

The Effect of Village Funds, General Allocation Funds, and Special Allocation Funds on the Effectiveness of Capital Expenditures for Regency / City Infrastructure Development in Central Java

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ABSTRACT

This study aims to analyze the effect of Village Funds, General Allocation Funds (DAU) and Special Allocation Funds (DAK) on the effectiveness of capital expenditure in infrastructure development in districts/cities in Central Java Province during the 2020-2023 period. This study uses a quantitative approach with a multiple linear regression analysis method on panel data consisting of 35 districts/cities for four years. Data were obtained from the APBD Realization Report, Regional Government Financial Reports (LKPD), and the official website of the Directorate General of Fiscal Balance. The results of the classical assumption test show that simultaneously Village Funds, DAU, DAK together affect the effectiveness of Capital Expenditure. While partially Village Funds have a negative effect on the effectiveness of capital expenditure, for DAU and DAK have a significant positive effect on the effectiveness of capital expenditure. The DAK variable has a dominant effect on capital expenditure, followed by DAU and Village Funds.

INTRODUCTION

Regional development plays a vital role in achieving overall community welfare across all areas of Indonesia. It involves the sustainable development of public infrastructure, including the construction of roads, bridges, healthcare facilities, educational institutions, and other essential infrastructure. Such development not only meets the basic needs of the population but also serves as a key driver for economic growth, equitable development, and the enhancement of regional competitiveness (Intan et al., 2022).

Within the framework of regional autonomy, infrastructure development is the main responsibility of local governments. To facilitate this, the central government offers financial assistance through a fiscal decentralization policy, allocating transfer funds to regional governments. These transfers consist of the General Allocation Fund (DAU), the Special Allocation Fund (DAK), and the Village Fund. All three are included in the Transfers to Regions and Village Funds (TKDD) which is one of the main instruments in improving regional fiscal capacity. Through these funds, local governments are expected to manage capital expenditure effectively to support the provision of equitable and quality public infrastructure.

As a form of fiscal accountability, infrastructure development is the primary responsibility of local governments, especially for types of spending that are productive and have a long-term impact on development (Lestari & Sri Setiawati, 2025). However, the effective use of transfer funds is still a problem in various regions (Yaqin & Herwanti, 2018), (Andris et al., 2025) In Central Java Province, although the total value of disbursed funds from the central government increased over time, the proportion of capital expenditure in the total regional expenditure was tiny. Based on BPKAD and BPK reports, the capital expenditure budget allocation is still inferior to the allocation of personnel and operational costs. The low proportion of capital expenditure has resulted in limited procurement of adequate public infrastructure. In addition, the implementation of capital expenditure projects in several districts/cities still faces various obstacles, such as delays in construction, suboptimal infrastructure quality, and output realization that does not match the initial plan.

The General Allocation Fund (DAU) and Special Allocation Fund (DAK) have been studied in many previous studies as factors that influence local government capital expenditure. Most of the research produced by Zikral et al. (2024), Meutia et al. (2022), (Kartika, 2019) Studies show that there is a significant positive correlation between capital expenditure and both types of funds. However, some other studies conducted by Maryati et al. (2022), Syahdila Putri et al. (2021), (Febriyanti et al., 2024) state that the relationship has no effect. This shows the need for further study considering the conditions and characteristics of each region.

Meanwhile, the Village Fund, as a form of transfer of funds from the central government that is allocated directly to villages, has not been widely studied empirically regarding capital expenditure at the level of regencies and municipalities. In fact, the Village Fund can also indirectly influence the effectiveness of capital expenditures, especially because many basic

infrastructure developments are financed from the Village Fund. Villages are an integral part of the region, and village development will contribute to the improvement of regional quality of regional development as a whole. Based on data from the Directorate General of Fiscal Balance and BPKAD Central Java, the total Village Fund distributed to districts/cities in Central Java in 2022 reached more than Rp8 trillion, while DAU and DAK allocations also experienced an increasing trend (jateng.prov.go.id). In addition, the distribution of Transfers to Regions (TKD) in Indonesia in 2023 increased by 2.1 percent relative to the realization in the corresponding period of 2022, which was noted at Rp284.3 trillion (Amelia et al., 2024).

