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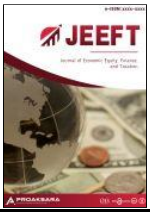

The Effect of Fiscal Decentralization on Economic Growth: An Empirical Study of Regencies/ Cities in Riau Province

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ABSTRACT

Fiscal decentralization involves shifting financial administrative powers from national to regional governments with the goal of improving local financial management efficiency and fostering balanced, long-term economic development. This research investigates how fiscal decentralization influences regional economic development across the districts and municipalities of Riau Province between 2017 and 2021. The study examines four explanatory variables representing fiscal decentralization components: General Allocation Fund (DAU), Revenue Sharing Fund (DBH), Special Allocation Fund (DAK), and Local Government Revenues (PAD) within Riau's regencies and cities. Economic growth serves as the outcome variable of interest. The research utilizes panel data methodology covering all regency and city-level administrative units in Riau Province over the five-year period, with the Fixed Effect Model (FEM) selected as the analytical framework.The research findings indicate that among the fiscal variables examined, only the General Allocation Fund (DAU) demonstrates a statistically significant positive relationship with economic growth. The other three components—Revenue Sharing Fund (DBH), Special Allocation Fund (DAK), and Local Government Revenues (PAD)—do not exhibit significant effects on economic development.Based on these results, the study recommends maximizing the effectiveness of General Allocation Fund utilization and enhancing the quality of regional expenditure strategies to bolster economic performance across Riau's administrative regions during the fiscal decentralization period.

Keywords: Fiscal Decentralization, Economic Growth, Fixed Effect Model, Riau Province

1. INTRODUCTION

Decentralization of finances involves transferring control over financial management from the central government to local governments. The effectiveness of decentralization is often used as a measure of how well economic growth is happening at the regional level (Nazikha & Rahmawati, 2021). A number of countries have adopted fiscal decentralization, including Indonesia, which began implementing this policy in 2001. Under such conditions, fundamental changes occurred in the country's financial management system, particularly in budget allocation, development planning, and the implementation of regional government programs. Fiscal decentralization aims to boost economic growth by improving the way public funds are used, as local governments are believed to be more familiar with the specific requirements and opportunities within their regions. In addition, Litvack et al. (1998) in Matsui (2003), outlined four other objectives of implementing fiscal decentralization in a country. First, achieving better allocative efficiency by aligning local preferences with public goods. Second, enhancing the competitiveness of local governments. Third, fostering good governance. Lastly, there is a focus on enhancing the credibility and endurance of various areas. Within this framework, the level of economic advancement is frequently utilized as a key measure to evaluate the effectiveness of financial decentralization. It is generally believed that the stronger the economic progress in a particular location, the more successful the financial strategy is in promoting growth.

However, research findings on the impact of fiscal decentralization on economic growth show mixed results. Some studies find that fiscal decentralization can promote regional economic growth due to policies that are more responsive to local needs. On the other hand, other studies indicate that fiscal decentralization has a negative or insignificant effect on economic growth, particularly when it is not accompanied by adequate institutional capacity at the regional level. The findings from various studies can be classified into three groups based on their logical arguments and empirical evidence. Jin & Rider (2020) found that fiscal decentralization has a negative effect on economic growth. On the other hand, Hanif et al. (2020), Sasana (2019), and Suciayu & Wibawa (2012) revealed that fiscal decentralization is actually able to encourage increased economic growth. On the other hand, research conducted by Fitria et al. (2023) revealed that fiscal decentralization is actually able to encourage increased economic growth. The variations in the findings of these researches bring up significant concerns regarding the impact of fiscal decentralization on promoting economic development, particularly in developing nations such as Indonesia.

