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Local expenditure financing response in regencies and municipalities in Indonesia: Analysis of the flypaper effect phenomenon

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Abstract

Research aims: This research aims to analyze the flypaper effect on regencies and municipalities in Indonesia, considering the medium-term expenditure framework and their economic conditions.

Design/Methodology/Approach: Quantitative methodology with secondary data from 226 regencies/municipalities in Indonesia was used. The first hypothesis testing was to find whether there was a different expenditure mean value, and if there were any, hypothesis testing about flypaper occurrence would be performed.

Research findings: The results show that there was no difference in capital expenditure mean value because there was a target of capital expenditure set for every local government. Therefore, flypaper effect occurrence hypothesis testing was not performed, and there was different operational expenditure mean values. The flypaper effect did not occur in rich local governments but in poor ones.

Theoretical contribution/Originality: This research fills the research gap of flypaper effect occurrence on capital expenditure and operational expenditure based on local governments' economic conditions.

Practitioner/Policy implication: This research implies that intergovernmental transfers should be used accordingly, and local governments should increase their local own-source revenue so that they wouldn't be dependent on the transfers from the central government.

Research limitation/Implication: The limitations of this study were related to the data period (abnormal condition of COVID-19) and statistical data (further explanation from primary data needed).

Keywords: Flypaper Effect; Economic Conditions; Local Own-Source Revenue; Local Expenditure; Intergovernmental Transfers

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Introduction

One of the issues over the reform era was the demand for greater regional autonomy. The demands have been fulfilled by enacting various regional autonomy-related acts that are renewed to this day. According to Indonesian Fiscal Agency, regional autonomy in Indonesia is built upon four kinds of decentralization which are political decentralization, administration decentralization, economic decentralization, and fiscal decentralization (BKF, 2021). Fiscal decentralization assigns authority over local governments to organize and manage their finances. Aid/grants were

distributed from the central government to help local governments actualize decentralization (Christia & Ispriyarso, 2019). Hence, financial relations are established between the central government and local governments.

Regional autonomy is assigned to develop citizens' welfare and prosperity by providing better services, empowerment, and enhancement of public participation. Citizens' welfare and prosperity may be achieved by enforcement of economic potential optimization policy in every local government (Azhari & Negoro, 2019). Infrastructure availability, such as public works, transportation projects, electricity availability, telecommunication, and clean water supply, might be able to stimulate economic growth (Meidiana & Marhaeni, 2019). Local government accommodates the infrastructures by capital expenditure. Based on the World Competitiveness Yearbook annual reports issued by the International Institute for Management Development, Indonesia's rank based on infrastructure availability is the lowest among Southeast Asia countries that are included—Malaysia, Thailand, and Singapore. Even though capital expenditure increases every year, it is not sufficient to match other countries.

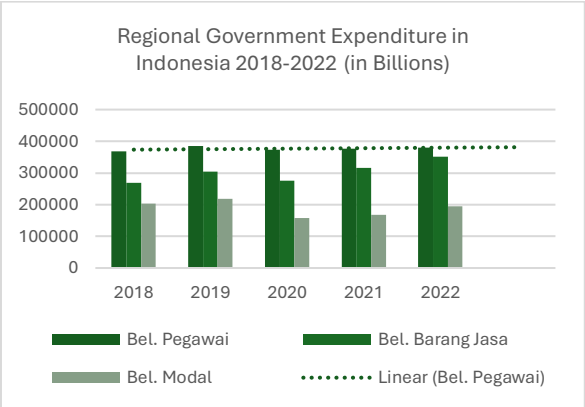

Figure 1 Regional Government Expenditure in Indonesia 2018-2022

Based on Figure 1, the highest proportion of regional government expenditure is taken by personnel expenditure, which has an upward trending tendency, followed by goods expenditure and capital expenditure. According to an explanation made by Director General of Financial Balance Luky Alfirman in BPK RI News, most personnel expenditure is financed by General Allocation Funds (GAF) (BPK RI, 2023). Moreover, he said there are local governments that use almost 64,8% of their intergovernmental transfers for personnel expenditures only.

