



## Impact of Village Funds and Number of Cooperatives on the Number of Poor Residents in East Java Province

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### Abstract

This study analyzes Village Fund as a government policy concerning impoverished communities and cooperatives as a financial institution producing capital in East Java Province. The study used the district and city panel data of East Java Province in 2010-2018. It utilized panel data regression with the Fixed Effect Model (FEM). Estimation results show that village funds and the number of cooperatives have a negative impact on the number of poor people. This means that the higher the Village Fund and the number of cooperatives in districts and cities of East Java Province, the decreased the number of poor people in the region. Therefore, those instruments can be used to support the program of the local government in reducing the poverty.

**Keywords:** Poverty, Village Fund, Cooperatives, Fixed-Effect Model.

**JEL Classification:** R<sub>51</sub>, C<sub>13</sub>, H<sub>53</sub>.

### Introduction

Community development is reflected in the people's increased ability to meet their basic needs, leading to liberation from poverty (Todaro in Prishardoyo, 2008). According to Suliswanto (2010), the central government acknowledges that national development is involved in implementing just and prosperous community goals. One of the pointers of successful growth is increased welfare and a decreased number of poor people. Therefore, in implementing community poverty alleviation, the national government should focus on reducing the number of poor people (Simatupang and Dermoredjo, 2003).

BPS (2019) stated that East Java province had the highest number of poor people for the last 5 years, followed by Central Java, West Java, North Sumatra, and Lampung, respectively. Despite the decline in the last 3 years, East Java is still ranked first, with poverty more pronounced at the district level (BPS, 2019). The poverty rate is lower in the 9 cities than 28 other districts. Sampang Regency has the highest average poverty rate at 24.07%, while Malang City has the lowest at 4.40%. Also, the data indicate that villages have poorer populations than in urban areas. Therefore, the implementation of poverty alleviation programs needs to prioritize rural communities. The program should reduce inequality between villages and cities to realize the principle of justice in which every citizen has the right to prosperity (Sumarto and Dwiantara, 2019).

Every government has always prioritized poverty reduction. The Village Fund program has been adopted to improve welfare and reduce population poverty. It is part of the 7 village

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financial resources. The revenue budget of the Village Fund is sourced from the state budget and distributed through the district and city Regional Revenue and Expenditure Budget (Ministry of Finance, 2017). The Village Fund Program is compatible with poverty conditions in East Java province, which is dominated by district areas. The village is part of the district, while only Batu City has a town in East Java.

The Village Fund realization increases every year. Based on the Ministry of Finance (2018) in financial report, the Village Fund revenue was 20.77 trillion Rupiah in 2015, rising to 59.86 trillion Rupiah in 2018. In East Java province, it increased from 2.21 trillion in 2015, to 6.15 trillion in 2018. Based on Law no. 6 of 2014 on villages, the Village Fund's allocation is based on the population, poverty level, size of the area, and geographical difficulty. Hence, the reduced allocation of East Java Village Fund in 2018 shows a decline in the indicators leading to the awarding of funds.

According to Sumarto and Dwiantara (2019), many communities were positively impacted by the Village Fund program. Sofianto (2017) stated that the Village Fund significantly helped the rural government. It is a significant financial boost for village development, solving the problem of the insufficient budget for infrastructural development, health, educational and clean water facilities, markets, construction and repair of roads and bridges, among other utilities (Abdulkadir et al., 2021). As a result, it increases productivity, facilitating the reduction of the poor population (Anshori and Bukhori, 2018).

Increasing investment through capital formation is an alternative to prevent poverty, apart from the Village Fund. In line with this, Jhingan (1992) stated that the cycle of poverty is vicious due to capital constraints, market imperfections, and a stagnant economy. Capital accumulation is achieved through substantial investment, known as community expenditure. It creates and increases the stock of capital goods (Mankiw, 2000). However, low income and ignorance inhibit the poor from utilizing the financial sector (Rakhmindyarto and Syaifullah, 2014; Wasiaturrahma et al., 2020).

