by address, is very important in order to distribute more fairly the benefits of growth that may be obtained from modern sectors such as capital-intensive services (Siregar and Wahyuniarti, 2008).

When compared to the poverty condition in Maluku Province, the East Seram Regency, which was expanded based on Law No. 40/2003, dated December 18, 2003, is now 20 years old but still has a high poverty rate of 21% (BPS SBT, 2024). The study of poverty in villages is important because the largest number of poor people are in the villages, and the specific characteristics and models for overcoming them are not yet known. This study is important to know and analyze the characteristics of poor households in rural areas of Kabupaten Seram Bagian Timur and to develop a relevant poverty reduction model. This is important considering that each district/city or island cluster in Maluku has specific, complex and risky regional characteristics, even sensitive to social conflict.

RESEARCH METHOD

This research was conducted in Kabupaten Seram Bagian Timur, one of the poorest kabupaten in Maluku. The location was chosen because of the high poverty rate and the researcher's long experience in this area. Three villages representing the Village Development Index (IDM) category in three sub-districts were purposively selected: Negeri Salas (IDM 0.66 - developing village, Kecamatan Bula), Negeri Adm Karay (IDM 0.58 - underdeveloped village, Kecamatan Teluk Waru), and Negeri Adm Sumber Agung (IDM 0.76 - developed village, Kecamatan Bula Barat). The research was conducted in November 2024 by considering the accessibility of the location as well as the limitations of research labor, costs, and time.

Population and Sample

The population in this study was all poor households in the research villages, namely Salas village, Karay village and Sumber Agung village. Because the researcher has been familiar with the research area for a long time, both at the kabupaten, kecamatan and village levels, the sampling was carried out using a stratified purposive sampling technique (Sugiyono, 2019).

The stratification basis for determining the sample is that respondents are households registered as recipients of social assistance. Researchers selected respondents from the population list of social assistance recipients. Every respondent who received social assistance in the list in the village was used as the main respondent. The number of samples selected was 99 respondents, consisting of 29 respondents in Salas village, 40 respondents in Karay village and 30 respondents in Sumber Agung village.

On the one hand, respondents can be seen as a representation of the poor at the village and kecamatan levels, even at the kabupaten level, but on the other hand, they can be seen as a case study that only occurs in the village concerned, even at the household level.

Data collection

The data used in this study consists of primary and secondary data. Primary data is data that is directly obtained from the main source, namely the heads of poor households, both respondent characteristics, such as age, education, number of children, number of family dependents, as well as responses or attitudes to a number of questions related to poverty indicators.

Secondary data is data obtained from a second source in the form of documents or reports. The sequential data in this study includes poverty data at the provincial, district and subdistrict levels obtained from the Central Bureau of Statistics, central and local government offices, the internet and study reports. Secondary data will be useful to enrich the interpretation of primary data, and vice versa.

The primary data collection method was a survey using a questionnaire as the main tool, with the researcher as the supporting tool. Data was obtained through in-depth interviews with each household head who had been selected as research respondents.

Data analysis

The data collected consisted of primary and secondary data. Primary data includes respondent characteristics and variables related to the poverty reduction model. The characteristics of poor households include age, education, number of children, number of dependents, occupation, food patterns and productive assets. Poverty reduction model variables include social characteristics (number of children and dependents), education, health, poverty and consumption. The aspects asked about were respondents' perceptions of social characteristics, education and health as well as poverty and food patterns of rice and sago. Questions were organized in the form of a Likert scale. Respondent characteristics were analyzed using descriptive statistics with the help of Stata17, while the poverty reduction model used path analysis with the help of SEM-SmartPLS4 software.

The research method used in the problem experiment includes analytical methods. Contains the type of method, time, place and tools of research materials. Picture captions are placed as part of the picture title (figure caption) not part of the picture. The methods used in completing the research are listed in this section.

RESULT AND DISCUSSION

Characteristics of Respondent Households

The characteristics of poor households can be seen from several variables. First, the characteristics of age, dependents and education of household members. The average age of the household head is close to 50 years old. The average number

of children is four, with the lowest being one and the highest being seven. A large number of children can become a burden rather than a productive asset if they do not work or are unemployed. Furthermore, the average number of family dependents is 6 people. On the one hand, the poor need labor to help the family's livelihood, but on the other hand, children become a burden to the household economy.

