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Analysis of the Effect of Fiscal Decentralization on Household Welfare in West Nusa Tenggara Province, 2017–2024

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ABSTRACT

The objective of this study is to analyze the impact of Local Own Source Revenue (PAD) and Balancing Funds on household welfare measured by real per capita expenditure both directly and indirectly through capital expenditure as an intermediary variable in ten regencies and cities in West Nusa Tenggara Province, Indonesia, during the 2017–2024 period. This study employs a quantitative associative approach using panel data consisting of 80 observations. The data were analyzed using path analysis based on the Fixed Effects Model (FEM), with the Sobel test to examine the mediating effect. The results indicate that local revenue (PAD) has a negative but statistically insignificant effect on capital expenditure, while Balancing Funds have a positive but statistically insignificant effect. Furthermore, local revenue, Balancing Funds, and capital expenditure do not have statistically significant partial effects on real per capita expenditure. Conversely, the average number of years of schooling has a positive and statistically significant effect, while the poverty rate has a negative and statistically significant effect. The results of the Sobel test indicate that capital expenditure does not mediate the effects of either PAD or balancing funds on household welfare. Nevertheless, the overall model is statistically significant and explains 97.7% of the variance in real per capita expenditure.

Keywords: Local Own-Source Revenue, Balancing Funds, Capital Expenditure, Real Per Capita Expenditure, Household Welfare.

INTRODUCTION

Welfare generally describes a decent standard of living, reflected in the ability of individuals and households to meet their basic needs and achieve a better quality of life. Welfare represents the quality of life of individuals or households, which can be measured through household expenditure and asset accumulation (Roosyidah et al., 2024; Sherka & Tsehay, 2025). However, individual satisfaction cannot be directly observed; therefore, a quantitative measure is needed to represent it. One approach that can be used is *money metric utility*, which measures welfare based on the amount of expenditure a household needs to achieve a certain level of utility at prevailing prices (Deaton, 1980). Under this approach, consumption expenditure can serve as a monetary measure reflecting the level of welfare attained by a household. To compare welfare across regions, expenditure must be expressed in real terms by

accounting for differences in price levels and living costs, so that variations more accurately reflect differences in purchasing power rather than merely differences in prices. This expenditure is then calculated on a per capita basis, taking into account the number of household members, to reflect the economic resources available to each household member. The use of this indicator is also supported by Trang et al. (2026), who note that household expenditure per capita is a commonly used welfare indicator in developing countries because it better reflects living standards than income. Based on these considerations, this study uses real per capita expenditure (PRPK) as a proxy for household welfare.

In line with this approach, this study estimates household welfare using annual real per capita expenditure, as this measure reflects people's purchasing power after adjustment for differences in purchasing power. According to data from Statistics Indonesia (BPS, 2024), adjusted per capita expenditure in West Nusa Tenggara Province reached IDR 11,606,000 per person per year in 2024. Nevertheless, disparities in welfare levels persist across regencies and municipalities in the province. In 2024, Mataram City recorded the highest annual real per capita expenditure, at IDR 16,514,000 per person per year, whereas Bima Regency recorded only IDR 9,418,000 per person per year. This situation indicates that improving public welfare in West Nusa Tenggara Province remains a challenge. One approach expected to improve public welfare is fiscal decentralization, which involves transferring authority to regional governments to manage their financial resources according to the potential, characteristics, and needs of their respective regions (Ningsih et al., 2023). This authority is intended to enable regional governments to improve the quality of public services and enhance public welfare (Hardiana, 2023).

Fiscal Federalism Theory provides a theoretical basis for understanding the relationship between fiscal decentralization and social welfare. The theory originates from Musgrave (1959) in *The Theory of Public Finance: A Study in Public Economy*, which identifies three major government functions: economic stabilization, income distribution, and resource allocation. Oates (1972) further developed the resource allocation function through the *Decentralization Theorem*. As cited in as cited in Slavinskaitė et al. (2019), Oates (1972) explains that local governments can allocate resources more efficiently because they have a better understanding of the needs and characteristics of their communities. However, carrying out these responsibilities requires adequate financial resources to support local administration and the provision of public services. Thus, fiscal decentralization encompasses not only the transfer of authority to local governments but also the allocation of financial resources from the central government to enable them to exercise their responsibilities and meet local community needs.

Transfers from the central government are an important part of intergovernmental fiscal relations. In Indonesia, these transfers are provided through Balancing Funds to support regional financing. This study treats Balancing Funds as an indicator of fiscal decentralization because they represent fiscal resources transferred from the national to local level. Their contribution to welfare may depend on how effectively local governments convert the funds into services and development outcomes (Arends, 2020).

