

The Effect of HDI and Unemployment Rate on Poverty in the Riau Islands

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Abstract: Poverty in the Riau Islands Province will be studied from 2018 to 2023 with a focus on how it affects HDI and unemployment rates. We analyzed secondary data obtained by the Central Statistics Agency (BPS) using quantitative methods in this research which uses a documentation approach. Random Effect Model (REM) was selected as the best estimation model after a series of panel data tests, including Chow, Hausman, and Lagrange Multiplier tests. Unemployment has a significant and positive effect on poverty according to this research (coefficient = 3971.224). This means there is an increase of 39% in the underprivileged population for every 1% increase in the unemployment rate. There is a positive and statistically significant correlation between HDI and poverty ($r=2086.092$), which shows that a 1% increase in HDI means an increase in poverty of 20%. The findings from this study show increasing employment opportunities and improving the quality of human resources as potential efforts to reduce poverty in the Riau Islands Province.

Keywords: Human Development Index, Unemployment Rate, Poverty

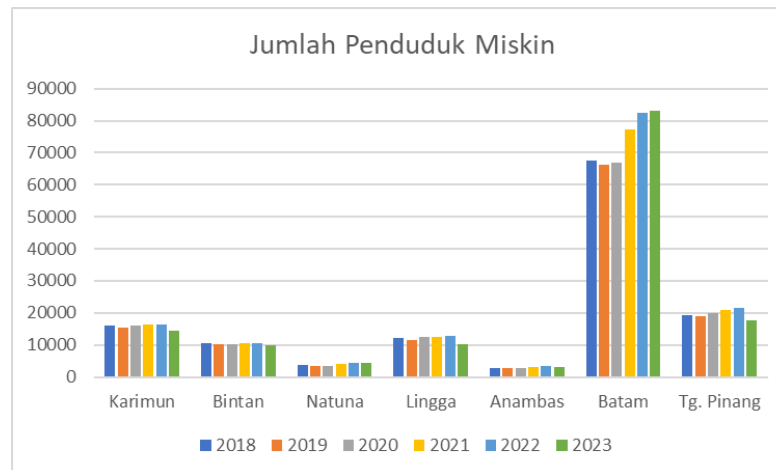
JEL: I3,J6, O1

1. INTRODUCTION

Economic growth is part of national development which aims to improve people's welfare. For developing countries, poverty alleviation is very important. This is a problem faced by all developing countries. Like many other developing countries, poverty is a major obstacle to development in Indonesia. Quoted in Tambunan's work in 2003. The breadth, diversity, and social and cultural norms and experiences of Indonesian society make poverty a complicated problem in this country. Additionally, there are a number of factors that contribute to poverty, and money is just one of them (Mataheurilla, 2021). The inability to live a decent life, being vulnerable to poverty, and being unable to fulfill basic rights are examples (Salim, 2009). A person or family is said to be poor if they are unable to meet their basic needs. Most Indonesian people live in poverty, even though this country is rich in natural resources and a fertile environment.

All districts and cities in the Riau Islands experienced a decrease in poverty rates in 2019 as seen in the graph above. In 2023, a number of districts and cities, including Karimun, Bintan, Natuna, Lingga, Anambas and Tanjung Pinang City, will also experience a decline. Two years, namely 2019 and 2023, there was a decline in Karimun Regency. This number decreased from 15,360 people in 2019 to 14,330 people in 2023. In 2019, 10,140 people left Bintan Regency, and in 2023, 9,860 people left Bintan Regency. Natuna Regency experienced a decrease of 3,430 people in 2019 and a decrease of 4,300 people in 2023. A total of 3,430 people left Lingga Regency in 2019, and in 2023 there will be 4,300 people. The population of Anambas Regency in 2019 decreased by 27,220 people, and in 2019 it was 30,080 people. In 2023. In 2019, the population of Batam City decreased by 66,210 people. The population of Tanjung Pinang City decreased by 19,050 people in 2019 and 17,670 people in 2023. Of the seven districts/cities included in the Riau Islands Province, Anambas Regency has the lowest poverty rate, while Batam City has the highest.

