Global Economics, Social, and Development Review

The Nexus of Economic Growth, Human Development Index, and Unemployment to Income Inequality in East Java

Elyada Christi Octavia[1]
Arif Amanudin Firmansyah[1]
Rahmania Dwi Fatmala[1]
Siti Nur Aisa[1]
Aminudin Ma'ruf[1]*
Akhmad Faisal Hamzah[2]
[1]Faculty of Economics and Business, State University of Surabaya, Indonesia
[2]Graduate Education Institute, Istanbul Sabahattin Zaim University
Email: aminudinmaruf@unesa.ac.id*
*corresponding author

Received 07 July 2024, revised 09 September 2024, accepted 29 October 2024

ABSTRACT

The research seeks to analyse the complex correlation between economic growth, human development index, and unemployment on income inequality in East Java from 2018 to 2022. This study addresses the issue of inequality in East Java both theoretically and empirically. The data is obtained from the Central Agency of Statistics and the Regional Development Planning Agency of East Java Province. Through specific considerations, this study utilized panel data from the six districts or cities with the highest and lowest income inequality. The data analysis employs panel data regression with the selected model, the Common Effect Model, to examine the influence among variables. Furthermore, in describing the results of the analysis, descriptive and quantitative methods are used. The analysis shows that the three exogenous variables collectively influence income inequality. Through the T-test, it was discovered that only the human development index variable shows a significant effect on income inequality. On the contrary, economic growth and unemployment variables show no significant effect. However, all three positively correlate with income inequality in East Java from 2018 to 2022.

Keywords: Economic Growth, Human Development Index, Income Inequality, and Unemployment
JEL: D6, O4, R11

DOI: https://doi.org/10.24123/gesdr.v28i2.7002

1. INTRODUCTION

One assessment of a country's economic success is economic development. Economic development is defined as improving an institutional system accompanied by an increase in real national income through long-term efforts to manage a potentially productive economy. One of the measurements used to assess economic development performance is economic growth. However, rapid economic growth only partially guarantees a country's development success. Public welfare is an important factor in achieving economic development (Zulfariska & Bariyah, 2021). Public welfare is reflected in income distribution. Countries with equitable income distribution tend to have higher welfare (Nurcahyo, 2022).

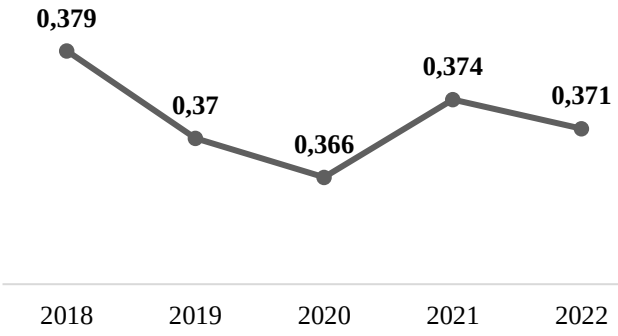
Based on various studies, a non-linear relationship between economic growth and income equality has been found. According to Kuncoro (2006), economic growth will take longer when economic development focuses more on income equality. Conversely, income inequality is more likely to occur if economic development is focused on increasing economic growth. In line with Kuznets' theory, there is an existing correlation between income inequality and economic growth. Kuznets (1995) argues that income distribution will worsen until a certain peak in the early phase of economic growth.

However, in the next phase, there will be income equalization and a decline in inequality. This indicates a positive correlation between economic growth and income distribution in the short term but a negative correlation in the long term. This theory is referred to as the "inverted U" curve.

Meanwhile, Todaro (2006) opined that the size of income inequality can be gauged through the Gini ratio index value. The Gini ratio index is the most widely used measure of income inequality among economists. The Gini ratio index value is expressed in numbers from 0 to 1. Income equality occurs perfectly if the Gini ratio index value is approaches to 0. Nevertheless, when the Gini ratio index value is approaches to 1 it indicates significant income inequality in the region. Income inequality is low if the Gini ratio index value is less than 0.4 and is higher if the Gini ratio index value is more than 0.5.

