The Effect of Local Government Income on Community Welfare by Using Expenditures as Mediating Variable

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Abstract—Fiscal decentralization is one of the decentralization political's consequences. This study aims to examine the effect of provincial government income on people welfare by using local government expenditure as intervening variable. The aim is to determine the effectiveness of local government's income and expenditure for community welfare. Regional income variables are fiscal balance funds (DAK, DBH, and DAU). The proxy of Community welfare is HDI. Expenditure components, as intervening variables, are capital expenditures (BM) and operation expenditures (BO). This research data is obtained from audited financial reports of provinces in Indonesia (34 provinces) and BPS website. This study used path analysis panel data to examine the direct and indirect effects between endogenous and exogenous variables mediated by two intervening variables. The results show that DAK and DBH directly has no significant effect on HDI, and DAU has a significant negative effect. Examination of the indirect effect of income on HDI, which is mediated by expenditure, shows that regional expenditure can increase the effect of income on people welfare. It can be seen from the effect of DAK and DBH on HDI, which turned out to be significant. Indirect effect of DAU on HDI remained negative but not significant. BO has a significant positive influence on welfare, while BM has a negative influence. Thus, it can be concluded that the BM conducted by the local government has not been well-targeted and managed properly.

Keywords— fiscal balance fund; profit sharing funds; general allocation funds; specific allocation funds; human development index; capital expenditure; operation expenditure; government income; government spending

I. INTRODUCTION

Achieving a just and prosperous society is the goal of every government. Various efforts are designed and implemented by local governments in order to increase regional economic growth. Different needs and priorities between various regions are impacted by cultural diversity and geographical conditions within a country [1]. The politics of decentralization, in which the regions have the autonomy to manage their own fiscal, is one of the efforts in order to achieve equitable distribution of development. Decentralization will not be meaningful unless it is followed by fiscal decentralization.

The purposes of implementing autonomy are to create independency, delegate authority, and develop the potential local government resources so that they are financially stable. Akudugu [2] stated that socio-economic conditions that reflect the community's welfare in an area are expected to be realized through various efforts made by the local government. For two decades, Indonesia has carried out various constitutional reforms, including fiscal decentralization. Since the forming of Law Number 25 of 1999 on Regional Government Fiscal Balance, which was last amended by Law Number 33 of 2004, various problems have risen.

The implementation of fiscal decentralization does not provide a significant improvement leap to the distribution of public services and public welfare. The level of community welfare is reflected in economic and social indicators such as the Human Development Index (HDI), poverty rate, life expectancy, gross regional domestic product, and financial inequality between community groups. The lack of harmony and synergy between state budget (APBN) and local government

budget (APBD) cause non-optimal function. As a result, the implementation of fiscal policy did not have a significant impact on people prosperity. The HDI value describe population accessibility to development outcomes such as income, health, education, and other aspects of life. In the Human Development Report (HDR) published by UNDP in 1990, three dimensions have been introduced to form the human development index: long and healthy life, knowledge, and a decent standard of living. These three dimensions are measured by four indicators, those are Life Expectancy at Birth (UHH), Literacy Rate (AMH), Gross Enrollment Rate (GER), and Gross Domestic Product (GDP) per capita [3].

Submission and distribution of financial resources to regions through Transfers to Regions and Village Funds (TKDD) always increases every year (Table I). Overall, the TKDD portion is approximately 33.6% of the total 2019 APBN expenditure (Rp.826.7 trillion of total Rp.2,461.1 trillion) [4]. In the last 5 (five) years (period 2015 to 2019), the average TKDD growth have reached 7.65% per year, from Rp. 623.1 billion in 2015 to Rp. 826.8 billion in 2019. It reflects that the Indonesian government delivers high spending authority to regions (decentralized expenditures).

TABLE I. TRANSFER TO REGION AND VILLAGE FUND (TKDD)

Year	2015	2016	2017	2018	2019
Transfer to Region and Village Fund (TKDD)	623.1	710.3	742	763.6	826.8
1. Transfer to Region	602.4	663.6	682.2	703.6	756.8
2. Village Fund	20.8	46.7	59.8	60	70
Percentage of Increasing/Decreasing	8.61 %	13.99 %	4.46 %	2.91 %	8.28 %

a. Source: Ministry of Finance Indonesia, 2020.

