

Human Development in Times of Extraordinary Events: Study on the Effect of Government Spending, Unemployment Rate, and Pandemic Severity on the Human Development Index During the Covid-19 Pandemic

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Abstract

This research aims to look at human development during extraordinary events as seen from the influence of government spending, especially in health and education spending by local government, unemployment rates, and the severity of the Covid-19 pandemic that occurred. Population data uses data from all provinces in Indonesia from 2020 to 2022. Analysis of the development and condition of HDI, government spending, unemployment levels, and the severity of the pandemic using descriptive statistical methods. Meanwhile, to determine the development and extent of the effect of government spending variables, unemployment levels, and the severity of the pandemic on human development, this research uses panel data regression analysis with the Fixed Effect Model (FEM). Panel data analysis findings indicate that government spending variables in the education and health sectors have no bearing on raising the HDI score. However, the HDI is significantly impacted by the unemployment rate and the pandemic's severity. Based on these findings, this study suggests that government expenditure in the health and education sectors be optimized to deal with extraordinary events and maintain the region's focus on human development growth.

Keywords: Plague; HDI; Government Spending; education spending; Health Spending;
Unemployment Rate; Severity of the Pandemic

INTRODUCTION

Extraordinary Events (KLB), especially outbreaks, are not new in Indonesia. KLB or outbreaks are an increase in the incidence of diseases that exceed normal expectations, suddenly in a community, and limited by place and at a certain period of time (SKM., M.Kes et al., 2024). Several outbreaks have occurred in Indonesia such as the outbreak of the Avian Influenza virus (H5N1) in 2003, the Swine Flu virus (H1N1) in 2009, diphtheria disease which reappeared in 2009, malnutrition, etc.

In 2020, Indonesia experienced a return to KLB due to the spread of the coronavirus (SARS Cov-2). The uncontrolled spread of the virus has led to high cases of infection and death rates in the world. This made the World Health Organization (WHO) take a quick response by declaring that the extraordinary event of the Corona virus 2019 (Covid-19) became a global pandemic in March 2020. In line with WHO, the Ministry of Health also designated this coronavirus case as an extraordinary event (KLB) by referring to the provisions of the Regulation of the Minister of Health of the Republic of Indonesia Number 1501/Menkes/Per/X/2010. This determination is based on the high rate of virus transmission and significant impact on public health (Aeni, 2021). With the number of Covid-19 cases increasing, Indonesia even occupies the second highest position of the country most affected by the Covid-19 pandemic in Southeast Asia after Vietnam with a total of 4,254,443 cases in November 2021 with 35,374,218 people examined, 4,102,700 confirmed cases recovered, and 143,766 people declared dead (Qomarrullah, 2023).

The increase in unemployment due to the Covid-19 pandemic occurred globally (Harnanti et al., 2023), including Indonesia. A report released by the Organisation for Economic Co-operation and

Development (OECD) in 2020 stated that the unemployment rate based on February 2020 data was at 5.2% which then increased in May 2020 to 8.4%. For Indonesia itself, unemployment fluctuates statistically every year. Based on data released by BPS, in August 2020, the percentage of the Open Unemployment Rate (TPT) was 7.07% or an increase of 1.84% compared to August 2019, meaning that in 100 people in the workforce, there are 7 people who are included in the unemployed group. Although it decreased in February 2021 to 6.26%, TPT increased again in August 2021 to 6.49%. The increase in TPT is the effect of the increase in the number of working-age population that is not balanced with the availability of jobs. In August 2021, the number of working-age population was 206.71 million people, an increase of 2.74 million people compared to August 2020. Among the working-age population, there are 21.32 million people or as many as 10.32% who are affected by the Covid-19 pandemic (Triono & Sangaji, 2023).

Based on the UNDP report, Indonesia's HDI value in 2022 is 0.713, which places Indonesia in the group with high human development. This value increased by 0.006 after decreasing in 2020 and 2021. Overall from 1990 to 2022, the HDI value changed from 0.526 to 0.713 or a change of 35.6%. The Life Expectancy (AHH) rate at birth in Indonesia changed by 5.1 years, the average length of school was 3.8 years, and the estimated length of school was 5.3 years. Indonesia's GNI per capita changed by around 187.9% between 1990 and 2021.

