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Research Article

The Effectiveness of Fiscal Transfer of South Sumatra Province: Initiation of Ecological Fiscal Transfer Concept

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Abstract.

This study identifies the effectiveness of South Sumatra Provincial Government's financial assistance budget transfer on Poverty Levels and the Human Development Index. This fiscal transfer from the Provincial Government is to assist and support the Regency/City Governments' budget for their development program. The problem of this study is to identify the effect of this fiscal transfer to support the Regency/City Government in reducing poverty level and increasing Human Development Index. A coefficient of determination analysis is applied to assess the effect of the provincial financial assistance to reduce poverty rates and increase the Human Development Index. Analysis is also conducted to identify opportunities for the implementation of Ecological Fiscal Transfer model for the allocation of financial assistance budget. The study analyzes data from the Regional Budget of South Sumatra Province for the last 10 years. Coefficient of determination analysis shows that the fiscal transfer in the form of financial assistance fails to explain the variation of poverty rates and the Human Development Index in the area. Following that, the study also adopted an Ecological Fiscal Transfer model to simulate the allocation of Provincial Financial Assistance.

Keywords: financial assistance, ecological fiscal transfer, poverty, Human Development Index

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1. Introduction

Fiscal Transfer in the form of Financial Assistance is a discretion policy of the regional leader to assist the lower-level Governments to assist their development. The Provincial Government can provide fiscal transfers in the form of financial assistance transfers to the district/city and village governments, while the Regency/City Governments can provide financial transfers to village governments [1]. This financial assistance budget can be both general form and specific form. Financial assistance that is in general form is fully handed over to the lower government in order to assist the implementation of the duties of the Regional Government. While the financial assistance in specific form is determined by the Regional Government providing assistance in order to accelerate development [2].

The fiscal transfer of the South Sumatra Provincial, in the form of a financial assistance budget, is a discretionary policy of the Governor of South Sumatera Province. The Provincial Government can use its budget to provincial development goals in the city/district. First, provincial government uses its budget to directly provide basic services that it does not have its remit. The first option politically benefits the provincial government, but – in addition to not being within his authority – it will also allow the provincial government to carry out small scale activities. Second, transfer the funds to districts / cities that have that authority. This option can encourage closer cooperation between the provincial government and the district / city government in carrying out activities to achieve the vision and mission of the provincial government, in accordance with their respective authorities [3].

However, there has been no study that measures the effectiveness of fiscal transfers of South Sumatra Province on development achievements, such as poverty reduction and improvement in human development index. The study further identifies the effectiveness of fiscal transfers to reduce poverty levels and increase human development index in areas receiving financial assistance. Furthermore, the study tried to build a fiscal transfer allocation scheme in the form of this financial assistance, based on the Ecological Fiscal Transfer (EFT) model. The Ecological Fiscal Transfer Model is a model to provide fiscal or budgeting transfers to regions based on environmental conservation performance [4]. Ecological Fiscal. Transfer policy has been widely applied in various countries and discussed in various scientific papers [5]. This model can also be developed to measure other performance, such as the performance of Education, Health and basic service development. Performance measurement will be used as a basis for calculating the amount of fiscal or budget transfers that can be received by a region.

2. Theory, Literature Review, and Hypothesis

2.1. Financial Assistance Budget as Fiscal Transfer

Regional financial assistance policies, as stated in PP No. 12/2019 concerning Regional Financial Management, can be provided to other regional government in the framework of regional cooperation, equitable distribution of financial capacity improvement, and/or certain other objectives [6]. Certain other objectives described in Permendagri No. 77/ 2020 on Regional Financial Management Guidelines are interpreted as "to provide benefits to the givers and/or recipients of financial assistance." One model for this

certain objective is the regional performance-based budget allocation model [7]. The financial assistance policy is regulated in the regional policy of South Sumatra Province, as mentioned in PP 12/2019 which states that further regulations are regulated in the regional head regulation.

2.2. Poverty Level and Human Development Index

The poverty rate is one of the indicators that describe the level of people's welfare. Development goals are always directed to reduce poverty and reduce its growth rate. The poverty rate can be reflected through the population having an average per capita expenditure per month below the poverty line. While the Poverty Line is a minimum expenditure value for food and non-food needs that must be met so as not to be categorized as poor [8]. The poverty line in September 2022 increased by 5.95% to IDR 535,547 from IDR 505,468 in March 2022 [9].

