International Journal on Social Science, Economics and Art, 15 (2) (2025) 81-87

Published by: Institute of Computer Science (IOCS)

International Journal on Social Science, Economics and Art

Journal homepage: www. ijosea.isha.or.id

The Influence Of Population, Economic Growth And Human Development Index On Income Inequality (Case Study Of Gowa District)

Anis Mirani[1], Basri Bado[2], Regina[3], Citra Ayni Kamaruddin[4], Abd. Rahim[5]

[1,2,3,4,5]Economic and Business Faculty, Makassar State University, Indonesia

Article Info

Article history:

Received: Jun 08, 2025
Revised: Jul 16, 2025
Accepted: Aug 30, 2025

Keywords:

Population;
Economic Growth;
HDI;
Income Inequality..

ABSTRACT

This study looked at how Gowa Regency's population, economic growth, and HDI affected income inequality between 2014 and 2023. Multiple linear regression analysis is the quantitative method employed in this study. The findings show that whereas economic development has no discernible impact on income inequality, the population variable has a positive and considerable impact. On the other hand, Gowa Regency's income disparity is significantly and negatively impacted by the Human Development Index (HDI). To get more thorough and reliable results, future researchers interested in related subjects are urged to increase the sample size and include more variables.

Corresponding Author:

Anis Mirani,
Economic and Business Faculty,
Makassar State University,
Jalan Raya Pendidikan, Makassar, South Sulawesi Province, Indonesia
Email: anismirani02@gmail.com

1. INTRODUCTION

One important indicator that shows the achievement of development goals is economic progress. Often, income inequality increases as a result of rapid economic growth. When income inequality increases in a region, it indicates that the income distribution of the people there is unequal over a period of time. This indicates that there is more and more difference between both the high-income and low-income groups.

(Todaro & Smith, 2011), argue that high income inequality can lead to economic inefficiency, social stability, and solidarity. In addition, income inequality leads to poor areas that are remote, vulnerable, isolated, and lack resources (Gesang Almuazam & Sirait, 2022). As mentioned earlier, economic development theoretically has the ability to minimise income inequality (Duarsa & Wijaya, 2023).

Aspects that contribute to income inequality include firstly population. An increase in the population rate in a region, if not accompanied by an increase in productivity, will result in lower purchasing power, which in turn leads to a reduction in per capita income (Doğan & Aslan, 2023). It has been suggested that population increases are linked to rising inequality, due to the influx of

both high-skilled and low-skilled workers that deepen occupational and income divisions (Butler et al., 2020).

Economic growth is the next element influencing income disparity. There is a link between income distribution and economic development, where a more effective distribution of income equality can encourage a more significant rate of economic growth (Finanda & Toto, 2022). Economic growth itself represents the achievement of a region in optimising economic results obtained through various economic activities in a sustainable manner over time (Chen & Chen, 2023). On the other hand, the findings of (Nadhifah & Wibowo, 2021) suggest that economic growth does not significantly affect the income gap in the Special Region of Yogyakarta.

Another factor that influences income distribution disparity is the Human Development Index (HDI). The well-being achieved through human development can be measured through income distribution and the level of income generated by the region (Putri & Iryani, 2023). Education is considered to be able to boost income and reduce income disparities (Osakede et al., 2023). Likewise, a higher level of health allows a person to participate more optimally in the labour market, thus potentially increasing income and reducing inequality (Puspasari & Handayani, 2020).

Gowa, which is one of the regencies in South Sulawesi Province, faces an income inequality problem that needs to be addressed urgently. As income equality is part of Indonesia's national development strategy and main objective, this important element must be continuously monitored. Therefore, to achieve equitable economic development, the development process in this region must be optimised as it is implemented. This can be achieved through increased effectiveness to develop leading economic sectors that have competitive value across the region in a sustainable manner.