Human development was initially measured through numbers that symbolized economic growth such as GDP and per capita income level. However, when many countries have reached their economic growth targets, the level of population welfare has not changed. Sen (1989) stated that health will provide a higher level of productivity, while education will contribute to a more equitable distribution of national income, and make humans more able to choose to live their lives (Muniroh et al., 2023). Thus, Sen (1989) argues that education and health have their own roles in the process of human development. Therefore, UNDP introduced the concept of HDI in 1990 as a summary of the three main dimensions of human development including education, health and longevity, and a decent standard of living. The HDI measurement concept has also been adopted by the Indonesian government through BPS.

If you look at BPS data from 2010 – 2022, human development has actually increased where Indonesia's HDI increased by an average of 0.77% per year, from 66.53 in 2010 to 72.91 in 2022. Despite the deceleration in 2020, in 2022 Indonesia's HDI experienced another increase supported by all its constituent dimensions. The development of HDI from 2010 to 2022.

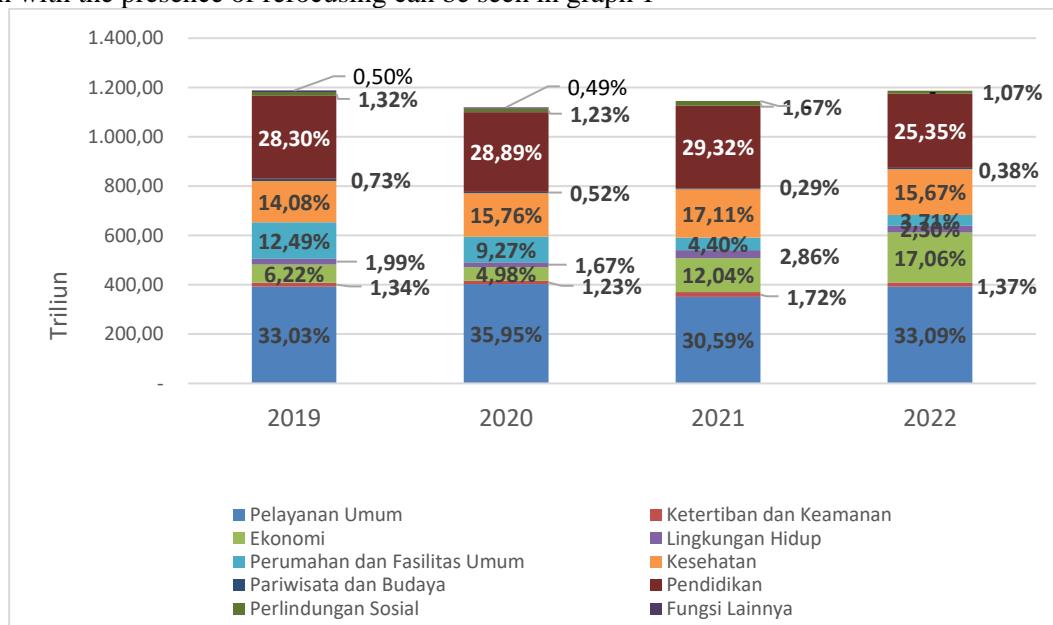
In the context of policy, HDI is used by the government as one of the indicators of the government's macro targets contained in the 2020-2024 RPJMN. The central government targets HDI in 2024 to be 75.54 nationally from the previous 71.39 in 2018. Regionally, HDI in Indonesia grows but is uneven in various regions. Of the 514 districts/cities surveyed in 2022, BPS data shows that 241 or almost half of the districts/cities in Indonesia do not have high/very high HDI. With details as many as 221 regions are districts/cities with medium HDI and 20 districts/cities are still in the status of districts/cities with low HDI. Medium and/or low HDI indicates that people in the area have not been able to fully enjoy development in the fields of education and health and relatively do not have a decent standard of living.

