

## THE IMPACTS OF FISCAL DECENTRALIZATION ON PUBLIC WELFARE IN SELECTED PROVINCES IN JAVA ISLAND

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### Abstract

One of the many ways to promote public welfare is fiscal decentralization. In this article, we focused on human development and poverty alleviation to indicate public welfare. Human resources have a pivotal role in a country because it determines the economic growth and development. In commercial terms, factors of production include labor, land, and capital. Therefore, the quality of human resources matters to determine the economic growth and development of a country. Since the emergence of the ASEAN Economic Community in 2015, growing a spirit of competition among countries, human development has been attractive. Furthermore, poverty was also considered as an interesting issue in Indonesia because it remained a problem since the country's independence 74 years ago. In 2016, Indonesia recorded the second-largest number of poor people in ASEAN. This paper aimed to analyze the impacts of fiscal decentralization on human development and poverty alleviation. The data used in this study were balanced panel data of six provinces and 112 regencies and cities in Java Island taken from 2011 until 2018. We used local governments' expenditures, revenues, and fiscal balances to measure fiscal decentralization in selected provinces in Indonesia, i.e., West Java, Central Java, East Java, Special Capital Region of Jakarta, Special Region of Yogyakarta, and Banten. The data were processed using the Ordinary Least Square method with EViews program. We found that decentralization policies statistically significantly affected human development and poverty alleviation. Therefore, this finding could be useful to develop targeted interventions aimed to increase local governments' revenues and reduce unnecessary local governments' expenditures to escalate fiscal space. The fiscal space could be used to fund programs that promote human development and alleviate poverty.

**Keywords:** Fiscal Decentralization, Public Welfare, Human Development, Poverty Alleviation, Java Island.

### I. INTRODUCTION

As part of efforts to realize one of the ideals of the reform agenda by granting regional autonomy to local governments to the greatest extent possible for the first time in 1999, two laws have been enforced, i.e., the laws concerning regional governments (Law No. 22 of 1999) and concerning fiscal balances between the central and local governments (Law No. 25 of 1999). Fiscal decentralization officially kicked off on 1 January 2001. Until now, the two regulations have been revised two times, and lastly, by Law No. 23 of 2014 concerning regional governments and Law No. 33 of 2004 concerning fiscal balances between the central and local governments. The fiscal balance policy was intended to: (1) empower and

enhance local economic capacities; (2) create a fair, proportional, rational, transparent, participatory, and accountable local financial system; and (3) create fiscal balances between the central and local governments, which reflect the authority of each level and clear responsibilities between the central and local governments.

However, the implementation of fiscal decentralization in Indonesia initially aimed at creating a sense of independence in regions. Fiscal decentralization is very useful for increasing the economic capacity of a region, which in turn can improve public welfare. Therefore, the local levels are given authority in all fields, except authority in the fields of foreign policies, defense, security, justice, monetary, fiscal, and religious matters.

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Funding sources follow the authorization in the form of handing over tax bases and providing funding assistance through the transfer-to-region mechanism.

Transfers of funds to regions, commonly referred to as fiscal balances (intergovernmental transfers), are divided into three, i.e., general allocation funds (GAFs), special allocation funds (SAFs), and revenue sharing funds (RSFs). GAFs are transfers of funds to local governments, meaning that local governments have the flexibility to allocate the funds. In general, more prosperous regions (higher local government revenues) receive relatively smaller GAFs than more impoverished regions (lower local government revenues). SAFs aim to equalize fiscal capacities among regions to fund their respective needs. The funds are provided for special activities within the affairs of local governments and following the national priorities.

SAFs are divided into several fields, including marine and fisheries, agriculture, family planning, forestry, facilities and infrastructure for disadvantaged areas, trade facilities, rural energy, housing and settlements, and land transportation safety. In general, each region has different fiscal capacities to fund their activities. It can lead to inequality among regions (horizontal inequality).

To overcome horizontal inequality, the central government provides GAFs and SAFs. At the same time, RSFs are sourced from state budget revenues based on the percentage of tax objects to fund the needs of each region.

Human resources determine economic growth and development. As we know, an economy runs on factors of production, i.e., land, labor, and capital. To create labor, we need human resources. That is why the quality of human resources really matters to determine the economic growth and development of a country.