2. RESEARCH METHOD

In order to determine the link between many variables, this study employs a quantitative approach, which is a method for gathering and analysing data in numerical form and statistical applications. Associative research is utilised to determine the association between two or more variables, according to Siregar (2013). This research is intended to quantify the degree to which the independent variable (X), either separately or in combination, influences the dependent variable (Y).

In addition to reviewing pertinent literature and scholarly publications, the Central Bureau of Statistics for Gowa Regency and South Sulawesi Province provided the secondary data used in the present study. The time series data used in this study spans the years 2014–2023.

3. RESULTS AND DISCUSSIONS

3.1 Results

The Shapiro-Wilk test is one method used to evaluate the normal distribution assumption of the dataset used in this study. It is a preliminary test to determine normalcy by combining data from both skewness and kurtosi (Quraisy, 2022).

Table 1. Results of Shapiro-Wilk Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total Residents	,088	10	,200*	,986	10	,990
Growth Economics	,209	10	,200*	,952	10	,695
HDI	,132	10	,200*	,968	10	,872
Inequality	,144	10	,200*	,961	10	,801
Revenue						

Source: Data processed (2025)

From the normality test using the Shapiro-Wilk approach, the sig. values of population (0.990), economic growth (0.695), Ipm (0.872), and income inequality (0.801) are all above the 0.05 threshold. It can therefore be inferred that X1, X2, X3, and Y are distributed normally. To assess the intercorrelation between independent variables in this study, a multicollinearity test is applied. Independent variables are regarded as free from multicollinearity when the VIF value is less than 10 and the Tolerance value is greater than 0.10

Table 1. Multicollinearity Test Results

Model		Collinearity Statistics	
		Tolerance	VIF
1	Total Population	,400	2,503
	Economic Growth	,733	1,364
	HDI	,481	2,077

Source: Data processed (2025)

Referring to the data presented in table 2, the values seen are VIF variable population (X1) 2.503 < 10 with a tolerance value of 0.400 > 0.05, Economic Growth Variable (X2)1.364 < 10 with a tolerance value of 0.733 > 0.05 and HDI variable (X3) 2.077 < 10 with a tolerance value of 0.481 > 0.05. Therefore, the data cannot be considered multicollinearity.

To determine whether the variance of the residuals in the regression model is not uniform or there is inequality, a heteroscedasticity test is performed. In this study, the test was conducted using the Glejser approach. Assessment of the test results refers to the significance value with a threshold of 0.05. If the value obtained is greater than this figure, it can be said that the findings show that there are no signs of heteroscedasticity in the model.

Table 2. Heteroscedasticity Test Results

Model	*Unstandardised Coefficients*		*Standardised Coefficients*	*t*	*Sig.*
	B	*Std.Error*	*Beta*		
(Constant)	*,191*	*,194*		*,984*	*,363*
Total Population	*1,553 E-7*	*,000*	*,785*	*,335*	*,749*
Growth Economics	*,001*	*,001*	*,317*	*1,064*	*,328*
Ipm	*-,004*	*,008*	*-1,382*	*-,575*	*,586*

Source: Data processed (2025)

As shown in Table 3, the Glejser test yields significance values greater than 0.05. Thus, heteroscedasticity is not present in this study's model.

Table 3. Autocorrelation Test Results

	Unstandardised Residual
Test Value[a]	,00092
Cases < Test Value	5
Cases>= Test Value	5
Total Cases	10
Number of Runs	4
Z	-1,006
Asymp. Sig. (2-tailed)	,314

Source: Data processed (2025)

According to Table 4, the Asymp. Sig. (2-tailed) value stands at 0.324, exceeding the 0.05 cutoff point, suggesting no presence of autocorrelation in the applied regression model.

Multiple linear regression is applied to evaluate the degree to which the independent variables explain fluctuations in the dependent variable.