In addition, HDI continues to be used by the government as one of the bases and indicators in determining the allocation of the General Allocation Fund (DAU). In accordance with Article 7 of the Minister of Finance Regulation (PMK) Number 208/PMK.07/2022 concerning Fiscal Incentive Management, HDI is one of the indicators used by the central government to assess whether a region is eligible to receive the Regional Incentive Fund (DID), a fund intended as an appreciation for the performance of local governments in the fields of public services, financial governance and community welfare by a local government. So that the HDI value is the basis for resource allocation that can show the commitment of local governments to human development in their areas (Imsar et al., 2023).

Further research related to the allocation of resources to improve human development can be seen through government spending, which is mandatory and discretionary. Mandatory spending includes government spending on programs such as health services, education, and social welfare, playing a crucial role in driving HDI. HDI is a measure of a country's overall well-being that takes into account factors such as life expectancy, education, and per capita income. In accordance with Law Number 33 of 2004 concerning Financial Balance in the Central Government and Regional Governments, local government expenditures or expenditures are regulated according to the main function of local

government, namely providing services for the community. This regional expenditure is grouped into several functions including the health function and the education function (Harbain & Suryaman, 2024). This regional shopping has programs designed to provide essential services and support to vulnerable groups, contributing to the health, education and welfare of the community as a whole (Rahayu et al., 2022).

In this extraordinary event, local government spending in the health sector and education should play an important role not only in meeting the needs of basic services for the community but also when facing the Covid-19 pandemic. The government through PERPU Number 1 of 2020 concerning State Financial Policy and Financial System Stability in handling the Covid-19 pandemic, local governments are authorized to prioritize their budget allocation for certain activities (refocusing), reallocation and the use of the APBD. With this policy, there has been a change in the spending structure, including health spending and education spending on local governments. The structure of regional expenditure by function with the presence of refocusing can be seen in graph 1



Graph 1. Regional Expenditure Structure by Function

Source: DJPK Ministry of Finance

METHOD

The analysis technique of this research was carried out through a quantitative method using panel data in the form of a combination of cross sections (latitude data) from 34 provinces and using time series (time series data) from the Covid-19 pandemic period for the period 2020 - 2022 (Ningtias & Anwar, 2021). The processing of the research data was carried out using the multiple linear regression method applied to the panel data.

The data used in this study is secondary data obtained from the publication of the Central Statistics Agency (BPS), Directorate General of Financial Balance (DJPK) of the Ministry of Finance, Ministry of Health. Secondary data refers to information collected and analyzed by other organizations and researchers for different purposes (Aaker, Kumar & Day, 2001). Secondary data generally includes previously collected data that can be reused in new research that is not related to the purpose of the data collection (Vartanian, 2010). Secondary data is generally provided in the form of reports, articles, and databases. The use of secondary data takes into account that the data has been collected and recorded in a structured format.

This study uses data from 34 provinces in Indonesia during the Covid-19 pandemic, from 2020 to 2022. The data used is BPS statistical data related to social and population conditions at the provincial level in Indonesia. Periodically, BPS releases HDI data periodically that can be used to evaluate the progress of human development as well as to plan and implement human development policies. In addition to human development data, this study also uses data on open unemployment rates and population density levels obtained from BPS.

For data on the realization of education expenditure and provincial health expenditure, data is used published by the DGT of the Ministry of Finance through the www.djpk.kemenkeu.go.id website. As for the pandemic severity data, namely the number of positive Covid-19 cases obtained from the Ministry of Health issued at the end of 2020 to 2022 and data published on the www.covid19.go.id website.