According to data from the Central Agency of Statistics (2022a), East Java's Gini ratio in 2022 reached 0.371 as depicted in Figure 1. The Gini Ratio of East Java decreased by 0.003 compared to 2021, which amounted to 0.374. However, the highest income inequality occurred in 2018 at 0.379. Although East Java's income inequality is categorized as moderate, the economic disparities between regions become apparent when broken down by district and city. The Central Agency of Statistics (2022a) recorded that the highest Gini ratio index in East Java in 2022 occurred in Malang city at 0.421, followed by Madiun city at 0.398. The lowest level of the Gini ratio index is achieved by the Sumenep district at 0.266 and the Lamongan district at 0.273. Meanwhile, the Regional Development Planning Agency (2022) shows that East Java's economic growth in 2022 increased to 5.34 percent. Compared to Indonesia's economic growth rate, East Java's economic growth rate is slightly better. In 2022, according to Regional Office of the Directorate General of Treasury in East Java (2022) Indonesia's economic growth was around 5.31 percent.

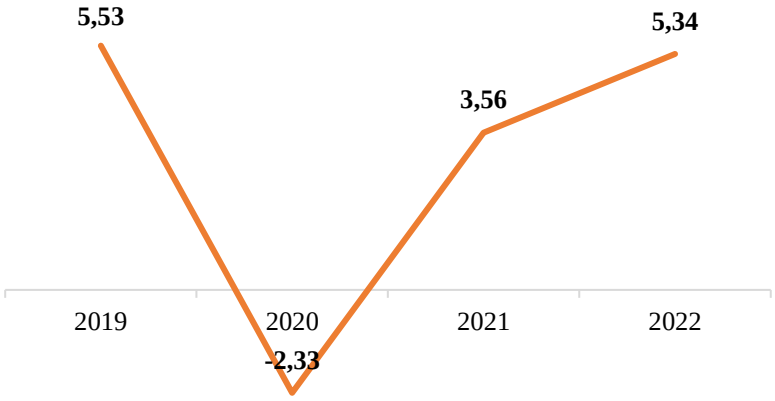
Figure 1. East Java Gini Ratio



Source: Central Agency of Statistics (2022a), processed in 2024

East Java’s economic growth has shown a positive trend throughout the years except during the COVID-19 pandemic. Figure 2 shows the economic growth of East Java in four years. The graph indicates the potential development of East Java’s economy in the coming years. Economic growth and income equality must be achieved simultaneously to achieve sustainable economic development. Economic growth that is not followed by the presence of income equality will widen the gap between one group and another. Meanwhile, income equality that is not supported by economic growth leads to increasing poverty. However, when poverty and income inequality levels are high, reducing income inequality becomes the main focus rather than increasing economic growth (Suhendra et al., 2021). This means that not only economic growth but other development factors need to be considered to reduce income inequality.

Figure 2. East Java Economic Growth

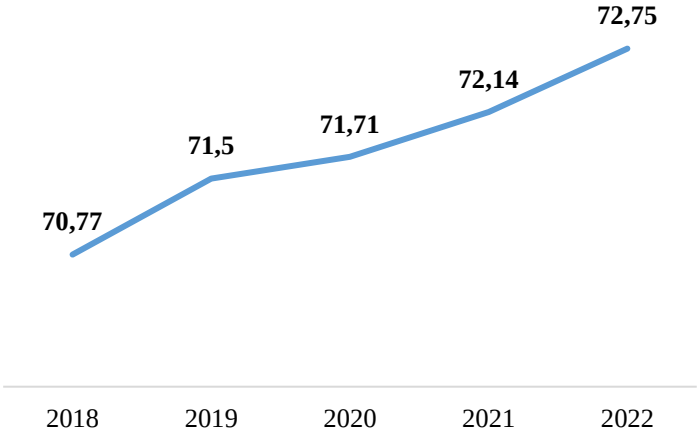


Sources: Regional Development Planning Agency (2022), processed in 2024

Another variable that is thought to correlate with income inequality is the human development index. The definition of the human development index released by the United Nations Development Program (2023) is one approach to measuring a country's economic development level. Three indicators serve as a comparison for measuring the national development index and influence each other, namely quality of life standards, education standards, and health standards. The government needs to pay attention to these three indicators to improve the human development index. A country with a good human development index value is considered to have quality human resources and encourage the region's welfare towards a better direction. Increased welfare can have implications for increased income (Setiyaningrum & Erdkhadifa, 2023).

