Analysis of the Determinants of Poverty Among the Productive-Age Population in Rokan Hilir Regency

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Abstract. Poverty is a condition in which individuals are unable to meet a decent standard of living, and it remains a major development issue in many regions. Efforts to reduce poverty are often difficult to achieve if inappropriate approaches are applied. Therefore, optimizing the potential of the population, particularly those in the productive age group, is a key strategy in poverty alleviation. This study aims to analyze the effects of education level, employment status, savings ownership, mobile phone ownership, and health complaints on the poverty level of the productive-age population in Rokan Hilir Regency in 2024. The method employed is binary logistic regression. The findings reveal that employment status and health complaints have a significant influence on poverty. Individuals who work in non-casual employment are less likely to experience poverty compared to casual workers. In addition, productive-age individuals without health complaints are also less likely to fall into poverty. Based on these findings, it is recommended that the local government increase the creation of formal job opportunities and strengthen public health services, particularly for the productive-age population. Such policies are expected to sustainably reduce poverty rates in Rokan Hilir Regency.
Keyword: Poverty, Produtive-age population

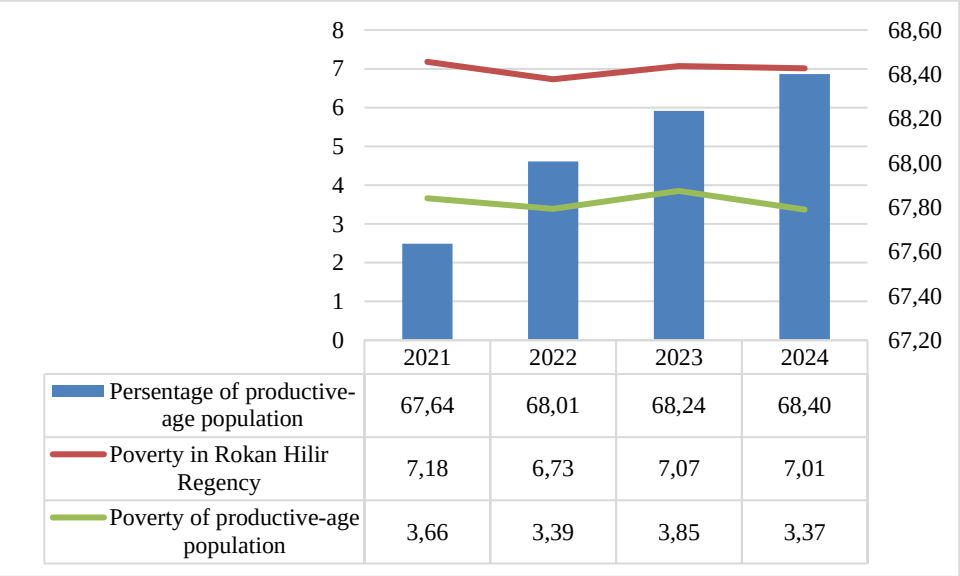
1. Introduction

Poverty is a fundamental issue faced by all countries in the world, including Indonesia. This problem has been the focus of governments worldwide since 2000, marked by the introduction of the Millennium Development Goals (MDGs), in which the first of the eight goals was to eradicate poverty and hunger. This commitment continued with the adoption of the Sustainable Development Goals (SDGs), where the first goal also emphasizes poverty eradication. The targets set in the SDGs, including poverty alleviation, are expected to be achieved no later than 2030.

Poverty is defined as a condition in which individuals are unable to meet a decent standard of living in a given area. This condition is characterized by low household income, which results in the inability to afford basic daily needs. In Indonesia, poverty is categorized based on the basic needs approach, measured through monthly household consumption expenditures.

Poverty alleviation has become a major agenda in every region, including Rokan Hilir Regency. The local government has made various efforts to reduce poverty levels; however, these efforts have not yet produced optimal results, particularly among the productive-age population. Productive-age population defined as population that aged between 15 to 64 years (Weber, M., & Langbein, J. ,2021). According to Mantra (2000), the positive potential of a large productive-age population is that the more household members are working, the fewer dependents each household will have. Nevertheless, the poverty rate in Rokan Hilir Regency during 2020–2024 has tended to stagnate, and in 2023 the percentage of poor

residents even increased. On the other hand, the growth of the productive-age population has not contributed significantly to reducing poverty levels.