RESULTS and DISCUSSION

Result

In determining the model to be used in this study, 3 approaches were used, namely the Pooled Least Square, the Fixed Effect model, and the Random Effect model. The selection of models in this study is shown as follows:

Table 1. Comparison of OLS, FE, and RE

| Variable | OLS | FE | RE |
|--------------------------|-------------|--------------|---------------|
| Health Shopping | -.67152144 | -.00308541 | -.01310388 |
| Education Spending | 1.1621981 | .14837535 | .0404667 |
| Unemployment Rate | .46493788* | -.081205* | -.08306379* |
| Number of Covid-19 Cases | -.13725303 | .06630878*** | .06237853*** |
| Number of PSBB Days | -.01005601 | -/0048787*** | -/00416606*** |
| Population Density | .00025937 | -.0026962* | .00066123*** |
| Health Facilities | -.00033924 | -.00195051 | -.0014135 |
| Number of High Schools | -.00467542* | .00195666 | .00194504 |
| Number of Vaccine | -.13725303 | .06630878*** | .06237853*** |
| Recipients | | | |
| _Cons | | | |

Legend: * p< 0.05; ** p< 0.01; p< 0.001

Based on the results of the regression comparison above, the best model choice is the Fixed Effect (FE) model. The FE model was chosen to be able to reduce the bias of time invariant. The regression results using FE are as follows:

Table 2. Fixed Effect Model Regression Results

| IPM | Coefficient | Std. err | t | P > t | [95% conf. interval] | |
|--------------------------|-------------|-----------------------------------|-------|--------|----------------------|-----------|
| Health Shopping | -.0030854 | .1206342 | -0.03 | 0.980 | -.2444738 | .238303 |
| Education Spending | .1483754 | .1339957 | 1.11 | 0.273 | -.1197495 | .4165002 |
| Unemployment Rate | -.081205 | .0331262 | -2.45 | 0.017 | -.147905 | -.0149195 |
| Number of COVID-19 Cases | -.0566295 | .061257 | -0.92 | 0.359 | -.1792046 | .0659455 |
| Number of PSBB Days | -.0048787 | .0005781 | -8.44 | 0.000 | -.0060354 | -.003722 |
| Population Density | -.0024696 | .0010816 | -2.28 | 0.026 | -.004634 | -.0003053 |
| Health Facilities | -.0019505 | .0008989 | -2.17 | 0.034 | -.0037492 | -.0001518 |
| Number of High Schools | .0019567 | .0036062 | 0.54 | 0.589 | -.0052594 | .0091727 |
| Number of Vaccine | .0663088 | .0067435 | 9.83 | 0.000 | .0528151 | .0798025 |
| Recipients | | | | | | |
| _Cons | 69.80986 | 4.998119 | 13.97 | 0.000 | 59.80865 | 79.81108 |
| sigma_u | 9.3907272 | | | | | |
| sigma_e | .17525848 | | | | | |
| Rho | .99965182 | (fraction of variance due to u_i) | | | | |

F test that all u_0 : F(33, 60) = 872.71 Prob > F = 0.0000

From the results of the regression above, it is necessary to know whether the variables used have an influence on HDI measurement indicators other than health and education, namely per capita income. This needs to be reviewed because HDI does not capture income inequality directly even though it is closely correlated with income inequality (Chasin, et al. 2001). Both HDI and per capita income are highly correlated with poverty measures. Poverty itself is calculated using the average per capita expenditure per month which is below the poverty line. When per capita income is low, it indicates a declining standard of living. For this reason, it is necessary to see the relationship between the influence



of the free variables above on HDI whether it also has an effect on poverty by regressing the free variables in this study on the Percentage of Poor Population, Poverty Depth Level (P1), and Poverty Severity (P2).

Table 3. Comparison of HDI, P0, P1, and P2

| Variable | IPM | P0 | P1 | P2 |
|------------------------------|--------------|------------|------------|------------|
| Health Shopping | -.00308541 | -.0636898 | -.2424813 | -.1843678 |
| Education Spending | .14837535 | -.1932171 | .1197745 | .0472843 |
| Unemployment Rate | -.081205* | .0490201 | .0114316 | .0095488 |
| Number of COVID-19 Cases | .06630878*** | -.1270424 | .036005 | .029146 |
| Number of PSBB Days | -.0048787*** | .0017333 | .0008984 | .0003458 |
| Population Density | -.0026962* | .0023627 | .000774 | .0004344 |
| Health Facilities | -.00195051 | -.0002658 | .000685 | .0002168 |
| Number of High Schools | .00195666 | -.00033 | .0010129 | -.000013 |
| Number of Vaccine Recipients | .06630878*** | -.0284157* | -.0150288* | -.0087171* |
| Observation | 102 | 102 | 102 | 102 |
| Number of Province | 34 | 34 | 34 | 34 |