Legislation in Indonesia mandates the practice of fiscal decentralization through two key laws passed in 1999. These regulations prioritize the monetary balance between the Central Government and local authorities. Equality funds are financial assets set aside from the National Budget to aid the needs of self-governing areas. This economic assistance includes the Specific Allocation Fund, the Universal Allocation Fund, and the Income Distribution Fund. The central government allocates funds to regional governments to support the operations of regional administration and to provide public services that meet set benchmarks (Negara & Khoirunurrofik, 2021). The central government offers financial assistance through balance funds or fiscal transfers to aid in the enforcement of governance at the regional level. The amount of balance funds is determined in each fiscal year and adjusted according to the characteristics and needs of each region, including fiscal capacity and population size. For example, Riau Province receives allocations of balance funds based on its contribution to national revenue, natural resource potential, and regional development needs. As one of Indonesia's major oil and gas producing regions, Riau obtains a relatively large share of the Revenue Sharing Fund (DBH) compared to several other provinces. However, the amount of funds received does not necessarily guarantee effective improvement in public service delivery or the promotion of regional economic growth. Therefore, efficient and transparent management of balance funds is crucial to ensure that the goals of fiscal decentralization are truly achieved at the regional level, including in Riau Province. The realization of balance fund transfers in the 12 regencies/municipalities of Riau Province is as follows.

Table 1. Realization of Balancing Funds for 12 Regencies/Cities in Riau Province 2017-2021 (Billion)

Year	Balancing Fund	DAU	DBH	DAK
2017	234.408	100.000	50.918	83.490
2018	297.679	100.000	107.984	89.695
2019	279.044	99.520	88.970	90.554
2020	293.981	98.940	99.952	95.089
2021	293.081	100.000	99.976	93.105

Source: Directorate General of Fiscal Balance (DJPK)

Riau Province, as one of the regions rich in natural resources, receives a substantial amount of balancing funds each year. Table 1 shows that the balancing funds in the 12 regencies/cities of Riau Province during the 2017 to 2021 period exhibited fluctuations in the realization of these funds for each regency/city in the province. Regional government expenditure plays a vital role as a driving force for economic growth at the regional level. Government spending is closely related to the Regional Revenue and Expenditure Budget (APBD), which is largely funded by Balance Funds. One of the key components of government expenditure is capital spending, which serves as an instrument to stimulate economic activity in the region. The greater the allocation of capital expenditure by local governments, the higher the potential for increased household income and consumption, which in turn drives regional economic growth (Kusuma, 2016). An indicator that reflects the outcome of this process is the rate of economic growth, as presented in the following table.

Table 2. Economic Growth Rate of 12 Regencies/Cities in Riau Province 2017-2021 (In Percent)

Regency/City	Year				
	2017	2018	2019	2020	2021
Kuantan Singingi	4.37	4.66	4.58	1.01	3.75
Indragiri Hulu	3.98	3.49	3.78	-0.12	4.26
Indragiri Hilir	4.52	3.61	3.87	2.25	4.07
Pelalawan	4.06	3.63	3.87	2.25	4.07
Kampar	2.97	1.91	3.86	-0.90	3.45
Rokan Hulu	5.38	4.18	4.92	1.51	4.98
Bengkalis	-1.72	-1.69	-1.89	-3.30	0.51

Rokan Hilir	1.56	-0.28	0.65	-0.99	2.64
Kepulauan Meranti	3.29	4.03	2.64	0.43	2.56
Pekanbaru	6.12	5.39	5.99	-4.41	5.24
Dumai	4.46	5.34	5.60	-1.04	5.98
Riau	2.66	2.35	2.81	-1.13	3.36

Source: Central Statistics Agency (BPS)

Table 2 illustrates the fluctuations in economic growth in 12 regencies/cities in Riau Province each year. The increase in economic growth in 2019 aligns with the significant surge in balancing funds that year. However, there was a decline of -1.12% in 2020 due to the Covid-19 pandemic, which disrupted economic activities. In 2021, economic growth rose again by 3.36%. This table also shows variations in the level of economic growth among the regencies/cities in Riau, reflecting differences in fiscal management in each region. The lowest economic growth during the 2017-2021 period was recorded in Pekanbaru in 2020, at -4.41%. Further investigation is needed to delve deeper into how fiscal decentralization affects economic development and community well-being in the regions and municipalities of Riau Province, building on current data and research results. It is essential to ascertain the extent to which fiscal decentralization contributes to driving economic expansion.

