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Government Expenditure Efficiency on Human Development in The Underdeveloped Regions

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Abstract

This study aims to analyze the efficiency of government expenditure on human development and the effect of real GDRP per capita, population density, and per capita fiscal transfers on the efficiency of government expenditure on human development in underdeveloped regions during 2017-2019. The method used in this study is Data Envelopment Analysis (DEA) with input oriented to analyze the efficiency of government expenditure and panel data regression to analyze the determinants of efficiency. The data used in this study are 122 districts which are categorized as underdeveloped regions with a study period of 2017-2019. The results of this study indicate that there are only 10 districts that are always efficient during the study period, and there are 7 districts that are only efficient in certain years. The underdeveloped districts in the western part of Indonesia are more efficient than the eastern part of Indonesia. The results of this study also show that real GDRP per capita and per capita fiscal transfers have a negative effect on efficiency, while population density has a negative effect on efficiency.

Keywords: ***Efficiency, Government Expenditure, HDI, DEA, Regression***

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INTRODUCTION

Development is a multidimensional process that involves major changes in social structures, public attitudes, and national institutions, as well as accelerating economic growth, reducing inequality, and reducing poverty. In essence, development must reflect changes in the total social system that can change lives towards better

conditions (Todaro & Smith, 2015). In other words, development emphasizes the importance of humans as the goal of development itself.

United Nations (UN) 2015 produced a 2030 Agenda for Sustainable Development that emphasizes the importance of humans in development. The Sustainable Development Goals (SDGs) are developments that maintain the economic welfare and social life of the community in a sustainable manner, the quality of the environment, as well as ensure justice and the implementation of governance that is able to maintain an increase in the quality of life from one generation to the next (BAPPENAS, 2017) SDGs is based on universal, integrated, and inclusive principles to ensure that no one is left behind.

One of the indicators of macro development targets in the SDGs is the Human Development Index (HDI). According to the UNDP, HDI is an important indicator to measure human development achievements based on three basic dimensions, (1) a long and healthy life; (2) knowledge; and (3) a decent standard of living. According to Todaro & Smith (2015), HDI is an indicator used to measure the comparative status of socio-economic development which shows that development actually means human development in a broad sense, not only high performance. Therefore, the HDI is used as a standard for the success of comprehensive and adequate development policies and is used as a benchmark for progress in human development (Yuliani & Saragih, 2014). In Indonesia, HDI is one measure of government performance in development.

The government through The National Medium Term Development Plan (RPJMN 2015-2019) prioritizes the development of areas that are still lagging behind as one of the national development agendas. The government has determined 122 districts that are included in the category of underdeveloped regions.

Development of underdeveloped areas is a border cross-sectoral approach that aims to improve community welfare, and equitable development, and reduce development gaps between underdeveloped regions and other regions. A district is categorized as an underdeveloped region based on 6 main criteria, economic, human resources, infrastructure, regional financial capacity, accessibility, and regional characteristics.

Table 1. HDI of Underdeveloped Regions by Region 2015-2019

Region	2015	2016	2017	2018	2019
Sumatera	62.04	62.74	63.32	64.07	64.84
Java	62.15	62.82	63.23	63.88	63.62
Nusa Tenggara	61.30	61.99	62.72	63.44	64.22
Kalimantan	63.69	64.34	64.95	65.64	66.27
Sulawesi	63.39	63.98	64.60	65.27	65.88
Maluku	61.79	62.56	63.23	63.92	64.62
Papua	53.39	53.95	54.82	55.61	56.43

Source: BPS, 2020

One of the development targets for underdeveloped regions in The National Medium Term Development Plan (RPJMN 2015-2019) is to increase human development in underdeveloped regions. Based on table 1, it can be seen that the HDI in underdeveloped regions has increased every year in all regions.