Moreover, since the emergence of the Association of South-East Asian Nations (ASEAN) Economic Community, each country is demanded to have more developed and more competitive human resources domestically and globally among other countries. The quality of human resources can affect the level of productivity. An increase in the quality of human resources in a country increases the level of productivity in that country and eventually leads to an increase in public welfare. The quality of human resources is influenced by various aspects, such as level of education, health, skills, and income, among others. The role of local governments through fiscal decentralization is also needed to improve the quality of human resources. Fiscal decentralization is expected to accelerate the improvement of the quality of human resources in each region because local governments are more aware of the needs and

preferences of their people compared to the central government is. For instance, a city has a preference in the field of education. Therefore, the local government may make policies to improve the quality of human resources in the region by improving the quality of education, such as building schools. However, the policies may vary among regions with different preferences.

According to Article 28 paragraph (2) of Law No. 33 of 2004, each local funds need to be used to provide basic public services with special attention to Human Development Index (HDI) (Soejoto et al., 2015). The quality of human resources in Indonesia increased every year. Based on data from BPS - Statistics Indonesia (2018), the national HDI was 66.53 percent, down from 71.39 percent in the previous year. The improvement of the quality of human resources is influenced by several policies made by the governments, such as the decentralization policy, which has been adopted since 2001.

On the other hand, poverty alleviation remains a challenge in all countries, including Indonesia. Poverty is usually correlated with many negative measurable aspects of standards of living. Therefore, poverty alleviation is significant because it can have positive impacts on the lives of millions of people around the world. The most dangerous thing is when the poor in a country continue to be poor and cannot escape the cycle of poverty. Based on the Ragnar Nurkse theory (Kattel et al., 2012), two factors cause poverty: low level of public income, implying low public capacity to save, and low public capacity to invest due to low income. When public capacity is low, public productivity will also be low, hence low income. Among measures to alleviate poverty is the improvement of the quality of education for the better quality of human resources and, eventually, better public income.

Poverty alleviation should be given special attention because poverty may disrupt national development otherwise. Acceleration of poverty alleviation in Indonesia is primarily determined by the role of local governments in implementing fiscal decentralization. But it is still a debate on to what extent fiscal decentralization can alleviate poverty because, despite an increase in fiscal balances in the central government and an increase in local governments, spending since decentralization, the government still faces serious poverty problems (Nursini & Tawakkal, 2019). Agyemang-Duah et al. (2018) found that fiscal decentralization had the potential for poverty alleviation when characterized by greater fiscal autonomy of regions with proper fiscal allocation, prioritization, accountability, and responsiveness. Therefore, fiscal decentralization policies should take into consideration the elements

of good governance and decentralization. However, Putra (2017, p. 29) argued that decentralization alleviated poverty by promoting efficiency and increasing the capacity of local governments to manage their domestic expenditures. More transfers from the central government mean more power for a local government to carry out its policies. In line with this study, Bartolini et al. (2016) argued that fiscal decentralization could lead to a more efficient provision of local public goods and services and improvement of a better match between policies and public preferences. As of September 2017, the number of poor people, residents with per capita expenditure per month below the poverty threshold, reached 26.58 million, or 10.12 percent. This figure was lower than the previous year. By region, the number of poor people in urban areas was 401.28 thousand or 7.26 percent while the number of poor people in rural areas was 786.95 thousand or 13.93 percent (BPS - Statistics Indonesia, 2018).

The importance of these two aspects of welfare (human development promotion and poverty alleviation) attracts researchers to further analyze the success of fiscal decentralization to promote human development and alleviate poverty. According to Putra (2017), demand for decentralization relied on political power and natural resources. Local people and governments demand equitable development among provinces, regencies, and cities, especially for better infrastructure, such as city parks, sidewalk streets, and so on. In this case, decentralization requires poverty alleviation and human development promotion.

Based on the above background and problems, we formulated the following research questions: "Did fiscal decentralization policy from the central government affect public welfare in Indonesia?"

This study focused on the decentralization funds (which consist of GAFs, SAFs, and RSFs), total public expenditures, total revenues outside fiscal balances, PSIs, and HDIs. Furthermore, we focused on Java Island, which comprises six provinces and 112 regencies and cities. We combined the data of Padalarang Regency and Ciamis Regency because they were not separated until 2014.

The specific objectives of this study were:

- To identify the impacts of decentralization funds on reducing autonomous regions' PSIs.
- To identify the impacts of decentralization funds on increasing autonomous regions' HDIs.

