


The Phenomenon of Flypaper Effect on Fiscal Transfer and Regional Expenditure in Regencies/Cities of West Papua Province in 2017–2021

La Ode Alisyah¹, Ketysia Imelda Tewernusa², Nita Dwi Jayanti³

^{1,2,3} Faculty of Economics and Business, Universitas Papua, Indonesia

Article Info	ABSTRACT
Keywords: Regional Shopping, Special Allocation Fund, General Allocation Funds, Flypaper Effect, Regional Original Revenue.	This study aims to analyze the influence of Regional Original Revenue (PAD), General Allocation Fund (DAU), Special Allocation Fund (DAK), and Revenue Sharing Fund (DBH) on Regional Expenditure and identify the phenomenon of flypaper effect in districts/cities in West Papua Province for the 2017–2021 period. The data used is secondary data obtained from the Directorate General of Financial Balance and the Central Statistics Agency. The analysis method employed is panel data regression, with model selection conducted through the Chow test and the Hausman test, which yields the Fixed Effects Model (FEM) as the best model. The results of the study show that PAD, DAU, and DBH do not have a significant effect on Regional Expenditure, while DAK has a considerable impact. These findings indicate a flypaper effect, where local governments are more responsive to fiscal transfers than to Regional Original Revenue. This condition reflects the fiscal dependence of local governments on central funds, so a strategy to increase PAD is needed to strengthen regional financial independence..
This is an open access article under the CC BY-NC license 	Corresponding Author: La Ode Alisyah Faculty of Economics and Business, Universitas Papua E-mail : l.alisyah@unipa.ac.id

INTRODUCTION

Fiscal decentralization is one of the important policies in modern governance that aims to improve the efficiency, effectiveness, and accountability of local government implementation. Through devolution, part of the authority for state financial management is transferred from the central government to the regions, allowing public services to be closer to the community and enabling development needs to be accommodated in a more targeted manner. The primary objective of this policy is to promote equitable development, enhance regional autonomy, and mitigate regional inequality (Fan et al., 2020; Lewis et al., 2020; Xu & Lin, 2022).

In the Indonesian context, central and regional financial relations are implemented through a fiscal transfer mechanism in the form of a balance fund, in addition to Regional Own Revenue (PAD), which serves as the primary source of self-financing. The balance fund, comprising the General Allocation Fund (DAU), Special Allocation Fund (DAK), and Revenue Sharing Fund (DBH), is designed to mitigate fiscal disparities between regions while ensuring the equitable distribution of public services. However, the high dependence of regions on central transfer funds often raises new problems, namely the weak motivation of local governments in exploring the potential of PAD (Dinh Thanh et al., 2023; Kim et al., 2022; Wang et al., 2024).

Regional spending is a crucial indicator for assessing the extent to which local governments can effectively deliver public services. The greater the expenditure allocated to the public sector, such as education, health, and infrastructure, the higher the expected level of community welfare. However, the effectiveness of regional spending is not only determined by the amount of budget available, but also by the structure of regional revenue sources. In this case, the composition of PAD and transfer funds affects the direction of regional spending policies (Foa, 2022; Lewis, 2023; Purbadharmaja et al., 2019; Singh et al., 2024).

The phenomenon of an imbalance between PAD contributions and transfer funds is known as the flypaper effect, which occurs when regional spending is more responsive to transfer funds from the central government than to PAD. This has serious implications for regional fiscal independence, as over-reliance on transfer funds can weaken local governments' incentives to increase their own fiscal capacity. In other words, instead of being a stimulus for independence, transfer becomes a source of dependency (Kim et al., 2022; Singh et al., 2024; Wang et al., 2024).

West Papua is one of the provinces in Indonesia that receives special treatment in the form of special autonomy, as outlined in Law Number 21 of 2001 and further strengthened by Law Number 35 of 2008. This policy allocates a larger portion of transfer funds than other provinces, aiming to accelerate development and reduce regional disparities. However, the facts show that the contribution of West Papua's PAD is still relatively low compared to the transfer funds received, thus creating a potential for a flypaper effect.

During the 2017-2021 period, regional spending in West Papua experienced significant fluctuations. The largest increase occurred in 2020, which was influenced by the policy of refocusing the budget in response to the COVID-19 pandemic. At the same time, PAD makes only a small contribution to total regional revenues, while most of the financing needs are still dependent on DAU, DAK, and DBH. The significant difference between PAD contributions and transfer funds reinforces the allegation of a 'flypaper effect'.