This budget growth is not proportional to the growth of Indonesia's HDI (Table II). In 2015, Indonesia's HDI reached 69.55, which is 5th in ASEAN. In 2019, Indonesian HDI increased to 71.92 (Figure. I), and it is categorized as high level. However, Indonesia's ranking in ASEAN dropped from 5th to 6th. The average increase of Indonesia's HDI per year is only 0.86%. It shows that the high transfer spending to the regions is not commensurate with increasing people welfare.
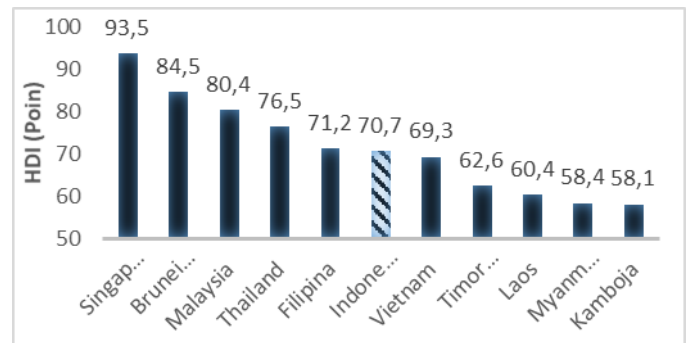
TABLE II. INDONESIAN HDI

Year	2015	2016	2017	2018	2019
HDI	69.55	70.18	70.81	71.39	71.92
Percentage of Increasing/Decreasing	0.94%	0.91%	0.90%	0.82%	0.74%

b. Source: BPS, 2020

FIGURE I.

FIGURE II. ASEAN HDI

a. Source: United Nations Development Programme (UNDP), 9 Desember2019.

Oktora and Pontoh's research [5] have revealed that DAU significantly affects capital expenditure allocation. Suharyanto's research [6] has proved that transfer funds affect increasing HDI, as well as local revenue and village funds. Rajkumar proves that public spending often does not produce the expected yield increases. It depends on good or bad governance [7].

This study aims to determine the effect of provincial income from fiscal balance funds i.e. DBH, DAU, and DAK on people welfare by using spending as mediating variable, during 2015-2019. The indicators of community welfare is HDI, while indicator of regional expenditures, as mediating variables, are Operational Expenditures (BO) and Capital Expenditures (BM). Therefore, the effectiveness of transfer spending to improve people welfare can be known precisely as well as provincial government's expenditure.

II. LITERATURE REVIEWS

Decentralization means transfer of affairs and authority, both legally and politically, resources and planning processes, decision making, and management of public functions, from the central government to the government under it [1]. Fiscal decentralization grants the region's authority to explore sources of income and the right to receive transfers from the higher government in determining routine spending and investment [8]. Rondinelli [9] classifies decentralization into four stages, namely deconcentration, delegation, devolution, and privatization. Some governments have used all four types simultaneously or at different times. After assessing the initial results, they started with one approach and then shifted to another ones. Other governments use various combinations of the four.

Many countries have transferred responsibility for managing development to local governments but retain strong indirect control over them.

In Indonesia, APBD revenues come from local own source revenue (PAD) and TKDD. The TKDD consists of the Fiscal Balance Fund, the Regional Incentive Fund (DID), the Special Autonomy Fund (Otsus), the Yogyakarta Special Region Privileges Fund, and the Village Fund. The fiscal balance fund is regional funding sourced from the APBN, which is allocated to the regions to finance regional needs consisting of the General Allocation Fund (DAU), the Specific Allocation Fund (DAK), and the Revenue Sharing Fund (DBH). DAU is a fund intended for equitable distribution of financial capacity between regions to funding regional needs. It is used in implementing decentralization. DAK can also be called an infrastructure fund because it is a capital expenditure to finance investment in the procurement and/or repair of physical facilities and infrastructure with a long economic life. However, in certain circumstances, DAK can also be used to operating and maintaining certain facilities and infrastructure for a limited period. DBH is allocated to regions based on the percentage of tax revenue and regional natural resources to fund regional needs in implementing decentralization [10].