The average percentage of local own-source revenue (LOSR) to total regional income is 25%, and transfer income to total regional income is 67%. Based on Figure 2, most of the local government income comes from transfer income received from the central government, which could indicate the local government's dependency on transfer funds received from the central government.

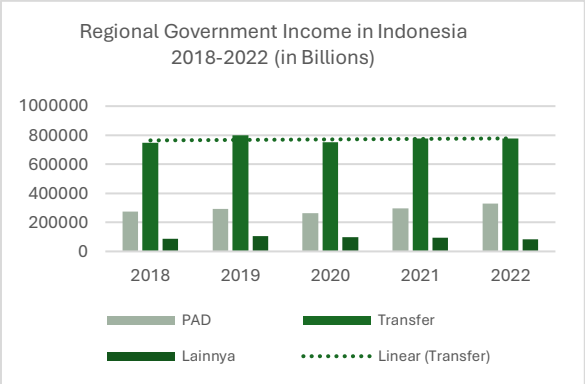

Figure 2 Regional Government Income in Indonesia 2018-2022

Therefore, it is in the researcher's best interest to analyze how local expenditure financing responds to regencies and municipalities by referencing the empirical evidence of flypaper effect theory. Simple economic theory explains that grants make the same response in increasing the local expenditure as the other income (Hines & Thaler, 1995). However, other research projects show that grants stimulate expenditures higher than what the theory predicts. The different response is known by the flypaper effect, in which income from citizens' income (or taxes) stays on citizens and intergovernmental transfers remain on the government that they are used more in financing local expenditures—money sticks where it hits (Inman, 2008).

Research projects on the flypaper effect have been done in Indonesia. GAF has a higher effect on local expenditure than LOSR effect on local expenditure (Ansori & Muthmainah, 2018; Fikri et al., 2020; Purbarini & Masdjojo, 2015; Setyaningsih & Witono, 2024). On the other hand, there are research projects that show that the flypaper effect does not occur (Amalia, 2015; Pramuka, 2010). However, a research project on the flypaper effect occurrence on local expenditure that considers different economic conditions and implementation of a medium-term expenditure framework has not been done yet. Hence, researchers are interested in providing empirical evidence of the occurrence of the flypaper effect in Indonesia, considering the two aspects. Different economic conditions are measured by a cutoff value made by real gross regional domestic product (GRDP) that could indicate economic performance (BPS, 2023). The implementation of a medium-term expenditure framework requires to consider the perspective of more than one budget year.

The sample used in this study are 226 regencies and municipalities in Indonesia for the 2018-2022 budget year period for capital expenditure and operational expenditure as the variable dependent and the 2017-2021 budget year period for LOSR and transfers income as the independent variable. Stratification on the sample is based on a cutoff value that is the mean value of real GRDP for the five years (2018-2022), so the sample is classified by rich local government (have GRDP mean value above the cutoff value) and poor local government (have GRDP mean value below the cutoff value). Before continuing the hypothesis testing of the flypaper effect occurrence, it is necessary to test for whether

there is a difference in each capital expenditure and operational expenditure mean value between rich local government and poor local government.

This research contributes to providing empirical evidence of flypaper occurrence on capital expenditure and operational expenditure considering local governments' economic conditions and their medium-term expenditure framework approach. Local governments in Indonesia have different economic conditions that may affect how they manage and allocate the budget to achieve the goal of regional autonomy, which is improving citizens' welfare and prosperity. From the perspective of the citizens, this research may give access to the citizens to oversee the government's performance.

Literature Review and Hypotheses Development

Local Expenditure

Based on Government Financial Management Government Regulation 12/2019, local expenditure consists of capital expenditure and operational expenditure. Capital expenditure is expenditure for the acquisition of assets that have a useful life of more than one year of the accounting period. Operational expenditure is expenditure for daily government activities with a short-term benefit period. The economic status of a region (rich vs. poor) significantly influences its ability to allocate funds for capital and operational expenditures. Rich regions with greater fiscal resources are expected to allocate higher capital expenditure and potentially higher operational expenditure. In contrast, poor regions with more limited budgets are likely to have lower capital expenditures and may focus more on basic operational spending.