Research on the flypaper effect has been conducted widely in various regions of Indonesia, yielding mixed results. Some found that transferring funds had a greater influence on regional spending, while others showed that PAD was also able to contribute significantly to

spending. These differences in results highlight the importance of contextual analysis, particularly in areas with unique characteristics, such as West Papua, which receives substantial amounts of special autonomy funds (Fan et al., 2020; Lewis et al., 2020; Xu & Lin, 2022).

Based on this background, this study aims to analyze the influence of PAD, DAU, DAK, and DBH on regional spending in districts/cities of West Papua Province and identify the phenomenon of the flypaper effect that may occur. The findings of this study are expected to contribute to the development of the literature on fiscal decentralization and provide policy recommendations for local governments to reduce their fiscal dependence on the central government and enhance regional financial independence.

METHODS

This study employs a quantitative approach to examine the causal relationship between independent variables, including Regional Original Revenue (PAD), General Allocation Funds (DAU), Special Allocation Funds (DAK), and Revenue Sharing Funds (DBH), and the dependent variable, namely Regional Expenditure. The quantitative approach was chosen because it enabled the objective measurement of the influence of fiscal variables on regional spending, providing empirical evidence related to the phenomenon of the flypaper effect in districts/cities of West Papua Province.

This type of research falls under the category of causal associative research, which aims to analyze the cause-and-effect relationship between two or more variables. With this method, researchers can determine the extent to which changes in the PAD, DAU, DAK, and DBH variables influence changes in regional spending. In addition, this study also emphasizes hypothesis testing to determine whether a flypaper effect exists in the context of fiscal transfers in West Papua.

The data used are secondary, in the form of a report on the realization of the district/city budget in West Papua Province for the 2017-2021 period. The data was obtained from the official publication of the Directorate General of Financial Balance (DJPK) of the Ministry of Finance of the Republic of Indonesia and the Central Statistics Agency (BPS). The election for the 2017–2021 period is based on the availability of complete data and relevance to the development of fiscal policy in the era of West Papua's special autonomy.

The research population encompasses all districts and cities in West Papua Province, which comprises 13 autonomous regions. All members of the population were used as a research sample (total sampling), resulting in 65 observations (13 regions × 5 years). This sampling technique was chosen to avoid bias and ensure a comprehensive representation of fiscal conditions throughout the West Papua region.

Data analysis was carried out using panel data regression. This method was chosen because it combines the characteristics of cross-sectional data (between districts/cities) with

those of a time series (for the period 2017–2021). The advantage of panel data regression is its ability to produce more efficient estimates, reduce the potential for multicollinearity, and control individual heterogeneity between regions. The estimation models used include Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) (Aguade et al., 2022; Al-Shammari et al., 2021; Sun & Wang, 2022).

To determine the best model, a model specification test is carried out. First, the Chow test is used to compare CEM and FEM. If the test results are significant, then FEM is more appropriate. Second, the Hausman test was carried out to compare FEM with REM. If the test results are significant, then FEM becomes the chosen model. After obtaining the best model, a classical assumption test is carried out, which includes a multicollinearity test, a heteroscedasticity test, and an autocorrelation test to ensure the validity of the estimation results (Anley Alebachew, 2020; Bahasoan et al., 2019; de Medeiros Silva et al., 2019; Papke & Wooldridge, 2023).

Hypothesis testing was conducted using partial tests (t-tests), simultaneous tests (F-tests), and determination coefficients (R^2). The t-test is used to determine the influence of each independent variable on regional spending. The F-test is used to test the influence of independent variables on the dependent variable. In contrast, R^2 is used to determine the contribution of independent variables in explaining regional spending variations. The flypaper effect phenomenon is stated to occur if the influence of transfer funds (DAU, DAK, DBH) on regional spending is greater and significant than the influence of PAD (Hamaker & Muthén, 2020; Huang et al., 2019; Ullah et al., 2021).

RESULTS AND DISCUSSION

Statistical Test Results

The data used in this study includes Regional Original Revenue (PAD), General Allocation Fund (DAU), Special Allocation Fund (DAK), Revenue Sharing Fund (DBH), and Regional Expenditure in 13 districts/cities in West Papua Province for the 2017–2021 period. The average development of each variable is shown in

Based on the results of descriptive statistics in Table 1, it can be seen that the average regional expenditure of districts/cities in West Papua Province for the period 2017–2021 reached Rp 1,876.45 billion, with considerable variation (standard deviation of Rp 654.89 billion), indicating a difference in fiscal capacity between regions. The PAD variable has a relatively small average value of IDR 102.34 billion compared to transfer funds, thus illustrating the low contribution of regional original revenue to regional financing. In contrast, DAU and DAK showed sizable average values of IDR 812.54 billion and IDR 312.78 billion, respectively, which confirms that the main source of regional spending still relies on transfer funds from the central government.