For almost two decades of implementing transfers to regions, the DAU arrangement is considered not to have reduced inequality between regions. It can be seen from the measurement of equity indicators, which show that inequality between regions has not improved. One indication that cause phenomenon is existence of the same formula for all regions in Indonesia (one size fits for all) [11]. Based on empirical research that Oktora and Pontoh [5] have conducted revealed that the DAU has a significant effect on the allocation of capital expenditures. Suhyanto's research [6] proved that all transfer funds affect increasing HDI, as well as local revenue and village funds. Regional income, which has the most significant influence on HDI, is DAU, followed by PAD and DAK.

Kartikasari's research hypothesized that DAU positively affects the allocation of district/city government capital expenditures in Central Java in 2015-2017. Statistical test results show that DAU significantly affects the direction of a negative relationship to capital expenditure allocation, which means this hypothesis is rejected [12]. Felix also stated the same thing, where general allocation funds

should not be allocated for routine expenditures that are less productive but should be prioritized for capital expenditures. Local governments should pay attention to this because capital expenditures that lead to infrastructure improvements can support economic growth [13].

Christy and Adi examined the influence of DAU, BM, and the quality of human development. The results show that DAU has a positive effect on BM, and BM positively affects the quality of human development [14]. In some regions in Indonesia, the role of DAU in regional spending policies is still much more dominant than PAD [15]. Palayukan research [16] concluded that government spending on education and health positively and significantly affects the HDI. For HDI's increasing, it is necessary to increase allocation of spending the public sector, namely education and health spending, thereby increasing per capita income through economic growth and improving human development quality. The ratio of PAD and DAK to capital expenditure and economic growth has a significant positive effect on HDI, while the DAU variable has a significant negative effect. Meanwhile, the ratio of DBH to capital expenditure is the only variable that does not significantly affect HDI. Economic growth is the variable with the most dominant influence on HDI [10].

Previous research conducted on Indonesia mainly used samples in one province or one district. In addition to researching impact of regional income on people welfaret does not consider government expenditure as an influencing factor. The novelty of this research is that the researcher uses panel data from 34 provinces in Indonesia and uses local government expenditure as a mediating variable.

III. RESEARCH METHOD

This study uses panel data from 34 provinces in Indonesia during the 2015-2019 period. This study examines the effect of regional income on people welfare by using regional expenditure variable as a mediator. Regional income is represented by fiscal balance funds, namely DBH, DAU, and DAK, which are exogenous variables. This study uses three endogenous variables: Operational Expenditure (BO), Capital Expenditure (BM), and HDI, where BO and BM are mediator variables. BO and BM are chosen as intervening variables because these two groups of expenditures are the largest expenditure components in regional expenditures. Regional income and expenditure data are obtained from provincial
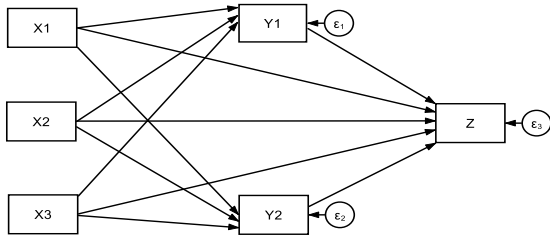
government audited financial reports. The level of community welfare is represented by HDI which is obtained from data published by Central Bureau of Statistic (BPS).

Data were analyzed using the path analysis data panel, which was processed with Stata. This analysis was conducted to determine direct and indirect effect of exogenous on endogenous variable. The steps to test path analysis are: 1. Determine the paradigm of the relationship between variables; 2. Create a path diagram model; 3. Determine the path coefficients and structural equations.

IV. RESEARCH RESULT

One of the essential things in doing path analysis is determining the suitable model. This model used six variables consisting of three endogenous variables and three exogenous variables. As first stage it needs to define a model specification that describes relationship between the variables (Figure II).

