



The Effectiveness of Village Funds in Alleviating Rural Poverty: A Case Study of Belitung Regency

^{*,2}ASEP HARIYANTO, ¹BAMBANG JUANDA,
¹ERNAN RUSTIADI, ¹SRI MULATSIH

^{*,1}IPB University, Bogor, Indonesia, ² Bandung Islamic University (UNISBA), Bandung, Indonesia
Correspondance author: asephariyanto130971@gmail.com

Article

Article History

Received: 9/5/2023
Reviewed: 10/7/2023
Accepted: 28/7/2023
Published: 30/7/2023

DOI:

doi.org/10.29313/mimbar.v39i1.2309



This work is licensed under a Creative Commons Attribution 4.0 International License

Volume : 39
No. : 1
Month : June
Year : 2023
Pages : 197-208

Abstract

Poverty is always synonymous with disadvantaged people in rural and urban areas. According to the OECD (2016) three billion people in developing countries, including Indonesia, live in rural areas, and the majority are poor. The government has made various efforts in Indonesia to alleviate poverty, including through the concept of "building from the periphery" by allocating considerable funds to strengthen rural development. This study aims to measure the effectiveness of village funds in alleviating poverty in rural areas (case study: Belitung Regency) using the *Moran's Index Analysis* and *Geographically Weighted Regression* (GWR) analysis methods. Based on the results of Moran's Index analysis on poverty levels in 42 villages in Belitung Regency, it can be seen that the distribution pattern of poverty in each village is random or unpredictable. At the same time, the effect on poverty shows that village funds in the field of government administration have not influenced poverty alleviation. Meanwhile, the fields of development implementation, community development, community empowerment, disaster management, and emergencies, and urgency affect poverty alleviation as indicated by a "negative" regression coefficient.

Keywords: Effectiveness; Poverty; Rural Development.

© 2023 Mimbar: Jurnal Sosial dan Pembangunan, Unisba Press. All rights reserved.

Introduction

OECD (2016), in its book entitled "A New Rural Development Paradigm for the 21st Century: A Toolkit for Developing Countries", states that three billion people in developing countries, including Indonesia, live in rural areas, and the majority of the population are residents of rural areas are poor. This happens because the population in rural areas generally has limitations and lacks opportunities to get productive employment. Moreover, the population's education level in rural areas is also low.

Thus, the productivity level of the rural population is generally low. In addition, the infrastructures in rural areas, in both quantity and quality, are still very limited and even tend to be poor European Commission (2008). Rural communities also have limited access to markets and public services, so rural residents have difficulty marketing the products they produce. When viewed from various development indicators, it can be seen that almost all development indicators show that the condition of rural residents is worse than urban residents. This is indicated by extreme poverty levels, high child mortality rates, limited access to electricity and poor-quality sanitation.

The development of rural areas aims to realize community independence and create independent and sustainable villages with social, economic, and ecological resilience and strengthen the linkage of rural-urban economic activities. President Joko Widodo, through *Nawacita*—precisely in its third point, stated that he would build Indonesia from the periphery Bappenas (2019). The paradigm of "Building from the Periphery" means building underdeveloped rural areas. The government believes that rural-based development is essential to strengthening the foundation of the country's economy to accelerate poverty alleviation and reduce disparities among regions. As a solution for social change, the village has a strategic position as a basis for change.

With the enactment of Law No. 23 of 2014 concerning Regional Government and Law No. 6 of 2014 concerning Villages, there has been a shift in development which was previously centralized, leading to decentralization, namely by giving the regions and villages the freedom to develop their territory. Rural development is rural-based development by prioritizing local wisdom in rural areas, which includes the demographic structure of the community, socio-cultural characteristics, physical/geographical characteristics, patterns of agricultural business activities, patterns of rural-urban economic linkages, village institutional sectors, and characteristics of residential areas Amanah and Fatchiya (2018).

The village laws have placed the village as the spearhead of development and improvement of community welfare Suryahadi et al, (2010). Based on the law, the definition of a village fund is a fund sourced from the state revenue and expenditure budget designated for traditional villages and villages transferred through the district/city's regional revenue and expenditure budget and used to finance government administration, development, and community empowerment.

However, from the research results of the Regional Autonomy Implementation Monitoring Committee (KPPOD), village funds disbursed by the government from 2015 until now have not shown a significant impact on the welfare of the community in the village. Although the Government claims through the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration that the community has felt the benefits of village funds. However, in fact, the positive impact has not been felt by all villages in Belitung Regency. There are still many developing villages because the use of village funds is not well targeted and does not focus on superior village products Situmeang (2021).

Based on the 2018 Village Development Index (IPD) data, it is known that from 42 villages in Belitung Regency, there are 37 (88.10 percent) developing villages and 5 (11.90 percent) independent villages. Meanwhile, based on the developing village index (IDM) data from the Ministry of Villages, Disadvantaged Regions, and Transmigration in Belitung Regency in 2020, it was recorded that there were no more villages that were categorized as very underdeveloped and left behind even though there were no villages that were included in the independent category. Based on the Building Village Index (IDM) data, it is known that of 42 villages, there are 19 (45.24 percent) in the developing village category, and 23 (54.76 percent) villages, which are in the developed village category. However, the use of village funds in recent years is felt to reduce the status of villages previously categorized as underdeveloped to developing villages.

Based on the explanation above, a big question arises related to this research: "to what extent is the effectiveness of village funds which the government has allocated in the past few years in efforts to alleviate rural poverty". From these questions, the formulation of the problem in this study is how effective is village funds in alleviating poverty in Belitung Regency? In this regard, this study aims to determine the effectiveness of village funds in alleviating rural poverty, especially in the Belitung Regency.

Research Method

Moran's Index Analysis

To determine the pattern of poverty distribution in a particular region, Moran's Index analysis can be used. This analysis is used to identify spatial autocorrelation of poverty in Belitung Regency. The tool used to identify spatial autocorrelation is the Spatial Autocorrelation (Moran's Index) tool in

ArcGIS 10.5 software. Moran's Index is capable of showing the level of relationship between one area and the surrounding areas. The values obtained from the Moran's Index calculation range from $-1 < I < 1$.