From the regression comparison above, it is known that government spending and open unemployment rates have no effect on the percentage of the poor population, the depth of poverty, and the severity of poverty. As for the severity of the pandemic, only the administration of vaccines has a significant influence on the three poverty indicators. For this reason, it can be concluded that government spending policies in the health and education sectors as well as unemployment reduction programs during the Covid-19 pandemic have not been able to increase HDI and reduce poverty.

From the regression results that have been carried out, local government health spending during the Covid-19 pandemic shows a negative and insignificant influence on human development. This shows that health spending during the Covid-19 pandemic had no effect on HDI growth, even though during the Covid-19 pandemic the local government refocused the budget on the basis of the central government's instructions, namely moving budgets such as employee spending, official travel spending, and other goods spending to be reallocated to health spending, social security spending and national economic recovery. So that from the budget shift there has been an increase in the budget, one of which is for health expenditure(Tumbuan et al., 2023).

The focus of the Central Government and Regional Governments at that time was in terms of overcoming health problems, especially Covid-19, while for other health services, namely essential health services which are basic routine health services, there was no significant increase in budget. In addition, although routine health services are still carried out, people are limited in accessing basic health services due to the imposition of restrictions according to the Covid-19 health protocol.

The increase in health spending during the Covid-19 period is carried out to provide a guarantee of the provision of health services by the local government to the community to overcome the Covid-19 pandemic given to people infected with Covid-19 and those who are not infected(Scott, 2020). The data on the amount of health budget used for handling the Covid-19 pandemic in several provinces, districts, and cities are as follows.

Table 4. Health Budget Data for Handling the Covid Pandemic

| Region | Health Expenditure Budget | Health Budget for Handling the Covid Pandemic | Percentage |
|-----------------------------|---------------------------|---|------------|
| Banten Province | IDR686,606,527,511 | IDR 258,328,425,294 | 37.62% |
| Dumai City | IDR 376,287,076,602 | IDR130,104,569,000 | 34.58% |
| North Sumatra Province | IDR543,841,149,495 | IDR 352,142,452,285 | 64.75% |
| Jember Regency | IDR708,284,730,697 | IDR310,052,747,768 | 43.78% |
| Bengkulu City | IDR209,586,918,704 | IDR160,941,065,764 | 76.79% |
| South Sumatra Province | IDR 378,897,258,263 | IDR118,598,316,175 | 31.30% |
| Gorontalo Province | IDR170,146,505,869 | IDR82,150,204,322 | 48.28% |
| Southeast Sulawesi Province | IDR447,033,962,556 | IDR217,392,890,000 | 48.63% |
| Bali Province | IDR420,840,480,684 | IDR226,801,946,074 | 53.89% |
| Maluku Province | IDR262,314,832,788 | IDR103,397,905,205 | 39.42% |

Source: DJPK Ministry of Finance & LHP BPK RI

This pandemic handling program is carried out for testing, tracing, treatment, as well as education and socialization activities which include health care such as shopping for tools and goods for tests, shopping for personal protective equipment (PPE), treatment and isolation of Covid patients, shopping for consumables such as medicines to increase immunity, hand sanitizers, disinfectants, and incentives for health workers.

The negative influence of health spending on human development is in line with previous research that also stated that health spending had a negative but significant effect on HDI before the Covid-19 pandemic. This is because government spending in the health sector still focuses on healing (curative spending) and not prevention. Furthermore, a similar study conducted by Banik (2022) on 161 countries also stated that health spending has a negative and significant influence on HDI in East Asian, Asia Pacific, European, Central and South Asian countries. The negative and significant impact of health spending in these countries is due to the challenges faced in controlling corruption and the failure to ensure the provision of comprehensive basic health facilities.