The highest increase in HDI was in the Papua Region with an average of 1.39 percent and the lowest was in the Sulawesi Region at 0.97 percent. The highest HDI achievement for underdeveloped regions was in the Kalimantan Region with a value of 66.27 and the lowest was in the Papua Region of 56.43 with a difference of

9.84 points in 2019, a decrease compared to 2015 with a difference of 10.30 points.

However, although the HDI in underdeveloped regions tends to increase and the gap tends to decrease every year, the HDI targets for underdeveloped regions as set out tend to be difficult to achieve as shown in table 2. The achievement of HDI realization in underdeveloped regions is always lower than the target set in the RPJMN 2015-2019.

Table 2. Target and Realization of HDI in Underdeveloped Regions 2015-2019

	2015	2016	2017	2018	2019
Target	59.91	60.63	61.34	62.06	62.78
Realization	59.88	60.53	61.23	61.95	62.69

Source: BPS, 2020

In the era of regional autonomy and fiscal decentralization, local governments are required to be better able to exercise greater authority in managing regional development. Regional development is essentially the authority of the regional government, both provincial and district/city, while the government functions as a motivator and facilitator in accelerating the development of underdeveloped regions (Nasution, 2019). The government through its expenditures plays an important role in the development in the region.

Government expenditure is a reflection of the costs that must be incurred by the government to implement a policy that is funded from the government budget (Mangkoesoebroto, 2014). At the regional government level, government expenditure is funded from the Regional Government Budget. Regional Government Budget is the main tool of the local government to improve people's welfare (Mongan, 2019).

Government expenditure has an important role in efforts to increase HDI (Kusuma Sari, 2022). Government expenditure on education and health has a positive effect on human capital formation and can also promote economic growth while promoting equity and poverty reduction (Gupta et al., 1998). When the government has used the benefits of economic growth to finance basic health care and access to education for all people, it will provide multiple benefits to the community, especially the poor. They will be healthier and better educated and in the end they are able to increase their consumption (Doryan, 2001).

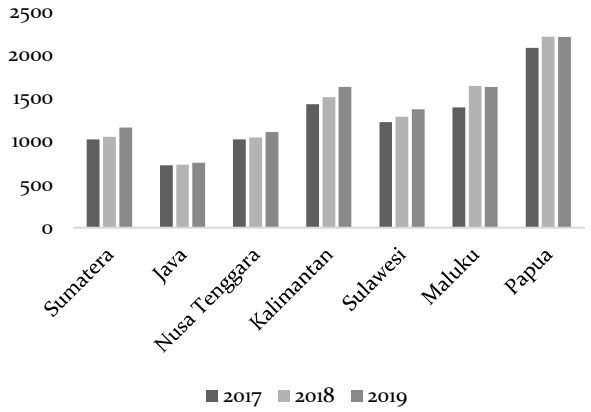

Figure 1. Government Expenditure per Capita Average District of Underdeveloped Regions in Education by Region in 2017-2019 (in Thousand IDR)

Source: DJPK, 2021

Figure 1 shows that most of the per capita government expenditure in education has increased every year except for the Maluku and Papua regions which experienced a decline in 2019. Judging from the size of per capita expenditure, the Papua Region has the highest average per capita government expenditure with IDR 2,209.10 thousand, and the lowest was in the

Java Region which was only IDR 751.38 thousand in 2019.

In the health sector, based on figure 2 shows that the increase in per capita expenditure varies between regions. There are regions that continue to increase every year (Sumatra, Java, Nusa Tenggara, and Papua) and decrease in certain years (Kalimantan, Sulawesi, and Maluku Regions), but overall government expenditure has increased in 2019 compared to the previous year 2017. Judging from the amount of expenditure, the Papua region has the highest average per capita government expenditure of IDR 2,399.65 thousand and the lowest is in the Java Region which is only IDR 384.72 thousand in 2019.