Figure 3 shows the development of East Java's human development index in the last five years. In 2022, East Java's human development index increased by 0.61 points to 72.75 compared to the previous year. From 2018 to 2022, the index will continue to increase. Nevertheless, it is still below Indonesia's achievement rate, which is 72.91 points (Central Agency of Statistics, 2022b).

Figure 3. East Java Human Development Index



Sources: Central Agency of Statistics (2022b), processed in 2024

On the other hand, the human development index is also crucial in enhancing a country's potential to master modern technology, thereby increasing its capabilities. Improvement in the Human Development Index is often accompanied by an increase in the population's skills and education, which in turn enhances competitiveness in the labour market (Herlambang & Rachmawati, 2023).

When competitiveness in the labour market increases, unemployment tends to decrease, which can impact income inequality. Unemployment has a significant influence on income inequality. When unemployment rises, more people lack a stable income, exacerbating the disparity between high-income and low-income groups. Conversely, when competitiveness in the labour market improves, unemployment tends to decrease because more people possess the skills and education needed by companies, making it easier to find jobs. With more people employed, overall income increases.

Similar research provides additional perspectives on the variables influencing income inequality. Among these studies, Febriyani & Anis (2021) analysed the impact of the human development index, investment, and economic growth on income inequality in Indonesia. Using the random effect model, findings indicate that economic growth has an insignificant and negative effect on the inequality of opinion in Indonesia. This means that when economic growth increases, income inequality also increases. Second, the human development index exhibits a negative and insignificant impact on income inequality. When there is an increase in the human development index, inequality tends to decrease.

The impact of the human development index in Indonesia from 2015 to 2020 was also studied by Putri & Wulandari (2022). Using the Seemingly Unrelated Regression (SUR) estimate method, a panel data regression analysis strategy was employed in the study. The results of the study indicate that income inequality in Indonesia is negatively impacted by the human development index. This is consistent with the findings of Nursahid et al. (2018) investigation. A five-variable multiple linear regression analysis model is used in the study. Additionally, this research indicates that between 2008 and 2013, economic growth had a favourable impact on income inequality whereas the human development index had a negative impact.

Another study by Zusanti et al. (2020) on Java Island examined the impact of economic growth, unemployment rate, and the human development index on inequality from 2010 to 2018. This study employed regression data analysis, revealing that economic growth, the unemployment rate, and the human development index negatively impacted income inequality on Java Island. In a different study, Nurani & Juliannisa (2022) investigated the causes of income inequality in five provinces: the Special Region of Yogyakarta, Gorontalo, West Java, DKI Jakarta, and Papua. This research, conducted over five years (2015-2020), utilized thirty data samples and applied multiple linear regression with panel data analysis. The findings indicate that income inequality is significantly influenced only by the human development index, with economic growth showing no effect.

Research on income inequality has also been widely studied in Indonesian provinces. Research conducted by Arif & Wicaksani (2017) in East Java province focused on the years 2011 to 2015. Variables in the research included the human development index, labour force, economic growth, and population. A validity test stated that the human development index with a positive coefficient direction was the only variable influencing income inequality in East Java from 2011 to 2015.

In another study, Islami & Nugroho (2018) tried to identify factors influencing income inequality in East Java using the Williamson index approach. Multiple linear regression analysis reveals that the variables that significantly influence income inequality from 2001 to 2015 are investment, labour force, and human development index.