Kartasapoetra (2003) stated that a cooperative consists of a weak, voluntary economic community. They are considered the best way to reach poor and low-income segments of society (Buckland et al., 2011; Anjugam, 2011). Additionally, the cooperative is founded on the principles that ensure member's welfare, such as helping, openness, democracy, economic participation, autonomy and focus on community talents (Anbumani, 2007). Cooperatives guarantee financial solutions to the community. Through them, socio-economic issues are resolved, especially for rural households and the educated, low-skilled, and economically less able women (Divya, 2014; Paramasivan and Ganeshkumar, 2013).

*Badan Pusat Statistik* (BPS; Central Bureau of Statistics) in 2019 showed that the number of cooperatives is far higher than that of banks. This means that cooperatives are more easily found compared to banks. Their diversity triggers a large number of cooperatives. In business, cooperatives are classified as savings and loan, consumption, business, and production (UU No. 12 of 1967). The 4 types of cooperatives have their respective roles and functions on economic activities in the community. They offer economical solutions for members and the surrounding community.

Poverty is considered a hindrance in development. A higher poverty rate implies that more development issues have to be resolved. For instance, East Java province has the most impoverished population. Therefore, poverty reduction becomes a priority of the central government. In this regard, the Village Fund program is compatible with the poverty conditions in East Java Province. Also, several studies stated that the Village Fund adversely influences the rates of poverty (Wijaya et al., 2018). However, the existing research focuses on the initial 2 years of the Village Fund program, which has been in place for 4 years until 2018.

One of the strategies of poverty reduction is increasing capital investment, apart from

relying on government programs. Microfinance Institutions (MFIs), such as cooperatives, are considered as solutions to the various limitations and conditions of the poor. According to Beck et al. (2007), Sarma and Pais (2008), and Chandran (2012), financial inclusion, just like cooperatives, is pro-poor. Apart from reducing poverty, cooperatives improve the socio-economic conditions of the community (Kelkar, 2010; Devaki, 2008). This research analyzes the impact of the Village Fund program and the number of cooperatives on the population in East Java for the period 2010-2018.

Nurkse (1953) in Kuncoro (2004) stated that the poverty circle theory is the basis for identifying the causes of poverty. Poverty circle is a power relationship that influences the condition of each other. As a result, an impoverished area experiences difficulties in realizing development. Underdevelopment decreases productivity due to insufficient capital and human resources, as well as imperfect markets. Furthermore, there is a decline in revenues, resulting in low investments and savings. Reduced investment decreases capital accumulation and impedes the creation and development of employees. The low capital accumulation is caused by underdevelopment, among other factors (Kuncoro, 2004).

The Village Fund Program is focused on supporting the development and improvement of the village community. This includes physical and human development through infrastructure and community empowerment. The development is aimed at increasing the productivity of rural communities. This increases community revenue and liberates the city from poverty. Chasanah et al. (2017) stated that the Village Fund program is to be maximally utilized when infrastructural development and community empowerment are simultaneously prioritized. Therefore, the Village Fund contributes to physical development and improves the dignity of the village community. This enables the village communities to alleviate themselves from the inherent poverty (Sofianto, 2017; Sumarto and Dwiantara, 2019).

Roy (1982) reported that cooperatives are independent businesses and joint ventures of unstable individuals. These individuals collaborate in order to overcome problems associated with financial shortages and improve their economic conditions. The cooperatives' principles guarantee easy accessibility to the poor and guarantee them financial and socio-economic empowerment. As a result, the population is empowered to overcome limitations caused by inadequate skills and low education levels (Paramasivan and Ganeshkumar, 2013 and Divya, 2014). Sufficient capital from cooperatives increases productivity, revenue and savings, as well as community investments, resulting in poverty alleviation.

Mudjisantosa (2013) stated that an item is categorized as capital expenditure when it results in fixed or other assets adding life, benefits, or capacity. These expenditures exceed the minimum capital limit of fixed or other assets by government regulations. The other assets resulting from these expenditures are not shared or resold. According to Sasana, (2019), capital expenditure is part of local government investments. An increase in regional capital expenditure raises investment. Concerning the poverty circles theory, higher investment as a result of increasing capital improves productivity. As a result, the revenue and welfare levels in the area are increased (Ajija and Siddiqui, 2021).

