

THE INFLUENCE OF REGIONAL EXPENDITURE IN THE EDUCATION, HEALTH, AND INVESTMENT SECTORS ON THE HUMAN DEVELOPMENT INDEX IN EASTERN INDONESIA REGION

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ABSTRACT

This study aims to analyze the effect of Regional Expenditure on Education and Health derived from the APBN and APBD, Domestic Investment, and Foreign Investment on the Human Development Index in Eastern Indonesia. This study uses the panel data analysis method. The research data use time series data from the 2015-2019 period and cross-section data on 13 provinces in Eastern Indonesia. The variables used in this study are the HDI as the dependent variable, then the Education and Health Deconcentration funds, Education and Health Function Expenditures, DDI and FDI Investment Realization as independent variables. The results showed that regional expenditure in the field of education originating from the APBN had a significant negative effect on HDI in Eastern Indonesia, regional expenditure in the field of education originating from the APBD had a significant positive effect on HDI, regional expenditure in the field of health originating from the APBN had a negative and insignificant effect on HDI, regional expenditure in the field of health originating from the APBD had a significant positive effect on HDI. DDI has a positive and insignificant effect on HDI. FDI partially has a negative and insignificant effect on HDI.

Keywords: Regional Expenditure; Education; Health; Investment; Human Development Indeks

INTRODUCTION

In local government financial governance, some state expenditures have been regulated in the amount based on the Law. Setting the amount of this expenditure is called *mandatory spending*. The purpose of *this mandatory spending* is to reduce the problem of regional social and economic inequality and is a form of government commitment in implementing the Law. The types of *mandatory spending* in the Regional Budget (APBD) consist of: 1) education budget allocation of 20% of the APBN or APBD. 2) health budget allocation of 5% of the state budget and 10% of the regional budget.

The existence of *mandatory spending* can have a good impact on access to education. The PISA (*Programme For International Student Assessment*) score, which is one of the indicators of education performance in Indonesia, states that since 2001 it has not experienced a significant improvement. Even in 2018, after almost 1 decade the government allocated 20% of the education budget, around 52% of the students who became PISA samples were in the *low performer* category in all three test subjects (literacy, mathematics and science), far lower than the achievements of neighboring countries. PISA is highly dependent on the quality of educators/teachers (Kurba, 2022).

The results of the Teacher Competency Test (UKG) released by the Ministry of Education and Culture in 2019 also stated that only 4 percent of teachers scored 70 or higher (Kemendikbud, 2019). The World Bank and POSPERA stated that the low quality of education in Indonesia is due to several aspects of the problem, namely the uneven distribution of allocation per student, there are variations in education spending and performance between regions, inefficient spending, and the contribution of education spending from PAD is declining and there is still a need for synergy between central and local government spending.

In line with problems in the field of education, in the health sector, individual health efforts through the National Health Insurance (JKN) need to be balanced with an increase in the budget for public health efforts, especially the fulfillment of the Minimum Service Standard for Health (SPM-BK) budget in order to achieve the expected results (Wiwin/IRO, 2020).

In the 2021 Regional Fiscal Review report published by the Directorate General of Treasury of NTB Province, it is stated that there is a relationship between budget allocations for the fields

of education, health, and economy (together) with HDI achievements in the regions and separates the variables of health spending that are partially insignificant in forming HDI. However, each variable has a positive effect on the formation of its own index. Furthermore, the insignificance of the Health expenditure factors (together in the model) to HDI, but significant when modeled alone against the health index illustrates that an evaluation of this expenditure allocation is needed (Hendra & dkk., 2006).

Education and health are a combined investment in order to form quality Human Resources (HR) that have an important role for a country's economy. Different patterns of economic growth in each region can be seen from the difference in economic growth between developed regions and less developed regions. The existence of this difference in economic growth will result in the creation of income inequality between regions. Varying income inequality can be caused by low human development, disparities in natural resources and unequal investment (Yanthi & Sutrisna, 2021).

Investment from both the private sector and the government can be said to be one of the important elements in the economy of a country or region because investment has a relationship with the sustainability of economic activities in the present and in the future. Based on its status, investments include Domestic Investment (DDI) and Foreign Direct Investment (FDI).

In 2016 and 2017, the absorption of labor in FDI was greater than the workforce absorbed in DDI. Meanwhile, from 2018 to 2020, DDI absorbed more workers than FDI (Zahara & Octavia, 2021). Investment will affect the improvement of public welfare, both public and private investment, because investment will increase the number of workers absorbed. Along with increasing income, the purchasing power of people who are part of the HDI component will also increase. Economic growth accompanied by equal distribution of income will result in a higher amount of HDI increase compared to economic growth that is not accompanied by equal distribution of income in society.

The role of the government in improving the Human Development Index also affects economic growth and vice versa. The rate of regional economic growth is positively and significantly influenced by human development which is expected to improve the quality of human life (Mirza, 2012).

Indonesia has experienced a fairly good increase in HDI in the last 12 years, namely in the range of 70 to less than 80 since 2016. Until 2021, the ten provinces that achieved the high HDI category were DKI Jakarta, DI Yogyakarta, East Kalimantan, Riau Islands, Bali, North Sulawesi, Riau, Banten, West Sumatra and West Java while the ten provinces with the lowest HDI respectively were Papua, West Papua, NTT, West Sulawesi, West Kalimantan, NTB, North Maluku, Gorontalo and Central Sulawesi. There is a considerable difference between the western and eastern regions of Indonesia (Gianie, 2022).