Pradipta & Wijaya (2022) try to link the interrelation between the human development index and income inequality in DI Yogyakarta. The data utilized comprises secondary data sourced from the Central Agency of Statistics and Regional Development Planning Agency of DI Yogyakarta Province from 2007 to 2021. It is gleaned from the results that the human development index on income inequality exhibits a positive correlation, but it lacks a significant effect.

Another study in Yogyakarta aimed to determine whether economic growth, the human development index, and unemployment have an impact on income inequality, conducted by Sholikah & Imaningsih (2022). This study used the fixed effect model (FEM) as the chosen method, with the

Gini ratio from 2012 to 2021 as the independent variable. The study found that economic growth, the human development index, and unemployment collectively have a significant impact on income inequality. The economic growth variable has a positive and significant influence because income distribution is becoming more unequal. The human development index variable has a negative but not significant impact, as income inequality increases when labour productivity declines. Meanwhile, the unemployment variable has a positive and significant influence due to the lack of sufficient job opportunities.

Other income inequality research was also conducted by Ersad & Zulgani (2022). This research was conducted in five provinces of southern Sumatra, namely Jambi, South Sumatra, Bengkulu, Lampung, and the Bangka Belitung Islands. The data used is from the period 2010 to 2019 and was processed using panel fixed effect model regression data analysis. The outcome is that the human development index shows no influence, while unemployment positively affects income inequality.

Objective of this research is to analyse the relationship between economic growth, human development index, and unemployment on income inequality in East Java from 2018 to 2022. Hopefully, this study can be used as evaluation material for the East Java government to determine the best policy to reduce income inequality. In addition, this paper can be a basis and reference in the study of income inequality in the future. To the best of our knowledge, there is no prior research theoretically or empirically discussing the issue of inequality in East Java from 2018 to 2022.

2. METHODS

The study uses data from the Central Agency of Statistics and Regional Development Planning Agency of East Java Province. The period used is 2018 to 2022, and the research sample consist of six cities in East Java which are Malang, Madiun, Blitar, Sumenep, Lamongan and Probolinggo. Sampling was done purposively or through certain considerations so that the samples studied can accommodate the objective of the study.

The variables compared in this study consist of endogenous and exogenous variables. The Gini ratio index, which measures income inequality is the endogenous variable. Meanwhile, the exogenous variables are economic growth, human development index, and unemployment. The method of analysing the data used is panel data regression analysis with the help of EViews 12 software. Panel data regression analysis includes three models: the Fixed Effect Model, the Common Effect Model, and the Random Effect Model. The Chow, Hausmann, and Lagrange multiplier tests are carried out to determine the best of the three models. The significant tests on the data include the validity T-test, the Simultaneous (F) test, and the R-squared test. The basic equation used to test the relationship between variables as shown at formula 1:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it} \quad (1)$$

3. RESULT AND DISCUSSION

1. Result

1. Model Goodness testing

Table 1 Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.733052	(5.21)	0.0471
Cross-section Chi-square	15.036470	5	0.0102

The Chow test is used to identify the most appropriate model among Fixed Effect and

Common Effect. Table 1 indicates that the resulting cross-section F probability value is 0.0102. The probability value is less than the significance level of 0.05 (prob. < 5%) suggesting that the Fixed Effect model is currently the most suitable model to use.

The Hausman test is conducted to ensure the choice of the most suitable model, the Random Effect model or the Fixed Effect model. The Hausmann test indicates that the probability value for the random cross-section is 0.4369. This suggests that the probability value exceeds the 0.05 significance level, leading to the selection of the Random Effect model as shown at table 2.

Table 2 Hausman Test Results

	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.719896	3	0.4369

The Chow test and Hausmann test results show different selected models. Therefore, a Lagrange Multiplier test is necessary. This test selects the most appropriate model between the Common Effect Model and the Random Effect Model. In accordance with table 3, it is evident that the Breusch-Pagan value is 0.2597, with a probability value exceeding the significance level of 0.05. Thus, the conclusion drawn is that the Common Effect Model is the best in this study.

