

ANALYSIS OF THE HUMAN DEVELOPMENT INDEX IN EAST NUSA TENGGARA 2018-2022

Heny Yulianty¹, Bertha Iin Esti Indraswanti²

^{1,2}Program Studi Ekonomi Pembangunan Fakultas Ekonomi dan Bisnis Universitas Bengkulu

ARTICLE INFO

ABSTRACT

Keywords:

Analysis,
Human Development,
East Nusa Tenggara

The province of East Nusa Tenggara is ranked as the third lowest in the Human Development Index (HDI) in Indonesia. Additionally, the Gross Regional Domestic Product (PDRB) per capita for East Nusa Tenggara in 2023 is only 21.71 million rupiahs, making it the province with the smallest PDRB compared to all other provinces in Indonesia. This study aims to identify and analyze the influence of population size, poverty, PDRB, and minimum wage on the Human Development Index (HDI) in the regencies/cities of East Nusa Tenggara. The research employs a quantitative method, using panel data consisting of a combination of time series data from 2018 to 2022 and cross-sectional data from 22 regencies/cities. The data analysis process involves panel data regression analysis using the Common Effect Model (CEM), which is processed using Eviews 13 software. The results suggest that the population size variable has a significantly negative effect on HDI, while the PDRB variable has a significantly positive impact on HDI. Meanwhile, the regional minimum wage variable does not have a significant effect on HDI in the regencies/cities of East Nusa Tenggara during the period of 2018-2022.

E-mail:

heniyulianti25@gmail.com
berthaindraswanti@unib.ac.id

Copyright © 2023 Economic Journal. All rights reserved.
is Licensed under a Creative Commons Attribution-NonCommercial 4.0
International License (CC BY-NC 4.0)

1. INTRODUCTION

Development is a comprehensive process aimed at improving the quality of life for a better society in terms of economics, social aspects, politics, infrastructure, education, health, and more. The success of development is not only reflected in the economic growth of Gross Regional Domestic Product (PDRB) but also in the improvement of human quality, which can be seen through the Human Development Index (HDI) or IPM (Indeks Pembangunan Manusia). The Human Development Index, also known as IPM, is a crucial tool for measuring success in building human quality of life (society or population). IPM can determine the ranking or level of development in a country or region (Sapaat et al., 2020). The Human Development Index (HDI) was introduced by the United Nations Development Program (UNDP) in 1990 through the publication of the Human Development Report 1990 (Rustariyuni, 2014). HDI is a composite index that can be measured through levels of education, health, and income. There are three basic dimensions for calculating HDI: longevity and healthy life, knowledge, and a decent standard of living. These dimensions are derived from life expectancy at birth, mean years of schooling, expected years of schooling, and Gross National Income (GNI) per capita (Arafat et al., 2018).

The education index is obtained from the average years of schooling and the literacy rate, which can be influenced by income. The duration of schooling can indeed be influenced by economic capacity, measured by income. In general, a family is considered prosperous when it can provide the best education for its members. According to Mahihody et al. (2018), when a community in a region has high expectations for years of schooling and average years of schooling, it can enhance the quality of life for that community. In addition to the education index, the formation of the HDI includes the health index, which can be measured by life expectancy. The higher the level of health in a community, the higher the life expectancy. This can be achieved if income is high or adequate. However, even with high or adequate income, if the number of family members or the population is large, it will be distributed among many, potentially reducing well-being. Thus, this situation may lead to not all members of the community having access to education, health, and so on. The suitability of the community's life is strongly determined by income; this also means that income determines health. The third component of the HDI is the index of a decent standard of living, which can be measured by per capita expenditure or the cost incurred by the community for household consumption. It is also one of the factors that can influence the Human Development Index. Per capita expenditure can affect the purchasing power of the community. The higher

Analysis of The Human Development Index in East Nusa Tenggara 2018-2022. Heny Yulianty, et al

the per capita expenditure, the higher the purchasing power of the community in meeting the basic needs of life (Kusumaningrum in Harahap, 2022).

The following is Table 1, showing the Human Development Index (HDI) of provinces with the highest and lowest ranks in Indonesia from 2020 to 2022.