In the western part of Indonesia, which includes Sumatra, Kalimantan and Java, the average HDI is slightly higher than the national figure of 72.86. However, in eastern Indonesia which includes Nusa Tenggara, Sulawesi, the Maluku cluster and Papua, the HDI figure is below the national figure, which is 68.95. The average HDI of eastern Indonesia in 2021 is almost the same as the average HDI of western Indonesia in 2012 which was at 68.50. (BPS)

This shows, from the dimension of time, the results of development are not enjoyed equally by all Indonesian people. It can be seen that there is a fairly wide gap in human quality between the western and eastern regions. The achievement of HDI shows the quality of human development in a region while the indication of development carried out by the government to improve the quality of its society can be seen from the growth rate of HDI.

This study aims to analyze the influence of Regional Expenditure in Education and Health both from the APBN and APBD, to analyze the influence of DDI and FDI Investment on the Human Development Index in Eastern Indonesia from 2015 to 2019.

RESEARCH METHOD

The type of research that the author uses is quantitative descriptive research that describes a phenomenon that occurs carefully based on the characteristics and facts that occur (Azwar, 1998). This type of research approach was chosen because the design in this study calculates and presents how much the relationship and influence between the independent variable and the dependent variable.

This research was conducted in 13 provinces located in Eastern Indonesia. The provinces in question are 1) Bali, 2) West Nusa Tenggara, 3) East Nusa Tenggara, 4) North Sulawesi, 5) Gorontalo, 6) Central Sulawesi, 7) West Sulawesi, 8) South Sulawesi, 9) Southeast Sulawesi, 10) North Maluku, 11) Maluku, 12) West Papua, 13) Papua.

The author uses secondary data types obtained from publications released by the Central Statistics Agency, Directorate General of Financial Balance, Investment Agency of the Ministry of Investment, Annex to the Regulation of the Minister of Education and Culture on deconcentration funds, and Annex to the Regulation of the Minister of Health on deconcentration funds. The author disaggregated the data from 2015 to 2019.

The dependent variable used in this study is the Human Development Index (HDI) and the independent variables used in this study amounted to 6 (six) variables, namely:

1. Education Expenditures Derived from the State Budget represented by the Education Deconcentration Fund (PN)
2. Expenditure in the Education Sector sourced from the Regional Budget (APBD) (PD)
3. Expenditure in the Health Sector sourced from the State Budget (APBN) represented by Health Decentralization Fund (KN)
4. Expenditure in the Health Sector sourced from the Regional Budget (APBD) (KD)
5. Domestic Investment (DDI)
6. Foreign Direct Investment (FDI)

This study used panel data. Panel data is a data set that contains sample data of individuals (households, companies, districts / cities, etc.) in a certain period of time. In other words, panel data is a combination of *time-series* data and cross-individual data (*cross-section*) (Ekananda, 2016). The final equation to be used in panel data regression is as follows:

$$\text{Log}(IPM) = \alpha + \beta_1 \text{Log}(PN) + \beta_2 \text{Log}(PD) + \beta_3 \text{Log}(KN) + \beta_4 \text{Log}(KD) + \beta_5 \text{Log}(DDI) + \beta_6 \text{Log}(FDI)$$

Information:

Log : Logaritma

α : Constant

β : Variable Regression Coefficient X_1 - X_6

PN : Education Expenditures Derived from the State Budget represented by the Fund Deconcentration of Education

PD : Expenditure in the Education Sector sourced from the Regional Budget (APBD)

KN : Expenditure in the Health Sector sourced from the State Budget (APBN) represented by Health Decentralization Fund

KD : Expenditure in the Health Sector sourced from the Regional Budget (APBD)

DDI : Domestic Investment

FDI : Foreign Direct Investment

In analyzing regression models using panel data can be done with several approaches, namely: a) Common Effect Model (*CEM Approach*); b) *Fixed Effect Model (FEM) Approach*; c) *Random Effect Model (REM) Approach*. To determine which method/approach is good in estimating panel data regression, there are several procedures that can be done, namely: :

1. Test Chow. The chow test is a test used to select the appropriate method between the *Common Effect* or *Fixed Effect Model*. If the F-count value is greater than the F of the table then it is considered significant, it means rejecting H_0 . In other words, accept H_a which states that

estimates with the Fixed Effect Model are better than estimates with the *Common Effect Model*.

2. The Hausman test is performed to determine the best method between FEM and REM. This test follows the distribution of chi-square at free degrees (k-1). If the chi square > 0.05 then H_0 is accepted and the right choice of method is REM while if the chi-square < 0.05 then H_0 is rejected and the right choice of method is FEM

Furthermore, the model hypothesis test was carried out to identify whether the regression coefficient obtained in this study was significant (had an effect between one variable and another). The t- Statistical test is performed to determine the effect of the independent variable partially (each variable) on the dependent variable. The F-Statistics test is performed to determine whether all independent variables simultaneously (together) have an effect on the dependent variable.

The determinant coefficient test (R²) is an important measure and should be considered in conducting regression analysis because the value of the determinant coefficient can inform whether or not the estimated regression model is good. In other words, the coefficient of determinance can measure how close the estimated regression line is to the actual data. The value of the coefficient of determinance reflects how much the model variation of the dependent variable (Y) can be described by the independent variable (X).

Uji Asumsi Klasik yang digunakan dalam penelitian ini adalah

- 1) Normality Test. The normality test aims to determine the distribution of data in variables to be used in research and should be done before the data is processed based on research models. The Jarque Berra (JB) test is one of the normality tests of the goodness of fit test through eviews software which measures whether the skewness and kurtosis of the sample are in accordance with the normal distribution.
- 2) Multicollinearity Test. Multicollinearity is the presence of perfect linear relationships among variables that explain the regression model. To measure the occurrence of multicollinearity in regression models seen from the correlation coefficient between each independent variable. If the coefficient > 0.80 , then in the regression model multicollinearity occurs
- 3) Heterokedasticity Test. The heteroscedasticity test is a test to see if in the regression model there is an inequality of variance from the residual of one observation to another. There are two ways to detect the presence or absence of heterokedasticity, namely the graph method and the statistical test method (formal test). The relative graph method is carried out, namely by finding a residual graph with graph requirements that do not cross the limit (500 and -500), meaning that the residual variants are the same and it can be concluded that there are no symptoms of heterokedasticity or pass the heteroscedasticity test (Napitupulu et al., 2021).