FIGURE III. MODEL SPECIFICATION

Structural equations are determined from the model above. These equation models describe form of the relationship between variables. The next step is to perform a path analysis to determine the path coefficient (Figure III), then the path coefficient is entered into the following structural equation to determine the relationship between variables.
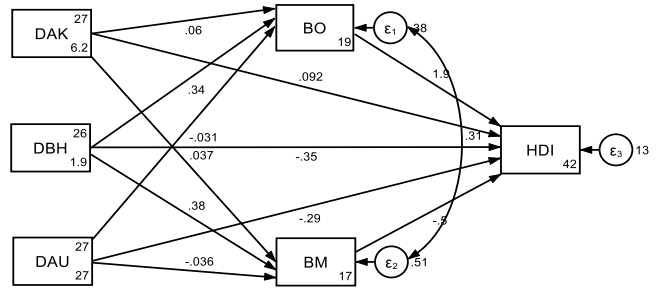
$$Y1 = P_{y1x1}.X_1 + P_{y1x2}.X_2 + P_{y1x3}.X_3 + e_1 \quad (1)$$

$$Y2 = P_{y2x1}.X_1 + P_{y2x2}.X_2 + P_{y3x3}.X_3 + e_2 \quad (2)$$

$$Z = P_{zx1}.X_1 + P_{zx2}.X_2 + P_{zx3}.X_3 + P_{zy1}.Y_1 + P_{zy2}.Y_2 + e_3 \quad (3)$$

Variables X1, X2, and X3 are regional income, Y1 and Y2 are regional expenditure variables, and Z are community welfare variables. Variable e indicates residual factor whose function is to explain other variables that have not been indicated by theory or arise due to errors in variable measurement.

FIGURE IV. STRUCTURAL MODEL

4.1 Goodness of Fit Test

This path analysis model is then checked for compliance with the best variable relationship model based on research data. Evaluating overall of the model was conducted with Goodness of fit analysis. Results of this analysis can be seen in Table III. Model testing results indicate that this model meet conformity requirements with the data and samples, where RMSE <= 0.05, AIC<BIC, CFI and TLI values > 0.95, and SRMR <= 0.5.

TABLE III. OVERALL GOODNESS OF FIT

Fit statistic	Value	Description
Population error		
RMSEA	0.000	Root mean squared error of approximation
90% CI, lower bound	0.000	
upper bound	0.000	
pclose	1.000	Probability RMSEA <= 0.05
Information criteria		
AIC	3880.67	Akaike's information criterion
BIC	3937.11	Bayesian information criterion
Baseline comparison		
CFI	1.000	Comparative fit index
TLI	1.000	Tucker-Lewis index
Size of residuals		
SRMR	0.000	Standardized root mean squared residual
CD	0.560	Coefficient of determination

[c.] Source: Processed data

4.2 Direct and Indirect Effects

Results of the direct and indirect path analysis are shown in Table IV. Table IV shows path coefficients between endogenous and exogenous variables, standard errors, and z values. With a 95% confidence level, the relationship between variables is considered significant if z value>=1.96. Direct estimation of effect of fiscal balance fund on HDI shows that DAK has no significant effect on HDI, with a value of z=0.76, as well as DBH. DAU has a significant negative effect on HDI. The z value seems to have increased through the indirect effect mediated by the income variable.

TABLE IV. STRUKTURAL EQUATION MODEL DESCRIPTION-DIRECT AND INDIRECT EFFECTS

	Coef.	z	P>|z|
Direct effects			
BO <−			
DAK	.0597957	2.98	0.003
DBH	.3372102	8.54	0.000
DAU	-.0311308	-2.84	0.004
HDI <−			
BO	1.927632	3.05	0.002
BM	-.4969449	-0.91	0.361
DAK	.0915329	0.76	0.447
DBH	-.3469635	-1.23	0.218
DAU	-.2922034	-4.45	0.000
BM <−			
DAK	.0374082	1.61	0.108
DBH	.3842147	8.39	0.000
DAU	-.0361513	-2.85	0.004
Indirect effects			
HDI <−			
DAK	.0966744	2.31	0.021
DBH	.4590836	2.65	0.008
DAU	-.0420435	-1.83	0.067
Total effects			
HDI <−			
DAK	.1882073	1.55	0.121
DBH	.1121201	0.47	0.638
DAU	-.3342469	-5.05	0.000
	Number of Obs. = 170 Conf. Level 95%		

^{d.} Source: Processed data

Direct estimation effect of DAK, and DBH, have significant positive effect on BO, while DAU have negative significant effect on BO. Analysis on fiscal balance fund effect on BM shows that DAK has not significant effect on BM, DBH has significant effect and DAU has negative significant effect. BO have significant effect on HDI with z value 3.05, P=0.002. Contrary with BO, BM has negative effect on HDI.

