



THE IMPACT OF VILLAGE FUNDS ON THE INDONESIAN ECONOMY: EXPANSION AND PROGRESS

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Abstract

This study examines the impact of village fund allocations on economic growth and development in Indonesia within the decentralized development framework. Indonesia's economic progress remains less inclusive, hindered by infrastructure disparities and centralized development legacies. To address regional inequalities, the government implemented village funds since 2015, aiming to spur rural development. Using a quantitative approach, this research applies the Difference-in-Difference (DID) method to analyze panel data from Indonesian districts and cities between 2011 and 2019. The study compares treatment areas receiving village funds to control areas without such funding, controlling for infrastructure, population, poverty, education, and other socioeconomic factors. Findings reveal that village fund allocations positively and significantly contribute to economic growth and development indicators, reflected in improved infrastructure and increased economic activities, such as the proliferation of Village-Owned Enterprises (BUMDes). Although the impact is statistically significant, it remains relatively modest, suggesting room for improved fund utilization and distribution mechanisms. The research highlights the need for continued provision of village funds alongside enhanced accountability to maximize developmental benefits. This study addresses a critical aspect of Indonesia's inclusive growth agenda, demonstrating the role of decentralized funding in rural economic empowerment. The robust methodological approach and empirical evidence support policy recommendations for sustaining and optimizing village fund programs to foster balanced regional development nationwide.

Keywords: Difference-In-Difference Analysis, Effects, Village Funds, Progress Economy, Progress Area

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A. Introduction

In 2018, the Ministry of National Development Planning and the National Development Planning Agency released metrics detailing the country's progress towards inclusive economic development. Three pillars make up the indicators: economic growth and development, income distribution and poverty reduction, and increasing opportunities and access.

Indonesia is still far behind in terms of inclusive economic development compared to other countries in the field of economic growth and development. The achievements described in the third pillar are Indonesia's achievements in terms of economic growth, labor absorption, and availability of economic infrastructure. The achievement of this pillar on a scale of 1-10 was only 5.29 in 2021, according to the Ministry of National Development Planning /Bappenas (2022). Because these pillars are closely related to the problem of regional inequality, the success of economic development is less than optimal. Limited infrastructure is the main cause of inequality in Indonesia, according to Sukwika (2018). According to Faridis and Afifah (2019), the clear gap in infrastructure (economic, social, and health) is the cause of the backwardness of eastern Indonesia. The development paradigm no longer adheres to a centralistic ideology after the New Order government ended, which caused differences in infrastructure, according to Fuady (2012).

In Indonesia, the development paradigm has shifted from centralization to decentralization or regional autonomy. The goal is to enable the country's economy to develop in other regions. Since 2015, the government has implemented initiatives aimed at encouraging economic growth across villages in Indonesia. Part of this effort is to provide village resources to all villages in Indonesia. Village funds are estimated to reach 403.39 trillion in 2021. Village funds are prioritized for village development at the beginning of their implementation. However, the use of Village Funds is adjusted to address the COVID-19 pandemic.

For five years, village funds have been provided. Therefore, any impact that may occur must be examined. Most of the village funds are allocated for basic infrastructure and rural economic development. Therefore, the impacts that arise are mainly related to the benefits obtained for the growth and economic development of the region. Research has examined the impact of village funding on local economic indicators. According to Litonga et al. (2021), local resource supply has little effect on economic expansion. Sumatra is where this research was conducted. Samshir et al. (2021), as they did in Litonga, also found that the South Sulawesi economy developed with a negative correlation with village resources. The second study showed results that contradicted expectations about the existence of village resources in Indonesia.

The narrow focus of the study on the influence of village fund distribution on economic growth as the only macroeconomic indicator, without taking into account the

counterfactual conditions, namely the scenario of non-implementation of intervention (treatment) in the form of village funds, is one of its weaknesses. The study that only focuses on the influence of village fund distribution on economic growth as the only macroeconomic indicator, without taking into account the counterfactual conditions, namely the scenario of non-implementation of intervention (treatment) in the form of village funds, is one of its weaknesses.

