

# VILLAGE FUND AND RURAL PUBLIC WELFARE IMPROVEMENT: QUANTITATIVE ANALYSIS OF RURAL RESIDENTS' CONSUMPTION EXPENDITURE BEFORE AND AFTER THE PROGRAM

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## ABSTRACT

The main finding of this study indicates that the Village Fund program has caused an increase in rural residents' per capita expenditure. This study also finds that the magnitude of this increase in per capita expenditure varies by regional characteristics. *Firstly*, per capita expenditure in areas having good infrastructure is higher compared to per capita expenditure in areas having poorer infrastructure. *Secondly*, the same pattern is also found in areas with a low poverty rate compared to areas with a high poverty rate. Per capita expenditure in areas with a low poverty rate is higher than per capita expenditure in areas with a high poverty rate.

**Keywords:** *village fund, per capita consumption, before and after, Susenas*



## BACKGROUND

The main objective of the Village Fund program is to improve the welfare of residents living in rural areas. It is designed to accelerate rural area development through infrastructure development and empowerment (Ministry of Finance 2020). Village funds were first provided in 2015 to all villages in Indonesia. In other words, all villages have been involved since the beginning of implementation of the Village Fund. This affects the design of the impact analysis conducted in this study, namely due to the absence of comparative village groups or villages that did not receive any Village Fund disbursement. In this study, therefore, the analysis of common impacts of the Village Fund on rural public welfare was conducted by examining conditions “before and after” the program.

In this “before and after” impact analysis, rural residents’ per capita expenditure before the program (2014) is compared to residents’ per capita expenditure after three years of the program (2017). Per capita expenditure is one of the main indicators of an increase-decrease in the level of public welfare. Various basic infrastructure developments and rural public empowerment activities are expected to improve rural public welfare.

The main finding of this study indicates that the Village Fund program has caused an increase in rural resident’s per capita expenditure. This study also finds that the magnitude of this increase in per capita expenditure varies by regional characteristics. *Firstly*, per capital expenditure in areas having good infrastructure is higher compared to per capita expenditure in areas having poorer infrastructure. *Secondly*, the same pattern is also found in areas with a low poverty rate compared to areas with a high poverty rate. Per capita expenditure in areas with a low poverty rate is higher than per capita expenditure in areas with a high poverty rate. The results of this quantitative review are presented in three sections: (1) Data and Method; (2) Findings and Discussion; and (3) Conclusions and Recommendations.

## DATA AND METHOD

The three main data sources used in this analysis are: (i) data on the amount of village funds by regency in 2015-17; (ii) data on National Socioeconomic Survey (*Susenas*) in 2014 and 2017; and (iii) publication data. The first data on village funds was sourced from the Directorate General of Fiscal Balance (*Direktorat Jenderal Perimbangan Keuangan: DJPK*) of the Ministry of Finance. The data states that 432 regencies/cities received village funds in the period from 2015 to 2017. The second data source is *Susenas* which contains information on public welfare conditions such as: (i) household consumption expenditure; (ii) demographic information such as education, health, and occupation; and (iii) housing indicators. The third source in this analysis is aggregate data at the regency/city level published by Statistics Indonesia, such as data on the Geographic Difficulty Index (*Indeks Kesulitan Geografis: IKG*), Human Development Index (*Indeks Pembangunan Manusia: IPM*), and the poverty rate.

The analysis of Village Fund influence uses a panel regression approach. The used panel data is data at the regency/city level in (“t”) 2014 and 2017. The relationship between response variable (residents’ per capita expenditure) and treatment variable (residents’ per capita village fund) is indicated by equation (1).

$$\text{Expenditure\_per\_capita}_{it} = \alpha + \beta \text{Village\_Fund\_per\_capita}_{it} + \delta X_{it} + Y \text{ year} + \epsilon_{it} \dots (1)$$

$Expenditure\_per\_capita_{it}$  is the rupiah average of per capital real consumption expenditure (food and non-food) of rural residents in “i” regency/city in “t”.  $Village\_Fund\_per\_capita_{it}$  is the rupiah accumulated average of village fund in “i” regency/city in “t”. In 2014, the value of per capita village funds for every regency is “0” (nil), while for 2017, the value of per capita village funds is the accumulation of village funds from 2015 to 2017. In this analysis, village funds are assumed to be funds given to all rural residents in every regency/city in the form of per capita village funds, which will contribute to an increase in their consumption—through a transmission mechanism of productivity improvement as an impact of infrastructure development in villages. This is later aggregated at the regency/city level.

Subsequently, the  $X_{it}$  variable is a vector of other factors that have an influence on per capita expenditure such as: (i) residents’ demographic characteristics (average age of household head, occupational sector, and education); (ii) average social assistance program received by regions (Rice for Poor Families, Family Hope Program, Cash Transfer for Poor Students, National Health Insurance, and Regional Health Insurance);<sup>1</sup> and (iii) regency/city-specific variables such as *IPM* and *IKG*. Details of the variables are presented in **Attachment 1**.

