

**POPULATION SIZE CAN MODERATE THE EFFECT OF HUMAN
DEVELOPMENT INDEX ON ECONOMIC GROWTH**

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Abstract

This research is a quantitative study with an explanatory approach, namely an approach that uses previous studies as the main basis for obtaining novelty and is developed in the research being conducted. The data used in this study are secondary data from various credible sources, namely the Central Statistics Agency from 2010 to 2024. The data were analyzed using the smart PLS 4.0 analysis tool. The result in this article show the two hypotheses proposed in this article, namely the Human Development Index variable can have a positive relationship direction and a significant influence on Economic Growth can be accepted and proven. This is because the P-Values are positive and below the significance level of 0.05, namely 0.009. The reason for these results is that the Human Development Index which is influenced by Health and Education Levels can have a good, positive, and significant impact on Economic Growth. On this basis, it can be concluded that the first hypothesis in this article can be accepted. In the next section, the researcher also has another hypothesis, namely that the Population Size variable can moderate the influence of the Human Development Index variable on Economic Growth because of the same thing, namely the P-Values are positive and below the significance level of 0.05, which is 0.000 more significant than direct testing of 0.009. Thus, the first and second hypotheses in this article can be accepted.

Keywords: Population Size, Human Development Index, Economic Growth

1. INTRODUCTION

To measure the Human Development Index has been introduced by the United Nations Development Program (Ahmad Zarkasyi 2016). In the HDI explains how the population can access the results of development in obtaining income, health, education, and so on. According to UNDP, the Human Development Index (HDI) measures the achievement of human development based on a number of basic components of quality of life. As a measure of quality of life, the HDI is built through a basic three-dimensional approach.

These dimensions include: 1. A long and healthy life; 2. Knowledge; and 3. A decent standard of living. The HDI is calculated using the approach of the longevity and healthy life dimension proxied by life expectancy at birth, the knowledge dimension proxied by adult literacy rate, and the decent standard of living dimension proxied by GDP per capita. To calculate the three dimensions into a composite index, the arithmetic mean is used (Arifin and Fadlan 2021).

In 2010, UNDP changed the methodology for calculating the HDI. This time, drastic changes occurred in the calculation of the HDI. UNDP calls the changes made to the calculation of the HDI a new method. Several indicators were replaced with more relevant ones. The Combined Gross Enrollment Ratio indicator was replaced with the Expected Years of Schooling indicator (Statistik 2022). The Gross Domestic Product (GDP) per capita indicator was replaced with the Gross National Product (GNP) per capita. In addition, the calculation method also changed. The

arithmetic mean method was replaced with the geometric mean to calculate the composite index. The following is a table of changes in the new human development index (Baeti 2013).

So that the variables in the new method of HDI that have been applied in Indonesia can be seen as follows (Primandari 2019) : 1. Life Expectancy at Birth - AHH (Life Expectancy - e0) Life Expectancy at Birth is defined as the average estimated number of years that can be lived by a person since birth. AHH reflects the health level of a community. AHH is calculated from the results of the census and population survey. 2. Average Years of Schooling - RLS (Mean Years of Schooling -MYS), Average Years of Schooling is defined as the number of years used by the population in undergoing formal education. It is assumed that under normal conditions the average length of schooling in a region will not decrease. The population coverage calculated in calculating the average length of schooling is the population aged 25 years and over. 3. Expected Years of Schooling - HLS (Expected Years of Schooling-EYS), Expected Years of Schooling is defined as the length of schooling (in years) that is expected to be felt by children at a certain age in the future. It is assumed that the probability of the child remaining in school at subsequent ages is the same as the probability of the population attending school per population for the same age currently. The Expected Years of Schooling figure is calculated for the population aged 7 years and above. HLS can be used to determine the condition of the development of the education system at various levels which is indicated in the form of the length of education (in years) that is expected to be achieved.

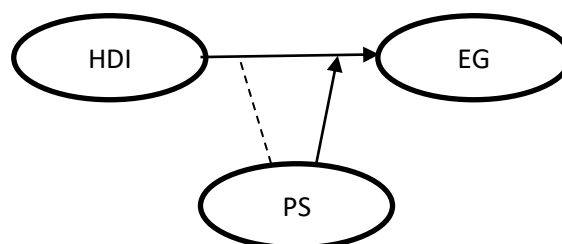
Based on the exposure of the three dimensions of measuring the Human Growth Index with the new method above, researchers believe that the Human Growth Index can have a positive relationship direction and significant influence on Economic Growth. Economic growth according to Prof. Kuznet (M.L. Jhingan, 2016) is "a long-term increase in a country's ability to provide more and more types of economic goods to its population; this ability grows in accordance with technological advances, and the necessary institutional and ideological adjustments. This definition has 3 (three) components: first, the economic growth of a nation is seen from the continuous increase in the supply of goods; second, advanced technology is a factor in economic growth that determines the degree of growth in the ability to provide various kinds of goods to the population; third, the use of technology widely and efficiently requires adjustments in the institutional and ideological fields so that the innovations produced by human science can be utilized appropriately.

