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DETERMINANTS OF POOR HOUSEHOLDS IN SOUTH SUMATRA USING A MULTILEVEL LOGISTIC MODEL

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ABSTRACT

Poverty is still one of the problems experienced by all countries, including Indonesia. According to BPS, in March 2021, the poverty rate in Indonesia was 10.14 percent. South Sumatra is a province with a poverty rate, which is the tenth-highest nationwide and the third-highest on Sumatra Island. This poverty rate is accompanied by a contraction in economic growth in 2021 by 3.58 percent. This condition indicates a contradiction and suggests that poverty still needs to be resolved. Moreover, the disparity in social and economic aspects across regions could potentially make the poverty rate high. This research aims to see the individual and regional or contextual factors affecting poor households. To simultaneously capture the effects of individual and regional level, we perform a Multilevel Logistic model using hierarchical structured poverty data from SUSENAS. The result shows that 4 (four) variables at individual level, which are the number of household members, the status of residence building, health insurance, and saving ownership, had a significant effect on the poor household. The region with high unemployment rate tends to have a high percentage of poor households. This result indicates that local government need to have policies that can affect poor households directly, such as socializing more about health insurance program and family planning program, as well as supervision in social aid distribution. Moreover, they need to create a program that can employ more people in order to decrease the percentage of poor households in such regions.

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1. INTRODUCTION

Poverty is still one of the problems experienced by all countries. The complexity of poverty encourages world leaders, especially from developing countries, including Indonesia, to work together to alleviate poverty. According to BPS, poverty can be measured by the "basic needs approach" concept. Through this concept, poverty is approached with the inability to meet the basic need of "food" and "non-food" measured through expenditure. A person is categorized as "poor" if they have an average expenditure below the poverty line. In addition to this definition Haughton and Khandker [1] defined poverty as a condition of deprivation in well-being. Meanwhile, the United Nations Development Programme [2] defined poverty as an inability of a person to expand his or her options.

Nowadays, poverty alleviation is still one of the main agendas in the Sustainable Development Goals or SDGs. Goal 1: End poverty in all its form everywhere. The Indonesian government also set the similar goal in the 2020-2024 RPJMN through goals that set the poverty rate to decrease and can reach 6.5 to 7.0 per cent in 2024. According to BPS, in March 2021, the poverty rate in Indonesia was at 10.14 per cent and there are 16 provinces in Indonesia that have a poverty rate above the nation's rate. One province is South Sumatra. South Sumatra is a province with a poverty rate which is the tenth-highest nationwide. The poverty rate of this province is 12.84 percent. This poverty rate accompanied by a contraction in economic growth in 2021, which was 3.58 percent.

Based on Arthur Lewis's "Trickle-down Effect", economic growth is closely related to poverty and has the opposite effect to each other [3]. It is very reasonable that low economic growth can lead to a high poverty rate. However, if we link to the exciting theory was already mentioned before, the poverty rate in South Sumatra should be in contrast to their economic growth rate. In fact, South Sumatra has a high poverty rate, which is the third-highest on Sumatra Island. With a high economic growth rate in 2021, South Sumatra should not be in the top three provinces with the highest poverty rate on Sumatra Island. This condition indicates a contradiction and suggests that poverty still needs to be resolved. According to BPS, if we look further by regencies, there is a variation in the poverty rate. This indicate there is an influence from the regional aspect on the poverty rate. The areas with almost the same poverty rate tend to converge on adjacent areas. This condition is supported by Hox's theorem [4]. Hox said that research with social scope allows the creation of interactions between individuals and the social context where individuals come from. This is because the region or the group highly influences the individual characteristics to which they belong. Thus, if we connect it with the condition we have, it indicates that the poverty characteristics of an individual represented by a household can influence by the level where they belong or the level above them, such as the region.

Poverty has many definitions and is often associated with economic aspects. Those in poor conditions generally have limited access to economic activities that can leave them behind and do not have enough income to place their position at the minimum threshold [5]. According to BPS in the Social Protection Program Data Collection, with a household characteristic approach, some factors can explain poverty. These fourteen factors include the floor area per capita, the type of house floor, the kind of house wall, the variety of defecation facilities, the source of drinking water, the lighting used, the frequency of meals in a day, the ability to buy new clothes, the ability to get medical treatment in a day, employment field of household heads, education of household heads, and possession of assets. Meanwhile, four external factors affect poverty: the presence of toddlers, school-age children, family planning participation, and acceptance of business loans.