The Human Development Index (HDI) is a comparative measure of life expectancy, literacy, education and standard of living. HDI explains how people can access development outcomes in obtaining income, health, education, and so on [10]. The Human Development Index (HDI) has three dimensions that are used as the basis for its calculation:

i. Health, as measured by life expectancy at birth

ii. Education, which is calculated from school expectations and the average length of schooling

iii. A decent standard of living, calculated from gross national product per capita

2.3. Ecological Fiscal Transfer

Ecological Fiscal Transfer which is later referred to as EFT is one of the climate change financing instruments in Indonesia. The financing is in the form of fiscal transfers of the government (central) to regions that consider environmental aspects or indicators [11].

In Indonesia, the discourse on EFT has begun to develop in the last 2 years. The Research Center for Climate Change University of Indonesia / RCCCUI initiated the addition of forest area variables in the formula for distributing General Allocation Funds (Dana Alokasi Umum DAU) to regions [12]. The Biodiversity Finance Initiative initiated by UNDP encourages the Regional Incentive Fund (Dana Insentif Daerah-DID) scheme for biodiversity [13]. Then The Asia Foundation (TAF) together with civil society coalition promote EFT through 3 schemes, namely Ecology-based Provincial Budget Transfer

(Transfer Anggaran Provinsi berbasis Ekologis-TAPE), Ecology based District Budget Transfer (Transfer Anggaran Kabupaten berbasis Ekologis-TAKE), and Ecology-based National Budget Transfer (Transfer Anggaran Nasional berbasis Ekologis TANE) [7].

3. Research Methods

3.1. Data

This study uses secondary data, derived from the 2014-2022 South Sumatra Provincial Budget document, as well as BPS reports related to poverty rates in South Sumatra Province and South Sumatra HDI figures in the 2019-2023 period. The variables use in this study are the amount of financial assistance alocation budget, the poverty rate of each district/city in South Sumatra, and the Human Development Index figure in each district/city in South Sumatra. Data taken in the period 2019-2022.

3.2. Descriptive Analysis

Descriptive analysis is carried out by collecting past and current data, then the data is compiled, processed and analyzed to be able to provide an overview of the existing problems [14]. This analysis is only in the form of basic data accumulation in the form of descriptions only in the sense of not looking for or explaining interrelationships, testing hypotheses, making predictions, or drawing conclusions. Presentation of data in visual forms such as histograms, polygons, ogives, bar charts, pie charts, pie charts, and emblem charts [15] [16].

In this study, a descriptive analysis was conducted to determine the development of the total financial assistance budget of South Sumatra Province over the past 10 years, and identify the allocation of the financial assistance budget. Data from the South Sumatra Provincial Budget will be sorted to describe the financial assistance budget and its allocation.

3.3. Coefficient of Determination

The variables use in this paper are the amount of financial assistance budget for South Sumatra Province from 2018-2022 as independent variable, and the poverty rate in districts / cities in South Sumatra, and the Human Development Index (HDI) figures of all districts / cities in South Sumatra in 2018-2022 period as dependent

variable. There are two coefficient determination analysis that will be carried out, namely: (i) Analysis between the amount of financial assistance allocation of South Sumatra Province and the poverty rate, (ii) Analysis between the amount of financial aid allocation of South Sumatra Province and the Human Development Index. The value of coefficient of determination is to measure the percentage of independent variable (financial assistance budget) to explain the variance of dependent variable (poverty rate) of each city/district in 2021 [17].

The coefficient of determination (R^2) is often interpreted as how much the ability of all independent variables to explain the variance of their dependent variables. The determinant coefficient indicates the ability of the independent variable to explain the variance of its dependent variable [15]. This coefficient of determination test is carried out with the intention of measuring the ability of to explain the influence of independent variables (financial assistance budget) affects the dependent variable (poverty rate and human development index). According to Ghozali [18] a small value of the coefficient of determination means that the ability of independent variables to explain the dependent variable is very limited, Conversely, if the value is close to 1 (one) and away from 0 (zero) it means that the independent variables have the ability to provide all the information needed to predict the dependent variable.

