

# The Effect of Human Development Index (HDI), Economic Growth, and Open Unemployment Rate on Poverty in Bojonegoro Regency

Endang

Development Economics Research Program, Faculty of Economics, Bojonegoro University  
Bojonegoro, East Java Province, Indonesia

**Abstract:-** This study aims to determine the Effect of the Human Development Index (HDI), Economic Growth, and Open Unemployment Rate (TPT) on Poverty in Bojonegoro Regency. The method used in this research is a descriptive quantitative analysis using secondary data in the form of macro indicator data, namely the human development index, economic growth, and open unemployment and poverty rates in Bojonegoro Regency in 2013-2021. The data analysis technique used multiple linear regression analysis. The results of the Poverty regression value =  $60.38594 - 0.706179(IPM) + 0.005992(PE) + 0.29165442(TPT)$ . The regression results show that the Human Development Index (HDI) variable has a negative and significant effect on the Poverty variable in Bojonegoro Regency with a probability value of  $0.0033 < 0.05$ . Economic Growth affects the variable of Poverty in Bojonegoro Regency in 2013-2021 with a probability value of  $0.8275 > 0.05$ . The Variable Open Unemployment Rate affects poverty in Bojonegoro Regency in 2013-2021 with a probability value of  $0.2750 > 0.05$ . The F-statistic value is 13.25240 with a probability (F-statistic) of  $0.008151 < 0.05$  and an  $R^2$  value of 88.82 %.

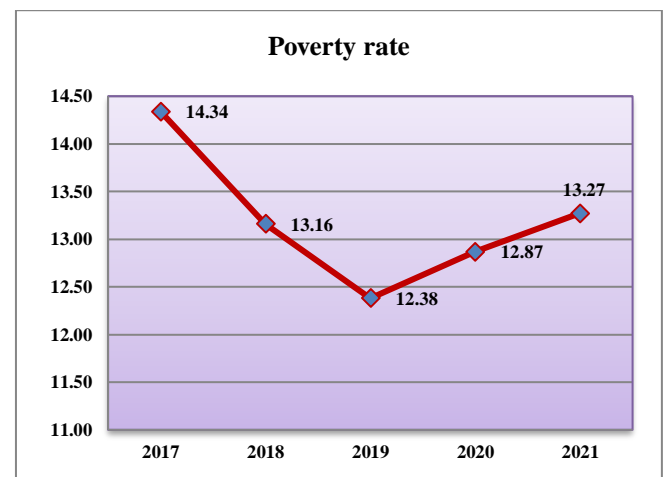
**Keywords:-** Human Development Index, Economic Growth, Open Unemployment Rate and Poverty.

## I. INTRODUCTION

The development that has been carried out by the Government is aimed at realizing the welfare of the people. To achieve this goal, the government carries out a sustainable, comprehensive, targeted, and integrated development program to improve the level of community welfare. National development in general aims to improve people's welfare which can be measured by poverty indicators. Poverty can be one of the benchmarks for socio-economic conditions in assessing the success of development carried out by local governments where high poverty levels can cause various negative impacts such as social problems and economic problems [1].

Poverty is an urgent national problem and requires systematic, integrated, and comprehensive handling steps and approaches. Poverty is a condition in which a person cannot fulfill the basic needs of his life. Poverty is related to a person's lack of access to education, health, and infrastructure facilities. Poverty is a multidimensional problem that is not only related to economic conditions but also social and cultural [2]. The cause of poverty from an economic

perspective is the result of the low quality of human resources. The low quality of human resources is caused by the low level of education. The low quality of human resources means that their productivity is also low, which in turn the wages received are also low [3]. Based on data from the Central Statistics Agency (BPS), the number of poor people from 2017 to 2019 has decreased and in 2020 and 2021 there is an increase, this is because economic activity has not yet recovered as a result of the COVID-19 pandemic.