Houghton and Khandker [1] said that poverty consists of major determinants covering a wide range of characteristics, including society, households, and individual parts. According to Sinnathurai [6], some economists emphasize that economic growth, characterized by GRDP growth, significantly impacts poverty reduction and inequality. Ravallion [7] in his study argued that poor countries have less capacity to redistribute the benefits of GDP values, which is considered one of the causes of further increases in poverty. In addition, the general theory explains that a higher economic growth rate pays the way for a sustained and stable increase in productivity. This condition can result in increased productivity and job opportunities. When they achieve high productivity, which causes them to remain unemployed and their income to improve, they will have better economic conditions to escape poverty.

Previous studies have successfully identified factors affecting poor households. Rini and Sugiharti [8] found that household characteristics like sex of household head, age of household head, number of household members, employment status of household head, access to information and communication technology, access to credit, education of household head, and location had a significant effect on the poor status of

households. In addition, Nugroho [9] successfully identified several individual (household) factors that significantly impacted poor households, such as the number of household members, sex of the household head, and education of the household head. Besides that, he also identified contextual factors, such as the Public Facilities Accessibility Index, that can significantly affect poor households.

The binary multilevel logistic regression is an analysis that models hierarchical or structured data with a binary response variable. This is a model that falls within the exponential family and follows a binomial distribution, offers a robust framework for analyzing hierarchical or structured data. In general, binary logistic regression and binary multilevel logistics regression share similar frameworks. However, according to Harlan [10], the difference between these two models lies in the multilevel approach's estimation of variation components, which then unveiling the presence of presence of fixed effects and random effects on explanatory variables. An explanatory variable is said to have a fixed effects if its regression coefficient has the same value across all samples. Conversely, a variable is considered to exhibit a random effect when its regression coefficients vary among two or more subgroupings within the sample. Moreover, a model that incorporates both random and fixed effects in explanatory variables is denoted as a mixed-effects model. In statistical literature, multilevel models are commonly referred to as mixed models. The multilevel models used Generalized linear models (GLMs) to addressing issues stemming from non-normally distributed errors. The estimation model in GLMs is maximum likelihood estimation or MLE. MLE yields consistent and efficient parameter estimated. In multilevel model, MLE maximize the likelihood function on population parameters using the inverse of the link function to predict the response variable [4].

Based on the explanations above, a statistical method to obtain the factors affecting poor households is needed for the hierarchical structured in poverty that has an individual and a regional level [4]. This study is interested in obtaining the individual and regional factors affecting poor households and their characteristics, also aims to find the general overview of poor households in South Sumatra. There are seven individual factors we want to see their effects on poor households, such as the classification of residence areas, number of household members, sex of household head, ownership status of the building, functional disorders, ownership of health insurance, and ownership of savings. Meanwhile, the contextual or regional factors are GRDP and Open Unemployment Rate.

2. RESEARCH METHODS

2.1 Data Set

This study covers the area of South Sumatra Province in 2021, consisting of 17 regencies/cities. The data used are secondary data obtained from SUSENAS March 2021 with 11054 samples or respondents. The variables used in this study are as listed in Table 1 below.

Table 1. Variables and Their Categories

Variable Name	Notation	Category
Response Variable		
Poor Households	Poor	0 = Not Poor (*ref*) 1 = Poor
Explanatory Variables		
Individual Level (Household)		
Residential Area	RA	0 = Urban (*ref*) 1 = Rural
Number of Household Members	Members	0 = ≤ 4 People (*ref*) 1 = > 4 People
Sex of Household Head	Sex	0 = Male (*ref*) 1 = Female
Ownership Status of Residential Building	Building	0 = Self Owned (*ref*) 1 = Non-Self Owned
Functional Disabilities of Household Head	Disabilities	0 = No (*ref*) 1 = Yes
Health Insurance Ownership of Household Head	HealthIns	0 = Yes (*ref*) 1 = No