In addition to transfer revenue, local governments obtain Local Own-Source Revenue (PAD), which reflects their capacity to generate funds within their jurisdictions. PAD and Balancing Funds provide resources for regional spending, including capital expenditure on infrastructure and public facilities. The implications of these revenue sources for welfare therefore depend not only on their size but also on the priorities and effectiveness of budget allocation. The two sources of regional revenue can finance different expenditure needs, including investment in infrastructure and public facilities. Such spending may improve living conditions when it expands access to productive assets and essential services. Nevertheless, the extent of these benefits can differ across regions, depending on fiscal capacity, spending priorities, and the quality of implementation (Changwony, 2026; Kasim et al., 2026).

According to Endogenous Growth Theory, Barro (1990) explains that productive public services can serve as inputs in the private sector's production process, allowing their provision to increase capital productivity and promote economic output growth. In the context of this study, capital expenditure allocated to infrastructure and public facilities can support economic activity and increase public productivity. This mechanism is supported by Anjande et al. (2022), who found that infrastructure spending can stimulate economic activity, create jobs, and increase people's incomes. Increased employment opportunities and income can subsequently strengthen households' ability to meet their consumption needs. As their consumption capacity improves, households may increase their expenditure on both food and nonfood needs. Such increases in expenditure may then be reflected in Real Per Capita Expenditure (PRPK), which this study uses as a proxy for household welfare. Therefore, capital expenditure is expected to serve as a mechanism linking PAD and Balancing Funds to household welfare through the development of infrastructure and public facilities that support greater economic activity, higher incomes, and improved consumption capacity.

Beyond local fiscal policies, household living standards are also affected by socioeconomic conditions. Therefore, this study incorporates the unemployment rate (TPT), mean years of schooling (RLS), and the proportion of the population living in poverty as control variables to reduce the risk of biased estimates of the effects of the main explanatory variables. The unemployment rate (TPT) is expected to negatively affect real per capita expenditure, as higher unemployment can reduce income-earning opportunities and weaken people's purchasing power. Okun (1962, as cited in Foroni & Furlanetto, 2026) explains that there is a negative relationship between real output growth and the unemployment rate, meaning that an increase in unemployment can limit people's ability to earn income and meet their consumption needs. Ziegenbein (2021) further explains that Okun's Law describes the short-run elasticity between economic output and unemployment; that is, increases in economic output are generally accompanied by decreases in the unemployment rate.

Educational attainment is measured using Mean Years of Schooling (RLS). Consistent with *Human Capital Theory*, education represents an investment in human capital that enhances individuals' knowledge, skills, and abilities, thereby increasing labor productivity. Higher productivity, in turn, improves individuals' chances of obtaining employment with higher

earnings, ultimately increasing households' capacity to consume (Schultz, 1961; Becker, 1964, as cited in Backman, 2014). Therefore, higher levels of educational attainment are expected to increase people's opportunities to earn higher incomes and, consequently, strengthen their ability to meet consumption needs. This improvement may be reflected in higher Real Per Capita Expenditure, which serves as an indicator of welfare (Erwin et al., 2026).

Poverty is also included as a control variable because it is expected to influence public welfare. This relationship can be explained through the *Vicious Circle of Poverty* proposed by Nurkse (1953, as cited in Safhira et al., 2023), which explains that a country or community may remain poor because limited capital and income constrain investment that could otherwise increase productivity and income, thereby perpetuating a cycle of poverty. This explanation is consistent with Ma et al. (2024), who state that households with limited assets and capital, as well as restricted access to education, healthcare services, and employment opportunities, are more vulnerable to becoming trapped in a poverty trap, making it difficult for them to improve their income and welfare.

Previous studies have reported inconsistent findings. In addition, research specifically using Real Per Capita Expenditure (PRPK) as the dependent variable to measure household welfare remains limited. Most studies use the Human Development Index (HDI) as an indicator of welfare (Fadilah & Setiawan, 2025; Fatimah & Priyono, 2020; Irmawati & Kawedar, 2025; Khoirunisa & Sulaeman, 2022), whereas Yustriawan (2021) and Saputri et al. (2024) use per capita income as the dependent variable. The HDI is a composite index encompassing health, education, and a decent standard of living, with the latter measured using Real Per Capita Expenditure. Because it combines these three dimensions, using the HDI as a welfare indicator does not specifically reveal how fiscal decentralization affects people's expenditure. Furthermore, changes in health and education outcomes tend to take time, meaning that changes in the overall HDI may not immediately reflect the long-term effects of local government spending. Meanwhile, per capita income represents the average income of a region but may not necessarily reflect household purchasing power as indicated by actual expenditure. Kasim et al. (2026) use economic growth as a mediating variable, whereas Verawaty & Salwa (2022) treat poverty and unemployment as independent variables. In addition, most previous studies have been conducted at the national level or across various provinces, indicating differences in research settings, welfare indicators, analytical models, and variables.