Table 3 Lagrange Multiplier Test Results

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	1.270309 (0.2597)	0.967108 (0.3254)	2.237417 (0.1347)

2. Statistical Testing

To find out how far the exogenous variables affect the endogenous variable, T-test is necessary. This test is done by comparing the probability of count with α. If the probability < α (0.05), then the exogenous variables show significant effect on the endogenous variable. It is apparent from the table 4 that the probability value of the economic growth variable exceeds α, which is 0.3426. This implies that economic growth has an insignificant effect on income inequality. Meanwhile, the probability value of the human development index variable shows 0.0442. This result has a value less than α, indicating that the human development index significantly influences income inequality. For the unemployment rate, the result shows a value of 0.1218, implying that the unemployment rate does not significantly affect income inequality.

Table 4 T-test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.041382	0.095500	0.433316	0.6684
X1	0.002295	0.002374	0.966725	0.3426
X2	0.003337	0.001578	2.115112	0.0442
X3	0.007135	0.004460	1.599688	0.1218

The stimulant test aims to ascertain whether the exogenous variables influence the endogenous variable. If the probability < α (0.05), the exogenous variables are tested to influence the endogenous variable jointly. Referring to table 5, the F-statistic value is 15.38542 and the probability of 0.000006 is less than α. Thus, one can infer that the exogenous

variable has a simultaneous effect on the endogenous variable.

Table 5 Stimulant Test Results (F)

F-statistic	15.38542
Prob(F-statistic)	0.000006

In measuring how much the exogenous variable can explain the endogenous variable, it can be tested through the coefficient of determination (R^2). The determination coefficient in table 6 reveals a value of 0.639671, which means that economic growth, human development index, and unemployment can explain the income inequality variable by 63.97%, and other variables outside this study explain the remaining 36.03%.

Table 6 R-Squared Test Results

R-squared	0.639671
Adjusted R-squared	0.598094

2. Discussion

1. The Effect of Economic Growth on Income Inequality

The test outcomes reveal that economic growth has a positive influence, but it is not significant regarding income inequality in East Java. This indicates that if economic growth increases, the Gini ratio, an indicator of income inequality, will increase. An increase in GRDP in a district or city, especially from the growth of specific sectors, will lead to an escalation in the rate of economic growth. Each sector has a different strategic value in driving the economic growth of a region. Economic sectors such as manufacturing, trade, and agriculture significantly contribute to the GRDP of East Java. Growth in these sectors is driven by increased productivity, investment, and market expansion. For instance, the manufacturing sector benefits from investments in technology and increased production capacity, while the trade sector gains from increased domestic consumption and exports. The agricultural sector also contributes through improved agricultural yields and efficiency in distribution.

GRDP of East Java increases from the contributions of various economic sectors, reflecting the region's economic growth. However, this increase does not always have a positive impact on income distribution. Economic growth in certain sectors can lead to income inequality if economic benefits are concentrated among specific groups or if access to economic opportunities is uneven. For example, the rapidly growing manufacturing and trade sectors might not provide the same benefits to workers in the informal sector or rural communities dependent on subsistence agriculture.

Todaro (2006) argues that high aggregate savings among the wealthy can boost investment and economic growth, but this can also exacerbate income inequality if economic benefits are not proportionally distributed. The wealthy have a higher savings ratio compared to the poor, enabling them to invest more and reap greater profits, while the poor may not gain the same advantages. Additionally, a savings ratio contributing only 20% to the GRDP indicates that high economic growth does not always lead to improved income distribution. Therefore, economic growth alone is insufficient to significantly reduce income inequality.

More focused and inclusive policies are needed to ensure that the benefits of economic growth are felt by all societal layers. Policy interventions should also focus on enhancing the competitiveness of less developed sectors and ensuring that economic benefits are evenly distributed. The government needs to strengthen infrastructure, improve inter-regional connectivity, and create a conducive investment climate to promote inclusive and sustainable economic growth. Thus, economic growth can become more equitable and provide greater

benefits in reducing income inequality in East Java.