Saving Ownership of Household Head	Saving	0 = Yes (*ref*) 1 = No
Regional Level (District)		
Gross Regional Domestic Bruto (GRDP)	GDRP	Numeric
Open Unemployment Rate	Unemploy	Numeric

2.2 Methodology

The analysis methods used in this study were descriptive analysis and inferential analysis. This study used descriptive analysis to provide a general overview of the characteristics of poor households in South Sumatra in 2021. Meanwhile, the inferential analysis uses a binary multilevel logistic regression model with random intercept. Multilevel Analysis explains the relationship between variables characterizing individuals and variables characterizing groups or the relationship between factors measured at a different level in a hierarchical or multilevel structure. Analysis with this kind of model is a multilevel version of the general multiple regression model. Still, in multilevel research, the data structure in the population is hierarchical, and the sample data are a sample from that hierarchical population. The hierarchical structure is used in this model because the data has a certain level. The lowest level is defined by the individuals which will form a group that will be the higher level **[4]**.

In this study, we used binary multilevel analysis to identify individual factors (represented by household) and regional (represented by districts) factors that affected poor households in South Sumatra in 2021.

The empirical model in this study denoted by **Equation (1)**

$$\ln\left(\frac{\pi_{ij}}{1-\pi_{ij}}\right) = \gamma_{00} + \beta_{0j} + \beta_{1j}RA_{ij} + \beta_{2j}Members_{ij} + \beta_{3j}Sex_{ij} + \beta_{4j}Building_{ij} + \beta_{5j}Disabilities_{ij} + \beta_{6j}HealthIns_{ij} + \beta_{7j}Saving_{ij} + \gamma_{01}GDRP_{ij} + \gamma_{02}Unemploy_{ij} + u_{0j} + e_{ij} \quad (1)$$

Notes:

$Members_{ij}$	: Number of household members
RA_{ij}	: Residential area
Sex_{ij}	: Sex of household head
$Building_{ij}$	: Ownership status of residential buildings
$Disabilities_{ij}$	: Functional disabilities of household head
$HealthIns_{ij}$	: Health insurance ownership of household head
$Saving_{ij}$	: Saving ownership of household head
$GDRP_{ij}$	: Natural logarithm (ln) of GRDP of each district
$Unemploy_{ij}$	: Open Unemployment Rate of each district
i	: Individual (household) sample order ($i = 1, 2, \dots, n_j$); n_j is the number of households at level 1 in group j
j	: Regional (district) sample order ($j = 1, 2, \dots, 17$)
u_{0j}	: Random effect of group j in level 2
ε_{ij}	: Residual/error for each i-th individual at level 1 in j-th group
γ_{00}	: Intercept
$\beta_{pj} = \gamma_{p0}$	: Regression coefficient for p-th explanatory variable in level 1
γ_{0q}	: Regression coefficient for q-th explanatory variable in level 2
p	: $1, 2, 3, \dots, 7$;
q	: $1, 2$

In this study, we estimated the odds ratio for each level. We used **Equation (2)** to represent the odds ratio for the individual level (level 1) and **Equation (3)** for the regional level (level 2).

Level 1:$OR = \exp(\hat{\gamma}_{p0})$ (2)

Level 2: $OR = \exp(\hat{\gamma}_{0q})$ (3)

3. RESULTS AND DISCUSSION

3.1 General Overview of Poor Households in South Sumatra 2021

This study was conducted in South Sumatra with data sourced from SUSENAS March 2021 KOR and KP modules. From the entire 41312 sample respondents, we used only 11054 samples to analyze as household representatives. The representative sample of a household in this study is the respondent whose relationship status with the head of the household is the head of household or respondent with code 1. Based on the data processed, 11.81 percent of households are in poor household status, while the rest are non-poor. Then, if we detail by district, the distribution of poor households per district can be seen in **Figure 1**. Increasingly concentrated color gradations indicate a higher poverty rate. The region with the highest percentage of poor households is Prabumulih, while the lowest percentage is Pagar Alam. In addition, 8 districts have a ratio of poor households above the province, and the rest have a proportion of poor households below the province percentage (see **Figure 2**).