According to human capital theory, health affects an individual's productivity (Frank and Bernanke, 2007). Linked to the poverty circles theory, productivity determines the income received. As a result, better human capital increases the productivity of a community and the possibility of overcoming poverty. Conversely, low human capital decreases community productivity. As a result, household savings are depleted, which lowers the quality of life and increases poverty.

According to Kuznets in Jhingan (2002:53), economic growth reflects an increase in the potential of a region to support its inhabitants. This is realized through a continuous increase in national output as a result of technological development. Dollar and Kraay (2002) stated that evenly distributed growth increases income from various segments of society, regardless

of poverty levels. This reduces poverty, indicating that the growth equally benefits everyone in the community. Also, Siregar and Wahyuniarti (2006) stated that economic growth reduces poverty when it is accompanied by an even income distribution in all population groups.

Research on the influence of cooperatives and village funds on poverty produces several conclusions. Lal (2018) examined the effect of cooperatives on poverty. Using a one-way ANOVA, T-test, and SEM for data analysis, the study concluded that financial inclusion through cooperative banks directly and significantly influenced poverty alleviation. Another research was on Poverty Alleviation through Tourism Cooperatives in Yuhu Village in China, by Yang and Hung (2014). Using the interview method, the study concluded that by embracing a broader understanding of poverty, tourism cooperatives have effectively reduced the sufferings of Yuhu villagers. Similarly, the same results were obtained by Adnan and Ajija (2015) after investigating the effectiveness of *Baitul Maal wat Tamwil* (BMT) on poverty reduction. The study concluded that BMT is part of an active cooperative that reduces poverty. Most respondents increase their income after receiving services from BMT.

Sari and Abdullah (2017) examined the influence of village funds on poverty. The study concluded that the Village Fund negatively affected poverty in Tulungagung District during 2015-2016. Also, using path analysis and descriptive statistics, Sunu and Utama (2019) concluded that the Village Fund had a negative and significant effect on poverty levels in Bali Province. Lalira et al. (2018) used the research object of 10 villages in Gemeh Sub-district, Talud Islands District, and concluded that the Village Fund had a non-significant negative impact on poverty.

Previous research has proven that the variables used in this study are mutually influential. However, existing research is still focused on the first 2 years of the Village Fund program. No research has examined the influence of these variables for 8 years in East Java. This research contributed to the existing literature by examining the effect of cooperatives and village funds to the poor population in East Java in 2010-2018. From the description in the previous chapter, the hypotheses in this study are as follows:

1. Cooperatives have a negative and significant effect on poverty in East Java Province.
2. Village Funds have a negative and significant effect on poverty in East Java Province.
3. Either cooperatives or Village Funds significantly affect poverty in East Java Province.

The remainder of this paper is organized as follows. Section 2 presents the data used in this paper. Section 3 briefly describes the empirical models, and section 4 presents the empirical results. Section 5 concludes the paper.

## Data Description

This research used a quantitative approach and secondary data from various sources. It used the data of all districts and Batu City in East Java Province from 2010 to 2018. Data on poverty, the number of health facilities, and economic growth were obtained from BPS East Java Province. The data on the number of cooperatives in figures were obtained from the Regency, from 2011 to 2019. Capital expenditure data were obtained from the Directorate General of Fiscal Balance (DJPK) of the Republic of Indonesia. The Village Fund data were obtained from the Central Government Financial Statements (LKPP) from 2015 to 2018.

## Methodology

The research used a combination of time series and cross-sectional data. Panel data regression was used for testing, while the STATA 13 software conducted the analysis. The empirical model used in the study consisted of one dependent and 5 independent variables. Some variables were created using the natural logarithmic model because the units and magnitudes were different, as written below:

$$\ln POV_{it} = \beta_0 + \beta_1 VF_{it} + \beta_2 \ln Coop_{it} + \beta_3 \ln CE_{it} + \beta_4 \ln HEALTH_{it} + \beta_5 GROWTH_{it} + \varepsilon_{it} \quad (1)$$

Information:

