

## EFFECT OF FUND TRANSFER, REVENUE ON DEVELOPMENT INDEX AS MODERATION VARIABLES

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### Abstract

One of the instruments to measure the level of success of a country in carrying out development is the human development index calculation approach. In essence, development is a change towards better conditions so that as a result of development activities it will have implications for the emergence of a budget and ultimately money is needed to realize development activities. During the twenty-four years of implementing fiscal decentralization in Indonesia, the number of transfers to the regions has increased significantly. However, efforts to increase regional revenues are often neglected, so that the goal of fiscal decentralization towards self-sufficient regional government funding has not been achieved to date. This study examines quantitatively how the influence of money arising from development activities, namely Central Government Transfer Funds and Regional Original Revenues, can generate benefits or whether the realization of the budget spent by local governments, namely Capital Expenditures, can generate a certain value or benefit for the community, so that in this study can be described through the human development index instrument. The sampling technique used in this study was purposive sampling. The data used in this study is secondary data obtained from the Central Bureau of Statistics and the Directorate General of State Financial Balance. The research method used is panel data regression with the Fixed Effect Model (FEM), where the data collected is cross-sectional data, namely 414 districts/cities in Indonesia for the period 2012 to 2020 which are time series data. The results obtained show that: (1) DTPP has a positive and significant effect on HDI; (2) PAD has a positive and significant effect on HDI; (3) Through capital expenditure mediation, DTPP has a negative and significant effect on HDI; and (4) Through the mediation of capital expenditure, PAD has a positive and significant effect on HDI.

## INTRODUCTION

All over the world, both developed and developing countries always pay attention to development in their countries. Development is one of the ways used to achieve

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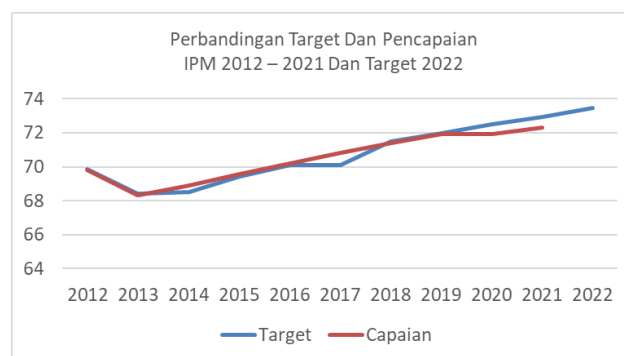
national goals. In essence, development is a change towards better conditions so that development activities must be carried out in a directed and planned manner. Targeted means there are clear steps and goals, while planned means clear the process and goals to be achieved from the development (input, process and output) and the most important thing is how the value of money or the budget for building produces benefits or whether the budget (funds) spent produces a certain value for society.

In Indonesia, development is carried out in various fields. According to Mahadiansar et al., (2020), often the term development has a more physical connotation, meaning that it often carries out physical building activities, often even more narrowly defined as building infrastructure or physical facilities. In 2021, according to data from the Directorate General of Budget, in Indonesia, infrastructure or physical development is a top priority when viewed from the 2021 budget ceiling for ministries and institutions, namely the PUPR Ministry with the largest portion of Rp. 149.8 trillion or equivalent to 15.42% of the total ceiling of Rp. 1.032 trillion.

Development with an infrastructure approach is not merely the only important option for the welfare of the people. An instrument is needed to measure the level of success of a country in carrying out development. One such instrument is the Human Development Index (IPM). According to S. P. Sari, (2019) The development paradigm, which is measured by the human development index, is important because if a country is rich in natural resources but minimal in human resources, like Indonesia, it will be difficult to develop the country. But good human resources will certainly be able to manage the wealth owned by a country well too.

The human development index was first introduced by the United Nations Development Program in 1990 and is reported annually. As the government's development target, in 2015 for the first time the HDI in macro assumptions in the DPR-RI was made one of the indicators in the State Budget Law with calculations involving three main elements in human life, namely health, education and a decent standard of living. According to Nashshar, (2022) HDI can explain the condition of the community in enjoying the results of development in the form of access to education services, health services, and income for a decent life in a region or country.