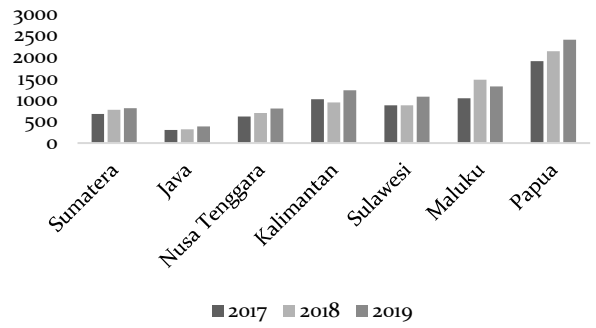

Figure 2. Government Expenditure per Capita Average District of Underdeveloped Regions in Health by Region in 2017–2019 (in Thousand IDR)
Source: DJPK, 2021

Apart from expenditure on education and health, government expenditure on social protection and economics also has an important role in improving people's welfare. Expenditures in these two fields are considered production costs that can result in the level of real per capita expenditure of the community (Rambe, 2020). The level of real expenditure per capita of the community shows the purchasing power of the people, with the greater the income, the greater the expenditure (Pramono & Soesilowati, 2016). Thus, the real per capita expenditure of the community can describe the level of welfare enjoyed by the community.

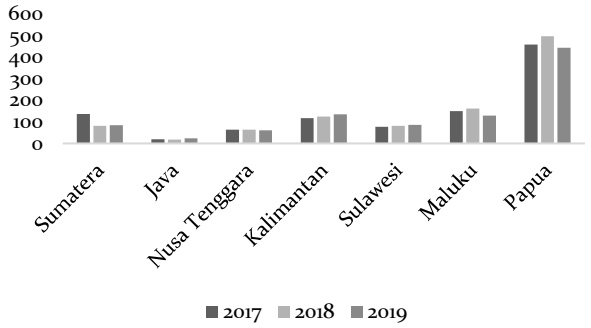

Figure 3. Government Expenditure per Capita Average District of Underdeveloped Regions in Social Protection by Region in 2017–2019 (in Thousand IDR)
Source: DJPK, 2021

In social protection, based on figure 3, it can be seen that the increase in per capita expenditure varies between regions. There are areas that show an increasing trend (Java, Kalimantan, and Sulawesi Regions) and areas that show a decreasing trend (Sumatra, Nusa Tenggara, Maluku, and Papua regions). Judging from the amount of expenditure, the Papua Region is still the region that has the highest average per capita government expenditure of IDR 44.43 thousand, and the lowest is still in the Java Region which is only IDR 18.87 thousand in 2019.

In the economy, based on figure 4, it can be seen that in general, per capita expenditure tends to experience a downward trend, except for the Kalimantan Region, which increases every year. When viewed from the amount of expenditure, the Papua Region is still the region with the

highest average per capita expenditure and the Java Region is still the region with the lowest average per capita expenditure during 2017-2019 as well as spending on education, health, and protection social.

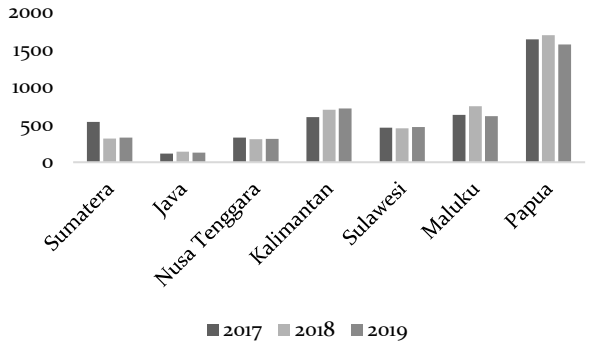

Figure 4. Government Expenditure per Capita Average District of Underdeveloped Regions in Economy by Region in 2017 – 2019 (in Thousand IDR)
Source: DJPK, 2021

How productive and beneficial expenditure, however, depends on how funds are allocated within those sectors (Gupta et al., 1998). Per capita spending on education, health, social protection, and the economy in underdeveloped regions varies in an effort to promote human development. There are regions that overall have higher per capita expenditures, but with lower HDI achievements than areas with lower expenditures.