Second, the consumption of poor household members per capita. The average rice consumption is 5.4 kg per month/person or 27.3 kg/KK, while the consumption of sago and tubers is 2.9 kg (16.5 kg/KK) and 0.6 kg (3.5 kg/KK) per month respectively. Ideally, rice consumption is 10 kg per capita per month but 5 kilograms is covered from sago and tubers but the amount seems insufficient. If this is the case, then the poor can be said to be vulnerable to the adequacy of food sources of carbohydrates. Based on this fact, the heads of poor households stated that, except for the price of tubers, the price of rice and sago is already relatively expensive.

Table 2: Characteristics of Respondents by Age, Consumption and Price Perception

Variables	Mean	Std dev	Min	Max	Ket
Age, dependents and education					
Age (year)	**49.8**	**12.9**	**23**	**89**	
Number of children (Soul)	**3.9**	**1.3**	**1**	**7**	
Number of dependents (people)	**5.8**	**1.2**	**3**	**8**	
Education	**2.3**	**0.7**	**2**	**4**	
Per capita consumption					
Rice consumption (Kg/cap/month)	**5.4**	**4.4**	**2**	**15**	
Sago consumption (Kg/cap/month)	**2.9**	**2.2**	**0**	**8**	
Tubers consumption (Kg/cap/month)	**0.6**	**1.0**	**0**	**60**	
Consumption per household					
Rice consumption (Kg/KK/month)	**27.3**	**21.8**	**10**	**30**	
Sago consumption (Kg/KK/month)	**16.5**	**12.6**	**0**	**12**	
Consumption of yam (Kg/KK/month)	**3.5**	**5.5**	**0**	**3**	
Price perception					
Perception of rice price	**2.3**	**0.5**	**2**	**3**	**expensive**
Sago price perception	**1.8**	**1.3**	**0**	**4**	**expensive**
Price perception of yam	**4.0**	**0.1**	**4**	**4**	**cheap**
Notes:					
Rice consumption	Sago	Yam			
1. 10 kg/kk/month	1. 0 kg	1. No consumption=0 kg			
2.15 kg/kk/month	2. 15 kg	2. 12 kg			

3.20 kg/kk/month	3. 30 kg
4.60 kg/kk/month	

However, if asked about their perception, the price of (poor) rice or Ranstra is still considered affordable because the price is likely still subsidized by the government. Rice prices are getting more expensive because national rice production is declining and rice imports are inevitable. The amount of subsidized rice is limited to 5-10 kg per household per month and is often given quarterly, making it difficult for poor households. As this is insufficient, respondents have to buy rice at commercial prices at nearby stalls or shops. The selling price of rice will tend to be more expensive if purchased in smaller quantities. The price of rice will be cheaper if purchased in larger quantities. The problem is that richer people have enough money to buy more rice and thus obtain a lower selling price. In contrast, poorer households will pay a higher price for each kilogram of rice. If this is the case, then an increase in the price of rice and a policy of lowering the price of rice will benefit those with higher incomes more than the poor who can only afford to buy rice in small quantities (kilos).

One reasonable solution is to replace rice with local food, especially sago and tubers which are cheaper if produced in larger quantities. This needs to be done by the government by building sago and tuber flour processing factories and developing small industries to produce sago and tuber products and their derivatives, so that they are easily accessible to the people in rural East Seram. Because the largest sago potential currently in Maluku is in East Seram Regency.

Table 3. Respondent Characteristics: Type of Social Assistance

Village	Social Assistance					
	Not accepted	JKN-KIS	PKH	Raskin	JKN+KIS+PKH+Raskin+KIP	Total
Salas						
Frequency	7		2		20	29
Percent	7.1%		2.0%		20.2%	29.3%
Karay						
Frequency	4	2	1	1	32	40
Percent	4.0%	2.0%	1.0%	1.0%	32.3%	40.4%
Sumber Agung						
Frequency	4				26	30
Percent	4.0%				26.3%	30.3%
Total						
Frequency	15	2	3	1	78	99
Percent	15.2%	2.0%	3.0%	1.0%	**78.8%**	100.0%

Source: Primary data processed, 2024

Third, the characteristics of poor households can be seen from the type of social assistance they receive. The study results show that 84.8% received social assistance while the remaining 15.2% did not. This pattern tends to be found in the

research villages where 78.8% of poor households receive all types (five types) of social assistance, while 6% only receive one type of social assistance. This data illustrates that poor households actually receive various types of social assistance, which of course come from different agencies. The respondents' admission proves that the local government has provided many subsidies for poor households and their family members, in the form of food, education and health insurance, even the family hope program and decent housing.

