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The Impact of Investment and Government Expenditure on Economic Growth in Bulukumba Regency

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Abstract: This study examines the effects of investment and government expenditure on economic growth in Bulukumba Regency, South Sulawesi, Indonesia, during 2010–2024. The study employs a quantitative research approach using secondary annual time-series data obtained primarily from Statistics Indonesia (BPS) of Bulukumba Regency. Investment is measured using Gross Fixed Capital Formation (GFCF/PMTB), government expenditure is measured through regional government spending, and economic growth is represented by the annual growth rate of Gross Regional Domestic Product (GRDP) at constant prices. Multiple linear regression analysis was conducted using SPSS 27, preceded by normality, multicollinearity, heteroskedasticity, and autocorrelation tests. The results indicate that investment has a negative and statistically significant effect on economic growth, with a regression coefficient of -4.934×10^{-6} and a significance value of 0.019. In contrast, government expenditure has a positive but statistically insignificant effect, with a coefficient of 4.711×10^{-6} and a significance value of 0.171. Simultaneously, investment and government expenditure significantly affect economic growth, as indicated by an F-statistic of 4.952 and a significance value of 0.027. The model explains 45.2% of the variation in economic growth, with an adjusted R^2 of 36.1%. The findings highlight the importance of improving investment quality, productive capital allocation, expenditure efficiency, and policy coordination to strengthen sustainable regional economic growth in Bulukumba Regency.

Keywords : Investment; Government Expenditure; Economic Growth; Regional Economic Development; Bulukumba Regency.

1. Introduction

Economic growth is a fundamental indicator of regional economic development because it reflects the capacity of an economy to increase the production of goods and services over time. Sustained economic growth is generally associated with improvements in productive capacity, capital accumulation, employment opportunities, household income, and overall economic welfare. From a macroeconomic perspective, economic growth is influenced by the interaction of various production factors, including investment, government expenditure, labor, technological development, and human capital. Therefore, understanding the determinants of economic growth is particularly important for regional governments in formulating effective and evidence-based development policies.

In Indonesia, regional economic performance has demonstrated considerable resilience despite external economic uncertainty and the lingering effects of the COVID-19 pandemic. Statistics Indonesia (Badan Pusat Statistik/BPS) reported that Indonesia's economy grew by 5.04% in 2025. This positive performance indicates the continuing recovery and expansion of domestic economic activity, supported by household consumption, investment, government expenditure, and other components of aggregate demand. Nevertheless, national economic growth does not necessarily translate into uniform economic performance across regions. Regional disparities in resource endowments, infrastructure, investment attractiveness, fiscal capacity, and economic structure may generate substantial differences in growth outcomes among districts and provinces. Consequently, empirical analysis at the regional level remains necessary to identify the factors that contribute most significantly to local economic growth.

One of the most important determinants of regional economic growth is investment. Investment represents the allocation of resources to productive assets that can increase future production capacity. At the regional level, investment can stimulate economic activity through capital formation, expansion of productive enterprises, job creation, technology adoption, and the development of supporting industries. Investment is commonly measured through Gross Fixed Capital Formation (Pembentukan Modal Tetap Bruto/PMTB), which represents expenditure on fixed assets used repeatedly in the production process for more than one year. An increase in PMTB indicates an expansion of productive

capacity and may therefore contribute to higher regional output. Agusta and Arianti (2023) emphasize the importance of investment as an economic growth component because capital accumulation strengthens the productive foundation of an economy.

In addition to investment, government expenditure constitutes another important instrument for stimulating regional economic activity. Government expenditure through regional budgets can generate economic effects both directly and indirectly. Productive public spending on infrastructure, education, health, public services, and economic development can improve the quality of human resources, reduce transaction costs, strengthen connectivity, and create an enabling environment for private-sector investment. Government expenditure can therefore function as a fiscal instrument for stimulating aggregate demand while simultaneously strengthening long-term productive capacity. However, the economic effect of government expenditure depends not only on its magnitude but also on its composition, allocation, and effectiveness. Increasing expenditure without adequate targeting may not necessarily produce proportional improvements in regional economic performance.