Table 1. HDI in Indonesia with the Highest and Lowest Ranks In the Years 2020-2022

Highest IPM	Province	2020	2021	2022
1	DKI Jakarta	80.77	81.11	81.65
2	D I Yogyakarta	79.97	80.22	80.64
3	East Kalimantan	76.24	76.88	77.44
Lowest IPM				
1	Papua	60.44	60.62	61.39
2	West Papua	65.09	65.26	65.89
3	East Nusa Tenggara	65.19	65.28	65.90

Source: Central Statistics Agency (2022), processed data

Based on Table 1, it can be observed that the three provinces with the lowest HDI values in Indonesia are Papua, West Papua, and East Nusa Tenggara. These three provinces have different characteristics, such as their land area. Papua has an area of 319,036 km², West Papua 140,376 km², while East Nusa Tenggara has only 47,246 km². This means that East Nusa Tenggara is the province with the smallest land area compared to Papua and West Papua (Rosyadah, 2020). The following table presents data on the Gross Regional Domestic Product (PDRB) of East Nusa Tenggara, West Papua, and Papua provinces for the years 2018-2022.

Table 2. Lowest Gross Regional Domestic Product (PDRB) of 3 Provinces Years 2018-2022 (Million Rupiah)

Province	2018	2019	2020	2021	2022
East Nusa Tenggara	65.92	69.38	68.80	70.54	72.69
West Papua	60.46	62.07	61.60	61.28	62.51
Papua	159.71	134.56	137.67	158.61	172.90

Source: Central Statistics Agency (2022), processed data

Based on Table 2, it can be observed that West Papua has a smaller Gross Regional Domestic Product (PDRB) compared to East Nusa Tenggara (NTT) and Papua provinces. Papua province has the highest PDRB compared to East Nusa Tenggara (NTT) and West Papua provinces. However, the per capita PDRB of East Nusa Tenggara province in 2022 is only 21.7 million rupiahs, making it the province with the smallest per capita PDRB compared to all provinces in Indonesia. According to the Central Statistics Agency (BPS) in 2022, East Nusa Tenggara (NTT) is the province with the Gross Regional Domestic Product (PDRB) per capita of only 21.71 million rupiahs, making it the province with the smallest PDRB compared to all provinces in Indonesia. The following is data on the 5 provinces with the lowest per capita PDRB, along with their minimum wage levels and population in 2022:

Table 3. Data for Provinces in Indonesia with the Lowest Per Capita Gross Regional Domestic Product (PDRB) and Minimum Wage, Along with Population in 2022.

Province	GDP per capita (Million Rupiah)	UMP (Rupiah)	Population (Millions)
Aceh	39.2	3.166.460	5.4
West Sulawesi	37.1	2.678.863	1.5
West Nusa Tenggara	28.7	2.207.212	5.5
Maluku	28.5	2.619.312	1.9
East Nusa Tenggara	21.7	1.975.000	5.5

Source: Central Statistics Agency (2022), processed data

Based on Table 3, it can be seen that the lowest per capita Gross Regional Domestic Product (PDRB) is in East Nusa Tenggara with the lowest minimum wage (UMP) level of 1,975,000 million Rupiah. However, the population in Nusa Tenggara is higher than the population in Aceh province, totaling 5.5 million people. A very high population in a country will have an impact on its economic growth. Population control is necessary to achieve development success and address population-related issues. Controlling and optimizing the population is one way to address population density. To achieve regional prosperity, efforts to increase Gross Regional Domestic Product (PDRB) per capita or per capita income must be accompanied by population growth control. The higher the population growth, the higher the

population density. If left unchecked, per capita income will not reach satisfactory results. Consequently, an uncontrolled population will lead to a population explosion (Tumaleno, 2022).

Based on the background description, the formulated problem is how the variables of population size, PDRB, and minimum wage affect the Human Development Index in the regencies/cities of East Nusa Tenggara from 2018 to 2022. The purpose of conducting this research is to understand and analyze the influence of the variables of population size, PDRB, and minimum wage on the Human Development Index (HDI) in the regencies/cities of East Nusa Tenggara during the period 2018-2022.

2. METHOD

The research method employed in this study is quantitative research. The type of data utilized is panel data, which is a combination of time series data and cross-sectional data. The total number of observations for this research is 110, consisting of the time series data from 2018 to 2022 and cross-sectional data from 22 regencies/cities in East Nusa Tenggara. The data used in this study were collected from the Central Statistics Agency (BPS). The variables included in the research are the Human Development Index (HDI) as the dependent variable (Y), population size, Gross Regional Domestic Product (PDRB), and minimum wage as independent variables (X). The analysis technique employed in this study is the panel data regression method using the Common Effect Model (CEM) as the best-fitted model, with the Eviews 13 analytical tool. The equation form of the panel data regression analysis is as follows:

$$IPM_{it} = \beta_0 + \beta_1 JP_{it} + \beta_2 PDRB_{it} + \beta_3 UMR_{it} + e_{it}$$