Economic growth is the development of activities in the economy that causes goods and services produced in society to increase (Jhingan 2016). The problem of economic growth can be viewed as a long-term macroeconomic problem. From one period to another, a country's ability to produce goods and services will increase. This increased ability is caused by production factors that will always experience an increase in quantity and quality

Several previous studies (Izzah 2015); (FERARI 2022); (Shobri 2021); (MUH.SURIADI 2019); (BELLA MEISY BHUANA SAR 2019) & (A 2016). Unlike the five studies above, this study adds the Population Size variable as a moderating variable.

2. RESEARCH METHODS

Figure 1
Model



Noted:

HDI: Human Development Index

EG: Economic Growth

PS: Population Size

Based on the image above, it can be concluded that this study aims to analyze the effect of the Human Development Index on Economic Growth. This basic objective is in line with a number of previous studies, namely (Izzah 2015); (FERARI 2022); (Shobri 2021); (MUH.SURIADI 2019); (BELLA MEISY BHUANA SAR 2019) & (A 2016). Unlike the six studies above, this article adds the Population Size variable as a moderating variable (Sugiyono 2019). This research is a quantitative study with an explanatory approach, namely an approach that uses previous studies as the main basis for obtaining novelty and is developed in the research being conducted (Jonathan Sarwono 2016). The data used in this study are secondary data from various credible sources, namely the Central Statistics Agency from 2010 to 2024 (Manzilati 2017). The data were analyzed using the smart PLS 4.0 analysis tool with the hypothesis below (Abdurahman 2016).

Hypothesis:

H1: The Influence of Human Development Index on Economic Growth

H2: Population Size Can Moderates The Influence of Human Development Index on Economic Growth

3. RESULT AND DISCUSSION

Background Analysis

To measure the Human Development Index has been introduced by the United Nations Development Program (Ahmad Zarkasyi 2016). In the HDI explains how the population can access the results of development in obtaining income, health, education, and so on. According to UNDP, the Human Development Index (HDI) measures the achievement of human development based on a number of basic components of quality of life. As a measure of quality of life, the HDI is built through a basic three-dimensional approach.

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Validity Test

Although the data used in this article is secondary data obtained from the Central Statistics Agency from 2010 to 2024, it must go through several stages, namely the validity test stage, the reliability test stage, and the path coefficient stage. The following are the results of the validity test stages in this article (Ghozali 2016):

Table 1
Validity Test

Variable	Loading Factor	Noted
Human Development Index	0.872	Valid
Economic Growth	0.925	Valid
Population Size	0.951	Valid

Valid > 0.70

Reliability Test

According to the sequence, if the validity test stage has been carried out, then the next stage that must be carried out is the reliability test stage. The reliability test stage is a mandatory stage that must be passed regardless of the data used in this study, primary or secondary data because this stage focuses on the data used. The following are the results of the reliability test in this article (Hair 2010):

Table 2
Reliability Test

Variable	Composite Reliability	Cronbach Alfa	Noted
Human Development Index	0.892	0.851	Reliabe
Economic Growth	0.941	0.901	Reliabe
Population Size	0.984	0.942	Reliabe

Reliable > 0.70

Path Coefisien

The stages that have been passed, namely the validity test and reliability test stages in this article, culminate in the final goal, namely the stage of determining whether the hypothesis used in this article can be accepted or not. This determination stage is also called the Path Coefficient stage. The following are the Path Coefficient stages in this article (Sarstedt et al. 2014):

Table 3
Path Coefisien

	Validity	P-Values	Noted
Direct Influence	HDI-> EG	0.009	Valid
Indirect Influence	PS* HDI-> EG	0.000	Valid

Significant Level < 0.05

At this determination stage, it can be concluded concretely that the two hypotheses proposed in this article, namely the Human Development Index variable can have a positive relationship direction and a significant influence on Economic Growth can be accepted and proven. This is because the P-Values are positive and below the significance level of 0.05, namely 0.009. These results are in line with a number of previous studies, namely (Izzah 2015); (FERARI 2022); (Shobri 2021); (MUH.SURIADI 2019); (BELLA MEISY BHUANA SAR 2019) & (A 2016). The reason for these results is that the Human Development Index which is influenced by Health and Education Levels can have a good, positive, and significant impact on Economic Growth. On this basis, it can be concluded that the first hypothesis in this article can be accepted. In the next section, the researcher also has another hypothesis, namely that the Population Size variable can moderate the influence of the Human Development Index variable on Economic Growth because of the same thing, namely the P-Values are positive and below the significance level of 0.05, which is 0.000 more significant than direct testing of 0.009. Thus, the first and second hypotheses in this article can be accepted.

4. CONCLUSION

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