The relevance of investment and government expenditure to economic growth can be observed in Bulukumba Regency, South Sulawesi. Bulukumba possesses substantial economic potential, particularly in agriculture, fisheries, maritime activities, trade, and tourism. However, the development of these sectors requires continuous capital formation and effective public-sector intervention. The following data illustrate the development of investment, government expenditure, and economic growth in Bulukumba Regency during 2020–2024.

Table 1. Investment, Government Expenditure, and Economic Growth in Bulukumba Regency, 2020–2024

Year	Investment (million IDR)	Government Expenditure (million IDR)	Economic Growth (%)
2020	2,302,143	1,428,512	0.43
2021	2,391,781	1,328,420	0.76
2022	2,517,293	1,345,471	3.81
2023	2,749,227	1,467,331	4.11
2024	2,827,842	1,598,273	4.60

Source: Statistics Indonesia (BPS) of Bulukumba Regency, 2025.

The data indicate that investment in Bulukumba Regency increased consistently from IDR 2.30 trillion in 2020 to IDR 2.83 trillion in 2024. Government expenditure also increased overall, from IDR 1.43 trillion in 2020 to IDR 1.60 trillion in 2024, although it experienced a temporary decline in 2021. During the same period, economic growth increased substantially from 0.43% in 2020 to 4.60% in 2024. The simultaneous improvement in investment, government expenditure, and economic growth provides an initial indication of a potential relationship among these variables. However, descriptive trends alone cannot establish whether increases in investment and government expenditure statistically explain variations in economic growth. A quantitative empirical investigation is therefore required.

The 2020–2024 period is particularly relevant because it encompasses the COVID-19 pandemic and the subsequent regional economic recovery. In 2020, economic growth in Bulukumba was recorded at only 0.43%, reflecting the disruption of production, mobility, trade, and household economic activities. Economic growth subsequently improved to 0.76% in 2021, 3.81% in 2022, 4.11% in 2023, and 4.60% in 2024. This recovery coincided with a continuous increase in investment and a broader expansion of government expenditure. The pattern raises an important empirical question concerning whether the improvement in regional economic performance was significantly associated with

increasing capital formation and government spending or whether it was primarily driven by other structural and sectoral factors.

Previous empirical studies have produced mixed findings concerning the effects of investment and government expenditure on economic growth. Several studies have reported that investment and government expenditure have positive and statistically significant effects on economic growth (Akbar et al., 2024; Aswar et al., 2025; Amanda & Murwiati, 2025). These findings suggest that capital accumulation and fiscal intervention can enhance productive capacity and stimulate regional economic activity. However, other studies have found that investment and government expenditure do not significantly affect economic growth (Prasasti, 2022; Timbuleng, 2024). These contradictory findings indicate that the relationship between investment, government expenditure, and economic growth may be context-dependent and influenced by regional characteristics, expenditure effectiveness, economic structure, and the period of observation.

The inconsistency in previous findings constitutes an important research gap. Although earlier research has examined the relationship between investment, government expenditure, and economic growth, relatively limited empirical evidence focuses specifically on Bulukumba Regency using recent data that capture the post-pandemic recovery period. Fitriani et al. (2018), for example, found a significant relationship between investment, government expenditure, and economic growth in Bulukumba. However, the study was conducted using an earlier observation period and therefore may not adequately reflect the structural and economic changes that occurred during and after the COVID-19 pandemic. More recent studies have generally focused on national or provincial contexts, while district-level evidence remains comparatively limited. Furthermore, few studies have simultaneously examined investment and government expenditure as explanatory variables for economic growth in Bulukumba using an updated time-series framework.

This research gap is important because regional economic policies are implemented within specific institutional, fiscal, and structural contexts. Findings obtained at the national or provincial level cannot necessarily be generalized to individual districts. Bulukumba's economic structure, dependence on primary sectors, regional fiscal capacity, investment opportunities, and development priorities may generate relationships that differ from those observed in other regions. Consequently, district-level empirical evidence is necessary to provide a more context-sensitive understanding of the mechanisms underlying regional economic growth.