$\ln POV_{it}$ :	Number of poor populations in district $i$ year $t$
$\beta_0$ :	A Constant
$VF_{it}$ :	Village fund Dummy variable district $i$ year $t$
$\ln Coop_{it}$ :	Number of cooperatives district $i$ year $t$
$\ln CE_{it}$ :	Capital expenditure district $i$ year $t$
$\ln HEALTH_{it}$ :	Number of medical facility district $i$ year $t$
$GROWTH_{it}$ :	Economic growth district $i$ year $t$
$\varepsilon_{it}$ :	Error terms

According to Basuki and Prawoto (2017: 276), panel data regression combines time series and cross-section data. Several methods are used in estimating the regression model with panel data, including:

#### *Pooled Least Square (PLS)*

PLS is the most straightforward compared to the other 2 models. In this model, regression does not depend on the cross-section and time series in the data (Adkins and Hill, 2011: 444). The equation for the PLS method is:

$$Y_{it} = \beta_1 + \beta_2 X_{2_{it}} + \beta_3 X_{3_{it}} + e_{it} \quad (2)$$

where  $i$  and  $t$  show the subject (cross-section) and period.

#### *Fixed Effect Model (FEM)*

In this model, it is possible to have differences in the intercept parameters for each variable (Adkins and Hill, 2011: 446). The equation for the FEM method is:

$$Y_{it} = \beta_{1_i} + \beta_2 X_{2_{it}} + \beta_3 X_{3_{it}} + e_{it} \quad i = 1, \dots, N \quad (3)$$

#### *Random Effect Model (REM)*

In this model, heterogeneity between variables is applied as a random component (Adkins and Hill, 2011: 458). The equation for the REM method is:

$$Y_{it} = \bar{\beta}_1 + \beta_2 X_{2_{it}} + \beta_3 X_{3_{it}} + v_{it} \quad (4)$$

where  $v_{it}$  consists of residual cross-section, while  $e_{it}$  is the residual combined time series and cross-section.

Three methods were used in choosing the best model. They included the Chow Test (F-Statistics), the Hausman Test, and the Langrange Multiplier Test. The classic assumption test was performed when the estimation models were PLS and FEM. Gujarati and Porter (2012) in Satria (2018) stated that panel data has slight collinearity between variables. This means that there is very little possibility of multicollinearity. According to Iqbal, (2015), autocorrelation only exists in time series data. It is useless and meaningless to test autocorrelation on cross-section or panel data. Therefore, Heteroscedasticity Test is the most relevant in the panel data model (Iqbal, 2015).

Statistical tests on multiple regression prove the presence or absence of a relationship based on the significance between the dependent and independent variables. The tests conducted were the F-Test and t-Test, where the F-Test determined the relationship of the independent variables to the dependent variable simultaneously. The t-test determined the partial relationship of each independent variable to the dependent variable. R-square test established how well a model owned the regression line.

## Estimation Result

The statistical description of the variables determined the mean, standard deviation, minimum, maximal, and the number of observations on each variable used in the study.

**Table 1.** Description of Data

Variable	Observation	Mean	Std. Deviation	Min	Max
Poor people (lnPOV)	270	11,801	0,628	8,985	12,650
Village fund (VF)	270	1,482	1,836	0	5,76
Cooperatives (lnCoop)	270	6,677	0,441	5,017	7,521
Capital Expenditure (lnCE)	270	26,332	0,595	24,663	27,598
Health (lnHEALTH)	270	7,253	0,478	5,323	8,094
Economic growth (GROWTH)	270	5,696	1,933	-2,66	21,95

**Source:** Research finding, using STATA 13.

Over the past 10 years, the number of poor communities in East Java has negatively risen with fluctuating figures. This means that from 2010 to 2018, the poor population almost always decreases with a different percentage each year. It was evidenced by the decline in the number of poor communities from 5.86 million in 2009 to 4.33 million in 2018. Since poverty is a benchmark of economic growth, a decrease in the number of poor people indicates the development realized by local governments and the center of success for East Java Province (BPS, 2019). Village Fund Receipts in each district or city have different proportions.