RESULTS AND DISCUSSION

Based on the panel data regression model approach using the Common Effect Model, Fixed Effect Model, and Random Effect Model approaches and *the tests that have been carried out, namely the Chow Test and the Hausman Test show that the more appropriate regression model to be used in this study is the Fixed Effect Model*. The regression results from the test are presented in Table below.

Table 1 Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	209,102392	(12,46)	0,0000
Cross-section Chi-square	261,121615	12	0,0000

Table 2 Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	14,889011	6	0,0211

Table 3 Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.091118	0.303831	13.46509	0.0000
PN	-0.013617	0.004508	-3.020353	0.0041
PD	0.012645	0.004746	2.664140	0.0106
KN	-0.005546	0.006009	-0.922904	0.3609
KD	0.008382	0.005015	1.671430	0.1014
DDI	0.000355	0.001037	0.342803	0.7333
FDI	-0.000508	0.001490	-0.340942	0.7347

Source: Data processing results with Eviews

The regression line equation is obtained as follows:

$$\begin{aligned} \text{Log (HDI)} = & 4,091118 - 0,013617 \text{Log(PN)}_{it} + 0,012645 \text{Log (PD)}_{it} \\ & - 0,005546 \text{Log(KN)}_{it} + 0,008382 \text{Log(KD)}_{it} + 0,000355 \text{Log(DDI)}_{it} \\ & - 0,000508 \text{Log(FDI)}_{it} \end{aligned}$$

By looking at each value of the coefficient, the influence of independent variables on the dependent variable can be explained as follows:

1. The regression coefficient value of the education budget derived from the APBN (PN) is - 0.013617, meaning that when the state budget in the education sector (PN) represented by the education deconcentration fund increases by 1%, there is a decrease in HDI by 1.3% and vice versa, if there is a decrease in state spending in the education sector (PN), HDI increases by 1.3%.
2. The regression coefficient value of the variable regional budget in education (PD) of 0.012645 means that when the regional budget in education (PD) increases by 1%, HDI increases by 1.26% and vice versa, namely if there is a decrease in regional expenditure in education (PD), HDI decreases by 1.26%.
3. The regression coefficient value of the state budget in the Health sector (KN) of -0.005546 means that when the state budget in the Health sector (KN) increases by 1%, there is a decrease in HDI by 0.55% and vice versa, namely if there is a decrease in the state budget in the Health sector (KN) by 1%, the HDI increases by 0.55%.
4. The regression coefficient value of the regional budget in the Health sector (KD) is 0.008382, meaning that when the regional budget in the Health sector (KD) increases by 1%, the HDI increases by 0.83% and will also apply vice versa, namely if there is a decrease in the regional budget in the Health sector (KD), the HDI decreases by 0.83%.
5. The regression coefficient value of domestic investment (DDI) of 0.000355 means that when domestic investment (DDI) increases by 1%, HDI will increase by 0.03% and vice versa, namely if there is a decrease in domestic investment investment by 1%, HDI decreases by 0.03%
6. The regression coefficient value of foreign direct investment (FDI) of -0.000508 means that when foreign investment (FDI) increases by 1%, there is a decrease in HDI by 0.05% and vice versa, namely if there is a decrease in foreign investment investment by 1%, HDI increases by 0.05%.

Table 4 T-statistical test, F-statistical test and Coefficient of determination

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.091118	0.303831	13.46509	0.0000
PN	-0.013617	0.004508	-3.020353	0.0041
PD	0.012645	0.004746	2.664140	0.0106
KN	-0.005546	0.006009	-0.922904	0.3609
KD	0.008382	0.005015	1.671430	0.1014
DDI	0.000355	0.001037	0.342803	0.7333
FDI	-0.000508	0.001490	-0.340942	0.7347

Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.990347	Mean dependent var		4.206168
Adjusted R-squared	0.986570	S.D. dependent var		0.060232
S.E. of regression	0.006980	Akaike info criterion		-6.852616
Sum squared resid	0.002241	Schwarz criterion		-6.217026
Log likelihood	241.7100	Hannan-Quinn criter.		-6.601835
F-statistic	262.1871	Durbin-Watson stat		1.591009
Prob(F-statistic)	0.000000			

Source: Data processing results with Eviews

The F-statistical test presented in Table 2 yields a value of F-statistic probability smaller than the significance level ($0.0000 < 0.05$). Thus, it can be concluded that the regression model formed is feasible to use and the independent variables which include PN, PD, KN, KD, DDI and FDI have a simultaneous influence on the dependent variable HDI, while the t-static test produces regression results as follows:

- a. The probability value of the PN variable is smaller than the significance level ($0.0041 < 0.05$) with a t-statistic value of -0.013617 , meaning that the PN variable (Regional expenditure in education derived from the State Budget) partially has a significant negative influence on HDI .
- b. The probability value of the PD variable is smaller than the significance level ($0.0106 < 0.05$) with a t-statistic value of 0.012645 , meaning that the PD variable (Regional expenditure in education derived from the APBD) partially has a significant positive influence on HDI.
- c. The probability value of the KN variable is greater than the significance level ($0.3609 > 0.05$) with a t-statistic value of -0.005546 , meaning that the KN variable (Regional expenditure in the Health sector derived from the State Budget) partially has a negative insignificant influence on HDI.
- d. The probability value of the KD variable is greater than the significance level ($0.1014 > 0.05$) with a t-statistic value of 0.008382 , meaning that the KD variable (Regional expenditure in the Health sector derived from the Regional Budget) partially has a negative insignificant influence on HDI.
- e. The probability value of the DDI variable is greater than the significance level ($0.7333 > 0.05$) with a t-statistic value of 0.000355 , meaning that the DDI (Domestic Investment) variable partially has a positive insignificant influence on HDI.
- f. The probability value of the FDI variable is greater than the significance level ($0.7347 > 0.05$) with a t-statistic value of -0.000508 , meaning that the FDI (Foreign Investment) variable partially has a positive insignificant influence on HDI.