Table 1. Descriptive Statistics of Research Variables (in billion rupiah)

Variable	Minimum	Maximum	Average	Std. Deviation
PAD	15,21	345,67	102,34	75,21
DAU	310,12	1.245,89	812,54	210,76
DAK	55,45	689,23	312,78	120,45
DBH	12,89	276,56	98,64	65,32
Regional Spending	550,34	3.456,78	1.876,45	654,89

Source: DJPK & BPS, processed (2025)

Based on the model specification test (Table 2), the results of the Chow test showed that FEM was more appropriate than CEM, and the results of Hausman's test also confirmed that FEM was more appropriate than REM. Thus, the best model used in this study is the Fixed Effect Model (FEM).

Table 2. Panel Regression Model Specification Test

Test Type	Hypothesis	Prob.	Decision	Selected Models
Chow Test	EMC vs EMF	0,000	Subtract H0	FEM
Hausman Test	FEM vs REM	0,002	Subtract H0	FEM

Source: Data processed (2025)

The results of the classical assumption test (table 3) on the panel data regression model with the FEM approach show that the model is feasible to use, because there is no multicollinearity ($VIF < 10$), there is no heteroscedasticity (test probability value > 0.05), there is no autocorrelation (the DW value is in the range dU and $4-dU$), and the residual is normally distributed (Prob. JB > 0.05). This confirms that the regression model meets the basic assumptions, allowing the estimation results to be validly interpreted.

Table 3. Panel Data Regression (FEM) Classical Assumption Test

Test Type	Indicators/Values	Prob. /Border	Result
Multicollinearity	FAST PAD = 1.47; DAU = 1.40; DAK = 1.67; DBH = 1.33	VIVID < 10	No multicollinearity
Heteroscedasticity	Prob. PAD = 0.276; DAU = 0.391; DAK = 0.114; DBH = 0.327	> 0.05	No heteroscedasticity
Autocorrelation	DW = 1.89	$1.55 < DW < 2.45$	No autocorrelation

Test Type	Indicators/Values	Prob. /Border	Result
Normality	JB = 1,782	Prob. = 0.412 > 0.05	Normally distributed data

Source: Data processed (2025)

Based on the results of the estimation (Table 4) using the Fixed Effects Model (FEM), it was found that the variables PAD, DAU, and DBH did not have a significant effect on Regional Expenditure, as indicated by a probability value above 0.05. In contrast, the DAK variable had a positive and statistically significant effect, with a coefficient of 0.347 and a p-value of 0.003. This shows that the increase in DAK allocation actually encourages an increase in regional spending, while PAD, DAU, and DBH do not have a significant effect. Overall, these findings confirm the occurrence of the flypaper effect, where regional spending is more responsive to central government transfer funds than to local revenues.

Table 4. Table 4. FEM Estimation Results

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C (Constant)	154,32	78,54	1,96	0,053
PAD	0,084	0,092	0,91	0,367
DAU	0,132	0,105	1,25	0,216
DAK	0,347	0,112	3,10	0,003**
DBH	0,067	0,089	0,75	0,454

$R^2 = 0.732$ | Adj. $R^2 = 0.691$ | F-Stat = 17.82 (Prob. 0.000)

Remarks: **Significant at $\alpha = 5\%$**

The Role of Regional Original Revenue (PAD) on Regional Expenditure

The study's results indicate that PAD has no significant impact on regional spending in West Papua districts/cities. This condition indicates that the contribution of PAD is still very small compared to the total regional revenue. The low role of PAD can be attributed to a limited regional tax base, weak tax administration capacity, and low public compliance with paying regional taxes. As a result, PAD has not been able to become the main source of financing regional development needs.

This phenomenon aligns with previous studies that have found PAD in most regions of Indonesia plays a marginal role in regional spending, particularly in areas with low fiscal capacity. In West Papua, although some regions have potential natural resources, the management and optimization of PAD still face various obstacles, both in terms of regulations

and the human resource capacity of the regional apparatus (Hong Vo et al., 2021; Y. Li & Bai, 2024).

This condition reinforces the suspicion that local governments continue to rely on fiscal transfers from the central government to fulfill their spending functions. Thus, the policy of increasing PAD must be a priority, for example, through the intensification of regional taxes, the extension of the levy base, and the development of regionally owned businesses oriented towards increasing sustainable income.

General Allocation Funds (DAU) and Regional Expenditure Response

The results of the analysis indicate that DAU has no significant effect on regional spending. This is in contrast to the main function of DAU as an instrument of fiscal equity between regions. The block-grant nature of DAUs can explain the absence of significant influence, which allows for flexible use and often prioritizes routine expenditures, such as paying civil servants' salaries, over development spending.