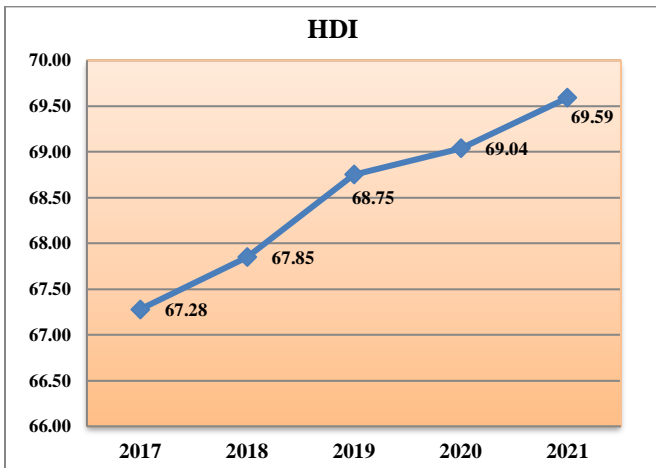


Source; BPS Bojonegoro 2022

Fig 1 ; Poverty Rate

The Human Development Index (HDI) is a parameter that measures the achievement of human development based on several basic components of quality of life that can affect the level of productivity produced by a person, in other words, the higher/better each component that composes the HDI also affects the welfare and life of the community. which is better. HDI growth is one way to see human development in a region and is an indicator of progress in human development. One of the main causes of poverty is the quality of human resources. Human development is an indicator that can explain the condition of the population of a region in having the ability to access the results of development in the region which are part of their rights as residents, meaning that a healthy society, good education and increased productivity will encourage an increase in consumption which in the end indicates that poverty is decreasing [4]. In general, the HDI of Bojonegoro Regency has increased from year to year. The increase in HDI in Bojonegoro Regency is very possible as long as all elements move together because there are many obstacles, especially from the cultural side (local values and social capital). Along

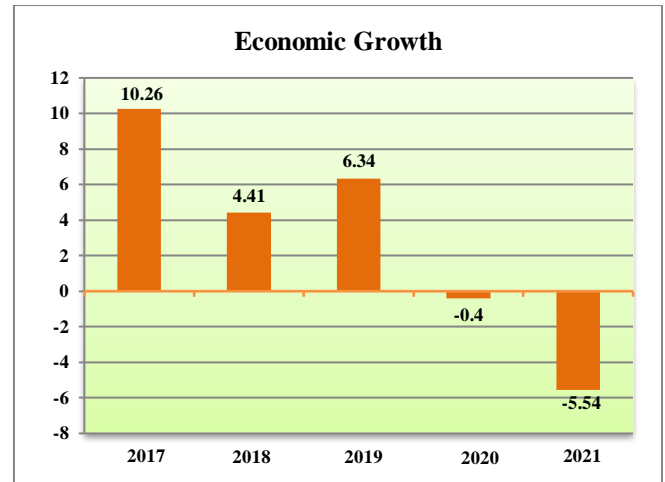
with this, it is necessary to know the value of each component that supports the HDI in each sub-district in Bojonegoro Regency, because by knowing the value in each sub-district it will be known which sub-districts have low values and need intervention handling [5]. Based on data released by the Bojonegoro Regency BPS from 2017 to 2021, it continues to increase until the HDI in 2021 is 69.59%.



Source; BPS Bojonegor 2022

Fig 2; Human Development Index (HDI)