The Adjusted r-squared *value* in Table 2 is 0.987930 . This means that the variation in HDI by 98% can be explained by variables PN, PD, KN, KD, DDI and FDI while the remaining 2% is explained by other variables outside the model.

The Influence of Regional Expenditure In The Education, Health, And Investment Sectors On The Human Development Index In Eastern Indonesia Region

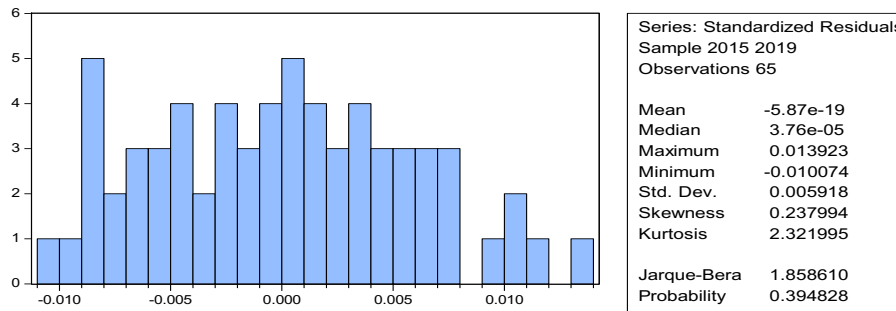


Figure 1 Normality Test Result

Source: Data processing results with Eviews

Based on the results of the normality test in Figure 1 shows that the Jarque-Bera probability value of 0.394828 is greater than the significance level of 0.05 so that the data is normally distributed.

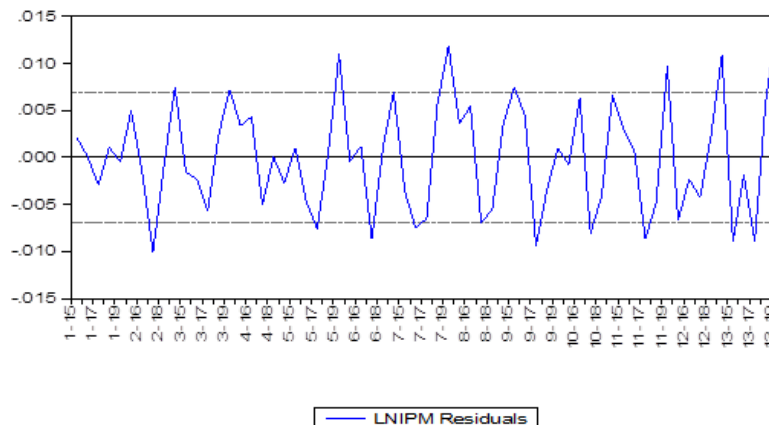
Table 5 Heterokedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0,052020	0,061401	0,847222	0,4013
PN	-0,000364	0,000911	-0,399097	0,6917
PD	0,000212	0,000959	0,220715	0,8263
KN	-0,000829	0,001214	-0,682871	0,4981
KD	-0,000968	0,001013	-0,954849	0,3446
DDI	5,06E-05	0,000210	0,241360	0,8103
FDI	-0,000108	0,000301	-0,358777	0,7214

Source: Data processing results with Eviews

Based on heterokedasticity testing in Table 3 using the statistical test method, it was obtained that all probability values of the independent variable were greater than the significance level of 0.05 so that it was concluded that heteroscedasticity did not occur.

Figure 2 Multicollinearity Test Table



Source: Data processing results with Eviews

Based on multicollinearity testing using *Pearson Correlation* in Table 4, it is known that the value of the coefficient between variables is smaller than 0.8. Then it can be concluded that the data does not have a multicollinearity problem.

1. The Effect of Education Expenditure from the State Budget on HDI
The results obtained from the *Fixed Effect Model* regression result in a probability value of

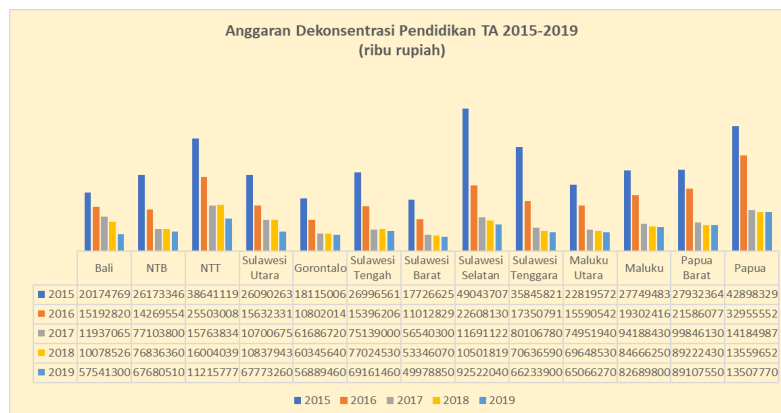
the state budget variable in the education sector (PN) smaller than the significance level ($0.0041 < 0.05$) with a regression coefficient value of the state budget in the education sector (PN) of -0.013617 meaning that the state budget in the education sector represented by the Education Deconcentration fund has a significant negative influence on HDI in Eastern Indonesia Province 2015-2019.