Fiscal decentralization policy is one of many ways to promote human development and alleviate poverty in Indonesia. The results of this study were expected to provide input for the government to ensure that the implementation of fiscal decentralization is

in line with human development promotion and useful information for readers, especially other researchers, to have ideas of further research by observing other variables. This study also served to evaluate and monitor the distribution of funds by the fiscal management fields in provinces, regencies, and cities. Furthermore, the urgency of this study for development study is that fiscal decentralization is expected to improve fiscal management so that it becomes more efficient and effective in alleviating poverty and promoting human development.

From the explanation above, we built our hypothesis of this study as follows:

- Decentralization funds (intergovernmental transfers) supposedly increases HDIs in autonomous provinces, regencies, and cities.
- Decentralization funds (intergovernmental transfers) supposedly reduces PSIs in autonomous provinces, regencies, and cities.

Several researchers have studied the relationship between fiscal decentralization and public welfare (human development promotion and poverty alleviation). Among previous studies on the relationship between fiscal decentralization and poverty alleviation is Tiebout (1956) conducted by Saputra (2012). Musgrave (1959) emphasized the importance of improving public services. Furthermore, Saputra (2012) pointed out that decentralization was expected to improve the efficiency in the allocation of resources because local governments are likely to know better about their public needs and preferences than the central government does. Her study was conducted in 30 provinces in Indonesia from 2003 until 2009, using GAFs and RSFs as indicators of fiscal decentralization. Various studies have assessed the relationship between fiscal decentralization and poverty alleviation. Mehmood & Sadiq (2010) said fiscal decentralization through expenditures and revenues positively affected HDIs and urbanization variable positively significantly affected HDIs because the pull effects outweighed the push factors. Caldeira et al. (2012) suggested that decentralization had an overall positive impact on access to basic services, such as drinking water and sanitation systems.

On the other hand, Galiani et al. (2008) on Caldeira et al. (2012) concluded that decentralization improved public services only in more prosperous areas that could voice their preferences. Shahzad & Yasmin (2016) claimed that fiscal decentralization and income inequality were negatively correlated in developed countries, otherwise positively correlated in developing countries. They traced the reallocation of resources from the central level to the provincial level, preventing the central government from

receiving a large share so that funding for long-term development projects designed for poverty alleviation was limited. In other words, it shows that it was not due to fiscal decentralization restriction but the incapacity of local governments to manage finances. The study was conducted in Pakistan from 1972 to 2013. The data used in the study were revenues, expenditures, and intergovernmental transfers as proxies for fiscal decentralization and using the generalized method of moments (GMM). This study concluded that the provincial governments must be given fiscal autonomy to achieve the targeted level of fiscal decentralization. Still, on the other hand, the preferences (desires) of each province must be taken into account. This view was supported by Nursini & Tawakkal (2019, p. 282), who said that local government revenues and intergovernmental transfers statistically significantly alleviated poverty while local governments' expenditures did not affect poverty alleviation. The authors concluded that it is important for stakeholders or policy makers to increase local revenues to fund poverty alleviation programs in Indonesia.

Several studies have begun to examine the relationship between fiscal decentralization and human development. Soejoto et al. (2015) said that fiscal decentralization had positive significant impacts on HDIs. Therefore, an increase in fiscal decentralization would increase HDIs. This study was conducted in Indonesia. The data used in this study were GAFs, SAFs, public expenditures, tax revenues, and non-tax revenues as indicators of fiscal decentralization, economic growth, poor population, and human development.

This study found that an increase in decentralization funds had a positive impact on public goods provision improvement and economic growth, but not significant. The authors also traced the decentralization funds sourced from the center to the regions, and they were proven to have a positive impact on HDIs so transfers to regions would increase HDIs. Besides, the decentralization fund policy that had positive impacts on human development in provinces, regencies, and cities was adopted. This study also found that the decline in the total poor population of autonomous regions had a significant positive impact on human development that an increase in HDI of a region would be followed by a decrease in the total poor population of the region. However, Soejoto et al. (2015) did not examine regional revenues to address horizontal inequality. They only used the total poor population in general to indicate poverty. Meanwhile, to measure the level of poverty, this study used PSIs because, in our opinion, the indices were more representative to indicate poverty in each region. In agreement, Braathen

(2008) and Ezcurra & Pascual (2008) in Shahzad & Yasmin (2016) concluded that fiscal decentralization was a success for major public welfare measures as it results in human capital development, resource mobilization, and pro-poor service delivery.