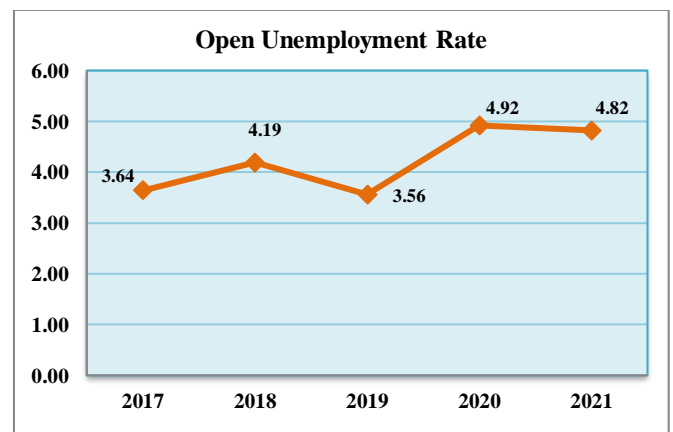
An important indicator that can be used as a benchmark for the performance of an economy, especially to analyze the results of the business that has been carried out by a region or country is by looking at economic growth. Each country will strive to reduce poverty and achieve optimal economic growth. It is said to experience economic growth if the production of goods and services increases from year to year. Economic growth describes the extent to which economic activity will generate additional income in a certain period [6]. In addition, the economy can be said to experience growth if all real remuneration for the use of production factors in a certain year is greater than the previous year. The indicator used to measure economic growth is the growth rate of Gross Regional Domestic Product (GRDP) based on constant prices [7]. Economic growth is the ability of a country to provide the need for goods and services to the community in large quantities so that it is possible for an increase in living standards which also has an impact on reducing unemployment in the long term [8]. To achieve economic growth, job opportunities are needed for the community which will have an impact on the creation of income distribution in a population. If economic growth is said to be one of the indicators of welfare, it is very important if the economic growth of the Bojonegoro Regency is considered. Based on Bojonegoro statistical center, data from the Development Planning Agency on macro indicators of economic growth in Bojonegoro Regency, the economy of Bojonegoro Regency in 2021 compared to 2020 experienced a contraction of -5.54% [9]. This can be seen in Figure 3.



Source; BPS Bojonegoro 2022

Fig 3; Economic growth

One of the main problems faced by developing countries, especially Indonesia in economic development, is the problem of limited employment opportunities. The state of employment can be observed from two aspects, namely the availability aspect and the need aspect. Ideally, these two aspects are in a balanced position, which means that the number of labor needs can be met from the number of available workers so that unemployment does not occur [10]. The problem of unemployment arises because there is an imbalance between the number of the workforce and the number of available jobs. One of the factors causing the imbalance between the availability and the need for labor is the economic growth factor that is not in line with the adequate absorption of labor. The open unemployment rate shows the number of job seekers who do not get the job they are looking for so they are unemployed, this situation causes them to be vulnerable to being included in the poor group because they do not get income [11]. The following is a picture of the Open Unemployment Rate in Bojonegoro Regency in 2017-2021 based on the latest data in 2022 the Bojonegoro statistical center [9].



Source; BPS Bojonegoro 2022

Fig 4; Open Unemployment Rate

Based on the phenomena that have been described, that through increased productivity due to an increase in HDI will encourage economic growth, which is expected to increase

opportunities and demand for labor, thereby helping to reduce unemployment and reduce poverty. Thus the relationship between the Human Development Index (HDI), Economic Growth, and Open Unemployment Rate (TPT) on Poverty in Bojonegoro Regency is very important to be studied more deeply so that it can be used as a reference, especially for local governments in formulating strategies and policies in the economic field. The purpose of the study was to determine the effect of the Human Development Index (HDI), Economic Growth, and Open Unemployment Rate (TPT) on Poverty in Bojonegoro Regency. This research is expected to be used as a reference, especially for local governments in formulating strategies and policies in the economic field, and can contribute theoretically.

## II. LITERATURE REVIEW

### A. Human Development Index

The Human Development Index (HDI), launched by the United Nations Development Program (UNDP) in 1990, contributes to emphasizing that not only economic growth, but also people and their capabilities, should be considered in assessing the development of a country [12]. The Human Development Index (HDI) is a parameter that measures the achievement of human development based on several basic components of quality of life that can affect the level of productivity produced by a person [13].

The Human Development Index (HDI) covers three basic aspects of human development, namely life span, knowledge, and a decent standard of living. The aspect of life span is the indicator is life expectancy, the aspect of knowledge is the indicator of the expected length of schooling, the average length of schooling, aspect of a decent standard of living the indicator is adjusted per capita expenditure. The Human Development Index (HDI) is a comparative measure of life expectancy, literacy, education, and living standards for all countries around the world. HDI is used to clarify whether a country is a developed country, a developing country, or an underdeveloped country and also to measure the effect of economic policies on the quality of life [14].

