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Research Article

The Influence of the Labor Force and Regional Income on the Human Development Index (HDI) in Indonesia

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Abstract

This research examines the influence of the labor force and regional income on the Human Development Index (HDI) in Indonesia during 2012-2022. Using panel data analysis and multiple regression, the results show that the labor force has a significant positive influence on HDI, while regional income shows a negative influence. This shows that increasing the workforce contributes to improving the quality of life, but regional income without effective management does not always improve human development. These findings are important for policy makers in managing the workforce and regional income to achieve a higher HDI.

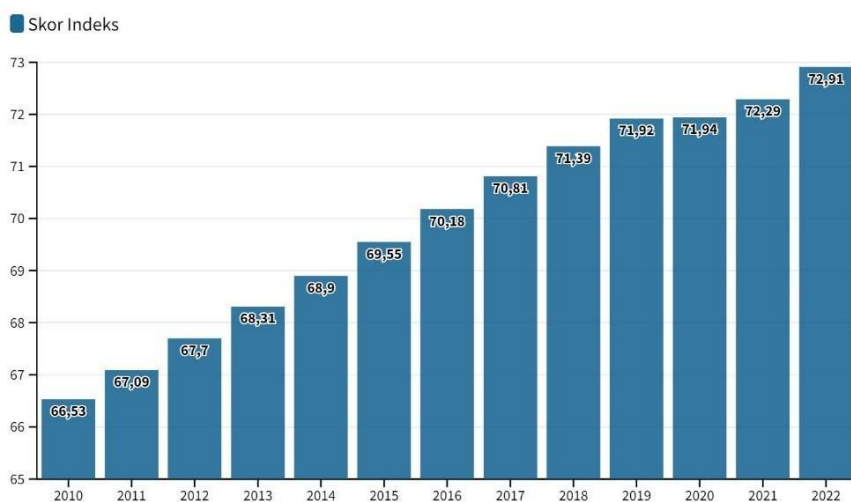
Introduction

Development is an effort or process to bring about change in a better direction. This process involves various changes in social, political, economic and cultural aspects. Therefore, development is an important prerequisite for the sustainability of a country. The basic elements of successful economic development include fulfillment, identity and freedom, which are the main goals that must be achieved by every society (Todaro, 2000: 26). Economic development is an effort to reduce poverty, overcome income inequality, and create jobs. An important indicator of economic development is improving the quality of human resources which can be measured using the Human Development Index (HDI).

The success of national development is not only seen from the high rate of economic growth, but also from the success of human development. IPM is the process of expanding the choices available to humans. According to the Central Statistics Agency (BPS), in measuring the quality of life of human development, the measure that can be used is the HDI of a region or region. HDI shows how residents in a region can access development results in obtaining income, health and education to determine the ranking or level of development of the region or country.

Tren Perkembangan IPM di Indonesia

Tahun 2010 - 2022



GoodStats

Sumber: BPS

Table 1. Table of HDI Development in Indonesia

Based on the table above, Indonesia's HDI has increased consistently. In 2022, the HDI will reach 72.91, up 0.62 points (0.84%) compared to the previous year (72.29). This increase shows significant progress in improving the quality of life of Indonesian people. However, there are still several factors that influence HDI, such as the labor force and regional income.

The workforce plays an important role in increasing the HDI. The labor force is people who work to meet the increasing needs of life. The number of residents who are actively working can increase regional income and reduce poverty. Like the HDI, the workforce also continues to increase every year, from 112,504,868 in 2012 to 135,296,713 in 2022. Apart from that, regional income also influences the HDI, because it can increase community access to health, education and other facilities. -other.

In recent years, Indonesia has experienced significant economic growth, which has had an impact on increasing regional income. Regional income is revenue obtained from regional sources, collected based on regional regulations in accordance with applicable laws and regulations (Al Qomariah et al., 2022). This aims to reduce fiscal dependence on the center and achieve regional economic independence. The aim of this research is to see how the labor force and regional income affect HDI in Indonesia from 2012 to 2022.

Hypotheses Development

A hypothesis is defined as a temporary answer or assumption to a research problem. The hypothesis that can be developed based on this introduction to determine the influence of the labor force and regional income on the human development index in Indonesia from 2012 to 2022 is as follows.