The size of the Village Fund received is balanced by the number of villages in the district or city. The more villages in a district or city, the greater the Village Fund received. For instance, Lamongan and Bojonegoro Regencies, which ranked first and second as the most Village Fund recipients, collected 5.61% and 5.24% of the total East Java Province, respectively. That is because Lamongan and Bojonegoro Regencies have the highest number of villages in East Java Province, which are 462 and 419 respectively. Batu city received a smaller proportion of the Village Fund compared to other districts because it has only 19 villages (BPS, 2019). Regencies or towns with the highest number of cooperatives are Jember and Sumenep Regencies, as well as Surabaya City. These cooperatives are evenly distributed throughout the regencies or cities. Therefore, the regencies and city have sufficient sources of capital to sustain and smoothly run the economy of each of their population. Batu, Mojokerto, and Probolinggo cities have the smallest number of cooperatives (BPS, 2019).

The realization of capital expenditure by regencies or cities in East Java Province increases every year, from 6322.26 billion in 2010 to 18572.38 billion in 2018. The table above shows that from 2017, the realization of capital expenditure has been slightly decreasing. Bank Indonesia (2017) states that the decline is flat in the capital, operating and social expenditures. The total transfers to sub-districts or villages have increased, which probably explains the decline in the realization of each expenditure on the regional budget. Additionally, the East Java Provincial Government has been constructing new airports and toll roads since 2017. As

a result, the budget allocated for capital expenditure in the province is quite large (BPS, 2019).

*Posyandu* health services are owned by every RT / RW in all regency or city areas. As a result, they are more than any other health service. The *polindes* are village maternity huts. In contrast to the *posyandu*, which are supported by *puskesmas* staff, services at the *polindes* are provided by village midwives. Therefore, the fluctuating number of *polindes* in East Java Province is possibly attributed to the uncertain presence of midwives in each village. The number of *puskesmas* in East Java Province is nearly constant each year because of its presence in almost every village or sub-district. Furthermore, the number of health services only slightly increased in 2011 and 2017 (BPS, 2019).

The panel data regression estimation technique employed 3 methods, including the Pooled Least Square (PLS), Fixed Effect Model (FEM), and Random Effect Model (REM). In this study, the number of poor people was the dependent variable, while the 5 independent variables were Village Funds (DD), Cooperatives (KOP), Capital Expenditures (BM), Health (INHEALTH), and Economic Growth (GROWTH).

**Table 2.** Results of Panel Data Regression with Three Estimation Models

Independent Variable	Parameter	Estimation model		
		PLS	FEM	REM
Constant	$\beta_0$	6.692***	16.002***	12.759***
		1.103	0.534	0.569
Village Fund (VF)	$\beta_1$	0.006	-0.005**	-0.005*
		0.014	0.002	0.003
Cooperative (lnCoop)	$\beta_2$	-0.202**	-0.107**	-0.056
		0.081	0.033	0.040
Capital Expenditure (lnCE)	$\beta_3$	-0.116**	-0.076***	-0.086***
		0.045	0.009	0.011
Health (lnHEALTH)	$\beta_4$	1.343***	-0.202***	0.233***
		0.072	0.070	0.073
Economic Growth (GROWTH)	$\beta_5$	-0.041***	0.000	0.000
		0.010	0.002	0.002
R-squared ( $R^2$ )		0.768	0.577	0.517
Prob (F-stat)		0.000	0.000	0.000

**Source:** Research finding, using STATA 13.

**Note:** Numbers in parentheses () indicate the standard error value; \*\*\*, \*\*, and \* successively show statistically significant variables on  $\alpha$  1%, 5%, dan 10%.

The results of the Chow Test and the Hausman Test in Table 4.4 show that both  $H_0$  tests were rejected due to the large p-value of 0.000 each and to the significance value ( $\alpha$ ) 5%. Therefore, the one chosen from the Chow Test and the Hausman Test is the FEM method.