4. Results and Discussion

4.1. Financial Assistance Budget Effectiveness

This section describes the effectiveness of financial assistance in the province of South Sumatra. The effectiveness is measured by the correlation of the financial assistance budget with two target development indicators in South Sumatra, namely: (i) a decrease in poverty rates in each district / city, with data taken in 2021, (ii) an increase in the Human Development Index, with data taken in 2021.

4.1.1. Coefficient of Determination Analysis with Poverty Rate 2021

The effectiveness of financial assistance is measured from the coefficient of determination between financial assistance data for South Sumatra province from 2019-2021 and poverty data in 2021. The results of the coefficient of determination between financial assistance and poverty can be seen in Figure 1 below.
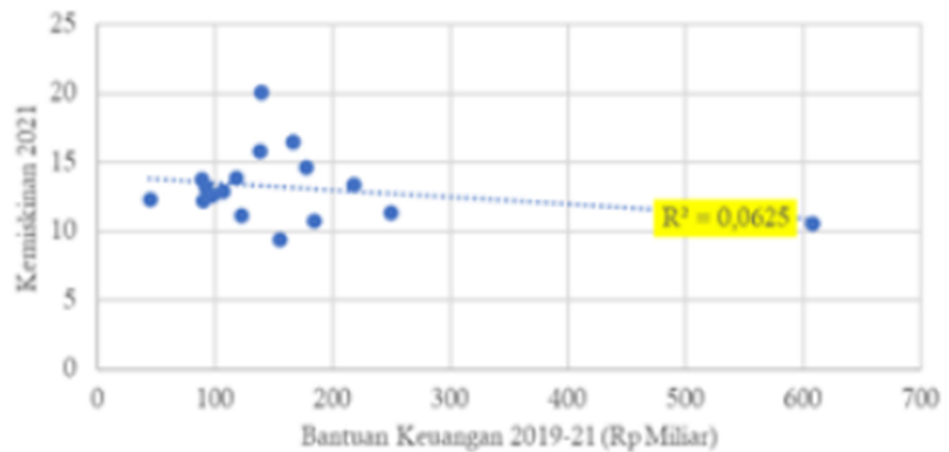
Figure 1: Coefficient of Determination of South Sumatra Provincial Financial Assistance 2019-2021 to Poverty 2021 (in Billion Rupiah). Source : Data Processed, 2023.

The figure above shows that the coefficient of determination between the amount of financial assistance and the poverty rate in each district / city, shows the value of R^2 = 0.0625. This figure means that the variable amount of financial assistance received by each district/city is only able to explain the variation in poverty data in 2021 of 6.25%. So it can be concluded that the poverty rate in 2021 is around 93.75% influenced by other variables.

The education of the respondents in this study was vocational degree (two people or 1.94%), bachelor's degree (99 people or 96.12%), and postgraduate (two people or 1.94%). So, the respondents were dominated by auditors with a bachelor's degree and all of them were majoring in accounting.

4.1.2. Coefficient of Determination to Human Development Index 2021

The effectiveness of financial assistance is measured from the coefficient of determination between financial assistance budget from 2019-2021 and poverty data in 2021. The results of the coefficient of determination between financial assistance and poverty can be seen in Figure 2 below.