2. LITERATURE REVIEW

2.1. Decentralization Theory

According to Ozmen (2014), decentralization involves transferring power from the central government to local authorities. Supporters believe that this helps enhance the effectiveness of public services by enabling closer attention to the unique requirements of different regions. According to Chalid (2005), fiscal decentralization involves giving regional administrations the power to independently manage their finances, including revenue and expenses, by transferring financial authority from the central government. The primary aim is to create financially autonomous regional governments capable of delivering public services effectively, tailored to the needs of their local populations. Chalid highlights that fiscal decentralization goes beyond simply distributing funds from the central to local governments—it also involves enhancing regional capacity to manage budgets in a transparent and accountable manner. This process is expected to promote more balanced regional economic development and contribute to overall national economic growth. The implementation of decentralization can bring positive effects to the regions that adopt it. David Osborne (1995) in their work *Reinventing Government*, outlines four key advantages that regional governments hold over the central government within the framework of decentralization and autonomy. First, regional governments are more responsive to the needs of local communities. Second, they tend to be more creative and adaptive. Third, they have a higher level of accountability to their citizens. And fourth, they are more effective in delivering public services.

2.2. Theory of Economic Growth

Economic growth shows how much economic activity contributes to the growth of public income during a given period (Anitasari & Soleh, 2015) and (Rori et al., 2016). According to Adisasmita (2013), Economic growth involves expanding production capacity by using resources to create more output, as shown by metrics like Gross Domestic Product (GDP) and Gross Regional Domestic Product (GRDP) in a particular area. It is the consistent rise in output per individual over a prolonged timeframe. This definition emphasizes three key components: the continuous nature of the process, the focus on per capita output, and the importance of a long-term timeframe. On the other hand, certain economists provide a broader definition of economic growth, describing it simply as a rise in GDP or GNP, without considering whether this growth exceeds population growth or includes shifts in the economic structure.

2.3. Previous Research

Research on fiscal decentralization and its effect on economic growth has been conducted in various countries, both developing and developed countries. Jin & Rider (2020) examined whether fiscal decentralization promotes economic growth in China and India. The results showed that expenditure decentralization had a short-term negative effect on economic growth in both countries, while a positive long-term effect was found only in India. Meanwhile, Hanif et al. (2020), in their study of developing countries with federal systems such as Brazil and India, found that fiscal decentralization contributes positively to economic growth.

In Indonesia, various studies have also shown diverse findings. Nugraha & Soebagyo (2024) found that Revenue Sharing Funds (DBH) and General Allocation Funds (DAU) contribute positively to the growth of the economy, whereas Special Allocation Funds (DAK) have a notable negative impact on economic development. Rahman & Djasuli (2024) found that fiscal decentralization is shown to have a beneficial impact on the economic growth of Bangkalan Regency. A similar finding was also presented by Nurlaili (2022), who showed that Local Government Revenues (PAD), General Allocation Funds (DAU), and Special Allocation Funds (DAK) have a positive and significant effect on economic growth in the regencies/municipalities of East Java Province.

The study by Nazikha & Rahmawati (2021) broadened the perspective by including regional fiscal capacity and fiscal elasticity as additional variables. The findings showed that fiscal decentralization and regional fiscal capacity contribute positively to inclusive growth, whereas fiscal elasticity does not impact economic growth significantly. Sasana (2019) also supported the positive findings on the effect of fiscal decentralization on economic growth, particularly in Central Java Province. The study by Suciayu & Wibawa (2012) in Yogyakarta Province showed that fiscal decentralization has a positive and significant effect, although the Special Allocation Fund (DAK) does not have a significant effect on economic growth.

However, not all studies show positive results. The research by Fitria et al. (2023) in West Sumatra Province revealed fiscal decentralization is not found to have a strong impact on economic growth, even though regional taxes and population size are shown to have a favorable and substantial impact on economic growth. Arina et al. (2019) also found that Revenue Sharing Funds (DBH), General Allocation Funds (DAU), and Special Allocation Funds (DAK) do not significantly contribute to the economic growth of Manado City, however, Local Government Revenues (PAD) are essential for stimulating economic development.