The present study addresses this gap by empirically examining the effects of investment and government expenditure on economic growth in Bulukumba Regency using data covering the 2020–2024 period. The study contributes to the literature in three ways. First, it provides updated district-level evidence on the relationship between investment, government expenditure, and economic growth during a period encompassing the pandemic and subsequent economic recovery. Second, it evaluates the effects of investment and government expenditure simultaneously, thereby providing a more comprehensive assessment of two major components of regional economic development. Third, the findings are expected to provide context-specific evidence that can support the formulation and evaluation of regional development and fiscal policies in Bulukumba Regency.

Based on these considerations, this study investigates the following research questions: (1) Does investment significantly affect economic growth in Bulukumba Regency? and (2) Does government expenditure significantly affect economic growth in Bulukumba Regency? Accordingly, the objective of this study is to empirically examine the individual effects of investment and government expenditure on economic growth in Bulukumba Regency. The findings are expected to contribute to the development of regional economic growth literature and provide practical implications for policymakers in designing investment and expenditure strategies that are more effective in supporting sustainable regional economic development.

2. Literature Review

2.1 Investment and Economic Growth

Investment is a fundamental component of economic development because it contributes to capital accumulation, productive capacity, employment creation, and improvements in productivity. In the context of regional economies, investment represents the allocation of resources toward productive assets that are expected to generate economic benefits in the future. From a macroeconomic perspective, investment contributes not only to the expansion of production capacity but also to the strengthening of aggregate demand. Aswar et al. (2025) conceptualize investment as expenditure on capital goods and productive equipment intended to replace or increase the existing capital stock and support future production activities. The relationship between investment and economic growth can be explained through several theoretical perspectives. The Neoclassical Growth Theory emphasizes the role of capital accumulation in increasing output per worker. An increase in the capital stock, particularly when capital accumulation grows faster than population, can increase capital availability per worker and consequently enhance productive capacity (Aswar et al., 2025). Therefore, regions that experience higher levels of investment are expected to have greater capacity to expand production and generate economic output.

The Harrod-Domar perspective further emphasizes the importance of investment in determining economic growth. Investment is viewed as both an expenditure that increases productive capacity and a component that stimulates effective demand (Setijawan et al., 2021). This implies that investment can influence economic growth through two complementary mechanisms: increasing the economy's capacity to produce goods and services and generating additional demand for goods and services. In the long term, investment can also increase the capital stock and productivity, thereby supporting sustainable economic expansion (Dumais et al., 2022). In regional economic analysis, investment is commonly represented by Gross Fixed Capital Formation (GFCF) or Pembentukan Modal Tetap Bruto (PMTB). PMTB captures expenditure on fixed assets with a useful life of more than one year and represents physical capital formation within an economy. It includes investment in residential and non-residential buildings, infrastructure, machinery, equipment, and other productive fixed assets (Agusta & Arianti, 2023; Ali & Septiana, 2022). An increase in PMTB therefore reflects an expansion of the physical capital base that can support regional production.

The empirical literature generally suggests a positive relationship between investment and economic growth, although the magnitude and statistical significance of this relationship may vary across regions and periods. Akbar et al. (2024), Aswar et al. (2025), and Amanda and Murwiati (2025) provide evidence that investment contributes positively to economic growth. However, Prasasti (2022) and Timbuleng (2024) report different findings, indicating that the effect of investment may depend on regional characteristics, investment quality, sectoral composition, and the effectiveness of capital utilization. For Bulukumba Regency, investment is particularly relevant because the regional economy has substantial potential in agriculture, fisheries, maritime activities, trade, and tourism. Increased investment can expand productive capacity in these sectors, generate employment, stimulate business activity, and strengthen the regional production base. Accordingly, this study proposes that higher investment is associated with higher economic growth.

H1: Investment has a positive and significant effect on economic growth in Bulukumba Regency.