The calculation of HDI as an indicator of human development has important objectives, including Developing indicators that measure the basic dimensions of human development and the expansion of freedom of choice. Utilize several indicators to keep the measure simple. Form a composite index instead of using several basic indices. The human capital theory argues that education is an investment in human resources that provide many benefits, including obtaining better working conditions, production efficiency, increasing welfare, and increasing one's income if one can complete a higher level of education compared to the income of graduates of education underneath. Education is an important investment in facing the future of the world globally [15].

If the HDI is only seen from per capita expenditure, it means that it only looks at the progress of the economic status of a region/country based on annual income, while if you look

at the social side (education and health), you can see a much more diverse dimension related to the quality of life of the community. Indirectly, HDI is always correlated with people's welfare [6]. In other words, the higher/better each component that composes the HDI also affects the welfare and better life of the community.

### B. Economic growth

Economic growth describes the expansion of the potential Gross Domestic Product or the country's national output. A closely related concept is the rate of growth of output per person, this determines the rate at which the country's living standards rise. Countries are especially concerned with growth in per capita output because it causes an increase in average income [16].

In some countries, the main condition for the creation of poverty reduction is economic growth. However, in the conditions in developing countries, including Indonesia, the economic growth achieved was also accompanied by the emergence of the problem of increasing the number of people living below the poverty line [17].

Economic growth is the process of increasing output in the long run. This understanding includes three aspects, namely process, per capita output, and long-term. Economic growth can also be interpreted as a process of increasing the production capacity of an economy which is manifested in the form of an increase in national income. Economic growth is a process where there is an increase in real gross national product or real national income. So the economy is said to be growing or developing if there is real output growth [18].

### C. Open Unemployment Rate

One of the main problems faced by developing countries, especially Indonesia in economic development, is the problem of limited employment opportunities. The problem of unemployment arises because there is an imbalance between the number of the workforce and the number of available jobs. Unemployment is a condition in which a person belonging to the labor force category does not have a job and is actively looking for work. To measure unemployment in a country, the unemployment rate is usually used, which is unemployment expressed as a percentage of the total workforce. Unemployment is now a major problem that must be solved immediately [19]. The lack of government and private efforts in creating jobs is one of the triggers for the increasing number of unemployed in Indonesia, especially coupled with low levels of public education and inadequate human resources, making people unable to get jobs [20]. The cause of unemployment is generally because job seekers or the number of the workforce is not proportional to the number of available jobs. Many factors affect the unemployment rate, one of which is inflation, the financial crisis to a low level of public education. Unemployment is often a problem in the economy because, with unemployment, people's productivity and income will decrease which can lead to poverty and other social problems [21].

The unemployment rate is one of the priority targets for development that needs to be reduced. The unemployment rate is indicated by several measures. In this analysis, the unemployment indicator is the open unemployment rate. The open unemployment rate (TPT) is the ratio between the number of job seekers and the workforce and is usually expressed as a percent. Its purpose is to indicate the percentage of the working-age population who are included in the unemployment group in an area or region [22].

*D. Poverty*

Poverty is one of the inhibiting factors for economic development. Poverty is a condition in which there is an inability to meet basic needs such as food, clothing, shelter, education, and health. Poverty can be caused by the scarcity of necessities, or the difficulty in accessing education and employment. The term poverty is always attached and so popular in developing societies. The term is very easy to pronounce but it is so easy to determine who is poor and who is classified as poor [15]. Poverty is a condition where a person cannot fulfill his basic needs. Mahatma Gandhi called them the last, the least, the lowest, and the loss. Poverty is related to a person's lack of access to education, health, and infrastructure facilities [2].

The cause of poverty from an economic perspective is the result of the low quality of human resources. The low quality of human resources is caused by the low level of education. The low quality of human resources means that their productivity is also low, which in turn has low wages.