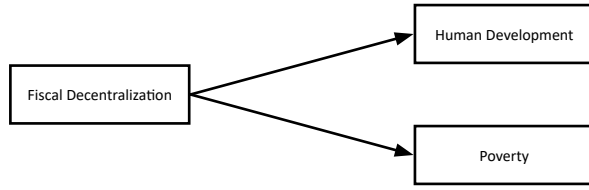
Since many previous studies only examined the impacts of fiscal decentralization on welfare partially (either on human development or poverty alleviation), this study was more comprehensive as we examined the impacts of fiscal decentralization on public welfare more thoroughly, which included both human development promotion and poverty alleviation as parts of public welfare. This study also focused on Java Island, which had the largest population in Indonesia. Furthermore, in this study, we analyzed the impacts of fiscal decentralization on public welfare by province, regency, and city.

The rest of this study is structured as follows: Section 2 presents the research methodology, analysis technique, and definition of used variables; Section 3 presents empirical results and discussion; and Section 4 reports the conclusion of this study, which included a summary, suggestions, and acknowledgment.

## II. METHOD

In this study, we used balanced panel data of six provinces and 112 regencies and cities in Java Island taken from 2011 until 2018. The provinces were West Java, Central Java, East Java, Special Capital Region of Jakarta, Special Region of Yogyakarta, and Banten. As stated above, we combined the data of Padalarang Regency and Ciamis Regency because they were not separated until 2014. The data were obtained from Statistics Indonesia (BPS - Statistics Indonesia, n.d.). The analysis technique was the Ordinary Least Square method with EViews program. Figure 1 shows the conceptual framework of this study. The measurement of fiscal decentralization consists of five indicators, i.e., decentralization revenues, decentralization expenditures, GAFs, SAFs, and RSFs. Since fiscal balances of provinces were different from funds given to regencies and cities, we divided the analysis into two categories by region, i.e. (1) provinces and (2) regencies and cities.

The measurement of human development in this study was HDI. HDI is an indicator of human development achievements based on three dimensions of basic aspects of quality life, i.e., a long and healthy life, knowledge, and a decent life. The indicator used to measure longevity and healthy living was life expectancy at birth. The indicators used to measure knowledge were long school expectations and average length of schooling. The indicator for per capita expenditure was the expenditure index. The authors prefer using HDI to indicate public welfare



**Figure 1.** Conceptual Research Framework

because, according to theoretical and empirical reviews, human development has been influenced positively and significantly through two-way economic growth (Soejoto et al., 2015).

Given the importance of this human development, Article 28 paragraph (2) of Law No. 34 of 2004 included HDI as a variable in preparing the transfer system in Indonesia. The inclusion of HDI as a variable certainly had a variety of considerations and reasons, because the essence of development is human development so that this aspect should be prioritized in budget preparation. Besides, The Ministry of National Development Planning or National Development Planning Agency (Bappenas) stated that Indonesian human development was still very underdeveloped in comparison with many other countries (Victoria, 2019).

Another measurement of poverty in this study was PSI. PSI is an indicator to show the poverty level. The index describes the distribution of expenditures among the poor and shows how far expenditures of the poorest people in a particular region is relative to the expenditures on average expenditures of the poor there. A higher index indicates higher poverty severity level.

Based on the conceptual framework, our analysis used four models. To facilitate analysis, we divided the research into provinces and regencies and cities. The general models of the estimated equations were as follows:

To analyze the impacts of fiscal decentralization on HDIs in regencies and cities, we used the following equation:

$$\begin{aligned}
 HDIKABKOT_{it} = & \alpha_0 + \alpha_1 DAUKABKOT_{it} + \alpha_2 DAKABKOT_{it} + \\
 & \alpha_3 DBHKABKOT_{it} + \alpha_4 REVKABKOT_{it} + \\
 & \alpha_5 EXPKABKOT_{it} + e_{it}
 \end{aligned} \quad (1)$$

To analyze the impacts of fiscal decentralization on PSIs in regencies and cities, we used the following equation:

$$\begin{aligned}
 POVKABKOT_{it} = & \beta_0 + \beta_1 DAUKABKOT_{it} + \\
 & \beta_2 DAKABKOT_{it} + \beta_3 DBHKABKOT_{it} + \\
 & \beta_4 REVKABKOT_{it} + \beta_5 EXPKABKOT_{it} + \varepsilon_{it}
 \end{aligned} \quad (2)$$