The Model of the Village Fund Effect on Poverty Alleviation

To see the effect of the Village Fund on poverty alleviation using Geographically Weighted Regression (GWR) analysis. The GWR model is a global regression model converted into a weighted regression model O'Sullivan (2003); Fotheringham et al (2002). In contrast to the global regression, which is generally applied at each observation location, GWR produces an estimator of local model parameters for each observation location. Parameter values will be calculated at each geographic location point so that each geographic location point has a different regression parameter value.

$$PM_{it} = \beta_0(u_i, v_i) + \beta_1(u_i, v_i)FIG_{it} + \beta_2(u_i, v_i)FID_{it} + \beta_3(u_i, v_i)FCD_{it} + \beta_4(u_i, v_i)FCE_{it} + \beta_5(u_i, v_i)FD_{it} + \beta_6(u_i, v_i)KPLN_{it} + \beta_7(u_i, v_i)JSMA_{it} + \beta_8(u_i, v_i)JRS_{it} + \beta_9(u_i, v_i)JPol_{it} + \beta_{10}(u_i, v_i)TKel_{it} + \beta_{11}(u_i, v_i)Peng_{it} + \beta_{12}(u_i, v_i)JRastra_{it} + \beta_{13}(u_i, v_i)JPKH_{it} + \varepsilon_{it}$$

Where:

- PM_{it} = The number of poor people in the i village, year t (person)
- β_0 = Constant
- $\beta_1 \dots \beta_{14}$ = The coefficient of each variable in the i village
- u_i = Longitude spatial coordinates for the observation of the i village
- v_i = Latitude spatial coordinates for the i village observation
- FIG_{it} = Village Fund for the Implementation of Village Government in the i village, year t (Rp)
- FID_{it} = Village Fund for Implementation of Village Development in the i village, year t (Rp)
- FCD_{it} = Village Fund for Village Community Development in the i village, year t (Rp)
- FCE_{it} = Village Fund for Village Community Empowerment in the i village, year t (Rp)
- FD_{it} = Village Fund for Disaster Management in the i village, year t (Rp)
- $KPLN_{it}$ = The number of PLN Electricity User Families in the i village, year t (KK)
- $JSMA_{it}$ = Distance to senior high school in the i village, year t
- JRS_{it} = Distance to Hospital in the i village, year t (Km)
- $JPol_{it}$ = Distance to the polyclinic in the i village, year t (Km)
- $TKel_{it}$ = The number of Shops/Grocery Stalls in the i village, year t (Unit)
- $Peng_{it}$ = The number of Lodging in the i village, year t (Unit)
- $JRastra_{it}$ = The number of Neighborhood (RT) Recipients of Prosperous Rice (Rastra) in the i village, year t (KK)
- $JPKH_{it}$ = The number of Neighborhood (RT) Recipients of the Family Hope Program (PKH) in the i village, year t
- ε_{it} = Error Component

Results & Discussion

Belitung Regency Administrative Boundary

Belitung Regency is an archipelago consisting of 98 large and small islands. With these conditions, the selection of the location of Belitung Regency is the most appropriate choice to design research on the implications of village funds on poverty alleviation and rural development performance. Belitung Regency has 5 sub-districts, 7 urban villages, and 42 villages. Data on the distribution of villages in sub-districts refers to BPS 2021 data (Table 1 and Figure 1).

Table 1
Distribution of villages and sub-districts in Belitung Regency

| Sub-District | Urban Village | Village |
|---------------|---------------|---------|
| Membalong | - | 12 |
| Tanjungpandan | 7 | 9 |
| Badau | - | 7 |
| Sijuk | - | 10 |
| Selat Nasik | - | 4 |

| | | |
|--------------|----------|-----------|
| Total | 7 | 42 |
|--------------|----------|-----------|

Source : Belitung Regency Regional Statistics. 2021



Figure 1. Distribution of Villages and Sub-Districts of Belitung Regency

Belitung Poverty Overview of Belitung Regency

In 2017-2018, the poverty rate in Belitung Regency decreased by 0.21 percent. Based on 2017 data, the poverty rate reached 7.77 percent, then in 2018, it decreased to 7.56 percent. This is undoubtedly a measure of the success of the government's target to constantly suppress the poverty rate in the regions through direct cash and non-cash assistance programs. The poverty rate in Belitung Regency this year has quantitatively decreased, as seen by the number of poor people, which decreased by 0.78 percent, where in 2017 it was 14,110 people to 14,000 people in 2018. The Poverty Depth Index (P1) and the Poverty Severity Index (P1) P2) tend to decrease. P1 decreased from 1.14 in 2017 to 0.59 in 2018, and P2 decreased from 0.23 in 2017 to 0.08 in 2018. The poverty Depth Index (P1) measures the average expenditure gap of each poor population towards the poverty line. The declining P1 index illustrates that the average expenditure of the poor is moving closer to the poverty line. In Belitung, the poverty line in 2018 was IDR 704,855 per capita per month and was the highest in all districts/cities in the Province of the Bangka Belitung Islands. At the same time, the Poverty Severity Index (P2) provides an overview of expenditure distribution among the poor. The declining P2 index illustrates the lower expenditure inequality among the poor.

Various factors cause the decrease in poverty rates. Some of those factors are because more and more investors are entering Belitung Regency, along with the progress of the Belitung Regency in the tourism sector. Therefore, it absorbs workers, and some employees work and stay there. This poverty reduction is also due to village funds used to build village infrastructure so that the community's economic mobility becomes more accessible. Most of the people of the Belitung Regency work as farmers and fishers who rely on their livelihoods from agricultural and plantation commodities, so decent access to traffic roads is needed. In addition, this decline was also due to the empowerment of economic actors, especially SMEs, through forming BUMDes to increase people's income. The formation of BUMDes increased people's economic income, overcame poverty and unemployment, and prevented urbanization. Besides also increasing the human development index (HDI) through education and health. The poverty gap is still visible between rural and urban areas. Data published by BPS (2018) shows that the poverty rate in Belitung Regency is still higher in rural areas compared to urban areas (Table 2).