This study aims to investigate how village tourism offerings affect Indonesia's economic growth and development. The method used is to compare the current situation with the situation you believe

B. Method

This study employs a quantitative research approach to evaluate the impact of village fund allocations on economic growth and development in Indonesia. The quantitative approach was selected to enable objective measurement and statistical analysis of the relationship between village fund interventions and regional economic outcomes.

1. Data and Sample Selection

The analysis utilizes panel data from Indonesian districts and cities (kabupaten/kota) for the period 2011–2019. The main data sources include the Ministry of National Development Planning/Bappenas, the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration, as well as supplementary data from the Central Statistics Agency (BPS). The sample includes all districts and cities in Indonesia, with the treatment group defined as areas that received village funds and the control group as areas that did not receive such funds or received them later.

2. Variables

a. Dependent Variables:

- Economic Growth Index
- Economic Development Index

b. Independent Variable:

- Village Fund Allocation (treatment indicator)

c. Control Variables:

- Infrastructure development indicators
- Population size
- Poverty rate
- Education level
- Other relevant socioeconomic variables

d. Analytical Method

The primary analytical technique is the Difference-in-Difference (DID) method, which estimates the causal effect of village fund allocations by comparing changes in economic outcomes between the treatment and control groups before and after the implementation of the village fund policy. The DID model is specified as follows:

$$\ln(Y_{it}) = \alpha + \beta_1 T_i + \beta_2 t_t + \beta_3 (T_i \times t_t) + \gamma X_{it} + \epsilon_{it}$$

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where:

- Y_{it} is the economic outcome for region i at time t ,
- T_i is a dummy variable for the treatment group,
- t_t is a time dummy (pre- and post-intervention),
- $T_i \times t_t$ is the DID interaction term,
- X_{it} is a vector of control variables,
- ϵ_{it} is the error term.

e. Assumption Testing

To ensure the validity of the DID estimates, several diagnostic tests were conducted:

- Parallel Trends Test: Pre-intervention trends in economic outcomes were visually and statistically compared between treatment and control groups to satisfy the parallel trends assumption.
- Multicollinearity Test: Variance Inflation Factor (VIF) values for all independent variables were checked and found to be below 10, indicating no significant multicollinearity.

Normality of Residuals, Residuals from the regression were tested for normality using P-P plots, confirming the suitability of the model.

C. Results and Discussion

In this study, positive trends were observed in economic indices and economic progress. Indonesia According to Ministry of National Development Planning/Bappenas (2022), the index value of 5.13 points rose to 5.48 points in 2019 or 6.82% during this period. Infrastructure economy as sub pillar show significant improvement during implementation of village funds in 2019. Subpillar This only reach the figure was 5.65 in 2014, but increase to 6.33 in 2019 (Ministry of National Development Planning/Bappenas, 2022). The following figure describe results revolution and the values achieved by each subpillar.

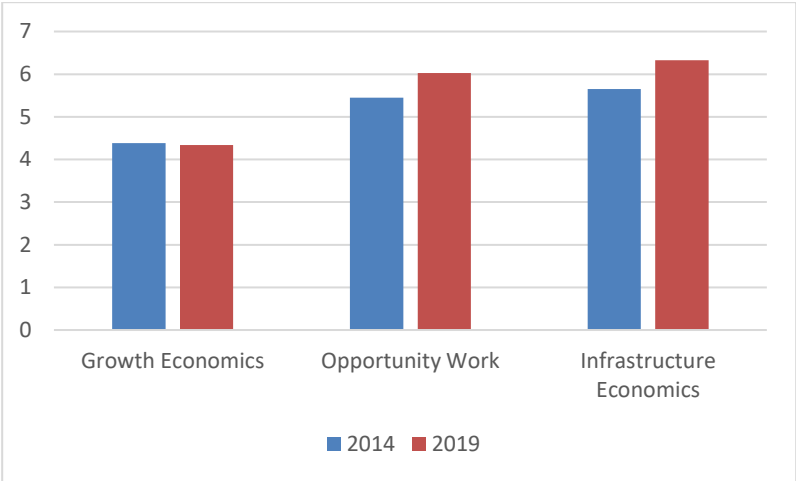


Figure 1. Achieving Indonesia's Economic Growth Index and Development Subpillar for 2014 and 2019

