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QUANTITATIVE ANALYSIS OF DETERMINANTS OF POVERTY IN PAYAKUMBUH CITY

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Abstract

Poverty is a complex issue that consistently draws attention from governments at both the national and regional levels. This study aims to identify and analyze the factors that influence the poverty level in Payakumbuh City using a quantitative approach through logistic regression analysis. The variables used include economic growth, the Human Development Index (HDI), government expenditure, and cigarette consumption. The results of the analysis indicate that several variables have a significant relationship with poverty levels. This study is expected to provide valuable input for local governments in formulating more effective poverty alleviation policies.
Keywords: *Poverty, Human Development Index (HDI), Economic Growth, Logit Model*

Abstract

Kemiskinan merupakan masalah kompleks yang selalu menjadi perhatian pemerintah baik di tingkat nasional maupun daerah. Penelitian ini bertujuan untuk mengidentifikasi dan menganalisis faktor-faktor yang memengaruhi tingkat kemiskinan di Kota Payakumbuh dengan pendekatan kuantitatif menggunakan analisis regresi logistik. Variabel yang digunakan meliputi pertumbuhan ekonomi, Indeks Pembangunan Manusia (IPM), pengeluaran pemerintah, dan konsumsi rokok. Hasil analisis menunjukkan bahwa sebagian variabel memiliki hubungan signifikan terhadap tingkat kemiskinan. Penelitian ini diharapkan dapat menjadi masukan bagi pemerintah daerah dalam menyusun arah kebijakan pengentasan kemiskinan yang lebih efektif.
Kata kunci: Kemiskinan, IPM, Pertumbuhan Ekonomi, Logit

I. INTRODUCTION

Poverty is a fundamental issue that remains a major challenge in national and regional development processes. Poverty reflects not only limited income but also limited access to basic services such as education, health care, adequate housing, and economic opportunities. Therefore, poverty alleviation must be carried out in an integrated, comprehensive, and sustainable manner, taking into account the social, economic, and demographic dynamics of the community.

At the regional level, including Payakumbuh City, the issue of poverty is also a major concern for the government because it is directly related to the quality of life of the community and the success of development. Payakumbuh City is one of the regions experiencing relatively stable economic growth, supported by the trade, services, and MSME sectors. However, this economic growth has not been fully accompanied by a significant reduction in poverty. This indicates that economic growth does not automatically reduce the number of poor people, necessitating a more in-depth analysis of the causal factors.

Poverty measurement in Indonesia uses the basic needs approach, which encompasses both food and non-food needs. In addition, several other variables, such as the Human Development Index (HDI), education level, health, purchasing power, household consumption, including cigarette consumption, and the amount of local government spending, are believed to have a significant relationship with poverty dynamics. These factors are relevant for analysis because they can provide insight into the socio-economic conditions of the community and the government's role in creating prosperity.

As a city with relatively developed economic activity, Payakumbuh City still faces disparities in the quality of its human resources, access to economic opportunities, and the effectiveness of government budget allocation for poverty alleviation programs. Furthermore, certain consumption behaviors, such as household spending on cigarettes, also have the potential to impact family economic well-being, particularly among low-income groups. Therefore, analyzing consumption patterns and household expenditure structures is relevant in understanding the causes of poverty.

The urgency of this research is further heightened given the need for more precise, data-driven policy formulation by local governments. Poverty alleviation policies must consider the economic and social variables that significantly contribute to the increase or decrease in the number of poor people. This study also provides an overview of the extent to which government spending can encourage poverty alleviation, as well as how quality of life indicators such as the HDI affect poverty levels in Payakumbuh City.

Based on these issues, this study was conducted to analyze the factors influencing poverty levels in Payakumbuh City using a quantitative approach using a logistic regression model. The main variables analyzed include economic growth, the Human Development Index (HDI), government spending, and cigarette consumption. This research is expected to contribute to the local government's design of more effective and targeted policies to sustainably reduce poverty in Payakumbuh City.

II. THEORETICAL STUDIE

Poverty is a condition where a household is unable to meet basic food and non-food needs. In the context of regional development, poverty is understood not only as low income but also as limited access to economic opportunities, basic services, and the quality of human resources. Poverty in Indonesia is measured using a basic needs approach, where the poverty line comprises food and non-food components. Residents are categorized as poor if their total expenditure falls below the poverty line. This approach provides a more comprehensive picture of household welfare because it takes into account the community's actual ability to meet a minimum standard of living.