Similar results were found by Putri et al. (2024) in Denpasar City, where Revenue Sharing Funds (DBH), and General Allocation Funds (DAU) did not have a significant effect on economic growth. In Eastern Indonesia, Lulage et al. (2023) examined the effect of General Allocation Funds (DAU) and Special Allocation Funds (DAK) on economic growth in the Talaud Islands Regency and found that Special Allocation Funds (DAK) had no significant effect on economic growth. Meanwhile, Laodini et al. (2023), in a study conducted in North Sulawesi Province, showed that Local Government Revenues (PAD) and funds being transferred did not show any notable impact on the advancement of the economy. Conversely, investments in capital displayed a detrimental yet noteworthy impact on the economic growth of North Sulawesi. Previous studies discussing similar topics in Riau Province remain relatively limited. Yet, Riau is one of the provinces in the eastern region of Indonesia, which is often considered to lag behind compared to the western region. The research gap lies in the time period used. This study uses panel data from regencies/municipalities in Riau Province during the 2017–2021 period.

3. RESEARCH METHODS

This research was carried out in 12 regions as the subjects of the study. The study utilized secondary data of a quantitative nature, specifically numerical data. The data for this research was sourced from various organizations such as the Central Statistics Agency, Directorate General of Fiscal Balance, and the Ministry of Finance of Indonesia. Panel data analysis was the method used for the analysis, which involves a combination of cross-sectional and time-series data from 12 regions in Riau Province between 2017 and 2021, analyzed using STATA. By considering both dependent and independent variables, a regression model was developed.

$$Y_{it} = \alpha + \beta X_{it} + u_{it}$$

From the functional equation, it is then transformed into the following linear econometric model:

$$Y_{it} = \beta o + \beta_1 X_{1it} + \beta_1 X_{2it} + \beta_1 X_{3it} + \beta_1 X_{4it} + u_{it}$$

Where:

Y = Economic Growth (percent)

X1 = General Allocation Fund (DAU) (percent)

X2 = Revenue Sharing Fund (DBH) (percent)

X3 = Special Allocation Fund (DAK) (percent)

X4 = Local Government Revenues (PAD) (percent)

In this study, there is a determination of the estimation model, namely:

1) Pooled Least Square (PLS)

The Pooled Least Squares (PLS) method represents the most fundamental approach to analyzing panel data regression. This technique combines both time series and cross-sectional observations into a single dataset for estimation, but it does not consider differences that may exist across time periods or among individual units. PLS operates similarly to standard Ordinary Least Squares (OLS) regression and serves as the most straightforward model within the family of panel data analytical methods. The mathematical specification for the Pooled Least Squares approach in panel data analysis is structured as follows (Gujarati, 2012):

$$Y_{it} = \beta_1 + \beta 2\ X_{2it} + \ldots + \beta_n\ X_{nit} + u_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$

Where *i* represents the *i-th* subject and *t* denotes the time period of a given variable. The variable *Y* is the dependent variable, which is influenced by various explanatory variables. In this case, the aim is to observe how the explanatory variables affect the dependent variable *Y*, which refers to per capita income in each province.

2) Fixed Effect Model (FEM)

The Fixed Effect Model (FEM), sometimes called the Fixed Effect Least Square Dummy Variable (LSDV) method, is an estimation technique used in panel data analysis. This model assumes that intercepts vary across different cross-sections, which is why it is known as a fixed effect model. The Fixed Effect Model used in panel data regression can be expressed as follows (Gujarati, 2012):

$$Y_{it} = \alpha_1 + \alpha_2\ D_2 + \ldots + \alpha_n\ D_n + \beta 2\ X_{it} + \ldots + \beta_n\ X_{nit} + u_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(2)$$

Where D2i = 1 for capital stock in province x, and 0 otherwise; and so on according to the number of dummy variables used. The use of dummy variables is based on the number of explanatory variables included.