Fourth, the main occupation of respondent households was 83.8% farmer and the remaining 16.2% non-farmer. This data shows that although the SBT region is surrounded by sea, the main livelihood of the population, especially poor households, is farming. Farming has a lower risk than marine fisheries, which has high uncertainty.

Table 4. Characteristics of Respondents by Main Occupation

Village	Main occupation		
	Non-farmer	Farmers	Total
Salas			
Frequency		29	29
Percent		29.3%	29.3%
Karay			
Frequency	9	31	40
Percent	9.1%	31.3%	40.4%
Sumber Agung			
Frequency	7	23	30
Percent	7.1%	23.2%	30.3%
Total			
Frequency	16	83	99
Percent	16.2%	83.8%	100.0%

Source: Primary data processed, 2024

The type of work in each village was not the same, differing from one another. In Desa Salas, for example, there are no poor households working in non-agricultural businesses, while in the other two villages there are non-agricultural businesses, 9% in Desa Karay and 7% in Desa Sumber Agung, respectively. As villages become more developed, non-agricultural businesses, especially household and small-scale industries, trade and services, become more developed and advanced. The transformation from villages dominated by agricultural businesses to villages dominated by non-agricultural businesses illustrates how rural industrialization or downstream agricultural and fishery products are growing and developing. Therefore, the solution to accelerate rural economic development as well as poverty alleviation is no choice but to increase productivity by increasing investment in the agricultural and marine-based processing industry sector, so that it will increase added value, employment and improve the welfare of villagers.

Fifth, the education of poor household heads is 83.8% primary school and 16.2% have a senior high school education. This education condition illustrates that the poor household heads may be able to read and write, but most are not yet able to read and act creatively and are open to new technology. Children with a senior high school education are facing a dilemma, on the one hand, they cannot work for themselves because they do not have the skills, or they want to continue their education to a higher level but there is no money available.

Table 5. Characteristics of Respondents by Education

Village	Head of household education		
	Elementary School	HIGH SCHOOL	Total
● Salas			
Frequency	21	8	29
	21.2%	8.1%	29.3%
● Karay			
Frequency	40		40
	40.4%		40.4%
● Sumber Agung			
Frequency	22	8	30
	22.2%	8.1%	30.3%
● Total			
Frequency	83	16	99
	83.8%	16.2%	100.0%

Source: Primary data processed, 2024

Sixth, access to clean water is a crucial problem faced by miksin households in every village. The source of drinking water generally (85%) comes from their own wells and the remaining 15% from rainfed water, none of which are sourced from drinking water companies provided by the government.

Seventh, poor households have a limited value of productive economic assets, even in villages classified as underdeveloped there are a number of households that claim to have no productive economic assets, including savings. The poverty indicator that food expenditure is more important than non-food expenditure is recognized by the residents of villages that are classified as underdeveloped and developing (indigenous villages), while in transmigration villages that are classified as more developed, only some of them state that food expenditure is greater than non-food expenditure. Another interesting point is that poor households in Sumber Agung village consume rice as their staple food and do not consume sago and local tubers. In contrast, poor households in Karay and Salas villages are experiencing a shift in consumption patterns towards the substitution of local foods by rice.

Table 6: Characteristics of respondents according to access to clean water

Village Name	Source of drinking water			Difficult access to clean water		
	Rainfed	Own well	Total	Strongly agree	Agree	Total

1. Salas	7	22	29	0	29	29
	24,14	75,86	100	0	100	100
2. Karay	0	40	40	21	19	40
	0	100	100	52,5	47,5	100
3. Great Source	8	22	30	1	29	30
	26,67	73,33	100	3,33	96,67	100
Total	15	84	99	22	77	99
	15,15	84,85	100	22,22	77,78	100