2.2 Government Expenditure and Economic Growth

Government expenditure represents one of the principal instruments of fiscal policy through which governments influence economic activity. At the regional level, government expenditure is reflected in the Regional Revenue and Expenditure Budget (APBD) and represents the allocation of public resources to finance government programs, public services, infrastructure, and other

development activities. Government expenditure can influence economic growth by stimulating aggregate demand in the short term and improving productive capacity in the long term. The Keynesian perspective provides an important theoretical foundation for understanding the relationship between government expenditure and economic growth. An increase in government expenditure can increase aggregate demand, which subsequently stimulates production, income, and employment. Consequently, government expenditure can become an important mechanism for supporting economic activity, particularly when private-sector demand and investment are insufficient to sustain economic expansion.

Government expenditure also has a supply-side function when allocated to productive sectors. Public expenditure on infrastructure, education, health, and other public services can improve the environment in which households and firms conduct economic activities. Improved infrastructure can reduce transportation and transaction costs, while investment in education and health can improve human capital and labor productivity. Thus, the effect of government expenditure on economic growth depends not only on its total amount but also on the effectiveness and productivity of its allocation. The literature reviewed in this study distinguishes government expenditure according to its relationship with government programs and activities. Expenditure directly associated with specific programs includes spending on personnel, goods and services, and capital expenditure, while other expenditures may include transfers, subsidies, grants, social assistance, and other fiscal obligations (Akbar et al., 2024). From an economic perspective, productive expenditure, particularly capital expenditure and expenditure that strengthens public infrastructure and human capital, is more likely to generate long-term economic benefits.

Akbar et al. (2024) emphasize that regional government expenditure, particularly in public-service sectors, can influence regional economic growth. Similarly, Dumais et al. (2022) identify government expenditure as an important component of fiscal policy aimed at increasing output, employment, and economic stability. Nevertheless, empirical findings remain inconsistent. Some studies demonstrate a positive and significant relationship between government expenditure and economic growth (Akbar et al., 2024; Aswar et al., 2025), whereas other studies report insignificant effects (Prasasti, 2022; Timbuleng, 2024). These differences suggest that fiscal expenditure does not automatically generate economic growth and that the effectiveness of government spending may depend on allocation, efficiency, and regional economic conditions. In Bulukumba Regency, government expenditure has increased during the observation period, alongside improvements in economic growth. The increase in public expenditure potentially supports regional economic activity by financing infrastructure, public services, and development programs. However, the observed trend does not in itself establish causality. Empirical testing is therefore required to determine whether government expenditure has a statistically significant effect on regional economic growth.

Based on the Keynesian perspective and previous empirical evidence, this study proposes the following hypothesis:

H2: Government expenditure has a positive and significant effect on economic growth in Bulukumba Regency.

2.3 Economic Growth as the Dependent Variable

Economic growth represents the sustained increase in the production of goods and services within an economy. At the regional level, economic growth is commonly measured through the growth rate of Gross Regional Domestic Product (GRDP) at constant prices. The use of constant-price GRDP is important because it enables changes in real economic output to be distinguished from changes caused by price movements. Thus, the growth rate of constant-price GRDP provides an appropriate indicator for assessing changes in regional productive activity over time (Agusta & Arianti, 2023).

Economic growth is closely associated with improvements in productive capacity and regional welfare. Classical growth theory emphasizes the role of production factors such as capital, labor, and natural resources in determining economic expansion (Regina, 2022). Meanwhile, the Harrod-Domar framework emphasizes savings and investment as major determinants of growth (Setijawan et al., 2021). More recent endogenous growth perspectives broaden this explanation by emphasizing the importance of internal factors such as capital accumulation, human capital, innovation, technology, and effective government policy in determining long-term economic performance (Aulia & Sudibyo, 2025). These theoretical perspectives provide a common foundation for examining the role of investment and government expenditure in regional economic growth. Investment contributes to capital accumulation and productive capacity, while government expenditure can provide public goods, infrastructure, and services that support private economic activity. Consequently, both variables are theoretically expected to contribute to variations in regional economic growth.