Lastly, *year*, is a dummy variable with a score of “0” for 2014 and “1” for 2017. This variable captures the general dynamics experienced by all regencies/cities between both year points, for example, dynamics caused by economic fluctuations or change/s in the central government’s policy. In equation (1) above, parameter  $\beta$  is the main concern in the evaluation, indicating the value of the Village Fund’s contribution to the increase in per capita expenditure.

The main challenge in evaluating the impacts of a block grant program such as the Village Fund lies in the various types of activities undertaken and outcomes of the use of such funds. As the types of activities vary, there will be different outcomes and impacts. For example, there are villages that prioritise the use of village funds to construct basic infrastructure such as a village main road, agricultural pathways, roads to schools, waterways, agricultural irrigation channels, or sanitation facilities. On the other hand, there are villages that use village funds to develop more advanced facilities, such as village markets, village business units, or early childhood education (*Pendidikan Anak Usia Dini: PAUD*) buildings. There are also villages that allocate a relatively significant proportion of village funds for public empowerment activities. Each of those activities will make varying impacts both on the achievement period (short- or long-term) and outcomes (increase in village residents’ income, poverty eradication, or improved access to education and health).

Since the Village Fund program has only been in operation for three years, in this study, the analysis was focused on identifying short-term impacts (immediate outcomes). The impact of the Village Fund on the increase in rural residents’ income was measured from the increase in per capita expenditure at the regency level. In the first phase, the analysis was conducted by identifying the impact of village funds in general in 432 Village Fund beneficiary regencies/cities. The second phase sorted (disaggregated) regencies/cities by *IKG*. Lastly, the analysis was conducted by sorting regencies/cities by poverty level. **Attachment 2** indicates the geographic spread of regencies/cities by *IKG* and poverty level.

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<sup>1</sup> Rice for Poor Families (Beras Miskin: Raskin); Family Hope Program (Program Keluarga Harapan: PKH); Cash Transfer for Poor Students (Bantuan Siswa Miskin: BSM); National Health Insurance (Jaminan Kesehatan Nasional: JKN); and Regional Health Insurance (Jaminan Kesehatan Daerah: JKD).



## FINDINGS AND DISCUSSION

### Average Development of Rural Residents' Consumption Expenditure

Average household consumption expenditure is an indicator most commonly used to assess changes in public welfare level. In this study, the residents' average per capita consumption expenditure indicator is used to compare the rural public welfare level between 2014 and 2017, namely before and after implementation of the Village Fund program.

In the three-year period, rural residents' real per capita consumption expenditure grew by 15 per cent—from Rp 757,180 to Rp 872,019 per month. This was 2.5 per cent higher than the average increase in national per capita consumption, which grew by 12.6 per cent—from Rp 974,055 to Rp 1,096,917. The average rural public consumption increased by 5 per cent annually.

The average increase in rural consumption in each regency/city varied. Compared to the overall average rural consumption, underdeveloped areas, namely villages having a high *IKG* and high poverty rate, underwent a faster consumption growth. Rural areas with an *IKG* above the national average underwent an increase in per capita expenditure of 17.38 per cent between 2014-2017, while in areas having an *IKG* below the national average, per capita expenditure grew by a more modest 13.98 per cent. A similar outcome was also found in rural areas with a high poverty rate (above the national average). Per capita expenditure in these villages grew by 19.03 per cent, far exceeding the per capita expenditure growth of areas with a poverty rate below the national average, namely an increase of 10.41 per cent. Nominally, residents living in areas with a high *IKG* and in poor areas underwent a higher consumption growth.

The increase in the rural per capita consumption rate is an accumulation of the impacts of various conditions in villages. The conditions that contribute to an increase in rural public welfare include economic growth, intervention of poverty eradication programs, health insurance programs, and village-specific development programs such as the Village Fund. The Village Fund program is, therefore, not the only factor causing the increase in rural residents' welfare.

To measure the contribution of the Village Fund to the increase in rural welfare, we must, therefore, consider the influence of factors other than village funds. This study uses a panel regression analysis to isolate the contribution of village funds to the increase in rural residents' expenditure.

### Contribution of the Village Fund to the Increase in Rural Residents' Consumption Expenditure

This section discusses the results of the analysis of impacts before and after implementation of the Village Fund on the average increase in rural residents' expenditure. **Table 1** indicates the summary of "before and after" panel regression results on 432 regencies/cities based on five analysis scenarios. Column One indicates the results of the regression for all 432 regencies/cities. Columns Two and Three indicate results based on the selection of regencies/cities by *IKG*, while Columns Four and Five are the summary of regression results by the sorting of regencies/cities according to poverty rate.