Notes: IDM Karay=Left Behind; IDM Salas=Developed; IDMSumber Agung=Advanced

				Food Expenditure > Non-Food				Rice consumption (kg/kg/month)					Sago consumption (kg/kg/month)			
	Don't have	1-5 Million	Total	Agree	Dis agree	Strongly disagree	Total	10	15	20	60	Total	0	15	30	Total
1. Salas	0	29	29	23	4	2	29	27	1	1	0	29	0	29	0	29
	0	100	100	79,31	13,79	6,9	100	93,1	3,45	3,45	0	100	0	100	0	100
2. Karay	40	0	40	26	14	0	40	0	40	0	0	40	0	0	40	40
	100	0	100	65	35	0	100	0	100	0	0	100	0	0	100	100
3. Source: r The Great	3	27	30	0	30	0	30	0	0	0	30	30	30	0	0	30
	10	90	100	0	100	0	100	0	0	0	100	100	100	0	0	100
Total	43	56	99	49	48	2	99	27	41	1	30	99	30	29	40	99
	43,43	56,57	100	49,49	48,48	2,02	100	27,27	41,41	1,01	30,3	100	30,3	29,29	40,4	100

Notes: IDM Karay=Left Behind; IDM Salas=Developed; IDMSumber Agung=Advanced

The indigenous people still consume sago but in limited quantities They consume sago because they have limited cash to buy rice. Poverty seems to be indicated by sago consumption. Rice is considered superior goods while sago is considered inferior goods. In fact, sago is healthier because it is low glycemic, high in carbohydrates, high in fiber and sago plants are environmentally friendly compared to paddy rice plants. As one of the districts that has the largest sago area in Maluku province (Girsang, 2018), the SBT district government should make policy interventions to protect sago land and plants as environmentally friendly plants and conserve soil and water. Sago is included as the main source of healthy carbohydrates for the population in SBT district and Maluku. In contrast, rice paddy is less suited to the ecology of islands or small islands in Maluku province because it is water intensive and requires high external inputs.

Poverty Reduction Model

Based on the data collected in the field, the variables or constructs selected in this study are four, namely: 1) number of children and dependents; 2) Education and health; 3) poverty; and 4) food consumption. Specifically, the manifest variables (observations) of each latent variable (construct) need to be stated in detail. The number of children and dependents has two indicators or manifest variables, namely the number of biological children and the number of dependents.

Education and health also have two main indicators or manifest variables, namely the number of family members still in school and the ability to bear family health costs. Food consumption consists of two indicators, namely rice consumption and sago consumption. Furthermore, the poverty variable has three main indicators, namely house size, wall materials and sanitation-including access to clean water and sanitation.

The relationship between variables, can be seen as a causal relationship for prediction purposes, namely the relationship between exogenous variables (independent variables) and endogenous (dependent variables). are as follows: 1) the number of children and dependents affects education and health; 2) the number of children and dependents affects food consumption; 3) Education and health affect poverty; 4) Education and health affect food consumption; and 5) poverty is influenced by education and health and food consumption.

The results of checking whether the model can be used or not can be explained by the cross loading and collinearity (VIF) values. The data shows that the cross loading value of each manifest variable is greater than 0.7 (≥0.7) and the collenarity value (no overlap between manifest variables) is smaller than five (<5). This means that the model is valid because the correlation between manifest variables is strong and there is no overlap or repetition of variable values with one another so that it can be continued for the next process.

Table 8: Cross Loading Value and Collinearity of Manifest Variables

Variables	VIF	Cross loadings			
		Number of children/dependents	Poor	Consumption	Education and health
Number of family members	1.840	-0.358	-0.502	-0.426	**0.884**
Health	1.840	-0.320	-0.728	-0.668	**0.942**
Number of biological children	4.305	**0.975**	0.312	0.291	-0.373
Number of dependents	4.305	**0.961**	0.231	0.211	-0.332
House size	1.451	0.209	**0.773**	0.492	-0.456
Wall	1.399	0.313	**0.830**	0.793	-0.514
Sanitation	1.363	0.144	**0.785**	0.485	-0.676
Rice consumption	3.104	-0.203	-0.605	**-0.937**	0.377
Sago consumption	3.104	0.286	0.809	**0.970**	-0.740

Source: Primary data processed, 2024

The next requirement that needs to be considered is the reliability and validity of the model used. data shows that the composite reliability (rho_a) value is greater than 0.7 (≥0.7), while the Cronbach's alpha and composite reliability (rho_c) values vary. So composite reliability (rho_a) can be used as an indicator that the model has good reliability. This is reinforced by the average variance extracted (AVE) values which are all greater than 0.5 (AVE≥0.5) so that the model can be said to have good reliability and validity.