2.4 Integrated Theoretical Framework

The relationship among investment, government expenditure, and economic growth can also be interpreted through the Rostow-Mususgrave perspective, which emphasizes the changing role of government and investment throughout the stages of economic development. In the early stages of development, public investment and government expenditure are particularly important for providing basic infrastructure and public services. As economic activity develops, private investment increasingly contributes to productive expansion, while government expenditure continues to support infrastructure and social sectors (Herita & L V, 2023). This perspective suggests that investment and government expenditure are not isolated determinants of regional economic performance. Government expenditure can create the infrastructure and institutional environment necessary for private investment, while investment expands the productive capacity of the regional economy. The interaction of these mechanisms can subsequently influence the growth of regional output.

Accordingly, the conceptual model of this study positions investment (X1) and government expenditure (X2) as independent variables and economic growth (Y) as the dependent variable. Investment is operationalized through Gross Fixed Capital Formation (PMTB), while government expenditure represents regional government spending. Economic growth is measured through the growth rate of GRDP at constant prices. This conceptualization is consistent with the theoretical and empirical relationships identified in the literature.

Conceptual framework:
Investment (X1) → Economic Growth (Y)
Government Expenditure (X2) → Economic Growth (Y)

The framework assumes that higher investment increases regional productive capacity and that more effective government expenditure strengthens economic activity and public-sector support for production. Therefore, both variables are expected to have positive effects on economic growth in Bulukumba Regency.

2.5 Hypothesis Development

Based on the Neoclassical Growth Theory, Harrod-Domar Theory, Keynesian Theory, and endogenous growth perspective, as well as the empirical findings reviewed above, investment and government expenditure are theoretically expected to contribute positively to regional economic growth. Investment increases the capital stock and productive capacity, whereas government

expenditure can stimulate aggregate demand and provide public infrastructure and services that support economic activity.

Therefore, the hypotheses of this study are formulated as follows:

H1: Investment has a positive and significant effect on economic growth in Bulukumba Regency.

H2: Government expenditure has a positive and significant effect on economic growth in Bulukumba Regency.

3. Research Methodology

3.1 Research Design

This study employs a quantitative research approach using secondary time-series data to empirically examine the effects of investment and government expenditure on economic growth in Bulukumba Regency, South Sulawesi, Indonesia. A quantitative design is appropriate because the study aims to measure the relationships among variables numerically and test the proposed hypotheses using statistical procedures. The analysis focuses on the extent to which investment and government expenditure explain variations in regional economic growth. The observation period covers annual data from **2010 to 2024**, resulting in 15 annual observations. The selection of this period is intended to provide a sufficiently long time-series perspective for examining changes in investment, government expenditure, and economic growth in Bulukumba Regency. The study was conducted during March–May 2026.

3.2 Data Sources and Data Collection

The study relies exclusively on secondary data. The primary source is the **Statistics Indonesia (Badan Pusat Statistik/BPS) of Bulukumba Regency**, which provides official statistical information on regional economic indicators, including investment, government expenditure, and economic growth. Additional relevant information was obtained from official statistical publications and supporting literature related to regional economic development. Data collection was conducted through documentation and systematic observation of annual statistical records. The documentation procedure involved identifying, recording, and compiling the required observations for each research variable over the 2010–2024 period. The use of official statistical data is intended to ensure consistency and comparability across the observation period.

3.3 Variables and Operationalization

The study consists of one dependent variable and two independent variables. Economic growth is the dependent variable, while investment and government expenditure are the independent variables.

Economic Growth (Y). Economic growth represents the annual change in the real economic output of Bulukumba Regency. It is measured using the growth rate of Gross Regional Domestic Product (GRDP) at constant prices. The use of constant-price GRDP enables changes in real output to be assessed without being distorted by changes in the general price level. **Investment (X1).** Investment represents expenditure allocated to increase the productive capital stock of the regional economy. Following the measurement used in the study, investment is operationalized using **Gross Fixed Capital Formation (GFCF/PMTB)** and expressed in million Indonesian rupiah. PMTB represents expenditure on fixed assets with a useful life of more than one year and constitutes an important component of regional capital formation (Agusta & Arianti, 2023). **Government Expenditure (X2).** Government expenditure represents total regional government spending used to finance public goods, public services, infrastructure, and development programs. The variable is measured in million Indonesian rupiah and incorporates regional government expenditure reflected in the APBD. The original research framework identifies direct and indirect expenditure as components of regional government expenditure.