Chart 1 Data on the Number of Poor Population in Regencies/Cities of Riau Islands Province 2018-2023



Source: Central Statistics Agency for 2018-2023

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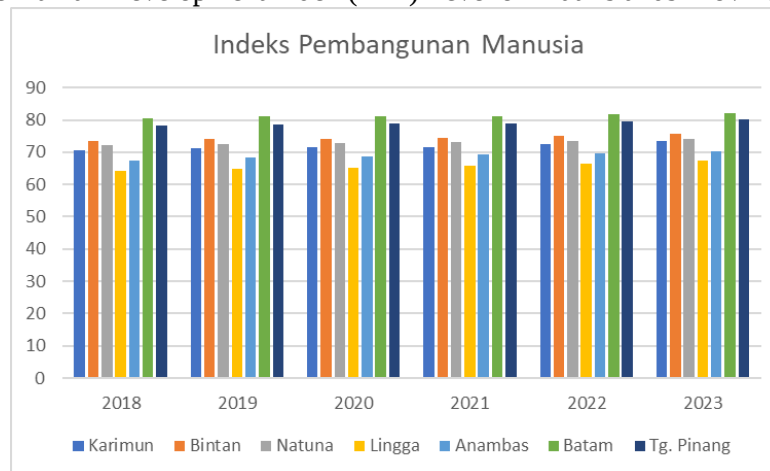
One of the main metrics for measuring a region's economic progress is the Human Progress Index (HDI). The basic pattern of regional development includes this. One of the causes of poverty is a lack of quality human resources. According to Sjafi'i and Hidayanti (2009), access to competent human resources is very important for long-term economic growth. This highlights the importance of the human development index (HDI) in managing development at the regional level. To achieve focused planning and growth, HDI and other human development indicators will play an important role. There must be a positive correlation between the poverty level and HDI, because the poverty level is a measure of a region's progress. This is because low levels of poverty and improvements in living conditions are generally believed to be associated with a high HDI (Sayifullah & Gndasari, 2016).

The HDI of Riau Islands Province has continued to increase in recent years, as can be seen in the graph above. Various Regencies and Cities in the Riau Islands in 2023 Ranked Based on the Human Development Index (HDI). The most extreme HDI values are as follows: The following districts were surveyed: Karimun Regency (73.51), Bintan Regency (75.7), Natuna Regency (74.21), Lingga Regency (67.44), Anambas Regency (70.26), Batam City (82.11), and Tanjung Pinang City (80.23). The lowest HDI ranking in 2018 was in the Regency and City of the Riau Islands. Anambas (67.53), Karimun (70.56), Bintan (73.41), Natuna (72.1), Lingga (64.06), Tanjung Pinang (78.33), and Batam City (80.54). Batam City has the largest HDI of the seven districts and cities in the Riau Islands Province, while Lingga Regency has the lowest HDI.

When human development grows faster than employment, the problem of unemployment in that location becomes worse. When a country's unemployment rate is high, it means that its development efforts are not successful. According to (Tambunan, 2011), there are several ways unemployment can impact poverty. Inability to find work while a member of the workforce. This situation is known as unemployment. As the population continues to increase every year, both the

demand for jobs and the availability of workers are likely to increase, making it increasingly difficult to overcome the persistent problem of unemployment in this country. Efforts to reduce poverty and unemployment levels are also equally important. People are not considered poor if they have a job and earn enough money to cover their basic living expenses; This is different from those who are unemployed. Simply put, a low unemployment rate is associated with ample job prospects. Aspects of a region's development process that have not been successful include excessive unemployment which can disrupt national stability due to a mismatch between the number of job seekers and the number of available jobs (Mukhtar et al., 2019).

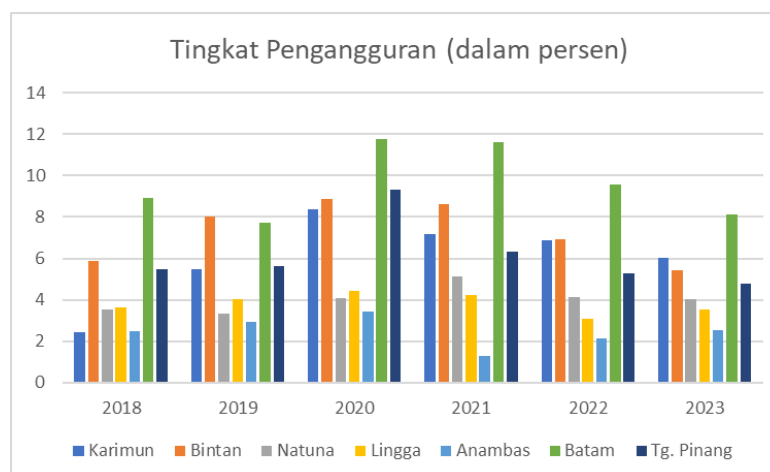
Chart 2 Data on the Human Development Index (HDI) Level of Riau Islands Province for 2018-2023