	2021	2022	2023	2024
Persentage of productive-age population	67,64	68,01	68,24	68,40
Poverty in Rokan Hilir Regency	7,18	6,73	7,07	7,01
Poverty of productive-age population	3,66	3,39	3,85	3,37

Figure 1. Poverty in Rokan Hilir Regency

Poverty among the productive-age population remains relatively high. The data show that poverty within this group is around 3 percent, with the highest rate occurring in 2023. Between 2021 and 2023, poor residents were still predominantly from the productive-age population, with the largest proportion recorded in 2023, when 54.53 percent of the poor were classified as productive-age individuals.

The slow decline in poverty levels, particularly among the productive-age population in Rokan Hilir Regency, requires special attention from the local government. Comprehensive measures are crucial to achieve a prosperous society and to meet the first goal of the SDGs, namely poverty eradication by 2030, especially given the continuing growth of the productive-age population. Therefore, it is necessary to conduct an analysis of the determinants of poverty among the productive-age population in Rokan Hilir Regency in 2024.

2. Research Method

2.1. Concept of poverty

Several institutions have defined the concept of poverty. The World Bank defines poverty in monetary terms, focusing on the minimum resources required to meet basic needs (World Bank, 2022). BAPPENAS (2018) defines poverty as a condition of an individual's inability to fulfill basic needs standards. Meanwhile, BPS-Statistics Indonesia (2024) states that individuals whose average monthly per capita expenditure falls below the poverty line are classified as poor. In this text, poverty line describe as poverty line in region of Rokan Hilir regency.

2.2. Determinant of poverty

There are various factors that contribute to poverty. According to the Narayan, D., Pritchett, L., & Kapoor, S. (2009), poverty can arise from four perspectives: regional, community, household, and individual. From the regional perspective, poverty is influenced by limited infrastructure in remote areas, weather, climate, environmental conditions, and inadequate government policies. At the community

level, limited access to employment opportunities and public goods and services increases poverty. From the household perspective, household size, dependency ratio, gender of the household head, asset ownership, and income level are key factors. At the individual level, age, ethnicity/race, education, employment status and type, as well as health status, all affect poverty.

Several previous studies serve as references for this research. Anyanwu (2013) argues that low levels of education contribute to poverty. Similarly, Amao, Ayantoye, and Fanifosi (2017) found that living standards, education, health, and assets significantly contribute to poverty. Astuti (2018) further identified that dependency ratio, household size, education of the household head, and employment sector of the household head are significant determinants of poverty. Cruz & Ahmed (2018) found that child dependency ratio, aged dependency ratio, education of women, and human capital are significant determinants of poverty. Garza-Rodriguez et al. (2021) founds that informal worker contribute to increase poverty. Mdluli & Dunga (2021) founds that income, household size, head of household characteristics such as gender, marital status, age and population group size are significant determinants of poverty. Mukherjee & Benson (2003) founds that education, formal wage worker, and assets are significant determinants of poverty.

2.3. Productive-age population

According to the BPS-Statistics Indonesia, individuals are considered to be in the productive age group if they fall within the age range of 15 to 64 years. At this stage, individuals are assumed to have the capacity to produce goods or services and to meet their living needs optimally. A high proportion of the productive-age population, if managed effectively, can result in higher income levels, improved quality of life, and a reduction in poverty rates.

2.4. Casual Worker

Casual Worker is a person who does not work permanently for other people/employer/ institution (more than 1 employer during previous month) in non-agriculture based on remuneration paid with money or goods, and based on daily or contract payment system (BPS-Statistics Indonesia, 2025)

2.5. Frame of mind

In this study, the poverty status of the population was determined based on per capita monthly expenditure using data from the March 2024 Susenas Consumption and Expenditure Module. The per capita expenditure was then compared with the poverty line established by the BPS-Statistics Indonesia. The analysis of poverty status among the productive-age population was conducted by examining several independent variables. The independent variables included in this study are education level, employment status, savings ownership, mobile phone ownership, and health complaints.

2.6. Data Source

The data source used in analyzing poverty levels is secondary data obtained from the BPS-Statistics Indonesia, namely the 2024 Susenas Consumption and Expenditure Module and the Module on Individual and Household Characteristics for Rokan Hilir Regency.