Testing these hypotheses is crucial to understanding the extent to which a region's economic condition influences its budgetary policies and financial management. Ultimately, this can have a profound impact on regional development and the well-being of the communities within those regions. So, the hypothesis proposed is:

***H_1**: There is a difference in the mean value of capital expenditure between rich local governments and poor local governments.*

***H_2**: There is a difference in the mean value of operational expenditure between rich local governments and poor local governments.*

Flypaper Effect Theory

The flypaper effect happens when there is a difference in the effect of the use of intergovernmental transfers and local own-source revenue on government expenditure that transfers increase expenditure more than an equivalent amount of local own-source (Fisher, 1982; Hamilton, 1983; Alekseev et al., 2021). There are several alternative causes of the flypaper effect, as explained by researchers, one of whom was Inman in 2008. He

explained that there are four causes of the flypaper effect, which are (1) the misclassification of matching grants, which have a price effect as lump-sum aid, which has an income effect, (2) the exclusion of other determinants, which are negatively correlated with input purchases so that the estimated income coefficient decreases, (3) misperception of the income effect of lump-sum aid as an average price effect, and (4) political policy (Inman, 2008).

The criteria for the occurrence of the flypaper effect are that the elasticity of public spending on transfer income is larger than the elasticity of public spending on LOSR in the public spending demand function. (Fisher, 1982). Meanwhile, Maimunah and Akbar classify the flypaper effect happens if it meets one of the requirements, namely (1) the effect of transfer income on local expenditure is greater than the effect of LOSR on local expenditure, and both have a significant influence on local expenditure or (2) LOSR does not have a significant influence on local expenditure (Maimunah & Akbar, 2008).

Sulistyaningsih (2021) explained that LOSR per capita and GAF per capita did not have a significant influence on capital expenditure. Research by Nugroho (2017) showed that LOSR had a larger effect (coefficient) than GAF, and Purbarini and Masdjojo (2015) showed that GAF did not have a significant influence on capital expenditure, so it can be concluded that there was no flypaper effect on capital expenditure. However, Pramuka (2010) found that GAF and LOSR in the previous year influenced and increased capital expenditure in the following year. Because of the different results obtained, hypotheses are built as follows:

***H_{1a}**: Capital expenditure in year t is more responsive to transfer income in year t-1 compared to LOSR in year t-1 (flypaper effect occurs) in rich local governments.*

***H_{1b}**: Capital expenditure in year t is more responsive to transfer income in year t-1 compared to LOSR in year t-1 (flypaper effect occurs) in poor local governments.*

Operational expenditure is expenditure for daily government activities. The results of the study by Purbarini and Masdjojo (2015) provide evidence of the occurrence of the flypaper effect in operational expenditure in Indonesia with an indicator of the phenomenon in the form of a GAF coefficient of more than one indicating a flypaper effect. Pramuka (2010) provides evidence that GAF and LOSR from the previous year affect and increase operational expenditure in the following year. The medium-term expenditure framework budgeting approach is also considered so that transfer income and LOSR use data from year t-1, and operational expenditure uses data from year t. Therefore, hypotheses are built as follows:

***H_{2a}**: Operational expenditure in year t is more responsive to transfer income in year t-1 compared to LOSR in year t-1 (flypaper effect occurs) in rich local governments.*

***H_{2b}**: Operational expenditure in year t is more responsive to transfer income in year t-1 compared to LOSR in year t-1 (flypaper effect occurs) in poor local governments.*

Research Method

The population in this study was all regencies and municipalities in Indonesia for the 2018-2022 budget period. The sampling technique used in this study was stratified random sampling. Stratification was based on the cutoff value of economic condition that is measured by the mean value of real Gross Regional Domestic Product (GRDP) for five years (2018-2022). The sample in this study was 226 samples of local governments in Indonesia with 112 rich local governments (have PDRB mean value above the cutoff value) and 114 poor local governments (have PDRB mean value below the cutoff value).

