Efficiency of Government Spending in Reducing Poverty Rate in Bengkulu Province

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The study aims to measure the efficiency of local government expenditure in poverty reduction in 10 regencies and cities in Bengkulu Province. The study is quantitative descriptive. Research method applied is Data Envelopment Analysis (DEA) based on input-oriented model with the Variable Return to Scale approach. Output is poverty rate. Three inputs used are capital expenditure, goods and service expenditures, and employee expenditure. The results show that out of the 10 regencies and cities in Bengkulu Province in 2019 and 2022 only three regencies are relative efficiency, they are Lebong, Kepahiang, and Bengkulu Tengah. Three peers in Bengkulu Province are Lebong, Kepahiang, and Bengkulu Tengah. The most efficient in 2019 is Lebong regency and in 2022 is Bengkulu Tengah regency. To be efficient, the inefficient regencies and cities government should reduce their expenditure, especially employee expenditure, which is the biggest source of inefficiency.

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INTRODUCTION

Natural disasters or disease outbreaks are one of the causes of poverty that are not often discussed. The Corona virus outbreak or known as the Covid-19 pandemic has shaken the world since the end of 2019, which has spread widely. In early March 2020, Covid-19 entered Indonesia with an increasing number of exposures and an expanding distribution area, so it was declared a non-natural national disaster (Tarigan et al., 2020). The International Organization for Health, namely WHO, states that Covid-19 can infect the respiratory tract in humans. The virus has effects ranging from mild to very serious flu (Kiriga & Muthuri, 2020). According to Surhayadi, Covid-19 caused many economic activities to contract, resulting in an increase in the number of unemployed, a decrease in the productivity level of individuals and companies, and encouraging the emergence of new poor people (Wibisono, 2022).

Poverty in a macroeconomic perspective is seen as a failure of a country to be able to achieve optimal economic performance because there are still production factors that are not used in accordance with their capacity (Kristiyanto, 2017). Not only seen as a failure of a country but also as a reference for the progress of a country’s welfare, a country with a low poverty rate then the country can be said to be prosperous or developed and able to overcome poverty problems in its country.

Based on graph 1 from 2017 to 2019, poverty in Indonesia shows a graph that tends to decrease. However, in 2020 the graph increased again and showed the number of poor people in Indonesia as many as 27.55 million people. In that year, the economy in the world was affected by the Covid-19 pandemic, including Indonesia. Although in 2022 the number of poor people in Indonesia decreased to 26.36 million people compared to the previous year, which was 26.5, this figure is still quite concerning when looking at how efforts were made to reduce the number of poor people in 2019 before the Covid-19 pandemic.

The problem of poverty is so complex that it is related to various aspects including the economy. Poverty that occurs within a country must be considered
as a serious problem, because poverty makes many people experience difficulties in meeting the needs of life (Wulandari et al 2022). Reducing poverty is one of the big agendas in Indonesia's development, all government efforts in alleviating poverty in Indonesia certainly require a large budget. In government budgeting, spending needed in the context of poverty reduction is included in two broad categories, namely direct spending and indirect spending. Another problem that may arise is when linking government efforts in overcoming poverty with efficiency in the use of government budgets. In carrying out the poverty alleviation program, of course, there will be efficient districts / cities and some are inefficient. (Kristiyanto, 2017).

Local government spending through direct spending and indirect spending is a tool of government intervention in overcoming economic problems, one of which is poverty and is considered the most effective of the other intervention options. The success of a region in realizing common interests depends largely on local government policies through its expenditure allocation. The right allocation of spending is expected to improve the welfare of the population (Huda et al, 2021). Several empirical studies on the use of poverty as an output in research were revealed by Kristiyanto, 2017 and (Putri & Rambe, 2023).

Spending on community development is inefficient towards the amount of poverty in Oba District, Tidore Islands City (Hasan &; Amin, 2022). In Aceh Province, most of 74% of districts/cities have not been efficient in terms of spending on social assistance for family hope programs for poverty (Irfan et al, 2023). Government spending has a significant effect on poverty in Batu City in 2017-2020 (Wulandari, et al 2022). In research (Siregar, 2020) regional spending has a significant effect on poverty in district/city governments in North Sumatra.