**Table 1:** Panel Regression Results

Per capita Consumption	All Regencies/ Cities	IKG ≤ National Average	IKG > National Average	Poverty ≤ National Average	Poverty > National Average
	(1)	(2)	(3)	(4)	(5)
Per capita Village Fund	0.107*** (0.0309)	0.188*** (0.0626)	0.0108 (0.0464)	0.199*** (0.0664)	0.0394 (0.0379)
Observations	864	526	338	370	494
Total Regencies	432	263	169	185	247
R2	0.5923	0.6867	0.6992	0.6523	0.5252

(\*) significant at 90%, (\*\*) significant at 95%, (\*\*\*) significant at 99%

Standard errors in parentheses

Source: Processed by the authors (2019).

Based on the table above, the Village Fund indicates positive impacts on the increase in rural public per capita consumption expenditure—a main finding of this study. Column One in **Table 1** indicates that the Village Fund has a coefficient of 0.107 (significant at the level of 1 per cent). This coefficient indicates that in three years of implementation of the Village Fund, every Rp 1 spent from village funds correlates to an increase in rural residents' per capita expenditure of Rp 0.107.

The contribution of village funds to the increase in per capita consumption differs according to poverty rate and *IKG*. The disbursement of village funds indicates a more significant impact in areas with a low poverty rate than in areas with a high poverty rate. Column Two in **Table 1** indicates that village funds have a coefficient of 0.199 (significant at the level of 1 per cent) in areas with a low poverty rate. On the contrary, in Column Three, village funds only indicate a coefficient of 0.0394 (insignificant) in areas with a high poverty rate. This indicates that, for the first three years of program implementation, village funds made a faster impact on per capita consumption expenditure in areas having a low poverty rate.

A similar pattern is also found in the analysis based on *IKG* ranking. The Village Fund indicates significant impacts in areas with a low *IKG*, namely areas having good geographic and infrastructure access. On the contrary, village funds have not indicated any impact in areas with a high *IKG*, namely areas with difficult geographic access.

This is indicated by village funds having a coefficient of 0.188 (significant at the level of 1 per cent) in areas with low *IKG*. On the contrary, village funds only have a coefficient of 0.011 (insignificant) for areas with a high *IKG*. The Village Fund indicates stronger effects on the increase in residents' per capita consumption in areas having good infrastructure.

The finding above is in line with the finding of a qualitative study conducted by *TNP2K* in six villages. In the *TNP2K* study, village funds were mostly used for developing productive economic activities in villages with good infrastructure. The villages allocate more village funds to construct rural economic supporting facilities such as village markets or village business units, rather than constructing roads, bridges, or sanitation facilities. For example, Gerbosari Village in Kulon Progo Regency constructed a rest area facility by a national road which passes through the village. The rest area is used for selling various food and craft products produced by village residents. Meanwhile, Bulu Cindea Village in Pangkajene and Islands Regency developed a new technology that allows farmers to produce salt during the rainy season. Results of the development directly impact the increase in village residents' revenue.

## CONCLUSIONS AND RECOMMENDATIONS

This review has two indications. *Firstly*, it describes rural residents' per capita consumption expenditure growth. This review indicates that areas with high geographical difficulty and areas with a high poverty rate have faster consumption growth. *Secondly*, the contribution of the Village Fund to the average increase in expenditure uses the panel regression method in regency/city-level data. The regression analysis indicates that the Village Fund contributes to an increase in consumption, especially in areas with low geographical difficulty and low poverty rate.

This review recommends that the distribution of village funds needs to be adjusted in accordance with each area's need. For example, the amount of village funds should be prioritised in areas with low infrastructure access and a high poverty rate so that they can overcome the lag in infrastructure development and poverty alleviation

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# Appendix

## Attachment 1

**Table 1A.1:** Average Comparison of Per Capita Monthly Expenditure by Village Fund Beneficiary Category in 432 Regencies/Cities (2014-17)