Three kinds of variables were used in this study. First, the dependent variables of this study were capital expenditure and operational expenditure, which consisted of personnel expenditure, grant expenditure, goods expenditure, subsidy expenditure, interest expenditure, and social assistance expenditure. Second, the independent variables of this study were local own-source revenue (LOSR,) general allocation funds (GAF), special allocation funds (SAF), and revenue-sharing funds (RSF). Third, the dummy variable of this study was 0 for local governments that have a PDRB mean value above the cutoff value and 1 for local governments that have a PDRB mean value below the cutoff value.

The data collection technique used in this study was the documentation technique. This technique collected secondary data in the Budget Realization Report (*Laporan Realisasi Anggaran*) of the local governments published on the website of the Directorate General of Fiscal Balance, namely https://djpk.kemenkeu.go.id/portal/data/apbd and https://djpk.kemenkeu.go.id/portal/data/tkdd.

The data analysis method used in this study consisted of descriptive statistical analysis, panel data regression estimation model test, classical assumptions test, and multiple regression test. Descriptive statistical analysis organized, summarized and presented data informatively. The data presented in this study were in the form of mean, standard deviation, minimum value, and maximum value. Because the data used in this study was in the form of panel data, an appropriate approach was needed to estimate the data parameters. The selection of the approach began with conducting the Chow test (CEM or FEM), the Lagrange Multiplier test (CEM or REM), and the Hausman test (FEM or REM). Then, classical assumptions tests were performed. A regression equation using the least squares method was considered the best regression line (Best Linear Unbiased Estimator) if it met the four assumptions tested by the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. Meanwhile, the regression equation using the general least squares method generally transformed the variables so that the variance of the error could be the same (homoscedastic) and there would be no autocorrelation.

Regression testing was continued by conducting several tests, which were the coefficient of determination test, the goodness of fit test, and the t-test. The coefficient of determination test provided information on how well the model can represent the original data. The goodness of fit test showed whether the independent variables are

significant to the regression model. The t-test showed whether the independent variables partially influence the dependent variable.

The flypaper effect occurred if it met one of the two criteria, namely (1) the regression coefficient of GAF, SAF, and RSF as the transfer income on local expenditure is larger than the LOSR coefficient on local expenditure (capital expenditure or operational expenditure), and both have a significant influence on local expenditure or (2) LOSR does not have a significant influence on local expenditure.

Result and Discussion

Descriptive Analysis

Based on Table 1, LOSR had a mean value of 394.16 billion and a standard deviation of 609.65 billion. Pegunungan Arfak Regency had the lowest LOSR (4.92 billion in 2022). Meanwhile, Surabaya Municipality had the highest LOSR (5,381.92 billion in 2020). GAF had a mean value of 757.78 billion and a standard deviation of 347.84 billion. Kutai Kartanegara Regency had the lowest GAF (141.99 billion in 2018). Meanwhile, Bandung Regency had the highest GAF (2,159.83 billion in 2020). SAF had a mean value of 246.28 billion and a standard deviation of 123.31 billion. Mojokerto Municipality had the lowest SAF (61.67 billion in 2020). Meanwhile, Bogor Regency had the highest SAF (744.51 billion in 2020). RSF had a mean value of 180.43 and a standard deviation of 359.64 billion. Saburaijua Regency had the lowest RSF (6.11 billion in 2021). Meanwhile, Kutai Kartanegara Regency had the highest RSF (3,861.85 billion in 2020).

Table 1 Descriptive Statistics

	Mean	Standard Deviation	Minimum	Maximum
Local own-source revenue (LOSR)	394.16	609.65	4.92	5,381.92
General allocation funds (GAF)	757.78	347.84	141.99	2,159.83
Special allocation funds (SAF)	246.28	123.31	61.67	744.51
Revenue-sharing funds (RSF)	180.43	359.64	6.11	3,861.85
Capital expenditure (CE)	352.56	282.34	44.39	2,754.30
Operational expenditure (OE)	1,386.73	941.50	304.51	7,679.44
Gross regional domestic product (GRDP)	31,937.19	45,135.73	133.00	434,268.00