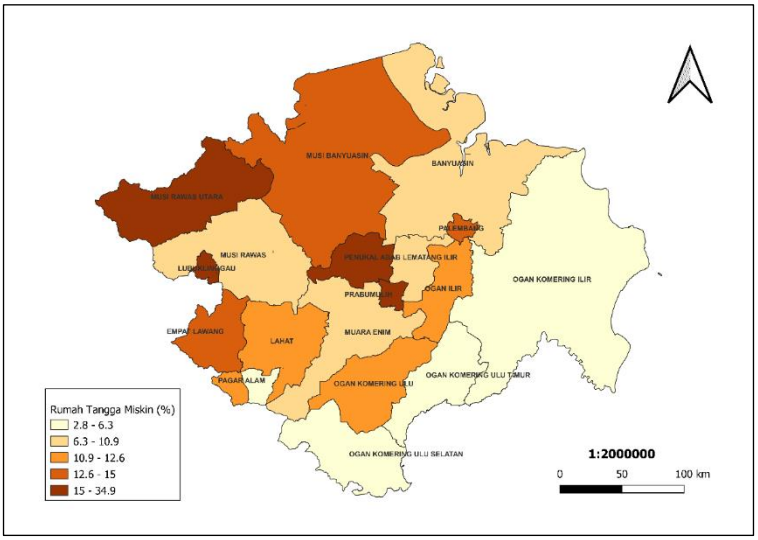

Figure 1. The Distribution of Poor Households According to Each District in South Sumatra 2021
Source: SUSENAS March 2021, processed

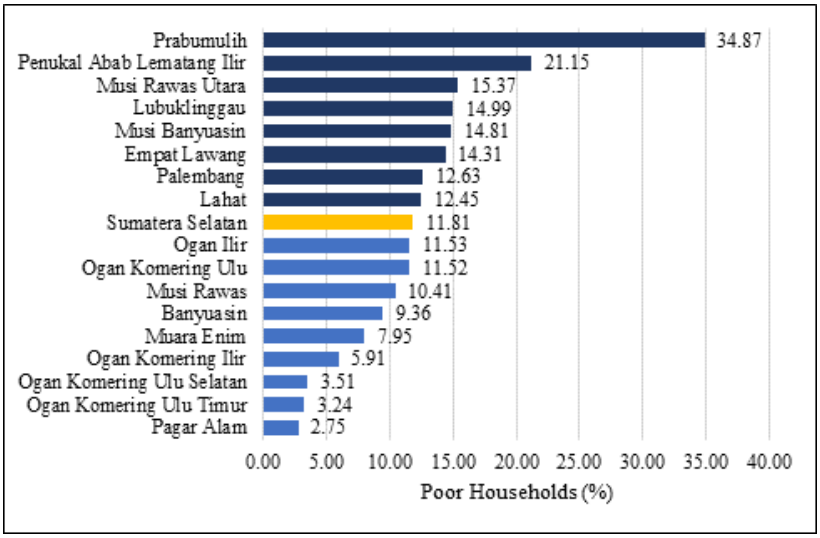

Figure 2. Percentage of Poor Households in Each District in South Sumatra 2021
Data Source: SUSENAS March 2021, processed

An overview of the general characteristics of poor households based on the individual level (household) can be shown in **Table 2**.

Table 2. Percentage of Poor and Non-poor Households in South Sumatra in 2021 by Category of Explanatory Variables in the Individual Level

Variable	Category	Poor Households (%)	Non-poor Households (%)
Residential Area	Urban (*ref*)	13.97	86.03
	Rural	10.82	89.18
Number of Household Members	≤ 4 People (*ref*)	7.74	92.26
	> 4 People	23.10	76.90
Sex of Household Head	Male (*ref*)	11.97	88.03
	Female	10.59	89.41
Ownership Status of Residential Building	Self-Owned(*ref*)	10.72	89.28
	Non-Self Owned	16.63	83.37
Functional Disabilities of Household Head	No (*ref*)	11.68	88.32
	Yes	12.43	87.57
Health Insurance Ownership of Household Head	Yes (*ref*)	11.78	88.22
	No	11.85	88.15
Saving Ownership of Household Head	Yes (*ref*)	6.43	93.57
	No	15.11	84.89