In addition, high dependence on DAU can actually weaken regional incentives to explore PAD. Some studies show that when DAU increases, regions tend to reduce efforts to increase PAD because they feel that their fiscal needs have been met. In the context of West Papua, this is exacerbated by challenging geographical conditions and a weak productive economic base, resulting in regional spending being more directed towards administrative needs (Arends, 2020; Wu et al., 2023).

These findings confirm that, although DAU plays a major role in regional revenue structures, its effectiveness in encouraging development spending remains limited. Therefore, it is necessary to evaluate the DAU distribution mechanism so that it is more oriented towards development output, rather than just serving as a balancing fund.

The Effect of Special Allocation Funds (DAK) on Regional Expenditure

In contrast to PAD and DAU, the study's results show that DAK has a positive and significant impact on regional spending. This indicates that a corresponding increase in regional spending accompanies every increase in DAK. The significance of DAK's influence is due to its conditional nature (earmarked grant), where its use is directed to priority sectors such as education, health, and infrastructure.

This condition aligns with the primary purpose of DAK, which is to fund special activities that are a national priority and cannot be funded solely with PAD or DAU. In the context of West Papua, DAK plays a crucial role, given that this area faces fiscal limitations and high development needs. The DAK allocation promotes the enhancement of public service quality while bolstering regional capital expenditure.

These findings also show that fiscal transfer policies through DAK are relatively effective in encouraging development spending in West Papua. Thus, strengthening the right DAK allocation can be an effective strategy to reduce the lag of inter-regional development (Choudhury & Sahu, 2022; J. Li & Ding, 2022).

Revenue Sharing Fund (DBH) and Regional Expenditure

The results of the study indicate that DBH has no significant impact on regional spending. This can be caused by fluctuations in DBH revenue, which is highly dependent on the performance of state revenues from natural resources and central taxes. When state revenue decreases, the DBH received by the regions also decreases automatically.

In West Papua, despite possessing a wealth of natural resources, including oil, gas, and mining products, DBH's contribution remains relatively small and unstable. This uncertainty makes it difficult for regions to make DBH the basis for sustainable spending planning on DBH. As a result, DBH is unable to have a significant influence on regional spending patterns.

This condition highlights the importance of diversifying regional revenue sources to minimize the impact of uncertain fluctuations in central transfers on regional spending. Local governments need to strengthen PAD and take advantage of local economic potential so that regional spending is more stable and oriented towards long-term development (Hörcher et al., 2023; Pietrovito et al., 2023).

The Flypaper Effect Phenomenon and Policy Implications

Simultaneously, PAD, DAU, DAK, and DBH have a significant effect on regional spending. However, only DAK had a significant effect, while PAD, DAU, and DBH did not. These findings show the occurrence of the flypaper effect, where regional spending is more responsive to fiscal transfers from the central government than to PAD. In other words, transfer funds are "sticking" more strongly to regional spending than the source of regional revenue (Digdowiseiso et al., 2022; Thanh et al., 2022).

The flypaper effect phenomenon in West Papua shows a high fiscal dependence on the central government. This condition not only weakens regional independence but also has the potential to reduce the motivation of local governments in exploring the potential of PAD. If left unchecked, this dependency will hamper sustainable development efforts and widen the fiscal gap (Rotulo et al., 2021).

The policy implications of this finding are the need for a strategy to increase PAD through the optimization of regional taxes and levies, the development of regional businesses, and an increase in the capacity of the local apparatus to manage potential. In addition, the central government needs to design a fiscal transfer scheme that encourages regional independence,

for example, by providing fiscal incentives for regions that have succeeded in significantly increasing PAD.

CONCLUSION

This study examines the impact of Regional Original Revenue (PAD), General Allocation Fund (DAU), Special Allocation Fund (DAK), and Revenue Sharing Fund (DBH) on Regional Expenditure in districts/cities of West Papua Province for the period 2017–2021. The results of the regression analysis using the Fixed Effects Model (FEM) indicate that partially adjusted PAD, DAU, and DBH do not have a significant impact on Regional Expenditure. In contrast, DAK has a positive and significant effect. Simultaneously, these four variables have a significant effect on regional spending. These findings indicate the occurrence of the flypaper effect, a condition in which regional spending is more responsive to central government transfer funds than to PAD. This phenomenon reflects the low level of regional fiscal independence in West Papua, as local governments rely more on central transfers than on exploring the potential of local revenues. Based on the research results, it is suggested that local governments focus more on strategies to increase PAD through tax intensification and extensification, as well as optimizing local economic potential. On the other hand, the central government needs to design a fiscal transfer mechanism that further encourages regional fiscal independence by providing incentives for regions that succeed in increasing their contribution to PAD's total revenue.

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