Discussion

From the regression results above, local government education spending shows a positive but not significant influence on human development during the Covid-19 pandemic. The regression results show that the probability value for education expenditure is 0.30 because the value of > 0.05 , it can be concluded that education expenditure does not have a significant effect on human development. In addition, the results of the analysis also show that the value of the regression coefficient for education expenditure is 0.13. This value shows a positive but not significant influence between education spending and HDI during the Covid-19 pandemic, where any increase in health spending by 1% will increase the HDI value by 0.13 assuming other independent variables are considered constant.

The results of this analysis are in accordance with the research conducted by Bhakti, et al. (2022) with the scope of APBD research in 33 provinces in 2008 - 2012. The results of the study show that the APBD for education does not have a significant influence on HDI. This is because the allocation of the education budget is not fully aimed at development for human quality as a direction and policy of development, as well as the education budget that is not evenly distributed between provinces in Indonesia. The regulation regarding the minimum allocation of education expenditure in the APBD is a good guideline, but the allocation must be on target. The amount of budget that has been allocated should have gone through consideration of how the use of the funds in question can be done wisely and on target in order to improve the quality of human resources (Mongan, 2019).

In terms of nominal, the government's education budget continues to increase by Rp370,810.2 billion in 2016 and then increased to Rp406.1 billion in 2017, increased again to Rp431.7 billion in 2018, to Rp460.3 billion in 2019, then in 2020, the budget significantly increased by 19.0% to Rp547.8 billion compared to the realization in 2019. The cause of the increase in the budget is due to an adjustment to the education budget in 2020 due to an increase in state spending to overcome the impact of the Covid-19 pandemic, so that to continue to carry out the mandate of a fixed budget portion of 20% of state spending, several adjustments were made, especially the amount of the education budget. In 2021, the education budget through Central Government spending is IDR 550 billion (Director General of Budget of the Ministry of Finance, 2022).

The increase in the central government's education budget is also followed by an increase in the education spending budget in local governments through budget refocusing in accordance with the Joint Decree between the Minister of Home Affairs and the Minister of Finance with Numbers 119/2813/SJ and 117/KMK.07/2020 regarding the Acceleration of the 2020 APBD Adjustment for handling Covid-19, securing people's purchasing power and the national economy, all local governments are required to make adjustments to the FY 2020 APBD refers to the guidelines that have been set for the local government budget. Although there is a budget refocusing, for the education sector in the APBD, it must still be budgeted at 20% of the APBD.

Although there has been an increase in the realization of education spending due to budget refocusing, this is solely prioritized for handling the Covid-19 pandemic such as the implementation of distance learning. During the Covid-19 period, in the field of education, the government has issued SE Minister of Education and Culture No. 4 of 2020 which regulates the implementation of learning policies in emergency situations of the spread of Covid-19 (Malahayati et al., 2022). This SE encourages

educational institutions to carry out distance or online learning activities. Even to support the handling of the pandemic, the School Operational Assistance Fund (BOS) can be used for health protocol facilities in preparation for face-to-face learning tailored to regional conditions. So that the use of education expenditure is not effective enough in helping to ensure fair and equitable access to education, strengthen educational infrastructure and improve the quality of teachers and students.

The influence of education spending during COVID-19 has also been researched by Hadiyanto, et al. (2022) through analysis of panel data showing that the influence of government spending and Covid-19 on HDI varies in the West and Eastern Indonesia regions. For education expenditure in the KBI area, regional education expenditure does not show a significant influence on HDI. This is due to the KBI area which has more private schools than the number of public schools financed by local government spending. In addition, local government education policies during the pandemic must be re-evaluated, especially when the learning system changes to online, because its implementation is suspected to be ineffective.

From the results of the regression above, the TPT variable shows a negative and significant influence on human development. The probability value for unemployment is 0.01 because < 0.05 , it can be concluded that the percentage of unemployment in 2022 which decreased compared to 2021 and 2020 has had a significant influence on HDI. The regression coefficient value for TPT is - 0.08 which shows the influence of TPT on HDI during the Covid-19 pandemic where every decrease in TPT by 1%, the HDI value increases by 0.08 HDI value assuming other independent variables are considered constant.