Based on **Table 2**, in the classification of the residential area, there are more poor households in urban areas than in rural areas, with a percentage of 13.97. Based on the number of household members, we found that households with more than 4 members have a higher rate of poor households than households with less than or equal to 4 household members, with a percentage of 23.10. Next, based on the sex of the household head, we can see that the rate of poor households headed by men and women is relatively the same, which is in the range of 11 to 12 per cent. Then, **Table 2** also gave us information that households whose residential building ownership status is not their own are more in poor condition than households whose residential building ownership status is by themselves, which is 16.63 per cent. From the functional disabilities possessed by the head of the household, the head of household with functional disabilities is in households with more poor household status than households that do not have functional disabilities, which is 12.43 per cent. Based on the ownership of health insurance owned by the head of the household, the head of the household who does not have health insurance is in the percentage of poor households that are relatively the same as households whose have health insurance, which is less than 12 per cent. Furthermore, judging from the ownership of saving by the head of household, we obtained information that households whose head of household does not have savings have a higher percentage of poor households than households whose head of household has savings, which is 15.11 per cent.

Besides obtaining a general overview of the poor household through explanatory variables at the individual level, this study also provides an overview of poor households through explanatory variables at the regional level (district) with Gross Regional Domestics Product (GRDP) and Open Unemployment Rate. **Figure 3** shows the distribution of the GDRP value (in billion rupiahs) of districts in South Sumatra in 2021. Based on **Figure 3**, many districts have a slightly dark red color. Based on **Figure 3**, in general, many districts in South Sumatra 2021 have low GDRP (billion rupiahs) and a high percentage of poor households. In addition, based on **Figure 3**, there are several areas with slightly dark blue and somewhat light brown colors. In general, many districts in South Sumatra in 2021 have a fairly high GDRP with a relatively low percentage of poor households, and many have not too high GRDP with a not-too-low percentage of poor households.

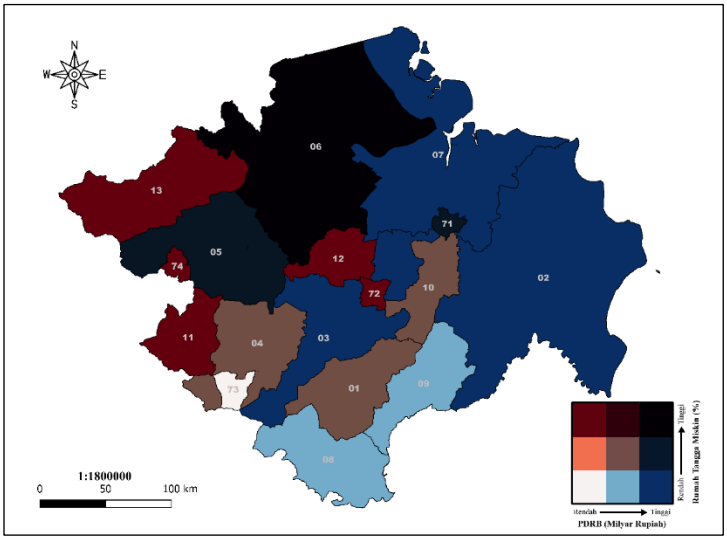

Figure 3. The distribution of GRDP According to Each District in South Sumatra 2021
Data Source: South Sumatra Province in Number 2022 and SUSENAS March 2021, processed

Figure 4 shows the distribution of a percentage of the open unemployment rate in each district in South Sumatra in 2021. The darker the color on the map indicates a higher percentage of both the open unemployment rate and poor households. In **Figure 4**, in South Sumatra in 2021, there are many districts with a low percentage both of open unemployment rate and poor households, marked with a cloudy white color. From this figure, we also obtained that many districts have a high percentage both of open unemployment rate and poor households, marked in black. These indicate that the open unemployment rate is directly proportional to the percentage of poor households. When the open unemployment rate is low, a district's percentage of poor households tends to be low and vice versa.