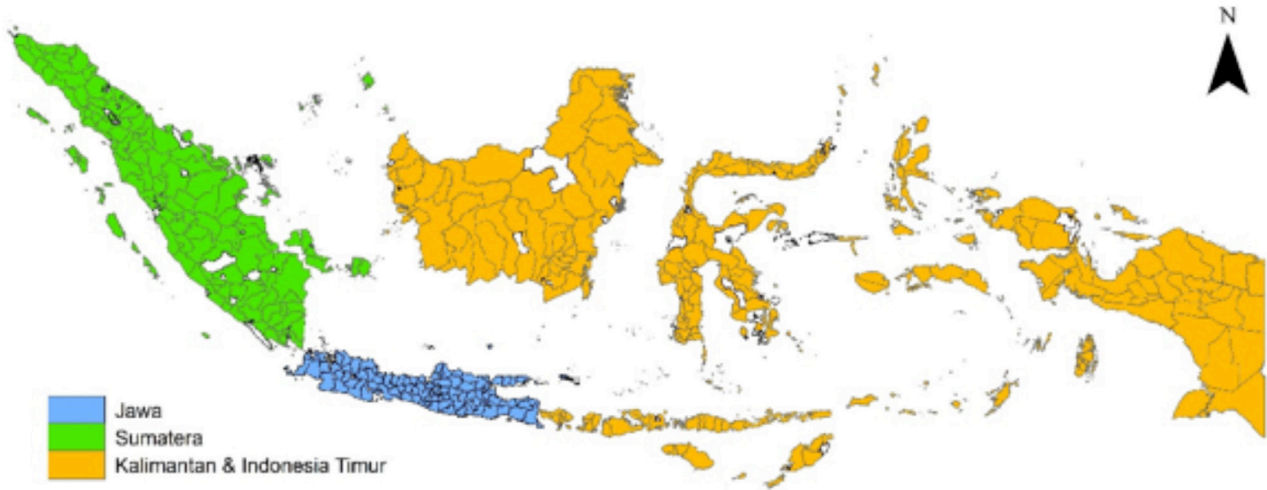
Regency/City	Year	Difference (Rp)	Change (%)	p-value	Poverty > National Average
	(Rp)				
	2014	2017			
432 Regencies/Cities	757,180	872,019	114,838	15.17	***
<i>IKG</i> ≤ National <i>IKG</i> Average	764,524	871,426	106,902	13.98	***
<i>IKG</i> > National <i>IKG</i> Average	743,799	873,067	129,268	17.38	***
<i>POV</i> ≤ National <i>POV</i> Average	864,991	955,005	90,014	10.41	***
<i>POV</i> > National <i>POV</i> Average	684,219	814,395	130,177	19.03	***
Indonesia	974,055	1,096,917	122,862	12.61	***

Source: Susenas 2014, 2017.

Note: \*\*\*significant at the degree of confidence of 99 per cent.

Attachment 2

Figure 2A.1: Spread of 432 Village Fund Beneficiary Regencies/Cities by Islands



Source: Processed by the authors (2019).

Attachment 2

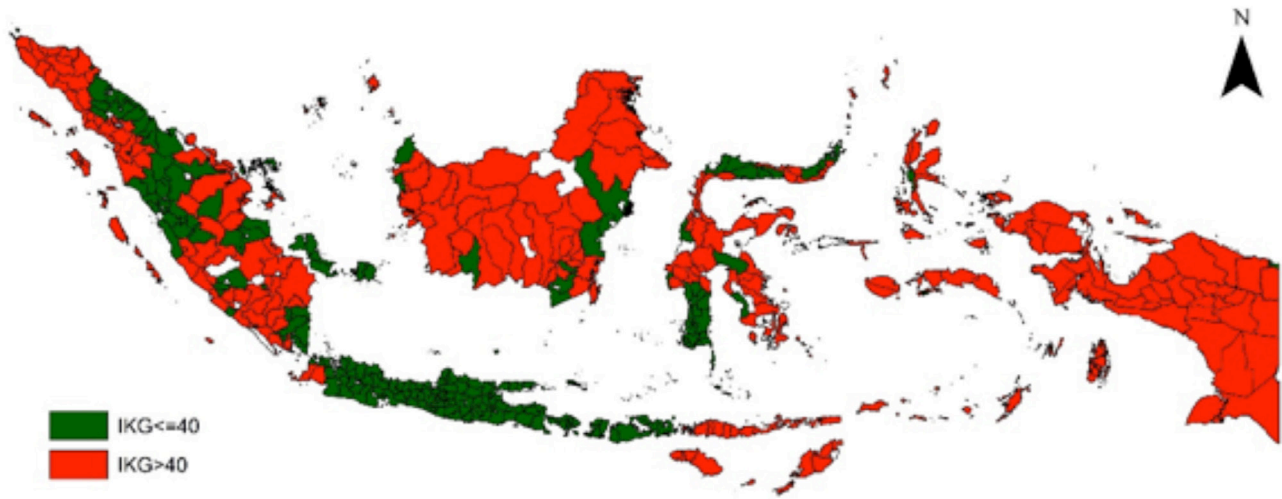
Figure 2A.2: Spread of Classification of 432 Village Fund Beneficiary Regencies/Cities by 2014 IKG.



Source: Processed by the authors (2019).

Attachment 2

Figure 2A.3: Spread of Classification of 432 Village Fund Beneficiary Regencies/Cities by Poverty Rate of 2014.



Source: Statistics Indonesia, processed by the authors (2019).

Note: *Kemiskinan*: Poverty.









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