The research gap is also reflected in the inconsistent empirical findings regarding the role of Capital Expenditure as a mediating variable. Yustriawan (2021) found that Capital Expenditure mediates the effect of Balancing Funds on per capita income. In contrast, Saputri et al. (2024) found that Capital Expenditure does not serve as a mediating variable in the effects of Local Own-Source Revenue (PAD) and the General Allocation Fund (DAU). Melgiana et al. (2020) likewise found that Capital Expenditure does not mediate the effects of Local Own-Source Revenue (PAD), the General Allocation Fund (DAU), and the Special Allocation Fund (DAK) on the Human Development Index (HDI). These divergent findings indicate that the role of Capital Expenditure as a mechanism linking regional fiscal capacity to welfare levels

has not received consistent empirical support. This situation provides a basis for re-examining the mediating role of investment expenditure using a welfare indicator that specifically focuses on household expenditure.

Against this background, this study examines the relationship between fiscal decentralization and household welfare in West Nusa Tenggara, with capital expenditure specified as a potential mediator. The study also uses real per capita expenditure as the welfare measure, rather than relying solely on HDI or per capita income. This approach allows the analysis to consider whether local revenue and central transfers are associated with household purchasing power directly or through capital expenditure.

RESEARCH METHOD

A quantitative associative design is applied to examine relationships between fiscal decentralization and household welfare in the regencies and municipalities of West Nusa Tenggara Province, Indonesia. The approach tests the proposed relationships using numerical observations and statistical analysis. The analysis focuses on the direct relationships between PAD, Balancing Funds, capital expenditure, and real per capita expenditure, as well as the possible indirect relationships through capital expenditure (Creswell, 2013; Sugiyono, 2013).

This study covers all regency and municipal governments in West Nusa Tenggara Province, Indonesia, comprising eight regencies and two municipalities, over the observation period from 2017 to 2024. All regencies and municipalities are included in this study using a saturated sampling technique (total sampling), as the population is relatively small and therefore all population members are included in the sample. According to Sugiyono (2013) saturated sampling is a sampling technique in which the entire population is used as the sample, generally when the population is relatively small. Accordingly, this study consists of 80 observations, representing a panel of ten regency and municipal governments over eight years of observation.

The analysis relies on secondary data published by Statistics Indonesia (BPS) and the Directorate General of Fiscal Balance (DJPK), Ministry of Finance of the Republic of Indonesia. Data were gathered through documentation by compiling official statistical and fiscal publications relevant to each study variable. Using these institutional publications provides a consistent basis for comparing local governments over the observation period (Siyoto & Sodik, 2015).

According to Sugiyono (2023), research variables consist of independent variables, dependent variables, intervening variables that explain the mechanisms linking independent and dependent variables, and control variables used to account for other factors outside the model. The model distinguishes between explanatory, outcome, mediating, and control variables. Real per capita expenditure (PPK) is the dependent variable; PAD and Balancing Funds (DP) are the principal independent variables; and capital expenditure (BM) is examined as a mediator. The Open Unemployment Rate (TPT), Mean Years of Schooling (RLS), and the percentage of the population living in poverty (PPM) are included as control variables specifically in the main model (Substructural Model II) to account for regional socioeconomic

characteristics that directly affect public welfare. All monetary variables measured in rupiah (PPK, PAD, DP, and BM) are transformed using the natural logarithm (ln) to align their measurement scales with those of the control variables measured in percentages and years.

The data were analyzed in EViews 12 using panel regression. The candidate specifications were the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The Chow test was used to compare CEM with FEM, the Hausman test helped distinguish FEM from REM., while the Lagrange Multiplier (LM) test to choose between the CEM and REM for each of the research equations. Subsequently, classical assumption tests, including normality, heteroskedasticity, autocorrelation, and multicollinearity tests, were conducted to assess whether the regression models satisfied the underlying assumptions and could therefore provide valid estimates (Ghozali, (2021). After assessing these assumptions, multiple linear regression analysis was performed using path analysis involving two structural equations. Path analysis was selected because it enables the identification of both direct and indirect effects among variables through a mediating variable (Sugiyono, 2013).

Two regression equations were estimated. The first examines whether PAD and Balancing Funds are associated with capital expenditure. The second estimates the relationships of PAD, Balancing Funds, capital expenditure, and the socioeconomic controls with real per capita expenditure. This structure also provides the path coefficients required to evaluate the proposed mediation relationships (Ghozali, 2021). The Sobel test was applied to evaluate whether capital expenditure carries an indirect effect from PAD or Balancing Funds to real per capita expenditure. The test uses the estimated path coefficients and their standard errors to assess the statistical significance of each indirect effect. An absolute Z-statistic greater than 1.96, or a p-value below 0.05, is treated as evidence of a statistically significant mediation effect (Ghozali, 2021).