Source: Central Statistics Agency for 2018-2023

Looking at these figures, it is clear that the unemployment rate in Karimun Regency fell by 7.2% in 2021, the following year to 6.87%, and the year after that to 6.02%. There will be a decrease of 6.91 percent in 2022 and a decrease of 5.43 percent in 2023 in Bintan Regency. In 2019, Natuna Regency experienced a decline of 3.33%, followed by a loss of 4.15% in 2022, and 4.05% in 2023. A decline of 4.23 percent in 2021, 3.09 percent in 2022, and 3.52 percent in 2023 will occur in Lingga Regency. In 2021 there will be a decrease of 1.27 percent in Anambas Regency. A decrease of 9.56 and 8.14 percent respectively occurred in 2022 and 2023 in Batam City. In 2021 there was a decrease of 6.31 percent; in 2022 it will be 5.27 percent; and in 2023 it will be 4.76 percent. Batam City has the highest unemployment rate of the seven districts/cities in the Riau Islands Province, while Anambas Regency has the lowest.

Chart 3 Data on Open Unemployment Rates for Regency/City Riau Islands Province 2018-2023



Source: Central Statistics Agency for 2018-2023

The Riau Archipelago is a province in Indonesia which includes the cities of Tanjungpinang and Batam as well as the districts of Bintan, Natuna, Lingga and Karimun. This information comes from (Laws Of The Republic Of Indonesia 25 Of 2002 On Establishment Of Riau Islands Province, 2002). Based on (Law Number 33 of 2008 Concerning the Establishment of Anambas Islands Regency in Riau Islands Province, 2008) which divided the Natuna Regency area in 2008, the Anambas Islands Regency was formed. The land area of the Riau Islands is 8,201.72 km². This researcher is interested in conducting research with the following title considering the above "The Influence of HDI and Unemployment Rates on Poverty in the Riau Islands Province".

2. LITERATURE REVIEW

2.1 Human Development Index (HDI)

A composite statistic that assesses a country's average achievement in three main elements is the Human Development statistic (HDI): 1) The average length of a person's life, as determined by his or her birth certificate; 2) The average number of years a person spends in school and the literacy level of society in general; and 3) Standard of living, which is determined by the amount of money each person spends per capita. One hundred is the range of HDI values. The HDI provides a comprehensive picture of three main aspects of human development: long and healthy life expectancy (as measured by life expectancy), a decent standard of living (as measured by purchasing power or income parity), and good education (as measured by level of literacy and participation in elementary, middle, and high school). The HDI examines the complex relationship between wealth and happiness, but does not fully cover human development (which includes things like political freedom and human rights). Nonetheless, it provides a more holistic view of human growth (McGillivray, 2023).

While maintaining three key dimensions—long and healthy life, knowledge, and a decent quality of life—the United Nations Development Program (UNDP) revised its human development measurement (HDI) technique in 2010. On the other hand, metrics such as average and projected years of education, as well as gross national product (GNP) per capita, have changed over time. The three main components of HDI are obtained from calculations and formulas provided by UNDP and the Central Statistics Agency (BPS). First, life expectancy at birth is a measure of longevity. Second, the average number of years spent in school and the literacy rate of the adult population constitute the level of education, each given a weight of one third. Third, per capita income, adjusted for PPP in rupiah, is an indicator of a good standard of living. The HDI takes a basic average of these three factors. In short, the following three main components can be combined proportionally to get HDI:

$$IPM = \frac{1}{3} (\text{indeks } X_1 + \text{indeks } X_2 + \text{indeks } X_3)$$

Where:

X_1 = Length of life

X_2 = Education level

X_3 = Decent living standard (purchasing power)

2.2 Unemployment Rate

Unemployment is a worrying problem in both developed and developing countries. If someone is not working and is actively looking for work, then he is categorized as unemployed. One way to measure the unemployment rate in a country is to look at the unemployment rate, which is the percentage of the total workforce that is unemployed.