In addition, as seen from the variation of the increase, there are regions that have increased expenditures and there are regions that have decreased in their respective fields with HDI achievements that tend to increase every year. So that the question arises about how local governments in underdeveloped regions use a combination of expenditures properly in order to increase the optimal welfare of the community.

Efficiency is an important aspect of regional financial management because local governments are faced with many strategic issues that are their responsibility while local governments have limited sources of local revenue. Therefore, the government must be able to create constructive expenditures by consistently directing limited resources so that they can be used effectively and efficiently to achieve the targets set and of quality development.

In general, efficiency can be defined as the ratio between the output and input, or the amount of output produced from one input used (Sutanto, 2015). Efficiency of public expenditure is measured by comparing actual expenditure with the minimum expenditure theoretically sufficient to produce the same actual outcome (Hauner & Kyobe, 2010). In addition, this study will also examine the factors that influence the efficiency of government expenditure.

A number of studies have shown the extent to which a government's success in achieving outcomes efficiently appears to be determined by a number of important factors. Previous studies have shown that the factors that determine the efficiency of government expenditure are per capita GDP, population density, and per capita fiscal transfers. According to Antonelli & de Bonis (2018) GDP per capita represents the stock of physical capital that facilitates the efficient production of public goods and services and can also facilitate the monitoring of policymakers.

But Baumol (1967) in Hauner & Kyobe (2010) states that per capita income can reduce efficiency by increasing the relative cost of public services. The Baumol effect could increase relative input prices for nontradable in richer countries and bias the expenditure ratios upwards and the efficiency scores downwards.

Population density affects the cost of providing public services (de Borger & Kerstens, 1996).

The cost of public services will be relatively lower in areas with denser population structures than in areas with lower population densities. This means that public services in areas with a higher population density will result in economies of scale which in turn can increase the efficiency of government spending. Grants or transfers from the central government can reduce the accountability of local governments in their fiscal decisions.

This results in fewer incentives to increase efficiency and develop innovative methods of delivering public services (Weingast, 2009). Higher transfers from the central government can weaken spending discipline with negative consequences on spending efficiency. Local governments have little incentive to reduce their spending because it will have an impact on the possible risk of losing transfers (Tuladhar, 2014).

Different results were found in research conducted by Annisa (2017) and Rambe et al. (2020). Research conducted by Annisa (2017) found that central transfers represented by balance funds have a positive effect on the efficiency of government spending. Meanwhile, research conducted by Rambe et al. (2020) shows that general purposes grants have no effect on the efficiency of government spending.

RESEARCH METHODS

This study uses a quantitative approach. The type of data used in this research is secondary data obtained through a literature study from sources related to government expenditure data in the fields of education, health, social protection, economy, and transfers obtained from the website of the Directorate General of Fiscal Balance (DJPK). Data on the Human Development Index (HDI), total population, area, and GRDP were obtained from the Central Statistics Agency (BPS).

In the first stage, this research uses a nonparametric method with a Data Envelopment Analysis (DEA) model to calculate the relative technical efficiency scores of 122 district governments in underdeveloped areas in 2017-2019. The DEA model used to measure the relative technical efficiency in this study is the BCC (Banker, Charnes, and Cooper) or Variable Return to Scale (VRS) model with input oriented. Input-oriented is used to see the amount of government expenditure that can still be reduced proportionally to the output (HDI) that has been achieved by each underdeveloped district to achieve efficiency.