H1. The Influence of the Labor Force on the Positive Human Development Index

According to the Central Bureau of Statistics, the labor force is people aged 15 years and over who are working or have a job but are not currently working and are considered unemployed. According to (Kurniawan & Sri Budhi, 2015: 129), the workforce includes both working and non-working adults. It is called not unemployed if the workforce has the will and is ready to work and must have made efforts to find work in the last four weeks.

This hypothesis assumes that the workforce has a significant effect on the human development index (HDI). HDI is a measure used to assess the quality of human life, which includes three main dimensions: education, livelihood and length of life. By cultivating a larger, more organized, and more balanced workforce, countries can improve quality of life, increase health awareness, and improve societal well-being. As explained by Arifin

(2021), human resources (human resources) are a very important factor in economic growth. Efficiency in the use of labor is necessary to achieve significant economic growth. As a result, a larger and more efficient workforce can increase the country's economic growth and the country's ability to improve people's quality of life, resulting in an increase in the HDI.

H2. The Effect of Regional Income on the Positive Human Development Index

The human development index is strongly influenced by regional income which has an important role in increasing HDI, especially in improving the quality of people's lives through effective and efficient income allocation. Winarno, Wing Wahyu (2015) and Lalu Ariya Wira Wijaya (2018), found that Regional Income has a positive and significant influence on HDI. This shows that increasing regional income can result in an increase in HDI, which in turn can improve people's quality of life through increasing access to education, health services and other facilities.

This research focuses on quantitative analysis of empirical data to test the hypothesis that the labor force and regional income have a positive effect on HDI in Indonesia. It is hoped that the results of this research will provide statistical evidence that supports this hypothesis and provide insight for policy makers in developing strategies to improve people's quality of life by increasing the workforce and regional income

Method

This research uses quantitative methods. This research was conducted to find out clearly whether the workforce (X1), regional income (X2) have a significant effect on the human development index (Y) in Indonesia. The data obtained is then processed systematically. The data used is secondary data obtained from the Indonesian Central Statistics Agency (BPS). The data taken includes the Human Development Index, labor force data and regional income. The type of data used is panel data or pooled data (a combination of cross section data and time series data). Time series data were taken from 2012-2022. In this research, classical assumption tests, multiple regression analysis and hypothesis testing were carried out. Kusumaningtyas et al. (2022) stated that there were several model problems found by researchers, including normality and multicollinearity. So it is necessary to test classical assumptions to overcome this problem.

Sugiyono (2017) explains that multiple linear regression analysis is an analytical tool used by researchers to obtain a decision whether the increase or decrease in variable Y can be done by increasing variable X or not. Multiple linear regression is a regression model in which there is more than one independent variable. The formula for the multiple linear regression equation is:

$$Y = \alpha + \beta_1 PMA + \beta_2 EN + \beta_3 TK + \varepsilon$$

Information:

Y = Human Development Index

α = Constant

β_1 = Regression coefficient for Labor Force

β_2 = Regression coefficient for Regional Income

ATK = Labor Force

PD = Regional Income

HDI = Human Development Index

ε = Standard Error

Hypothesis testing

1. T test

According to Junjuna and Nawangsari (2021), the t test (partial test) is a test to find out whether there is an influence between an independent variable on the dependent variable by comparing t_{hitung} with t_{tabel} .

2. F Test

According to Junjuna and Nawangsari (2021), the F test (simultaneous test) is a test to see whether there is an influence between the independent variables (together) on the dependent variable by comparing F_{hitung} with F_{tabel} .

3. Coefficient of Determination

According to Meiryani (2021), the coefficient of determination shows the extent to which the contribution of the independent variable explains the dependent variable. The R2 value ranges from 0 to 1, the closer it is to 1, the stronger the influence of variable X on variable Y. Conversely, the closer to 0 indicates the weaker the influence.