There are several forms of unemployment (Sukirno, 1994), such as:

1. Frictional Unemployment: This occurs when new workers enter the workforce and Frictional Unemployment: This occurs when people are looking for their first job in the workforce or when they move to a more productive position.
2. Structural unemployment, which occurs when there is a gap between a person's abilities and the job requirements available.
3. Cyclical unemployment occurs when the demand for labor decreases due to a downturn in the economic cycle.

4. The fourth type of unemployment is known as “seasonal unemployment,” and it occurs in industries such as agriculture and tourism where hiring patterns change with the seasons.
5. The fifth type of unemployment is known as “natural unemployment”. This occurs when the labor market is fully occupied and inflation is expected to be equal to real inflation.

2.3 Poverty

The inability to meet the most basic needs, such as food, clothing, and a safe place to live, is the definition of poverty. According to (BPS, 2019), one approach to assessing poverty is to consider the community's ability to meet their basic needs. According to this method, people are considered poor if they are unable to fulfill their most basic needs, including food and things that are not directly related to food.

The following is an explanation of the two poverty criteria proposed by (Todaro, 2006):

A. Absolute Poverty

A group of individuals is considered to live in poverty if they are unable to fulfill their most basic needs. When a person's income is less than what is needed to meet basic needs such as food and clothing, then a person is said to live in absolute poverty.

B. Relative Poverty

When a person's abilities are limited compared to other members of society, a condition called poverty will occur. The greater the degree of inequality, the greater the number of those categorized as poor.

C. Structural Poverty

The failure of development programs to address income inequality at all social levels is the main cause of this poverty.

3. METHOD

3.1 Research methods used

The research conducted used quantitative research methods. The population in focus is the entire data that has been published by BPS regarding the human development index, unemployment and poverty rates in several cities/regencies in Riau Islands Province, namely Tanjungpinang City, Batam City, Karimun Regency, Bintan Regency, Natuna Regency, Lingga Regency, Anambas Regency in 2018-2023. The sampling technique applied is purposive sampling, where the sample is selected based on certain characteristics of the target population in accordance with the objectives or research problems. (Martono, 2010).

3.2 Data collection technique

A documentation approach, namely collecting secondary data through literature and manuals, was used in this research (Asnawi, 2011).

3.3 Data analysis

To obtain research results, the data analysis technique in this study will be processed using the eviews 12 program. The test used in analyzing the data in this study is Panel Data Multiple Regression.

4. RESULTS AND DISCUSSION

4.1 Results

4.1.1 Selection of Estimation Model

The selection of the best model carried out in this study can be seen in several stages of testing, namely: Chow Test, Hausman Test, and Lagrange Multiplier (LM) Test. From the test stage, it can be produced with the best model selected, the Random Effect Model (REM).

Table 1 Random Effect Model (REM) Test Results)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	42.28649	7.313867	5.781687	0.0000
HDI	-0.483164	0.103910	-4.649852	0.0000
UNEMPLOYMENT	0.155603	0.153284	1.015133	0.3165
R-squared	0.387450	Mean dependent var		1.905665
Adjusted R-squared	0.355210	S.D. dependent var		1.823958
S.E. of regression	1.459937	Sum squared resid		80.99383
F-statistic	12.01786	Durbin-Watson stat		0.915838
Prob(F-statistic)	0.000090			

Source: E-views (processed).

Based on the results of the estimation of the regression equation, the panel data used is the Random Effect Model (REM) model. The results of the estimation of this model are as follows:

4.1.2 Estimation and Interpretation

The Random Effects Model (REM) is a method of estimating panel data regression based on the results of the Chow, Hausman, and Lagrange Multiplier tests. The estimation of this model gives the following results:

$$\text{POVERTY} = 42.2864900282 - 0.48316437633 * \text{HDI} + 0.155603366014 * \text{UNEMPLOYMENT} + [\text{CX} = \text{R}]$$

By solving this equation, we get a positive coefficient value of 0.1556 with a probability value of 0.3165 > 0.05, for the unemployment variable, it can be concluded that the poverty level in the Riau Islands is significantly and positively affected by unemployment. This is in line with previous research conducted by (Widya et al., 2023) which stated that there was a positive but insignificant relationship in seeing the Unemployment variable having a positive and insignificant effect on the poverty rate in West Nusa Tenggara Province.

