



Comparison Of Human Development Index Before And During The Covid-19 Pandemic

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ABSTRACT

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The COVID-19 pandemic that has hit the world has brought various impacts on human life, including human development achievements. Development can be interpreted as an effort or process to make changes for the better. The development process occurs in all aspects of people's lives, such as economic, political, social and cultural aspects. The purpose of this study is to see the difference in the Human Development Index before and during the covid 19 pandemic. The research method used is the Paired Sample T-Test which is an analytical test to determine the average difference between matched data points. The results of the study show that there are differences in the Human Development Index in Indonesia, as seen from the results of the Paired Sample T-Test table. The significant value of HDI shows that there are differences in the Human Development Index in Indonesia before and during the COVID-19 pandemic. This means that the Indonesian government needs to take strategic steps and good policies to increase the human development index.

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1. Introduction

The COVID-19 pandemic that has hit the world has brought various impacts on human life, including human development achievements. Development can be interpreted as an effort or process to make changes for the better. The development process occurs in all aspects of people's lives, such as economic, political, social and cultural aspects. While economic development is a process to change a situation for the better, so that welfare and prosperity are higher. Human development is a development paradigm that places humans (population) as the focus and ultimate goal of all development activities. Human development is about people's choices to ensure they are able to live long and healthy lives, have access to resources for a decent standard of living, and have the means for cultural enrichment (Lind, 2019).

Human development is also a process of expanding people's choices. Of the many choices, there are three that are considered the most important, namely: a long and healthy life, education, and access to resources that can meet a decent standard of living (UNDP, 2019). Other options that are considered to support the three choices above are political freedom, human rights, human rights and respect for personal rights. UNDP also measures and compiles the three options in a composite index based on three indicators, namely: life expectancy at birth, adult literacy rate and average years of schooling (mean years). of schooling, and purchasing power parity.

Several countries in the world are estimated to experience a slowdown in HDI growth, some even experience a decline due to the pandemic. Although Indonesia is also not spared from this pandemic, we should be grateful that Indonesia's HDI in 2020 only grew slower than the previous year. The challenges

of slowing HDI growth during the COVID-19 pandemic were mainly due to slowing growth in life expectancy and education, as well as declining real per capita spending as a result of the contraction of economic growth (BPS, 2020). The condition of the human development index in Indonesia:

The slowdown in HDI also has an impact on economic growth originating from the tourism sector. If economic growth is high and the tourism sector increases, the Human Development Index is expected to increase (Miftakhurrohman, Prakoso, 2020). It can be seen that the tourism sector has become one of the leading sectors in Indonesia. Tourism has a significant influence on income and encourages economic growth of a country (Sun et al., 2021; Wu & Zheng, 2014), this can encourage an increase in people's welfare which can be seen from the human development index. The level of community welfare can be seen from the increase in HDI (Hakim et al., 2021). This research is important as one of the measurements in seeing the differences in IPM growth before and during the Covid-19 pandemic in Indonesia.

HDI is a comparative measure of the life expectancy index, education index, and the overall decent standard of living index of the country (UNDP, 2017). HDI is also a function of four country-specific statistics: $HDI = f(L, G, S, M)$ where, as follows, L is life expectancy at birth, G is Gross National Income per person in a country at purchasing power parity, S is the expected school year and M is the average year of schooling (Lind, 2019). The function of the HDI is to determine the magnitude of the influence that can arise from efforts to advance human resource capabilities. Through population empowerment, the element of human development focuses on improving the basic human being. The calculation of development is done by measuring the size of the number of education, health, and purchasing power. The higher the calculation results indicate the more successful the development goals. Development is a way of change towards improvement (Ranis et al., 2006).