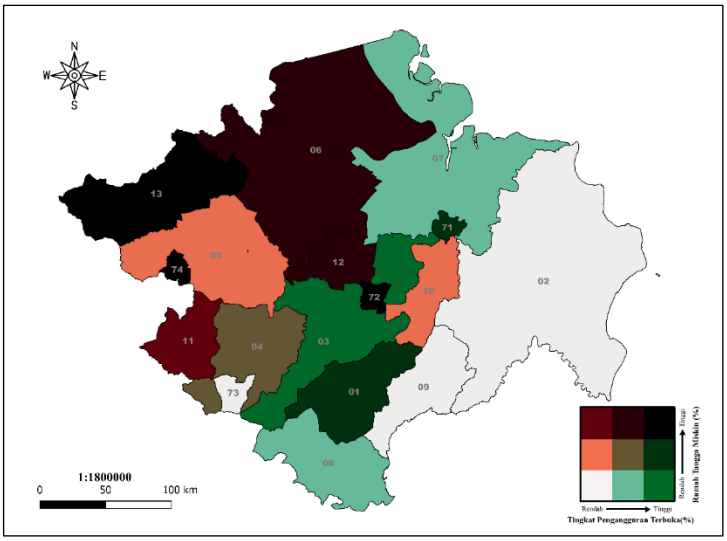

Figure 4. The distribution of Open Unemployment rate According to Each District in South Sumatra 2021
Data Source: South Sumatra Province in Number 2022 and SUSENAS March 2021, processed

Before obtaining individual and regional variables that have a significant influence on poor households, a binary multilevel logistic regression analysis with random intercept is performed. First, we did a significance of random effects test based on the processing results with RStudio Software; the LR test statistic value was 415.1617. This value is greater than $\chi^2_{0.95;(1)} = 3.841$. Thus, the decision to reject the null hypothesis results in the conclusion that there is a significant random effect. Furthermore, based on these test results, we concluded that the binary multilevel logistic regression model was better at explaining the research model than the general binary logistic model. In addition, the ICC score of 0.1330 means that the diversity of poor households in South Sumatra in 2021 is 13.30 per cent. We can explain 13.30 per cent variation at the individual level can be defined at the regional (district) level. According to Sorra and Dyer **[11]**, ICC with values greater than 0.05 or 5 per cent indicates there is greater variation between groups than expected. However, Twisk **[12]** argues that there is no certainty about the minimum value of ICC. In addition, Nezlek

[13] also stated that multilevel models with ICC values close to 0 can still be used because the data used is hierarchical or multilevel structured. So, it concluded that the ICC value we obtained supports the binary multilevel regression to be applied in this study.

Then from the results above, parameter estimation was performed using the maximum likelihood (MLE) method and continued with simultaneous variable significance testing through the G test. From this test, we obtained the 801.17 G test statistics value. Furthermore, this value is greater than $\chi^2_{0.95;(9)} = 16.92$. This result rejects the null hypothesis and concludes that minimally one explanatory variable significantly affects the variables of poor households. Furthermore, we can demonstrate the effect of each partial explanatory variable on poor households through significance testing with the Wald test statistics.

Table 3. The Result of Parameter Estimation, Significance, and Odds Ratio of Explanatory Variables of Poor Households in South Sumatra in 2021

Variable	Category	Random Intercept Model			
		Estimation Parameter	Odds Ratio (OR)	$1/OR$	p-value
Individual Level (Household)					
Intercept		-1.5065	0.2217	4.5109	0.6225
Residential Area	Urban (*ref*) Rural	-0.1068	0.8987	1.1127	0.2361
Number of Household Members	$\leq$ 4 People (*ref*) $>$ 4 People	1.4202	4.1379	-	0.000*
Sex of Household Head	Male (*ref*) Female	0.0583	1.0600	-	0.5783
Ownership Status of Residential Building	Self-Owned(*ref*) Non-Self Owned	0.5919	1.8074	-	0.000*
Functional Disabilities of Household Head	No (*ref*) Yes	0.1199	1.1274	-	0.1641
Health Insurance Ownership of Household Head	Yes (*ref*) No	0.2150	1.2399	-	0.0036*
Saving Ownership of Household Head	Yes (*ref*) No	1.2247	3.4031	-	0.000*
Regional Level (District)					
GRDP		-0.1907	0.8264	1.2101	0.3387
Open Unemployment Rate		0.2082	1.2315	-	0.0374*