Table 9: Construct Reliability and Validity

	Variables	Cronbach's alpha	**Composite reliability (rho_a)**	Composite reliability (rho_c)	Average variance extracted (AVE)
1.	Number of children and dependents	0.934	**0.967**	0.968	0.937
2.	M1Poor	0.716	**0.729**	0.839	0.635
3.	M8Consumption	-9.317	**0.988**	0.006	0.909
4.	Education and health	0.806	**0.870**	0.910	0.834

Source: Primary data processed, 2024

After checking that the model is valid and can be used, the next step is to check the R square and f square values. R square illustrates the value or magnitude of the influence of exogenous variables on endogenous variables, while f square gives an idea of how big the impact of the influence is. The R square values of education and health, poverty and consumption are 13.4%, 47.8% and 59.2% respectively. This means that, first, the variation in the value of education and health can be explained by 13.4% by the variables of the number of children and dependents, while the remaining 87.6% is explained or influenced by other factors not included in this study. Second, the variation in the value of poverty can be explained or influenced in aggregate by Education and Health as well as the number of children and dependents by 47.8%, while the remaining 53.2% is influenced by other variables included in the model.

Third, the variation in the value of food consumption can be explained by 59.2% in aggregate by the variables of education and health, number of children and dependents, and poverty, while the remaining 41.8% is explained by other variables not included in this model. When viewed from the impact, the variables that have the greatest impact on poverty are Education and Health. This means that, first, improving poverty must prioritize education and health programs because the impact is large at 0.761. Second, improving consumption should prioritize poverty reduction because the impact is also large, at 0.513. Field observations show that those who are poor tend to consume more local food, especially sago. As the poverty rate increases, there is a tendency to consume sago in the village and to consume rice less.

Table 10. R Square and F Square values

Variables	Rsquare		f square		
	R-square	Adjusted R-square	M1Poor	M8Consumption	Education and health
1. Poor	0.478	0.467		**0.513**	

2.	Consumption	0.592	0.580			
3.	Education and health	0.134	0.125	**0.761**	0.036	
4.	Number of children and dependents			0.002	0.001	0.155

Source: Primary data processed, 2024

As a study that is still in search of a more appropriate model, the SRMR and NFI values are 0.112 and 0.599 respectively. This illustrates that the model is still classified as a moderate fit because the SRMR value is greater than 0.1 (ideally less than 0.1) although the NFI value is close to 0.9 (ideally >0.9). Therefore, the search for a model that is more appropriate and suitable for local conditions needs to continue to be studied so as to find a more adaptive capital, even though we realize that there is no single method or model that fits to solve all the problems. Graphically, the value of the manifest variable or indicator for each construct, the R square value and the regression coefficient, can be seen in Figure 2.

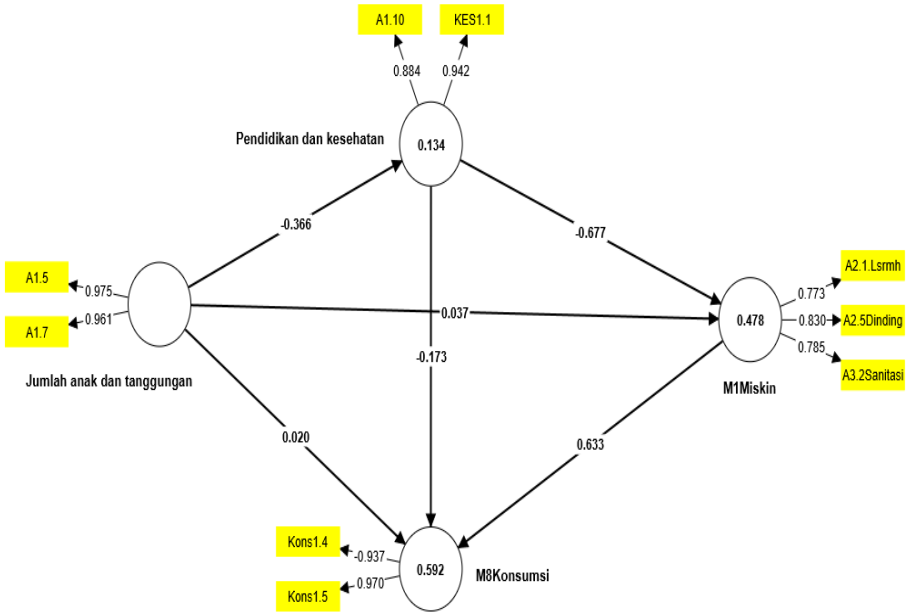

Figure 1: Outer Model of Poverty in Rural Seram Bagian Timur

This model is related to the analysis of the three dimensions of multidimensional poverty, namely education, health and living standards. One indicator that needs to be prioritized is the condition of housing, water and sanitation. These three components are interrelated, housing will be problematic if drinking water is inadequate and sanitation is not good. In addition, there are indications that rice and sago consumption are not complementary but mutually negating, meaning that rice consumption will replace sago consumption. This needs to be considered so that local food, especially sago which is quite abundant in SBT, is not neglected, even forgotten because it is increasingly replaced by (imported) rice.