Research Model Equations

Substructural Model I (Mediating Variable)

$$BM = \alpha + \beta_1 PAD + \beta_2 DP + \varepsilon_1$$

Substructural Model II (Main Model)

$$PPK = \alpha + \beta_1 PAD + \beta_2 DP + \beta_3 BM + \beta_4 TPT + \beta_5 RLS + \beta_6 PM + \varepsilon_2$$

Description:

PPK = Public Real Per Capita Expenditure (Dependent Variable)

PAD = Local Own-Source Revenue (Independent Variable)

DP = Balancing Funds (Independent Variable)

BM = Capital Expenditure (Mediating Variable)

TPT = Open Unemployment Rate (Control Variable)

RLS = Mean Years of Schooling (Control Variable)

PM = Percentage of the Population Living in Poverty (Control Variable)

α = Constant

β_1–β_6 = Regression Coefficients

ε_1, ε_2 = Regression Errors (*error terms*)

RESULTS AND DISCUSSION

1. Data Analysis

The dataset contains 80 panel observations for ten regencies and municipalities in West Nusa Tenggara over 2017–2024. These observations were used to estimate two relationships: the association of PAD and Balancing Funds with capital expenditure, and the association of these fiscal variables and capital expenditure with real per capita expenditure after accounting for unemployment, schooling, and poverty.

Panel Data Estimation Model Selection

Model selection was undertaken using the Chow and Hausman tests. The Chow test assesses whether fixed effects provide a better fit than a common intercept specification, while the Hausman test evaluates whether the fixed-effects estimator is preferable to the random-effects estimator. The test outcomes were used to select the panel estimation method for each substructural model.

1. Chow Test

Tabel 1. Chow Test for Substructural Model I

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.230123	(9,68)	0.0302
Cross-section Chi-square	20.690948	9	0.0141

Source: EViews 12 Output (processed by the authors)

The Chow test results for Model I show a probability value of 0.0141, which is < 0.05. Therefore, the Fixed Effects Model (FEM) is more appropriate than the Common Effect Model (CEM).

Tabel 2. Chow Test for Substructural Model II

Effects Test	Statistic	d.f.	Prob.
Cross-section F	112.894610	(9,64)	0.0000

	226.07047		
Cross-section Chi-square	3	9	0.0000

Source: EViews 12 Output (processed by the authors)

The Chow test results for Model II show a probability value of 0.0000, which is < 0.05. Therefore, the Fixed Effects Model (FEM) is more appropriate than the Common Effect Model (CEM).

2. Hausman Test

Tabel 3. Hausman Test for Substructural Model I

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	7.075601	2	0.0291

Source: EViews 12 Output (processed by the authors)

The Hausman test results for Substructural Model I indicate a probability value of 0.0291, which is < 0.05. Therefore, the Fixed Effects Model (FEM) is more appropriate than the Random Effects Model (REM).

Tabel 4. Hausman Test for Substructural Model II

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	29.489553	6	0.0000

Source: EViews 12 Output (processed by the authors)

The Hausman test results for Substructural Model II indicate a probability value of 0.0000, which is < 0.05. Therefore, the Fixed Effects Model (FEM) is more appropriate than the Random Effects Model (REM).

Based on the results of the Chow and Hausman tests, the Fixed Effect Model (FEM) was identified as the most appropriate estimation model for both Substructure I and Substructure II. The Lagrange Multiplier (LM) test was not conducted in this study because it is used to determine the more appropriate model between the Common Effect Model (CEM) and the Random Effect Model (REM), and is relevant only when the Chow test indicates that the CEM is the preferred model. Since the results of both the Chow and Hausman tests consistently indicate that the FEM is the most appropriate model for both equations in this study, further comparison between the CEM and REM using the LM test was deemed unnecessary.

Classical Assumption Tests

The classical-assumption assessment covered residual normality, multicollinearity, heteroskedasticity, and serial correlation for both substructural models. These checks were conducted to identify diagnostic issues that could affect the reliability of the estimated regression results. Multicollinearity was assessed using the correlation matrix for the explanatory variables. A correlation above 0.90 was treated as a possible indication of strong linear association among regressors. The reported correlations did not indicate a serious multicollinearity concern in the estimated models Ghozali (2021).

Heteroskedasticity is tested using the Glejser test. A probability value > 0.05 indicates no evidence of heteroskedasticity, whereas a probability value ≤ 0.05 indicates its presence. In Model I, all probability values are > 0.05, indicating no evidence of heteroskedasticity. In Model II, the initial test using conventional standard errors indicates potential heteroskedasticity. Therefore, White period (cross-section cluster) robust standard errors are employed. The robust estimation results show that all probability values are > 0.05, indicating no evidence of heteroskedasticity in Model II.

The autocorrelation test is subsequently conducted using the Breusch–Godfrey Serial Correlation LM Test. A probability value > 0.05 indicates no autocorrelation, whereas a probability value ≤ 0.05 indicates the presence of autocorrelation. The test results yield probability values of 0.9949 for Model I and 0.0980 for Model II. Both values are > 0.05; therefore, neither model shows evidence of autocorrelation.

Regression Analysis

Two panel regression specifications were estimated. Substructural Model I treats capital expenditure as the outcome and includes PAD and Balancing Funds as explanatory variables. Substructural Model II uses real per capita expenditure as the outcome and includes PAD, Balancing Funds, capital expenditure, and the three socioeconomic control variables.