However, there is still a mismatch between the high allocation of funds and the achievement of infrastructure indicators, such as road quality, access to clean water, or the village development index. This suggests potential ineffectiveness in the management of capital expenditure, which may result from several factors, such as inaccurate allocations, weak planning, and low accountability in regional financial management.

Amid this phenomenon, it is essential to examine simultaneously how the three types of transfer funds - Village Fund, DAU and DAK - affect the effectiveness of regional capital expenditure, especially in the context of infrastructure development. This study focuses on Central Java Province because it has a large number of districts/cities, diverse geographical and fiscal conditions, and receives a significant distribution of transfer funds by the central government.

From the explanation above, several research questions can be outlined as follows:

1. Does the Village Fund affect the effectiveness of capital expenditure in infrastructure development in the districts/municipalities of Central Java Province?
2. Does the General Allocation Fund (DAU) affect the effectiveness of capital expenditure?
3. Does the Special Allocation Fund (DAK) affect the effectiveness of capital expenditure?

This study aims to analyze the effect of Village Fund, General Allocation Fund, and Special Allocation Fund on the effectiveness of capital expenditure in infrastructure development in regencies/municipalities in Central Java Province during the period 2020-2023. By combining the three components of transfer funds into one research model, it is expected to provide a deeper understanding of the simultaneous and partial contribution of each type of fund on local government capital expenditures.

This study contributes theoretical to the advancement of financial studies and fiscal policy by enriching the literature on the determinants of capital expenditure, especially by integrating the Village Fund, which was previously often separated from regional macro-fiscal studies. In practical terms, this research serves as a basis for reflection by the central and regional governments in evaluating the effectiveness of fiscal transfer policies and formulating more

targeted budgeting strategies, especially to strengthen equitable and sustainable public infrastructure development.

THEORETICAL REVIEW

Agency Theory

Agency Theory was proposed by Michael C. Jensen dan William H. Meckling, (1976) which emphasizes the connection between the mandate giver (principal) and the mandate recipient (agent). In the context of public finance, the central government acts as a principal who distributes funds to local governments (agents) it is anticipated that these funds are will be administered efficiently for the public interest. However, due to information asymmetry and differences in interests, agency problems can arise that lead to irregularities in the use of funds (Sonbay, 2022).

Fiscal Desentralization Theory

This theory was advanced by Oates (1999), which asserts that fiscal decentralization can provide an increase in the efficiency of public spending because local governments better understand local needs and characteristics. The distribution of financial resources from the center government to local governments aims to enable local governments to improve financial performance by formulating revenue generation and expenditure allocation policies that are more adaptive to the needs of local communities (Febriandiela et al., 2024).

Publik Capital Budgeting Theory

According Jacobs (2008), in the IMF report entitled A Review of Capital Budgeting Practices, public capital budgeting must go through the stages of long-term planning, cost-benefit analysis, and performance evaluation. Capital expenditure is not just an expenditure, but a long-term investment that must be able to produce (Paellorisky & Solikin, 2019).

Theoretical Synthesis

The three theories provide a conceptual basis for understanding the relationship between central fund transfers and the effectiveness of regional capital expenditures. Agency Theory emphasizes the significance of accountability and oversight mechanisms in managing public funds. Fiscal Decentralization Theory emphasizes the role of regional autonomy in making more efficient spending decisions. Meanwhile, Public Capital Budgeting Theory emphasizes the essential role of quality in managing of capital expenditure as form of long-term investment. The synergy of the three forms a theoretical framework to explain and analyze the effect of Village Funds, DAU, and DAK on the effectiveness of regional capital expenditures.

Hypothesis Development

The Effect of Village Funds on the Effectiveness of Capital Expenditures

The Village Fund is part of the Transfers to Regions and Village Funds (TKDD), which aims to finance development needs and village-level community development (Setyawan et al., 2018). The Village Fund Allocation functions as

financing for basic infrastructure development, such as village roads, irrigation, small bridges, and other public facilities (Irmansyah et al., 2021). The Village Fund Allocation (ADD) comes from part of the balancing funds received by district/city governments through the APBD, minus the Special Allocation Fund (DAK). In accordance with the provisions, the district/city government is required to allocate ADD in each fiscal year, with a minimum percentage of 10% of the net balancing funds received (Miki Indika et al., 2022). However, the influence of the Village Fund on local government capital expenditure can be explained indirectly, through its contribution to improving the quality of basic infrastructure in village areas, which are an integral part of districts/cities (Iftitah & Wibowo, 2022).