The Central Statistics Agency (BPS) noted that the Human Development Index (IPM) in Indonesia in 2020 has decreased due to the COVID-19 pandemic, Indonesia's HDI in 2021 has begun to experience improvement, reaching 72.29 in 2021. This figure has increased 0.49% compared to the previous year of 71.94. Indonesia ranks 114th out of 191 countries based on a report issued by UNDP in 2021. Compared to neighboring countries in Southeast Asia, Indonesia is ranked fifth. HDI of Singapore, Brunei Darussalam, Malaysia and Thailand are still better than Indonesia.



The national HDI data above (diagram 1) is a comparison between actual achievement and the target figure for achieving HDI taken in the 2015 to 2021 State Budget Law. The human development index over the past 10 years shows that achievements and targets are not always as expected. In 2015 to 2017 Indonesia has succeeded in achieving the set HDI target but failed to achieve the target in 2018, 2019, 2020 and 2021.

The diversity of regions and the conditions of the region and its people have resulted in inequality of development that is not evenly distributed between regions and is a challenge for the government in Indonesia. Law Number 22 of 1999 concerning Regional Autonomy and Law Number 25 of 1999 concerning Balancing Central and Regional Finances, which were later revised to become Law No.32/2004 and Law No. 34/2004 is a policy of regional autonomy and fiscal decentralization as a form of central government support to address development gaps(Nashshar, 2022).

With the enactment of regional autonomy and decentralization, it is hoped that the regions will be able to finance regional expenditures using local revenue (PAD), but not all regions are able to do this. This causes development to be uneven, to overcome this, the central government allocates a Balancing Fund, which consists of Revenue Sharing Funds (DBH), General Allocation Funds (DAU), Special Allocation Funds (DAK), special autonomy funds and adjustments.

Central government transfer funds in the form of balancing funds will be of direct benefit to the community if realized in the form of quality regional spending. Capital expenditure is one type of regional expenditure that is directly related to the provision of public services to the community. According to Bappenas (2011) in Nashshar(2022)most of the use of PAD and transfer funds in the form of block grants are still focused on the needs of personnel expenditures and routine operational expenditures, so that the regions are highly dependent on DAK for capital expenditure needs.

The uneven distribution of development in Indonesia, as well as the inconsistency in achieving the HDI, indicate that the implementation of decentralization in Indonesia in the form of providing Balancing Funds to the regions and the realization of capital expenditures by the regions have not fully been able to have an optimal impact on human development. This study aims to examine the effect of central government transfer funds and local revenue on the human development index with capital expenditure as a moderating variable. Several studies have been widely studied with various research results. The results of these studies, among others, Nashshar (2022)with the results of DAK research having a significantly positive indirect effect on HDI through capital expenditure. Williantara (2016) the ability of PAD, DAU, and DBH to finance Capital Expenditures does not affect HDI achievements. However, the Special Allocation Fund shows results that have a negative effect on HDI. This indicates that the greater the DAK in financing Capital Expenditures, the can reduce the achievement of HDI. Kurniasari's research (2021) PAD and DBH directly or indirectly have no effect on the human development index, general allocation funds directly or indirectly have an influence on the human development index. Furthermore, special allocation funds have no effect on the human development index but have an indirect effect through capital expenditure on the human development index.

## METHOD

This research includes quantitative research. The population in this study are all districts/cities in Indonesia. Meanwhile, the sample was taken using a purposive sampling technique with the criteria of having complete data for ten years (2012-2021) which includes realization, DTPP, PAD and Realization of capital expenditure, as well as HDI figures.

Table 1. Descriptive statistics

Variable	Min	Maks	Average	Std. Deviation	Data Source
<b>Dependent Variable</b>					
Human Development Indeks (IPM)	0.550000	0.840000	0.685529	0.051163	Central Bureau of Statistics (BPS)
<b>IndependenVariable</b>					
Central Government Transfer Fund(Billion Rupiah)	2.610000	22.82000	8.703524	3.467782	Directorate-General of Regional Fiscal Balance (DJPK)
Pendapatan Asli Daerah (Billion Rupiah)	0.020000	13.37000	1.427326	1.552135	Directorate-General of Regional Fiscal Balance (DJPK)
<b>Moderating Variable</b>					
Capital Spending	1.515070	2.959797	2.336102	0.208484	Directorate-General of Regional Fiscal Balance (DJPK)
Total Observation Data	4.140	4.140	4.140	4.140	