Table 4. Multiple Linear Regression Analysis

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,526	,570		4,435	,004
	Total	3,748E-6	,000	4,312	2,763	,033
	Populatio n Growth Economics	,000	,003	-,028	-,142	,892
	Ipm	-,072	,023	-5,090	-3,175	,019

Source: Data processed 2025

Referring to the regression estimation results presented in Table 5, the following multiple linear regression model can be formulated to describe the relationship between the variables.

$$\mathbf{Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 1X3 + e}$$
$$\mathbf{Y = 2.526 + 3.748 + 0.000 - 0.072}$$

The model equation above implies that: (a) The intercept value of +2.526 means that if the variables population, economic growth, and IPM stay fixed, income disparity stands at 2.526. (b) With a coefficient of +3.748, the population variable suggests that each additional million people results in a 3.748-point rise in income inequality, holding other factors constant. (c) A coefficient of +0.000 for economic growth implies that income inequality remains unchanged with a 1% increase in economic growth, assuming all other variables are fixed. (d) The HDI variable has a regression coefficient of -0.072, meaning a 1% rise in HDI results in a 0.072 point decrease in income inequality, assuming other independent variables stay the same.

The t-test is utilized as a verification tool to assess the individual contribution of each independent variable to the dependent variable. The significance criterion is met if the t-count exceeds the t-table value. Table or when the significance probability falls below the 5% threshold, indicating that the result is statistically significant. The t-test results based on Table 5 are as follows:

a. Population Variables on Income Disparity:

From the test results, the tcount value > ttable is 2.763 > 2.447, and the significant value (sig) is smaller than the significance level, namely 0.033 < 0.05, so it can be concluded that population has a positive and significant effect on income inequality in Gowa Regency. Therefore, the first hypothesis is accepted.

b. Economic Growth Variables on Income Disparity:

According to the results obtained, it can be concluded that tcount of 0.142 is smaller than the t(table) of2.447, and the significance value of 0.892 exceeds the 0.05 significance limit. These findings imply that economic growth is not a significant determinant of income disparity in Kabupaten Gowa. Therefore, the null hypothesis is accepted.

c. Ipm Variable to Income Disparity Variable:

From the results of the statistical test, it is known that tcalculatedvalue of 3.175 is greater than ttableof 2.447. In addition, the significance value of 0.019 is below the significance limit of 0.05. This shows that HDI has a significant negative effect on income disparity in Gowa Regency. Thus, the first hypothesis can be accepted.

To determine whether all independent variables together impact the dependent variable significantly, the F-test is performed. A significant simultaneous effect is indicated when the F-value calculated is greater than the F-table value or when the p-value is below 0.05.

Table 5. F Test Results

	Sum of Squares	df	Mean Square	F	Sig.
Regression	,005	3	,002	11,677	,006[b]
Residuals	,001	6	,000		
Total	,06	9			

Source Data processed 2025

As shown in Table 6, the calculated F-value of 11.677 is greater than the F-table value of 4.757. Furthermore, the significance level of 0.006 is below the 0.05 threshold. These results indicate that the independent variables population, economic growth, and the Human Development Index (HDI) collectively exert a significant influence on income inequality in Gowa Regency.

The coefficient of determination (R^2) is utilized to evaluate the extent to which the independent variables collectively explain the variation in the dependent variable. The assessment is based on the R Square value, which represents the proportion of variance in the dependent variable that is explained by the regression model.

Table 6. Results of the Coefficient of Determination (R2)

Model Summaryb			
Model	R	R Square	Adjuted R Square
1	,924a	,854	,781

Source: Data processed 2025

As presented in Table 7, the R^2 test results show a value of 0.781. It can be inferred that the independent variables considered in this research have the ability to explain about 78.1% of their contribution to changes in the dependent variable Meanwhile, a proportion of 21.9% is accounted for by variables outside the scope of this research.