The success of village development will have an impact on aggregate regional development achievements, including in capital expenditure indicators. When the Village Fund is used to build village roads, irrigation channels, and other public facilities that are fixed assets, these expenditures have the characteristics of capital expenditures even though they are recorded in the village financial structure (Miki Indika et al., 2022). According to (Paellorisky & Solikin, 2019) the Village Fund Allocation is adjusted to the needs and poverty level of the village, where public expenditure is directed at the construction of physical facilities that are of strategic value and long-term. In accordance with the theory of public capital budgeting, when the Village Fund is used for the construction of village roads, bridges, or irrigation, conceptually and practically these funds become part of capital expenditures that are able to produce productive assets for the community.

According to Supriadi et al., (2020), Intan et al., (2022) research, the Village Fund significantly increased infrastructure development in rural areas, reflecting an increase in capital expenditure in these areas. Indah dan Muslinawati (2022) also stated that the larger the Village Fund, the higher the development expenditure included in capital expenditure. Public Capital Budgeting theory supports that funds allocated for infrastructure development will enhance the effectiveness of regional capital expenditure. Therefore, the hypotheses formulated include:

H1: Village Fund has a positive effect on the effectiveness of capital expenditure.

Effect of General Allocation Fund on Capital Expenditure Effectiveness

DAU is a transfer fund that is general in nature (block grant) and can be used to finance all regional needs including capital expenditures (Yaqin & Herwanti, 2018). According to the theory of Fiscal Decentralization, the transfer of resources from the center to the regions can improve spending efficiency and regional fiscal accountability (Hidayat, 2024). Each area is obliged to conduct government functions independently and contextually act locally, but still in line with the direction of national development, with a national perspective (Hardiana, 2023). This aligns with the Fiscal Decentralization theory, which states that public management will be more efficient if left to local governments, which better understand local preferences and costs, than centralized management (Oates, 1999).

Several studies confirm that DAU has a positive impact on capital expenditure, as shown by research by Gunawan Siregar (2022), Pratiwi (2019), Zikral et al., (2024) dan Hidayat, (2024). An increase in DAU provides fiscal space for Local governments to boost investment in long-term assets, including infrastructure. Thus, the hypotheses formulated include:

H2: General Allocation Fund has a positive effect on the effectiveness of capital expenditure.

Effect of Special Allocation Fund on the Effectiveness of Capital Expenditure

DAK is earmarked funding and is intended to provide financing for certain activities or programs/activities that are national priorities, especially in infrastructure development and basic public services (Imam Nashshar & Budi Mulyana, 2022). The use of DAK in these activities is expected to improve the quality of public services, as reflected in increased capital expenditure. (Maryati et al., 2022). Based on Agency theory, the central government grants funds to local governments to be managed in accordance with the authority that has been allocated, while the DAK allocation is a form of central control over the regions to ensure the achievement of national targets through the intervention of bonded funds (Diah Riski Hardiana, 2023).

Research by Marheni dan Triyanto (2023), as well as Firza Alpi et.al (2022), Imam Nashshar & Budi Mulyana (2022), Agung Satria et al., (2022) show that DAK has a positive impact on capital expenditure. Physical DAK, in particular, is directly allocated for regional infrastructure development. Therefore, the hypothesis formulated is:

H3: The Special Allocation Fund has a positive effect on the effectiveness of capital expenditure.

METHODOLOGY

Research Type and Approach

The study uses a causal quantitative approach with an explanatory nature. The methodology chosen aims to provide an analysis and testing regarding the impact of several independent variables. (Village Fund, General Allocation Fund, and Special Allocation Fund) on the dependent variable (Capital Expenditure Effectiveness) in terms of regional infrastructure development.

Quantitative research allows researchers to test hypotheses that have been formulated based on theory and previous research results, using nominal rupiah data and using SPSS version 26.

Location and Scope of Research

The research took place in the administrative area of Central Java Province, comprising 35 districts/cities. Central Java was used as a research location because it is the region with the largest number of recipients of Village Funds, DAU, and DAK, and shows variations in the effectiveness of capital expenditures in various districts/cities. The scope of research time covers the period 2020 to 2023, so the research uses panel data (cross-section and time series).