Table 2
Belitung Regency Poverty Development, 2002 – 2018

| Year | Total Population (person) | Poor People Population (person) | Poor Population Percentage (%) | P1 | P2 | Poverty Line (Rp/Cap/Mo) |
|------|---------------------------|---------------------------------|--------------------------------|----|----|--------------------------|
| 2002 | 129,774 | 29,800 | 22.96 | - | - | 122,602 |
| 2003 | 132,893 | 17,400 | 13.09 | - | - | 150,533 |
| 2004 | 136,074 | 15,900 | 11.68 | - | - | 155,463 |
| 2005 | 139,322 | 14,100 | 10.12 | - | - | 192,054 |
| 2006 | 142,586 | 17,010 | 11.93 | - | - | 232,804 |

| 2007 | 145,910 | 14,020 | 9.61 | - | - | 269,924 |
|------|---------------------------|---------------------------------|--------------------------------|------|------|--------------------------|
| 2008 | 149,297 | 13,330 | 8.93 | - | - | 293,222 |
| 2009 | 152,747 | 12,440 | 8.14 | - | - | 334,165 |
| 2010 | 156,764 | 15,900 | 10.14 | 1.25 | 0.25 | 367,883 |
| Year | Total Population (person) | Poor People Population (person) | Poor Population Percentage (%) | P1 | P2 | Poverty Line (Rp/Cap/Mo) |
| 2011 | 160,385 | 11,290 | 7.04 | 0.81 | 0.13 | 416,041 |
| 2012 | 163,977 | 12,090 | 7.37 | 0.74 | 0.11 | 470,503 |
| 2013 | 167,602 | 14,300 | 8.53 | 0.66 | 0.10 | 523,846 |
| 2014 | 171,271 | 12,700 | 7.42 | 0.64 | 0.10 | 563,475 |
| 2015 | 175,048 | 14,580 | 8.33 | 1.10 | 0.23 | 580,050 |
| 2016 | 178,719 | 13,940 | 7.80 | 0.79 | 0.15 | 610,072 |
| 2017 | 182,418 | 14,100 | 7.77 | 1.14 | 0.23 | 652,989 |
| 2018 | 186,155 | 14,000 | 7.56 | 0.59 | 0.08 | 704,855 |

Source: Belitung Regency in Figures 2002-2018

Moran Index Analysis

Based on the results of Moran's Index analysis on poverty levels in 42 villages in Belitung Regency, it can be seen that the distribution pattern of poverty in each village is random or unpredictable. This is indicated by the negative value of spatial autocorrelation. The Moran's Index (I) value is negative (-0.013404), as well as the Expected Index value (-0.024390). The negative value of Moran's Index for island areas such as Belitung Regency is likely due to the scattered location of the villages, which affects their spatial continuity and connectivity, including their relationship with poverty. Thus, each village does not have a strong spatial influence on the poverty level of its neighboring villages. Villages with high poverty levels will not affect their neighboring villages, and vice versa, villages with low poverty levels will not affect their neighboring villages (Figure 4).

| | |
|-----------------|-----------|
| Moran's Index: | -0.013403 |
| Expected Index: | -0.024390 |
| Variance: | 0.001734 |
| z-score: | 0.263882 |
| p-value: | 0.791871 |

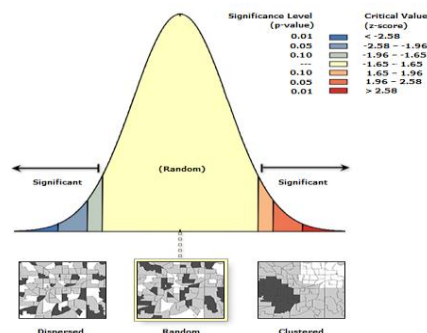


Figure 4. Moran Index Analysis

The Effect of Village Funds on Poverty Alleviation

The effect of using village funds and other variables on poverty was analyzed using GWR. Through the GWR analysis, information on the effect of each independent variable specific to each observed village can be obtained. After obtaining the coefficient figures, a significance test was conducted with a t-test on each independent variable with a significance level of 5 percent to 10 percent. The GWR model of the effect of village funds on poverty in the Belitung Regency produces 42 regression equations according to the number of villages in this study. The GWR estimation results show that the average coefficient of determination (R²) is 88.09 percent, which means that factors can explain 88.09 percent of poverty in Belitung Regency in the fields of village government administration, village development implementation, village community development, empowerment of rural communities, disaster management, as well as other variables that have been included in the model. Meanwhile, the remaining 11.01 percent is explained by other factors that are not included in the model.

Modeling with GWR analysis will produce a local regression equation, so the value of the coefficient of determination is also different for each village. The highest coefficient of determination (R²) is dark blue, which ranges from 89.41-90.40 percent, found in 3 villages. At the same time, the lowest coefficient of determination is cream, with a value ranging from 86.15-86.98 percent, which is found in 8 villages (Figure 5).