Capital expenditure directly affects poverty, direct capital expenditure positively affects economic growth, and capital expenditure indirectly affects poverty through economic growth as an intervening variable in North Minahasa (Kaligis et al, 2017), in (Sumiyarti, 2022) capital expenditure statistically does not significantly affect poverty in 33 provinces for the period 2010-2017. Grant spending and social assistance can significantly reduce poverty levels between administrative regions in North Sumatra Province (Amri, 2022), spending that has a significant effect on other poverty alleviation, namely education spending and social protection spending. While health spending has no effect (Syamsuri &; Budiyono, 2018). The effects of spending on education, health, care, social security and infrastructure have a significant impact on poverty reduction in China (Liu et al, 2020). In Brazil, people are more supportive of retributive programs that increase their income in the short term such as cash transfers (Bursztyn, 2016). Based on this explanation, this study is to measure the efficiency of government spending in reducing poverty rates in Bengkulu Province. This research will focus on capital expenditure, goods and services expenditure, and indirect employee expenditure in an effort to reduce poverty rates, especially in Bengkulu Province.
LITERATURE REVIEW

Poverty

A condition of a person's inability to meet basic daily needs as a measure to survive in the form of food, clothing, and shelter is a condition called poverty (Todaro, 2009). According to Arsyad (2015), poverty is a complex and multidimensional problem so that it can be viewed from several points of view. In general, poverty is a condition or condition where a person does not have the ability to meet the needs of life, in this case the needs of clothing, food and shelter. Poverty is multidimensional, meaning that human needs vary (Wulandari & Mawardi, 2022). BPS defines poverty as the inability from the economic, material and physical side to meet the basic needs of food and not food as measured by expenditure.

Efficiency

Adisasmita (2011, 35) suggests efficiency as inputs used can be allocated optimally to achieve output that uses the lowest cost. Permendagri Number 13 of 2006 states that efficiency is an achievement of maximum output with certain inputs or the use of the lowest inputs to achieve certain outputs. According to Coelli (2005) the efficient approach can be measured into an output-oriented approach and an input-oriented approach. The output-oriented approach assesses how much output can be increased proportionally to the quantity of inputs already available. While the input-oriented approach assesses how much quantity of input can be reduced proportionally without changing the amount of output. In other words, with a predetermined / achieved level of output, a reduction in input units will be made to achieve an efficient level.

Government spending

Government expenditure is a government action that regulates the course of the economy through the annual determination of the amount of state income and expenditure reflected in the APBN and APBD regional/regional documents. The purpose of this policy is to stabilize prices, production levels, and employment opportunities as well as to encourage economic growth (Sukirno, 2004). In Permendagri- No.13 of 2006 expenditure according to shopping groups consists of direct spending and indirect spending. Direct spending is shopping that is directly related to the implementation of programs and activities. The type of indirect expenditure can be measured by the outputs and results of the programs and activities organized, including the effectiveness of achieving these outputs and results. Capital expenditure, goods and services expenditure is part of direct expenditure and indirect employee expenditure is part of indirect expenditure.

Capital expenditure is local government expenditure intended to finance the construction of facilities and infrastructure (Tampubolon & Ariadi, 2023). Capital expenditure is expenditure for the purchase/procurement or construction of tangible fixed assets that have a useful value of more than 12 months to be used in government activities such as in the form of land, equipment and machinery, buildings and buildings, roads, irrigation and networks, and other fixed assets (Ariadi, 2021). Regulation No. 12 of 2019, spending on goods and services to budget related to goods/services with a usage
period of less than one year, such as goods/services that will be submitted for public benefit (Dyna et al, 2023). Indirect employee expenditure in Permendagri-No. 13 of 2006 is compensation expenditure, in the form of salaries and benefits, as well as other income provided to civil servants determined in accordance with statutory provisions.

**METHODOLOGY**

This study measures the efficiency of government spending in 10 regencies/cities in Bengkulu Province. This research design is in the form of quantitative descriptive research. Using the Data Envelopment Analysis (DEA) method because it is able to accommodate units of different input and output variables and directly compare the efficiency of each Decision Making Unit (DMU). The data used is in the form of secondary data obtained from BPS. There are 4 inputs used in efficiency measurement, namely capital expenditure, goods and services expenditure, grant expenditure, and indirect employee expenditure. The output used is the poverty level in 2019 and 2022. However, to meet the assumption of DEA (Bogetoft & Otto, 2011: in Putri & Rambe 2023) that positivity the greater the output can be interpreted as better conditions, then in measuring this efficiency a proxy is used for the percentage of non-poor people (= 100% - poverty rate). The method uses an input-oriented model with a VRS (Variable Return to Scale) approach. The purpose of using this model is to find out how much more efficient expenditure should be spent by local governments in order to get efficient results or output.