Furthermore, the outer model needs to be examined further to analyze the extent to which each exogenous variable has a significant effect on the endogenous variables. The value of this significant influence can be seen from the inner model. Specifically, the inner model contains research hypotheses. In this study, the research hypothesis can be reduced to six hypotheses, but s. The following will describe each hypothesis:

The number of children and dependents has a real effect on poverty. The data shows that there is a positive effect of 0.037 units or 3.7% but it is not real or significant at α=0.05 (5%) as seen from the T statistics value (ideally >1.67 for α=10% and >2.0 for α=5%) and p values of 0.620 (ideally <0.05). A positive effect means that a one-unit increase in the value of the exogenous variable (independent) will increase the value of the endogenous variable, otherwise it will occur if the direction of influence is negative.

The number of children and dependents has a significant effect on food consumption. The results of the study or model show that there is a positive influence of 2% but it is not real or significant because the p values are greater than 0.05 (i.e.=0.792).

The number of children and dependents has a significant effect on education and health. The study results show that there is a real effect and the direction is negative. This means that the more the number of children and dependents in a household, the lower the education and health conditions of the household members. The coefficient value is 36.6%. This means that a one-unit increase in the number of children and dependents will reduce the Health and Education conditions by almost 37%. Policies regarding the number of children and the number of dependents in a family may be related to the socio-culture of the local community, which requires a cultural approach to overcome.

Poverty affects consumption. The results show that poverty has a real effect on consumption with a coefficient of 0.633 units. This means that if poverty increases by one unit, food consumption will increase by 63.3%. This means that food and poverty have a very close relationship. Furthermore, in fact, sago consumption will increase while rice consumption will decrease if poverty increases. Conversely, if poverty decreases, rice consumption will increase. So the more prosperous the household, the more rice consumption increases and the more consumption of sago and other local foods such as tubers, bananas, breadfruit and others decreases. This problem needs to be watched out for in SBT district because the potential for local food, especially sago, is still quite large, but it is neglected and even seems that there is negligence, so that it can lead to the extinction of sago endangered plasma.

Education and health have a significant effect on poverty. The data shows that education and health have a very real effect with a negative direction. If education

and health increase by one unit, poverty will decrease by 67.7%. The implication is that the priority for poverty reduction is to encourage improvements in education and health. Good education and health will give birth to a generation that is healthy, smart, skilled, creative and entrepreneurial, so that after finishing school will get or create a job, with a decent salary or wage, so that it is not only enough to finance himself but also to finance the education of his younger siblings and family.

Education and health have an effect on sago and rice food consumption. The data shows that education and health have a negative effect on consumption but are not significant at the 5% level (but significant at the 10% level). This means that improvements in education and health will encourage household members to increase rice consumption and decrease sago consumption (because sago and rice consumption are substitutes rather than complements). A decrease in poverty will lead to a decrease in sago, although it is likely to reduce sago consumption.

Table 11: Path coefficient: Mean, STDEV, T values, p values

Hypothesis	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
1. Number of children and dependents -> Poor	0.037	0.038	0.074	0.496	0.620
2. Number of children and dependents -> Consumption	0.020	0.018	0.075	0.263	0.792
3. Number of children and dependents -> Education and health	-0.366	-0.365	0.093	3.943	0.000
4. Poor -> Consumption	0.633	0.638	0.090	7.067	0.000
5. Education and health -> Poor	-0.677	-0.681	0.055	12.298	0.000
6. Education and health -> Consumption	-0.173	-0.171	0.096	1.802	0.072