**Table 1.** Variables Included in the Analysis

| Variable  | Description  |
|-----------|--|
| HDIKABKOT | HDIs in regencies and cities   |
| POVKABKOT | PSIs in regencies and cities   |
| DAUKABKOT | GAFs of regencies and cities (Rp)  |
| DBHKABKOT | RSFs of regencies and cities (Rp)  |
| REVKABKOT | Total revenues outside fiscal balances of regencies and cities (Rp)                    |
| POVPROV   | PSIs in provinces  |
| DAUPROV   | GAFs of provinces (Rp)   |
| DBHPROV   | RSFs of provinces (Rp)   |
| REVPROV   | Total revenues outside fiscal balances (intergovernmental transfers) of provinces (Rp) |
| EXPPROV   | Total public expenditures in provinces (Rp)  |
| HDIPROV   | HDIs in provinces  |

To analyze the impacts of fiscal decentralization on HDIs in provinces, we used the following equation:

$$\begin{aligned}
 HDIPROV_{it} = & \rho_0 + \rho_1 DAUPROV_{it} + \\
 & \rho_2 DAKPROV_{it} + \rho_3 DBHPROV_{it} + \\
 & \rho_4 REVPROV_{it} + \rho_5 EXPPROV_{it} + u_{it}
 \end{aligned} \quad (3)$$

To analyze the impacts of fiscal decentralization on PSIs in provinces, we used the following equation:

$$\begin{aligned}
 POVPROV_{it} = & \xi_0 + \xi_1 DAUPROV_{it} + \\
 & \xi_2 DAKPROV_{it} + \xi_3 DBHPROV_{it} + \\
 & \xi_4 REVPROV_{it} + \xi_5 EXPPROV_{it} + z_{it}
 \end{aligned} \quad (4)$$

Based on the classical assumption test, we found that there was heteroscedasticity in the models. To overcome this problem, we used white heteroscedasticity-consistent standard errors and covariance. Besides, we also found that there was multicollinearity between total revenues outside fiscal balances and total public expenditures at the provincial level. To eliminate the problem and analyze the impacts of fiscal decentralization on PSIs

at the provincial level, we split the models into two equations. Therefore, this study used a total of six equations.

$$POVPROV_{it} = \omega_0 + \omega_1 DAUPROV_{it} + \omega_2 DAKPROV_{it} + \omega_3 DBHPROV_{it} + \omega_4 REVPROV_{it} + v_{it} \quad (5)$$

$$POVPROV_{it} = \gamma_0 + \gamma_1 DAUPROV_{it} + \gamma_2 DAKPROV_{it} + \gamma_3 DBHPROV_{it} + \gamma_4 EXPPROV_{it} + \theta_{it} \quad (6)$$

### III. RESULTS AND DISCUSSION

#### A. Impacts of Fiscal Decentralization on HDIs at Regency and City Levels

Data in Table 2 shows that GAFs, SAFs, revenues, and expenditures had positive significant impacts on HDIs in regencies and cities ( $\alpha=10\%$ ). It could be interpreted as follows: (1) an increase in GAFs by Rp1 trillion would increase HDIs by 0.15 point. (2) An increase in SAFs by Rp1 trillion would increase HDIs by 2.15 points. (3) An increase in expenditures by 1 percent would increase HDIs by 0.013 point. (4) An increase in revenues by Rp1 trillion would increase HDIs by 0.75 point. (5) RSFs were not statistically

**Table 2.**  
Results of Regression on HDIKABKOT

| VARIABLE        | COEFFICIENT       |
|-----------------|-------------------|
| CONSTANT        | 68.44<br>(0.49)   |
| DAUKABKOT       | 0.15**<br>(0.07)  |
| DAKKABKOT       | 2.15**<br>(0.95)  |
| DBHKABKOT       | -0.97<br>(0.72)   |
| LNEXP           | 1.30***<br>(0.28) |
| REVKABKOT       | 0.75***<br>(0.18) |
| R-Squared       | 0.98              |
| No. Observation | 784               |

*\*, \*\*, \*\*\* indicate significance levels at 90%, 95%, 99%*

Source: Processed by authors

significant for HDIs. Determination coefficient value ( $R^2$ ) of 0.98 means that all independent variables were able to explain 98% of the variation of HDIs at the regency and city levels. Other variables outside of the model equations explained the remaining 2%. SAFs had the biggest impact among the variables significant for HDIs. Meanwhile, GAFs had the least impact on HDIs. We assumed the local governments of the studied regencies and cities did not use the RSFs given to them for programs that could enhance HDIs. They might have used the funds for other sectors, such as poverty alleviation or infrastructure development.