3.2 Discussions

According to the results of the analysis, the t_{count} is 3.175 which is more than t_{table} of 2.447 so empirical evidence supports the acceptance of H1. This finding indicates that there is axerts a significant and positive effect on income disparity in Gowa Regency. This indicates that the greater the population, the more severe the income disparity. This outcome supports the Population Trap Theory as introduced by Thomas Robert Malthus. According to the Population Trap Theory, which explains that population growth that is not balanced with resource growth will cause economic limitations. Malthus posited that population growth occurs at an exponential rate, whereas the expansion of resources and food production progresses only at an arithmetic rate. As a result, a surge in population that is not accompanied by an escalation of efficiency and job creation can exacerbate income inequality, as most of the population is only absorbed into the low-income informal sector.

This evidence corroborates the study conducted by (Gusmianto, 2023), where the population variable is shown to contribute positively and significantly to income disparity, and is supported by the study conducted by (Firdaus & Hasmarini, 2023), where population makes a significant contribution to income inequality.

Guided by empirical findings, changes in economic growth do not exert a statistically significant influence on income inequality within Gowa Regency because the coefficient value is very small or close to zero. This phenomenon occurs because economic growth is not yet inclusive and there are differences in the driving sectors of the economy, besides that each region has varied

comparative advantages, such as differences in natural resources, supporting infrastructure, production factors, and human resources (HR). This indicates that an increase in the value of the regional economy has not been able to directly reduce income inequality between community groups. This finding can be interpreted through the Harrod-Domar Theory, which explains that economic growth depends on investment and capital efficiency. However, if the growth is only concentrated in certain sectors that are not inclusive, the results will not be enjoyed equally (Wahyuni & Andriyani, 2022)

Nevertheless, this finding supports the conclusions drawn in the study by (Simalango & Setiawati, 2024), which obtained a probability value of 0.1022 surpassing the 0.05 significance level, thus indicating that the dynamics of economic growth have no meaningful or insignificant contribution to income distribution disparities. The consistency of the findings is also reflected in research (Nadya & Syafri, 2019), which suggests that although economic growth experienced a positive trend, it did not have a significant impact on income disparity in Indonesia.

The result that shows a negative coefficient on HDI (-0.072) with a significance of 0.019 indicates that improvements in HDI contribute to reducing income inequality. This outcome supports the framework of Human Capital Theory proposed by Gary Becker. According to the Human Capital Theory, investment in education, skills and health has the potential to improve individual productivity levels, which in turn is anticipated to accelerate income levels and promote a more equitable and balanced economic expansion. In short, the better the quality of human capital, the greater the opportunity for individuals to get a decent job and improve their quality of life, resulting in a fairer income distribution. This outcome validates what has been revealed by (Yoertiara & Feriyanto, 2022) in their research, that improvements in the HDI are associated with a significant decrease in income disparity.

4. CONCLUSION

Population growth is identified as a factor that contributes positively and significantly to income inequality. This suggests that an increase in population tends to correspond with an increase in income disparity in Gowa Regency. The rate of economic expansion fails to demonstrate a significant effect upon income distribution inequality. In other words, fluctuations in economic growth, whether up or down, do not necessarily affect the level of economic inequality across the region. A rising Human Development Index (HDI) reflects improvements in people's education, health and quality of life. When the HDI rises, income inequality tends to decrease as people have more equal opportunities to prosper.

In light of the results obtained, it can be concluded that, the author recommends that the Government of Kabupaten Gowa improve the quality and skills of the workforce through optimising vocational training programmes, such as the Vocational Training Centre (BLK). The implementation of this programme is expected to expand employment opportunities, increase per capita income, encourage regional economic growth, and reduce unemployment in Kabupaten Gowa. This study has several limitations, so it is recommended that future researchers interested in similar topics consider adding other variables and expanding the number of samples so that the results obtained are more comprehensive.