Furthermore, capital expenditure had a mean value of 352.56 billion and a standard deviation of 282.34 billion. Tanjung Balai Municipality had the lowest capital expenditure (44.39 billion in 2021). Meanwhile, Surabaya Municipality had the highest capital expenditure (2,754.3 billion in 2019). Operational expenditure had a mean value of 1,386.731 billion and a standard deviation of 941.5011 billion. Saburaijua Regency had the lowest operational expenditure (304.51 billion in 2018). Meanwhile, Surabaya Municipality had the highest operational expenditure (7,679.44 billion in 2022). Gross regional domestic product had a mean value of 31,937.19 billion and a standard deviation of 45,135.73 billion. Pegunungan Arfak Regency had the lowest Gross regional domestic

product (133 billion in 2018). Meanwhile, Surabaya Municipality had the highest Gross regional domestic product (434,268 billion in 2022).

The high variability observed in several variables (such as GAF, RSF, OE, and GRDP) indicates significant differences between regions in terms of revenue, expenditures, and gross regional product. The wide range (from minimum to maximum values) across most variables suggests that there are regions with vastly different conditions. For instance, the variation in LOSR, ranging from 4.92 to 5,381.92, highlights the disparity between regions. This indicates that distinct policies or interventions may be required for regions with either very low or very high values. Additionally, the varying means, particularly for variables such as OE and GRDP, which have high average values accompanied by substantial standard deviations, further suggest a high degree of inequality in the distribution of these economic indicators across regions.

Panel Data Regression Estimation Model Test

Table 2 Chow Test

Model	Prob > F	Sig.
Capital Expenditure (CE) Regression	0.0000	0.05
Operational Expenditure (OE) Regression	0.0000	0.05

Based on the results of Table 2, the value of prob > F = 0.000, which was smaller than the significance value (0.05), indicated that the intercept of the regression equation was different so that the right approach was the fixed effect approach or fixed effect model (FEM). However, FEM caused the dummy variable of the local government economic conditions not to be included in the model regression process. It happened because the dummy variable was a time-invariant variable (a variable that does not change over time) which was not in accordance with FEM, which only processed time-variant variables (variables that change over time). Thus, FEM was not selected as the appropriate panel data regression model.

Table 3 Lagrange Multiplier Test

Model	Prob > $chibar^2$	Sig.
Capital Expenditure (BM) Regression	0.0000	0.05

Furthermore, the results of Table 3 show the Lagrange Multiplier Test, since FEM was not selected, the Lagrange Multiplier test was conducted to determine whether CEM or REM was the appropriate regression model. The value of prob > $chibar^2$= 0.000, which was smaller than the significance value (0.05), indicated that the appropriate approach was the random effect approach or random effect model (REM).

Multiple Regression Test

Table 4 Multiple Regression Test: Capital Expenditure

Variables	Capital Expenditure	
	Coefficient	Sig
Local own-source revenue (LOSR)	0.215	0.000
General allocation funds (GAF)	0.194	0.108
Special allocation funds (SAF)	0.135	0.194
Revenue-sharing funds (RSF)	0.283	0.000
Dummy (D)	-0.067	**0.259**
D*LOSR	-0.182	0.002
D*GAF	0.070	0.685
D*SAF	0.069	0.583
D*RSF	-0.158	0.000
Constant	5.571	0.000
Dependent Variable: Capital Expenditure		
R-Square Within	0.009	
R-Square Between	0.750	
R-Square Overall	0.618	
Prob > chi^2		0.000

The regression model for capital expenditure was:

$$lnCE_{it} = 5.571077 + 0.2156931 lnLOSR_{it-1} + 0.1942547 lnGAF_{it-1} + 0.1351091 lnSAF_{it-1} + 0.2828812 lnRSF_{it-1} - 0.066849 D_i - 0.1815912 D_i lnLOSR_{it-1} + 0.0702664 D_i lnGAF_{it-1} + 0.0689987 D_i lnSAF_{it-1} - 0.1582334 D_i lnRSF_{it-1} + v_{it}$$