3) Random Effect Model (REM)

The Random Effect Model (REM) is a method of panel data regression that includes an error term consisting of both cross-sectional and time-series errors. In this model, the intercept remains constant but is treated as a random variable drawn from a broader population. The panel data regression involves the use of the random effect model (Gujarati & Porter, 2009):

$$Y_{it} = \beta_1 + \beta 2X_{2it} + \ldots + \beta_n X_{nit} + \varepsilon_{it} + u_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3)$$

The selection of the estimation model is as follows:

1) Chow Test

The purpose of the Chow Test is to evaluate which model, either Pooled Least Squares (PLS) or Fixed Effect Model (FEM), is the most suitable to use. The test assesses the following hypotheses:

H0: Choose to use PLS

H1: Choose to use FEM

When the p-value (Prob > F) is lower than the significance level (α), the null hypothesis is disregarded, leading to the selection of the FEM model.

2) Hausman Test

The Hausman test is a test conducted to choose the best model between FEM (Fixed Effect Model) and REM (Random Effect Model). The test uses the following hypotheses:

H0: Choose to use REM

H1: Choose to use FEM

If the probability value is lower than the significance level, the null hypothesis will be disregarded in favor of the Finite Element Model (FEM).

After selecting the best estimation model to use, the next step is to perform classical assumption tests, including:

1) Multicollinearity Test

The purpose of the multicollinearity test is to check for correlations among the variables in the study. The findings are analyzed through inspecting the Variance Inflation Factor (VIF) values of the independent variables. Multicollinearity is determined if an independent variable has a VIF value that is more than 10.

2) Heteroscedasticity Test

Heteroscedasticity testing is used to examine the presence of inconsistent residual variance. If the residuals vary at a constant rate, the condition is referred to as homoscedasticity.

Then, there is a hypothesis test to determine whether there is sufficient evidence in the sample data to accept or reject the null hypothesis (H0) at a certain level of significance.

1) R^2 (R-Squared) Test

The R-Squared test, also referred to as the coefficient of determination, is used to assess how well independent variables account for the changes in the dependent variable. R-Squared values range from 0 to 1, with lower values indicating a larger gap between the data points and the regression line.

2) Simultaneous F-Statistic Test (F-Test)

The F-Statistic test analyzes the combined impact of independent variables on the dependent variable. Guidelines for decision-making in this test are established by:

a. If the significance value is less than 0.05 and the calculated F-value is greater than the F table value, then it suggests that the independent variables are collectively influencing the dependent variable.
b. If the level of importance, represented by the significance value, is greater than 0.05 and the calculated F-value (F count) is less than the critical F value, it suggests that the independent variables do not collectively impact the dependent variable.

3) Individual Significance Test t-Statistic (t-Test)

The purpose of this assessment is to ascertain the extent to which the independent factor has an impact on the dependent factor. The guidelines for conducting partial assessments according to the level of significance are as outlined below:

a. If the significance level is less than 5% and the t-value calculated is greater than the critical t-value, then there is evidence of a partial impact of the independent variable on the dependent variable.
b. If the significance level is greater than 5% and the t-value calculated is greater than the critical t-value, then there is some influence of the independent variable on the dependent variable.

4. RESULTS AND DISCUSSION

4.1. Results

Table 3. Statistical Description

Variable	Mean	Max	Min	Std. Dev	Obs.
Y	2.581833	6.12	-4.41	2.453604	60
X1	99.69217	100	96.86	0.5972225	60
X2	89.56033	114.4	47.8	20.7469	60
X3	90.38708	98.525	73.455	5.735249	60
X4	102.1432	184.59	47.3	28.77061	60

Source: STATA 14 (2024), processed

Descriptive analysis can explain the maximum value, minimum value, average, median, and standard deviation of each variable used in this study. Based on Table 3, the statistical estimation results are stated by 60 observations from 2017-2020 with the dependent variable being the GRDP variable and the independent variables being General Allocation Fund (DAU), Revenue Sharing Fund (DBH), Special Allocation Fund (DAK), and Local Government Revenues (PAD). In the statistical description, there is a significant decrease and increase due to the distribution of fiscal decentralization between different regions and the different economic conditions of each region.