From Figure 2, the coefficient of determination between the amount of financial assistance and the poverty rate in each district / city shows the value of R^2 = 0.0082. This figure means that the variable of amount of financial assistance is only able to explain the variation in poverty data in 2021 of 0.82%, while the remaining 99.18% is explained by variables other than the independent variable of financial assistance.
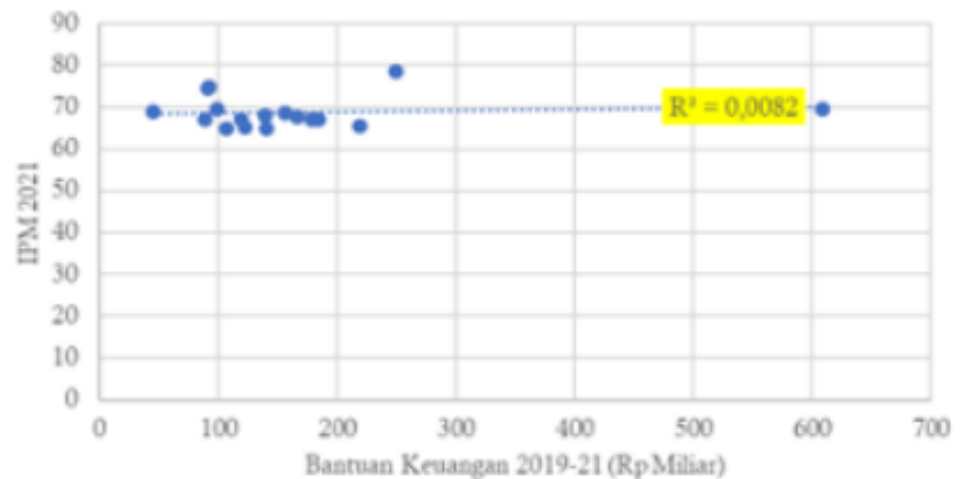
Figure 2: Coefficient of Determination of South Sumatra Provincial Financial Assistance 2019-2021 to Human Development Index 2021 (in Billion Rupiah) Source : Data Processed, 2023.

5. Finding and Conclusion

In this section, the authors present a brief conclusion of the research results with suggestions for advanced researchers or general readers. A conclusion may cover the main points of the article , but don't replicate the abstract in the conclusion. Researchers must explain the empirical and theoretical benefits, the economic benefits, and the existence of any new findings. This section should not merely restate the findings reported in the result section or report aditional findings that have not been discussed earlier in the article.

Two values of the coefficient of determination of the budget financial assistance with poverty and the human development index show very low coefficient values. This means that the financial assistance budget provided by the provincial government can only account for 6.25% for the poverty level variable, and 0.82% for the human development index variable.

Therefore, based on the results of the coefficient of determination analysis, it can be concluded that the allocation of financial assistance from the South Sumatra Provincial Government is not effective in reducing poverty rates and increasing the human development index. In order for the provincial financial assistance budget to be more effective in achieving development targets, the study builds a proposed concept for a budget distribution formula and simulates the distribution of the financial assistance budget based on this concept.

5.1. Initiation Concept -- Formulation of Provincial Financial Assistance Distribution

In this section, the study tries to propose a formula for the allocation of financial assistance based on: (i) regional disparities reduction, (ii) performance incentives, and (iii) thematic / affirmations based on strategic programs aimed at by the provincial government.
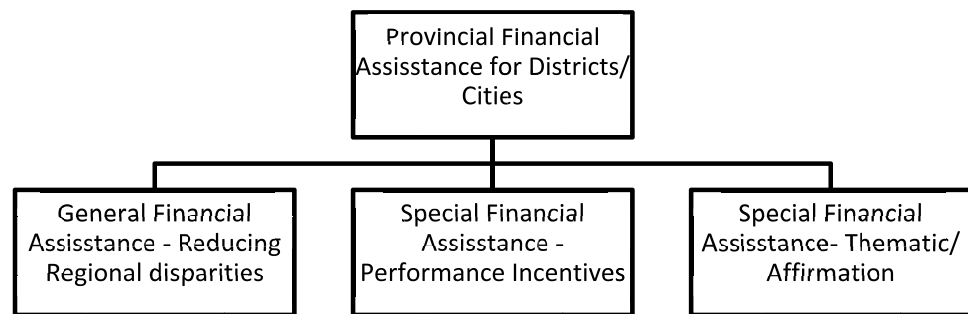
Figure 3: Proposed Provincial Financial Assistance Distribution Formula.

As with transfers from central to local governments, it is recommended that the province's financial assistance be allocated through two schemes. First, general financial assistance (BKU) which aims to equalize development. This BKU scheme can adopt indicators that can be a proxy for district / city needs, such as population, area, human development index (HDI) and poverty level. Second, to provide fiscal incentives to well-performing districts/cities – in other words promoting fairness –provincial governments need to allocate special financial assistance (BKK). Without BKK, BKU can create perverse incentives – the lower the HDI and higher the poverty rate, the greater the funds received.