2. Effect of the Human Development Index on Income Inequality

The analysis suggests that income inequality in East Java is significantly and positively affected by the human development index variable. Income inequality will also increase every time the human development index increases. This contradicts the human capital theory, which states that education influences economic growth and reduces income inequality.

Improvements in human resources quality occur because the education received by the community is getting better and impacts community productivity. Better education should enhance community productivity, enabling people to obtain better jobs and higher wages. However, this productivity increase is not evenly distributed across East Java. The improvement in the quality of human resources tends to be concentrated in economic centres, especially industrial areas and high-income regions. Economic centres like Surabaya enjoy greater benefits from the increase in the human development index compared to more remote areas. This is due to more job opportunities, better access to quality education, and more adequate healthcare services in these economic hubs. Conversely, less developed areas face limitations in access to the same facilities and opportunities, leading to increased income inequality.

The mismatch between the education received and the skills needed in the labour market also contributes to income inequality. Many graduates with higher education are forced to work in jobs that do not match their educational level, a phenomenon known as overeducation (Nadya & Syafari, 2019). For example, a university graduate working as a customer service representative, even though the job only requires basic skills. This mismatch indicates that although better education enhances individual productivity, a labour market that cannot properly absorb educated workers exacerbates income inequality. The impact of increasing income inequality, despite improvements in the human development index, is significant. Income inequality can hinder long-term economic growth because lower-income groups have limited access to education, healthcare, and economic opportunities.

The complex dynamics between the human development index and income inequality can also be examined through the lens of life expectancy. High income inequality can impact access to healthcare services, which in turn affects life expectancy (Aisyah et al., 2023). Regions with higher per capita income tend to have better healthcare facilities and easier access, leading to longer life expectancy. Conversely, in areas with lower per capita income, limited access to adequate healthcare services can reduce life expectancy and exacerbate welfare disparities between regions. This demonstrates that increasing per capita income must be accompanied by equitable access to basic services in order to reduce income inequality and improve overall quality of life.

3. Effect of the Unemployment Index on Income Inequality

The test findings demonstrate that the unemployment rate has an insignificant and positive correlation with income inequality in East Java. If the unemployment rate increases, income inequality will follow. Unemployment has an insignificant impact on income inequality due to government policies, such as social assistance, which alleviate the community's burden by meeting their needs. Another issue is that the living needs of most unemployed individuals rely on family support or savings until they find a job. This family support serves as a safety net for many individuals who have lost their jobs, helping them to sustain themselves without experiencing a significant drop in their standard of living. However, dependence on family and savings is only temporary and cannot be relied upon in the long term, leading to economic

uncertainty for individuals who remain unemployed for extended periods. Additionally, many workers have not been absorbed into the formal labour market. Many of them turn to the informal sector, such as working as family helpers or temporary labourers. Although they still receive wages, jobs in the informal sector often do not provide adequate social security and economic stability. Informal employment typically offers lower wages and poorer working conditions compared to formal jobs, ultimately exacerbating income inequality

4. CONCLUSION

To encapsulate the study, it is inferred that (1) Economic growth exhibits a positive and insignificant effect on income inequality in East Java from 2018 to 2022. The difference in the potential of each region to develop the economic sector causes economic growth to have little effect on income inequality; (2) The human development index exhibits a positive and significant effect on income inequality. This is due to the increase in education that only occurs in the economic centre and over education; (3) The unemployment rate exhibits a positive and insignificant effect on income inequality in East Java from 2018 to 2022. Unemployment has been controlled through programs run by the government, but on the other hand, employment has not been maximized; (4) Economic growth, human development index, and unemployment simultaneously affect income inequality in East Java from 2018 to 2022.

To address income inequality in East Java, more inclusive and equitable policies are needed in the distribution of the benefits of economic growth. The government must enhance infrastructure development across all regions of East Java to ensure that the benefits of development are felt by all segments of society, including less developed areas. Additionally, the improvement of human resources should be done evenly by ensuring equal access to education and healthcare services across the region. The labour market must also align the absorption of graduates with their skills to reduce the gap between educational qualifications and job requirements. These policies will help create more equitable and sustainable economic growth, thereby reducing income inequality in East Java.