Keterangan:

IPM	= Indeks Pembangunan Manusia
B_0	= konstanta
B	= koefisien regresi
JP	= jumlah penduduk
PDRB	= produk domestik regional bruto
UMR	= upah minimum regional
e	= error

3. RESULT AND DISCUSSION

Based on the results of the conducted tests, it can be observed that the relationship between independent variables and the dependent variable is as follows:

Table 4. Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	58.44213	1.872024	31.21869	0.0000
JUMLAHPENDUDUK	-0.537223	0.101574	-5.288977	0.0000
PDRB	0.114910	0.006131	18.74301	0.0000
UPAHMINIMUMREGIONAL	2.016826	1.018064	1.981040	0.0502
R-squared	0.780904	Mean dependent var	64.10373	
Adjusted R-squared	0.774703	S.D. dependent var	4.183884	
S.E. of regression	1.985899	Akaike info criterion	4.245706	
Sum squared resid	418.0422	Schwarz criterion	4.343906	
Log likelihood	-229.5139	Hannan-Quinn criter.	4.285537	
F-statistic	125.9354	Durbin-Watson stat	0.181629	
Prob(F-statistic)	0.000000			

The panel data regression equation shown in Table 1 is as follows:

$$YIPM = 58.44213 - 0.537223 JP + 2.016826 UMR$$

With explanation:

1. Based on the findings of this research, it is revealed that the population variable has a negative value of -0.537223. This indicates that an increase in the population by 1000 individuals will decrease the Human Development Index (HDI) by 0.53, and vice versa.
2. The coefficient value of the Gross Regional Domestic Product (PDRB) variable is positive, amounting to 0.114910. This implies that an increase in the PDRB variable by 1 trillion will increase the HDI by 0.11.
3. The minimum wage variable does not significantly influence the Human Development Index. This is indicated by its significance level being > 0.05.

Classic Assumption Tests

Analysis of The Human Development Index in East Nusa Tenggara 2018-2022. Heny Yulianty, et.al

1. Normality Test

The normality test using the Jarque-Bera test has been conducted, and it can be determined that the data is normally distributed or has passed the test. This is evident from the Jarque-Bera probability value of $0.803612 > 0.05$, concluding that the variables population size, Gross Regional Domestic Product (PDRB), and minimum wage are normally distributed.

2. Multicollinearity Test

Based on the results of the correlation matrix test, it is observed that none of the independent variables exceed 10, indicating the absence of multicollinearity in the model.

3. Heteroskedasticity Test

According to the heteroskedasticity test results, the probability value obtained is greater than the α level (0.05). Therefore, it can be concluded that the heteroskedasticity test has been fulfilled, or the data has passed the heteroskedasticity test.

4. Autocorrelation Test

Testing for autocorrelation can be performed by examining the Durbin-Watson value in the model and comparing it with the values in the Durbin-Watson table. With $DU < DW < 4-DU$, the Durbin-Watson value is 0.181629, and $4-DU$ is calculated as 2.2545 with DU 1.7455. Thus, it can be concluded that there is no autocorrelation or the data has passed the autocorrelation test.

Uji t-Statistic

The t-statistic test is used to determine whether the variables population size, Gross Regional Domestic Product (PDRB), and minimum wage have significance or partial effects on the Human Development Index in the regencies/cities of East Nusa Tenggara. It is known that the probability value for the population size variable is $0.0000 < 0.05$, indicating that the population size variable significantly influences HDI. The PDRB variable has a probability value of $0.0000 < 0.05$, indicating that PDRB significantly influences HDI. Meanwhile, the regional minimum wage variable does not have a significant influence on HDI because its probability value is greater than the significance level, which is 0.0502.

F-Statistic Test

Based on the results of the F-statistic test, the value is $0.000000 < 0.05$. Therefore, it can be concluded that collectively, the independent variables, namely population size, PDRB, and minimum wage, significantly influence the dependent variable, namely the Human Development Index.

Coefficient of Determination Test (R^2)

With an Adjusted R-Squared value of 0.780904, it can be concluded that the combined contribution of the population size, Gross Regional Domestic Product (PDRB), and minimum wage variables to the Human Development Index is 78%. Meanwhile, the remaining 22% is influenced by other variables not included in the model.