Population dan Sample

The research population includes districts and municipalities in Central Java Province for the period 2020–2023. By using a census approach (total sampling), In which the sample consists of all members of the population. The number of observation units used was 140, which was obtained based on 35 districts/cities × 4 years = 140 panel observations. The total sampling approach was chosen because the population is relatively small and can be fully reached through publicly available secondary data.

Types and Sources of Data

This study employs quantitative secondary data., which is time series and cross-sectional. Data sources are obtained from official documents of government institutions, including: Budget Realization Reports (LRA), Local Government Financial Reports (LKPD) of Regency / City in Central Java Province, and the Portal of the Directorate General of Fiscal Balance of the Ministry of Finance of the Republic of Indonesia (www.djpk.kemenkeu.go.id). The results of the data collected include the nominal Village Fund, DAU, DAK, and Capital Expenditure of each district/city per year for 4 years (2020-2023).

Table 1. Operational Definition and Variable Measurement

Variable	Type	Measurement Indicator	Unit
Village Fund	Independent	Total Realization	Nominal rupiah
DAU	Independent	Total Realization	Nominal rupiah
DAK	Independent	Total Realization	Nominal rupiah
Capital Expenditure	Dependent	Total Realzation	Nominal rupiah

The effectiveness of capital expenditure in this study is proxied by the total realization of capital expenditure listed in the Budget Realization Report (LRA) of each local government, as a representation of the local capacity to use funds for long-term infrastructure development.

Data Analysis Technique

The analysis employed multiple linear regression applied to panel data, consisting of cross-sectional and time-series components. Previously, descriptive statistical tests and classical assumption were tested to confirm their validity. The analysis was conducted using statistical software such as SPSS version 26. Descriptive Statistics, to determine the data characteristics of each variable, such as the average value, maximum, minimum, and standard deviation. Classical Assumption Test containing Normality Test (Kolmogorov-Smirnov), Multicollinearity Test (VIF and Tolerance), Heteroscedasticity Test (Glejser Test or scatterplot graph), Autocorrelation Test (Durbin-Watson), Furthermore, Multiple Linear Regression Analysis to test the simultaneous and partial

influence between Village Fund, DAU, and DAK on capital expenditure. Furthermore, the Coefficient of Determination (R^2), F Test (Simultaneous), and t Test (Partial) are tested.

Model Equation

This research presents the regression model as follows:

$$Y_{it} = \beta_0 + \beta_1 D_{it} + \beta_2 DAU_{it} + \beta_3 DAK_{it} + \epsilon_{it}$$

Description:

- Y_{it} = Capital Expenditure of the i-th Regency/City in year t
- D_{it} = Village Fund of the i-th district/city in year t
- DAU_{it} = General Allocation Fund of the i-th District/City in year t
- DAK_{it} = Special Allocation Fund of the i-th District/City in year t
- β_0 = Special Allocation Fund of the i-th District/City in year t
- $\beta_1, \beta_2, \beta_3$ = Regression coefficient of each independent variable
- ϵ_{it} = Error term (error)

RESULT AND DISCUSSION

Descriptive Statistics

Descriptive statistical analysis was carried out in order to obtain a general description of the classification of data collection results on each research variable. Descriptive statistics in this study include the minimum, maximum, average (mean), and standard deviation values of panel data covering 35 districts/cities in Central Java Province during the period 2020-2023.

Table 2. Descriptive Statistical Test

	N	Minimum	Maximum	Mean	Std.Deviation
Village Fund	140	0	492,478,504,000.00	229,909,961,729.58	131,139,132,081.73
DAU	140	3,129,681,337.00	1,306,921,916,000.00	856,505,954,552.41	242,881,706,731.67
DAK	140	16,412,444,897.00	1,107,122,582,000.00	98,260,584,145.69	102,251,754,392.96
Capital Expenditure	140	230,000,000.00	1,048,844,590,189.00	218,735,989,167.01	177,394,538,453.39

Based on the results of data processing, the following are descriptive statistics of each variable:

The findings of the analysis state that the Village Fund has a minimum value of Rp00 and a maximum of Rp492,478,504,000.00 with an average value of Rp229,909,961,729.58 and a standard deviation of Rp131,139,132,081.73. The standard deviation value is quite large compared to the average, indicating that the variation in the allocation of the Village Fund between districts/cities is still quite high. This indicates that the distribution of the Village Fund has not been entirely equitable, possibly due to the allocation formula that considers differences in the number of villages, population, and poverty levels between regions. Despite its relatively smaller nominal value when compared to other transfer funds, the Village Fund exhibits particular characteristics that support

Public Capital Budgeting, as it is directed to finance the development of long-term fixed assets at the village level, such as basic infrastructure.