Table 4 displays the findings from the regression analysis using panel data model, examining the common effect model, fixed effect model, and random effect model, and then identifying the optimal model.

Table 4. Results of the Common Effect Model, Fixed Effect, and Random Effect Regression

Independent Variable	Details	PLS	FEM	REM
C	Coefficient	-110.5724	-150.4638	-144.4265
	t-Stat	-1.98	-3.56	-3.49
	Prob	0.053	0.001	0.000
X1	Coefficient	1.132276	1.560961	1.492528
	t-Stat	2.09	3.83	3.73
	Prob	0.041	0.000	0.000
X2	Coefficient	-0.0021499	-0.000036	0.0001874
	t-Stat	-0.11	-0.00	0.01
	Prob	0.915	0.998	0.990
X3	Coefficient	-0.0168056	-0.0403373	-0.0347017
	t-Stat	-0.25	-0.75	-0.66
	Prob	0.806	0.460	0.508
X4	Coefficient	0.0194506	0.0105664	0.013067
	t-Stat	1.58	0.82	1.11
	Prob	0.120	0.418	0.267
R-Squared		0.1694	0.3650	0.3640

Standard errors in parentheres ***p<0.01 **p<0.05 *p<0.1

Source: STATA 14 (2024), processed

Afterward, the optimal model was chosen through the application of the Chow and Hausman examinations.

Table 5. Chow Test Results

Prob>F	0.0004
A	5%
H_0 = PLS	
H_1 = FEM	

Source: STATA 14 (2024), processed

The Chow test results indicated that the probability value is 0.0004, which is less than 0.05, leading to the choice of the fixed effect model.

Table 6. Hausman Test Results

Chi square	25.03
Prob > Chi square	0.000
A	5%
H_0 = REM	
H_1 = FEM	

Source: STATA 14 (2024), processed

The findings of the Hausman Test, displayed in Table 6, show that the chi-square probability is less than 0.05, suggesting the rejection of H0 at a significance level of 5%. Hence, the Fixed Effect Model (FEM) is selected as the preferred model. In order to address variations in the Fixed Effect Model (FEM), traditional hypothesis testing based on assumptions can be performed with the use of tests for multicollinearity and heteroscedasticity. The Variance Inflation Factor (VIF) test can be used to conduct the multicollinearity test.

Table 7. Results of the Multicollinearity Test

Variable	VIF
X1	1.15
X2	1.92
X3	1.68
X4	1.38
Mean VIF	**1.85**

Source: STATA 14(2024), processed

According to the findings presented in the table, it seems that the independent variables do not show any signs of multicollinearity.

The heteroscedasticity test is conducted to examine the issue of unequal variance in the error term (Gujarati, 2012). In this study, the heteroscedasticity test is applied to the regression results using the Fixed Effect Model (FEM). The hypothesis assumptions are as follows:

Table 8. Results Heteroscedasticity Test

Wald Test	0.0046

Source: STATA 14 (2014), processed

The results of the Wald test indicate that the chi-square probability value is 0.0046, showing statistical significance with a p-value less than 0.05. This indicates that the research data shows signs of heteroscedasticity, thus requiring correction or treatment to address the violation of classical assumptions, such as applying a robust test.

Table 9. FEM Robust Results

Independent Variable	Details	Before	After
C	Coefficient	-150.4638	-150.4638
	t-Stat	-3.56	-3.38
	Prob	0.001	0.006
	Std. Err.	42.22448	44.52083
X1	Coefficient	1.560961	1.560961
	t-Stat	3.83	4.13
	Prob	0.000	0.002
	Std. Err.	0.4080907	0.3777248
X2	Coefficient	-0.000036	-0.000036
	t-Stat	-0.00	-0.00
	Prob	0.998	0.997
	Std. Err.	0.0157112	0.0087056
X3	Coefficient	-0.0403373	-0.0403373
	t-Stat	-0.75	-0.42
	Prob	0.460	0.681
	Std. Err.	0.0541063	0.0956191
X4	Coefficient	0.0105664	0.0105664
	t-Stat	0.82	1.17
	Prob	0.418	0.266
	Std. Err.	0.0129373	0.0090147
R-Squared		**0.3650**	**0.3650**