5.2. Simulation of the Proposed Reformulation of Financial Assistance for South Sumatera Province

This section simulates a proposed reformulation for the distribution of financial assistance based on: (i) 50% of provincial financial assistance is allocated to reduce regional disparities, (ii) 30% of provincial financial assistance is allocated to incentivize regional performance on the Human Development Index, Poverty Reduction and Environmental Quality Index, and (iii) 20% of provincial financial assistance is allocated based on
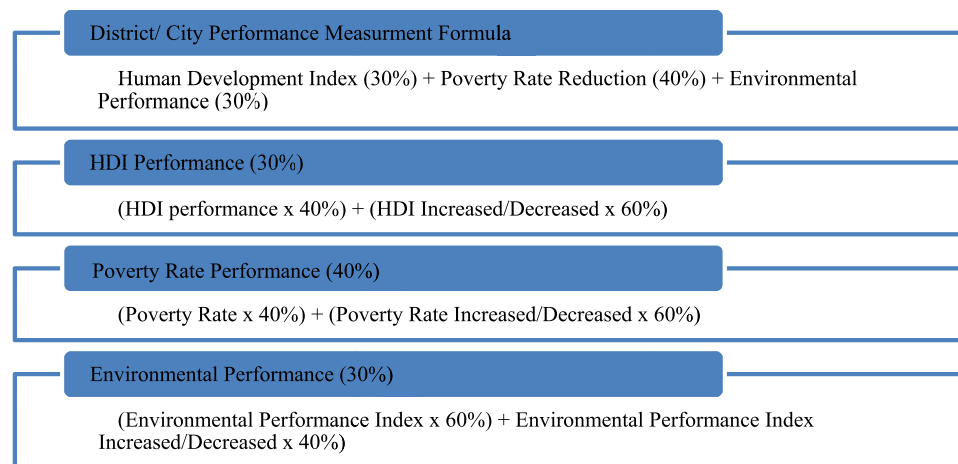
thematic issues promoted by the government province. This study is directed to the development of the scheme (ii) by simulating the proposal of performance-based measurement based on human resource performance and natural resource performance, as the basis for the distribution of provincial financial aid allocations to each district/city. While the (i) and (iii) schemes are a form of discretionary policy from the governor related to the amount of budget to be given to the district / city.

Incentives can be budgeted from Financial Assistance, which is specifically intended for providing incentives to the well performed districts / cities. Indicators that can be used in measuring district / city performance based on provincial development targets. In this case, the following 3 (three) indicators can be used to measure the performance of the District/City [19], namely:

1. Poverty Reduction in Districts/Municipalities

2. Human Development Index (HDI), and

3. Environmental Quality Index (IKHL)

It is assumed that the fiscal incentive of South Sumatra province from the Financial Assistance budget is IDR 100 billion from the total Financial Assistance Budget allocated in the Regional Budget of South Sumatra Province. The budget of IDR 100 billion will be transferred to the well performed districts / cities. The total budget of IDR 100 Billion, distributed for three types of performance, namely HDI Performance (30%) which is IDR 30 Billion, Poverty Rate Performance (40%) of IDR 40 Billion, and Environmental Performance (30%) of IDR 30 Billion.

District/ City Performance Measurment Formula

Human Development Index (30%) + Poverty Rate Reduction (40%) + Environmental Performance (30%)

HDI Performance (30%)

(HDI performance x 40%) + (HDI Increased/Decreased x 60%)

Poverty Rate Performance (40%)

(Poverty Rate x 40%) + (Poverty Rate Increased/Decreased x 60%)

Environmental Performance (30%)

(Environmental Performance Index x 60%) + Environmental Performance Index Increased/Decreased x 40%)

Figure 4: Formulation of Districts/ Cities Performance.

The formulation of the calculation of district/city performance is calculated based on the accumulated sum of the HDI performance achievements of District / City with a weight of 30%, plus the performance achievements of Poverty District/City with a weight of 40%, and the performance achievements of Environmental Performance Index (IKLH) District/City with a weight of 30%. HDI performance, Poeverty rate performance and Environmental performance are further explained in several indicators to determine performance.

5.2.1. HDI Performance and its Fiscal Transfer

Based on HDI data 2020-2021, the highest HDI performance was achieved by Palembang City, Musi Banyuasin District and Musi Rawas Utara District. While the districts / cities that have the lowest performance in HDI performance are Ogan Komering Ulu Selatan district, Empat Lawang district, and Ogan Ilir district. This HDI performance data is used to determine the budget allocation of Provincial Financial Assistance based on the assumed HDI performance of IDR 30 billion.