**III. RESEARCH METHOD**

The method used in this research is descriptive quantitative analysis. The data used is secondary data where the data sources are obtained from other parties such as books, literature, and sources related to the problems studied. Data were obtained from the Central Statistics Agency of Bojonegoro Regency, the Regional Development Planning Agency of the Bojonegoro Regency Government, and the Central Statistics Agency (BPS) of East Java. Secondary data is in the form of macroeconomic indicator data, namely the Human Development Index (IPM), Economic Growth, Open Unemployment Rate (TPT), and the poverty rate in Bojonegoro Regency in 2013-2021. The study uses time series data which is a collection of observations within a certain period. Data analysis used multiple linear regression, intending to know the effect of the independent variable on the dependent variable with the following multiple regression equation models [23]:

$$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + e_t$$

Description :

Y = KEM (Poverty), X<sub>1</sub> = IPM (Human Development Index), X<sub>2</sub> = PE ( Economic Growth), X<sub>3</sub> = TPT (Open Unemployment Rate), β<sub>0</sub> = intercept , β<sub>1</sub> - β<sub>3</sub> = regression coefficient , e<sub>t</sub> = error's terms.

**IV. RESULTS AND DISCUSSION**

➤ *Data Analysis Results*

The results of the estimation of the research model, the data were processed with the *evIEWS 12 programs*, and the results of the regression analysis calculations were obtained as shown in the following table:

Table 1. Results of Multiple Linear Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	60.38594	9.299273	6.493620	0.0013
IPM	-0.706179	0.133929	-5.272803	0.0033
PE	0.005992	0.026099	0.229597	0.8275
TPT	0.291654	0.237995	1.225463	0.2750

Source; Data processed, 2022

Based on table 1, the equations of the Poverty regression model in Bojonegoro Regency are;

$$KEM = 60.38594 - 0.706179(IPM) + 0.005992(PE) + 0.29165442(TPT)$$

The interpretation of the results of multiple linear regression analysis is;

1. The constant of 60.38594 indicates that if all the independent variables (Human Development Index, Economic Growth, Open Unemployment Rate) are considered constant, the KEM variable (Poverty) in Bojonegoro Regency increases by 60.38594%.
2. The regression coefficient value of the HDI variable is -0.7061791, which means that for every 1% increase in HDI (Human Development Index), the KEM (Poverty) will decrease by 0.7061791% with the assumption that other independent variables are constant.
3. The coefficient value of the PE variable is 0.005992, which means that for every 1% increase in PE (Economic Growth), KEM (Poverty) will increase by 0.005992% assuming other independent variables are constant.
4. The coefficient value of the TPT variable is 0.29165442 which means that, for every 1% increase in the TPT (Open Unemployment Rate), the KEM (Poverty) will increase by 0.29165442% assuming other independent variables are constant.

➤ *CLASSIC ASSUMPTION TEST*

1. *Multicollinearity Test*

Table 2. Multicollinearity Test Results

	IPM	PE	TPT
IPM	1.000000	-0.441975	-0.108506
PE	-0.441975	1.000000	-0.037234
TPT	-0.108506	-0.037234	1.000000

Source; Data processed, 2022

The multicollinearity test aims to test whether the regression model has a high or perfect correlation between the independent variables. The correlation value that can be tolerated in the multicollinearity test is 80% (0.8 ). The results

of the multicollinearity test have correlation values of -0.441975, -0.108506, -0.037234, or less than 0.8 so there is no multicollinearity problem in the research variables.

2. Autocorrelation Test

Table 3 . Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.467851	Prob. F(2,3)	0.6655
Obs*R-squared	2.139723	Prob. Chi-Square(2)	0.3431

Source; Data processed, 2022

The autocorrelation test is used to test the presence or absence of a serial correlation in the regression model or to determine whether in the model used there is an autocorrelation between the observed variables. The autocorrelation test can be known through the Breusch Godfrey Serial Correlation LM Test, where if the prob value < 0.05 then there is an autocorrelation while if the prob value is > 0.05 then there is no autocorrelation symptom. From the results of the autocorrelation test the value of Prob. Chi-Square ( 2) of 0.3431 > 0.05, it can be concluded that there is no autocorrelation symptom in the research model.