The BCC or VRS model is a development model of the CCR or CRS model developed by Banker, Charnes, and Cooper in 1984. Banker, Charnes, and Cooper in Coelli et al. (2005) suggested adjusting the CRS model to take into account the variable returns to scale (VRS). The use of the CRS model when not all decision-making units (DMU) operate at an optimal scale will result in technical efficiency calculations being disrupted by the efficiency scale. The use of the VRS model allows the calculation of technical efficiency without any efficiency scale effect. Based on the VRS approach and the input-oriented method, the relative efficiency model for this research is as follows:

Objective function

$$min_{\theta,\lambda} \ \theta$$

Subject to

$$st \qquad -q_i + Q\lambda \geq 0$$
$$\theta x_i - X\lambda \geq 0,$$
$$I1'\lambda = 1$$
$$\lambda \geq 0$$

where, θ = scalar or technical efficiency score; xi = N×1 input vector column; qi = M×1 output vector column; X = N×I input matric of all DMU; Q = M×I output matrix of all DMU; λ = (I×1) vector constant or weight; I1'λ = 1 = convexity constraint. The resulting technical efficiency scores ranged between 0.00 and 1.00. If the DMU has an efficiency score of 1.00 it indicates that it is a DMU, whereas if it is less than 1.00 it is considered an inefficient DMU (Ahmed et al., 2019).

After a score of efficiency obtained through DEA method, the next step is to identify the influence of several socio-economic variables and demographic variables were chosen as exogenous to the efficiency. This study uses the generalized least squares (GLS) estimation method and by using PCSE (Panel Corrected Standard Errors) to overcome the heteroscedasticity and autocorrelation problems contained in the Ordinary Least Squares (OLS) estimation method. Gujarati & Porter (2009) states that if there are problems in heteroscedasticity and autocorrelation, we can use the generalized least squares (GLS) estimation method in order to produce a BLUE regression model. The equation model in this study is as follows:

$$Ef_{it} = \alpha + \beta_1 LnPDRBRKap_{it} + \beta_2\, LnKPend_{it} - \beta_3 LnTrFKap_{it} + \varepsilon_{it} \quad \text{..(6)}$$

The equation model in this study uses a linear-logarithmic model. The linear-logarithmic model was used to see the absolute change of the efficiency score for the percentage change of each independent variable.

RESULTS AND DISCUSSION

In the first stage, this research will analyse the technical efficiency of government expenditure in human development using DEA. The value of technical efficiency is obtained from the comparison of input variables from per capita government expenditure in the education, health, social protection, and economy of each district with the output of the HDI.

The DEA model used in this study is Variable Returns to Scale (VRS), which means the amount of district government expenditure per capita in education, health, social protection, and economy to produce output in the form of HDI has an unequal quantity proportion. Furthermore, the model used in this study is input oriented.

The results of calculation of the technical efficiency value of government expenditure on human development in underdeveloped regions in feneral are as follows:

Table 3. Results DEA, 4 Inputs and 1 Output (HDI)

	2017	2018	2019
Average	0.601	0.571	0.572
Maximum	1.000	1.000	1.000
Minimum	0.089	0.068	0.060

Source: Output Results Using Win4DEAP2

Based on the results of efficiency calculations using DEA during 2017-2019 as shown in Table 3, the average efficiency values of districts in underdeveloped regions are 0.601, 0.571, and 0.572. With an input minimization orientation, in general, districts in underdeveloped regions can reduce their actual expenditures by 39.9 percent in 2017, 42.9 percent in 2018, and 42.8 percent in 2019 with reference to other districts that have been efficient. This research is in line with research conducted by Rambe (2020) which shows that government expenditure in education, health, social

protection, and economy is also still inefficient, meaning that government expenditure in the four fields is considered not to be allocated optimally.

There are 10 districts that have always been efficient in managing their expenditure during 2017-2019. The districts consist of West Pasaman, Sampang, Pandeglang, Lebak, West Lombok, East Lombok, Konawe, Central Maluku, Jayawijaya, dan Biak Numfor. The results of data processing show that 7 other districts achieve efficient conditions in certain years in their expenditures towards optimizing the achievement of the Human Development Index, namely Bangkalan (2017), West Lampung (2018), Central Lombok (2017 and 2019), Sambas (2017 and 2019), Polewali Mandar (2017 and 2018), West Sumbawa (2019), and Southwest Sumba (2019).