#### B. Impacts of Fiscal Decentralization on PSIs at Regency and City Levels

It can be seen from the data in Table 3 that GAFs, RSFs, and expenditures significantly affected poverty in regencies and cities in Java Island ( $\alpha=10\%$ ). The higher General Allocation Funds provided by the central government, the lower the level of regional poverty. An increase in GAFs by Rp1 trillion would alleviate poverty in regencies and cities by 0.030 point. An increase in RSFs by Rp1 trillion would increase PSIs by 0.14 point. An increase in expenditures by Rp1 trillion would alleviate poverty by 0.05 point.

Meanwhile, SAFs did not statistically significantly affect PSIs. Expenditures had the biggest impact among all variables significant to alleviate poverty, while RSFs increase PSIs instead of decreasing them.

**Table 3.**  
Results of Regression on POVKABKOT

| VARIABLE        | COEFFICIENT        |
|-----------------|--------------------|
| CONSTANT        | 0.57<br>(0.53)     |
| DAUKABKOT       | -0.03***<br>(0.01) |
| DAKKABKOT       | -0.01<br>(0.04)    |
| DBHKABKOT       | 0.14***<br>(0.04)  |
| LNREV           | 0.05<br>(0.03)     |
| EXPKABKOT       | -0.05***<br>(0.02) |
| R-Squared       | 0.81               |
| No. Observation | 784                |

*\*, \*\*, \*\*\* indicate significance levels at 90%, 95%, 99%*

Source: Processed by authors

The possible explanation for this might be that the local governments used the RSFs given to regencies and cities for poverty alleviation programs but not on target. That was the reason the funds ultimately increased the PSIs. Another possible explanation was that the preferences of regions and cities were not only on poverty alleviation. Determination coefficient value ( $R^2$ ) of 0.81 means that all independent variables were able to explain 81% of the variation of poverty at the regency and city levels. Other variables outside of the model equations explained the remaining 19%.

### C. Impacts of Fiscal Decentralization on Human Development at Provincial Level

Data in Table 4 shows that GAFs, SAFs, and revenues positively significantly affected HDIs in provinces in Java Island ( $\alpha=10\%$ ), while expenditures negatively significantly affected HDIs. RSFs appeared to be unaffected by HDIs. It could be interpreted as follows: (1) an increase in GAFs by Rp1 trillion would increase HDIs by 0.66 point; (2) an increase in SAFs by Rp1 trillion would increase HDIs by 0.30 point; (3) an increase in expenditures by Rp1 trillion would decrease HDIs by 0.10 point; (4) an increase in revenues by Rp1 trillion would increase HDIs by 0.23 point. GAFs had the biggest impact among all variables significant to promote human development while

**Table 4.**  
Results of Regression on HDIPROV

| VARIABLE        | COEFFICIENT        |
|-----------------|--------------------|
| CONSTANT        | 69.47<br>(0.51)    |
| DAUPROV         | 0.66**<br>(0.29)   |
| DAKPROV         | 0.3***<br>(0.07)   |
| DBHPROV         | -0.00<br>(0.05)    |
| EXPPROV         | -0.10**<br>(0.042) |
| REVPROV         | 0.23***<br>(0.42)  |
| R-Squared       | 0.98               |
| No. Observation | 42                 |

*\*, \*\*, \*\*\* indicate significance levels at 90%, 95%, 99%*

*Source: Processed by authors*

expenditures decreased HDIs instead of increasing them. We assumed that the local governments might not have used the RSFs given to provinces for human development programs. Determination coefficient value ( $R^2$ ) of 0.98 means that all the independent variables were able to explain human development of 98% at the provincial level. Other variables outside of the model equations explained the remaining 2%.

### D. Impacts of Fiscal Decentralization on PSIs at Provincial Level Without Expenditures

From Table 5, we can see that only SAFs significantly affected poverty at the provincial level in Java Island. It could be interpreted as follows: an increase in SAFs by Rp1 trillion would decrease PSIs by 0.03 point. Surprisingly, there was no evidence that GAFs, RSFs, and revenues had an impact on PSIs ( $\alpha=10\%$ ). Determination coefficient value ( $R^2$ ) of 0.79 means that all independent variables were able to explain the poverty of 79% at the provincial level. Other variables outside of the model equations explained the remaining 21%. A possible explanation of this might be that the local governments used the SAFs for poverty alleviation programs because poverty alleviation had become among the provincial governments' priorities.