Results And Discussion

Result

Classic assumption test

1. Normality test using the Jarque-Bera method

The normality test aims to test whether in the regression model, the dependent variable and the independent variable are both normally distributed or not. Decision making using the Jargue–Bera test, namely if the probability is $> 5\%$, then the variables are normally distributed

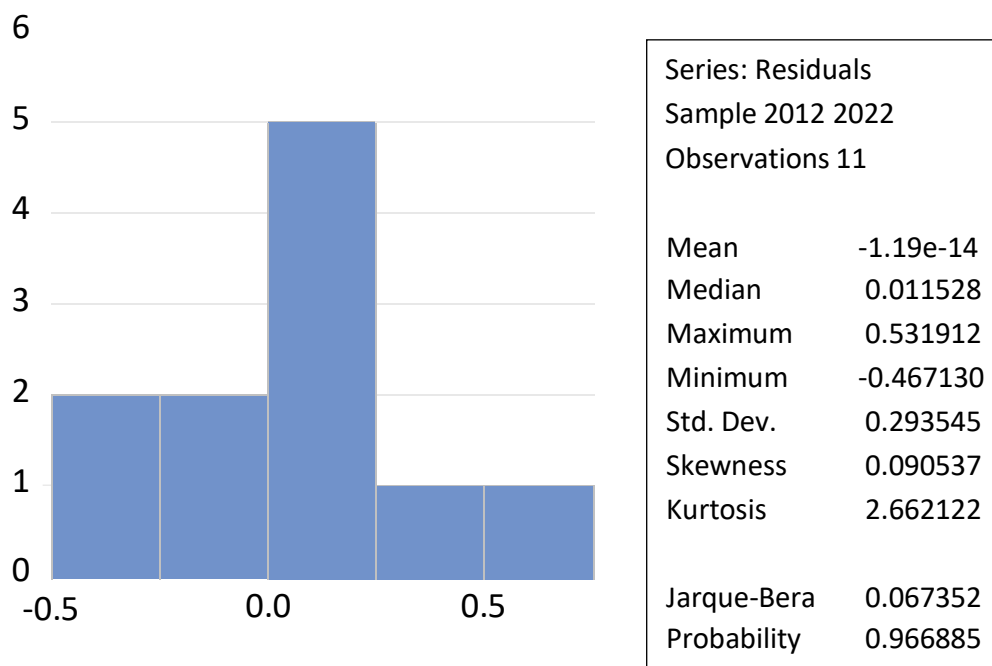


Table 2. Normality Test Results

From the results obtained with the Eviews estimation tool above, it can be seen that the probability value is

0.966885 > 0.05. So it can be concluded that in this study the data is normally distributed

2. Multicollinearity test with Centered VIF value

The multicollinearity test aims to test whether the regression model has a correlation between the independent variables or not. A good regression model should have no correlation between independent variables. If the independent variables are correlated with each other, then the variables are not orthogonal.

Variance Inflation Factors
Date: 04/29/24 Time: 09:38
Sample: 2012 2022
Included observations: 11

Variables	Coefficient Variance	Uncentered VIF	Centered VIF
C	10.65934	1088,586	NA
X1	2.01E-16	307.4210	1.229245
X2	0.000432	459.1973	1.229245

Table 3. Multicollinearity Test Results

From the results obtained with the Eviews estimation tool above, it can be seen that Centered VIF X1 or Labor Force is 1.229245. Centered VIF This research does not have multicollinearity problems

3. Multiple Regression Analysis using the Ordinary Least Square (OLS) method

Dependent Variable: Y
Method: Least Squares
Date: 04/29/24 Time: 09:23
Sample: 2012 2022
Included observations: 11

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	52.83259	3.264865	16.18217	0.0000
X1	1.92E-07	1.42E-08	13.51743	0.0000
X2	-0.055936	0.020774	-2.692667	0.0274
R-squared	0.971445	Mean dependent var		70.53636
Adjusted R-squared	0.964307	SD dependent var		1.737149
SE of regression	0.328194	Akaike info criterion		0.836575
Sum squared resid	0.861689	Schwarz criterion		0.945092
Log likelihood	-1.601163	Hannan-Quinn Criter.		0.768170
F-statistic	136.0824	Durbin-Watson stat		1.450526
Prob(F-statistic)	0.000001			

Table 4. Results of Multiple Regression Analysis

From the results obtained with the Eviews estimation tool above, the following regression results were obtained:

$$Y = \alpha + \beta_1 \text{ATK} + \beta_2 \text{PD} + \epsilon$$

$$\text{HDI} = 52.83259 + 1.92\text{E-}07 \text{ ATK} - 0.055936 \text{PD} + \epsilon$$

Based on the results of the regression model, the following model interpretation is made:

1. The constant is 52.83259. This explains that without a permanent workforce and regional income there will be a change in the human development index in Indonesia of 52.83259 in percent.
2. Labor Force Coefficient of 1.92E-07 has a positive sign, which means that if there is an increase in the labor force of 1%, it will result in the growth of the human development index in Indonesia increasing by 1.92E-07% assuming the variables are considered fixed.