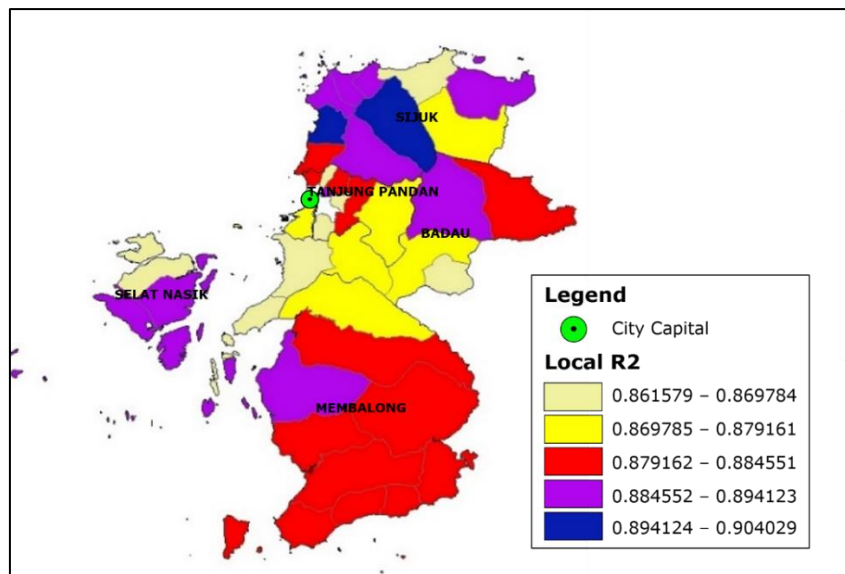


Figure 5. The Effect of Village Funds on Poverty

Table 3
Local R2 and the coefficient of influence of village funds on poverty

| No | Village | Local R2 | Coef FIG | Coef FDI | Coef FCD | Coef FCE | Coef DM |
|----|--------------------|----------|----------|----------|----------|----------|---------|
| 1 | Pulau Seliu | 0,8825 | 0,2120 | -0,1383 | -0,3262 | -0,1691 | -0,0655 |
| 2 | Membalong | 0,8835 | 0,2141 | -0,1394 | -0,3299 | -0,1685 | -0,0675 |
| 3 | Mentigi | 0,8820 | 0,2085 | -0,1400 | -0,3262 | -0,1669 | -0,0669 |
| 4 | Tanjung Rusa | 0,8833 | 0,1917 | -0,1618 | -0,3428 | -0,1464 | -0,0868 |
| 5 | Kembiri | 0,8831 | 0,2113 | -0,1408 | -0,3299 | -0,1668 | -0,0686 |
| 6 | Perpat | 0,8834 | 0,2168 | -0,1370 | -0,3278 | -0,1712 | -0,0646 |
| 7 | Lassar | 0,8860 | 0,2107 | -0,1500 | -0,3440 | -0,1584 | -0,0801 |
| 8 | Simpang Rusa | 0,8845 | 0,2097 | -0,1463 | -0,3376 | -0,1616 | -0,0754 |
| 9 | Bantan | 0,8792 | 0,1891 | -0,1507 | -0,3247 | -0,1540 | -0,0734 |
| 10 | Pulau Sumedang | 0,8737 | 0,1897 | -0,1334 | -0,2936 | -0,1641 | -0,0500 |
| 11 | Gunung Riting | 0,8846 | 0,2181 | -0,1392 | -0,3325 | -0,1694 | -0,0678 |
| 12 | Padang Kandis | 0,8813 | 0,1992 | -0,1467 | -0,3287 | -0,1595 | -0,0727 |
| 13 | Buluh Tumbang | 0,8781 | 0,1966 | -0,1394 | -0,3137 | -0,1641 | -0,0622 |
| 14 | Perawas | 0,8801 | 0,2076 | -0,1353 | -0,3169 | -0,1706 | -0,0602 |
| 15 | Dukong | 0,8654 | 0,0409 | -0,0350 | -0,0759 | -0,1115 | 0,0455 |
| 16 | Juru Seberang | 0,8785 | 0,1847 | -0,1537 | -0,3243 | -0,1508 | -0,0746 |
| 17 | Air Saga | 0,8805 | 0,2135 | -0,1313 | -0,3142 | -0,1755 | -0,0557 |
| 18 | Air Merbau | 0,8827 | 0,1960 | -0,1549 | -0,3377 | -0,1524 | -0,0811 |
| 19 | Aik Ketekok | 0,8875 | 0,2212 | -0,1450 | -0,3448 | -0,1642 | -0,0761 |
| 20 | Aik Rayak | 0,8654 | 0,1663 | -0,1308 | -0,2511 | -0,1432 | -0,0288 |
| 21 | Aik Pelempang Jaya | 0,8673 | 0,2435 | -0,0680 | -0,1553 | -0,1618 | 0,0550 |
| 22 | Pegantungan | 0,8658 | 0,0395 | -0,0213 | -0,0714 | -0,1243 | 0,0576 |
| 23 | Sungai Samak | 0,8698 | -0,0185 | -0,0032 | -0,0538 | -0,1237 | 0,0561 |
| 24 | Cerucuk | 0,8780 | -0,0433 | 0,0143 | -0,0463 | -0,1381 | 0,0646 |
| 25 | Badau | 0,8732 | 0,2451 | -0,0907 | -0,2232 | -0,1937 | 0,0151 |
| 26 | Kacang Botor | 0,8859 | 0,2044 | -0,1563 | -0,3472 | -0,1523 | -0,0855 |
| 27 | Air Batu Buding | 0,8819 | 0,2059 | -0,1420 | -0,3274 | -0,1647 | -0,0689 |
| 28 | Ibul | 0,8664 | 0,0638 | -0,0239 | -0,0913 | -0,1419 | 0,0620 |
| 29 | Batu Itam | 0,8839 | 0,0402 | -0,0639 | -0,2059 | -0,2191 | 0,0188 |
| 30 | Terong | 0,9019 | -0,0817 | -0,0272 | -0,1580 | -0,2085 | 0,0212 |
| 31 | Air Seru | 0,8860 | -0,0551 | 0,0175 | -0,0559 | -0,1528 | 0,0657 |
| 32 | Air Selumar | 0,9040 | -0,0694 | 0,0140 | -0,0745 | -0,1745 | 0,0602 |
| 33 | Tanjung Binga | 0,8941 | 0,3573 | -0,0957 | -0,2388 | -0,2461 | 0,0428 |
| 34 | Keciput | 0,8877 | 0,2131 | -0,1530 | -0,3502 | -0,1560 | -0,0842 |
| 35 | Sujuk | 0,8697 | 0,1811 | -0,1307 | -0,2747 | -0,1578 | -0,0399 |
| 36 | Sungai Padang | 0,8900 | -0,0639 | -0,0545 | -0,2049 | -0,2223 | 0,0073 |
| 37 | Tanjong Tinggi | 0,8872 | 0,2066 | -0,1584 | -0,3518 | -0,1507 | -0,0884 |
| 38 | Pelepak Pute | 0,8772 | 0,2076 | -0,1270 | -0,2999 | -0,1764 | -0,0476 |
| 39 | Suak Gual | 0,8877 | 0,2188 | -0,1475 | -0,3468 | -0,1615 | -0,0788 |
| 40 | Petaling | 0,8872 | 0,2229 | -0,1427 | -0,3424 | -0,1666 | -0,0734 |