1. Reliability Test

As illustrated in Figure 1, the economic growth subpillar of the Economic Growth and Development Index experienced a decline of 0.04 points from 2014 to 2019. From 2014 to 2019, there was a decline in the real GDP growth rate per capita in Indonesia; this decline was influenced by various factors. The high achievement of the economic infrastructure sub-pillar is supported by good performance in the value of each indicator. Improving the quality of roads to the village level is one of them. Directly, the implementation of village funds increases the achievement of this metric.

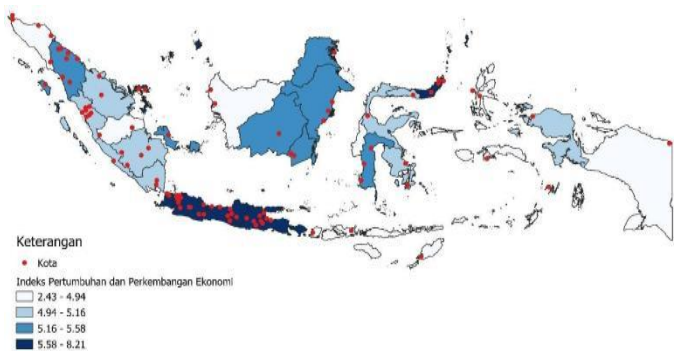


Figure 2 Source 2019 Growth Index Values and Distribution of Economic Development by Country: Data Analysis Results (2022)

Figure 2 shows the contradiction between economic growth and economic progress in Indonesia. As can be seen in the photo, the eastern part of Indonesia is lower than the western part, and Java has the most relatively high success index.

In the western region, urban growth is driven by high development aspirations and a large population. Figure 2 shows that most cities in Indonesia—especially in Java—are

located in the western part. Based on the classification of cities and districts, urban areas show higher economic growth and development indices compared to district area. As a result, areas with many cities tend to have higher economic growth and development indices.

Realization of Village Fund Utilization

Of the 514 districts and cities in Indonesia, 425 of them received village assistance from the central government. Since its inception, the transfer of village funds has been proven to produce various products in rural areas. The results of village-funded development are focused on the development of village infrastructure that supports the economic and social activities of village communities, such as village roads, reservoirs, irrigation channels, and village health centers.

One of the main results of the implementation of village funds is the establishment of Village-Owned Enterprises (BUMDes). Before the village funds were implemented in 2014, the number of BUMDes was only 1,022 units. However, after the village funds were implemented, this number increased tenfold to 50,199 business units in 2019 (Ilokadata, 2022).

Despite the fact that there have been specific guidelines aimed at the use of village funds specifically for the creation of BUMDes, many businesses running BUMDes open up new opportunities for the village economy and, ultimately, villagers get jobs as a result of the existence of BUMDes.

BUMDes Tirta Mandiri located in Ponggok Village, Klaten Regency, Central Java Province, illustrates how village funds can help develop this business. According to Arndhawati & Utami (2020), this business unit has the potential to generate annual revenue of 16.4 billion rupiah. The study also shows that BUMDes can change the economy, especially in terms of labor absorption.

According to the latest data from the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration, development output sourced from village funds other than BUMDes is as follows.



Figure 3. Infographic Output of Village Fund Usage from 2015 to 2017 in Indonesia

Source: Kmendes PDTT (2022)

Figure 3 shows the amount of economic and social infrastructure successfully built during the three years of Village Fund implementation (2015-2017). Efforts to encourage economic growth and regional development are closely related to this infrastructure.

According to Brilyawan & Santosa (2021), the progress of economic infrastructure such as roads has an impact on regional economic growth. Furthermore, Angelina & Wahyuni (2021) show that improving social and economic infrastructure in Indonesia has an impact on economic growth.