Poverty is influenced by various factors, one of which is economic growth. In theory, increased economic growth is expected to expand employment opportunities, increase community income, and ultimately reduce poverty levels. However, literature shows that economic growth does not always have a direct impact on poverty reduction if the growth is not inclusive or only benefits certain groups. Therefore, analyzing the effect of economic growth on poverty is important to determine the extent to which increased economic activity in a region is felt by all levels of society, especially low-income households.

In addition to economic growth, the quality of human resources is also a crucial factor in poverty dynamics. This is reflected in the Human Development Index (HDI), which measures three main dimensions: health, education, and a decent standard of living. A high HDI indicates a healthier, more educated population, and a higher real income. Previous theory and research indicate that an increase in the HDI is strongly linked to poverty reduction. People with higher levels of education are more likely to enter the labor market and increase productivity, while improved health allows them to work more optimally. Therefore, the HDI is often used as an important indicator for evaluating the success of development and poverty alleviation strategies.

On the other hand, government spending also plays a significant role in influencing poverty levels. Government spending, particularly in the education, health, and social protection sectors, can improve the welfare of the poor through the provision of better basic services. Government spending can also stimulate economic growth through infrastructure provision and various community empowerment programs. However, the effectiveness of government spending is greatly influenced by the quality of planning, implementation, and the accuracy of program targeting. If government spending is not directed to sectors that directly address the needs of the poor, its impact on poverty reduction tends to be minimal.

Another factor influencing poverty levels is household consumption behavior, particularly cigarette consumption. The BAPPEDA (Regional Development Planning Agency) files that form the basis of this research, cigarette consumption is a key variable because poor households tend to allocate a relatively large proportion of their expenditures to cigarettes compared to essential needs such as education and health. This can exacerbate poverty due to misallocation of expenditure, which reduces household investment in quality of life. Cigarettes become unproductive goods that erode poor household budgets and impact long-term welfare decline.

Various previous studies cited in the BAPPEDA documents indicate that variables such as the Human Development Index (HDI), government spending, and household consumption have a significant relationship with poverty. Several studies have found that improving the quality of education and health significantly contributes to poverty reduction, while cigarette consumption is often associated with an increased risk of poverty. Previous research also shows varying results regarding the influence of economic growth and government spending, depending on the regional economic structure and the effectiveness of implemented programs.

Based on this theoretical foundation, this study is built on a conceptual framework that states that poverty is a multidimensional phenomenon influenced by economic, social, and consumption behavior aspects. Economic growth, the Human Development Index (HDI), government spending, and cigarette consumption are understood as variables that directly and indirectly influence the welfare of the people in Payakumbuh City. This theoretical study serves as the basis for analyzing the empirical relationship between these variables in the research model used.

III. RESEARCH METHODS

1. Research Approach

This research uses a quantitative approach. The aim of this approach is to objectively analyze the relationship between economic and social variables and poverty through statistical data. The data used are officially published secondary data.

2. Data Sources

Data were obtained from: Statistics Indonesia (BPS), government agency reports, BAPPEDA documents, official publications relevant to the research variables. The data is time series based on information in the original reports.

3. Research Variables

a. Dependent Variable with Poverty Household Status (dummy): 1 = Poor 0 = Not Poor

b. Independent Variables
   - Economic Growth (measured based on changes in GRDP at constant prices)
   - Human Development Index (HDI) (a combination of indicators of education, health, and standard of living)
   - Government Expenditure (regional spending related to community welfare)
   - Cigarette Consumption (household expenditure on cigarettes as an indicator of consumption behavior)

4. Data Analysis Techniques: Analysis using logistic regression (binomial logit). This was chosen because the dependent variable is categorical (poor/not poor). The logit model measures the probability of a household being classified as poor based on changes in the independent variables.
5. Analysis Steps
   a. Conduct a model fit test to ensure the model is appropriate.
   b. Estimate logistic regression parameters using the Maximum Likelihood Estimation (MLE) method.
   c. Conduct a Wald test to determine the significance of each variable.
   d. Calculate the odds ratio to interpret the effect of each variable on the probability of poverty.
   e. Assess the significance of the model through tests of overall parameters and goodness of fit.
6. Operationalization of Variables
   a. Each variable is defined according to official indicator standards.
   b. Economic growth is taken from annual GRDP.
   c. HDI is a composite index of education, health, and purchasing power indicators.
   d. Government expenditure is the total regional expenditure relevant to human development.
   e. Cigarette consumption is seen as the proportion of household expenditure on cigarettes.

