

Effectiveness of Village Funds on Poverty Rate, Human Development Index, and Open Unemployment Rate 2019-2024 In East Java Province

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Abstract

This study aims to assess the effectiveness of the Village Fund in improving village development in the 2019-2024 period, specifically in reducing poverty, increasing the Human Development Index (HDI), and reducing the Open Unemployment Rate (TPT). Although the Village Fund has been allocated to support village development, its effectiveness in reducing poverty and unemployment is still debatable due to various constraints, such as low human resource capacity and lack of community participation in budget management. This study contributes by analysing the effectiveness of the Village Fund using a panel data method based on the Fixed Effects Model (FEM) and Random Effects Model (REM), which provides new insights into the influence of the Village Fund on village development indicators and the factors that influence its effectiveness. The research method used is a quantitative approach with panel data analysis for 2019-2024, using secondary data related to poverty, HDI, and TPT. The best model selection is carried out through the Chow test, Hausman test, and Lagrange Multiplier test. The results show that the Village Fund significantly improves HDI but has not effectively reduced poverty and unemployment. The main obstacles in managing the Village Fund are the low capacity of village officials and the lack of community participation in budget monitoring and utilisation. Although the Village Fund can improve the quality of life through increased HDI, its effectiveness in reducing poverty and unemployment is still limited. Therefore, more strategic policies and improved management capacity are needed so that the Village Fund can truly encourage inclusive and sustainable village development.

INTRODUCTION

The Village Fund is one of the Indonesian government's strategic policies that aims to accelerate development in rural areas and improve the welfare of rural communities. This policy is expected to reduce poverty, increase the Human Development Index (HDI), and reduce the Open Unemployment Rate (TPT). Since its launch in 2015, the Village Fund allocation has continued to increase yearly, including in East Java Province. However, the effectiveness of the implementation of the Village Fund in achieving village

development goals is still a challenge that needs to be studied further.

Based on data from the Central Statistics Agency (BPS) for 2019-2024, although the Village Fund allocation continues to increase, development indicators such as

Poverty and TPT still show insignificant fluctuations. This indicates that there are obstacles in managing and distributing the Village Fund. Some of the main challenges in the implementation of the Village Fund include the low capacity of human resources at the village level, lack of community participation in monitoring the use of funds, and weak accountability in village financial management. Therefore, it is important to conduct this research to evaluate the effectiveness of the Village Fund in improving village development through the analysis of poverty, HDI, and TPT indicators using panel data methods.

Although the Village Fund has been allocated to support village development, its effectiveness in reducing poverty and unemployment is still debatable. Several main issues need to be studied in more depth. First, does the Village Fund significantly increase the Human Development Index (HDI) in East Java Province? Second, to what extent is the Village Fund effective in reducing poverty levels in villages in East Java Province? Third, what is the effect of the Village Fund on reducing the Open Unemployment Rate (TPT)? Fourth, what factors are obstacles to the effectiveness of Village Fund management? To answer these questions, this study will analyse panel data from 2019 to 2024 to provide a comprehensive picture of the effectiveness of the Village Fund in promoting sustainable village development.

Village fund management has an important role in supporting sustainable rural development. (Savitri et al., 2019) It states that a structured approach that includes planning, implementation, supervision, transparency, community participation, and capacity building is key to effective village fund management. Meanwhile, Anam et al. (2023) Emphasised that although village funds have the potential to reduce poverty, their effectiveness is strongly influenced by regional factors and local government capacity, thus requiring more nuanced

policies.

The complexity of implementing the village fund distribution policy is one of the main challenges. According to (Bustomi et al., 2020), strategic improvements are needed so that the distribution of village funds can be used optimally for rural development. In terms of accountability, (Budyono and Maryam, 2017) Showed that accounting information technology and the competence of village officials can improve transparency, although the internal control system alone does not have a significant impact on this.

Aspects of regulatory compliance, the relationship between the number of villages and the allocation of funds, and performance evaluation are also important elements in managing village funds. Heru Kreshna Reza et al. (2022) Highlighted that a performance-based approach can increase the effectiveness of village fund allocations and promote inclusive development. This is supported by Fadhal et al. (2021), which highlights the importance of community participation, legal compliance, and ongoing support to empower village communities.

The competence and commitment of various parties in managing village funds are also key factors. Purba et al. (2020) State that active community involvement can improve the accountability of village fund allocations. Furthermore, Ardiansyah et al. (2022) Stated that the Village Fund Allocation Information System (SIADD) has great potential to support more efficient and effective management.