The following table presents the panel regression results for Substructural Model I estimated using the Fixed Effects Model.

Tabel 5. Regression Analysis for Substructural Model I

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.386392	0.942035	5.717825	0.0000
LOG_PAD	-0.081838	0.149084	-0.548939	0.5848
LOG_DP	0.080331	0.078907	1.018049	0.3123

Source: EViews 12 Output (processed by the authors)

Based on the table above, the panel regression equation estimated using the Fixed Effects Model is as follows:

LOG_BM = 5.386 - 0.081LOG_PAD + 0.080LOG_DP

Tabel 6. Regression Analysis for Substructural Model II

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.253299	0.159005	14.17125	0.0000
LOG_PAD	-0.004379	0.024704	-0.177256	0.8632
LOG_DP	-0.001438	0.003445	-0.417241	0.6863
LOG_BM	0.004307	0.011175	0.385411	0.7089
TPT	-0.006073	0.004979	-1.219580	0.2536
RLS	0.059881	0.014746	4.060732	0.0028
PPM	-0.024919	0.007365	-3.383630	0.0081

Source: EViews 12 Output (processed by the authors)

Based on the table above, the panel regression equation estimated using the Fixed Effects Model is as follows:

LOG_PPK = 2.253 - 0.004LOG_PAD - 0.001LOG_DP + 0.004LOG_BM - 0.006TPT + 0.059RLS - 0.024PPM + e

Model Significance Tests

Statistical testing was carried out to assess the models and to determine how strongly the independent variables affect the dependent variable. The partial t-test was used to examine the individual effect of each independent variable, while the simultaneous F-test was used to assess their joint effect. In addition, the coefficient of determination (R^2) was calculated to indicate how much of the variation in the dependent variable the model can explain.

Partial Test (t-Test)

The partial t-test is used to determine the individual effect of each independent variable on the dependent variable. The test is conducted at the 5% significance level ($\alpha = 0{,}05$). A p-value < 0.05 indicates a statistically significant effect, whereas a p-value > 0.05 indicates a statistically insignificant effect.

Tabel 6. t-Test for Substructural Model I

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.386392	1.206785	4.463422	0.0016
LOG_PAD	-0.081838	0.205656	-0.397935	0.7000
LOG_DP	0.080331	0.047654	1.685710	0.1261

Source: EViews 12 Output (processed by the authors)

1. PAD has a coefficient of -0.081838 (p = 0.7000 > 0.05), indicating a negative but statistically insignificant effect on Capital Expenditure.
2. Balancing Funds have a coefficient of 0.080331 (p = 0.1261 > 0.05), indicating a positive but statistically insignificant effect on Capital Expenditure.

Tabel 7. t-Test for Substructural Model II

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.253299	0.159005	14.17125	0.0000
LOG_PAD	-0.004379	0.024704	-0.177256	0.8632
LOG_DP	-0.001438	0.003445	-0.417241	0.6863
LOG_BM	0.004307	0.011175	0.385411	0.7089
TPT	-0.006073	0.004979	-1.219580	0.2536
RLS	0.059881	0.014746	4.060732	0.0028
PPM	-0.024919	0.007365	-3.383630	0.0081

Source: EViews 12 Output (processed by the authors)

1. The t-test results show that Local Own-Source Revenue (PAD) has a negative coefficient of -0.004379 and a probability value of 0.8632, which is > 0.05. indicating a negative but statistically insignificant effect on Real Per Capita Expenditure (PPK) across regencies and municipalities in West Nusa Tenggara Province.
2. The t-test results show that Balancing Funds (DP) have a negative coefficient of -0.001438 and a probability value of 0.6863, which is > 0.05. indicating a negative but statistically insignificant effect on PPK.
3. The t-test results show that Capital Expenditure (BM) has a positive coefficient of 0.004307 and a probability value of 0.7089, which is > 0.05. indicating a positive but statistically insignificant effect on PPK.
4. Among the control variables, the Open Unemployment Rate (TPT) has a negative coefficient of -0.006073 and a probability value of 0.2536, which is > 0.05. This indicates that TPT has a negative but statistically insignificant effect on PPK. Mean Years of Schooling (RLS) has a positive coefficient of 0.059881 and a probability value of 0.0028, which is < 0.05. This indicates that RLS has a positive and statistically significant effect on PPK. The Percentage of the Population Living in Poverty (PPM) has a negative coefficient of -0.024919 and a probability value of 0.0081, which is < 0.05. This indicates that PPM has a negative and statistically significant effect on PPK.

Simultaneous Test (F-Test)

The simultaneous test (F-test) is used to determine the extent to which all independent variables jointly affect the dependent variable. This test is conducted at a 5% significance level, with a p-value of less than 0.05 indicating that the independent variables jointly have a statistically significant effect on the dependent variable, whereas a p-value greater than 0.05 indicates that their joint effect is not statistically significant.