**Table 5.**  
Results of Regression on PROV-REVENUE

| VARIABLE        | COEFFICIENT     |
|-----------------|-----------------|
| CONSTANT        | 0.37<br>0.05    |
| DAUPROV         | 0.05<br>0.05    |
| DAKPROV         | -0.03*<br>0.014 |
| DBHPROV         | 0.00<br>0.30    |
| REVPROV         | 0.00<br>0.80    |
| R-Squared       | 0.79            |
| No. Observation | 42              |

*\*, \*\*, \*\*\* indicate significance levels at 90%, 95%, 99%*

*Source: Processed by authors*

**Table 6.**  
Results of Regression on PROV-EXP

| VARIABLE        | COEFFICIENT     |
|-----------------|-----------------|
| CONSTANT        | 0.34<br>(0.06)  |
| DAUPROV         | 0.04<br>(0.05)  |
| DAKPROV         | -0.03<br>(0.01) |
| DBHPROV         | 0.00<br>(0.00)  |
| EXPPROV         | 0.00<br>(0.00)  |
| R-Squared       | 0.80            |
| No. Observation | 42              |

\*, \*\*, \*\*\* indicate significance levels at 90%, 95%, 99%

Source: Processed by authors

### E. Impacts of Fiscal Decentralization on Poverty at Provincial Level Without Revenues

Closer inspections of Table 6 show that GAFs, SAFs, RSFs, and expenditures statistically insignificantly affected PSIs at the provincial level ( $\alpha=10\%$ ). A possible explanation for this might be there was a delay between expenditures made by the provincial governments for poverty alleviation programs, expecting a future decrease in PSIs. Determination coefficient value ( $R^2$ ) of 0.80 means that all independent variables were able to explain the poverty of 80 % at the provincial level. Other variables outside of the model equations explained the remaining 20%.

#### 1) *The Impacts of Fiscal Decentralization on HDIs in Regencies, Cities, and Provinces in Java Island*

We also analyzed the impacts of fiscal decentralization on PSIs, and the results showed positive impacts of fiscal decentralization through GAFs, SAFs, and revenues on HDIs in provinces, regencies, and cities. Furthermore, expenditures had a positive impact on HDIs at the regency and city levels and a negative impact at the provincial level. These results might be explained by the fact that expenditure allocation at the provincial level was not effective yet, so the target (an increase in HDIs) was not achieved.

Another possible reason might be that provincial governments regulate a broader scope

than local governments, implying different results of priority programs run by between the provincial governments and the local governments' priority programs. However, they were not against each other. At the regency and city levels, the local governments might know better about their preferences and needs of human development programs so the local governments could make much more detailed and focused programs according to the conditions of their people, and ultimately the target can be achieved.

#### 2) *The Impacts of Fiscal Decentralization on PSIs in Regencies, Cities, and Provinces in Java Island*

We also analyzed the impacts of fiscal decentralization on PSIs, and the results showed GAFs and expenditures negatively significantly affected PSIs at the regency and city levels. An increase in GAFs and local governments' expenditures would decrease PSIs in regencies and cities. RSFs also significantly affected PSIs, but the relation was positive at the regency and city levels. It could, therefore, be assumed that an increase in RSFs would increase PSIs. This finding was in line with that of a previous study conducted by Putra (2017) that an increase in GAFs would alleviate poverty. Lastly, SAFs showed a positive impact on poverty alleviation in the provinces. This relationship might partly be that the SAFs were used for unnecessary consumptions besides basic needs. For instance, people used SAFs in the form of social security given in cash to buy cigarettes or anything else instead of rice or other basic needs.

In summary, the results showed that fiscal balances in provinces, regencies, and cities were not effective yet in alleviating poverty and promoting human development. Still, it clearly significantly affected both human development promotion and poverty alleviation. Putra (2017) argued that decentralization might lead to ineffectiveness due to the different capacities and political interests of local governments. In some cases, centralized funding looks more effective in poverty alleviation. This result was in line with the finding of another study by Simanjuntak (2015) who said that the implementation of decentralization policy in Indonesia had not met expectations yet due to decentralization that only benefited the elites and local authorities, lack of quality of public services, and lack of institutional efficiency. We assumed that there were several problems that might arise when implementing the fiscal decentralization policy, including: (1) ineffective allocation of funds, for example the calculation of the amount of fiscal balances were not in accordance with what were needed by a region; (2) SAFs allocation for non-physical sectors, which should have been used for productive development; (3) possible delays of receipt of fiscal balances due to