The efficiency model with the DEA method is as follows:

**Purpose function:**

Min \( E = \mu_1 X_1 + \mu_2 X_2 + \mu_3 X_3 \) ......................... (1)

**Constraint Function:**

\[ v_1 X_1 + v_2 X_2 + v_3 X_3 = 1 \]     ............................................. (2)

\[ \mu_1 Y_1 - (v_1 X_1 + v_2 X_2 + v_3 X_3) \leq 0 \] ............................................. (3)

\[ \mu_1,2,3, v_1 \geq 0 \] .................................................................................. (4)

with the following variables:

- \( Y \) = percentage of the population is not poor
- \( X_1 \) = Capital Expenditure
- \( X_2 \) = Shopping for Goods and services
- \( X_3 \) = Indirect Employee Expenditure
- \( E \) = Value of efficiency of district / city government

The resulting efficiency of the DEA ranges from 0-1. A score of \( E = 1 \) is then considered relatively efficient, while a score of \( E < 1 \) is considered inefficient (Coelli et al, 2005). Furthermore, DEA will identify how much expenditure needs to be reduced based on the poverty level in districts / cities in Bengkulu Province that are declared inefficient.
RESEARCH RESULT

Efficiency measurements carried out using the DEA method based on the input-oriented model used in this study found that in 2019 and 2022 there were 3 efficient districts, namely Lebong, Kepahiang, and Bengkulu Tengah. Overall, it can be said that there are 7 inefficient districts/cities. (Table 1).

Table 1. Regency/City Government Expenditure Efficiency Score in Bengkulu Province

<table>
<thead>
<tr>
<th>Regency</th>
<th>Efficiency Score</th>
<th>2019</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bengkulu Selatan</td>
<td></td>
<td>0.758</td>
<td>0.815</td>
</tr>
<tr>
<td>Rejang Lebong</td>
<td></td>
<td>0.634</td>
<td>0.949</td>
</tr>
<tr>
<td>Bengkulu Utara</td>
<td></td>
<td>0.583</td>
<td>0.816</td>
</tr>
<tr>
<td>Kaur</td>
<td></td>
<td>0.978</td>
<td>0.957</td>
</tr>
<tr>
<td>Seluma</td>
<td></td>
<td>0.718</td>
<td>0.892</td>
</tr>
<tr>
<td>Muko-Muko</td>
<td></td>
<td>0.757</td>
<td>0.943</td>
</tr>
<tr>
<td>Lebong</td>
<td></td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Kepahiang</td>
<td></td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Bengkulu Tengah</td>
<td></td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Kota Bengkulu</td>
<td></td>
<td>0.577</td>
<td>0.570</td>
</tr>
</tbody>
</table>

Of the 10 regencies and cities in Bengkulu Province in 2019 and 2022, there are 7 inefficient districts/cities. Therefore, efficient districts and cities can be used as a reference for inefficient districts / cities.

Graph 2. Peers and the Number of District/City Governments Benchmarking (refer)

In 2019, of the 3 efficient districts, Lebong regency became the most peer, while Central Bengkulu became the lowest peer. Meanwhile, in 2022, Central Bengkulu is the district with the most peers and the lowest peer owned by Lebong Regency. Inefficient districts/cities will benchmark their respective peers. Benchmarking can be seen in the radial movement of inefficient districts, so that the government can see and make the right decisions in reducing expenditure on capital expenditure, goods and services expenditure, and indirect
employee spending with the aim of making the district/city government more efficient.

In Table 2, it can be seen that in 2019 out of 7 inefficient districts/cities had the largest source of inefficiency which can be known from the value of government expenditure on capital expenditure. Based on these results, the government is expected to reduce the allocation of capital expenditure ranging from 3 million rupiah (Kaur Regency) to 98 million (Bengkulu City).