Source: STATA 14 (2014), processed

The R-squared value of 0.3650 indicates that about 36.50% of the changes in economic growth can be attributed to the four variables considered in the model: X1 (General Allocation Fund/DAU), X2 (Revenue Sharing Fund/DBH), X3 (Special Allocation Fund/DAK), and X4 (Local Government Revenues/PAD). The remaining 63.50% of the variance stems from factors outside the scope of this model.

The results of the F-test show the overall importance of the predictor variables. Having an F-statistic probability of 0.0000, which is lower than the 0.05 significance level, we can infer that the joint impact of all independent variables on economic growth is statistically significant with a 5% confidence level. This suggests that these four fiscal variables together provide a significant explanation for variations in economic growth patterns.

Next, a partial test is conducted to observe the influence of each independent variable on the dependent variable by using the probability values generated by those variables. Based on the estimation results of the selected model, the Fixed Effect Model (FEM) with robust standard errors shows the following results.

Table 10. Results of t-Statistik Test

Variable	P>|t|
X1	0.002
X2	0.997
X3	0.681
X4	0.266

Source: STATA 14 (2014), processed

a. The p-value for Variable X1 (General Allocation Fund (DAU)) is less than α, indicating that the significance level of 5% has a significant impact on Y (economic growth).
b. The p-value for Variable X2 (Revenue Sharing Fund (DBH)) is greater than α, showing that a significance level of 5% does not have a significant effect on Y (economic growth).
c. The p-value for Variable X3 (Special Allocation Fund (DAK)) is also greater than α, meaning that a significance level of 5% does not impact Y (economic growth).
d. Variable X4 (Local Government Revenues (PAD)) has a p-value higher than α, suggesting that the significance level of 5% does not affect Y (economic growth).

4.2. Discussions

Partly, the findings of this study indicate that the General Allocation Fund (DAU) plays a significant and positive role in enhancing the economic progress of regencies and cities in Riau Province. Put simply, an increase in the General Allocation Fund (DAU) leads to an uptick in economic development, and conversely. Additionally, the study reveals that the more General Allocation Fund (DAU) a regency in Riau Province receives, the more economic growth is experienced in the 12 regencies/cities of Riau Province. This research supports the findings of Nurlaili (2022) who stated that the General Allocation Fund (DAU) plays a crucial role in driving economic growth in a meaningful way. Distributed by the central government, the DAU is intended to equalize revenue among different regions, thus contributing to the enhancement of local economic development through fiscal decentralization.

The findings from the analysis of the Revenue Sharing Fund (DBH) in the regencies and cities of Riau suggest that there is no notable impact on the Economic Growth indicator. This implies that the allocation of the Revenue Sharing Fund (DBH) may not be effectively utilized for developmental purposes. These results corroborate previous studies conducted by Arina et al. (2019) and Putri et al. (2024),which also showed that the impact of the Revenue Sharing Fund (DBH) on economic growth is not notable.

The DBH Fund, funded by regional taxes and natural resource profits, is transferred to the balancing fund during fiscal decentralization. A key aim of the revenue sharing fund is to decrease the gap in financial resources between the central government and regional authorities. Revenue Sharing Funds (DBH) in the regencies/municipalities of Riau Province are less flexible in terms of their utilization, which limits the regions' ability to freely plan budget allocations. Overall, Revenue Sharing Fund (DBH), contributes minimally to regional development.

The estimation findings relating to the Special Allocation Fund (DAK) suggest that its impact on Economic Growth in the regencies/municipalities of Riau is not statistically significant. This outcome aligns with previous research conducted by Suciayu & Wibawa (2012), Arina et al. (2019) and Lulage et al. (2023), which also found that the Special Allocation Fund does not play a major role in stimulating economic development.