**Table 3.** Result of the Chow test and Hausman Test

Chow test		Hausman test	
H0: PLS		H0: REM	
H1: FEM		H1: FEM	
Level of significance ( $\alpha$ )	5%	Level of significance ( $\alpha$ )	5%
Prob>F (FEM)	0,0000	Prob>Chi2	0,0000

**Source:** Research finding, using STATA 13.



A classic assumption test was needed because the chosen estimation model is the Fix Effect Model (FEM). As explained in Chapter 3, the classic assumption test is run with the heteroskedasticity test.

**Table 4.** Heteroscedasticity Test

<b>Heteroscedasticity Test</b>	
H0: Homoscedasticity	
H1: Heteroscedasticity	
Level of significance ( $\alpha$ )	5%
Prob>Chi2	0,0000

**Source:** STATA 13.

Based on the heteroscedasticity test results in the above table,  $H_0$  was rejected because Prob> Chi2 (0.0000) was smaller than the significant level (0.05). Therefore, the model used in this study had a heteroscedasticity problem, which was overcome by running a robust test. After the test, the model was written as:

$$\ln POV_{it} = 16,002^{***} - 0,005 * VF_{it} - 0,107^{**} \ln Coop_{it} - 0,076^{***} \ln CE_{it} - 0,202^{**} \ln HEALTH_{it} - 0,001 GROWTH_{it} + \varepsilon_{it}$$

T-statistic testing was conducted by comparing the p-values of each independent variable with a level of significance ( $\alpha$ ). Based on the FEM method that was tested for durability, it is interpreted that:

1. The Village Fund Variable (VF) has a p-value smaller than the 10% significance level ( $\alpha$ ) of 0.089. Therefore, the Village Fund (VF) variable significantly influences the poverty variable (POV).
2. The variable number of cooperatives (lnCoop) has a p-value smaller than the significance level ( $\alpha$ ) of 5%, equivalent to 0.016. As a result, the cooperative variable (lnCoop) significantly affects the poverty variable (POV).
3. The capital expenditure variable (lnCE) has a p-value smaller than the significance level ( $\alpha$ ) of 1%, equivalent to 0.000. Therefore, the variable capital expenditure (lnCE) significantly influences the poverty variable (POV).
4. The health variable (HEALTH) has a p-value smaller than the significance level ( $\alpha$ ) of 5%, equivalent to 0.013. Therefore, the health variable (HEALTH) significantly affects the poverty variable (POV).
5. The economic growth variable (GROWTH) has a p-value greater than the significance level ( $\alpha$ ) of 1%, 5%, or 10%, equivalent to 0.914. Therefore, the economic growth variable (GROWTH) does not significantly influence the poverty variable (POV).

The estimation results using the FEM method showed an F-statistic probability value of 0.00. The probability value is significant at the significance level ( $\alpha$ ) of 5%. Therefore, the Village Fund variable, the number of cooperatives, capital expenditure, health, and Economic Growth significantly affected the number of poor districts or cities in East Java Province from 2009 to 2018, simultaneously.

The estimation results by the FEM method showed that the coefficient of determination obtained was 0.5768. This means that the difference in independent variables explained as much as 57.68% of the variable variation in the number of poor people in the model. Other variables outside the model explained the other percentage.

The results of the analysis using the FEM method previously described, proved the hypothesis, as concluded below:



1. The Village Fund variable has a significant negative effect on poverty in East Java Province. This is in line with the hypothesis.
2. The number of cooperatives has a significant negative effect on poverty in East Java Province. This is in line with the hypothesis.
3. Either the variable Village Funds or the number of cooperatives significantly influences poverty in East Java Province. This is in line with the hypothesis.

The coefficient value of the Village Fund variable is 0.005. It shows a negative relationship to the poverty variable with a p-value of a 10% significance level ( $\alpha$ ). This means that a 1% increase in the Village Fund results to a 0.005% decline in the total number of poor people, assuming the other variables are constant. Therefore, a greater realization of Village Funds received by districts or cities in East Java results to a bigger decrease in the region's poor population. Susilowati et al. (2017) and Sofianto (2017) supported these results by stating that the Village Fund has a negative effect and supports the development designed for each village. However, Chasanah et al. (2017) stated that Village Funds are insignificant to poverty when rural infrastructure development is more prioritized than the community and economic empowerment.