2.7. Method

The scope of this report covers the productive-age population who have never attended school or are no longer in school in Rokan Hilir Regency in 2024. The dependent variable used in this report is poverty status, while the independent variables include education level, employment status, savings ownership, mobile phone ownership, and health complaints. The purpose of this report is to identify the determinants of poverty among the productive-age population in Rokan Hilir Regency. The variables used in this report are as follows:

Table 1. The list of variable

Variables	Variable Name	Category
Dependent Variable	Y: Poverty Status	0 = Not Poor 1 = Poor
Independent Variables	X1: Education Level	0 = Up to Primary School* 1 = Junior High School and above
	X2: Employment Status	0 = Casual Worker* 1 = Unemployed 2 = Non-casual Worker
	X3: Savings Ownership	0 = No savings* 1 = Has savings
	X4: Mobile Phone Ownership	0 = No mobile phone* 1 = Has mobile phone
	X5: Health Complaints	0 = Complaints interfere with daily activities* 1 = Complaints do not interfere with daily activities 2 = No health complaints

*reference category

3. Result and Discussion

The following are the results of research using binary logistic regression.

3.1. Goodness of fit test

The results of the model fit test using the Hosmer–Lemeshow Test show a p-value of 0.234. The non-significant p-value indicates that the constructed model is adequately fit to predict the data.

Table 2. Result of hosmer and Lemeshow Test

Step	*Chi-square*	*df*	*Sig*
1	*9.261*	*7*	*.234*

3.2. Simultaneous test

Based on the results of the simultaneous test using the omnibus test, the p-value obtained was 0.016. Since the p-value is less than the significance level of 0.05, H0 is rejected. This indicates that, at the 5 percent significance level, at least one independent variable has a significant effect on poverty status. Therefore, a model that includes independent variables is preferable to a model without independent variables.

Table 3. Result of omnibus test of model coefficients

Step	*Chi-square*	*df*	*Sig*
1	*17.159*	*7*	*.016*

3.3. Partial test

Based on the results of the binary logistic regression analysis in Table 4 , the variables that significantly influence poverty levels are health status and employment status, while savings ownership, mobile phone ownership, and education level do not have a significant effect. The health variable overall shows a significant effect on poverty levels (p = 0.010) with an odds ratio Exp(B) = 0.428. This means that

productive-age population with health conditions in category (2) have a 0.428 times likelihood of being poor compared to productive-age population in the reference health category, or in other words, a reduction in the probability of poverty by 57.2%. Employment status also significantly affects poverty levels (p = 0.038). For employment status category (2), the result shows p = 0.014 with an odds ratio Exp(B) = 0.399. This indicates that productive-age population in employment status category (2) are 0.399 times as likely to be poor compared to the reference category, which corresponds to a 60.1% reduction in the likelihood of poverty. Meanwhile, savings ownership (p = 0.996), mobile phone ownership (p = 0.260), education level (p = 0.571), and other categories of health and employment status are not found to significantly influence poverty levels. In conclusion, health status and employment status are important factors influencing productive-age population poverty, while ownership of simple assets (savings and mobile phones) as well as education level do not have a significant impact in this model.

Table 4. Result of partial test

Var	B	SE	Wald	df	Sig.
Savings	-0.001	0.271	0.000	1	0.996
Hanphone	-0.356	0.317	1.266	1	0.260
Health			7.059	2	0.029
Health (1)	-0.414	0.356	1.352	1	0.245
Helath (2)	-0.848	0.328	6.704	1	0.010
Education	-0.152	0.268	0.320	1	0.571
Work			6.545	2	0.038
Work (1)	-0.462	0.377	1.507	1	0.220
Work (2)	-0.918	0.373	6.061	1	0.014
Constant	-1.546	0.466	10.983	1	0.001

4. Conclusion

The result on this paper is the employment status and health complaints have a significant influence on poverty. Individuals who work in non-casual employment are less likely to experience poverty compared to casual workers. In addition, productive-age individuals without health complaints are also less likely to fall into poverty. Based on these findings, it is recommended that the local government increase the creation of formal job opportunities and strengthen public health services, particularly for the productive-age population. Such policies are expected to sustainably reduce poverty rates in Rokan Hilir Regency.

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