3. Heteroscedasticity Test

Table 4. Heteroscedasticity Test Results

Heteroskedasticity Test: White

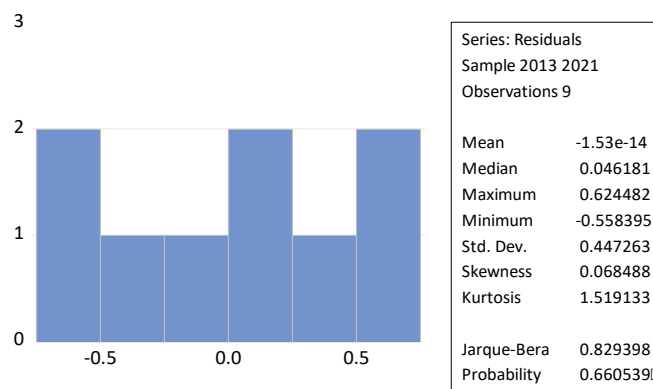
F-statistic	0.843625	Prob. F(3,5)	0.5260
Obs*R-squared	3.024598	Prob. Chi-Square(3)	0.3878
Scaled explained SS	0.274575	Prob. Chi-Square(3)	0.9647

Source; Data processed, 2022

The Herrosscedasticity test is used to determine whether or not there is a deviation from the classical assumptions. The prerequisite that must be met in the regression model is the absence of heteroscedasticity symptoms. If the prob value is < 0.05, then there is a symptom of heteroscedasticity in the research model, whereas if the prob value is > 0.05, there is no symptom of heteroscedasticity in the research model. From the results of the heteroscedasticity test using the white method, the prob value of 0.3878 > 0.05 so it can be concluded that there is no heteroscedasticity symptom in the research model.

4. Normality test

Normality test using the Jarque-Bera method (JB-Test), if the Jarque-Bera Prob < 0.05, then the data is not normally distributed. The results of the regression model have met the test assumptions with a probability value of 0.660539 greater than 0.05, so the residuals of the research data are normally distributed, following the results of the normality test in Figure 5.



Source: Data processed, 2022

Figure 5. Normality Test Results

➤ Partial Test (t Test)

Table 5, Statistical Test Results ( t-test)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	60.38594	9.299273	6.493620	0.0013
IPM	-0.706179	0.133929	-5.272803	0.0033
PE	0.005992	0.026099	0.229597	0.8275
TPT	0.291654	0.237995	1.225463	0.2750

R-squared	0.888286	Mean dependent var	14.19556
Adjusted R-squared	0.821258	S.D. dependent var	1.331739
S.E. of regression	0.563031	Akaike info criterion	1.990139
Sum squared resid	1.585021	Schwarz criterion	2.077795
Log likelihood	-4.955626	Hannan-Quinn criter.	1.800979
F-statistic	13.25240	Durbin-Watson stat	1.549822
Prob(F-statistic)	0.008151		

Source: Data processed, 2022

A partial test (t-test) is used to see the effect of an independent variable on the dependent variable. In table 5 above, it can be seen that the Human Development Index (IPM), Economic Growth (PE), and the Open Unemployment Rate (TPT) partially each variable affect Poverty (KEM) in Bojonegoro Regency. The HDI probability level of 0.0033 is smaller than <0.05%, meaning that the HDI variable significantly affects poverty. The Economic Growth Probability (PE) value of 0.8275 > 0.05 has no significant effect on poverty. The Probability Value of the Open Unemployment Rate (TPT) 0.2750 > 0.05 has no significant effect on poverty.

➤ F- test

Based on table 5, the F-statistic value of 13.25240 with a Prob (F-statistic) of 0.008151 < 0.05, it can be concluded that the variables of the Human Development Index (IPM), Economic Growth (PE), and Open Unemployment Rate (TPT) together have the same effect on poverty in Bojonegoro district.