Tabel 8. F-Test for Substructural Model I

R-squared	0.387333

Adjusted R-squared	0.288226
S.E. of regression	0.345794
Sum squared resid	8.130976
Log likelihood	-22.06126
F-statistic	3.908203
Prob(F-statistic)	0.000213

Source: EViews 12 Output (processed by the authors)

The F-test results for Substructural Model I show a probability value of 0.000213, which is < 0.05. This indicates that PAD and Balancing Funds jointly have a statistically significant effect on Capital Expenditure (BM) in regency and municipal governments in West Nusa Tenggara Province.

Tabel 9. F-Test for Substructural Model II

R-squared	0.976713
Adjusted R-squared	0.971255
S.E. of regression	0.029079
Sum squared resid	0.054117
Log likelihood	178.4301
F-statistic	178.9538
Prob(F-statistic)	0.000000

Source: EViews 12 Output (processed by the authors)

The F-test for Substructural Model II yields a probability value of 0.000000 (< 0.05), indicating that PAD, Balancing Funds, and Capital Expenditure simultaneously have a statistically significant effect on PPK in the regency and municipal governments of West Nusa Tenggara Province.

Coefficient of Determination (R^2 / Adjusted R^2)

The coefficient of determination indicates how much variation in the outcome is accounted for by the explanatory variables in a regression model. Values closer to one indicate a greater proportion of explained variation; the adjusted R-squared additionally accounts for the number of regressors included.

Tabel 10. Coefficient of Determination for Substructural Model

R-squared	0.387333
Adjusted R-squared	0.288226

Source: EViews 12 Output (processed by the authors)

For Substructural Model I, the adjusted R-squared is approximately 0.28. Thus, PAD and Balancing Funds jointly account for about 28% of the variation in capital expenditure after adjustment for the model's degrees of freedom; the remaining variation is associated with factors not captured by this specification.

Tabel 11. Coefficient of Determination for Substructural Model II

R-squared	0.976713
Adjusted R-squared	0.971255

Source: EViews 12 Output (processed by the authors)

For Substructural Model II, the adjusted R-squared is approximately 0.97. This indicates that PAD, Balancing Funds, capital expenditure, TPT, RLS, and PPM collectively explain around 97% of the observed variation in real per capita expenditure in the estimation sample, with the residual share attributable to other factors and random variation.

Sobel Test

The Sobel procedure evaluates the statistical significance of an indirect pathway using the estimated coefficients for paths a and b and their standard errors (Ghozali, 2021:276). The indirect relationship is considered significant when the absolute Z-statistic exceeds 1.96 or the p-value is below 0.05. The calculations were carried out using the reported regression estimates https://quantpsy.org/sobel/sobel.htm.

1. For the pathway from PAD through capital expenditure to real per capita expenditure, the Sobel statistic is −0.277 and the p-value is 0.782. Because the p-value exceeds 0.05, the indirect effect is not statistically significant. The results therefore do not support capital expenditure as a mediator of the PAD–PPK relationship in the sampled local governments.
2. For the pathway from Balancing Funds through capital expenditure to real per capita expenditure, the estimated Sobel statistic is 0.376, with a p-value of 0.707. This result does not meet the 5% significance threshold, so the analysis does not find evidence that capital expenditure mediates the relationship between Balancing Funds and PPK.

2. Discussion

The Effect of PAD on Capital Expenditure

The results show that Local Own-Source Revenue (PAD) has a negative but statistically insignificant effect on capital expenditure. This finding indicates that an increase in PAD is not necessarily accompanied by an increase in capital expenditure at the regency and municipal government levels in West Nusa Tenggara Province. This finding is consistent with Ilmi et al. (2019), who also found that PAD had a negative and statistically insignificant effect on capital expenditure in Hulu Sungai Selatan Regency. This situation suggests that higher PAD does not automatically contribute to increased local government capital expenditure. In allocating their budgets, local governments must consider their fiscal conditions, as well as various regional development needs and priorities.

The statistically insignificant effect of PAD on Capital Expenditure may be associated with local governments' ability to manage and allocate their available revenue. Bargain et al. (2025) show that the benefits of decentralization vary across regions and are more evident in areas with a greater capacity to generate own-source revenue. This suggests that the availability

of locally generated revenue must be accompanied by the government's capacity to manage resources and exercise its authority effectively. Similarly, Lewis (2022) found that institutional characteristics and local government systems can influence local governments' efforts to increase tax revenue, which is one source of PAD. These findings suggest that the ability to generate local revenue depends not only on a region's economic potential but also on how local governments exercise their authority and make decisions. Therefore, an increase in PAD does not necessarily lead directly to higher Capital Expenditure, as budget allocation decisions are also influenced by the conditions and priorities of individual local governments.