| | | | | | | | |
|----|--------------|--------|--------|---------|---------|---------|---------|
| 41 | Selat Nasik | 0,8616 | 0,1437 | -0,1137 | -0,1943 | -0,1229 | -0,0016 |
| 42 | Pulau Gersik | 0,8860 | 0,2199 | -0,1417 | -0,3383 | -0,1673 | -0,0715 |

Source : Results of data processing, 2022

The Effect of Village Funds in the Village Government Administration on Poverty

The results of the GWR show that the use of village funds for the administration of village government has not effectively reduced poverty. This is indicated by a positive regression coefficient, which means that the greater the village fund in the field of government administration, the poverty will increase. This is because the impact of using village funds in this field cannot be felt directly by the poor. This is in line with the research by Hasibuan et al. (2019) which stated that village funds in the field of governance administration have not had a positive impact on rural poverty. The use of village funds for governance administration is generally focused on administrative activities. Village programs funded by the governance administration field include providing office services, defining and confirming village boundaries, preparing village spatial information, managing village data and information, building village office infrastructure, village cooperation with private and other villages, as well as organizing village consultations for planning and evaluation purposes. However, in some villages, it showed a negative effect, which means that the more village funds in the field of government administration, the lower the poverty level of the village. This happened in Air Selumar, Sungai Padang, Air Seru, Cerucuk and Sungai Samak villages (Figure 6).

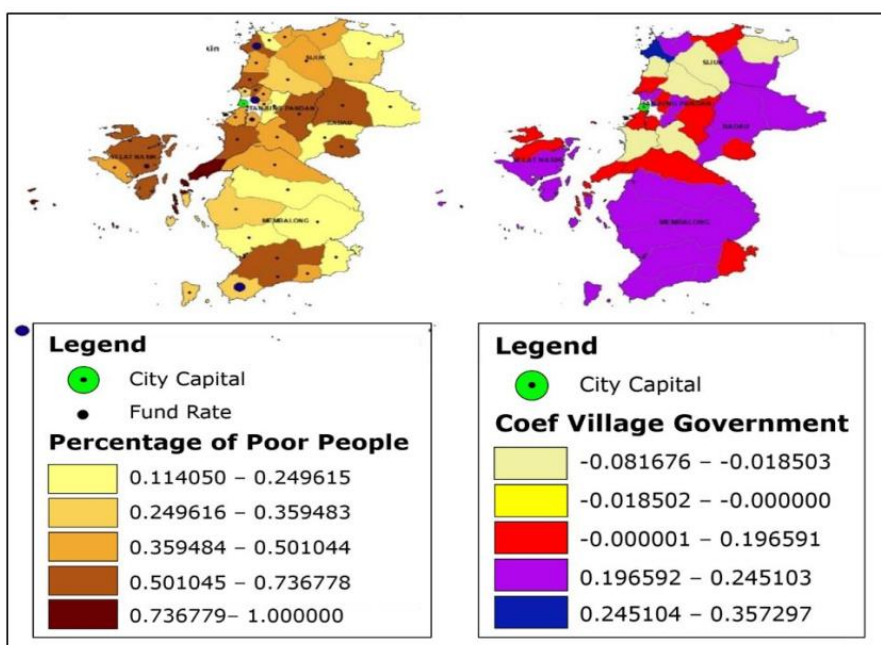


Figure 6. The Effect of Village Government Administration Funds on Poverty

The Effect of Village Funds in the Implementation of Village Development on Poverty

The results of the GWR modeling analysis show that there is a negative influence between the field of implementing village development on poverty, meaning that the greater the village fund in the field of village development, the lower the level of rural poverty in Belitung Regency. The minimum coefficient is 0.003 in Sungai Samak Village, and the maximum coefficient value is 0.161 in Tanjung Rusa Village. This shows that in a ceteris paribus condition, if there is an increase in village funds for the implementation of village development by one unit, there will be a decrease in poverty by 0.003-0.161. The results of this analysis are in line with the theory put forward by Nurkse (1953) stating that a poor country is poor because it is poor, meaning that poverty is caused by the lack of resources. Therefore, in order to eradicate poverty, development must be carried out through increased development funds. Meanwhile, regions with a positive coefficient indicate that village funds in this sector have not effectively reduced poverty, namely in Air Selumar, Cerucuk, and Air Seru villages. This means that the implementation of development funded by village funds in this area has not yet been felt in terms of poverty alleviation. This is due to the fact that the village development fund is used for infrastructure development, which is a

long-term investment and its impact cannot be directly utilized by the community (Artino et al. (2019), (Figure 7).