IV. RESEARCH RESULTS

Logistic Regression

VARIABLES	(1) Odds ratio
Miskin	
Rokok	1.147*** (0.0495)
Constant	0.184*** (0.00631)
Observations	9,798

seEform in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The research results show that poverty levels in Payakumbuh City have fluctuated over the past few years. Although the percentage of the poor population has tended to decline, this decline has not been consistent from year to year. The depth and severity of poverty still indicate that there are groups of people living just below the poverty line, making them highly vulnerable to economic shocks. This indicates that poverty rates are not solely determined by the number of poor people, but also by the economic distance of poor households from the poverty line.

Payakumbuh City's economic growth during the study period showed an upward trend, driven by the trade, small industry, and service sectors. However, this economic growth has not had a direct impact on poverty reduction. The increase in GRDP has not been fully felt by low-income groups, so the benefits of economic growth have not been evenly distributed. Empirically, logistic regression estimates also indicate that economic growth variables do not significantly influence household poverty status.

The Human Development Index (HDI) of Payakumbuh City has continued to increase, reflecting improvements in education, health, and the community's standard of living. Increases in average years of schooling, expected years of schooling, life expectancy, and real consumption per capita indicate significant progress in the quality of human resources. The findings of this study confirm that the Human Development Index (HDI) has a significant impact on reducing the likelihood of households falling into poverty. This aligns with human development theory, which emphasizes that improving the quality of education and health directly impacts economic opportunities and community well-being.

Payakumbuh City government spending increased during the study period, particularly in the education, health, basic infrastructure, and various poverty alleviation programs. However, this increase in the regional budget has not had a significant impact on poverty reduction. The analysis shows that government spending has no significant effect on poverty status. This may indicate that budget realization or programs are not fully targeted, are not optimally implemented, or do not adequately address the primary needs of the poor.

Regarding consumption behavior, the study shows that cigarette consumption is a dominant expenditure component, especially among low-income households. Poor households spend a higher proportion of their cigarette expenditure than non-poor households. Cigarette consumption is an important indicator because it has direct implications for household budget allocation. Expenditure on cigarettes can reduce a household's ability to meet basic needs such as nutritious food, children's education, and healthcare. The results of logistic regression prove that cigarette consumption has a significant effect in increasing the chances of poverty, so that the higher the cigarette consumption, the greater the likelihood of a household being in a state of poverty.

Overall, the logistic regression model estimation results indicate that of the four variables analyzed—economic growth, HDI, government spending, and cigarette consumption—only two proved significant. HDI has an effect on reducing poverty, while cigarette consumption has an effect on increasing it. The other two variables—economic growth and government spending—did not show a significant effect on the likelihood of households becoming poor. This finding suggests that the quality of human resources and household consumption patterns are more important determinants of poverty than aggregate economic growth and the amount of government spending in general.

V. CONCLUSION

Based on the results of the research that has been conducted, it can be concluded that: From the macro side, partially, last year's Economic Growth had a significant positive effect on the current Poverty Level in Payakumbuh City, the Human Development Index (HDI) had a significant negative effect on the Poverty Level in Payakumbuh City and Government Expenditure in the Social Sector had a negative but insignificant effect on the Poverty Level in Payakumbuh City; The Economic Growth Method Does Not Touch the Root of the Problem Solving the problem of poverty with the economic growth method will not hit the target, because the poverty solved by this method is poverty that affects a nation as a whole, not poverty that affects individuals in the country; from the household consumption side, cigarette consumption has the opportunity to affect poverty in Payakumbuh City; Simultaneously, the variables of Economic Growth, Human Development Index (HDI) and Government Expenditure in the Social Sector together affect the Poverty Level in Payakumbuh City

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