The operational definitions of the variables are summarized below.

Variable	Symbol	Operational Definition	Measurement Scale
Economic Growth	Y	Annual growth rate of GRDP at constant prices	Ratio (%)
Investment	X1	Gross Fixed Capital Formation (PMTB)	Ratio (million IDR)
Government Expenditure	X2	Regional government expenditure reflected in APBD	Ratio (million IDR)

3.4 Analytical Strategy

The data were analyzed using **multiple linear regression** to estimate the partial effects of investment and government expenditure on economic growth. Multiple regression is appropriate because the study examines the simultaneous contribution of two independent variables to one dependent variable.

The empirical model is specified as follows:

$$\mathbf{Y_t = \alpha + \beta_1 X1_t + \beta_2 X2_t + \varepsilon_t}$$

where:

- $\mathbf{Y_t}$ = economic growth in year *t*;
- $\boldsymbol{\alpha}$ = regression constant;
- $\boldsymbol{\beta_1}$ = coefficient of investment;
- $\boldsymbol{\beta_2}$ = coefficient of government expenditure;
- $\mathbf{X1_t}$ = investment in year *t*;
- $\mathbf{X2_t}$ = government expenditure in year *t*; and
- $\boldsymbol{\varepsilon_t}$ = error term.

The coefficient β_1 measures the estimated change in economic growth associated with a one-unit change in investment, holding government expenditure constant. Similarly, β_2 represents the estimated change in economic growth associated with a one-unit change in government expenditure, holding investment constant.

3.5 Regression Assumption Testing

Before estimating and interpreting the regression model, diagnostic tests are conducted to assess whether the model satisfies the relevant classical assumptions. Because the study uses time-series observations, particular attention is given to residual behavior and the possibility of serial correlation. **Normality test.** The normality test is used to assess whether the regression residuals follow an approximately normal distribution. The original research design proposes the use of graphical analysis and statistical testing, including the Kolmogorov–Smirnov procedure. A significance value above 0.05 is interpreted as indicating no statistically significant evidence against the normality assumption. **Multicollinearity test.** Multicollinearity is assessed to determine whether the independent variables are excessively correlated with each other. The assessment uses the **Tolerance** and **Variance Inflation Factor (VIF)** statistics. A tolerance value above 0.10 and a VIF value below 10 are used as the criteria indicating that serious multicollinearity is not present.

Heteroskedasticity test. Heteroskedasticity is examined by assessing whether the variance of the regression residuals remains constant across observations. The original methodology proposes examination of the residual-versus-predicted-value plot. A random distribution of residuals around zero without a systematic pattern indicates that the homoscedasticity assumption is reasonably satisfied. **Autocorrelation test.** Because the data are annual time-series observations, autocorrelation is

assessed using the **Durbin–Watson statistic**. The purpose of this test is to determine whether the residual in one period is correlated with the residual in the preceding period. The Durbin–Watson statistic is interpreted according to its conventional decision range and the appropriate critical values for the estimated model.

3.6 Hypothesis Testing

The hypotheses are evaluated using statistical significance tests at the **5% significance level (α = 0.05)**. The **t-test** is used to determine the partial effect of each independent variable on economic growth. Investment is considered to have a statistically significant effect on economic growth when the estimated coefficient is statistically different from zero at the 5% level. The same criterion is applied to government expenditure. The **F-test** is used to assess whether investment and government expenditure jointly provide statistically significant explanatory power for economic growth. A statistically significant F-statistic indicates that the independent variables collectively contribute to explaining variations in economic growth. The **coefficient of determination (R^2)** is used to assess the explanatory power of the regression model. The R^2 value indicates the proportion of variation in economic growth that can be statistically explained by investment and government expenditure included in the model, while the remaining proportion is attributable to other factors outside the model and random variation.

3.7 Empirical Model and Decision Criteria

The empirical analysis is designed to evaluate two principal hypotheses:

H1: Investment has a positive and significant effect on economic growth in Bulukumba Regency.