Table 5 Multiple Regression Test: Operational Expenditure

Variables	Operational Expenditure	
	Coefficient	Sig
Local own-source revenue (LOSR)	0.246	0.000
General allocation funds (GAF)	0.169	0.019
Special allocation funds (SAF)	0.192	0.000
Revenue-sharing funds (RSF)	0.093	0.000
Dummy (D)	-0.241	**0.000**
D*LOSR	-0.081	0.002
D*GAF	0.256	0.002
D*SAF	-0.142	0.000
D*RSF	-0,019	0.278
Constant	7.145	0.000
Dependent Variable: Operational Expenditure		
R-Square Within	0.068	
R-Square Between	0.948	
R-Square Overall	0.935	
Prob > chi^2		0.000

The regression model for operational expenditure was:

$$lnOE_{it} = 7.144845 + 0.246029lnLOSR_{it-1} + 0.1687879lnGAF_{it-1} + 0.1918826lnSAF_{it-1} + 0.0934101lnRSF_{it-1} - 0.2406624D_i - 0.0805046D_ilnLOSR_{it-1} + 0.2559791D_ilnGSF_{it-1} - 0.1420776D_ilnSAF_{it-1} - 0{,}0194446D_ilnRSF_{it-1} + v_{it}$$

Based on the result of Table 4, the category dummy variable had a p-value of more than 0.05, so that H_0 failed to be rejected. Failure to reject H_0 meant that there was no difference in the mean value of capital expenditure between rich local governments and poor local governments **($\mathbf{H_1}$ failed to be accepted)**. Because there was no difference in the mean value of capital expenditure, hypothesis testing regarding the occurrence of the flypaper effect in rich local governments ($\mathrm{H}_{1\mathrm{a}}$) and poor local governments ($\mathrm{H}_{1\mathrm{b}}$) could not be performed.

Based on the result of Table 5, the category dummy variable had a p-value of more than 0.05, so that H_0 was rejected. Rejection of H_0 meant that there was a difference in the mean value of operational expenditure between rich local governments and poor local governments **($\mathbf{H_2}$ was accepted)**. Because there was a difference in the mean value of operational expenditure, hypothesis testing regarding the occurrence of the flypaper effect in rich local governments ($\mathrm{H}_{2\mathrm{a}}$) and poor local governments ($\mathrm{H}_{2\mathrm{b}}$) could be performed.

Based on Table 5, LOSR had a significant effect on operational expenditure (p-value of less than 0.05). The interaction variable of LOSR with the dummy had a p-value of less than 0.05, which meant that there was a difference in the LOSR coefficient between rich local governments and poor local governments. The LOSR regression coefficient for rich local governments (dummy 0) was 0.246029. Meanwhile, the LOSR regression coefficient for poor local government (dummy 1) was 0.1655244 (0.246029-0.0805046).

GAF had a significant effect on operational expenditure (p-value of less than 0.05). The interaction variable of GAF with the dummy had a p-value of less than 0.05, which meant that there was a difference in the GAF coefficient between rich local governments and poor local governments. The GAF regression coefficient for rich local governments (dummy 0) was 0.1687879. Meanwhile, the GAF regression coefficient for poor local government (dummy 1) was 0.424767 (0.1687879+0.2559791).

SAF had a significant effect on operational expenditure (p-value of less than 0.05). The interaction variable of SAF with the dummy had a p-value of less than 0.05, which meant that there was a difference in the SAF coefficient between rich local governments and poor local governments. SAF regression coefficient for rich local governments (dummy 0) was 0.1918826. Meanwhile, the SAF regression coefficient for poor local government (dummy 1) was 0.049805 (0.1918826-0.1420776).

RSF had a significant effect on operational expenditure (p-value of less than 0.05). The interaction variable of RSF with the dummy had a p-value of more than 0.05, which meant

that there was no difference in the RSF coefficient between rich local governments and poor local governments.

The t-test results in Table 5 could also show the financing response of the operational expenditure, referencing whether the flypaper effect occurred or did not occur in rich local governments and poor local governments. The flypaper effect occurred if it met one of the requirements, namely (1) The transfer income (GAF, SAF, or RSF) coefficient was greater than the LOSR coefficient, and both are significant to operational expenditure or (2) LOSR had no significant effect on operational expenditure.

