

Research Article

Determinants of Multidimensional Poor Vulnerable Households in Jambi Province in 2024

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Abstract: Poverty is still an issue in various countries, both developed and developing countries. In Indonesia, many programs have been rolled out by the government in order to reduce poverty. However, precise and accurate data is needed so that poverty reduction does not become a futile step. So far, poverty reduction programs have only touched the level of the poor, while the near-poor/vulnerable poor have not been a policy priority. In fact, the population in this group is very vulnerable to falling into the category if they get a little shock, both social and economic. Some experts reveal that poverty is not only an economic/monetary problem, but other sides experience deficiencies, namely in the dimensions of education, health, and other social variables. This study aims to determine what variables affect vulnerable poor households in Jambi Province. The data used is the 2024 Susenas data produced by BPS with the binary logistic regression analysis method. From the processing results, it is concluded that the status of the region of residence, education of the household, gender of the head of household, and age of the head of household have a significant effect on multidimensionally poor vulnerable households in Jambi Province.

Keywords: Multidimensional Poverty, Binary Logistic Regression, Jambi Province.

I. INTRODUCTION

Poverty is a dynamic social condition and is not permanent. SMERU (Social Monitoring and Early Response Unit) explains that poverty is not a characteristic that is forever attached to individuals or groups. The main factors that cause poverty, according to Kartasasmita (1996), include low levels of education, poor health, limited employment opportunities, and regional isolation. These conditions make it difficult for individuals or households to move out of poverty.

The concept of multidimensional poverty arose when it was realized that measuring poverty solely on the basis of income was inappropriate. The poor may have problems other than a lack of money, such as poor access to clean water, malnutrition, and inadequate housing.

Amartya Sen, through his book entitled "Development as Freedom," states that income is not the only tool to determine a person's capability. There are other sides that experience deprivation (deprivation) that need to get as much attention as attention to income issues in understanding poverty. These other areas include: unemployment, education, health, human rights, freedom, and other social variables. This idea was applied in the research by Alkire-Foster.

Alkire-Foster in 2007 had started to develop a measurement of multidimensional poverty, which was finally formulated into the Multidimensional Poverty Index (MPI) by OPHI (Oxford Poverty and Human Development) and the Human Development Report (UNDP) in 2010. The MPI measures poverty in three dimensions, namely the education dimension, the health dimension, and the standard of living dimension, with each indicator in each dimension. In the health dimension, there are indicators of child mortality and nutrition, the education dimension with indicators of years of schooling and school participation, while in the standard of living dimension, there are indicators of cooking fuel, toilets, water, electricity, and assets.

OPHI measures multidimensional poverty with an equal weight of 1/3 for each dimension, which is the cumulative weight of each dimension. This weight value will later be used to determine a household's multidimensional poverty status. Each weight will be multiplied by one if the household is deprived. Then the cumulative value obtained by the household if it exceeds 1/3, the status of the household is multidimensionally poor. The calculation of multidimensional poverty using the Alkire-Foster method uses a household approach, so that if a household is declared multidimensionally poor, it means that all household members are also categorized as multidimensionally poor.

The 2005-2025 Long-Term Development Plan (RPJPN) stated that poverty is positioned as a problem that can be caused by several dimensions (multidimensional). Therefore, poverty is not only defined in terms of income, but also concerns the vulnerability and susceptibility of people to become poor, and the basic rights that must be fulfilled, and differences in treatment in living in society.



To determine policies to reduce poverty, information on the factors that cause poverty is needed. In relation to poverty reduction in Indonesia, many programs have been initiated by the government to improve the status of the community from poor to non-poor. The World Bank notes that Indonesia has made remarkable progress in reducing poverty over the past 15 years, which is now below 10 percent. During this period, Indonesia's middle class grew from 7 percent to 20 percent of the total population, or around 52 million people. But we need to pay attention to the poor who have just crossed the poverty line. They make up 45 percent of Indonesia's population, or 115 million people.

So far, poverty reduction programs have only touched the level of the poor, while the near-poor/vulnerable poor have not been a policy priority. In fact, the population in this group is very vulnerable to falling into the category if they get a little shock, both social and economic.

According to (World Bank 2020), poverty vulnerability refers to the possibility or probability of becoming poor or poorer in the future. Poverty vulnerability is a household's exposure to ex ante (yet to happen) risks. Simply put, economic turmoil will cause poor, poverty-vulnerable households to fall below the poverty line.