H2: Government expenditure has a positive and significant effect on economic growth in Bulukumba Regency.

The hypotheses are supported when the estimated regression coefficient has the expected positive sign and its associated probability value is below 0.05. Conversely, a probability value above 0.05 indicates insufficient statistical evidence to support the proposed effect. Overall, the methodological framework combines descriptive examination of regional economic data, regression diagnostics, multiple linear regression, and hypothesis testing to provide empirical evidence regarding the role of investment and government expenditure in determining economic growth in Bulukumba Regency during 2010–2024.

4. Results and Discussion

4.1 Development of Investment

Investment is an important component of regional economic development because it contributes to the expansion of productive capacity and supports long-term economic growth. In this study, investment is measured using **Gross Fixed Capital Formation (GFCF/PMTB)**, which represents expenditure on fixed assets such as buildings, machinery, equipment, and other productive assets used in economic activities. GFCF reflects the capacity of a region to expand its productive base and develop economic activities. In general, a higher level of GFCF indicates greater potential for increasing output and strengthening regional economic growth. Investment in Bulukumba Regency demonstrated an overall upward trend during 2010–2024. This increase reflects the expansion of capital formation through infrastructure development, machinery and equipment acquisition, and investment in other fixed assets supporting production. The positive development indicates that investment activity in Bulukumba Regency expanded over the observation period and potentially contributed to strengthening regional productive capacity.

Table 1. Development of Investment in Bulukumba Regency, 2010–2024

Year	Investment (GFCF) (Million IDR)
2010	1,100,255
2011	1,189,906
2012	1,364,870
2013	1,478,122
2014	1,600,571
2015	1,730,270
2016	1,850,282
2017	2,017,652
2018	2,171,070
2019	2,211,772
2020	2,302,143
2021	2,391,781
2022	2,517,293
2023	2,749,227
2024	2,827,842

Source: Statistics Indonesia (BPS) of Bulukumba Regency, 2025.

As shown in Table 1 and Figure 1, investment in Bulukumba Regency increased consistently throughout the 2010–2024 period. Between 2010 and 2014, investment increased substantially, indicating an expansion of economic development and capital formation in the region. During 2015–2018, investment continued to grow relatively steadily, suggesting increasing investment activity and improving confidence in the regional economic environment. In 2019, the rate of investment growth began to moderate, although its nominal value continued to increase. During 2020–2021, investment remained on an upward trajectory despite economic pressures during this period. This development indicates that investment activity in Bulukumba Regency demonstrated a degree of resilience. Subsequently, investment growth accelerated during 2022–2024, with a particularly notable increase in 2023 compared with the previous year. Overall, investment demonstrated a positive long-term trend, although the annual rate of growth varied across the observation period.

4.1.1 Development of Government Expenditure

Government expenditure represents an important fiscal policy instrument through which regional governments allocate resources to public infrastructure, education, healthcare, social programs, and other public services. The level and composition of government expenditure reflect regional fiscal priorities and may influence the capacity of local governments to stimulate economic activity and improve public welfare. Government expenditure may include expenditure associated with direct implementation of development programs as well as indirect expenditure, including personnel expenditure, social assistance, grants, and intergovernmental transfers. Both categories may influence regional economic activity through different channels. Productive public expenditure can strengthen infrastructure and human capital, while other forms of expenditure may support household income and public service provision. Government expenditure in Bulukumba Regency generally increased over the 2010–2024 period, although several years experienced declines. This development reflects changes in fiscal priorities and regional budget conditions.

Table 2. Development of Government Expenditure in Bulukumba Regency, 2010–2024

Year	Government Expenditure (Million IDR)
2010	577,590
2011	728,769
2012	861,133
2013	1,113,850
2014	1,249,121
2015	1,370,711
2016	1,418,879
2017	1,490,353
2018	1,402,255
2019	1,456,915
2020	1,428,512
2021	1,328,420
2022	1,345,471
2023	1,467,331
2024	1,598,273

Source: Statistics Indonesia (BPS) of Bulukumba Regency, 2025.