Based on HDI performance data, the districts / cities that received the largest allocation of financial assistance were Palembang City of IDR 3.2 billion, Musi Banyuasin District of IDR 2.5 billion and Musi Rawas Utara District of IDR 2.5 billion. Meanwhile, districts/cities that have poor performance will get a low HDI-based financial assistance allocation, such as Ogan Komering Ulu Selatan District of IDR 0.4 billion, Empat Lawang District of IDR 1 billion, and Ogan Ilir District of IDR 1 billion.
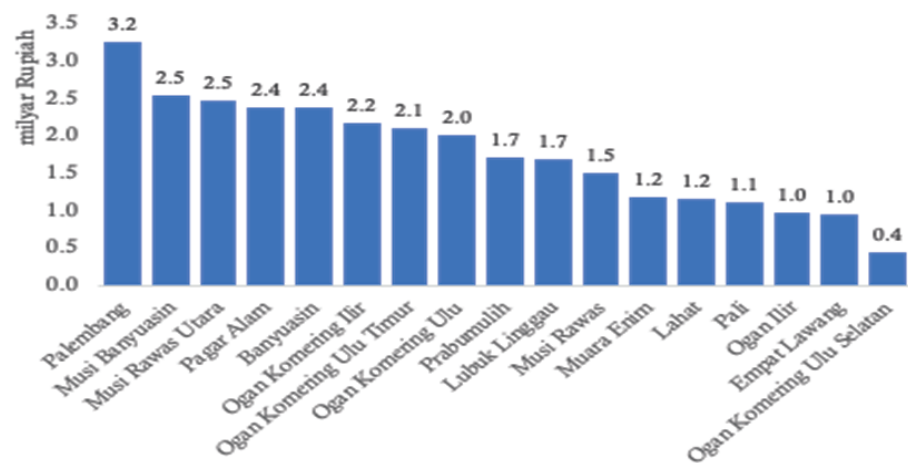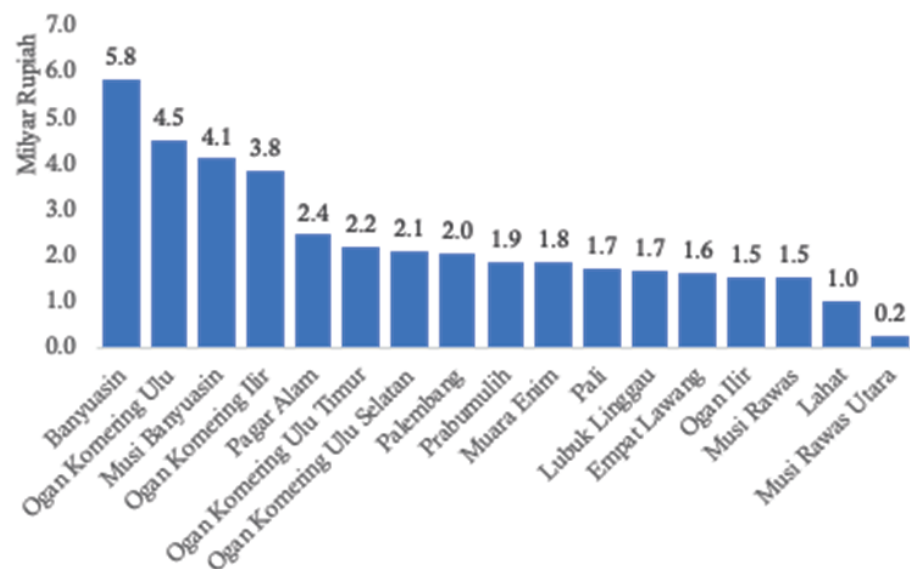

Figure 5: Provincial Financial Assistance Allocation based on HDI Performance. Source : Data Processed, 2023.

5.2.2. Poverty Reduction Performance

Based on the formulation set in this study, the highest poverty reduction performance was achieved by Banyuasin District, Ogan Komering Ulu District, and Musi Banyuasin District. Meanwhile, poor performance in reducing poverty rates occurred in Musi Rawas Utara district, Lahat district and Musi Rawas district.