Deconcentration Funding is implemented to finance activities that are the authority of the Central Government in regions where the characteristics of the activities are non-physical activities that produce outputs (output indicators) that do not add fixed assets, such as coordination, planning, facilitation, training, counseling, coaching, supervision, and control activities (Peraturan Pemerintah Nomor 7 Tahun 2008 Tentang Dekonsentrasi Dan Tugas Pembantuan, 2008). Ministries/Agencies must pay attention to the balance of funding in the regions in site planning and budgets for Deconcentration programs and activities.

Based on the mandate of laws and regulations, the Ministry of Finance is obliged to formulate the balance of funding in the regions (Peraturan Menteri Keuangan Nomor Tentang Perubahan Atas Peraturan Menteri Nomor 156/PMK.07/2008 Tentang Pedoman Pengelolaan Dana Dekonsentrasi Dan Tugas Pembantuan, 2010). The funding balance in question is reviewed from two variables, namely the Regional Funding Capability (KPD) variable which describes the potential financial capacity in the region and the community development variable in the region represented through the Human Development Index (HDI) (Kementerian Keuangan, 2019) so that from the calculation of these two variables will group the regions into four quadrants.

- Quadrant I regions are intended for areas that have real IKPD per capita above the national average and HDI above the national HDI. This area is categorized as a **non-priority area**.
- Quadrant II regions are intended for areas that have real IKPD per capita below the national average and HDI above the national HDI. This area is categorized as **priority II area**.
- Quadrant III regions are intended for areas that have real IKPD per capita below the national average and HDI below the national HDI. This area is categorized as **priority area I**.
- Quadrant IV regions are intended for regions that have real IKPD per capita above the national average and HDI below the national HDI. This area is categorized as a **non-priority area**.

The regions that receive the largest allocation of deconcentration funds are those that have funding capabilities below the national average and have HDI that is below the national HDI. The area in question is an area that is included in the Priority I and Priority II regional groups. As for the recommendation of the Minister of Finance regarding the Deconcentration fund, it is stated that areas included in other quadrant groups are still allocated by Ministries/Institutions, but the portion is relatively small when compared to priority areas.



Source: Appendix to the Ministry of Education and Culture on Deconcentration Funds, processed.

Figure 3
Eastern Indonesia Education Deconcentration Budget, 2015-2019

Based on the recommendation of the Minister of Finance on the balance of funding in the regions, provinces located in Eastern Indonesia as a whole are categorized as Priority I and II regions. This area is the area with the largest allocation of Deconcentration funds than areas with other categories. Figure 2 shows that if the amount of education deconcentration funds during the 2015-2019 period is averaged, Papua Province is the province with the largest number of recipients of deconcentration funds in Eastern Indonesia. Papua Province is also the province with the lowest HDI with an average HDI of 59.06 points during the observation period. The results showed that the largest allocation of recipients of Deconcentration funds were areas with low fiscal capacity.

In Figure 2, the allocation of Education Deconcentration funds during the observation year has generally decreased. The decrease in the Education Deconcentration fund budget resulted from the gradual transfer of deconcentration funds into Special Allocation Funds (DAK) as mandated in Article 108 paragraph (1) of Law Number 33 of 2004 concerning Financial Balance Between the Central Government and Regional Governments ([Undang-Undang Nomor 33 Tahun 2004 Tentang Perimbangan Keuangan Antara Pemerintah Pusat Dan Pemerintahan Daerah, 2004](#)). This diversion is due to the bias of the implementation of relations between the center and the regions where in practice deconcentration funds are mostly used to fund affairs that have been decentralized to the regions ([Undang-Undang Nomor 33 Tahun 2004 Tentang Perimbangan Keuangan Antara Pemerintah Pusat Dan Pemerintahan Daerah, 2004](#)).

Moreover. The Government Regulation on Deconcentration states that most of the deconcentration funds are used for non-physical activities and a small part can be used for supporting activities in the form of procurement of goods that can produce fixed assets ([Peraturan Pemerintah Nomor 7 Tahun 2008 Tentang Dekonsentrasi Dan Tugas Pembantuan, 2008](#)). However, in the proportion of each type of expenditure nationally, it is stated that most of the allocation of deconcentration funds is used for goods spending ([Kementerian Keuangan, 2019](#)).

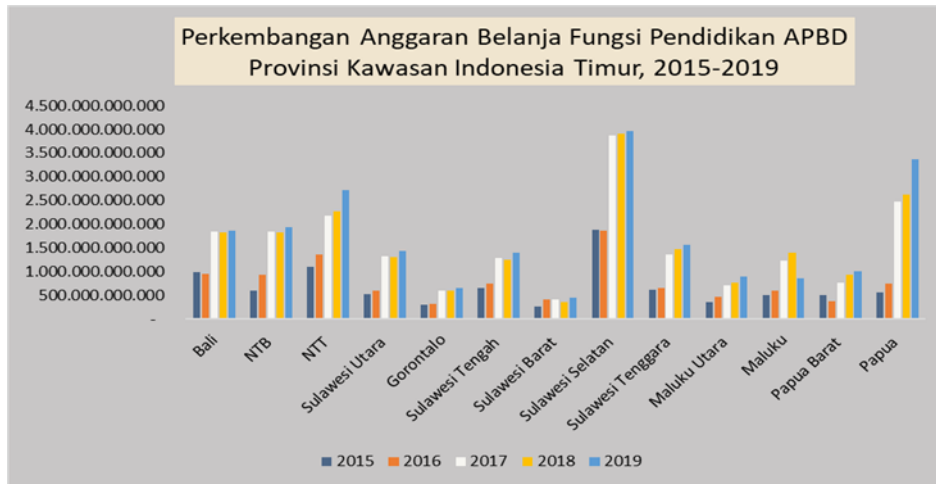
The tendency of goods spending in the allocation of deconcentration funds is the influence of the implementation of Minister of Finance Regulation Number 156 / PMK.07 / 2008 as amended by Minister of Finance Regulation Number 248 / PMK.07 / 2010 concerning Guidelines for Management of Deconcentration Funds and Assistance Duties. The Minister of Finance regulation regulates the use of goods expenditure for expenditure of goods supporting deconcentration activities ([Peraturan Menteri Keuangan Nomor 156/PMK.07/2008 Tentang Pedoman Pengelolaan Dana Dekonsentrasi Dan Tugas Pembantuan, 2008](#)).

