Analysis Of Economic Growth Health, Services Health, Financing, And Human Development Index in Indonesia in The Covid-19 Pandemic

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Abstract. The researchers aim to analyze the Human Growth Index. The researchers apply the quantitative method of panel data regression in 34 provinces in Indonesia with a time series from 2016 to 2020. Based on the study results, the conclusion comes from several discussions related to economic growth in Indonesia. Hence, the conclusion is as follows: HDI, Health Services, and medical costs highly affect the increase in economic growth in Indonesia. Economic growth in Indonesia, based on the study results, the R square value of 0.7960 is equivalent to 79.60 percent of the variables in economic growth that are explained significantly by the variables of Human Growth Index, Health.

Keywords: Human Growth Index; Economic Growth; Health Services; Medical Costs

1 Introduction

In the concept of development, a sustainable economy must provide the same results in three aspects. They are economic, socio-cultural, and environmental. These three aspects must be able to touch the social and environmental dimensions, which are one of the criteria for the success of economic development, in addition to the government's business objectives to realize the progress of the nation's life. Existing economic development is not always physical because economic development is a perspective of the growth of the country's progress, as an effort to create a better life in the society.

As an indicator of the success of a country in developing the quality of life, the welfare of the population/community in general, the tool used as a parameter is the Human Development Index. The determination of the ranking or level of development and economic growth of a region or a country can be measured from the level of economic growth. The importance of the human development index (HDI) is to predict the level of HDI development in the coming years so that the government can make references to determine policies or take action. The Development Index (HPI) is not decreasing.

Hopefully, it will continue to increase. The 2016-2020 data of the Indonesian Central Statistics Agency (BPS) show that Indonesia's HDI has increased from 2016 by 70.18%, increasing to 71.94 in 2020. It indicates that the society welfare level in all provinces in Indonesia is increasing annually.

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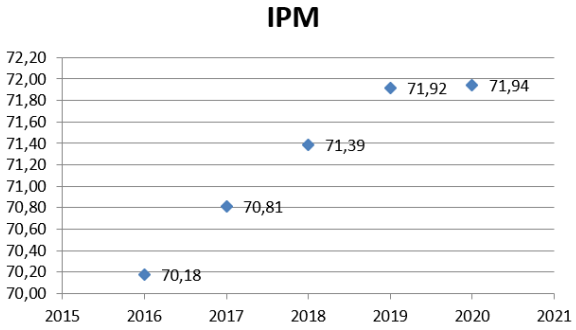

Fig.1. Indonesian HDI 2016-2020
Data source: BPS 2022

Todaro (2003:99) asserts that economic growth is an increase in the long-term ability of a country to be relevant in providing various economic goods to its people. On the basis of this research, the rate of economic growth is closely related to the increase in the population in a country. The high economic growth of a country will be in line with the increase in population. This is reflected in the high level of GRDP of an area. On the other hand, the population growth is an obstacle to economic growth.

The Economic Growth Index is an indicator to measure the level of success of economic growth in a region, which is assessed from the level of the society welfare to benefit from the outcomes of the country's economic development.

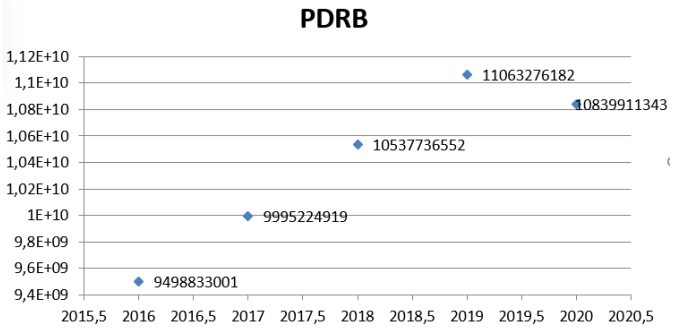

Fig.2. Indonesia's constant GRDP 2016-2020
Data source: BPS Indonesia 2022

Equitable distribution of people's income can improve people's living standards which is the goal of a country's economic development. Economic growth is a parameter of the success of a country's economic development. The population plays an important role in economic growth. Population is the number of people who live in a certain area at a certain time. The population is closely related to the growth (per capita income) of the country. One indicator of the successful economic development of a country can be measured from the level of economic growth. Economic growth can be measured from the amount of regional income due to growing community revenues.

2 Literature Review

Population Theory

In sociology, the definition of population is a country or region which can be defined in two senses:

a. People living in the area.
b. Those who have the legal right to live in the area.
   The term resident is all people who reside in the geographical area of the Unitary State of the Republic of Indonesia for 6 months or more and/or who have lived for less than 6 months but have a permanent residing purpose.