Based on the statement above, the Village Fund policy is appropriate in fighting poverty in East Java Province, because the district is more impoverished than the city. The total realization of Village Funds in East Java decreased in 2018. According to the Ministry of Finance (2017), the amount of village funds received by each district or city was based on the number of villages in the region. The amount of village funds received is determined by 4 indicators, one of which is the number of poor people. Therefore, the decline in the realization of the Village Fund was partly due to the decrease in the number of poor people in each area. As a result, the portion of the Village Fund received in East Java Province decreased. Also, (BPS, 2019) showed that in 2018, the number of poor people in East Java Province had decreased by 6.16%. This was the largest decline in the last 9 years.

According to the Ministry of Finance (2017), the Village Fund is prioritized for community development and empowerment. The fields considered for development include public services, such as bridges, roads and markets. The intended community empowerment should include providing education and health facilities accessible to the community, especially those with low economic strength. When linked to the poverty circle theory, the Village Fund is to increase productivity in rural areas. Development facilitates the economic processes and activities undertaken by communities such as farming, in which agricultural products are easily sold because of better road access. Furthermore, community empowerment increases knowledge and health levels. As a result, the income received by rural communities' increases, resulting in poverty reduction.

The regression results of this study indicate that the number of cooperatives has a p-value with a significance level ( $\alpha$ ) of 1%. The coefficient value is 0.107 and shows a negative relationship with the poverty variable. These results mean that every increase in the number of cooperatives by 1% reduces the poor population by 0.107%, assuming other variables are constant. As a result, a higher number of cooperatives in districts or cities in East Java Province reduces the number of poor people in the region. Furthermore, Beck et al. (2007), Sarma and Pais (2008), Chandran (2012), and Lal (2018) stated that financial institutions such as cooperatives significantly influence poverty because they help low-income households to access basic financial services such as savings and credit (Thaker and Thaker, 2019). This encourages the financial autonomy of the households, which solves income inequality problems and reduce the number of poor people.

This study used data on all types of cooperatives. From this amount, many cooperatives in East Java Province are under the savings and loan category. This is supported by the East Java Communication and Information Agency (2019), which stated that 79% of cooperatives are

engaged in savings and loans. This means that cooperatives are a source of capital for the community. In relation to the theory of poverty circles, capital availability increases productivity, which alleviates poverty from people (Nurske in Kuncoro, 2004). Additionally, the greater number of cooperatives than banks or BPRs (BPS, 2019) means that they are easily accessible to people even in remote areas (Banerjee and Francis, 2014). This is in line with Levine (1997), which concluded that a higher number of financial institutions such as cooperatives, accelerates the growth of a country within a short period of time.

The regression results show that the village expenditure variable has a coefficient value of 0.076 with a negative relationship. Based on the t-test, capital expenditure variable has a significant p-value at the significance level ( $\alpha$ ) of 10%. Therefore, the capital expenditure variable significantly affects the variable number of poor people. A 1% increase in capital expenditure reduces the number of poor people by 0.0765, assuming other variables are constant. Also, the results illustrate that a higher realization of capital expenditure in districts or cities in East Java Province results in a decline in the number of poor people in the region. Supporting this statement, Susilowati et al. (2017), stated that capital expenditure is considered effective in reducing poverty in an area.

Associated with the poverty circle theory, these results are based on the statement that insufficient capital causes poverty. Therefore, poverty is reduced with sufficient capital. Capital expenditure increases productivity, which raises income and savings, leading to a reduction of poverty in a population (Nurske in Kuncoro, 2004). Capital expenditure realization in districts or cities in East Java Province has increased over the last 9 years. This illustrates the increased annual development of infrastructure, accompanied by the decline in the number of poor people. According to Bank Indonesia (2017), through the Provincial APBD, East Java has been constructing new airports and toll roads since 2017. This is aimed at overcoming the declining realization of district or city capital expenditure in 2017 and 2018.