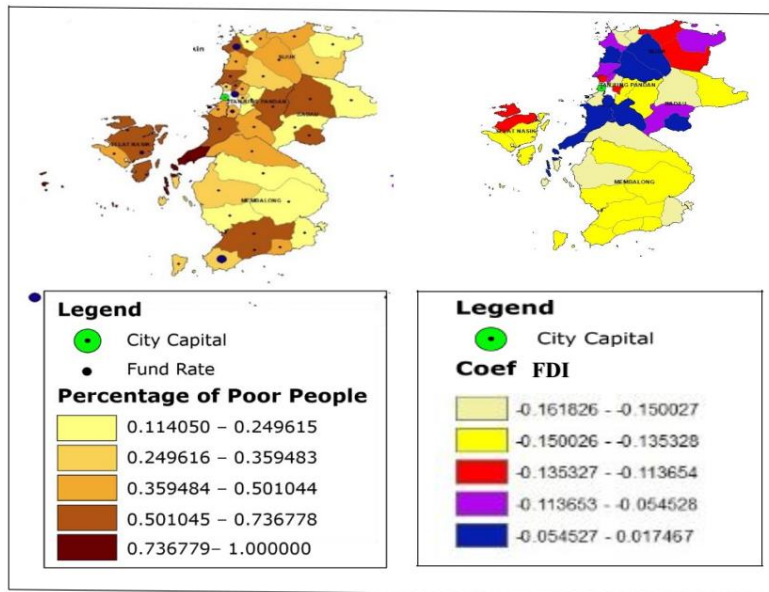


Figure 7. The Effect of Village Funds in the Field of Development Implementation on Poverty

The Effect of Village Funds in the Village Community Development on Poverty

The variable of community development is a long-term influencing variable. The analysis of community development variables will determine policies or strategies that will be made for the future, including policies related to village funds. Community development can be carried out in various ways, such as through training, meetings, competitions, celebrations, and others. The significant test results at a significant level of 0.05 showed that village funds in the community development field affected poverty at 28 village. In contrast, with a significant level of 0.1, it was found that village funds in the community development field affected poverty in one village, Aik Rayak village. The regression coefficient of village funds in the community development field is negative, with a minimum value of 0.046 in Cerucuk village and a maximum value of 0.352 in Tanjong village. Several villages showed that the relationship between funds for community development and poverty was negative but not significant. This is possible because the allocation of funds in the field of community development in villages is relatively small compared to the number of poor people. Villages that allocate relatively large funds to this field are able to reduce poverty (Figure 8).

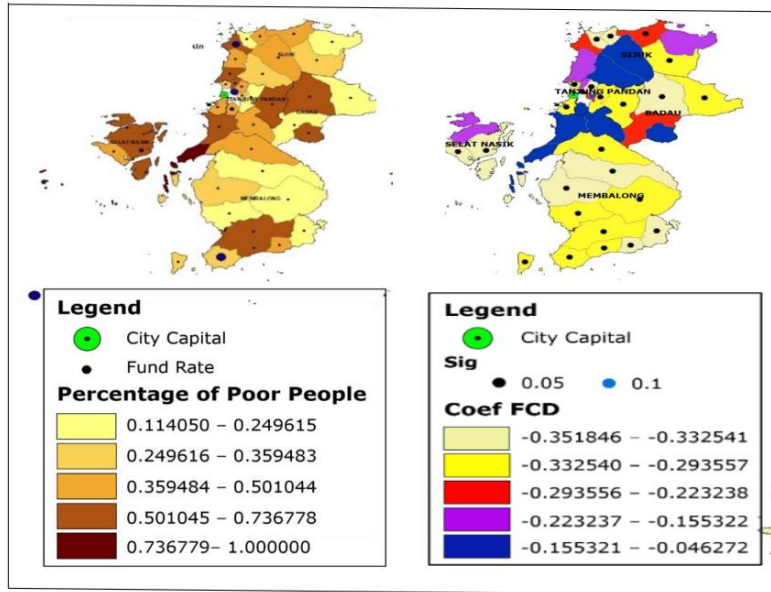


Figure 8. The Influence of the Village Fund for Community Development on Poverty

The Effect of Village Community Empowerment on Poverty

Village community empowerment is one of the methods for developing human resources in rural areas by exploring personal abilities, creativity, competency, and thinking skills as well as encouraging better actions over time. The use of village funds for community development spending is prioritized for the development of local economic potential to enhance the capacity of rural communities in entrepreneurship development, income improvement, and expansion of the rural economy. One of the poverty reduction strategies is to increase the capacity of the poor in business activities. The program is expected to help increase individual and group income, so that certain individuals or groups can escape poverty status. The results of the GWR analysis show a negative influence on the village community empowerment on poverty in the Belitung Regency. The regression coefficient ranges from 0.246 to 0.111. In a ceteris paribus condition, if one unit is added to the community empowerment fund, it will reduce poverty in Belitung Regency by 0.111-0.246. The highest coefficient is in Tanjung Binga village, and the lowest coefficient is in Dukong village (Figure 9).

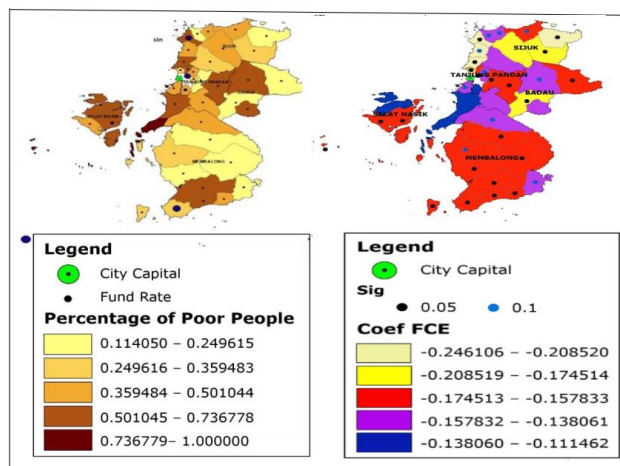


Figure 9. The Effect of Village Funds for Community Empowerment on Poverty

The Influence of Disaster Management, Emergencies and Urgency on Poverty

With the Covid-19 pandemic that entered Indonesia at the end of 2019 as a national issue that must be resolved starting from the village, the government has divided village funds into five fields. The field of disaster management, emergency and urgency is the field of using village funds focused on disaster management programs, both endemic and other natural disasters. In general, village funds for disaster management, emergencies and urgency have a negative impact on

poverty. This means that the higher the village fund for disaster management, emergencies, and urgency, the lower the poverty rate. The smallest regression coefficient is 0.001, and the highest is 0.088. Some villages also show a positive relationship between village funds for disaster management, emergencies and village urgency and poverty levels (Figure 10).