3. The regional income coefficient is -0.055936 has a negative sign, which means that if there is no increase in regional income there will still be a growth in the human development index in Indonesia of 0.055936 in percent

Hypothesis testing

1. t test results

Workforce

Based on the table, the probability value for the PMA variable is obtained 0.0000 . Because the probability value is <0.05 . So it can be concluded that the Labor Force variable has a significant effect on the human development index in Indonesia.

Regional Income

Based on the table, the probability value for the Regional Income variable is obtained 0.0274 . Because the probability value is <0.05 . So it can be concluded that the Regional Income variable has a significant effect on the human development index in Indonesia.

2. F Test Results

The results of the estimation in the F-statistical model are equal to 136.0824 with a probability of $0.000001 < 0.05$, so it can be concluded that the labor force and regional income variables simultaneously (together) have a significant effect on the Indonesian human development index.

3. Coefficient of Determination (R^2)

Based on the table, the coefficient of determination data or R^2 is obtained 0.971445 . This means that 97% of the independent variables jointly influence the dependent variable or Human Development Index and the remaining 3% are influenced by other variables.

Discussion

Based on the results of data processing, it can be seen that the labor force and regional income variables significantly influence the Human Development Index (HDI) in Indonesia. The constant value of the regression model is 52.83259 , which shows a positive sign. This means, if the labor force and regional income are zero, the average HDI will be 52.83259 .

The labor force coefficient value of $1.92E-07$ shows a positive influence on HDI. So, if the labor force increases by 1%, the HDI will increase by $1.92E-07$, assuming other variables remain constant. These results are consistent with previous research which states that a larger workforce can improve people's quality of life through increasing income and employment opportunities.

On the other hand, the regional income coefficient value of -0.055936 shows a negative influence on HDI. This means that if regional income increases by 1%, the HDI will decrease by 0.055936 , assuming other variables remain constant. These findings indicate that although regional income is important for development, increases that are not accompanied by effective allocation can have negative impacts.

The research results show that the workforce has a significant and positive influence on HDI. This is in line with Dumairy's (1996) statement that labor, especially the labor force, is an important component in economic development and improving the quality of life of society. An increase in the workforce means more individuals are productive and contribute to the economy, which in turn increases the HDI.

Regional income, although showing a negative influence in the results of this regression, still has an important role. Previous research by Winarno and Wing Wahyu (2015), and Lalu Ariya Wira Wijaya (2018), shows that with proper management, regional income can significantly increase HDI through increasing access to health services, education and other public facilities.

Overall, the analysis results show that increasing the workforce and effective regional revenue management are very important to encourage HDI in Indonesia. Governments and policymakers must focus on strategies to increase a productive workforce and ensure that regional revenues are used efficiently to improve people's quality of life. This research provides valuable insights for human development policy in Indonesia, underscoring the importance of these two variables in determining HDI levels.

Conclusion

Based on the results of this research, it can be concluded that the labor force and regional income significantly influence the Human Development Index (HDI) in Indonesia in the period 2012 to 2022. This finding shows that the labor force has a positive influence on increasing the HDI, which means that an increase in the number of the labor force can contribute significantly to improving the quality of life of the community. These results support the initial hypothesis that the workforce plays an important role in economic development and increasing social welfare. On the other hand, regional income shows a negative influence on HDI in this regression model. This indicates that although regional income is an important resource for development, without effective management and allocation, increasing regional income does not always contribute positively to increasing HDI. Therefore, appropriate strategies in regional revenue management are needed to ensure that existing funds are used optimally to increase community access to education, health and other public facilities. This research provides empirical evidence that labor force and regional income variables need to be taken seriously in the formulation of human development policies in Indonesia. The government and policy makers are expected to take appropriate steps to increase workforce productivity and manage regional revenues effectively to achieve sustainable development. Thus, a focus on increasing the workforce and good regional revenue management is key to achieving higher human development targets. In the future, further research can be carried out to explore other variables that may influence HDI, as well as to understand more complex dynamics in the relationship between economic and social variables on human development in Indonesia.

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