Health is one indicator that affects human capital. The human capital of an individual improves with better health standards. In this study, the health variable was represented by the number of health facilities. An increase in the number of health facilities improves the standards of public health in the area. That is because the community easily accesses health facilities and resolves all the related problems. The regression results show that the health variable has a p-value with a significance level ( $\alpha$ ) of 1%. The coefficient value is 0.202 and shows a negative relationship with the poverty variable (POV). This result means that a 1% increase in the number of health facilities results in a 0.202% decrease in poor population, assuming other variables are constant. A rise in the number of health facilities in the districts or cities of East Java Province leads to a decline in poor population in the region.

The above statement is in line with Bintang and Woyanti (2018) and Bakhtiari and Meisami (2010), which statistically explained that the level of health negatively affects poverty. This is because, as a component of human capital, the level of health is part of non-physical capital. Improving health status increases individual productivity and reduces income inequality in an area, which results in poverty reduction (Strauss and Thomas, 1998). The statement further explained the importance of health as a strategy to curb poverty in an area. Therefore, based on this evidence, the government should identify areas that need improvement to reduce poverty (Bakhtiari and Meisami, 2010).

The number of health facilities in East Java Province has always been increasing (BPS, 2019). In rural areas, Polindes is the most influential. However, the number of Polindes is very volatile, because their operation or failure depends on the presence of medical personnel in the village. Village officials adequately regulate Polindes with no clear monitoring from the local government. However, there are other health facilities, as evidenced by their rising number. As a result, the shortcomings of Polindes are taken care of by the other health

facilities. When health facilities are constructed together with adequate roads and bridges, the standards of health are rapidly improved. Therefore, the number of health facilities contributes to the reduction of the poor population.

Sukirno (2010: 331) defines economic growth as the development that results in increased production of goods and services, as well as improving the welfare of the community. Therefore, economic growth is an indicator that must be implemented to reduce poverty (Siregar and Wahyuniarti, 2006: 27). Regression results in this study showed p-values that were insignificant to the significance level ( $\alpha$ ) of 1%, 5%, or 10%. This means that the variable of economic growth does not influence poverty in the districts or cities of East Java Province. This is in line with Ravallion (1995), which stated that economic growth does not have a significant negative impact on relatively poor communities. The reason for the insignificant economic growth is the potential for poverty reduction. This is because increased economic growth is unreal when there is a problem in income distribution (Bigsten et al., 2003).

In support of the above statement, according to the U Reverse curve, problems in the distribution of income emerge at the beginning of the economic development period. This affects the impact of development on poverty (Kuznets in Todaro, 2006). Unequal distribution of income in an area causes certain communities to be sidelined in economic development, which is needed to lift them from poverty. The decline in economic growth in East Java Province for the last 9 years shows that the provincial government is still conducting development.

These developments are still in their initial phases because economic growth keeps declining every year, in which new strategies are implemented continuously. This probably explains the insignificant effect of economic growth in reducing the number of poor people in East Java Province. Some research states that economic growth is not the primary strategy of fighting poverty. This is because not all poverty problems are overcome by economic growth (Ravallion, 1995; Rodrik, 2000; Akbar, 2004).

## Conclusion

Based on the estimation results and the previous discussion, the Village Fund Program has a negative and significant impact on the number of poor people in East Java Province. This means that increased Village Fund reduces the poor population of an area. Additionally, the number of cooperatives had a negative and significant impact on the poor population in East Java Province. An increase in the number of cooperatives reduces the poor population of an area.

Several suggestions were made based on the above conclusions. Since the Village Fund influences the reduction of the poor, the village government needs to assess aspects that need to be prioritized while still considering allocations to other fields. Additionally, the government should oversee the establishment and operation of cooperatives in each region. This will raise the number of cooperatives in each region in every period.

Further research on developments should focus on East Java, as well as other districts or cities throughout Indonesia because poverty is a definite government concern in any region. Also, future studies should use better analytical tools to provide more convincing results. Additionally, further research should focus on the number of cooperatives at a macro level, as well as related matters such as credit, profits, among others.

There were several shortcomings and limitations in this study. It only covers districts or cities in East Java Province from 2010 to 2018. This is due to the limited availability of data per district or city, which is difficult to access. Additionally, to represent cooperative variables, this study used the total number of cooperatives in each district or city every year.

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