Discussion

The Human Development Index (HDI) is always an interesting topic for discussion. The analysis results found that an increase in the population has an impact on the decrease in the Human Development Index in the regencies/cities of East Nusa Tenggara from 2018 to 2022. This is indicated by the negative and significant influence of the population size on the HDI. A high population can lead to limited resource allocation, as it needs to be divided among many individuals. With limited resources, it becomes challenging to provide adequate healthcare and education services to the entire population, affecting the HDI. This finding aligns with the study conducted by Aryanti (2023), which states that the population size affects the HDI in each of the 38 regencies/cities in East Java Province. Based on these findings, it can be theoretically assumed that the population size can either support or hinder the economic development of a region. Unevenly distributed population can pose challenges to human development. This study also aligns with the research by Khadijah et al. (2022), stating that a high population without corresponding job opportunities can lead to unemployment and ultimately decrease the Human Development Index.

When there is an increase in the Gross Regional Domestic Product (PDRB), it has a positive and significant impact on the HDI. This indicates that if PDRB positively affects the community, such as increasing consumption, it will enhance the purchasing power within the community, leading to an overall improvement. A high level of purchasing power in the community has an influence on the HDI because community purchasing power is a significant component affecting the success aspects of human development, particularly in the income indicator. This result is consistent with the research by Kiha et al. (2021), stating that the PDRB, representing the total value added from various economic activities in the province and the sum of the value of goods and services produced in the province in a year, has a positive impact on the HDI in East Nusa Tenggara Province. This is because economic activities signify an increase

in people's income, which enhances the community's purchasing power for goods and future well-being. According to the research results by Muliza et al. (2017), Gross Regional Domestic Product (PDRB) shows a significant positive impact on Human Development in the regencies/cities of Aceh Province. Their findings align with the Kuznet's theory, stating that one characteristic of modern economic growth is the high per capita output (Todaro, 2008).

Regional minimum wages do not influence the Human Development Index in the regencies/cities of East Nusa Tenggara from 2018 to 2022. The fluctuations in regional minimum wages may not affect the Human Development Index because the formation of the HDI might be influenced by other factors, including government subsidies. Regional minimum wages are also not the sole source of income. There are two possibilities: companies may pay their employees more than the regional minimum wage, allowing individuals to have an income greater than the minimum wage. The second possibility is that even if the regional minimum wage is high or low, individuals may have access to government facilities such as education, health, and others provided for free. This research aligns with the study conducted by Putra & Wenagama (2020), stating that the minimum wage does not directly affect the Human Development Index in the regencies/cities of Bali Province. Additionally, Admaja & Hasmarini (2023) state that regional minimum wages do not influence the HDI in Lampung Province.

4. CONCLUSION

Based on the research results conducted to determine the influence of population size, Gross Regional Domestic Product (PDRB), and regional minimum wage on the Human Development Index (HDI) in the regencies/cities of East Nusa Tenggara during the period of 2018-2022, the following conclusions can be drawn: The regression results indicate that the population size has a negative and significant impact on the Human Development Index in the regencies/cities of East Nusa Tenggara. This suggests that an increasing population can lead to limited resource allocation, making it difficult to provide adequate healthcare and education services for the community, which in turn affects the Human Development Index. Gross Regional Domestic Product (PDRB) has a significant positive impact on the Human Development Index in the regencies/cities of East Nusa Tenggara. This indicates that an increase in PDRB contributes to the improvement of the HDI during the period of 2018-2022. Regional minimum wage does not influence the Human Development Index in the regencies/cities of East Nusa Tenggara. This is because the regional minimum wage is not the sole source of income; the community also has free access to government facilities such as education and health. Based on the research findings, the following suggestions can be made: Population Management Policies: Given the negative and significant impact of population size on the Human Development Index, it is recommended that the local government in the regencies/cities of East Nusa Tenggara implement effective population management policies. These policies could focus on family planning, education, and awareness programs to control population growth and ensure better resource allocation for healthcare and education services. Economic Development Strategies: Considering the significant positive impact of Gross Regional Domestic Product (PDRB) on the Human Development Index, it is advisable for the local authorities to continue fostering economic development initiatives. Encouraging investment, supporting local businesses, and diversifying economic activities can contribute to further improvements in the HDI. Comprehensive Social Welfare Programs: While regional minimum wage does not appear to directly influence the Human Development Index, it is essential to maintain and possibly enhance comprehensive social welfare programs. These programs can include initiatives related to education, healthcare, and other essential services to ensure that the community's well-being is not solely dependent on income sources like the minimum wage. Continuous Monitoring and Evaluation: To adapt and refine policies, it is crucial for local authorities to establish continuous monitoring and evaluation mechanisms. Regular assessments of the impact of population management, economic development, and social welfare programs will provide insights into their effectiveness and areas for improvement. Community Empowerment: Empowering the community through education and awareness programs on the importance of sustainable development and individual well-being can complement the government's efforts. Engaging the community in the decision-making process can foster a sense of ownership and responsibility for their own development.