Thus, from this performance measurement, each district / city will get an allocation of financial assistance based on poverty reduction performance, which is simulated at IDR 40 billion. As for Banyuasin district, Ogan Komering Ulu regency and Musi Banyuasin district as districts that achieve the best performance in reducing poverty rates will get the largest allocation, which is consecutively; IDR 5.8 billion for Banyuasin, IDR 4.5 billion for Ogan Komering Ulu, and IDR 4.1 billion for Musi Banyuasin. And districts that have low performance in poverty reduction will get an allocation of IDR 0.2 billion for Musi Rawas Utara, IDR 1 billion for Lahat and IDR 1.5 billion for Musi Rawas. The allocation of financial assistance to each district / city can be seen in Figure 5.
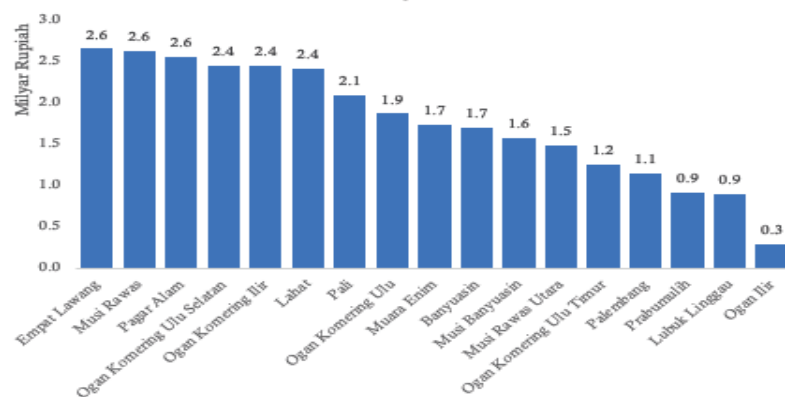
Figure 6: Provincial Financial Assistance Allocation based on Poverty Reduction Performance. Source : Data Processed, 2023.

5.2.3. Environmental Performance

Environmental performance measurement can be taken from the Environmental Quality Index (IKLH) issued by the Ministry of Environment and Forestry every year. Environmental quality indicators used to calculate IKLH consist of 4 indicators, namely: (1) Water

Quality Index (IKA); (2) Air Quality Index (IKU); (3) Land Quality Index (IKL); and (4) Seawater Quality Index (IKAL) [20].

Based on analysis, there are three districts / cities with the highest performance index were Empat Lawang district, Musi Rawas district and Pagaralam district. While the districts / cities that have the lowest environmental performance index values are Ogan Ilir district, Lubuk Linggau city, and Prabumulih City. The districts / cities that received the highest environmental performance incentives were Empat Lawang district getting IDR 2.6 billion, Musi Rawas district getting IDR 2.6 billion and Pagaralam city getting IDR 2.6 billion. Meanwhile, districts / cities that have low environmental performance index scores only receive financial assistance from environmental performance as much as; IDR 0.3 billion for Ogan Ilir district, IDR 0.9 billion for Lubuk Linggau city, and IDR 0.9 billion for Prabumuli city.

Figure 7: Provincial Financial Assisteance Allocation based on Environmental Performance. Source : Data Processed, 2023.

6. Implications, Limitations, and Suggestions

The study find that fiscal transfers in South Sumatra, in the form of financial assisstance budgets, have increased significantly, even becoming one of the largest fiscal transfers among provincial governments in Indonesia. However, the distribution of fiscal transfers to districts / cities is not evenly distributed. Studies have also identified that the distribution of this financial assistance is not effective in reducing poverty and increasing HDI in the districts/cities.

The study proposes to adopt and develop the concept of Ecological Fiscal Transfer. This concept can be developed by including other indicators needed by the province for development achievement, such as poverty reduction and HDI value increase. Thus, the distribution of provincial financial assistance can be an incentive for districts / cities

that have good performance. The simulation presented in this study is only limited to the assumptions of the researcher. Other indicators can be added to assess the performance of districts/cities. However, it is necessary to ensure that the specified indicators are available data every year and can be applied in all districts / cities.

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