### Table 2 Decrease in Government Expenditure per Capita (Radial Movement) of Inefficient Districts and Cities in Bengkulu Province in 2019

<table>
<thead>
<tr>
<th>Regency/City</th>
<th>Reduction of Inefficient Local Government Expenditures in Bengkulu Province (in millions)</th>
<th>Capital Expenditures</th>
<th>Shop for goods &amp; services</th>
<th>Indirect Employee Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bengkulu Selatan</td>
<td>38</td>
<td>56</td>
<td>97</td>
<td></td>
</tr>
<tr>
<td>Rejang Lebong</td>
<td>72</td>
<td>97</td>
<td>163</td>
<td></td>
</tr>
<tr>
<td>Bengkulu Utara</td>
<td>97</td>
<td>120</td>
<td>184</td>
<td></td>
</tr>
<tr>
<td>Kaur</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Seluma</td>
<td>48</td>
<td>67</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>Mukomuko</td>
<td>52</td>
<td>47</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>Kota Bengkulu</td>
<td>98</td>
<td>117</td>
<td>222</td>
<td></td>
</tr>
</tbody>
</table>

The decrease in inefficient expenditure on goods and services ranged from 5 million rupiah still held by Kaur to 120 million for North Bengkulu district. Meanwhile, indirect employee spending ranges from 6 million rupiah (Kaur) to 222 million rupiah for the Bengkulu City area.

### Table 3 Decrease in Government Expenditure per Capita (Radial Movement) of Inefficient Districts and Cities in Bengkulu Province in 2022

<table>
<thead>
<tr>
<th>Regency/City</th>
<th>Reduction of Inefficient Local Government Expenditures in Bengkulu Province (in millions)</th>
<th>Capital Expenditures</th>
<th>Expenditures for Goods &amp; Services</th>
<th>Indirect Employee Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bengkulu Selatan</td>
<td>20</td>
<td>47</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Rejang Lebong</td>
<td>5</td>
<td>11</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Bengkulu Utara</td>
<td>28</td>
<td>56</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Kaur</td>
<td>7</td>
<td>8</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Seluma</td>
<td>18</td>
<td>21</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>Mukomuko</td>
<td>8</td>
<td>12</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Kota Bengkulu</td>
<td>78</td>
<td>149</td>
<td>226</td>
<td></td>
</tr>
</tbody>
</table>

In Table 3, it can be seen that in 2022 out of 7 inefficient districts/cities have the largest source of inefficiency which can be known from the value of government expenditure on capital expenditure. Based on these results, the government is expected to reduce the allocation of capital expenditure ranging...
from 5 million rupiah (Rejang Lebong Regency) to 78 million (Bengkulu City).
The decrease in inefficient spending on goods and services ranges from 8 million
rupiah for the region (Kaur) to 149 million rupiah for the Bengkulu City area. As
well as for indirect employee expenditures ranging from 12 million rupiah in the
region (Kaur) to 226 million for the Bengkulu City area.

In 2019 is the year before the entry of Covid-19 into Indonesia and 2022 is
a year of recovery for Indonesia in recovering many problems caused by the
disease outbreak such as economic problems and poverty. The comparison seen
in 2022 is quite good when compared to 2019, although when viewed at the
decline in the number of poor people in 2022, it is not as good as in 2019. Of the
7 inefficient districts/cities, Kaur district as a whole has capital expenditure,
goods and services expenditure, and indirect employee expenditure which tends
to be small even though in 2022 the budget increased compared to 2019. This
causes the inefficiency of government spending in this district is the smallest in
Bengkulu Province. On the contrary, the greatest inefficiency is experienced by
Bengkulu City, so the city government must reduce the largest government
expenditure in order to be efficient in poverty alleviation in Bengkulu Province.

CONCLUSIONS
The results of the study are from 10 districts/cities in Bengkulu Province
in 2019 and in 2022 only 3 districts are efficient. 7 districts/cities that are
inefficient in benchmarking their respective peers. With this benchmarking, it is
known that indirect employee expenditure has the highest value of inefficiency
or inefficiency, so that the largest decrease in expenditure must be done to be
efficient followed by spending on goods and services and the last is capital
expenditure.

ADVANCED RESEARCH
The limitation in this study is that the study only examines government
spending, especially capital expenditure, goods and services expenditure, and
indirect employee spending while government spending is not only that. This
study only examined in 2019 before the Covid-19 pandemic hit and in 2022 only,
not in its entirety or in a span of several years so the research year was too
narrow. Based on the limitations of the study, recommendations for future
research are expected to be examined by increasing the scope of time and using
or adding other variables that can affect the poverty level.

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