REFERENCES

- Admaja, R. D., Hasmarini, M. I. (2023). Analisis Pengaruh Kemiskinan, Tingkat Harapan Hidup, Tingkat Harapan Lama Sekolah dan Upah Minimum Terhadap Indeks Pembangunan Manusia. *Jurnal Disrupsi Bisnis*, 6(1), 126-131.

- Arafat, L., & Rindayati, W. (2018). Faktor-faktor yang memengaruhi indeks pembangunan manusia di Provinsi Kalimantan Tengah. *Jurnal Ekonomi dan Kebijakan Pembangunan*, 7(2), 140-158.
- Aryanti, E. N. (2023). Analisis Pengaruh Indeks Kesehatan dan Indeks Pendidikan, Angkatan Kerja dan Jumlah Penduduk Terhadap IPM di Provinsi Jawa Timur Tahun 2015-2021. *Jurnal Ilmu Ekonomi*, 7(02), 223-234.
- Badan Pusat Statistik (2014). Indeks Pembangunan Manusia: Metode Baru
- Badan Pusat Statistik 2022. Indeks pembangunan Manusia: Metode Baru.
- HARAHAP, D. A. (2022). Analisis Faktor-Faktor Yang Mempengaruhi Indeks Pembangunan Manusia (Ipm) Di Indonesia.
- Khadijah, S., Saharudddin, S., Anwar, K., & Murtala, M. (2022). Pengaruh Pertumbuhan Ekonomi dan Jumlah Penduduk Terhadap Indeks Pembangunan Manusia di Kabupaten Simalungun. *Jurnal Aplikasi Ilmu Ekonomi*, 1(1), 74-82.
- Kiha, E. K., SERAN, S., & LAU, H. T. (2021). Pengaruh jumlah penduduk, pengangguran, dan kemiskinan terhadap indeks pembangunan manusia (ipm) di kabupaten belu. *Jurnal Ekonomi, Sosial & Humaniora*, 2(07), 60-84.
- Kiha, E. K., Seran, S., & Seuk, G. (2021). Pengaruh Inflasi, Produk Domestik Regional Bruto Dan Upah Minimum Regional Terhadap Indeks Pembangunan Manusia Propinsi Nusa Tenggara Timur. *INVEST: Jurnal Inovasi Bisnis dan Akuntansi*, 2(1), 41-56.
- Mahihody, A. Y., Engka, D. S., & Luntungan, A. Y. (2018). Pengaruh Upah Dan Indeks Pembangunan Manusia (IPM) Terhadap Pengangguran Di Kota Manado. *Jurnal Berkala Ilmiah Efisiensi*, 18(3).
- Muliza, M., Zulham, T., & Seftarita, C. (2017). Analisis pengaruh belanja pendidikan, belanja kesehatan, tingkat kemiskinan dan PDRB terhadap IPM di provinsi Aceh. *Jurnal Perspektif Ekonomi Darussalam (Darussalam Journal of Economic Perspec*, 3(1), 51-69.
- Putra, I. W. Y. A., & Wenagama, I. W. Pengaruh Tingkat Kemiskinan Dan Upah Minimum Terhadap Pertumbuhan Ekonomi Dan Ipm Provinsi Bali Tahun 2015-2019.
- Rosyadah, J. A. (2021). Determinan Indeks Pembangunan Manusia (IPM) Provinsi Nusa Tenggara Timur (NTT). *EFFICIENT: Indonesian Journal of Development Economics*, 4(1), 1080-1092.
- Rustariyuni, S. D. (2014). Pengaruh gini ratio, pengeluaran non makanan per kapita, belanja daerah dan laju pertumbuhan ekonomi pada indeks pembangunan manusia kabupaten/kota di provinsi bali periode 2004-2012. *Jurnal Piramida*, 10(1), 45-55.
- Sapaat, T. M., Lopian, A. L. C. P., & Tumangkeng, S. Y. (2020). Analisis faktor-faktor yang mempengaruhi indeks pembangunan manusia di Provinsi Sulawesi Utara tahun (2005-2019). *Jurnal Berkala Ilmiah Efisiensi*, 20(03).
- Tumaleno, A. F., & Riazis, K. R. (2022). Pengaruh Jumlah Penduduk Terhadap Produk Domestik Regional Bruto di Sulawesi Tenggara. *Arus Jurnal Sosial dan Humaniora*, 2(3), 189-195.