The Effect of Balancing Funds on Capital Expenditure

Balancing Funds have a positive estimated coefficient in the capital-expenditure model, but the relationship is not statistically significant. The direction of the coefficient suggests that larger transfers may coincide with higher capital spending, yet the evidence is not strong enough to conclude that the relationship exists systematically in the population. Transfers may also be needed to finance other expenditure responsibilities Susilo et al. (2024).

This finding is also consistent with Alves & Araujo (2024), who found no statistically significant evidence that increases in intergovernmental transfers lead to higher capital expenditure or public investment, while stronger effects were observed for administrative spending. Their findings suggest that additional transfers are not automatically allocated to public investment but may instead be used to meet other local government expenditure needs. Furthermore, Liu & Song (2022) show that the effects of intergovernmental transfers may vary according to the type of transfer and regional characteristics. They also emphasize the importance of local government incentives in determining how transfer funds are used. Therefore, the amount of Balancing Funds alone is insufficient to guarantee an increase in Capital Expenditure, as the effect also depends on the type of transfer and local governments' budget allocation decisions.

The Effect of Local Own-Source Revenue on Real Per Capita Expenditure

The main model shows that PAD has a negative but statistically insignificant effect on Real Per Capita Expenditure (PPK) across the regencies and municipalities of West Nusa Tenggara Province. The processed data indicate that the average fiscal decentralization ratio over 2017-2024 was only 13.20%, whereas Balancing Funds (DP) made up an average of 77.87% of total regional revenue. The ratios were even lower in Bima Regency (8.47%) and Bima City (7.29%), both well below the provincial average. These figures suggest that local governments in West Nusa Tenggara have limited fiscal independence and rely heavily on central government transfers. As a result, differences in PAD across years and regions may be too small to produce a statistically detectable effect on PPK.

This finding contrasts with (Kasim et al., 2026), who found that fiscal decentralization through PAD, Capital Expenditure, and intergovernmental transfers had a positive and statistically significant effect on public welfare, reflected in lower poverty, greater purchasing

power, and improved social conditions across Indonesian provinces. Similarly, Changwony (2026) found that fiscal decentralization reforms in Kenya substantially increased household expenditure. This difference is consistent with Habbe (2021), who found that PAD did not demonstrably improve the Human Development Index or reduce poverty, although it was associated with lower unemployment after a two-to-three-year lag. This suggests that the effect of PAD on welfare may be indirect and delayed, depending on how revenue is allocated and how long benefits take to reach the public. Hence, a higher PAD alone does not guarantee higher PPK.

The Effect of Balancing Funds on Real Per Capita Expenditure

Balancing Funds (DP) have a negative but statistically insignificant effect on Real Per Capita Expenditure (PPK) across regencies and municipalities in West Nusa Tenggara Province. This finding indicates that increased transfers from the central government do not necessarily lead directly to higher real per capita expenditure. This result is noteworthy because DP dominates the regional revenue structure in West Nusa Tenggara, accounting for an average of 77.87% of total regional revenue. The substantial dependence on transfers indicates that increased revenue from the central government is not necessarily translated directly into higher real per capita expenditure. This condition may be associated with the *flypaper effect*, which refers to the tendency for transfer funds to influence local government spending, particularly routine expenditures such as personnel and operational costs, rather than directly increasing the public's real purchasing power.

A study of intergovernmental grants by Shani et al. (2023) in Israel found that local governments respond asymmetrically to changes in transfer funding. When transfers increase, local governments raise spending while lowering local tax rates. Conversely, when transfers decline, local governments tend to increase local tax rates by twice as much without reducing local expenditure, suggesting that local spending is rigid in response to declining transfer revenue. Local governments tend to respond to increases in Balancing Funds by increasing their own expenditure rather than transferring the benefits directly to public welfare. A similar pattern was identified by Tang et al. (2024) in the Philippines, who found that each additional peso in transfers increased local government expenditure by 0.67 pesos, indicating a *flypaper effect*. This phenomenon reflects the tendency for additional transfers to be absorbed into government spending before affecting public welfare, although the transfers ultimately increased household income and reduced poverty in the long run. Together, these findings suggest that increased Balancing Funds do not directly translate into higher Real Per Capita Expenditure because the effects depend heavily on how local governments allocate the funds and how long it takes for the benefits to reach the public.

The Effect of Capital Expenditure on Real Per Capita Expenditure

Capital expenditure has a positive coefficient in the real per capita expenditure model, but the effect is not statistically significant. The estimate therefore does not establish a direct

relationship between capital spending and PPK in the sample, even though the positive sign is consistent with the possibility that public investment may support household welfare (Anjande et al., 2022). However, the benefits of Capital Expenditure are not always immediately felt by the public because budgeting, project implementation, and the use of completed facilities require time. This lag effect may extend over several years before the benefits become apparent. This condition is supported by patterns in government expenditure realization, which tend to be concentrated toward the end of the fiscal year. A study in the 2023 West Kalimantan Regional Fiscal Review by the Ministry of Finance identified back-loaded expenditure in infrastructure spending because most contract installment payments were made in the fourth quarter. This suggests that realized Capital Expenditure does not necessarily generate economic benefits in the same year, and its effects on PPK may take time to materialize.