Meanwhile, the General Allocation Fund (DAU) shows a minimum value of Rp3,129,681,337.00 and a maximum of Rp 1,306,921,916,000.00 with an average value of Rp856,505,954,552.41 and a standard deviation of Rp242,881,706,731.67. The high average DAU allocation reflects the importance of these funds as the main source of local public financing. The large variation (indicated by the high standard deviation) indicates that there are significant differences in fiscal capacity between districts/cities. This is because the formulation of the DAU takes into account the needs and potential of each region, including population, area, and regional financial capacity. As unspecified funds, the DAU provides flexibility to the regions in determining their spending priorities, including capital expenditures. In accordance with the Theory of Fiscal Decentralization, the DAU can increase the efficiency of regional spending if it is managed strategically and accountably.

The Special Allocation Fund (DAK) has a minimum score of Rp16,412,444,897.00 and a maximum of Rp1,107,122,582,000.00 with an average value of Rp98,260,584,145.69 and a standard deviation of Rp102,251,754,392.96. These values indicate that DAK, as funding allocated to fund specific activities that are national priorities, has a more varied distribution depending on the sector, regional proposals, and central policies. DAK fisik is generally allocated to support infrastructure development such as roads, bridges, education, and health facilities, so its contribution to capital expenditure is direct. In the context of Agency Theory, DAK is a form of central government control over local governments (agent) so that the direction of local spending remains in line with national objectives (principal). The variation in DAK allocations between regions indicates that success in obtaining DAK depends on planning capacity, proposal preparation, and synergy between the center and regions.

The capital expenditure variable shows a minimum value of Rp230,000,000 and a maximum of Rp1,048,844,590,189 with an average of Rp218,735,989,167.01 and a standard deviation of Rp177,394,538,453.39. This average shows that most districts/municipalities were able to allocate around half a billion rupiah per year for capital expenditure. However, the large standard deviation indicates that there are significant differences in the ability of regions to allocate capital expenditure. This variation may be caused by differences in fiscal capacity, development planning, and budget allocation policies between local governments. Capital expenditure reflects the effective utilization of public funds to finance the procurement of fixed assets used in the provision of long-term public services.

Overall, the results of this descriptive analysis show that although the three types of transfer funds from the central government have an important role in supporting regional financing, the effectiveness of their use in capital expenditure is strongly influenced by the capacity, fiscal policy and strategic planning direction of each region. Taking into account the variations in distribution and fiscal capacity reflected in the data, it is necessary for local

governments to optimize the planning and implementation of capital expenditure so that fund transfers can generate maximum development benefits.

Classical Assumption Test

Normality Test

The normality test is conducted to check if the residuals of the regression model are typically distributed, ensuring that statistical tests such as the t-test and F-test remain valid for concluding. In this study, the normality test was carried out using the Kolmogorov-Smirnov (K-S) test. The test criteria used if the value of Asymp. Sig. (2-tailed) > 0.05, then the residual data is declared normally distributed.

Table 3. Normality Test

One-Sample Kolmogorov-Smirnov Test		
N 140		
Normal Parameters	Mean	-0.0000122
	Std.Deviation	.80600000
Most Extreme Differences	Absolute	0.068
	Positive	0.068
	Negative	-0.052
Test Statistic		0.068
Asymp.Sig. (2-tailed)		0.200 ^{c,d}

From the results of data processing, it can be seen that the asymp sig. (2-tailed) value is 0.200, which means that it is greater than the significance rate of 0.05. Thus, it can be concluded that the residuals in the regression pattern are normally distributed, and the normality assumption is met.

Multicollinearity Test

Multicollinearity is a condition when the independent variables in the regression model have a high correlation with each other, causing instability in the coefficient estimate and making it difficult to interpret. This test is performed by observing two indicators. Tolerance value (expected > 0.10), Variance Inflation Factor (VIF) value (expected < 10).