Based on **Table 3**, 4 variables at the individual (household) level, such as the number of household members, the status of ownership of buildings, health insurance, and saving, significantly affected poor households in South Sumatra 2021. At the regional level, one variable that significantly affected poor households in South Sumatra in 2021 is the open unemployment rate. Thus, the binary multilevel logistic regression model equation formed by **Equation (4).**

$$\ln\left(\frac{\hat{\pi}_{ij}}{1-\hat{\pi}_{ij}}\right) = -1.5065 - 0.1068RA_{ij} + 1.4202Members^*_{ij} + 0.0583Sex_{ij} + 0.5919Building^*_{ij} + 0.1199Disabilities_{ij} + 0.2150HealthIns^*_{ij} + 1.2247Saving^*_{ij} - 0.1907GDRP^*_{ij} + 0.2082Unemploy^*_{ij} + \hat{u}_{0j} \quad (4)$$

Note: * = Variables that are significant at $\alpha = 0.05$.

According to the number of household members, the odds ratio is 4.1379. This odds ratio value means that the tendency of a household with more than 4 members to be classified as a poor household is 4.1379 times greater than a household with less than or equal to 4 members, with the assumption that the other explanatory variables are constant. This result is in line with the previous research **[14]**. Wulandari stated that an increase in the number of household members by one person would increase the risk of the household being in poor condition. According to Purwanto and Taftazani **[15]** also Nalle **[16],** a large number of

household members will lead to a decrease in welfare due to greater expenditures which in the end can cause the household to be in poor condition.

For residential building ownership status, we obtained an odds ratio of 1.8074. The tendency of a household with residential building ownership status that is not its own to be classified as a poor household is 1.8074 times greater than a household with a residential building status of its own, with the assumption that the other explanatory variables are constant. Residential buildings have become one of the basic human needs. According to Ningrum **[17],** the ownership status of residential buildings can reflect the economic condition of a household. Because residential buildings, a form of asset ownership by households, become one of the internal factors affecting household welfare, low household welfare conditions will result in poverty. Thus, the ownership of residential buildings will describe a better level of welfare and give a household a more negligible risk of poverty.

The following variable that significantly affects poor household status is the ownership status of health insurance by the head of the household. Based on **Table 3**, we obtained information that the odds ratio is 1.2399. The tendency of a household whose head of household does not have health insurance to be classified as a poor household is 1.2399 times greater than a household whose head of household has health insurance, with the assumption that the other explanatory variables are constant. Health insurance has become one of the investments in the health sector that has a vital role in economic development and has become one of the human-modals, especially in doing work. Lack of health insurance can lead to a poverty trap **[18]**. The lack of health insurance can threaten the population to fall into poverty due to catastrophic spending. According to Situmeang and Hidayat **[19]**, ownership of health insurance can reduce catastrophic spending. Health insurance can help reduce catastrophic spending, allowing households to use their income for other basic needs.

Savings ownership is also one of the variables that significantly affect this study, with an odds ratio of 3.4031. The tendency of a household whose head of household does not have savings as a poor household is 3.4031 times greater than a household whose head of household has saving with the assumption the other explanatory variables are constant. This result is in line with Adnyani and Sugiharti **[20]** and Rusnak's research **[21]**, which found that a household without savings has a greater probability of falling into poverty than a household with savings. Saving is strongly related to poverty. Saving becomes key in increasing poverty, especially in low-income households who do not have savings **[22].** A lack of savings will cause households difficulty getting funds to support life in the future **[23]**. Chambers' theory of sustainable livelihoods **[24]** supports this statement, saving is one of the top five assets that can reduce the risk of becoming a poor household.

The last variable that significantly affects this study comes from the regional level, namely the open unemployment rate variable. The odds ratio obtained from **Table 3** is 1.2315. This value indicates that every 1 per cent increase in a district's open unemployment rate can cause a household's tendency to be classified as poor household increases by 1.2315 times, assuming other variables are constant. This value means many poor households in areas with high open unemployment rates. Restrictions on community activities also support an area's high open unemployment rate during the pandemic. The tendency of a household to be classified as poor in areas with a high open unemployment rate is in line with Barika's research **[25]**, stated that unemployment positively influences poverty, which means that the increase in unemployment will also increase the poverty rate. In addition, Sukirno **[26]** also argues that when many people are unemployed, many people cannot fulfil their basic needs because they do not have enough income. This condition will cause them to be below the poverty line or belong to poor conditions.