Future research should focus on a more in-depth analysis of how specific economic sectors influence income inequality in detail. Research could explore factors that affect the distribution of economic growth benefits, such as the role of infrastructure investment and government policies in levelling economic access in less developed areas. Additionally, longitudinal studies can be conducted to monitor the long-term impact of changes in the human development index on income inequality in various regions. Research should also consider the mismatch between education and employment to gain a deeper understanding of how better education can contribute to reducing income inequality. With a more comprehensive approach and more detailed data, the research findings can provide clearer insights into effective ways to reduce income inequality and improve societal welfare in the future.

REFERENCES

Aisyah, H., Dahlan, M. D., & Aprila, M. (2023). Pengaruh Hubungan antara Ketimpangan Pendapatan, Pengurangan Kemiskinan, dan Pertumbuhan Ekonomi: Sebuah Perspektif dari Indonesia. Jurnal Economica, 2(12), 3722-3736. https://doi.org/10.55681/economina.v2i12.1065

Arif, M., & Wicaksani, R. A. (2017). Ketimpangan Pendapatan Propinsi Jawa Timur dan Faktor-Faktor yang Mempengaruhinya. *URECOL*, 323-328.

Central Agency of Statistics (2022a). Gini Ratio Menurut Kabupaten Kota di Jawa Timur 2020-2022. https://jatim.bps.go.id/indicator/23/488/1/gini-rasio-menurut-kabupaten-kota-di-jawa-timur.html. Accessed on December 4, 2023.

Central Agency of Statistics. (2022b). Indeks Pembangunan Manusia Menurut Kabupaten/Kota 2020-2022.https://jatim.bps.go.id/indicator/26/36/1/indeks-pembangunan-manusia-menurut-