Fair and transparent management of village funds contributes to the empowerment of local governments and rural communities. (Adji et al., 2019) Emphasised that this approach can encourage sustainable development. Research by (Wijayanti and Taufik, 2022) It also shows that village fund management involving transparency, accountability, and community participation can significantly improve community welfare. In handling COVID-19, (Utama et al., 2020) Discuss utilising village funds focused on

Targeted budget management. This research highlights the synergy between customary and official villages and the importance of village deliberations in prioritising community needs. This approach is expected to improve the effectiveness of village financial governance and resource management during the crisis.

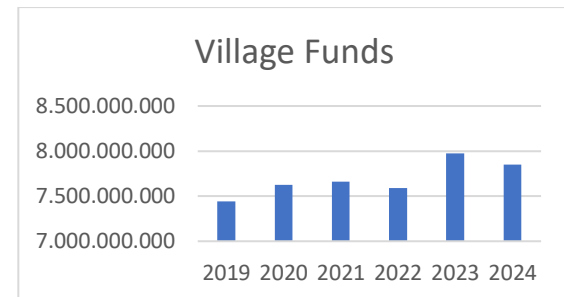
Other research provides insights into the effectiveness of village fund-based policies in addressing rural poverty challenges. (Chandoevrit & Ashakul, 2008) It highlighted the positive impact of village fund-based programs on improving the economic conditions of low-income households. (Conversion & Economy, 2023) And revealed the need for targeted interventions in the agricultural sector to address the complexity of rural poverty in Indonesia.

In addition, UDJIANTO et al. (2021) argues that effective management of local resources can support sustainable development, emphasising the importance of local involvement in village fund policies. Heru Kreshna Reza et al. (2022) Their research also provides important insights into the dynamics of village fund allocations and their implications for local governance and community development.

These studies highlight that managing village funds requires an integrated approach, encompassing transparency, active community participation, supporting technology, and evidence-based policies. These findings provide significant insights for policymakers in designing village fund management strategies to support inclusive and sustainable rural development. (Mainunah Sambas & Guntur Eko Saputro, 2024).

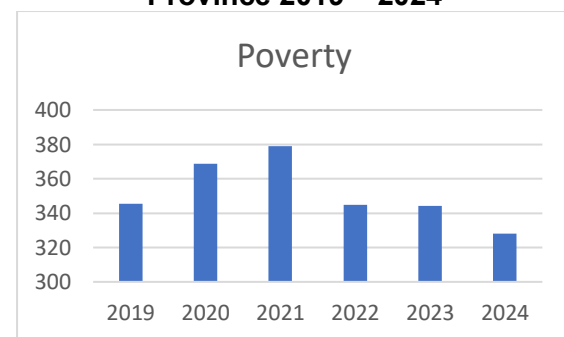
Although various studies have addressed aspects of Village Fund management and transparency, questions remain regarding the effectiveness of the Village Fund in reducing poverty and unemployment. Based on the results of the research that has been conducted, it is found that the Village Fund is effective in

increasing HDI but less effective in reducing poverty and unemployment. This is different from previous studies' findings, which emphasised the management and transparency aspects of the Village Fund without directly testing its impact on socioeconomic indicators. The following is the data on village funds from 2019 - 2024, along with poverty, human development index, and open unemployment rate data.



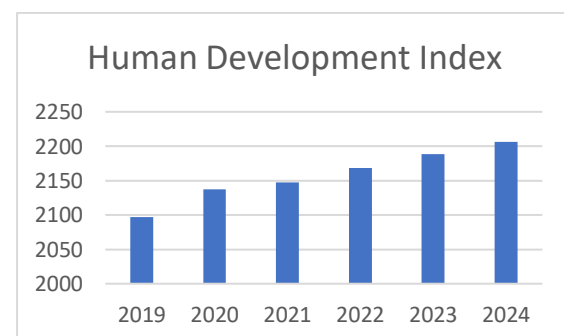
Source: Statistics Indonesia, East Java Province