Then, this study also obtained several findings regarding variables that have not significantly affected poor households in South Sumatra in 2021. In the residential area variable, the insignificance of this variable is in line with the opinion of Todaro and Smith **[27]**. According to them, poor households generally live in rural areas with traditional economic activities and still have many limitations, especially geographic disadvantages which make them less able to access various needs compared to people in urban areas. However, that does not mean that people in urban areas do not have problems. The increasing number of people in the urban area will cause various issues, especially the high competition for survival which impacts increasing social inequality **[28],** especially during the pandemic. This causes the city to provide many conveniences no longer and instead creates many obstacles **[29].** These obstacles can cause people in urban areas to feel the same opportunities as people in rural areas to be in poor conditions. Thus, the difference in the residential area is considered not to be able to show the poverty status of a household.

The following variable that is also unable to provide a real difference in this study is the sex of the household head. In this study, this condition is not in line with Srinivas' Causes of Poverty Theory **[30]**, which states that the cause of poverty can come from gender or sex. The non-significance of the sex variable of the head of the households illustrated that there was no significant difference between male and female household heads in influencing the status of poor households. This is because there has been a change in value that allows women to have a greater opportunity to get a decent job and income, so the assumption that female household heads are in poorer condition than male household heads begin to shift **[31]**. Thus, in this study, the sex difference of the head of household is considered not to be able to show the poverty status of a household.

According to the variable of functional disabilities of the head of the household, not enough evidence has been obtained to state that this variable affects poor households in this study. People with functional disabilities have a higher risk of being in poor conditions **[32].** However, it is still possible for people with disabilities to be less poor than those without disabilities. Equalization of rights allows persons with disabilities to have the same opportunities as society to get decent jobs and incomes, so the assumption that people with disabilities are poorer is starting to decrease. Law No. 4/1997 and the existence of policies related to persons with disabilities, such as in Law No. 4/2016 **[33]**, support this statement. Thus, in this study, the differences in functional disabilities are considered unable to indicate the poverty status of a household.

The last variable in this study that has yet to be able to give a real influence is the GDRP variable, one of the regional variables. The not-yet-significant GRDP illustrated that there was no significant difference in the value of GRDP between regions in influencing the status of poor households in South Sumatra in 2021. According to Prasad **[34]**, some areas with high GRDP values can be in high poverty. The result obtained in this study support this statement. Based on **Figure 3**, we can see that there are areas with high GRDP but also have a high percentage of poor households, and vice versa. Indeed, GRDP describes the region's output, which is not dependent on the population but influenced by the economic potential of a region. Regions with high GRDP indicate good economic potential **[35]** and impact people's welfare. However, this statement contradicted the results of this study. This statement shows that in this study, the potential for the economy has not yet had a direct or real impact on people's welfare. Supposedly, an area with high economic potential, described by a high GRDP, must be able to lift its people from being in a slump in welfare and poor conditions. The findings in this study indicated that the characteristic of economic growth, which the GRDP describes, is exclusive economic growth. Long-term economic growth cannot reduce poverty **[36]**. This strengthens the reason that in this study, the GRDP variable has not been significant in showing the poverty status of a household.

4. CONCLUSIONS

Based on the research results on the poor household status in South Sumatra in 2021, we found that the households in South Sumatra in 2021 were more likely to be in non-poor household status. The characteristics of poor households were found in urban areas, having family members of four people, having a male household head, having no savings, having functional disabilities, not having health insurance, and the ownership status of residential buildings is not self-owned. Meanwhile, the highest percentage of poor households was in Prabumulih, while the lowest was in Pagar Alam. In addition, based on the multilevel model, we obtained that at the individual level, the number of household members, the status of ownership of buildings, health insurance, and saving, significantly affected poor households in South Sumatra 2021. Meanwhile, at the regional level, only open unemployment rate that significantly affected poor households in South Sumatra in 2021. The tendency of poor household status was higher when the households had more than 4 household members, had non-owned buildings, the head of households had no health insurance and no saving and occurred in areas with a high open unemployment rate. This result indicates that local government need to have policies that can affect poor households directly, such as socializing more about health insurance program and family planning program, as well as supervision in social aid distribution. Moreover, government need to create a program that can employ more people to decrease the percentage of poor households in such regions.

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