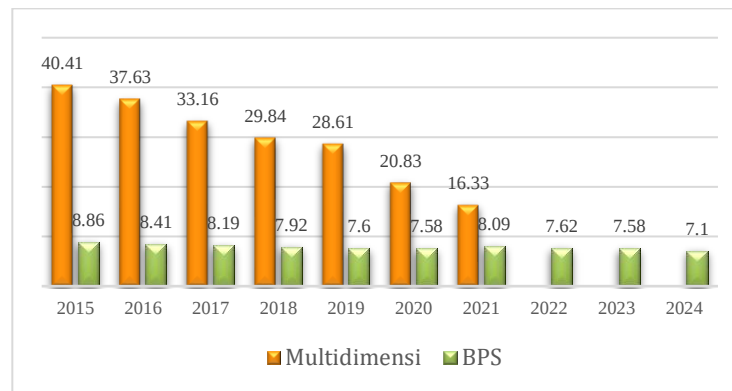


Fig. 1 Multidimensional and Monetary Poverty Trend in Jambi Province 2015-2024

The percentage of poor people in Jambi Province monetarily shows a downward trend from 2015, which was at a position of 8.86 percent or 300 thousand people, until 2024 at a position of 7.1 percent or 265 thousand people, except in 2021, which increased slightly and then fell back to 2024.

In general, the multidimensional poverty rate in Jambi Province showed a significant downward pattern in the 2012-2021 period. The multidimensional poverty rate in 2012 fell from 58.88 percent to 16.33 percent in 2021. A significant decline occurred in rural areas from 69.21 percent in 2012 to 20.83 percent in 2020, but the latest data for 2022 to 2024 is not yet available.

There is a considerable gap between the monetary poverty calculation calculated by BPS and the multidimensional poverty calculated by Prakarsa in Jambi Province during the 2015-2024 period. However, the gap is decreasing every year, whereas in 2015 the poverty calculation gap was 32 percent, until in 2021 it was only around 8 percent. This can be interpreted that many policies have been implemented by the government in order to reduce poverty from various dimensions.

In terms of poverty status, according to BPS data in 2023 in Jambi Province, there were 32.16 percent of the population who were vulnerable to poverty; 5.33 percent of the population were poor and 2.24 percent of the population were very poor. BPS limits the population to the near-poor group if the monthly per capita expenditure ranges from 1-1.6 GK, while if the expenditure is less than 1 GK, it will be categorized as poor and very poor. From this data, it can be seen that the proportion of the population in Jambi Province with near-poor poverty status has the largest proportion.

II. LITERATURE REVIEW

BPS uses a poverty line with an absolute poverty approach. The food sufficiency standard is defined as the sum of food needs equivalent to 2,100 kilocalories per capita per day plus expenditure on non-food needs. The World Bank, in a report titled *Aspiring Indonesia - Expanding the Middle Class* states that there are 114.7 million people who are categorized as heading towards the middle class, and 61.6 million people are categorized as vulnerable groups. In this classification, the World Bank defines the vulnerable population as a group of people with expenditures of IDR 354,000 to IDR 532,000 per person per month, while the group towards the middle class is IDR 532,000 to IDR 1,200,000 per person per month. The basis for calculating the World Bank's poverty rate refers to the 2017 Purchasing Power Parity (PPP). The World Bank sets the extreme poverty limit at US\$ 2.20 per person per day, the lower middle class at US\$ 3.30, and the upper middle class limit at US\$ 7.75 per person per day (World Bank 2019).

Narayan provides a view of poverty that is multidimensional and interconnected between one dimension and another. The causes of multidimensional poverty according to Narayan are: (1) the poor lack access to basic infrastructure, rural roads, transportation, and clean water; (2) poverty is closely related to psychological dimensions, such as powerlessness, inability to voice, dependency, shame, and humiliation; (3) the poor see education as the best way out of poverty.

(Puspa Artha and Misdawita 2023) Calculated multidimensional poverty in West Java Province using 5 dimensions of welfare, namely education, health, living standards, wealth, and employment, with a total of 19 indicators. This study concluded that the number of multidimensionally poor people in rural areas is twice that of multidimensional poverty in urban areas.