Village funds can improve the village economy. The results are not limited to the development of physical infrastructure. Purwantari et al. (2021) Mention several efforts, such as providing training to MSMEs, providing appropriate technology to meet the needs of village economic development, and creating programs for micro and small industries at the village level.

The impact of village funding on economic growth and development

From the two discussions that have provided a comprehensive explanation of the evidence that the provision of village resources has a positive effect on the achievement of economic growth and development. This section presents an analysis of empirical results regarding the relationship between the provision of village resources and indicators of achievement of economic growth and development in the area.

Before the DID analysis is conducted, the data trends are explained. Before confirming the village funds, visualization is conducted to determine whether the data trends are consistent in the treatment and control groups. This is very important because in Indonesia, cities are the majority of the control group and districts are the majority of the treatment group. There is a concern that economic growth and development indicators will be very different compared to rural areas because urban areas are more sophisticated. This trend is explained in Figure 4.

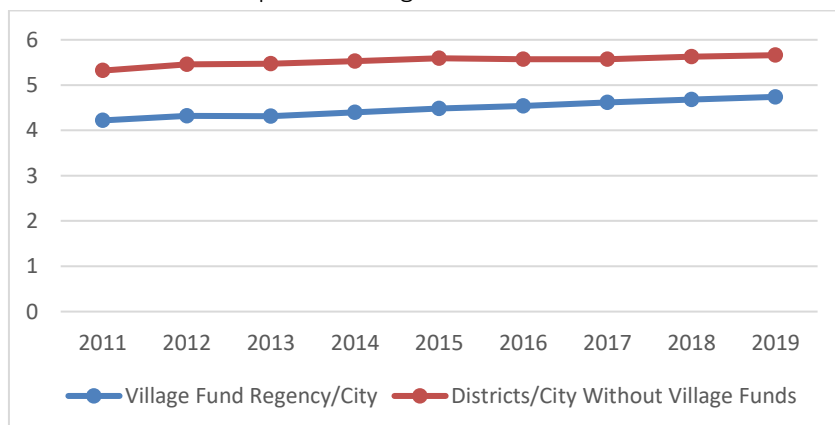


Figure 4. Economic Growth Value and Development Index of Control Group (Village Preference District/City) and Treatment (Village Preference District/City) 2011-2019

Source: Data Analysis Results (2022)

pre-rural trend components of the villages from 2011 to 2014. The increase in figures for the treatment and control groups in 2012 and 2014 is shown in Figure 5. This shows the same trend in the process. The next step is to create a regression equation according to the equation. The Stata 15 program is used to run this process. The results for the parameters of the estimation formula one (1) are as follows:

Table 1. Results of the discriminatory discrimination analysis (DID) on the impact of village sons on indicators of economic growth and progress in Indonesia.

Variables	Coefficient (β)	Robust Std. Err	t-statistic	P-Value
T	-0.101 ***	0.011	-8.83	0.000
t	0.053 ***	0.099	5.30	0.000
DID	0.036 ***	0.005	7.32	0.000
Ln(X1)	0.004 ***	0.001	4.45	0.000
Ln(X2)	-0.096 **	0.542	-1.77	0.078
Ln(X3)	0.373 ***	0.028	13.20	0.000
Ln(X4)	0.010	0.007	1.47	0.143
Ln(X5)	-0.067 ***	0.007	-10.33	0.000
Ln(X6)	0.002 **	0.001	1.98	0.049
Constants	1,720 ***	0.096	17.95	0.000

Based on Table 1, the regression equation formed can be explained mathematically using the resulting coefficient information as follows:

$$\begin{aligned} \ln(Y_i) = & 1,720 - 1.01T_i + 0.053t_t + \\ & 0.036DID + 0.004\ln(X1_{it}) - \\ & 0.096\ln(X2_{it}) + 0.373\ln(X3_{it}) + \\ & 0.010\ln(X4_{it}) - 0.067\ln(X5_{it}) + \\ & 0.002\ln(X6_{it}) + \varepsilon_i \end{aligned}$$

Before analyzing the parameter estimation results shown in Table 1, the first assumption test for non-multicollinearity was performed. This was done to ensure that the parameters created were the Best Unbiased Linear Estimator (BLUE). The findings showed that the variability inflation factor (VIF) for all independent variables used was 10 or less. According to Ohyver (2013), VIF values below 10 indicate the absence of multicollinearity among the independent variables used. Table 2 presents the test results.