Indirectly, DAK has a significant effect on HDI with a significance value of 0.021, as well as DBH has a significant effect of 0.008 on HDI. The negative effect of DAU on HDI also decreased after being mediated by the expenditure variable, where the z value became -1.83. When viewed from the side of expenditure, expenditure with a significant effect is BO, meanwhile BM has a negative effect on HDI, although it is not significant.

4.3 Result Analysis

The results of this statistical test indicate that regional income (fiscal balance funds) cannot significantly contribute to community welfare. The results of this study are not in line with the results of research by Oktora, Suhyanto, and Kartikasari ([5], [6], [12]). It is has the same results with Lugastoro's research [10], which DAU has a significant negative effect on HDI. DAU is block grants, the allocation is

handed over to regions. The basic allocation component, namely employee salaries, is still the main component that dominates the overall DAU. The increase of DAU has an impact on the decline in HDI, because the increase is mostly used for personnel expenditures, not capital expenditures. The DAU formulation should not be same for all regions, but use clustering, so that it can be adapted to the conditions and needs of each region. In addition, it is necessary to set a maximum allocation limit for employee salaries spending and a minimum limit for infrastructure spending.

Government expenditure can increase the influence of income on people welfare. However, the type of expenditure that has a positive influence is BO, not BM, as results of the research by Christy and Palayukan ([14], [16]). BM, which is a public expenditure to produce fixed assets such as equipment, buildings, infrastructure, and other fixed assets, turns out having a negative effect on people welfare. DAK that should be allocated for infrastructure funding does not have a significant effect on BM, but has a significant effect on BO. It indicates that DAK is not allocated according to its allocation.

Using data from 43 developing countries for 20 years, results of Devarajan's study show that increasing the share of current spending has a positive and statistically significant growth effect. In contrast, relationship between capital component of public spending and per capita growth is negative. Thus, expenses that appear to be productive, when overused, can become unproductive. This result implies that developing country governments have misallocated public expenditures for capital expenditures by forfeit of current spending.[17].

Rajkumar examined the relationship between public spending, governance, and public welfare. Results of research show that public spending often does not increase the expected yield. It is empirically proven that the quality of governance can largely explain the difference in the effectiveness of public spending. Health spending that can reduce child mortality is more common in countries with good governance. Similarly, public spending on primary education is becoming more effective in improving basic education in well-governed countries. Generally, public spending has almost no impact on health and education in countries with poor governance [7].

Based on the research of Devarajan and Rajkumar, income from balancing funds and public expenditures do not have a significant effect on people welfare. It is caused by expenditures that are not carried out proportionally and well-targeted, and it is also caused by poor local government governance. Central government needs to develop a better and more integrated supervision and control scheme so that the expenditure made by the regional government can be controlled well.

V. CONCLUSION

Distribution of fiscal balance funds to regions in various forms always increases every year. It aims to create regional fiscal independence, delegation of authority, and improve community welfare. Growth of transfer spending to regions is not disproportionate to Indonesia's HDI growth. Study results indicate that provincial income derived from fiscal balance funds, in this case, DAK, DBH, and DAU, directly do not have positive significant impact on the HDI of community. BO as mediating variable can increase the positive effect, but not BM. It indicate that the expenditure allocation made by the regional government is not proportional and in accordance with needs of the community. It also shows that local government governance is still poor, especially in provincial government.

Further research can use other components of regional income as an independent variable. In addition, expenditure component can be divided in more detail to determine more precisely which components of expenditure that have significant impact and which expenditures are counter-productive. In addition, other indicators of community welfare such as GRDP need to be added to make it more comprehensive.

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