REFERENCES

Butler, J., Wildermuth, G. A., Thiede, B. C., & Brown, D. L. (2020). Population Change and Income Inequality in Rural America. *Population Research and Policy Review*, *39*(5), 889–911. https://doi.org/10.1007/s11113-020-09606-7

Chen, Y.-Q., & Chen, Y.-H. (2023). Economic Growth, Income Inequality and Food Safety Risk. *Foods*, *12*(16), 3066. https://doi.org/10.3390/foods12163066

Doğan, F. C., & Aslan, M. H. (2023). The relationship of economic growth, income inequality and poverty: a study on developing countries. *Revista de Gestão e Secretariado (Management and Administrative Professional Review)*, *14*(9), 15727–15752. https://doi.org/10.7769/gesec.v14i9.2549

Duarsa, F. A., & Wijaya, R. S. (2023). ANALISIS PENGARUH PENGELUARAN PERKAPITA, RLS, AHH, DAN JUMLAH PENDUDUK TERHADAP KETIMPANGAN DISTRIBUSI PENDAPATAN. *Equilibria Pendidikan : Jurnal Ilmiah Pendidikan Ekonomi*, *8*(2). https://doi.org/10.26877/ep.v8i2.17306

Finanda, N., & Toto, G. (2022). Analysis of the effect of economic growth, population growth, and poverty rates on the environmental quality index. *Sosains: Journal of Social and Science*, *2*(1), 193–202.

Firdaus, A., & Hasmarini, M. I. (2023). Analisis Pengaruh Jumlah Penduduk, Upah Minimum Kabupaten, Pengangguran, dan Indeks Pembangunan Manusia Terhadap Ketimpangan Pendapatan Kab/Kota di Provinsi Bali Pada Tahun 2015-2022. *PRIMANOMICS : Jurnal Ekonomi Dan Bisnis*, *21*(3).

Gesang Almuazam, R., & Sirait, T. (2022). *Pengaruh Kebijakan Desentralisasi Fiskal Terhadap Ketimpangan Pendapatan Antarkabupaten/kota di Provinsi Papua Tahun 2015-2020*.

Gusmianto, A. (2023). Analisis Faktor-Faktor yang Mempengaruhi Ketimpangan Pendapatan di Jawa Tengah tahun 2018. *INTEGRAL: Jurnal Inovasi, Teknologi Terapan, Dan Litbang*, *2*(1), 71–81. https://doi.org/10.57122/integral.v2i1.17

Nadhifah, T., & Wibowo, M. G. (2021). Determinan Ketimpangan Pendapatan Masyarakat di Daerah Istimewa Yogyakarta. *Jurnal Ekonomi Dan Bisnis*, *24*(1).

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

Osakede, U. A., Aramide, V. O., Adesipo, A. E., & Akunna, L. C. (2023). Correlates of human development in Africa: Evidence across gender and income group. *Research in Globalization*, *6*, 100135. https://doi.org/10.1016/j.resglo.2023.100135

Puspasari, D. A., & Handayani, H. R. (2020). Analsis Pengaruh Pendidikan, Kesehatan Dan Upah Terhadap Produktivitas Tenaga Kerja Di Provinsi Jawa Tengah. *Jurnal Dinamika Ekonomi Pembangunan*, *1*(2).

Quraisy, A. (2022). Normalitas Data Menggunakan Uji Kolmogorov-Smirnov dan Saphiro-Wilk. *J-HEST Journal of Health Education Economics Science and Technology*, *3*(1), 7–11. https://doi.org/10.36339/jhest.v3i1.42

Todaro, M. P. , & Smith, S. C. (2011). *Economic Development. In Economic Development*.

Wahyuni, S., & Andriyani, D. (2022). Pengaruh Inflasi, Jumlah Penduduk Dan Pertumbuhan Ekonomi Terhadap Ketimpangan Pendapatan Di Provinsi Aceh. *Jurnal Ekonomi Regional Unimal*, *1*(5).

Yoertiara, R. F., & Feriyanto, N. (2022). Pengaruh pertumbuhan ekonomi, IPM, dan tingkat pengangguran terbuka terhadap ketimpangan pendapatan provinsi-provinsi di pulau Jawa. *Jurnal Kebijakan Ekonomi Dan Keuangan*. https://doi.org/10.20885/jkek.vol1.iss1.art9