Meanwhile, the districts that have the lowest efficiency values are Central Mamberamo (2017) and Tambrauw (2017, 2018, and 2019). This shows that most of the underdeveloped districts are still inefficient and less than optimal in managing their expenditure for human development. This finding is also in line with the research conducted by Kurniawan et al. (2021) which shows that in general there are many areas that are inefficient in allocating expenditure for human development.

Overall, the inefficiency of government expenditure in most underdeveloped districts based on the DEA is due to the non-optimal use of expenditure on education, health, social protection, and economy in human development as seen from the HDI achievements. According to Mahmudi (2010), uncontrolled and well-planned spending will be a source of budget inefficiency and waste that can harm the community. An expenditure can be said to be efficient if it uses fewer inputs with certain output achievements. In fact, there are regions that have large expenditure capacity in the four sectors, but the HDI achievements are not as large as the expenditures they use when compared to other regions. Inefficient districts tend to have large expenditure with low HDI achievements and vice versa.

Tambrauw and Mamberamo Raya are underdeveloped districts that have the lowest efficiency values during the study period with an average annual efficiency value of only 0.072 and 0.097. When viewed from the input side, Tambrauw and Mamberamo Raya are the regions with the largest average input compared to other districts, but the HDI achievement is not proportional to the input used. This indicates that Tambrauw and Mamberamo Raya have high expenditures, but the amount of expenditure used is not balanced with their HDI achievements.

In contrast, Sampang is the area with the lowest expenditure with an average total per capita expenditure in education, health, social protection and economy IDR 928.63 thousand per year, far below the averahe for underdeveloped districts which reached IDR 3.66 million per year, but the achievement of the efficiency value can reach 1.00 (efficient). This show that although Sampang has a low average input, it is able to optimize its expenditure. This is in line with the research conducted by Afonso & Kazemi (2017) which shows that in their research, regions with higher expenditure levels have less efficient performance compared to regions with lower expenditure levels.

To find out the distributuion of efficiency values in more detail, the results of the DEA calculation are divided by 7 regions, namely underdeveloped regional districts in the Sumatra Region, Java Region, Nusa Tenggara Region, Kalimantan Region, Sulawesi Region, Maluku

Region, and Papua Region. Table 4 shows the value of the technical efficiency of government expenditure on human development in underdeveloped regions in 2017-2019 by region.

Table 4. Efficiency Values by Region in 2017-2019

Region	Number of Districts	2017	2018	2019
Sumatera	13	0.735	0.706	0.671
Jawa	6	0.991	0.973	0.968
Nusa Tenggara	26	0.689	0.662	0.674
Kalimantan	12	0.636	0.587	0.579
Sulawesi	18	0.648	0.603	0.571
Maluku	14	0.549	0.469	0.483
Papua	33	0.390	0.393	0.418

Source: Output Results Using Win4DEAP2

Based on table 4 the average efficiency value varies between districts in underdeveloped regions. The Sumatra Region has an average annual efficiency value of 0,704 per year (0.735 in 2017, 0.706 in 2018, and 0.671 in 2019). The districts that is always efficient in the Sumatra Region is West Pasaman (2017-2019) and West Lampung is efficient only in 2018. The district with the lowest efficiency value in the Sumatra Region during 2017-2019 is in the Mentawai Island with an average annual efficiency value of 0.283.

Java Region have the highest average efficiency value during the study period with an average of 0.977 per year (0.991 in 2017, 0.973 in 2018, and 0.968 in 2019). Of the 6 districts categorized as underdeveloped regions in the Java Region, as many as 3 districts were efficient during the research period (Sampang, Pandeglang, and Lebak) and 1 district was efficient in 2017 (Sampang). This makes the Java Region as the region with the highes percentage of efficient districts compared to other regions.