(Murti and Kurniawan 2019) Have conducted multidimensional poverty research in Bengkulu Province using influential variables, namely the number of household members, education of the head of the household, gender of the head of the household, and the classification of the area of residence.

According to Andry (2018), the population vulnerable to poverty can be influenced by the education factor of the household head, the status of the area of residence, and the number of productive household members. People living in rural areas will be more likely to fall into poverty in the next period than those living in urban areas. This study also shows that the worse the social conditions of vulnerable households, the greater the chance of vulnerable households falling into poverty in the next period.

The global Multidimensional Poverty Index (MPI) measurement uses 10 indicators of poverty dimensions, such as health, education, and living standards, to calculate individual losses. The multidimensional poverty index that OPHI uses to calculate the world's small and medium-sized enterprises relates to two characteristics. First, the indicator includes people living in neighborhoods that do not meet the minimum standards of the International Multidimensional Poverty Index for basic functions such as malnutrition, education, and clean water consumption. Second, it refers to people who do not meet the requirements.

In Indonesia, multidimensional poverty measurement is carried out by Prakarsa, referring to the Alkire-Foster method in the form of the Multidimensional Poverty Index (MPI). Prakarsa published three calculations of multidimensional poverty in Indonesia, namely the calculation of the IKM in 2012-2014, then in 2015-2018, and 2012-2021. The use of dimensions in the two publications is the same, but the indicators used are different to adjust to the conditions of development trends and to better describe the conditions of poverty in a more real way. In the 2020 research, the health dimension contained indicators of sanitation, drinking water, and nutrition, while the education dimension consisted of indicators of PAUD participation and school sustainability. Meanwhile, in the dimension of living standards, Prakarsa uses indicators of cooking fuel, lighting sources, roof, floor, and wall conditions.

Referring to previous research, the researcher will use these three dimensions with indicators on the health dimension, namely proper sanitation, clean water, and nutrition. The education dimension uses indicators of household head education and school participation. Meanwhile, the standard of living dimension uses cooking fuel, house area, type of roof, wall and floor, and asset ownership. Meanwhile, the variables that are thought to affect vulnerable poor households are the status of the area of residence, education of the household head, gender of the household head, health complaints, per capita expenditure, business field of the household head, age of the household head, and work participation of the household head.

III. RESULTS AND DISCUSSION

The Headcount Ratio (H) illustrates the proportion of the population classified as multidimensionally poor in a region. According to the calculation results, out of a total of 948,359 households, 594,623 (62.7%) are categorized as not multidimensionally poor, while 217,742 (22.9%) are vulnerable to poverty, 111,779 (11.8%) are multidimensionally poor, and 24,215 (2.6%) are multidimensionally very poor. In terms of individuals, out of a total of 3,739,406 people, 2,366,472 (63.3%) are not poor, 875,915 (23.4%) are vulnerable to poverty, 404,037 (10.8%) are poor, and 92,979 (2.5%) are very poor. In other words, the Headcount Ratio (H) of multidimensional poverty in Jambi Province in 2024 was 17.21%, and the Poverty Intensity (A) was at 40.6%. Poverty intensity gives an idea of how much deprivation the multidimensionally poor experience in various dimensions of welfare. This means that residents in Jambi Province experience deprivation in 4 to 5 indicators of the 11 indicators of multidimensional poverty calculation. Meanwhile, the value of the Multidimensional Poverty Index (MPI) is 5.4%. The MPI is the product of the Headcount Ratio (H) and Poverty Intensity (A), reflecting the combination of the number of poor people and the level of deprivation they experience.

Comparisons between regions show significant variations, reflecting the level of multidimensional poverty distribution in Jambi Province. The district with the highest Headcount Ratio is Sarolangun at 20.32%, followed by Tanjung Jabung Timur (19.80%) and Tanjung Jabung Barat (18.70%). This figure is much higher than the Jambi Province average of 13.29%, indicating that more than a fifth of Sarolangun's population experiences multidimensional poverty.

The district with the highest poverty intensity is Bungo at 43.2%, followed by Merangin at 42.7% and Sarolangun at 42%. This value indicates that, on average, the multidimensionally poor in these three districts experience deprivation in more than 40% of basic welfare aspects such as education, health, and living standards.