Economic growth

Economic growth is one of the benchmarks of economic success in a country, for good or bad, as well as an indicator of the increase of the country's long-term capacity in terms of providing a lot of economic goods for the population. In addition, it aims to increase capacity building to determine or follow processes or adapt technological and institutional regulations to the various requirements of the prevailing situation.

Economic growth measurement

According to Suparmoko (1998), measuring the progress of an economy requires the right measuring tools. Several tools to measure economic growth include:

1. Gross Domestic Product (GDP)
   Gross Domestic Product (GDP), or at a regional level known as Gross Regional Domestic Product (GRDP), is the final amount and services produced by an economy in one year and is expressed in market prices. GDP and GRDP are aggregate measures. They are not the exact measures of economic growth because they do not reflect people's true happiness. Indeed, social assistance must be enjoyed by every resident of the country or region concerned.
2. Gross Domestic Product (GDP) Per Capita/Percapita Income
   Gross domestic product or gross regional gross domestic product per capita (GRDP) is a regional scale used as a measuring tool for economic growth that is more accurate and reflects the welfare of the population of a country or a region than its value from GDP or GRDP alone.

Health services

Based on BPS data, health services in Indonesia increased by 4.33% in 2016, by 5.18% in 2019, and by 5.44% in 2020. The data show that health services are always improving and increasing every year in all provinces in Indonesia.

Fig.3. Health services Data source: BPS Indonesia 2022

Cost of medication
It is the society's effort to be able to self-finance in terms of medication. The 2016-2020 BPS data show the amount of the society's medical costs on their own expenses for some reason, time constraints, remote locations and so on. The ability of the society to carry out personal medication had increased from 2016 by 63.77%, and by 72.19% in 2020.

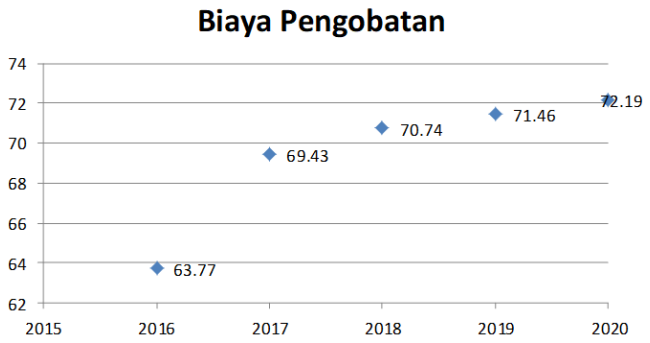

Fig.4. Cost of treatment
Data source: BPS Indonesia 2022

3 Research Methods

Research sites
The research was carried out in 34 provinces in Indonesia by using secondary data collection techniques sourced from the Indonesian Central Statistics Agency (BPS) from 2016 to 2020.

Operational definition
In measuring the variables, this research defines:
a. Economic growth
   Economic growth as a proxy for GRDP at constant prices expressed in percent.
b. Human Growth Index
   Human Development Index (HDI) as a proxy for comparative measure of life expectancy, literacy, educational attainment and standard of living. HDI explains how people can access development outcomes in terms of income, health, education and more.

Data analysis method
The researchers use a multi-linear regression method, where the variables studied are economic growth as a proxy for constant price GDP (PE) which is the dependent variable, while the independent variables are the human growth index (HDI), health services (PK) and health costs. (BK)
Y = 0 + 1 X1 + 2 X2 + 3 X3 + 4 X4 + et

(1)
The model is reformatted as follows:
GRDP = 0+ 1 HDI + 2 PK + 3 BK et ....(2)
Where :
GDP : Growth Economy

0 : constant
1, 2, 3 : Regression Coefficient
HDI : Human Growth Index
PK : Health services
BK : Health Financing
et :*Error term*

This test is needed to select the most appropriate technique in time chain production, namely statistical test, silent, original unit test check, ARIMA test model, MA and approximation test.

1. F test
   It is to measure whether or not all independent variables have a simultaneous effect on the dependent variable.
2. The hypothesis in the F test is as follows:
   H0 : No effect simultaneously
   H1 : Effect simultaneously
   Where if F Statistics > F table (df.5%) then reject H0 and accept H1.
3. Stationary Test
   The hypotheses used are:
   H0 : Data Not Stationary
   H1 :Stationary Data
   If the value of the result of the probability calculation is less than 0.05, it means that H0 is rejected and H1 is accepted.
4. Unit Root Test
5. Model tests of ARIMA, AR or MA
6. Forecast Test

4 Results and Discussion

Table of Effects of Economic Growth (GRDP) simultaneously on HDI, PK, and BK in 34 provinces in Indonesia.