An important factor in development is economic growth (Todaro, 2011). Economic growth is the percentage change in the final consumption of goods and services at one time against the previous time. The solid development of prosperity is supported by the quality of the three underlying pillars, namely: growth, stability and efficiency (Batuo et al., 2018). According to UNDP, economic development or more precisely, economic growth is a prerequisite for achieving the human development index, because economic development is guaranteed to increase productivity and increase income through the creation of job opportunities (UNDP, 2019). The relationship between the human development index and economic growth is reciprocal as shown in Figure 1. that is, economic growth affects the human development index (Mariano et al., 2015). The down-up arrow direction emphasizes the importance of economic growth to human development. It is hard to imagine any country that can carry out sustainable economic development without adequate economic growth. The direction of the up-down arrow which is the basic assumption of the HR approach is an affirmation of the economic reasons for the human development index whose validity is continuously supported by empirical evidence.

2. Methods

The research carried out is an experimental study that aims to investigate whether there are differences in the Human Development Index in the masses before and during the Covid 19 pandemic. The analysis used is the Paired Sample T-Test which is an analytical test to determine the average difference between data points that match (Hedberg, 2015). This study uses secondary data released by BPS and UNDP in several publications, the data used are 2016-2018 (Before Covid 19) and 2019-2021 (During Covid 19) in all provinces throughout Indonesia. The hypothesis of this case can be written:

$$H_0 = \mu_1 - \mu_2 = 0$$

$$H_1 = \mu_1 - \mu_2 \neq 0$$

means that the actual difference of the two means is not equal to zero.

Paired Sample T-Test formula

$$t_{hit} = \frac{D}{(SD/\sqrt{n})}$$

Where

$$SD = \sqrt{\text{var}}$$

$$\text{var}(S^2) = \frac{1}{(n-1)} \sum (x_i - \bar{x})^2$$

t = value t count
 = the average difference between 1 and 2 pengukuran
 = standard deviation of measurement difference 1 and 2
 n = number of samples.

3. Results and Discussion

Normality test

Normality test has a goal whether a data has a normal distribution or not. Normality test results can be seen in the table below.

Table 1.
Normality Test Results

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		102
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.41237008
Most Extreme Differences	Absolute	.068
	Positive	.068
	Negative	-.067
Test Statistic		.068
Asymp. Sig. (2-tailed)		.200 ^{c,d}

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.
- d. This is a lower bound of the true significance.

The number of n is 204 data so that the normality test uses the Kolmogorov-Smirnov Test, what is the condition of the test if the significance level is > 0.05, it can be concluded that the data is normally distributed. SPSS output results show significant results above 0.05 (2.00 > 0.05) so that the data is normally distributed.

Paired Sample T-Test

Table 2.
Paired Sample Statistics Results

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 IPM Before Covid 19	69.7660	102	4.06403	.40240
IPM Massa Covid 19	71.1608	102	3.88120	.38430

It is known that the mean HDI value before Covid 19 was 69.7 and this is smaller than the HDI results for the Covid 19 mass of 71.1 and this indicates that there is a difference in HDI before Covid and during Covid.

Table 3.
Paired Sample Correlations Results

	N	Correlation	Sig.
Pair 1 Before Covid 19 & Massa Covid 19	102	.994	.000

Table 3 shows the results of the correlation test or the relationship between HDI conditions before Covid 19 and the mass of Covid 19. Based on the results above, it is known that the correlation coefficient value

is 0.994 with a significant value of $0.000 < 0.05$, it can be said that there is a relationship between HDI before Covid 19 and the mass of covid 19 and the relationship is very high.

Table 4.
Paired Samples Test Results

		t	df	Sig. (2-tailed)
Pair 1	Before Covid 19 - Massa Covid 19	-30.595	101	.000

The guideline for decision-making in the paired sample t-test based on significant values is if the significant value is < 0.05 , it can be concluded that there is an average difference, and vice versa. Based on the Paired sample t test table above, it is known that the significance value is $0.000 < 0.05$, this indicates that there is a difference in HDI before and during the COVID-19 pandemic. The occurrence of covid 19 resulted in a decrease in the Human Development Index.

4. Conclusion

From the results of data processing, it shows that there are differences in the Human Development Index in Indonesia, as seen from the results of the Paired Sample T-Test table. The significant value of HDI shows that there are differences in the Human Development Index in Indonesia before and during the COVID-19 pandemic. This means The Indonesian government needs to take strategic steps and good policies to increase the human development index.

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