The overlapping rules and funding in the administration of affairs result in inefficient government spending so that it has not had an impact on human development in the regions. This is supported by research by Purwanti, et al (2016) which states that the Education Deconcentration Fund is not effective in reducing school dropout rates in the regions and in the presence or absence of the Government Deconcentration Fund can overcome the dropout rate with the APBD ([Permana & Purwati, 2013](#)).

2. The Effect of Education Expenditure from the Regional Budget on HDI

The results obtained from the Fixed Effect Model regression produce a probability value of the PD variable smaller than the significance level ($0.0106 < 0.05$) with a regression coefficient value of the regional budget for Education (PD) of 0.012645, meaning that the regional budget (PD) has a significant positive influence on HDI in the Eastern Province of Indonesia in 2015-2019.

The budget for education functions in the APBD of each Province in Eastern Indonesia during the period 2015-2019 presented in Figure 1.3, continues to increase. In general, the realization of the budget performance of the education function is closely related to the policy strategy for achieving the education development targets pursued by the Government.



Source: Directorate General of Financial Balance Publication

Figure 4
Shopping for Education Function in Eastern Indonesia, 2015-2019

In line with the increase in regional expenditures in the Education Sector in Eastern Indonesia in the period 2015-2019, the indicators forming HDI, School Length Expectations (HLS) and Average School Length (RLS) in Eastern Indonesia were also recorded to continue to increase from year to year with an average increase in HLS of 0.47 years and RLS of 0.63 years. With more and more children attending school with a higher level of education, it will have an impact on improving human capital in Eastern Indonesia.

The results of this study are supported by research conducted by Maryozi, et al which states that education spending can encourage an increase in HDI in the regions (Maryozi et al., 2022). Purwanti, et al (2016) who also examined the relationship between the APBD and Deconcentration Fund with the School Dropout Rate concluded that there was a relationship / correlation between the APBD and the dropout rate while the Deconcentration Fund did not affect the School Dropout Rate. Through the Wilcoxon difference test, the Regional Budget is more effective in reducing the dropout rate than the Deconcentration Fund. In the presence or absence of the Deconcentration Fund, the Central Java Government can overcome the School Dropout Rate with the Regional Budget (Permana & Purwati, 2013).

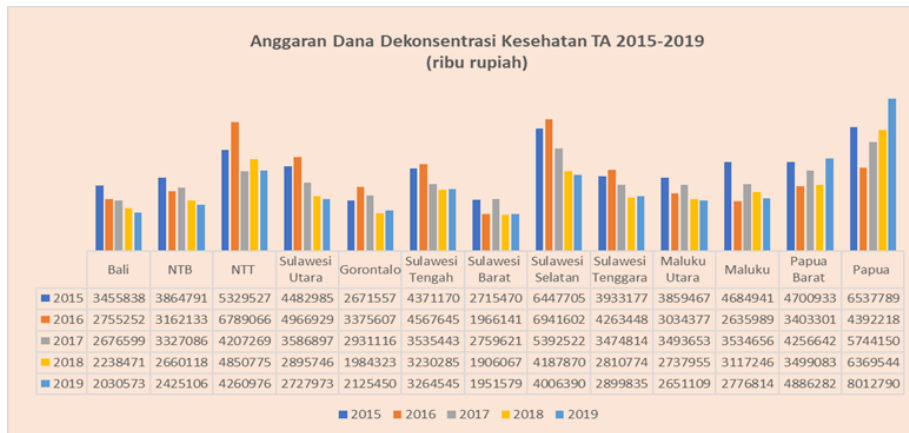
3. The Effect of Health Expenditure from the State Budget on HDI

The results obtained from the Fixed Effect Model regression produce a probability value of the KN variable greater than the significance level ($0.3609 > 0.05$) with a coefficient value of the state budget in the Health sector (KN) of -0.005546 meaning that the state budget in the Health sector represented by the Health Deconcentration fund has a negative influence on HDI in the Eastern Province of Indonesia in 2015-2019 but insignificantly.

Just like the education deconcentration fund, the determination of site plans and budgets for programs and activities to be concentrated is prepared by taking into account the country's financial capacity, the balance of funding in the regions, and regional development needs (Peraturan Pemerintah Nomor 7 Tahun 2008 Tentang Dekonsentrasi Dan Tugas Pembantuan, 2008). The balance of funding in the regions is reviewed from two variables, namely the Regional Funding Capability (KPD) variable which describes the potential financial capacity in the regions and the community development variable in the regions represented through the Human Development Index (HDI) (Kementerian Keuangan, 2019).

The amount of Health Deconcentration funds in Provinces in Eastern Indonesia as shown in Figure 4, fluctuates every year. If the amount of health deconcentration funds over a period of five years is averaged, Papua Province is the province with the largest number of recipients of Health Deconcentration funds during the observation period and it is known that Papua Province is the province with the lowest average HDI, which is 59.06 points during the 2015-2019 period

However, the lowest average Life Expectancy (UHH) during the observation period was in West Sulawesi Province.