Figure 1. Village Funds of east Java Province 2019 – 2024



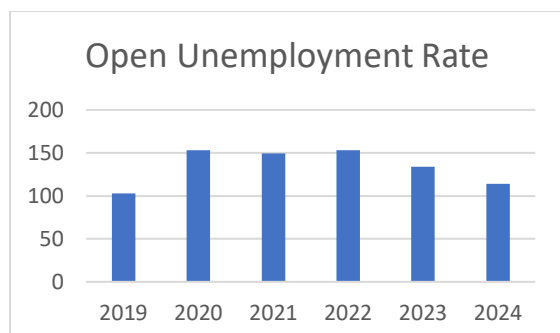
Source: Statistics Indonesia, East Java Province

Figure 2. Human Development Index of East Java Province 2019 – 2024



Source: Statistics Indonesia, East Java Province

Figure 3. Human Development Index of East Java Province 2019 – 2024



Source: Statistics Indonesia, East Java Province

Figure 4. Open Unemployment Rate of East Java Province 2019 – 2024

METHODOLOGY

This research uses a quantitative approach with panel data analysis for 2019-2024. The models used are the Fixed Effects Model (FEM) and Random Effects Model (REM), which are selected based on the results of the Chow, Hausman, and Lagrange Multiplier (LM) tests. The data used in this study are secondary data sourced from the Central Bureau of Statistics. The dependent variable in this study is the village development indicators, which include the Human Development Index (HDI), poverty rate, and Open Unemployment Rate (TPT). Meanwhile, the independent variables used include the Village Fund, community participation, and the capacity of village officials.

The research stages began with secondary data collection from various related sources and then continued with the classical assumption test to ensure the validity of the research model. After that, the best model was selected using the Chow test to determine whether the Fixed Effects Model (FEM) was more appropriate than the Random Effects Model (REM). The Hausman test is then used to confirm the selection of a more appropriate model between FEM and REM. If the Hausman test does not provide conclusive results, then the Lagrange Multiplier (LM) test is conducted to choose between the random and fixed effects models. Furthermore, the

selected model is used to analyze the effect of the Village Fund on village development variables, including HDI, poverty, and TPT.

RESULT AND DISCUSSION

Results

- Poverty
 - H0: Village funds are not effective in reducing poverty
 - H1: Village Fund is effective in reducing poverty
- HDI
 - H0: Village Fund is not effective in increasing HDI
 - H1: Village Fund is effective in increasing HDI
- TPT
 - H0: Village Fund is not effective in reducing TPT
 - H1: Village Fund is effective in reducing TPT

Model Selection Test

• Poverty

○ Chow Test

F test that all u i=0: F(29, 149) = 6.49 Prob > F = 0.0000
The prob. value is 0.0000 < 0.05, so the FEM model is selected.

○ Hausman Test

corr(u_i, X) = 0 (assumed) Wald chi2(1) = 0.79 Prob > chi2 = 0.3749

The prob. value is 0.3749 > 0.05, so the REM model is chosen.

○ Lagrange Multiplier Test

Breusch and Pagan Lagrangian multiplier test for random effects

$$\text{Kemiskinan}[\text{var2}, t] = Xb + u[\text{var2}] + e[\text{var2}, t]$$

Estimated results:		
	Var	sd = sqrt(Var)
Kemiskin	2504.66	50.04658
e	1317.656	36.29953
u	1255.406	35.43171

Test: Var(u) = 0
chi2(1) = 99.17
Prob > chi2 = 0.0000

Prob value. 0.0000 < 0.05, then the selected model is the REM model.

Based on the Chow Test, Hausman Test, and LM Test, the best model in this study is REM.

- **HDI**

- **Chow Test**

F test that all u_i=0: F(29, 149) = 38.54 Prob > F = 0.0000

The prob. value is 0.0000 < 0.05, so the FEM model is selected.

- **Hausman Test**

corr(u_i, X) = 0 (assumed) Wald chi2(1) = 14.50
Prob > chi2 = 0.0001

The prob. value Chi Square is 0.0046 < alpha 0.05, so the FEM model is chosen.

- **Lagrange Multiplier Test**

Breusch and Pagan Lagrangian multiplier test for random effects

IPM[var2,t] = Xb + u[var2] + e[var2,t]

Estimated results:

	Var	sd = sqrt(Var)
IPM	2207.912	46.98843
e	310.2043	17.61262
u	1999.159	44.71195

Test: Var(u) = 0
chibar2(01) = 327.09
Prob > chibar2 = 0.0000

The prob value. 0.0000 < 0.05, then the REM model is chosen.

Based on the Chow Test, Hausman Test, and LM Test, the best model in this study is FEM.