Source: Primary data processed, 2024

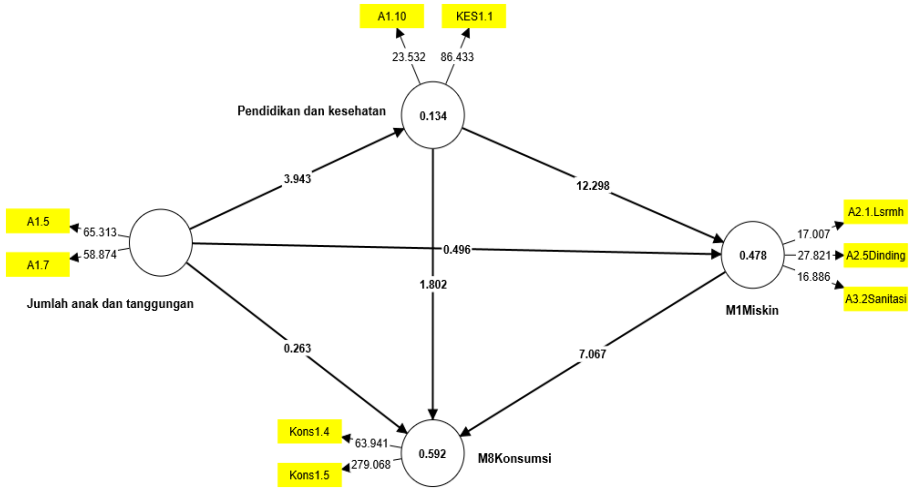

Figure 2: Inner model of poverty reduction in rural SBT

In general, Figure 2 shows the poverty reduction model. As stated by Alkire et.al (2015) regarding multidimensional poverty, the measure of poverty exceeds the boundaries of financial measures, namely economic deprivation, namely education, health and basic infrastructure, including living standards. Girsang (2011) found that cash poverty due to low wages and agricultural profits is not enough to cover basic needs, followed by attitudinal poverty, access to clean water, higher levels of education and better health services. This proves that the financial poverty measure, which is easier to measure, is inadequate, because the reality on the ground shows that there are non-financial deprivations or multiple deprivations experienced by poor households.

The results of this study show that health and education play an important and very real role in reducing poverty, especially in the aspects of living standards, namely housing (house size and walls) and sanitation (including access to clean water). Some villagers still have difficulty accessing clean and healthy water. Discussions with a village head and field observations, even in downtown Bula, showed that access to clean water is one of the difficulties for villagers, especially poor households. Therefore, infrastructure for clean water development is a priority because water is vital for the hygiene and health of villagers. The availability of clean water is closely related to the ecological conditions of small islands whose soil structure is craggy and biophysical conditions, plants and forests are very sensitive to the impacts of climate change. Poverty often leads to environmental degradation as poor people prioritize economy over ecology.

Do Miswa et.al (2025) found that there is a trade-off between poverty and the environment, where improvements in environmental quality increase poverty, and vice versa. However, research results also show that human development, rural wage labor and information communication and technology have an effect on improving environmental quality. Furthermore, economic growth, access to electricity and information communication and technology have a significant effect on reducing rural poverty. So access to information and technology will improve the trade-off between poverty and the environment for the better.

The number of children and the family's dependency burden appear to determine education and health, especially the capacity of the household head to pay for the education and health of all family members. Therefore, family planning programs are still very important in rural areas. The desired number of children is certainly not only due to cultural considerations of 'many children many fortunes' but whether children will live to be quality human resources, healthy and have better learning opportunities. Figure 22 shows that the number of children and the family dependency burden have a significant effect on education and health with a T statistic value of 3.9 or greater than 2.0. Al-Kharouf (2023) also found that the number of family members will determine the level of education and health of poor households. It is difficult for poor households to have better health and education because there are more dependents living in one house. Chatata et.al (2025) found that not only financial factors, non-monetary factors also affect maternal health, especially in using ante natal care (ANC) to avoid increasing infant mortality rates. ANC plays a role in providing consultation during pregnancy and childbirth to avoid the risk of infant mortality.