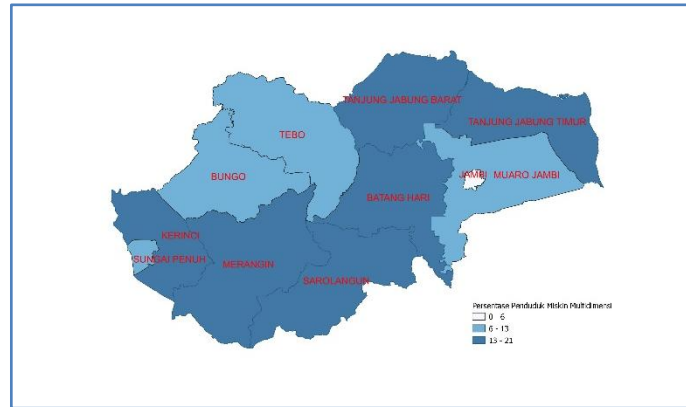


Fig. 2 Distribution of Multidimensional Poverty by Regency/Municipality

The Regency/Municipality with the highest MPI is Sarolangun at 8.5%, followed by Tanjung Jabung Timur at 8.1% and Tanjung Jabung Barat and Merangin at 7.7%. These values indicate that multidimensional poverty in these three regencies not only involves a large number of people, but also a deep level of deprivation.

The interconnectedness of these three indicators shows that multidimensional poverty alleviation is not only sufficiently focused on reducing the number of poor people (Headcount Ratio), but also needs to pay attention to the intensity of poverty experienced by the community. Regencies such as Sarolangun and Merangin require quantitative interventions to reduce the number of poor people, as well as qualitative interventions to improve access to basic services. Meanwhile, Jambi Municipality needs policies that are more oriented towards improving the quality of life of the poor by improving health services, education, and basic infrastructure.

Table 1: Contribution of Deprivation Score (c) by Regency/Municipality in Jambi Province in 2024

Regency/Municipality	Deprivation Score Contribution (c) (%)		
	Dimensions of Health	Dimensions of Education	Living Standard Dimension
Kerinci	22.80	61.96	15.24
Merangin	30.14	61.16	8.70
Sarolangun	27.77	63.86	8.38
Batang Hari	29.89	61.15	8.96
Muaro Jambi	27.61	62.40	9.99
Tanjung Jabung Timur	39.32	54.40	6.28
Tanjung Jabung Barat	23.98	67.71	8.31
Tebo	36.09	54.98	8.93
Bungo	30.02	58.65	11.33
Jambi Municipality	42.62	43.66	13.72
Sungai Penuh Municipality	31.17	47.64	21.19
Jambi Province	29.77	60.60	9.64

This relationship reinforces the argument that poverty alleviation policies must be multidimensional and not based solely on income. Regency with a high Headcount Ratio, such as Sarolangun and Merangin, shows that poverty in rural areas is more mass in nature and requires policies based on equalizing access to basic services. On the other hand, urban areas such as Jambi Municipality show that poverty is qualitative and requires interventions that are more focused on improving the quality of social services.

The health dimension contributed 29.77% to multidimensional poverty at the Jambi Province level, making it the second largest dimension after education. The education dimension contributed 60.60%, while the standard of living sector amounted to 9.64%. The dominance of the education dimension shows that the low level of community education, both in terms of the educational attainment of household heads and children's school participation, is the main factor causing multidimensional

poverty. The Regency with the highest contribution to education deprivation is Tanjung Jabung Barat (67.71%). This condition shows that low education is a determining factor of poverty in these regions, which is most likely caused by limited access to educational facilities, high school dropout rates, and low public awareness of the importance of education. The standard of living dimension contributes the least to multidimensional poverty with a provincial average of 9.64%. This shows that most people in Jambi Province have relatively good access to basic needs such as electricity, clean water, and sanitation. However, there are several districts/cities with a higher contribution to living standards deprivation than the provincial average, for example, Sungai Penuh Municipality (22.19%) has the highest contribution to the living standards dimension compared to other regions.