Table 4. Multicollinearity Test

Collinearity Statistics		
Model	Tolerans	VIF
Village Fund	0,451	2,216
DAU	0,434	2,306
DAK	0,570	1,754

All variables show a Tolerance value > 0.10 and VIF < 10. Thus, accordingly, it is concluded that the independent variables do not exhibit multicollinearity, so the regression model is eligible to proceed to the next stage of analysis.

Heteroscedasticity Test

Table 5. Heteroscedasticity Test

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	-1425678274348.42	1753215424933.69		-0.81	0.42
Village Fund	-0.14	0.29	-0.18	-0.49	0.63
DAU	0,03	0.07	0.08	0.38	0.70
DAK	-0.53	0.30	-0.84	-1.80	0.07

Heteroscedasticity arises when the residual variance is not constant across all predicted values of the independent variable. This condition violates the OLS assumption and causes the regression estimate to be inefficient. This study uses the Glejser Test by observing at the significance score of each independent variable on the absolute residual score.

The test criteria are that if the significance value is > 0.05, then there is no heteroscedasticity. The test findings state that all independent variables have a significance value > 0.05. Therefore, it can be concluded that there are no signs of heteroscedasticity, and the residual variance is homogeneous (homoscedastic). This indicates that the regression model used is efficient.

Autocorrelation Test

Table 6. Autocorrelation Test

Model Summary ^b		
Model	Std. Error of the Estimate	Durbin-Watson
1	.22100	2.002

Autocorrelation refers to the correlation between the current residual value and the previous residual value. Although autocorrelation is more commonly found in time series data, this test is still conducted to ensure there is no violation of the residual independence assumption. The test is carried out using the Durbin-Watson (DW) test. If the DW value is in the range of 1.5 to 2.5, then the model is free from autocorrelation. The test results show a DW value of 2.002. The score is within the permissible range, from which conclusions can be drawn if there is no autocorrelation in the regression pattern.

F Test and Determination Coefficient Test

Table 7. F Test and Determination Coefficient Test

Model	Anova ^a		Model Summary ^b	
	F	Sig	R Square	Adjusted R Square
1	31,146	.000 ^b	0,407	0,394

The F test is conducted to determine whether the independent variables simultaneously have a significant effect on the dependent variable. The calculated F value of 31.146 and a significance value of 0.00 less than 0.05 indicate that simultaneously the three independent variables affect capital expenditure. Thus, the regression model used is feasible to explain the effect of Village Fund, DAU, and DAK on capital expenditure in districts/cities in Central Java. Furthermore, the test results of the coefficient of determination (R²) amounted to 0.394, which means that the independent variables consisting of Village Funds, General Allocation Funds, and Special Allocation Funds, can explain the dependent variable, namely Capital Expenditure in Central Java Province by 39.4% and as much as 60.6% is explained by other factors outside the equation model variables. Multiple linear regression was used in testing the hypothesis of this study.

Multiple Linear Regression Analysis Results

Table 8. Multiple Linear Regression Analysis

Model	Coefficients ^a		Standardized Coefficients Beta	t	Sig.
	Unstandardized Coefficients	Std. Error			
	B	Std. Error			
(Constant)	-194,546,778,103.912	47,642,107,878.312		-4,084	0.00
Village Fund	-0,656	0,119	-0.485	-5,502	0.00
DAU	0,602	0,063	0,825	9.624	0.00
DAK	0,489	0,128	0,282	3,823	0.00

From the results of data processing in table 8, the multiple linear regression equation was applied:

$$\text{Capital Expenditure} = 194,546,778,103.912 - 0,656 \text{ Village Fund} + 0,602 \text{ DAU} + 0,489 \text{ DAK} + e$$

Regarding the results of data processing in the table, it is known that the Village Fund variable has a regression coefficient value of (β_1) -0.656, a calculated t value of -5.502 > t table 1.976 and a significance value of 0.00 < 0,05 then it can be said that the Village Fund has a negative effect on the Effectiveness of Capital Expenditure, so it is said that the first hypothesis (H1) is rejected. While the General Allocation Fund (DAU) variable has a coefficient value (β_2) of 0.602, a calculated t value of 9.624 > 1.976 t table and a significance value of 0.00 < 0,05 then it can be said that the General Allocation Fund has a positive effect on the Effectiveness of Capital Expenditure, so it is said that the second hypothesis (H2) is accepted. Furthermore, the Special Allocation Fund (DAK) variable has a coefficient value (β_3) of 0.489, a t value of 3.823 > 1,967 t table and a significance value of 0.00 > 0,05 so it can be said that the General Allocation Fund has a positive effect on the Effectiveness of Capital Expenditure, so it is said that the third hypothesis (H3) is accepted.