In the Nusa Tenggara Region, the Nusa Tenggara Region has an average efficiency value of 0.675 per year (0.689 in 2017, 0.662 in 2018, and 0.674 in 2019). The districts that are always efficient in the Nusa Tenggara Region during 2017-2019 are in West Lombok and East Lombok. Central Lombok was efficient in 2017 and 2019, while Southwest Sumba and West Sumbawa were only efficient in 2019. The district with the lowest efficiency value in the Nusa Tenggara Region was in Central Sumba with an average efficiency of 0.326 per year.

In the Kalimantan Region, the Kalimantan Region has an average efficiency value of 0,601 per year (0.636 in 2017, 0.587 in 2018, and 0.579 in 2019). Sambas is the only district that has managed to achieve full efficiency in the Kalimantan Region in 2017 and 2019, while the rest are still inefficient in allocating their expenditures. The most inefficient district in the Kalimantan Region is in Nunukan with an average efficiency value of 0.148.

In the Sulawesi Region, the Sulawesi Region has an average efficiency value of 0.607 per year (0.648 in 2017, 0.603 in 2018, and 0.571 in 2019). The districts that are able to achieve full efficiency (efficient) are in Konawe which is efficient in 2017-2019 and Polewali Mandar in 2017 and 2018. The district that has the lowest efficiency values is in Konawe with an average efficiency value during 2017-2019 is 0.281 per year.

In the Maluku Region, the Maluku Region has an average efficiency value of 0.5001 (0.549 in 2017, 0.469 in 2018, 0.483 in 2019). The efficient district in the Maluku Region is in Central Maluku which is efficient during 2017-2019. While the most inefficient district is in Taliabu Island with an average efficiency value during 2017-2019 of 0.500.

Papua Region has the lowest average value compared to other regions with an average efficiency value of 0.4003 per year (0.390 in 2017, 0.393 in 2018, and 0.418 in 2019). Biak Numfor and Jayawijaya are the districts that are always efficient every year. The district that has the lowest efficiency in the Papua Region is Tambrauw with an average efficiency value in 2017-2019 of 0.072.

If we look further, further east of Indonesia, underdeveloped districts have lower efficiency values. This can be seen from the large average value of efficiency in the Nusa Tenggara Region which continues to show a downward trend to the Eastern part of Indonesia. This shows that underdeveloped districts in the eastern part of Indonesia have relatively lower efficiency values compared to the western part of Indonesia.

Table 5. Regression Results

Constant	Ln^GDRP Real Per Capita	Ln^ Density	Ln^Fiscal Transfer Per Capita
6.9419	-0.3322	0.1621	-0.0905
0.0979	0.0192	0.0451	0.0038
***	***	***	***
Adj. R^2	0.9982		
F stat	1578.5498		
Prob	0.000		

Note: *, **, and *** are significant at 10, 5, and 1%

Source: Output Results Using Eviews 10

After determining the efficiency score of each district government, the next step is to analyze the factors affecting these scores with regression. There is a violation of the assumption of heteroscedasticity and autocorrelation in the OLS regression, therefore this study uses GLS with PCSE. The following is a table of GLS regression output results with PCSE.

Table 5 shows that the coefficient of determination (adjusted R2) is 0.9982, meaning that the variables of real GDP per capita, population density, and per capita fiscal transfers are able to explain the variable efficiency of government spending by 99.82 percent and the remaining 0.18 percent explained by factors other than the independent variables in the model.

Based on the F test, with $\alpha = 5$ percent, and knowing that the probability is 0.000, the null hypothesis (Ho) is rejected. This implies that all three independent variables significantly affect the relative efficiency of government expenditure. A t-test is then performed to test the variables individually. The probability of GDRP real per capita is below 5 percent, so Ho is rejected.