Table 2: Binary Logistic Regression Processing Results

Variables	Coefficient (B)	Sig. (p-value)	Wald	Exp (B)
Regional Status of Residence	0,237	0,002	9,655	1,267
Head of Household Education	0,794	0,000	134,391	2,213
Gender of Head of Household	0,296	0,004	8,338	1,345
Health Complaints	-0,004	0,951	0,004	0,996
Expenditure per Capita	0,916	0,000	36,830	2,499
Employment of Head of Household	0,296	0,000	18,241	1,344
Age	-0,093	0,000	27,209	0,911
Employed Participation of the Head of Household	-0,395	0,004	8,248	0,674
Age Squared	0,001	0,000	27,710	1,001
Constant	0,342	0,439	0,599	1,408

The binary logistic regression equation model that explains the variables that affect multidimensional poverty in vulnerable households in Jambi Province in 2024 is as follows:

$$\hat{y}(x) = 0,342 + 0,237wilayah + 0.794didik + 0,296JK - 0,004sehat + 0,916pengeluaran + 0,296lapangan - 0,395kerja - 0,093umur$$

Description:

Wilayah	: Regional Status of Residence	Pengeluaran	: Expenditure per Capita
Didik	Head of Household Education	Lapangan	Employment of the Head of Household
JK	: Gender of Head of Household	Kerja	Employed Participation of the Head of Household
Sehat	: Health Complaints	Umur	: Age

From the Wald test results used to see the effect of the dependent variable partially, it is concluded that of the 8 independent variables, only 1, namely health complaints, does not have a significant effect on multidimensionally poor vulnerable households. This means that the status of the region of residence, education of the household head, gender of the household head, per capita expenditure, business field of the household head, age of the household head, and work participation of the household head affect multidimensionally poor vulnerable households in Jambi Province.

Interpretation of Logistic Regression Coefficient (Exp(B))

- The Regional Status of Residence variable shows that rural households are 1.26 times more likely to be multidimensionally poor than urban households.
- The Head of Household Education variable has a coefficient of 0.794 with an Exp(B) value of 2.213, indicating that households with a low education ($\leq$ junior high school) are 2.2 times more likely to be multidimensionally poor than households with a higher educated head of household.
- The Gender of Household Head variable shows that households with a female household head have a 1.34 times greater risk of being multidimensionally poor than households with a male household head.
- The variable Expenditure per Capita Below the Poverty Line has an Exp(B) value of 2.499, which means that households with expenditure below the poverty line have almost 2.5 times greater risk of becoming multidimensionally poor than households with expenditure above the poverty line.
- Employment also contributes significantly, with households where the head of household works in the agricultural sector having a 1.34 times greater risk of being multidimensionally poor.
- The coefficient of the age variable of -0.093 indicates that every one-year increase in the age of the household head tends to reduce the risk of vulnerability by 9.3%. The value of Exp(B) = 0.911 indicates that households with older household heads are less likely to be vulnerable to multidimensional poverty.

- However, this relationship is not linear. The age squared variable (age2) has a positive coefficient of 0.001 with a significance level of 0.000, indicating that at a certain age, the risk of vulnerability increases again. This pattern of relationship suggests that households with very old household heads have a higher risk of vulnerability, possibly due to decreased productivity, physical limitations, and higher health cost requirements.
- In contrast, households with a non-working head of household have a lower risk ($\text{Exp}(B) = 0.674$) of being multidimensionally poor than working households. This may be due to social support or assistance from extended family for non-working households.

IV. CONCLUSION

The number of multidimensionally poor households in Jambi Province amounted to 217,742 households (22.9%) or 875,915 people (23.4%). Deprivation experienced by the population in Jambi Province occurred in the education dimension, with an average contribution of 60.60%, which occurred in all districts/cities. The dominance of the education dimension shows that the low level of community education, both in terms of the educational attainment of household heads and children's school participation, is the main factor causing multidimensional poverty.

All variables, other than health complaints, affect multidimensionally poor vulnerable households in Jambi Province, namely regional status of residence, education of the head of household, gender of the head of household, health complaints, per capita expenditure, work participation, employment of the head of household and age of the head of household.

The highest trend of influencing variables is per capita expenditure; households with per capita expenditure below the poverty line have almost 2.5 times greater risk of being multidimensionally poor than households with expenditure above the poverty line.

The variables that have a large tendency to influence households to be vulnerable to poverty are the education of the household head and per capita expenditure per month. Therefore, there needs to be attention from the government to improve the skills and education of household heads and prospective household heads so that, with a higher education, they can have a good job and can fulfill household needs and increase their productivity.

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