The flypaper effect did not occur in the use of GAF_{t-1} and SAF_{t-1} on $operational\ expenditure_t$ for rich local governments. The regression coefficients of GAF_{t-1} and SAF_{t-1} were not greater than the regression coefficient of $LOSR_{t-1}$ or the p-value of $LOSR_{t-1}$ were significant to $operational\ expenditure_t$, so that it does not meet the requirements for the occurrence of flypaper effect. It was concluded that operational expenditure was not more responsive to GAF_{t-1} and SAF_{t-1} compared to $LOSR_{t-1}$ in rich local governments (H_{2a} was failed to be accepted, and the flypaper effect did not occur).

The flypaper effect occurred in the use of GAF_{t-1} on $operating\ expenditure_t$ in poor local governments. The regression coefficients of GAF_{t-1} was greater than the regression coefficient of $LOSR_{t-1}$ and both were significant to $operating\ expenditure_t$ or the p-value of $LOSR_{t-1}$ were significant to $operating\ expenditure_t$, so that it met the requirements for the occurrence of the flypaper effect. It was concluded that operational expenditure was more responsive to GAF_{t-1} compared to $LOSR_{t-1}$ in poor local governments (H_{2b} was accepted, and the flypaper effect occurred).

It was not known whether the flypaper effect phenomenon occurred in the use of RSF_{t-1} in rich local governments and poor local governments because the p-value of the interaction variable $D * RSF_{t-1}$ was not significant.

Discussion

The Effect of $LOSR_{t-1}$, GAF_{t-1}, SAF_{t-1}, and RSF_{t-1} on $Capital\ Expenditure_t$

The regression results showed that H_0, which states that there is no difference in the mean value of capital expenditure in rich local governments and poor local governments, failed to be rejected because the p-value of the category dummy was not less than 0.05. Although the amount of capital expenditure in rich local governments and poor local governments differed numerically, no significant difference was found between the two numerical figures. It made the interaction variable between the dummy and other independent variables not be used to determine whether the flypaper effect occurred or did not occur in capital expenditure in rich local governments and poor local governments. The lack of a difference in the mean value of capital expenditure between rich local government and poor local government could be one of the implications of the central government's policy regarding the budget for capital expenditure or infrastructure to all

regional governments. Listed in the main targets of national development in the 2015-2019 National Medium-Term Development Plan, the central government set the target for capital expenditure for districts/cities at 30% of total expenditure. In the latest 2020-2024 National Medium-Term Development Plan, a target for minimum spending of GAF and RSF for regional infrastructure spending was set at 25%. The existence of these policies encourages every local government to budget their capital expenditure accordingly so that statistically, there is no difference in the mean value of capital expenditure.

The Effect of $LOSR_{t-1}$, GAF_{t-1} , SAF_{t-1} , and RSF_{t-1} on $Operational\ Expenditure_t$

The regression results showed that H_0, which states that there is no difference in the mean value of capital expenditure in rich local government and poor local government, was rejected because the p-value of the category dummy was less than 0.05. Statistically, it was known that there was a difference in the mean value of operational expenditure, so further hypothesis testing regarding the occurrence of the flypaper effect in rich local governments and poor local governments could be performed.

Based on the regression results, the flypaper effect on operational expenditure using GAF_{t-1} and SAF_{t-1} did not occur in rich local governments because $LOSR_{t-1}$ had larger regression coefficients, both of which had a significant effect on operational expenditure. Every 1% increase in $LOSR_{t-1}$ increased operational expenditure by 0.24%. Meanwhile, every 1% increase in GAF_{t-1} and SAF_{t-1} increased operational expenditure by 0.16% and 0.19%, respectively.

The flypaper effect did not occur in rich local governments. This meant that LOSR dominated the financing of operational expenditures so that local governments were not too dependent on the transfer of income from the central government. The transfer incomes were used up to their function to help support LOSR (Pramuka, 2010). The absence of the flypaper effect phenomenon in rich local governments is in line with research by Pramuka (2010, Amalia (2015), and Rizal et al. (2021).