➤ Coefficient of Determination (R<sup>2</sup>)

The coefficient of determination (R<sup>2</sup>) is 88.82%. The results show that the relationship between the independent variables, namely the Human Development Index (HDI), Economic Growth (PE), and the Open Unemployment Rate (TPT) affects the dependent variable of poverty (KEM) by

88.83%. While the remaining 11.17 % is influenced by other variables outside the research variables.

## V. CONCLUSION

Based on the results of research and discussion related to the Effect of the Human Development Index (HDI), Economic Growth, and the Open Unemployment Rate on Poverty in Bojonegoro Regency, it is concluded that:

1. The Human Development Index (HDI) variable has a negative and significant effect on the Poverty variable in Bojonegoro Regency in 2013-2021.
2. variable of Economic Growth has an effect on the variable of Poverty in Bojonegoro Regency in 2013-2021.
3. The Variable Open Unemployment Rate has an effect on Poverty in Bojonegoro Regency in 2013-2021.

Based on the conclusions from the research that has been done, the suggestions that can be given are as follows:

1. The government of Bojonegoro Regency must increase the human development index with indicators of realizing the quality and sustainable Human Resources through education (increasing expectations of school years and average length of schooling), health (increasing life expectancy) and fulfilling living standards (increasing per capita spending).
2. The government must encourage economic growth through business strategies by increasing public consumption through the People's Business Credit policy and the ease of Halal Certification for Micro and Small Enterprises.
3. The government to overcome the problem of the unemployment rate can be by providing counseling, coaching, and job training to the community to be able to create jobs according to their abilities and interests.

## ACKNOWLEDGMENT

The author thanks for supporting by the Development Economics Research Program, Faculty of Economics, Bojonegoro University, Bojonegoro university research and service institute, and the statistics corner of Bojonegoro university,