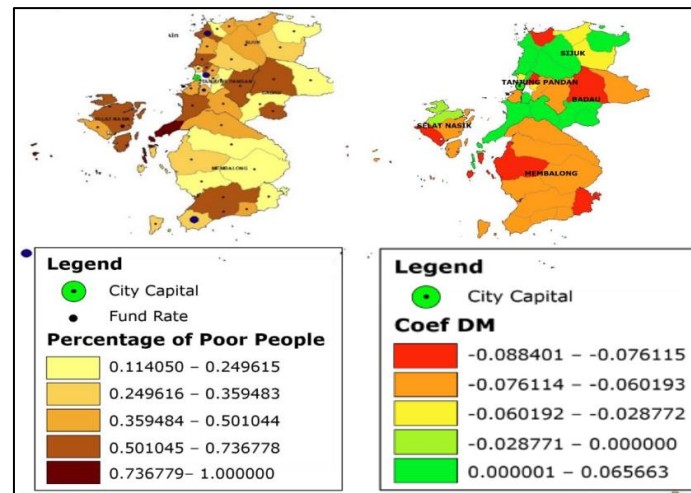


Figure 10. *The Influence of the Village Fund in Disaster Management, Emergencies and Urgency on Poverty*

Conclusions

Based on the analysis of the Moran index, it is known that poverty in Belitung Regency shows a random distribution pattern. This indicates that there is no clustering of poverty levels in adjacent or neighbouring areas. In other words, there is no poverty link among villages. To see the effect of using village funds on poverty, using GWR where the analysis results show that village funds in the field of government administration have not had an effect on poverty, which is indicated by a "positive" regression coefficient. Meanwhile, the field of development implementation, community development, community empowerment, disaster management, emergencies, and urgency affect poverty alleviation as indicated by the regression coefficient value of "negative".

The use of village funds should be more targeted and focused on superior village products and the development of the community's local economy so that the benefits are more visible for improving community welfare. Furthermore, the use must pay more attention to programs that are needed by the community, and an in-depth assessment should be conducted so that there is no program overlap. Further research needs to be done, especially to see the effect of the COVID-19 pandemic on the effectiveness of village fund use exclusively.

In order to improve the effectiveness of the use of village funds, poverty alleviation, and development performance, efforts are focused on prioritizing certain villages: Pulau Gersik, Pegantungan, Dukong, Buluh Tumbang, and Batu Itam through increasing village expenditure by increasing village income, optimizing the use of village funds for community development and empowerment, improving education and health infrastructure, and improving access to Pulau Gersik.

Based on research that has been conducted, the existence of village funds is considered to have provided positive benefits for reducing poverty and improving village development performance, so it is expected to address disparities. However, its optimization still needs to be improved, because its significance impact cannot be fully measured within several years of implementing village funds, especially with the Covid-19 pandemic that has hit Indonesia since 2019, which directly or indirectly affects the economy of rural communities. Therefore, the government needs to allocate some village funds for disaster, emergency, and urgent relief.

References

- Azlina, N., Hasan, A., Desmiyawati., Muda, I. (2017). The effectiveness of village fund management (case study at villages in coastal areas in Riau). *International Journal of Economic Research*, 14 (12): 325–336. <https://www.researchgate.net/publication/320335560>
- Artino A, Juanda B, Mulatsih S. (2019). Keterkaitan Dana Desa Terhadap Kemiskinan di Kabupaten Lombok Utara. *Tataloka*. 21(3). 381-389. <https://doi.org/10.14710/tataloka.21.3.381-389>.