- **Classical Assumption Test Results**

- **Heteroscedasticity Test**

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
Variables: fitted values of IPM

chi2(1) = 1.36
Prob > chi2 = 0.2430

The prob. value is 0.2430 > 0.05, so there are no symptoms of heteroscedasticity.

- **TPT**

- **Chow Test**

F test that all u_i=0: F(29, 149) = 6.23 Prob > F = 0.0000

The prob. value of F test is 0.0000 < 0.05, so the FEM model is selected.

- **Hausman Test**

corr(u_i, X) = 0 (assumed) Wald chi2(1) = 14.50
Prob > chi2 = 0.0001

The prob. value is 0.0001 < alpha 0.05, so the FEM model is chosen.

- **Lagrange Multiplier Test**

Breusch and Pagan Lagrangian multiplier test for random effects

TPT[var2,t] = Xb + u[var2] + e[var2,t]

Estimated results:

	Var	sd = sqrt(Var)
TPT	2162.464	46.5023
e	1007.269	31.7375
u	906.7016	30.11149

Test: Var(u) = 0
chibar2(01) = 92.31
Prob > chibar2 = 0.0000

The prob value. Chi Square 0.0000 < alpha 0.05, then the REM model is chosen.

Based on the Chow Test, Hausman Test, and LM Test, the best model in this study is FEM.

- **Classical Assumption Test Results**

- **Heteroscedasticity Test**

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
Variables: fitted values of TPT

chi2(1) = 3.46
Prob > chi2 = 0.0628

The prob. value is 0.0628 > 0.05, so there are no symptoms of heteroscedasticity.

Panel Data Regression Equation

- **Poverty**

Kemiskinan	Coef.
DD	.1053673
_cons	75.69324

$$Y = 75,69324 + 0,105367$$

1. The constant value of 75.69324 means that without variable X (DD / Village Fund), variable Y (Poverty) will increase by 75.69324%.
2. The beta coefficient value of variable X (DD / Village Fund) is 0.1053673; if the value of other variables is constant and variable X (DD / Village Fund) has increased by 1%, variable Y (Poverty) will increase.

- **HDI**

IPM	Coef.
DD	.351938
_cons	52.10386

$$Y = 52,10386 + 0,351938$$

1. The constant value of 52.10386 means that without variable X (DD / Village Fund), variable Y (HDI) will increase by 52.10386%.
2. The beta coefficient value of variable X (DD / Village Fund) is 0.351938; if the value of other variables is constant and variable X (DD / Village Fund) has increased by 1%, variable Y (HDI) will increase.

- **TPT**

TPT	Coef.
DD	.560097
_cons	32.38925

$$Y = 32,38925 + 0,560097$$

1. The constant value of 32.38925 means that without variable X (DD / Village Fund), variable Y (TPT) will increase by 32.38925%.
2. The beta coefficient value of variable X (DD / Village Fund) is

0.560097; if the value of other variables is constant and variable X (DD / Village Fund) has increased by 1%, variable Y (TPT) will increase.

Hypothesis Test Results

- **Poverty**

- **t Test Result**

Kemiskinan	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
DD	.1053673	.1187439	0.89	0.375	-.1273664 .3381011
_cons	75.69324	12.78872	5.92	0.000	50.6278 100.7587

The Village Fund has a t-statistic value of 0.89, with a probability of $0.375 > 0.05$, so it is not effective in reducing Poverty.

- **F Test Result**

Wald chi2(1)	=	0.79
corr(u_i, X) = 0 (assumed)		
Prob > chi2	=	0.3749

The wald chi2 value of $0.79 < F$ table, 2.97, and the sig value. $0.3749 > 0.05$, then H_0 is accepted and H_1 is rejected.

- **Coefficient of Determination Test Results**

R-sq:	
within	= 0.0028
between	= 0.0145
overall	= 0.0092

The R Square value of 0.0092 or 0.92% indicates that the Village Fund variable's effectiveness on Poverty is 00.92%.

- **HDI**

- **T Test Result**

IPM	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
DD	.351938	.1098613	3.20	0.002	.1348506 .5690253
_cons	52.10386	9.993039	5.21	0.000	32.35748 71.85024

The Village Fund has a t-statistic value of 3.20 with prob.

$0.002 < 0.05$, so the Village Fund is effective in increasing HDI.

○ F Test Result

```
corr(u_i, Xb) = -0.3150
```

```
F(1,149)
Prob > F
```

The calculated f value of 10.26 > f table is 2.97, and the sig value is. $0.0017 < 0.05$, then H_0 is rejected and H_1 is accepted.