Table 2. The results of the multicollinearity test carried out between variables are illustrated

Variables	VIF
Ln (X1)	1.17
Ln (X2)	2.70
Ln (X3)	1.72
Ln (X4)	1.35
Ln (X5)	1.19
Ln (X6)	1.09
T	2.47
t	7.07
DID	7.85

Source: Data Analysis Results (2022)

Figure 5 shows the results of the normality test. The next assumption test tests the error value of the previous parameter estimation results.

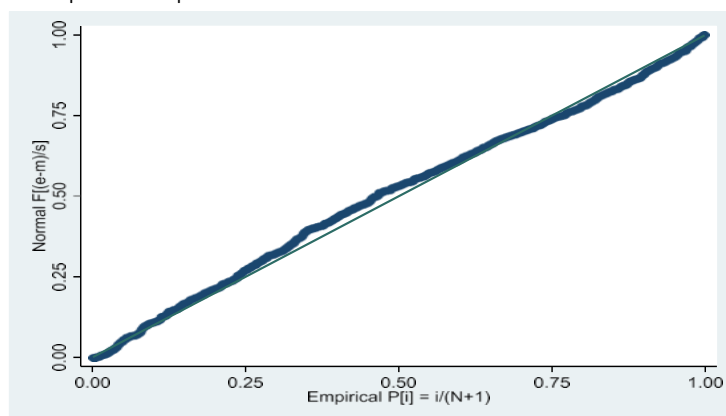


Figure 5. Normal P-Plot Residual Source: Data Analysis Results (2022)

The remaining plots are distributed diagonally, as shown in Figure 6. This indicates that the residuals of this research equation have a normal distribution. The test results indicate that the estimated parameters shown in Table 2 should be used.

The estimated results show that all independent variables affect the growth value and economic development index at the 95% confidence level, except for the variable not limited to the poverty level (x_4). This shows that almost all independent variables are used slightly at the confidence level. The variables are considered to be fixed by the natural logarithm.

At the 95% confidence level, this variable has a significant effect with a LN (YIT) value of 0.036. In other words, compared to industrial conditions, the provision of village tours increases the value of economic growth and economic development in the region by 0.036%. This empirically shows that the provision of village tours has a positive effect on the achievement of indicators for regional development and economic growth.

These results are in line with the findings of Iftitah & Wibowo (2022) which show that in terms of capital participation, the allocation of parent village funds to BUMDes has a positive effect on the level of village progress. Furthermore, Kurniawan (2021) shows that the use of village funds can guarantee the availability of facilities that facilitate business activities. The resulting impact, although significant, is still relatively small. This shows that although village funds can be profitable, they have not yet reached their ideal. This shows that there are still many aspects that need to be improved. Bismo & Sahputra (2021) identified the village fund distribution mechanism as an element that needs to be improved. This approach consists of three phases and is considered to influence the effectiveness of fund utilization.

D. Conclusion

The results of the DID analysis research from this study indicate that the provision of village resources significantly drives regional economic growth and development. Thus, village financial management can drive growth and achieve economic development targets in the region.

Based on these findings, the government to ensure that village funds are provided consistently. To achieve optimal results, the government also suggests improving the accountability aspect when implementing village funds. This study is limited to two points in time, 2014 and 2019. Fixed effects panel data regression analysis (FEM), which allows the incorporation of certain time intervals into the analysis process, can be used in further research. One of the exogenous variables that can be included in further analysis is the ratio of village funds to the district/city APBD

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