The connection between regional development spending and the Special Allocation Fund (DAK) is strong. DAK funding is earmarked for improving public services in various sectors like education, healthcare, infrastructure, marine and fisheries, agriculture, local government facilities, and the environment. Furthermore, the DAK is used to enhance both physical and non-physical infrastructure development in specific key areas. Special Allocation Fund (DAK) that does not have a significant effect on economic growth means that the fund is not being managed properly. In addition, it is most likely due to the nature of Special Allocation Fund (DAK) as a specific grant where the funds are mostly for regional infrastructure development that has not been a priority for the regional government in the current budget year.

According to the analysis findings for the Regional Original Income (PAD) variable, it is evident that the income generated in the regencies/cities of Riau does not play a significant role in influencing Economic Growth. Despite being a key source of funding for local development, Local Government Revenues (PAD) have not proven to be beneficial in stimulating regional growth. This situation highlights the need for local authorities to seek out and enhance other sources of revenue, particularly from local income streams. Nonetheless, the impact of Local Government Revenues (PAD) on the economy in this area is insignificant. These results align with previous research conducted by Laodini et al. (2023) which also found that Local Government Revenues (PAD) does not significantly affect economic growth.

At the same time, the analysis in this research is primarily focused on interpreting the regression findings from this study. By conducting a simultaneous significance test, it is evident that the General Allocation Fund (DAU), Special Allocation Fund (DAK), Revenue Sharing Fund (DBH), and Local Government Revenues (PAD) during the period of fiscal decentralization have had a favorable and noteworthy impact on the economic advancement of Riau's districts and cities from 2017 to 2021. These outcomes correspond with prior investigations conducted by Hanif et al. (2020), Rahman & Djasuli (2024), Nazikha & Rahmawati (2021), Sasana (2019), Suciayu & Wibawa (2012) which state that fiscal decentralization has a positive and significant effect on economic growth.

Fiscal decentralization allows local governments to have more control over their finances and resources, giving them the ability to tailor their management to better meet the specific needs of the community. In addition, fiscal decentralization can also improve the quality of public services, local investment and infrastructure, and allocate more efficient and responsive budgets. Therefore, this requires a commitment from regional leaders in allocating funds appropriately and there is no corruption in the distribution of funds in each region in the Regency/City of Riau Province.

5. CONCLUSIONS

This research examines how fiscal decentralization impacts economic growth across Riau Province during the 2017-2021 period. The analysis employs panel data methodology using the Fixed Effect Model (FEM) as the selected analytical approach. The findings from the regression analysis lead to several key conclusions. When examining individual variable effects (partial significance testing), only the General Allocation Fund (DAU) demonstrates a statistically significant positive influence on economic growth. In contrast, the other three fiscal components—Revenue Sharing Fund (DBH), Special Allocation Fund (DAK), and Local Government Revenues (PAD)—do not show significant individual impacts on economic growth. However, when all variables are tested collectively (simultaneous testing), the results reveal that the combined influence of all four fiscal decentralization components—DAU, DBH, DAK, and PAD—produces a statistically significant positive effect on economic growth across the regencies and cities within Riau Province throughout the study period of 2017-2021.

Based on the research findings, several recommendations are proposed for government authorities. First, the regency and city governments of Riau Province are encouraged to improve the capacity and efficiency of Local Government Revenue (PAD) management by developing local economic potential in a manner that does not burden low-income communities. Additionally, tax and levy governance should be enhanced to ensure greater efficiency and accountability. Second, the Revenue Sharing Fund (DBH) should be allocated in a targeted and equitable manner to reduce regional development disparities and support programs that directly address the basic needs of disadvantaged populations. Third, the governance of General Allocation Fund (DAU) utilization should be strengthened, emphasizing transparency and accountability to ensure not only high absorption rates but also effective and outcome-driven spending that promotes economic growth. Fourth, synergy between the Special Allocation Fund (DAK) and regional economic development policies should be reinforced to ensure that fiscal interventions are more precisely aligned with efforts to stimulate economic growth. For future researchers, it is recommended to extend the observation period, incorporate additional relevant variables, and apply more diverse analytical methods to enrich the findings and provide broader insights.

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