This study uses panel data covering regencies/cities throughout Indonesia in the 2012-2021 period (ten years). Sources of research data were obtained from publications from the Central Bureau of Statistics (BPS) and the Directorate General of Fiscal Balance (DJPK). Descriptive statistics for the research data can be seen in Table 1. The total number of data observed in this study was 4,140. As stated in the table, the average value of the Human Development Index (IPM) for all districts/cities in 2012-2021 is 0.686 with the lowest score at 0.550 and the highest score at 0.840. Data on central government transfer funds (DTPP), the average value is IDR 8.703 billion with the lowest value IDR 2.610 billion and the highest value IDR 22.820 billion. Regional Original Revenue (PAD) has an average value of IDR 1.427 billion with the lowest value IDR 0.020 billion and the highest value IDR 13.370 billion. For capital expenditure (BM) data, the average value is IDR 2.426 billion with the lowest amount IDR 0.330 billion and the highest amount IDR 9.120 billion.

## Research Model

$$Y_{it} = \alpha + \beta_1 DTPP_{it} + \beta_2 PAD_{it} + \beta_3 BM_{it} + \beta_n X_{nit} + e_{it}$$

## Information:

- $Y$  = Human development index
- $\alpha$  = Constant
- $\beta_1$ - $\beta_3$  = Regression coefficient
- DTPP = Central Government Transfer Funds
- PAD = Locally-Generated Revenue

LOGBM= capital expenditure (Log transformation)

$e$  = Error

$i$  = district/city sample

$t$  = year sample

## RESULTS AND DISCUSSION

### Sample Selection

Purposive sampling technique with several criteria was used to select the sample for this study. The criteria for determining the sample were determined, namely districts/cities that had complete data for ten years (2012-2021) and data that did not fall into the standard deviation of each variable were eliminated or data were outliers from 514 to 414 sample districts/cities.

One of the main goals of decentralization and regional autonomy is to facilitate development in all corners of the country, and to foster political stability and national unity. This is the basis for the reason that the selection of a sample of districts/cities is the focus of the implementation of regional autonomy for the purpose of equity.

### Regression Model Selection Results

Table 2. Model Estimation Approach Test Results

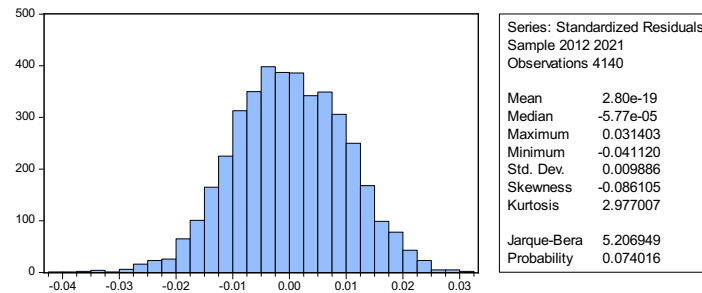
Chow Test	H0: Common Effect Model	H0: Accepted when Cross-Section $F > 0.05$	0.0000	FEM
	Ha: Fixed Effect Model	Ha: Accepted when Cross-Section $F < 0.05$		
Hausman Test	H0: Random Effect Model	H0: Accepted when Variabel X, $F > 0.05$	0.0000	FEM
	Ha: Fixed Effect Model	Ha: Accepted when Variabel X, $F < 0.05$		

Based on the results of the model selection test above, both regression equation models use FEM. The results of the Chow test on both models of equations show the probability value of the Cross-section Chi-square of 0.0000 (smaller than 0.05). Thus, the FEM model was selected. Furthermore, the Hausman test was carried out on both models. The result obtained is a random Cross-section probability value of 0.0000 (smaller than 0.05), so the FEM model was chosen. The BP-LM test is not necessary because the results of the two previous tests are FEM.

### Data Quality Test and Classical Assumptions

Test results for data quality and classical assumptions can be explained as follows:

1. Based on the results of the data quality test, namely the data normality test below, the result is that the probability value is  $0.074016 > 0.05$ , so the regression model in this study fulfills the data quality test and the residual data is normally distributed.



2. Based on the test results below, it shows that the correlation between the independent variables (central government transfer funds (DTPP), regional original income (PAD), and capital expenditure (LOGZ)) is less than 0.80, then  $H_0$  is accepted. Thus, it can be concluded that there is no multicollinearity problem between the independent variables in the regression model.