Based on BPS data in February 2021, it is known that the number of unemployed due to Covid-19 decreased from August 2020 where in August 2020 the number of unemployed was 2.56 million people while in February 2021 the number of unemployed fell to 1.62 million people. This can be caused by an increase in employment, especially in the accommodation and food and beverage sector with a percentage increase of 0.34%. Job increases also occur in health services, corporate services, information and communication, and other services (Muniroh et al., 2023). The percentage increase in employment can be seen from the increase in the percentage of the population working based on main occupation from 6.65 to 6.69. In addition, the government has also intervened to overcome the unemployment problem through the pre-employment card and people's business credit programs to support MSMEs during the Covid-19 pandemic (Rafhi Syahputra et al., 2022).

The results of this regression analysis are also in accordance with the research conducted in the time span before Covid-19 by Nur Baeti (2013) which used data on the number of unemployed in districts and cities in Central Java Province from the period 2007-2011. The results of the study stated that the unemployment variable had a negative and significant influence with a negative coefficient of 1.96 on HDI in Central Java from 2007 to 2011. Similarly, a study conducted by Dwiningtias (2019) using TPT data in districts and cities in East Java Province in 2017. The results of the study explain that TPT significantly affects the human development index at low, medium and high levels.

During the Covid-19 pandemic, there has been an increase in unemployment rates around the world. Research conducted by Ghaleb (2024) explains that there was an increase in unemployment worldwide in 2020, where previously in 2019 the unemployment rate was 5.36% to 6.58 in 2020, but it fell again in 2021 to 6.2% and fell again to 5.77% in 2022. The decline occurred because each country took policies including economic recovery, providing stimulus to people affected by Covid-19 and increasing labor force participation (Satriadi et al., 2022).

Based on the regression results above, the number of positive cases of Covid-19 shows a negative effect although not significant on HDI. The probability value for the number of positive cases of Covid-19 is 0.44, because the value of > 0.05 , it can be concluded that the variable of the number of accumulated positive cases of Covid-19 does not affect community productivity during the Covid-19 Pandemic. The cumulative number of positive Covid-19 cases used in this study is the total number of recovered cases and the number of deaths. Based on data on the number of positive Covid-19 cases from the Ministry of Health's publication on September 22, 2022, the cumulative number of Covid-19 cases is 6,417,490 cases with the number of deaths as many as 157,966 cases or 2.46 percent. With this data, although the number of positive confirmed cases has increased significantly, most Covid patients experience mild to moderate symptoms so they have a high recovery rate. This is supported by the existence of self-isolation protocols that are able to encourage recovery in Covid-19 patients (Ningtias & Anwar, 2021). As shown in the data regression results above, the number of health service facilities

is a control variable that shows a negative and significant influence on human development. These negative influences show that health facilities during the pandemic were only focused on handling Covid-19 patients who had moderate and severe symptoms, so that they were less than optimal in basic health services for the community.

In addition to positive cases of Covid-19, the implementation of the PSBB policy also shows a negative and significant influence on human development (Gultom & Utomo, 2022). From the results of the regression above, it shows that the probability value for PSBB is 0.00, because the $<$ value is 0.05, it can be concluded that PSBB is able to significantly affect HDI. The value of the regression coefficient for PSBB is -0.005 which means that a decrease in PSBB by 1% is able to increase the HDI by 0.005. Positive Covid-19 conditions with mild and moderate symptoms and the existence of social restrictions do not reduce people's productivity in carrying out daily activities. By carrying out self-isolation activities, people can still carry out activities such as studying and doing work as usual even though it is only done in an isolation room. This is in line with several previous studies where the existence of flexibility in work such as WFH can increase work productivity (Noonan & Glass, 2012; Amador, 2016; Simarmata, 2020). With the increase in productivity during the Covid-19 pandemic, it has also increased economic growth. Previous research has shown that the Covid-19 pandemic has been able to increase digital economic growth, especially in the information and communication sector which has a consistently positive contribution to the Gross Domestic Product (GDP) (Nizar & Sholeh, 2021). Economic growth can also be seen in Indonesia's economic growth data in the fourth quarter of 2021 released by BPS, where the Indonesian economy experienced a growth of 3.69 percent compared to 2020 which contracted by 2.07 percent with the highest contribution to GDP being on the island of Java which was 57.89 percent with a growth of 3.66 percent.