Similarly, education and health are variables that determine poverty. If education is better, it will improve the chances of getting better work and business opportunities (Subayil, 2020). If good education is followed by good health, it will increase productivity so that it is more efficient and effective to utilize productive business assistance and social safety net from the government. Gabriel and Amanda (2025) found that PKH or Conditional Cash Transfer needs to be increased in effectiveness because it still plays a significant role in improving the education level of children in poor households. Finally, poverty will determine the behavior of consumption patterns, especially the carbohydrate sources of rice and sago. Furthermore, Asma et.al (2023) found that the social safety net program is an important intervention from the government because it reduces poverty, improves food security and living standards, provided that it is carried out over a longer period of time and aid payments are at shorter intervals. In contrast to Asma (2023), BPS data (2023) shows that fluctuations in the value of social assistance in Maluku province have no real impact on reducing the nominal number of poor people, which is around 300 thousand people over the past decade (Girsang, 2025). The percentage of poverty has experienced an increasingly slow decline, less than one percent per year, and the percentage of poverty in villages is almost five times higher than in Ambon city. Spatially, Ambon city has a high level of inequality compared to the other 10 districts/cities in the Maluku Islands province. The results of this study also show that 85% of poor households receive more than one type of social assistance (PKH, welfare rice, BLT, health insurance and others) but have not had a real impact on reducing the number of poor people. This means that poor households from last year or several years ago are still poor households this year. Therefore, an evaluation of the various forms of social assistance needs to be carried out, by name by address, in every village and island area or island cluster.

Ainistikmalia, et al (2022) found that poverty is closely related to food security where poor households are likely to be categorized as food insecure. Poor households are trapped in multiple deprivations, inadequate housing conditions, difficult access to clean water, poor sanitation and lack of nutrition. Therefore, the poverty reduction model focuses on poor households that are most in need, with clear names and addresses (by name by address), starting from villages that are classified as poor. Cao et.al (2024) also found that poverty alleviation will improve food security, because as poverty decreases, food consumption diversification improves and household expenditure increases. Specifically, Khatum et.al (2022) stated that among poor households 80% were food insecure and among non-poor households, 30.8% were food insecure. This means that both poor and non-poor households have the opportunity to be food insecure. The determining factors are family size, per capita income and 'suffering from the diseases' so that policies need to consider various social indicators and characteristics of poor households.

Abdullahi et.al (2024) stated that productive safety net programs (cash, food or vouchers), by involving the poor, provide skills training in both rural and urban areas. Because inclusive programs for productive businesses and skills that match their interests and talents not only have a positive impact on reducing poverty but also strengthen the community food security system.

The aspects of poverty that need to be improved are housing conditions, especially the walls of the house and the size of the rooms in the house to make it livable, including sanitation and clean water to support hygiene and sanitation. If these aspects of poverty are improved, the impact will be felt in the improvement of food consumption. The model shows that sago and rice are more substitutable. The policy of providing or subsidizing poor rice (raskin) or now called Prosperous rice (rastra) needs to be reviewed in the research location, SBT district which is abundant with sago as a local food. The policy of making flour-based processing industries must be built in every village that has sago potential so that sago flour and other local foods substitute imported rice and wheat flour (Girsang, 2018). Gayo and Ngongolo (Gayo & Ngongolo, 2024) state that the role of women and youth in agroforestry farming systems will help reduce poverty and improve local food security. This is relevant to the condition of Maluku where farmers, especially indigenous farmers, live from agricultural businesses with agroforestry patterns or dusung systems that contain biodiversity and are managed with multiple cropping of annual and perennial plants. . Simultaneously, when poverty reduction is carried out at the level of poor and disadvantaged villages, industrialization and downstreaming of local superior commodities, especially nutmeg, clove, coconut and sago food crops, need to be carried out to increase community income and expenditure. It is necessary to strengthen the role of women and youth in cultivating dusung agroforestry for poverty alleviation and food security.

CONCLUSION

Respondent characteristics show that poor household heads in the three villages have varying numbers of dependents, ages, and education levels. The education they have is not sufficient to create employment and business opportunities without additional skills training. There is targeting inaccuracy in the distribution of social assistance, where most households receive various forms of assistance, while some deserving ones do not. Multidimensional poverty is seen in limited access to further education, a decent standard of living, and basic needs such as clean water, energy, and sanitation. In addition, food consumption patterns show that people are still dependent on rice as the superior food, while consumption of local foods such as sago increases as poverty increases. The poverty reduction model indicates that improving education and health can be effective strategies in reducing poverty and improving more balanced food consumption patterns.

A broader study needs to be conducted covering all kecamatan to obtain a more comprehensive picture of multidimensional poverty and a more effective model for its alleviation. Poverty alleviation policies should start from the poorest villages and be supported by investment in downstream and rural industrialization to strengthen food security. The kabupaten government needs to establish a regional regulation on poverty and initiate a pilot project on poverty alleviation with a strict monitoring and evaluation mechanism by certain regional government organizations (OPDs) to ensure a decrease in the poverty rate from year to year.

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