## REFERENCES

- [1]. T. A. Sigit and A. Kosasih, "Pengaruh Dana Desa terhadap Kemiskinan: Studi Tingkat Kabupaten/Kota di Indonesia," *Indones. Treas. Rev. J. Perbendaharaan Keuang. Negara dan Kebijak. Publik*, vol. 5, no. 2, pp. 105–119, 2020, doi: 10.33105/itrev.v5i2.170.
- [2]. K. B. BPS, *Indikator Kesejahteraan Rakyat Kabupaten Bojonegoro 2021*. Bojonegoro: Badan Pusat Statistik Kabupaten Bojonegoro, 2021.
- [3]. L. S. Suropto, "PENGARUH TINGKAT PENDIDIKAN, PENGANGGURAN, PERTUMBUHAN EKONOMI DAN INDEKS PEMBANGUNAN MANUSIA TERHADAP KEMISKINAN DI D.I.YOGYAKARTA PRIODE 2010-2017," *GROWTH J. Ilm. Ekon. Pembang.*, vol. 1, no. 2, pp. 1–17, 2020.
- [4]. N. T. N. Lora Ekana Nainggolan, Lenny Dermawan Sembiring, "Analisis Pengaruh Pertumbuhan Ekonomi Terhadap Indeks Pembangunan Manusia ang Berdampak Pada Kemiskinan Di Provinsi Sumatera Utara," *MEDIA BINA Ilm.*, vol. 15, no. 10, pp. 1–18, 2021.
- [5]. Endang and D. T. Hermawati, "Indeks, Analisis Manusia, Pembangunan Bojonegoro, Kabupaten Siswati," vol. 18, no. 2, pp. 93–114, 2018.
- [6]. farathika putri Utami, "Pengaruh Indeks Pembangunan Manusia (IPM) , Kemiskinan dan Pengangguran terhadap Pertumbuhan Ekonomi di Provinsi Aceh," *J. Samudra Ekon.*, vol. 4, no. 2, pp. 101–113, 2020.
- [7]. N. L. S. D. I. K. Sutrisna, "Pengaruh Komponen Indeks Pembangunan Manusia Terhadap Pertumbuhan Ekonomi Provinsi Bali," *E-Jurnal Ep Unud*, vol. 3, no. 3, pp. 106–114, 2014.
- [8]. J. H. S. Endang, "Analysis of Economic Growth Factors in 10 Asian Countries," *Int. J. Innov. Sci. Res. Technol.*, vol. 7, no. 7, pp. 1–8, 2022, doi: <https://doi.org/10.5281/zenodo.6985152>.
- [9]. BPS, "Badan Pusat Statistik Bojonegoro," 2022. <https://data.bojonegorokab.go.id/badan-perencanaan-pembangunan-daerah.html@detail=indikator-makro>.
- [10]. T. LKJIP, *Laporan Kinerja Instansi Pemerintah Kabupaten Tuban 2021*. Tuban: Pemerintah Kabupaten Tuban, 2021.
- [11]. Joko Susanto, "Determinan Tingkat Pengangguran Terbuka di D.I. Yogyakarta," *Develop*, vol. 5, no. 1, p. Develop, 2021, doi: <https://doi.org/10.25139/dev.v5i1.3689>.
- [12]. G. Resce, "Wealth-adjusted Human Development Index," *J. Clean. Prod.*, vol. 318, no. August, p. 128587, 2021, doi: 10.1016/j.jclepro.2021.128587.
- [13]. D. Mahroji and I. Nurkhasanah, "Pengaruh Indeks Pembangunan Manusia Terhadap Tingkat Pengangguran Di Provinsi Banten," *J. Ekon.*, vol. 9, no. 1, 2019, doi: 10.35448/jequ.v9i1.5436.
- [14]. A. Davies and G. Quinlivan, "A panel data analysis of the impact of trade on human development," *J. Socio. Econ.*, vol. 35, no. 5, pp. 868–876, 2006, doi: 10.1016/j.socec.2005.11.048.
- [15]. N. Latiffa, D. Rotinsulu, and R. Tumilaar, "Pengaruh Pertumbuhan Ekonomi Dan Indeks Pembangunan Manusia Terhadap Tingkat Pengangguran Terbuka Dan Dampaknya Pada Jumlah Penduduk Miskin Di Kota Manado," *J. Berk. Ilm. Efisiensi*, vol. 17, no. 02, pp. 106–117, 2017.
- [16]. W. D. N. Paul A. Samuelson, *ILMU MAKRO EKONOMI*, 17th ed. PT. Media Global Edukasi, 2004.
- [17]. A. Jonaidi, "Bahan mendeley analisis pertumbuhan ekonomi dan kemiskinan," *Kaji. Ekon.*, vol. 1, no. April, pp. 140–164, 2012.
- [18]. Boediono, *Teori Pertumbuhan Ekonomi*. Nature Publishing Group UK, 1999.

- [19]. W. Saputra, J. T. Hardinata, and A. Wanto, “Resilient method in determining the best architectural model for predicting open unemployment in Indonesia,” *IOP Conf. Ser. Mater. Sci. Eng.*, vol. 725, no. 1, 2020, doi: 10.1088/1757-899X/725/1/012115.
- [20]. C. Carrillo-Tudela, M. Graber, and K. Waelde, “Unemployment and vacancy dynamics with imperfect financial markets,” *Labour Econ.*, vol. 50, pp. 128–143, 2018, doi: 10.1016/j.labeco.2017.04.005.
- [21]. M. F. Tesfaselassie and M. H. Wolters, “The impact of growth on unemployment in a low vs. a high inflation environment,” *Rev. Econ. Dyn.*, vol. 28, pp. 34–50, 2018, doi: 10.1016/j.red.2017.07.005.
- [22]. A. Noviatamara, T. Ardina, and N. Amalia, “Analisis Pengaruh Pertumbuhan Ekonomi Dan Tingkat Pengangguran Terbuka Di Daerah Istimewa Yogyakarta,” *J. REP (Riset Ekon. Pembangunan)*, vol. 4, no. 1, pp. 53–60, 2019, doi: 10.31002/rep.v4i1.1341.
- [23]. Agus Widarjono, *ANALISIS MULTIVARIAT TERAPAN: Dengan Program SPSS, AMOS dan SMARPLS*, II. Yogyakarta: UPP STIM YKPN, 2015.