DISCUSSION

This study examines the effect of the Village Fund, General Allocation Fund (DAU), and Special Allocation Fund (DAK) on the effectiveness of capital expenditure at the district/city level in Central Java Province during the period 2020-2023. The regression results show that the Village Fund has an influence on capital expenditure. The General Allocation Fund and Special Allocation Fund have a positive influence. The discussion is organized based on the relationship of the findings with theory, descriptive statistics, and relevant previous studies.

Effect of Village Fund on Capital Expenditure

The results of the study indicate that Village Funds hurt capital expenditure. Thus, the first hypothesis (H1), which states that Village Funds have a positive effect on capital expenditure, is rejected. This condition indicates that the more Village Fund received by a region, the less the capital expenditure allocation is used for infrastructure development. This is in line with the PMK No. 35/PMK.07/2020 policy, This instructs the transfer of village funds to manage the COVID-19 pandemic and promote economic recovery. With part of the Village Fund allocated to health and social activities, the allocation for village infrastructure development, and indirectly capital expenditure at the district level, has decreased. As a result, allocations for physical development of a capital expenditure nature are limited. This reinforces the finding that the Village Fund tends to contribute negatively to capital expenditure, as its priority use shifts from physical activities to operational and social activities. From the results of data processing descriptive statistics, the Village Fund has an average value of Rp229,909,961,729.58 and a standard deviation of Rp131,139,132,081.73. This indicates that there are disparities in the distribution of the Village Fund between districts/cities in Central Java Province, so that the distribution pattern does not yet reflect fiscal equity.

Agency theory explains that the effectiveness of Village Fund management is highly dependent on the alignment between the interests of the village government as an agent and the community as the principal. When Village Fund management is not carried out effectively, misalignment of incentives between the two parties may occur. This condition risks resulting in suboptimal allocation decisions, thus negatively impacting the effectiveness of capital expenditure (Pramayoga & Ramantha, 2020). In addition, Public Capital Budgeting theory suggests that without proper investment planning, an increase in the Village Fund will not necessarily increase capital expenditure because it is not utilized within a systematic public budgeting framework (Setyawan et al., 2018).

This has no relation to the research outcomes of (Supriadi et al., 2020), (Intan et al., 2022), (Indah Listiana & Muslinawati, 2022) which states that village funds can indirectly increase capital expenditure. Meanwhile, in line with the similar findings of research by Karina Poluan et al., (2021), (Meutia & Liliana, 2018), (Setyawan et al., 2018) which states that the use of Village Funds in rural infrastructure development programs has not been fully effective, in terms of the

low timeliness of implementation which is not always in accordance with the predetermined planning schedule.

Effect of General Allocation Fund (DAU) on Capital Expenditure

The analysis findings indicate that DAU also has a positive and significant effect on capital expenditure. This indicates that the higher the DAU allocation, the greater the ability of local governments to finance capital expenditures. From the descriptive data, DAU has an average value of Rp856,505,954.55 with a standard deviation of Rp242,881,706,731.67, indicating that there is a significant fiscal disparity between regions.

This finding is in line with the Fiscal Decentralization Theory (Oates, 1999) which explains that fiscal decentralization provides spending decision-making autonomy to local governments, thus enabling efficiency in the management of public resources. As a block grant, DAU provides flexibility to regions to determine spending priorities in accordance with local conditions, including in financing capital expenditures.

These results are reinforced by research (Gunawan Siregar, 2022), Pratiwi (2019), (Zikral et al., 2024), dan (Hidayat, 2024) which concluded that DAU significantly increases local government capital expenditure. However, the effectiveness of DAU still depends on the commitment of the regions in setting capital expenditure as a priority, as these funds are also often allocated to personnel expenditure. Thus, the positive effect of DAU on capital expenditure in Central Java indicates that most local governments have been able to utilize the flexibility of DAU strategically to support infrastructure development.