Based on the regression results, the flypaper effect on operational expenditure using GAF_{t-1} occurred in poor local governments because $LOSR_{t-1}$ had smaller regression coefficients, both of which had a significant effect on operational expenditure. Every 1% increase in SAF_{t-1} increased operational expenditure by 0.42%. Meanwhile, every 1% increase in $LOSR_{t-1}$ increased operational expenditure by 0.16%.

The flypaper effect occurred in poor local government. This meant that GAF dominated the financing of operational expenditures, so local governments were dependent on the transfer of income from the central government. It might happen because the LOSR of the local government was not sufficient to finance the needs of local government spending. The discovery of the flypaper effect in poor local governments is in line with research by Purbarini and Masdjojo (2010), Ansori and Muthmainah (2019), and Setyaningsih and Witono (2024).

Practical Implication

Central government policies should continue to emphasize equitable budget distribution to ensure that both rich and poor regions receive adequate funding for infrastructure. Local governments, regardless of their economic status, should align their capital expenditures with these national targets to avoid disparities in infrastructure development across regions. Local governments, especially in poorer regions, should focus on improving LOSR generation to reduce dependency on central government transfers. This could involve enhancing local revenue collection mechanisms, improving tax compliance, and exploring new sources of local income to ensure financial independence and sustainability in the long term. Lastly, there is a need for targeted capacity-building programs for local governments, especially those in poorer regions, to improve their ability to generate LOSR. The central government could also consider additional measures, such as providing training or technical assistance, to enhance financial management and revenue collection capabilities in these regions.

Theoretical Implications

The findings provide empirical evidence for the ongoing debate about the flypaper effect, showing that it is not a one-size-fits-all phenomenon. The presence or absence of the flypaper effect depends on the local government's economic status, and the findings suggest that future research should explore how regional economic conditions, and the composition of local revenue influence the effectiveness of government transfers. Theoretical frameworks of fiscal decentralization should account for the uneven fiscal autonomy of local governments. Future research might investigate the long-term effects of decentralization on local government's ability to generate and manage their own revenues and how national fiscal policies can either empower or constrain local fiscal autonomy.

Conclusion

The study on the response of local government financing to local expenditure was conducted on 226 sample regencies and municipalities throughout Indonesia during the 2018-2022 budget year period. This study aims to determine whether there was a difference in the mean value of capital expenditure and operational expenditure between rich local governments and poor local governments, which was a requirement to do further hypothesis testing to determine whether each capital expenditure and operational expenditure was more responsive to $LOSR_{t-1}$ or transfer income $(GAF_{t-1}, SAF_{t-1}, or\ RSF_{t-1})$ so that the flypaper effect occurrence may be found or not. The flypaper effect phenomenon occurred if (1) the coefficient of GAF, SAF, or RSF was larger than the coefficient of LOSR and both had a significant effect on the expenditures or (2) the LOSR did not have a significant effect on the expenditures. The results of the study showed that there was no difference in the mean value of capital expenditure in rich local government and poor local government, so further hypothesis testing of the flypaper effect occurrence could not be performed. However, it was found that there was

a difference in the mean value of operational expenditure in rich local government and poor local government, and hypothesis testing of the flypaper effect occurrence was performed. The flypaper effect occurred on operational expenditure only in poor local governments. The operational expenditure is more responsive to the GAF in year t-1 compared to LOSR in year t-1 in poor local governments.

The limitations of this study are related to data period and statistical data. The selected period of the study is the most recent period for now, but it involves the time when the abnormal condition of COVID-19 occurred, which might have had an impact on the financing response of local governments. For further research, it is recommended that the period of the study be added and the time when abnormal conditions of COVID-19 occurred. The representative sample used may be able to draw a conclusion on the flypaper effect occurrence in regencies and municipalities in Indonesia. However, further analysis could be needed by using primary data on several samples so that more detailed information on local government financing responses can be obtained.

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Conflicts of Interest

The authors declare no conflict of interest. The funders had no role in the design of the study, in the collection, analyses, or interpretation of data, in the writing of the manuscript, or in the decision to publish the results.