kebupaten-kota.html. Accessed on December 4, 2023.
Ersad, M. E., Amir, A., & Zulgani, Z. (2022). Dampak IPM, Tingkat Pengangguran dan Tingkat Kemiskinan terhadap Ketimpangan Pendapatan di Sumatera Bagian Selatan. *Jurnal Paradigma Ekonomika*, 17(2), 425-438. https://doi.org/10.22437/jpe.v17i2.15614
Febriyani, A., & Anis, A. (2021). Pengaruh Pertumbuhan Ekonomi, Investasi dan Indeks Pembangunan Manusia terhadap Ketimpangan Distribusi Pendapatan di Indonesia. *Jurnal Kajian Ekonomi dan Pembangunan*, 3(4), 9-16. http://dx.doi.org/10.24036/jkep.v3i4.12375
Herlambang, B., & Rachmawati, N. S. A. (2023). Pengaruh PDRB, IPM, dan Jumlah Penduduk Terhadap Tingkat Kemiskinan di Jawa Timur. *Ekonomi Dan Bisnis: Berkala Publikasi Gagasan Konseptual, Hasil Penelitian, Kajian, Dan Terapan Teori*, 27(1), 52-60. https://doi.org/10.24123/jeb.v27i1.5732
Islami, F. S., & Nugroho, S. B. M. (2018). Faktor-Faktor Mempengaruhi Ketimpangan Wilayah di Provinsi Jawa Timur, Indonesia. *Media Ekonomi dan Manajemen*, 33(1), 29-30. http://dx.doi.org/10.24856/mem.v33i1.564
Kuncoro, M. (2006). Ekonomi Pembangunan. Salemba Empat.
Kuznets, S. (1955). Economic Growth and Income Inequality. *The American Economic Review*, 45 (1), 1-28. https://www.jstor.org/stable/1811581
Nadya, A., & Syafri, S. (2019). Analisis Pengaruh Faktor Pertumbuhan Ekonomi, Pendidikan, dan Pengangguran terhadap Ketimpangan Distribusi Pendapatan di Indonesia. *Media Ekonomi*, 27(1), 37–52. https://doi.org/10.25105/me.v27i1.5300
Nurain, H., & Juliannisa, I. A. (2022). Analisis Faktor Penyebab Ketimpangan Pendapatan pada Lima Provinsi Tertimpang di Indonesia. Equilibrium: *Jurnal Ekonomi-Manajemen-Akuntansi*, 18(1), 53-65. http://dx.doi.org/10.30742/equilibrium.v18i1.1960
Nurcahyo, A. M. (2022). Analisis Ketimpangan Pembangunan Antar Daerah di Jawa Timur (Studi Kasus 38 Kabupaten/Kota di Jawa Timur). *Jurnal Ilmiah Mahasiswa FEB*, 10(1).
Nursahid, E., Priyagus, P., & Mintarti, S. (2021). Analisis Faktor yang Mempengaruhi Ketimpangan Pendapatan di Indonesia. *Jurnal Ilmu Ekonomi Mulawarman (JIEM)*. https://doi.org/10.29264/jiem.v3i1.2335
Pradipta, A. I., & Wijaya, R. S. (2022). Faktor yang Mempengaruhi Ketimpangan Pendapatan Melalui Pertumbuhan Ekonomi di Provinsi Daerah Istimewa Yogyakarta. *Jurnal Ekonomika*, 6(1), 110-122. http://journal.lldikti9.id/Ekonomika
Putri, N. D. K., & Wulandari, D. K. A. (2022). Determinant analysis of income inequality in Indonesia 2015-2020. *Indonesian Journal of Human Resources Management*. https://pusdiklat.bps.go.id/journal/index.php/smart/article/view/15
Regional Development Planning Agency of East Java Province. (2022). Data Laju Pertumbuhan Ekonomi. https://simreg.bappenas.go.id/home/pemantauan/lpe. Accessed on December 4, 2023.
Regional Office of the Directorate General of Treasury in East Java. (2022). Kajian Fiskal Regional Jawa Tahun 2022. https://djpb.kemenkeu.go.id/portal/id/kfr-triwulan-ii-tahun-2022.html. Accessed on December 4, 2023.
Setiyaningrum, R., & Erdkhadifa, R. (2023). Analisis Faktor-Faktor yang Mempengaruhi Pertumbuhan Ekonomi di Daerah Istimewa Yogyakarta. *Jurnal Review Pendidikan dan Pengajaran (JRPP)*, 6(4), 445-457. https://doi.org/10.31004/jrpp.v6i4.20065
Sholikah, N. R., & Imaningsih, N. (2022). Pertumbuhan, Indeks Pembangunan Manusia dan Tingkat Pengangguran Terbuka serta Pengaruhnya terhadap Ketimpangan Distribusi Pendapatan di Provinsi Daerah Istimewa Yogyakarta. *Jurnal Pendidikan Ekonomi*, 10(3), 247-253. https://doi.org/10.26740/jupe.v10n3.p247-253
Suhendra, I., Ginanjar, R. A. F., Istikomah, N. (2021). Distribusi Pendapatan: Konteks Provinsi di Indonesia. Media Sains Indonesia.

Todaro, M. P., & Stephen, C. S. (2006). Pembangunan Ekonomi: Jilid 1. Erlangga Jakarta.

United Nations Development Program. (2023). Human Development Index (HDI). https://hdr.undp.org/data-center/human-development-index#/indicies/HDI. Accessed on December 4, 2023.

Zulfariska, D., & Bariyah, N. (2021). Pengujian Teori Kurva U-Terbalik (Hipotesis Kuznets) di Kalimantan Barat. *Jurnal Pembangunan dan Pemerataan* 10(1). https://doi.org/10.26418/pipt.2021.33

Zusanti, R. D., Sasana, H., & Rusmijati, R. (2020). Analisis Pengaruh IPM, Pertumbuhan Ekonomi dan TPT terhadap Ketimpangan Wilayah di Pulau Jawa 2010-2018. *DINAMIC: Directory Journal of Economic*, 2(3), 602-615. https://doi.org/10.31002/dinamic.v2i3.1413