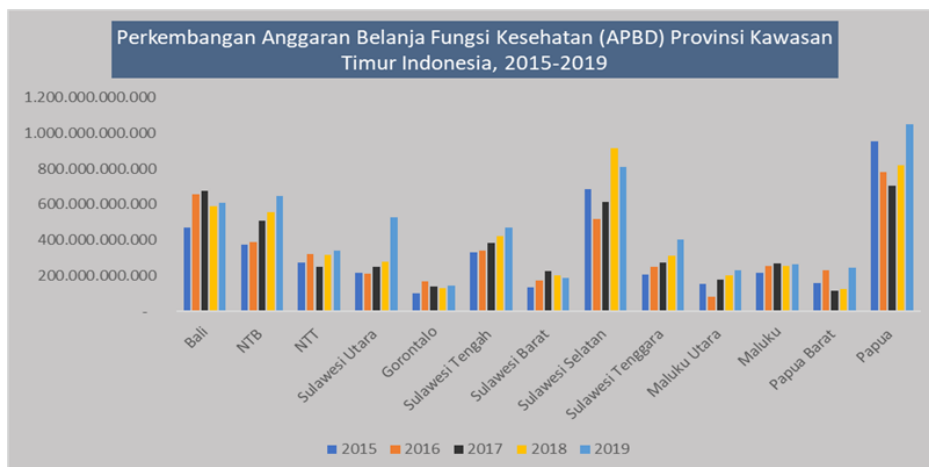
Source: Appendix to the Ministry of Health on Deconcentration Funds

Figure 5
Health Deconcentration Budget Table in Eastern Indonesia, 2015-2019

Although this study showed an insignificant association between health deconcentration funds and HDI with a negative direction of the relationship, it cannot be concluded that deconcentration funds directly cause a decrease in HDI. There are other factors that might influence HDI levels in the area, such as other social, economic, and policy factors not covered in the study.

4. The Effect of Health Sector Spending from the Regional Budget on HDI

The results obtained from the Fixed Effect Model regression produce a probability value of the KD variable greater than the significance level ($0.1014 > 0.05$) with a regional budget coefficient value in the Health (KD) of 0.008382, meaning that the regional budget for Health (KD) has a positive influence on HDI in the Eastern Province of Indonesia in 2015-2019 but insignificantly.



Source: Directorate General of Financial Balance Publication

Figure 6
Shopping for Health Functions in Eastern Indonesia, 2015-2019

The budget on the health function in each province in Eastern Indonesia during 2015-2019 presented in Figure 5 shows fluctuating trends but in general, the health function budget has increased from year to year. The increase in the budget allocation of the health function is driven

by the government's commitment to implement the National Health Insurance (JKN) program through the provision of health insurance to the poor and indigent (Contribution Assistance Recipients / PBI) and it is known that the PBI JKN budget in the 2015-2019 period experienced an average growth of 7.4% so that the adjustment of JKN contribution premiums will be the focus of policy in the use of state spending in the health budget column (Astutik, 2019).

Based on the components of HDI formation, the health dimension represented by Life Expectancy (UHH) is an indicator that can reflect the degree of health of an area related to the availability of infrastructure, ease of access to health services, and health quality. Looking at the development of UHH in 13 Provinces of Eastern Indonesia, UHH in each Province of Eastern Indonesia continues to increase during the period of 2015-2019 with an average growth of 0.26 percent per year.

However, even if the regional budget increases for health functions, the amount may still be limited to meet all health needs in the area. There are many health factors that are not widely explained by Life Expectancy, including::

- a. Quality of Life. Although UHH provides an idea of how long a person is expected to live, it does not directly reflect their quality of life. Factors such as physical and mental well-being, happiness levels, levels of discomfort or disability, and quality of social relationships also play a role in a person's quality of life, which is not always directly correlated with age.
- b. Disease. Although a person may live longer, they may experience chronic illness or significant disability that affects their quality of life.
- c. Environmental and Lifestyle Factors. Environmental factors such as air quality, water, sanitation, food safety, and work environment also have a significant effect on public health. In addition, lifestyles such as diet, physical activity, smoking habits, alcohol consumption, and exposure to stress also have a major impact on a person's health that cannot be explained by life expectancy alone.

Under these conditions, despite the increase in budget, the impact is not significant in addressing all health problems that affect HDI.

5. The Effect of Domestic Investment on HDI

The results obtained from the Fixed Effect Model regression produce a DDI variable probability value greater than the significance level ($0.7333 > 0.05$) with a Domestic Investment (DDI) coefficient value of 0.000355 meaning that Domestic Investment (DDI) has a positive influence on HDI in Eastern Indonesia Province in 2015-2019 but insignificantly.

Looking at the development of DDI investment in 13 Provinces of Eastern Indonesia during the period 2015-2019 shown in Table 1.5, it fluctuates greatly every year. It was noted that the increase in investment value only occurred on the island of Bali-Nusa Tenggara. While the Sulawesi and Maluku-Papua island groups fluctuate. In the Eastern Island group of Indonesia, there has been a considerable increase in the number of projects, but in terms of investment value absorbed, it has decreased

Table 6
Development of DDI Investment Realization by Island (Billion Rupiah)

Province	Development of Investment Realization in Domestic Investment									
	2015		2016		2017		2018		2019	
	Project	Investment	Project	Investment	Project	Investment	Project	Investment	Project	Investment
Sumatera	939	37.752	1.415	39.824	1.693	46.464	2.293	57.820	5.762	90.492
Jawa	3.155	103.758	4.336	126.354	5.555	166.000	6.350	176.953	17.691	202.494
Bali Nusa	85	2.894	156	2.647	223	7.088	357	9.930	1.428	14.665
Kalimantan	433	20.007	832	33.588	850	30.234	1.087	56.957	8.694	52.705
Sulawesi	421	13.668	687	33.588	459	10.085	634	23.499	1.660	24.230
Maluku										
Papua	67	1.387	85	251	58	2.480	94	3.445	216	1.914
Jumlah	5.100	179.466	7.511	236.253	8.838	262.351	10.815	328.605	35.451	386.498

Source: Investment Coordinating Board

The increase in the number of projects on DDI investment has the potential to affect per capita income in the economy. The increase in the number of DDI projects contributes to job creation and productivity improvement. With increased productivity, companies can produce more goods and services at a more cost efficient which will then lead to an increase in the revenue of both the company and employees.