Effect of Special Allocation Fund (DAK) on Capital Expenditure

DAK also shows a positive and significant influence on capital expenditure. This is in line with the function of DAK as a fund allocated to finance specific programs/activities, especially those oriented towards infrastructure development and basic services. The average value of DAK in this study is Rp98,260,584,145.69 with a standard deviation of Rp102,251,754,392.96, reflecting variations in allocations according to regional characteristics and needs.

In this case, DAK functions as a control instrument to ensure that infrastructure development continues in accordance with national priorities. The findings are consistent with the Agency Theory (Michael C. Jensen & William H. Meckling, 1976), in which the central government as the principal directs the local government as the agent to spend the budget in accordance with national objectives.

Empirically, this finding confirms the research of (Marheni & Triyanto, 2023), Firza Alpi et., (2022), (Imam Nashshar & Budi Mulyana, 2022), (Agung Satria et al., 2022) which shows that physical DAK directly contributes to the increase in local capital expenditure, especially in the road infrastructure, education, and health sectors. However, the effectiveness of DAK also depends on the synchronization between national priorities and local needs. If there is a mismatch between the two, then DAK allocations may be less than optimal in improving capital expenditure performance in real terms.

CONCLUSION

This study aims to analyze the influence of the Village Fund, General Allocation Fund (DAU), and Special Allocation Fund (DAK) on the effectiveness of capital expenditure in infrastructure development in the districts/cities of Central Java Province for the period 2020-2023. With a quantitative approach and multiple linear regression method on panel data, the following results were obtained:

1. The Village Fund negatively contributes to increased capital expenditure, particularly on basic infrastructure development in rural areas. However, its effectiveness is highly dependent on the compatibility of allocation and implementation with regional strategic planning. Such mismatches can reduce the effectiveness of capital expenditure. This finding reinforces the relevance of Public Capital Budgeting Theory, which emphasizes the importance of allocating public funds appropriately to build fixed assets of local governments.
2. DAU, as a block grant, provides flexibility for regions in setting spending priorities. These results support Fiscal Decentralization Theory, which states that fiscal autonomy can enhance the efficiency and effectiveness of managing local budgets.
3. The earmarked DAK is directed at priority sectors, especially physical infrastructure, thus directly encouraging capital expenditure. This corresponds to Agency Theory, where DAK reflects central government control over the direction of regional spending.

The coefficient of determination (R^2) of 0.394 indicates that 39.4% of the variation in capital expenditure is explained by Dana Desa, DAU and DAK, while the remaining 60.6% is influenced by other variables outside the model. Overall, the results of this study confirm that fiscal transfers from the central government, both general and specific, have an important role in increasing the effectiveness of capital expenditure for infrastructure development in the regions.

FURTHER STUDY

This study has several limitations that need to be considered in interpreting the results and as a reference for future studies. First, the independent variables analyzed are limited to three types of transfer funds, namely the Village Fund, the General Allocation Fund (DAU), and the Special Allocation Fund (DAK), without including other variables that also have the potential to influence capital expenditure, such as Regional Original Revenue (PAD), Regional Incentive Funds, and personnel expenditure. Secondly, the approach used is quantitative, so it does not explore qualitative aspects such as the policy context, allocation mechanisms, or implementation constraints at the regional level. Third, the scope of the research area is limited to Central Java Province, so generalization of the results to other regions needs to be done carefully. Fourth, capital expenditure is analyzed on an aggregate basis without differentiating between project types or infrastructure sectors.

Based on these results and limitations, it is recommended that local governments strengthen planning, supervision and evaluation of the use of the

Village Fund to make it more effective and sustainable. DAU also needs to be optimized to support long-term capital expenditure. Greater synergy is required between the central and local governments in the management of the DAK. In addition, the allocation formulation of the three types of transfer funds needs to be adjusted to the characteristics and fiscal capacity of each region. For future research, the inclusion of other variables such as PAD, fiscal capacity, and public participation, as well as considering a qualitative approach and a cross-regional or longitudinal design, is needed for a more thorough understanding of the effectiveness of fiscal transfers.

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Finally, the author hopes that this research will contribute positively to the development of knowledge and serve as a useful reference for policymakers, academics, and future researchers in the field of public finance and infrastructure development.

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