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Another factor that may explain this result is the relatively small allocation for Capital Expenditure compared with bureaucratic spending in regional budgets. An article by the Ministry of Finance of the Republic of Indonesia on the implementation of fiscal decentralization under Law No. 1 of 2022 indicates that empirical data show approximately 60% of regional budget expenditure is allocated to bureaucratic spending, including personnel and goods and services expenditures, while Capital Expenditure for infrastructure and public services accounts for only around 20%. Consequently, regional budget spending as a whole has not generated a significant multiplier effect on economic growth. Similar findings are reported by Nairobi & Respitasari (2021) in Lampung Province, who found that Capital Expenditure had no statistically significant effect on economic growth, whereas investment in specific infrastructure, such as irrigation and healthcare, had significant effects. Therefore, the positive but statistically insignificant effect of Capital Expenditure in this study may be associated with its limited share of total regional expenditure, consistent with structural patterns observed at the national level.

The Effects of the Control Variables on PPK

As a control variable intended to reduce estimation bias in the main variables, the Open Unemployment Rate (TPT) has no statistically significant effect on PPK, indicating that changes in TPT do not adequately explain variations in real per capita expenditure. Theoretically, rising unemployment can lower income and consumption capacity. However, TPT only measures the share of the labor force that is unemployed and actively seeking work,

so changes in TPT do not necessarily capture changes in income and consumption capacity across the whole population. By contrast, Mean Years of Schooling (RLS) has a positive and significant effect on PPK, in line with human capital theory, which holds that education improves knowledge, skills, and productivity, thereby widening opportunities for higher income and strengthening consumption capacity. The Percentage of the Population Living in Poverty (PPM) has a negative and significant effect on PPK, consistent with the expectation that a larger poor population implies weaker economic capacity to meet consumption needs and thus lower average real per capita expenditure. Nevertheless, this relationship may partly reflect definitional overlap, because the Statistics Indonesia poverty line is itself calculated in part from per capita expenditure data.

The Role of Capital Expenditure as a Mediating Variable

Capital Expenditure does not mediate the effect of PAD on Real Per Capita Expenditure (PPK) across the regencies and municipalities of West Nusa Tenggara Province, indicating that increases in PAD are not effectively transmitted through Capital Expenditure into improvements in PPK. One possible explanation is the limited capacity of PAD, which makes it a minor source of financing for Capital Expenditure. This is consistent with Azzahra et al. (2023), who found that Capital Expenditure did not mediate the effect of PAD on economic growth in the regencies and municipalities of Gorontalo Province.

Capital Expenditure also fails to mediate the effect of Balancing Funds (DP) on PPK in the regencies and municipalities of West Nusa Tenggara Province, suggesting that the large volume of transfers has not been effectively channeled into capital spending to raise household PPK. Although transfers dominate regional revenue, averaging 77.87%, not all of these funds go to Capital Expenditure, because local governments must also finance other needs. This agrees with Kurniasih et al. (2025), who found that transfers had no significant effect on Capital Expenditure and that Capital Expenditure did not mediate the relationship between transfers and local fiscal independence. Susilo et al. (2024) further showed that actual Capital Expenditure over the past five years tended to fall below the budgeted allocation. Thus, larger transfers do not necessarily translate into proportionally higher Capital Expenditure, and the indirect pathway is too weak to improve PPK.

On the other hand, the benefits of capital expenditure take time to materialize, from the budgeting and implementation of development projects to the point at which the resulting facilities become available for public use. Therefore, mediation effects that develop gradually may not be observable within the same period.

CONCLUSION

Using panel data for ten regencies and municipalities in West Nusa Tenggara from 2017 to 2024, this study finds that PAD and Balancing Funds do not have statistically significant individual effects on capital expenditure, although their joint effect is significant. In the main model, PAD, Balancing Funds, and capital expenditure also show no statistically significant

partial relationship with real per capita expenditure. Among the control variables, RLS is positively significant, while PPM is negatively significant; TPT is not statistically significant. The Sobel results do not support a mediating role for capital expenditure in either the PAD or Balancing Funds pathway.

Future studies could include additional regions and extend the observation period to increase the number of observations and improve the ability to detect modest effects. Researchers may also test lagged fiscal variables, because revenue changes and public investment can affect welfare over more than one budget year. Other measures of service quality, spending composition, and local institutional capacity may help explain differences that are not captured in the present model.

Local governments in West Nusa Tenggara should continue strengthening their capacity to generate PAD, given the relatively small contribution of own-source revenue to regional finances. At the same time, revenue growth should be accompanied by careful prioritization and evaluation of budget allocations. Transfers and locally generated funds are more likely to support household welfare when they finance effective public services and useful infrastructure, with outcomes monitored over an appropriate time horizon.

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