Several reasons for the increase in the number of projects are quite large, but in terms of investment value absorbed actually decreased, namely:

- a. Project Scale. A large number of projects does not necessarily mean that every project has a large scale. If the projects undertaken are small-scale, for example small projects at the individual or small business level, the overall investment value may not experience a significant increase.
- b. Return on investment. Although the number of projects increases, the return on investment of individual projects may not be very high. If the projects have a low rate of return, the overall investment value will not rise significantly.
- c. Project Type. The projects undertaken may be of the same or similar type, so the value of the investment does not vary too much. For example, if the projects undertaken relate only to a particular industry or a limited sector, the value of the investment may not experience a significant increase.
- d. Risk Level. A large number of projects may indicate scattered investments, but if they carry a high risk, investors may be reluctant to allocate large funds. This can cause the investment value to remain stable even though the number of projects increases.
- e. Economic conditions. External factors such as unstable economic conditions or slow growth can affect the overall value of the investment. If the economy experiences a slowdown, investors may be more cautious in allocating funds, so that the value of investments does not rise even though the number of projects increases.

The per capita expenditure indicator shows that per capita expenditure during 2015-2019 in each province in Eastern Indonesia did not experience a significant increase. Based on the sector, the realization of Domestic Investment Investment in 13 Provinces of Eastern Indonesia during the period 2015-2019 states that the Istitic, Gas and Water (LGA) sector is the sector with the highest investment value in Eastern Indonesia (BKPM, 2022).

BPS data in February 2022 recorded 135.61 million working people. The majority is absorbed in the agricultural sector by 29.96% while in the Electricity, Water and Gas sector has the least absorption of the working population at 0.23% (Annur, 2022). The data shows that the Electricity, Gas and Water sector has a fairly small contribution in employment in Indonesia compared to other sectors.

The insignificant influence between DDI and HDI investment in 13 Eastern Indonesia Provinces can be caused by the imbalance in investment distribution where investment allocation is uneven across sectors and regions, another factor that causes insignificant influence between DDI and HDI investment in 13 Eastern Indonesia Provinces is dependence on natural resources. If DDI's investment is based on the exploitation of natural resources, such as mines or the energy sector, its impact on human development may be limited. The revenues generated from this sector may not be fully reflected in the increase in HDI, especially if those revenues are not fairly distributed or if adverse environmental impacts are not properly addressed.

6. The Effect of Foreign Direct Investment on HDI

The results obtained from the Fixed Effect Model regression produce a probability value of the FDI variable greater than the significance level ($0.7347 > 0.05$) with a Foreign Direct Investment (FDI) coefficient value of -0.000508 meaning that Foreign Direct Investment (FDI) has a negative influence on HDI in the Eastern Province of Indonesia in 2015-2019 but insignificantly. This rejects the research hypothesis that there is a significant negative influence between Foreign Capital Security Investment and the Human Development Index.

Table 7
Development of FDI Investment Value Realization, by Island (US\$ Million), 2015-2019
Perkembangan Realisasi Investasi Penanaman Modal Asing

Province	2015		2016		2017		2018		2019	
	Project	Investment	Project	Investment	Project	Investment	Project	Investment	Project	Investment
Sumatera	1.884	3.733	2.964	5.665	2.529	5.497	2.356	4.839	3.809	4.251
Jawa	12.177	15.433	12.060	14.772	19.475	16.761	15.533	17.046	19.801	15.476
Bali Nusa	1.309	1.265	2.171	948	2.199	1.158	2.316	1.354	4.029	824
Kalimantan	1.195	5.843	1.630	2.589	1.101	2.887	914	1.954	1.438	2.131
Sulawesi	834	1.560	1.084	2.765	669	2.887	608	2.324	918	3.497
Maluku-Papua	339	1.442	412	2.225	284	2.449	245	1.790	359	2.029
Total	17.738	29.276	20.321	28.964	26.257	31.640	21.972	29.308	30.354	28.208

Source: Investment Coordinating Board

The development of foreign investment into Indonesia presented in Table 6 shows fluctuating movements every year. In 2016, foreign investment on the islands of Bali and Nusa Tenggara had experienced a significant decline and increased again in 2017-2018. In 2019, the value of foreign investment in Bali and Nusa Tenggara Island again experienced a sharp decline. This situation is inversely proportional to the number of projects in Bali and Nusa Tenggara Provinces which actually continue to increase from year to year

Based on the sector, the Basic Metal, Metal Goods, Non-Machinery and Equipment Industry is the sector with the highest FDI investment realization in Eastern Indonesia, but in its development has not had a direct impact on the increase in the human development index (HDI). One reason is because the metal and mining industries tend to require high technical skills in which some positions

CONCLUSION

Based on the results of panel data analysis that has been carried out using the Fixed Effect Model (FEM) approach, it can be concluded that the state budget in the education sector (KN) represented in the Education Deconcentration Fund has a significant influence, but has a negative relationship with HDI in Eastern Indonesia in 2015-2019. The regional budget in the field of education (PD) has a significant influence on the direction of positive relations with HDI in Eastern Indonesia in 2015-2019. The state budget in the health sector (KN) represented in the Health Deconcentration Fund has an insignificant influence on the direction of negative relations with HDI in Eastern Indonesia in 2015-2019. The regional budget in the health sector (KD) has an insignificant effect but has a positive relationship direction for HDI in Eastern Indonesia in 2015-2019.

Domestic Investment Investment has an insignificant effect but has a positive relationship direction for HDI in Eastern Indonesia in 2015-2019. Foreign Direct Investment has an insignificant influence on the direction of negative relations with HDI in Eastern Indonesia in 2015-2019.

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