delays of accountability reports, resulting in delays in construction, ultimately not having an impact in that year; (4) inequality of the quality of human resources among provinces, regencies, and cities, potentially affecting the results of the budget allocation; (5) regencies' and cities' inclined reliance on the amount of equilibrium funds provided by the central government for productive development activities in accordance with the average instruments of the fiscal balances significantly affecting public welfare likely leading to a lack of autonomy in regencies and cities; (6) local government institutions' unpreparedness to accept fiscal balances, as supported by [Soejoto et al. \(2015\)](#), who said that fiscal decentralization still had leakage caused by various factors, including the quality of regional institutions, to be more specific, the capacity of regional bureaucracies and local institutions. Institutional quality is also an essential factor in implementing a policy. For instance, a program already started but, in the implementation, there was a gap between what should be done and the reality due to inefficient fund allocation by government agents. It had a negative impact not only on the government but also the people. In general, the purpose of fiscal decentralization policy was fiscal equality, which in turn results in equitable development in each region. Since the study was limited to Java Island, it was not possible to show the impacts of fiscal decentralization in other provinces, regencies, and cities with different PSIs and HDIs. Dissimilar with this study, a previous study conducted by [Haryanto \(2018, p. 64\)](#) in Sumatra found that Sumatra's economic dependence level was still high on the natural-resources economy with some of the regions' natural resources contributions were still in their golden period, hence good region independence level, while other regions might have entered into the ending period of their natural sources contributions.

Conversely, according to [Purbadharmaja et al. \(2019\)](#), fiscal decentralization did not affect public welfare in Bali. Therefore, future studies about fiscal decentralization are still needed to get a broader and more comprehensive picture of fiscal decentralization and public welfare in Indonesia. Besides, this study also only saw public welfare from HDIs and PSIs, so it was likely that fiscal balances provided by the central government affected public welfare in other particular aspects.

#### **IV. CONCLUSION**

In Indonesia, fiscal decentralization had impacts on public welfare. Based on the results of the regression we conducted, this study found that the decentralization policy affected human development promotion and poverty alleviation. HDIs were

influenced by GAFs, SAFs, expenditures, and revenues in provinces, regencies, and cities. Meanwhile, PSIs were more affected by GAFs and expenditures at the regency and city levels and by SAFs at the provincial level. Furthermore, the decentralization policy had different impacts among provinces, regencies, and cities. In provinces, SAFs had a more significant impact on HDIs and PSIs, while at the regency and city levels, GAFs had a more substantial impact on HDIs and PSIs. Taken together, these results suggested that not all fiscal balances effectively affected HDIs and PSIs in provinces, regencies, and cities in Java Island. Therefore, this fiscal decentralization policy should be followed by the improvement of the management of fiscal balances with a better level of transparency. The governments could also utilize technology, such as e-budgeting, by implementing the "money follows the program" system for better effectiveness and efficiency in each autonomous province, regency, and city to promote human development and alleviate poverty. This study proved that the implementation of fiscal decentralization as fiscal balances was generally consistent with the formulated theories and the planned concepts. GAFs and SAFs were provided for addressing horizontal inequality while RSFs for addressing vertical inequality in autonomous regions and promote human development and alleviate poverty. The models used in this study were designed based on theories, concepts, and empirical results of the fiscal decentralization implementation in accordance with the actual reality. The results indicated that the central government needed to further monitor and evaluate fiscal balances and local governments needed to run programs that could promote human development and alleviate poverty.

This study could be useful for other researchers who want to further analyze fiscal decentralization policy and local government revenues in future investigations using different variables and identify if each fiscal instrument has distinct effectiveness in poverty alleviation in different regions, and further investigate the causes and how they happen. This study could also be useful for better financial management in provinces, regencies, and cities to evaluate and monitor the distribution of funds. Another suggestion for future researchers would be to account for the long-term impacts of fiscal balances on regional development in the models. A key policy priority should, therefore, be planned for the long-term care of (1) total revenues outside fiscal balances as sources of an increase in regional fiscal capacity by promoting tax-rate and levy-rate policies, since Chygryn et al. (2018) found that shared tax was the most effective fiscal instrument used under the fiscal decentralization implementation that also allowed to achieve favorable country economic dynamic; (2)

an increase in regional government expenditures for human development promotion and poverty alleviation, especially at the provincial level; and (3) an improvement in fiscal balances, especially GAFs because they were proven to have a significant positive impact on promoting human development at the provincial, regency, and city levels.

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