○ Coefficient of Determination Test Results

```
R-sq:
  within = 0.0644
  between = 0.0037
  overall = 0.0058
```

The R Square value of 0.0058 or 0.58% indicates that the effectiveness of the Village Fund variable on HDI is 0.58%.

• TPT

○ T Test Result

TPT	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
dd	.560097	.1979673	2.83	0.005	-.168911 .951283
_cons	32.38925	18.00721	1.80	0.074	-3.193228 67.97173

The Village Fund has a t-statistic value of 2.83 with prob. $0.005 < 0.05$, so the Village Fund is ineffective in reducing TPT.

○ F Test Result

```
corr(u_i, Xb) = -0.3360
```

```
F(1,149)
Prob > F
```

The calculated f value of 8.00 > f table is 2.97, and the sig value is. $0.0053 < 0.05$, then H_0 is rejected and H_1 is accepted.

○ Coefficient of Determination Test Results

```
R-sq:
  within = 0.0510
  between = 0.2114
  overall = 0.1425
```

The R Square value of 0.1425 or 14.25% indicates that the effectiveness of the Village Fund variable on TPT is 14.25%.

DISCUSSIONS

The results of hypothesis testing in this study show that the Village Fund has a significant influence on increasing the Human Development Index (HDI) but is less effective in reducing poverty and the Open Unemployment Rate (TPT). Based on the t-test, the Village Fund has a t-statistic value of 3.20 with a probability of 0.002, which is smaller than 0.05, so it can be concluded that it significantly contributes to increasing HDI. The f-test results also support this finding with an f-count of 10.26, greater than the f-table of 2.97, indicating that the effect of the Village Fund on HDI is real and significant.

In contrast, the t-test results show that the Village Fund effectively reduces these two indicators in the context of poverty and the unemployment rate. For poverty, the t-statistic value is 0.89 with a probability of 0.375, greater than 0.05, indicating no significant relationship between the Village Fund and poverty reduction. The f-test results also show that the Wald chi2 value of 0.79 is smaller than the f-table of 2.97, indicating that the null hypothesis is accepted and the Village Fund has no significant impact in reducing poverty.

The t-statistic value of 2.83 with a probability of 0.005 indicates that although there is an effect, the Village Fund is still ineffective in significantly reducing the unemployment rate. The f-test results show an f-count value of 8.00 greater than the f-table of 2.97, so the alternative hypothesis is accepted. However, the coefficient of determination

(R Square) value of 14.25% indicates that only a small portion of the variation in the unemployment rate can be explained by the Village Fund, indicating limited effectiveness.

In addition, the analysis shows that external factors such as access to skills training, job availability, and local economic dynamics play an important role in the effectiveness of the Village Fund. Although the Village Fund has been used for various infrastructure and economic empowerment programs, the results have not been able to address unemployment and poverty in a significant way directly. Therefore, a more integrated approach between the Village Fund and local economic policies is needed to improve its impact.

From these results, it can be concluded that while the Village Fund has successfully improved HDI, there are still challenges in reducing poverty and unemployment. As a concrete step, the government needs to organise training and technical assistance for village officials to optimise the management of the Village Fund. In addition, participatory initiatives such as village meetings need to be intensified to improve transparency and accountability in village financial management. Implementing the Village Fund Information System can also be a solution to improve efficiency and minimise misuse of funds. Finally, village fund allocations should focus on strategic sectors such as local economic empowerment, education, and health to address the root causes of poverty and unemployment at the village level.

CONCLUSION

The results of this study show that the Village Fund has provided benefits in improving the welfare of village communities, especially in the aspect of increasing the Human Development Index (HDI). However, its impact on reducing poverty and unemployment is still limited. The constraints faced in managing the Village Fund include the limited capacity of village officials, ineffective budget distribution, and the

lack of community involvement in the fund management process. To improve its effectiveness, strategic steps are needed, such as increasing the competence of village officials through training and technical assistance, strengthening transparency by increasing the number of village deliberation forums, and applying information technology to optimise supervision of the use of funds. In addition, the Village Fund should be more focused on sectors that can drive local economic growth, such as micro-enterprise empowerment, education, and health services, to more thoroughly address the root causes of poverty and unemployment in the villages. With a more systematic strategy, the Village Fund is expected to have a greater and more sustainable impact on village development.

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