GDRP real per capita has a negative and significant relationship to the efficiency. Herrera & Ouedraogo (2018) explains that if richer regions with higher incomes tend to be more inefficient, then the relationship between GDP per capita and government spending efficiency is negative. This result is supported by research conducted by Agasisti (2014) and Shiyi & Jun (2009) which found that GDP per capita has a significant negative effect on expenditure efficiency.

Furthermore, Agasisti explained that a richer region as indicated by a higher GDP per capita does not automatically lead to higher performance compared to a region with a lower GDP per capita. Baumol (1967) in Hauner & Kyobe (2010) states that per capita income can reduce efficiency by increasing the relative cost of public services. Higher relative costs without increasing productivity will result in lower efficiency.

Therefore, special attention is needed from the government through policies that can reduce the relative cost of public services and increase

productivity in underdeveloped districts with income proxied by high real GDP per capita in order to minimize its negative impact on the efficiency of government expenditure.

Density has a positive and significant relationship to the efficiency. The probability of density is below 5 percent, so Ho is rejected. These results are supported by research conducted by Rambe et al. (2020), Tuladhar (2014), and Yusfany (2015). According to Borger & Kerstens (1996) population density can affect the cost of providing public services through economies of scale.

This is because a higher population density is conductive to reducing management costs, more oversight of the management of government spending, and simplification of network arrangements and use of public services (Grossman et al., 1999; Yusfany, 2015). Thus, areas with a higher population density can ultimately increase the efficiency of government spending.

Fiscal transfer per capita has a negative and significant relationship to efficiency. The probability of fiscal transfer per capita is below 5 percent, so Ho is rejected. The results of this analysis are supported by research conducted by Rambe (2020), Tuladhar (2014), and Yusfany (2015). Weingast (2009) explains that transfers or grants from the central government can reduce the accountability of local governments in their fiscal decisions.

This results in fewer incentives to increase efficiency and develop innovative methods of delivering public services. Higher transfers from the central government can weaken spending discipline with negative consequences on spending efficiency. Local governments have little incentive to reduce their spending because it will have an impact on the possible risk of losing transfers (Tuladhar, 2014). If local governments receive more grants or transfers from the central government, then local governments tend to waste money by spending that does not reflect the needs of their local residents.

Local governments will spend these funds based on the amount of funds, not on what is needed. Different things happen if the local government depends on its own local revenue. The local government will better understand the needs of its citizens and be more responsible for the budget used in relation to the provision of public services received by the community. If the financing comes from its own local taxes, then the local government will be more selective, effective, and efficient in spending these funds (Mahi & Supriyanti, 2019).

The fiscal transfer is one of the implementations of fiscal decentralization which is a source of revenue in the APBD to fund development policies in the region. Fiscal decentralization is expected to create regional independence and reduce the dependence of regional governments on the central government (Azizah et al., 2022). However, when viewed from the proportion, fiscal transfers have the largest proportion of revenue compared to other sources of regional income.

Therefore, the government through its policies is expected to make local governments more independent in finding sources of income as well as conducting supercivision and evaluation related to fiscal transfer policies so that the use of fiscal transfers can be used optimally for development.

CONCLUSION

Based on the results of efficiency analysis using DEA with an input-oriented model, this study shows that during 2017-2019, of the 122

districts categorized as underdeveloped regions, there are only 10 districts that are always efficient each year, and 7 districts that are efficient in certain years. Meanwhile, underdeveloped regencies in the western part of Indonesia are more efficient in managing their expenditures compared to underdeveloped regencies in eastern Indonesia.

Based on regression analysis, real GRDP per capita and fiscal transfers per capita have a significant negative effect on the value of the efficiency of spending in underdeveloped regional governments in human development, which means that an increase in real GRDP per capita and per capita fiscal transfers will reduce the efficiency value, while population density has a significant positive effect on the efficiency value, which means that an increase in population density will increase the efficiency value.

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