- Buragohain, T., Landge, R. S. (2014). Measuring Rural Development: A Qualitative Approach. *Journal of Land and Rural Studies*, 2 (1): pp. 21–42. doi: 10.1177/2321024913515110
- Briones, R., Felipe, J. (2013). Agriculture and structural transformation in developing Asia: Review and outlook. *ADB Econ. Work. Pap. Ser.*, 363 (363): pp. 1–39. doi: 10.2139/ssrn.2321525.
- Chen, Z., Zhang, S., Geng, W., Ding, Y., Jiang, X. (2022). Use Geographically Weighted Regression (GWR) to Reveal Spatially Varying Relationships between Cd Accumulation and Soil Properties at Field Scale. *Land*, 11 (5). doi: 10.3390/land11050635.
- Fotheringham, A. S. Brunsdon, C. and Charlton, M. (2002). Geographically Weighted Regression: The Analysis of Spatially Varying Relationships. *Geographical Analysis* 35 (3): 272–75. <https://doi.org/10.1353/geo.2003.0008>.
- Geniaux, G., Martinetti, D. (2018). A new method for dealing simultaneously with spatial autocorrelation and spatial heterogeneity in regression models. *Regional Urban Economy*, 72: pp. 74–85. doi: 10.1016/j.regsciurbeco.2017.04.001.
- Haining, R. P., Kerry, R., Oliver, M. A. (2010). *Geography, Spatial Data Analysis, and Geostatistics: An Overview*. *Geographical Analysis*, 42: pp. 7–31.
- Harmadi, S. H. B., Suchaini, U., Adji, A. (2020). Village Development: Spatial Effect vs The Performance of the Village Government?. [Online]. <http://tnp2k.go.id/download/93404WP52ENGFinal2606.pdf>.
- Hasibuan, S. N. Juanda, B. and Mulatsih, S. (2019). Analisis Sebaran Dan Faktor Penyebab Kemiskinan Di Kabupaten Bandung Barat. *Jurnal Agribisnis Indonesia* 7 (2): 79–91. <https://doi.org/10.29244/jai.2019.7.2.79-91>.
- Johansson, B. Karlsson, C. and Stoughb, R. (2001). *Theories of Endogenous Regional Growth*. no. 1998.
- Kadir, K., Rizki, A. R. (2016). Economic growth and poverty reduction : the role of the agricultural sector in rural Indonesia Economic Growth and Poverty Reduction : The Role of The Agricultural Sector in Rural Indonesia. *Seventh Int. Conf. Agric. Stat.* doi: 10.1481/icasVII.2016.a03.
- Komite Pemantauan Pelaksanaan Otonomi Daerah (KPPOD). (2018). *Dana Desa Belum Berdampak. Suara Pembaruan*.
- Lowe, P. Murdoch, J. and Ward, N. (1997). Networks in rural development: beyond exogenous and endogenous models. <https://agris.fao.org/agris-search/search.do?recordID=ES9701386>
- Lu, B., Charlton, M., Harris, P., Fotheringham, A. S. (2014). Geographically weighted regression with a non-Euclidean distance metric: A case study using hedonic house price data. *Int. J. Geogr. Inf.*, 28 (4), pp. 660–681. doi: 10.1080/13658816.2013.865739
- Lee J, Wong DWS. (2001). *Statistical Analysis with Arcview GIS*. New York: John Wiley and Sons.
- Meutia, I. and Liliana, L. (2018). The Management of Village Fund Finances. *Jurnal Dinamika Akuntans* voli 9 no (1): 63–81. <https://doi.org/10.15294/jda.v9i1.12009>.
- Nakaya, T. (2008). Geographically Weighted Regression. *Encyclopedia of Geography*. <https://doi.org/10.4135/9781412939591.n478>.
- Nasution, Z. (2008). Farm Development and Rural Poverty Comparison among Villages in Kulon Progo Regency of Yogyakarta Special Province of Indonesia. *Economic Policy*, no. 2116: 0–33.
- Nurkse R. 1953. *Problems of Capital Formation in Underdeveloped Countries*. New York: Oxford University Press.
- O’Sullivan, D.(2003). Geographically Weighted Regression: The Analysis of Spatially Varying Relationships (Review). *Geographical Analysis* 35 (3): 272–75. <https://doi.org/10.1353/geo.2003.0008>.
- OECD. 2016. *A New Rural Development Paradigm for the 21st Century: A Toolkit For Developing Countries*. *Development Centre Studies*. <http://dx.doi.org/10.1787/9789264252271-en>.
- Permatasari, P., Ilman, A. S., Tilt, C. A., Lestari, D., Islam, S., Tenrini, R. H., Rahman, A. B., Samosir, A. P., Wardhana, I. W. (2021). The village fund program in Indonesia: Measuring the effectiveness and alignment to sustainable development goals. *Sustainability*, 13 (21). doi: 10.3390/su132112294.
- Ploeg, J. D. V. D. Renting, H. Brunori, G. Knickel, K. Mannion, K. Marsden, T. Roest, K. D. X Sevilla-Guzmán, E. and Ventura, F. (2000). Rural Development: From Practices and Policies towards Theory. *Sociologia Ruralis*, Vol 40 No (4): 391–408. <https://doi.org/10.1111/1467-9523.00156>.
- PRIYARSONO, D. S. (2017). Membangun Dari Pinggiran: Tinjauan Dari Perspektif Ilmu Ekonomi Regional. *Journal of Regional and Rural Development Planning* Vol 1, No (1): 42. <https://doi.org/10.29244/jp2wd.2017.1.1.42-52>.
- Sadono, S. (1985). *Ekonomi Pembangunan: Proses, Masalah, dan Dasar Kebijakan*. Lembaga Penerbit Fakultas Ekonomi Universitas Indonesia dan Bina Grafika. Jakarta.

- Simon, K. (1973). Modern Economic Growth: Findings and Reflections, *The American Economic Review*, Vol. 63, No.3, Juni 1973, 247-258.
- Situmeang, M. (2021). Analysis of Village Development Based on Village Funds (Case Study Of Sei Rotan Village, Percut Sei Tuan District). 15 (2): 1-23. <https://doi.org/10.24114/jg.v>.
- Suryahadi, A. Yumna, A. Raya, U. R and Marbun, D. (2010). Review of Government's Poverty Reduction Strategies, Policies, and Programs in Indonesia. Research Report, SMERU Research Institute, no. October: 1-43. <http://www.smeru.or.id/report/research/povertyreductionreview/povertyreductionreview.pdf>.
- Siciliano, G. (2020). Urbanization strategies, rural development and land use changes in China: A multiple-level integrated assessment. *Land use policy*, 29 (1): pp. 165-178. doi: 10.1016/j.landusepol.2011.06.003.
- Shackle, G. L. S. (2009). The Stages of Economic Growth. *Political Studies*, 10 (1): pp. 65-67. doi: 10.1111/j.1467-9248.1962.tb00978.x.
- Saefuddin, A., Setiabudi, N. A., Achسانی, N. A. (2011). Comparing ordinary linear and geographically weighted regression: With application to Indonesian poverty data. *European Journal of Scientific Research*, 57 (2): pp. 275-285. <http://www.eurojournals.com/ejsr.htm>.
- Sulekan, A., Jamaludin, S. S. S. (2020). Review on geographically weighted regression (GWR) approach in spatial Analysis. *Malaysian Journal of Fundamental and Applied Sciences*, 16 (2): pp. 173-177. doi: 10.11113/MJ fans.v16n2.1387.
- Saragi, N. B., Muluk, M. R. K., Sentanu, I. G. E. P. S. (2021). Indonesia's Village Fund Program: Does It Contribute to Poverty Reduction?. *J. Bina Praja*, 13 (1): pp. 65-80. doi: 10.21787/jpb.13.2021.65-80
- Tarani., Sirajuddin, T. (2020). Rural development strategies in Indonesia: Managing villages to achieve sustainable development. *IOP Conf. Ser. Earth Environ*, 447 (1). doi: 10.1088/1755-1315/447/1/012066.
- Todaro, M. P. and Smith, S.P. (2009). *Pembangunan Ekonomi*, edisi kesepuluh, Penerbit Erlangga : Jakarta.
- Windayani, I. A. R. S., Marhaeni, A. A. I. N. (2019). the Effect of Tourism Village Development on Community Empowerment and Welfare in Tourism Village of Panglipuran, Bangli District of Indonesia. *Russ. J. Agric. Socio-Economic*, 94 (10): pp. 257-265. doi: 10.18551/rjoas.2019-10.33.