On the other hand, online learning also plays a role in human development. Online learning can increase accessibility to learning opportunities, allowing individuals from different backgrounds, including students in remote areas, to be able to participate in educational programs that can then improve their knowledge and skills (Glavin, 2019). Through online learning, students can also improve their time management skills and self-learning abilities (Qing, 2020). Thus, based on the data of this study, the high number of positive confirmed cases does not hinder the growth of human development.

This increase in human development is also encouraged by the administration of the Covid-19 vaccine which began to be carried out in Indonesia in January 2021 (Marina, 2021). Based on the results of the above regression, it shows that the administration of vaccines shows a positive and significant influence on HDI. The probability value for the number of vaccine recipients is 0.000, because the $<$ value is 0.05 and the regression coefficient value for the number of vaccine recipients is 0.66 which indicates an increase of 1% in vaccine administration followed by an increase of 0.66. According to the Ministry of Health, the purpose of administering the Covid-19 vaccine is an effort to protect and strengthen the entire health system, maintain productivity and reduce the socio-economic impact in the community. The acceleration of vaccination for workers and the strict implementation of health protocols during the pandemic are able to accelerate the recovery of productivity (Mansyur, 2021). Even in studies in the United States of adults who were confirmed positive for Covid-19 and had symptoms, the administration of The Pfizer BioNTech vaccine (BA.4/5 BNT162b2) showed benefits in relieving symptoms and increasing work productivity after acute SARS-CoV2 infection (Di Fusco, et al. 2023). This research was conducted through a survey of 62% of the group that received the BA.4/5 BNT162b2 vaccine and 69% of the unvaccinated group based on Covid-19 examination population data at national retail pharmacies.

CONCLUSION

Based on the results of the research analysis, it can be concluded that during the Covid-19 pandemic, the refocusing of local government expenditure budgets, namely health spending and education spending, had less effect on HDI. Health spending does not have a significant influence, which shows that with the Covid-19 pandemic, health spending has not been able to increase human development through the provision of basic routine health services and health services for people exposed to Covid-19. Likewise, local government education expenditure does not show a significant influence on human development. Refocusing the local government spending budget on education spending has not shown that education spending is sufficient and effective in helping people gain access to education, strengthening education infrastructure and improving the quality of teachers and students,

as well as supporting educational innovation and technology during the Covid-19 pandemic. Although local government spending on health and education does not show its effect on human development, the unemployment rate does affect HDI. Based on the results of the analysis, the unemployment rate shows a significant negative influence on HDI in Indonesia. This is due to an increase in employment that is able to reduce the number of unemployed due to Covid-19. Government intervention also plays a role in reducing the percentage of TPT through programs and policies such as the Pre-Employment Card Program and KUR. Through this program, job seekers and those who are already working or workers can get improved skills and competencies and have the opportunity to get assistance to open a work business. On the side of the Covid-19 pandemic itself, the severity of the pandemic reviewed from the high number of positive Covid-19 confirmations and the number of PSBB days imposed by each province has a significant negative influence on human development. The results of the analysis through regression with a fixed effect model showed that the number of positive Covid-19 confirmations had a negative effect although it was not significant, while the number of PSBB days had a negative and significant effect on HDI. With the implementation of self-isolation and the easing of social restrictions, people can still carry out activities even with limited space. This positive influence is also encouraged by vaccination. The number of vaccine recipients shows a significant influence on the development of HDI. Vaccine administration is able to reduce the death rate due to Covid-19 and maintain community productivity during the pandemic.

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