Table 1. Chow test The goal is to determine the best model

Effects Test	Statistics	df	Prob.
Cross-section F	4988.756190	(34,137)	0.0000
Cross-section Chi-square	1246.372552	34	0.0000

Hypothesis

If the value of Prob Cross-section Chi-square <0.05, the good model is Fixed Effect. If the Prob Cross-section Chi-square value is > 0.05, the good model is Common Effect. Based on

the results of the Chow test, a good model is the Fixed Effect, so that the following equation values are generated:

Table 2. F-statistical test

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	-22.99847	7.450137	-3.086986	0.0024
HDI?	7.603629	1.676177	4.536292	0.0000
PK?	-0.221807	0.073476	-3.018747	0.0029
BK?	2.551742	0.911267	2.800215	0.0057
F-statistics	15.15740			
Prob(F-statistic)	0.000000			

Source: Eviews Processing Results (processed data, 2022)

Based on Statistical Calculations, equation data is generated simultaneously that GRDP as a proxy of economic growth as the dependent variable is significantly influenced by the independent variables of Human Growth Index, Health Services and Health Financing. It is proven that the results of the calculation of the panel data equation in 34 provinces in Indonesia with F statistic of 15.5740 and Prob = 0.0001 < 0.05. It shows to reject Ho and accept H1. There was a significant influence.

Stationary Test and Unit Root Test

Hypothesis
Ho : Data is not Stationary
H1 : Stationary Data
Critical Area
With the results of the Prob value greater than =0.05, Accept Ho, the data is not stationary
With the result that the Prob value is smaller than =0.05, Accept H1, the data is stationary

Table 3. Unit Root Test

Variable	Correlogram	t-Stats	Prob	Information
Economic growth	1st difference	-12,43699	0.0000	Stationary
Human Growth Index	Level	-3.779854	0.0038	Stationary
Health services	Level	-5.337373	0.0000	Stationary
Health Financing	Level	-7.041397	0.0000	Stationary

Based on the calculation of the Stationary test and the length of the lag in the Root Test, the results are:

Prob value < 0.05, it is proven that all data is stationary and can be carried out for Estimation and Model Examination.

Model Estimation and Validation

At this stage, the VECM model estimation and the optimal delay selection on the VECM model are carried out by using the information criteria, namely the Akaike Information Criterion (AIC) and the Schwartz Criterion (SC) is increasing. The following is a summary of the AIC and SC models of the VECM (p).

Table 4. AIC and SC . values

Information	p = 1	p = 2	p = 3	p = 4
AIC	1.8926	1.9019	1.9089	1.9157
SC	2.0011	2.0285	2.0536	2.0784

From table 4 it can be seen that the optimum lag in the VECM test is the best mapping of the VECM data model, because the order p = 1 gives the lowest AIC and SC values.share data Economic Growth, HDI< Health Services, and Health Financing.

Table 5. Equation Value on the VECM Model (1)

Dependent Variable: PE

Variable	Coefficient	Std. Error	t-Statistics	Prob.
PK	0.027710	0.051478	0.538292	0.5911
BK	0.768811	0.507052	1.516238	0.1313
HDI	3.564675	0.666582	5.347695	0.0000
C	0.589076	3.597780	0.163733	0.8701
R-squared	0.795970			
Adjusted R-squared	0.789934			
F-statistics	131.8622	Durbin-Watson stat		2.109238
Prob(F-statistic)	0.000000			
Inverted AR Roots	.90			

It is proven that the variables of health services, health financing, and the human growth index have a positive effect on economic growth in Indonesia. This is indicated by the F-statistical value of 131.8622 > F table and the value of Prob(F-statistics) < 0.05.

5 Conclusion

The results of the research on economic growth in 34 provinces in Indonesia, the researchers conclude as follows:

Economic growth in Indonesia is increasing and is positively influenced by the increase in the human growth index of each province in Indonesia, followed by an increase in the level of public health services and medical costs. The increase is simultaneously by 79.60%, and the remaining 20.4% is influenced by external factors that are not studied.

Recommendation

Based on some of the findings mentioned above, there are several recommendations from the authors to be applied in the future.

a. For the government, good residents are good citizens of the country. Therefore, the government is obliged to provide facilities for health and education services. The effect of increasing facilities will increase the rate of economic growth.
b. It is hoped that other researchers can study more on the impact of population growth & economic growth, for example the participation of school-age children, the welfare of people's lives, and the population.

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