Table 3. Multicollinearity Test Results

	DTPP	PAD	LOGZ
DTPP	1	0.608	0.673
PAD	0.608	1	0.467
LOGZ	0.673	0.467	1

3. Based on the table below, the results obtained from the heteroscedasticity test using the Glejser test show that the DTPP and PAD variables occur heteroscedasticity, this is proven by each variable having a probability value of less than 0.05 then  $H_0$  is rejected, while the LOGZ variable does not occur heteroscedasticity with a probability value greater than 0.05. Thus, it can be concluded that the regression model has heteroscedasticity. To eliminate the existence of heteroscedasticity, the model must be treated by means of Cross Section Weight. The model in this study uses the estimation results of the Fixed Effect Model with the GLS Weight Cross-Section Weight method so that the direct heteroscedasticity problem can be corrected and the model is free from heteroscedasticity problems.

Table 4. Heteroscedasticity Test Results

Independent Variable	Prob.	Decision
DTPP	0.0000	There is heteroscedasticity
PAD	0.0002	There is heteroscedasticity
LOGZ	0.3015	There is no heteroscedasticity

## Hypothesis Test Results

Table 5. Panel Data Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.650713	0.002278	285.5906	0.0000
DTPP	0.006760	0.000112	60.48803	0.0000
PAD	0.005018	0.000264	19.00707	0.0000
LOGZ	-0.013349	0.001055	-12.65048	0.0000
R-squared	0.977583			
Adjusted R-squared	0.975078			
Prob(F-statistic)	0.000000			

Based on table 5 above, the variables of central government transfer funds (DTPP) and local revenue (PAD) partially affect the human development index, with the following explanation:

1. The first hypothesis states that central government transfer funds have an effect on the Human Development Index. This can be proven by the Tcount value of 60.488 which is greater than Ttable  $\pm 1.960$  with a significance value of  $0.000 < 0.05$  so that it can be concluded that H0 is rejected and H1 is accepted.
2. The second hypothesis states that local revenue has an effect on the Human Development Index. This can be proven by the Tcount value of 19.007 which is greater than Ttable  $\pm 1.960$  with a significance value of  $0.000 < 0.05$  so that it can be concluded that H0 is rejected and H2 is accepted.

Only the capital expenditure variable has no effect on the human development index (LOGZ). Meanwhile, all of the independent variables have an effect on the human development index with a Prob(F-statistic) whose value is less than 0.05. The last is the test of determination, namely by looking at the Adjusted R-squared value. The results of the study show that the Adjusted R-squared is 0.975078, which means that the variables of central government transfer funds (DTPP), local revenue (PAD) and capital expenditures together can explain the human development index of 97.50%, while 2.50% is explained by other factors. The following is an explanation of the results of the moderation significance test:

1. The third hypothesis is that capital expenditure moderates the effect of central government transfers on the human development index. Here are the test results:

Table 6. Capital Expenditure Significance Test Results  
Moderate the Influence of Central Government Transfer  
Funds on the Human Development Index

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.540491	0.005072	106.5666	0.0000
DTPP	0.021412	0.000591	36.20166	0.0000
LOGZ	0.031096	0.002192	14.18499	0.0000
X1*LOGZ	-0.005474	0.000241	-22.69794	0.0000

From the table above it can be seen that the interaction of DTPP\*LOGZ with a Tcount value of -22.697 is greater than Ttable  $\pm 1.960$  with a significance value of  $0.000 < 0.05$  so that it can be concluded that H0 is accepted and H3 is rejected.

2. The fourth hypothesis is that capital expenditure moderates the effect of regional original income on the human development index. Here are the test results:

Tabel 7. Capital Expenditure Significance Test Results  
Moderate the Effect of Regional Original Income on the  
Human Development Index

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.605859	0.004127	146.7982	0.0000
PAD	0.053889	0.002211	24.37174	0.0000
LOGZ	0.024230	0.001779	13.61772	0.0000
PAD*LOGZ	-0.015450	0.000860	-17.95705	0.0000

From the table above it can be seen that the PAD\*LOGZ interaction with a Tcount value of -17.957 is greater than Ttable  $\pm 1.960$  with a significance value of  $0.000 < 0.05$  so that it can be concluded that H0 is accepted and H4 is rejected.