The score of the human development index coefficient can be seen as - 0.483164 with a probability value of 0.000 < 0.05, indicating that it has a significant and negative impact on the poverty rate in the Riau Islands. This is in line with the theory of endogenous growth, which highlights the role that human capital plays in directing long-term economic growth. Slow economic growth will result in increased poverty as a result of a reduction in human capital, as measured by the human development index. Research conducted by (Sukron, 2021), shows that the human development index (HDI) has a negative and insignificant influence on poverty in Central Java Province, supporting this study.

Based on the above results of the F-statistical value of 12,017 and the Prob value (F-statistic) of 0.00 (<0.05), it can be concluded from the data that the poverty rate in the Riau Islands is significantly and simultaneously influenced by unemployment and the human development index. With an adjusted R-squared value of 0.387450, we can conclude that unemployment and the human development index have an impact of 38.7% on the poor population, while other factors, not mentioned in this study, have an impact of 61.3%.

4.2 DISCUSSION

a. The effect of unemployment on the number of poor people

The results of the study show that the unemployment coefficient is 0.155603 which indicates that the poverty rate in the Riau Islands will grow by 15% for every 1% increase in the unemployment rate. According to research conducted (Diah &

Harsuti, 2017) the number of poor people is positively influenced by unemployment, thus supporting the existence of beneficial associations. Therefore, we expect an increase in both the unemployment rate and the poverty rate. The government can absorb the existing workforce and reduce poverty by increasing employment. Previous studies done by (Batubara et al., 2023) which found that the unemployment variable exhibited promising trends and significantly impacted the poverty rate in Aceh Province, corroborated this finding.

b. The Effect of the Human Development Index on Poverty

The value of the human development index coefficient is -0.483164 based on the findings of the panel data regression estimation. We can conclude that the poverty rate will decrease by 48% for every 1% increase in HDI. Having access to resources that can sustain living standards, obtain information, and meet the demands of longevity are the three main aspects of development covered by the Human Development Index, according to the estimate. In other words, poverty is greatly influenced by three important aspects of human development (Sayifullah & Ratu Gandasari, 2016). Researchers in North Sumatra found a positive correlation between the Human Development Index and poverty rates from 2017 to 2022, this is in line with this positive relationship (Suryani et al., 2023) in their research.

5. CONCLUSIONS AND SUGGESTIONS

CONCLUSION

Based on the findings of this research, if we look at how unemployment affects the number of poor people, the test results show an unemployment coefficient value of 0.155603. This shows that for every 1% increase in unemployment, the poverty rate in the Riau Islands will increase by 15%. As more people lose their jobs, the number of people living in poverty will inevitably increase. If we look at the impact of the human development index on poverty, the panel data regression estimation results show a coefficient value of -0.483164. The poverty rate in the Riau Island increases by 48% for every 1% increase in the human development index. According to these estimates, the HDI includes three main components of development: the capacity to acquire knowledge, the availability of resources to maintain living standards, and the likelihood of a long and healthy life.

SUGGESTION

If researchers want to have a more complete understanding of the factors that contribute to poverty in the Riau Islands Province, then they must expand the range of variables studied in future research. Not only the unemployment rate and the Human Development Index (HDI) must be taken into account, but also factors such as education level, availability of health services, infrastructure, and government policies related to economic and social issues. The cultural and social factors that cause poverty may be better understood using qualitative research methods. To better understand the relationships between variables, it is best to use more sophisticated analytical tools such as Structural Equation Modeling (SEM) and longitudinal approaches to examine changes over time. To further evaluate the effectiveness of various policies and initiatives aimed at reducing poverty, it is recommended to conduct comparative studies with other provinces in Indonesia or other countries. This means that policy makers in the Riau Islands can benefit from more targeted and relevant suggestions based on the findings of this study in their efforts to eradicate poverty.

ACKNOWLEDGMENTS

I am writing this letter to express my deepest appreciation to all parties who have played a role in making this research possible. Mr. Dr. Eko Wahyu Nugrahadi, M.Si., has been a very dedicated professor in our Poverty Economics course, and I am very grateful to him. Her input, comments, and coordination were invaluable throughout this research. His supervision and advice were critical to the success of this research.

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