## **Discussion of Hypothesis Test Results**

### **1. The Effect of Central Government Transfer Funds on the Human Development Index**

The results in table 5 show that the Central Government Transfer Fund (DTPP) has a positive and significant effect on the human development index. These results support the results of research (Suhyanto, 2017) that if there is an increase in transfer funds, there will also be an increase in the human development index. In this study, data on central government transfers is a figure for budget realization so that based on the results of data processing it is possible to realize an agreement on central government fund transfers (DAU, DAK, and DBH) to be able to improve the quality of human resources in regions in Indonesia with an overview of the human development index score, meaning that with the influence of the realization of money arising from the existence of a development budget, the Central Government Transfer Fund can generate benefits for the community because the HDI indicator describes the quality of education, health and welfare of life in an area. This research is in line with the statement (Nashshar, 2022) that HDI can explain the condition of the community in enjoying the results of development in the form of access to education services, health services, and income to live in a region or country.

### **2. The effect of regional original income on the Human Development Index**

In table 5, the results show that local revenue (PAD) has a positive and significant effect on the human development index. The results of this study are different from Rahman (2016) that Regional Original Income has no effect on the Human Development Index. However, this study supports the results of research from Handayani (2020) Sulastri & Efendri, (2019), Rinanda & Harsono, (2020) which state that regional original income has a significant effect on the human development index. PAD is regional income that reflects the level of fiscal independence of a region. With PAD Human development has a goal of advancing a country, where good quality human resources will help the country maximize all available resources to achieve sustainable prosperity.

Human development can be seen from the Human Development Index, which includes education and health factors. These two factors have an important function in creating quality human resources so that human development is important because it will support development in various other sectors. The allocation of PAD for investment in human capital aims to create quality human resources, so it needs to be a concern for local governments that the realization of PAD can be spent on investment needs in human capital. This is done in order to improve the quality of people's lives and to form productive human resources.

### **3. The Effect of Capital Expenditure Moderating Central Government Transfer Funds on the Human Development Index**

In table 6, the results show that capital expenditure cannot moderate the relationship between Central Government Transfer Funds and the human development index. APBD nationally is divided into 4 (four) main sections, namely personnel expenditures, capital expenditures, goods and services expenditures and other expenditures. From year to year the use of transfer funds from the central government to the regions or balancing funds when viewed from the total APBD expenditure in proportion, capital expenditure ranks third as expenditure with the largest expenditure value after personnel expenditure and



goods and services expenditure. The improving quality of regional spending can be seen from the decreasing portion of personnel spending in the APBD. The smaller the portion of APBD spending that is used for apparatus spending, the APBD can be optimized to support other types of spending that are more related to public services such as capital spending for the construction of community facilities or to support spending that effectively drives the wheels of the regional economy such as increasing connectivity with the construction of roads and bridges new. (DJPK, 2017)

#### 4. The Effect of Capital Expenditures on Moderating Regional Original Income on the Human Development Index

In table 7, the results show that capital expenditure cannot moderate the relationship between regional original income and the human development index. Ideally, Capital Expenditure Growth can be an important factor in reviewing increased development in an area, because positive Capital Expenditure Growth can illustrate the increasing allocation of funds used by Regional Governments for the construction of public facilities. Siregar Aroza, (2017). However, the results of the study show that regional own-source revenues through spending capital used for human capital development cannot in fact increase the human development index. This is because the human development index data for the last 10 years has tended to increase even though it has not reached the target. Sandri ketut, (2016).

### Discussion of Hypothesis Test Results

Based on the test results and discussion, it can be concluded that central government transfer funds, local revenue and capital expenditure simultaneously affect the human development index. but partially only capital expenditure which has no effect on the human development index. MRA testing shows the results that moderation in capital expenditure has no effect on the relationship between central government transfer funds and regional own-source revenues on the human development index. This can be explained by the fact that in the implementation of fiscal decentralization and regional autonomy, the expected results with large transfer funds have not yet had an impact on people's welfare, the indications of which can be seen from the human development index instrument. This is because the realization of receipts from central government transfer funds or balancing funds and regional original income is used or spent, with the largest portion being personnel expenditures and goods or services expenditures. The allocation portion of capital expenditure realization must be a priority concern for regional governments because the realization of capital expenditure, the benefits can be directly felt by the community. This will also automatically increase the human development index if capital expenditure by regional governments is allocated with the largest portion each year. Suggestions in this study are that the authorities in the regional government must always allocate the largest budget or spending for activities with an orientation to the interests of the community, be it educational, health and other infrastructure related to public services so as to be able to have a positive effect on human development sustainable. In addition, suggestions for future researchers are that in future research it is hoped that they can examine specifically each expenditure function that also influences the human development index besides capital expenditure.

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