Table 2 and Figure 2 show that government expenditure in Bulukumba Regency generally increased during the observation period, although fluctuations occurred in several years. The increase from 2010 to 2017 indicates an expansion of regional fiscal expenditure associated with development activities and public service provision. However, government expenditure declined in 2018 and again during 2020–2021. These reductions may reflect budget adjustments and changes in expenditure priorities in response to prevailing economic conditions. Government expenditure subsequently increased during 2022–2024, indicating a recovery and strengthening of regional fiscal activity. Overall, the pattern demonstrates that government expenditure was influenced by changes in fiscal policy and regional economic conditions. Nevertheless, regional expenditure remained an important instrument for supporting development activities and public service delivery.

4.1.2 Development of Economic Growth

Economic growth refers to the sustained increase in the production of goods and services over time and represents one of the key indicators of regional development performance. Economic growth is influenced by several factors, including capital accumulation through investment, labor growth, technological progress, and improvements in productivity. To measure real economic growth without the influence of price changes, this study uses **Gross Regional Domestic Product (GRDP) at constant prices**. Constant-price GRDP provides a more appropriate basis for assessing changes in real economic output because it removes the effect of changes in the general price level. GRDP at constant prices can therefore be used to assess the real development of regional economic activity over time. It also provides an important basis for evaluating changes in regional production capacity. The development of GRDP is consequently an important indicator for assessing economic performance in Bulukumba Regency.

Table 3. Development of Economic Growth in Bulukumba Regency, 2010–2024

Year	Economic Growth (%)
2010	5.71
2011	5.49
2012	9.65
2013	7.77
2014	8.54
2015	5.62
2016	6.77
2017	6.89
2018	5.05
2019	5.49
2020	0.43
2021	0.76
2022	3.81
2023	4.11
2024	4.60

Source: Statistics Indonesia (BPS) of Bulukumba Regency, 2025.

Table 3 and Figure 3 indicate that economic growth in Bulukumba Regency fluctuated throughout the 2010–2024 period. Economic growth was relatively high during the initial years of the observation period but subsequently experienced periods of deceleration. The most substantial slowdown occurred during 2020–2021, when economic growth decreased to 0.43% and 0.76%, respectively. This period represents a significant disruption to regional economic activity. Economic growth subsequently recovered during 2022–2024, increasing from 3.81% in 2022 to 4.11% in 2023 and 4.60% in 2024. The recovery suggests a gradual improvement in regional economic activity following the substantial slowdown in 2020–2021. The economic performance of Bulukumba is also associated with the contribution of major economic sectors, particularly agriculture, forestry, and fisheries, which constitute important components of regional economic activity.

4.1.3 Regression Diagnostic Tests

The empirical analysis was conducted using **multiple linear regression with SPSS version 27**. Economic growth was specified as the dependent variable, while investment and government expenditure were included as independent variables. Before estimating the regression model, a series of diagnostic tests were conducted to evaluate the suitability of the model, including normality, multicollinearity, heteroskedasticity, and autocorrelation tests.

a. Normality Test

The normality test was conducted to determine whether the regression residuals approximately followed a normal distribution. Two graphical approaches were used, namely the histogram and Normal P–P Plot, complemented by the **One-Sample Kolmogorov–Smirnov test**. Figure 4 shows that the residual distribution approximately follows a bell-shaped pattern. The mean residual is approximately zero (−5.55E−17), while the standard deviation is 0.926. Although the sample size is relatively small (N = 15), the graphical pattern indicates that the residuals are reasonably close to a normal distribution. The Normal P–P Plot shows that the observed points are distributed around and generally follow the

diagonal line. This pattern provides graphical evidence that the residuals approximately satisfy the normality assumption.

Table 4. One-Sample Kolmogorov–Smirnov Normality Test

Statistic	Value
N	15
Mean	0.0000000
Std. Deviation	1.86596431
Absolute Maximum Difference	0.164
Positive	0.093
Negative	−0.164
Test Statistic	0.164
Asymp. Sig. (2-tailed)	0.200
Monte Carlo Sig. (2-tailed)	0.323
99% CI Lower Bound	0.311
99% CI Upper Bound	0.335

Source: SPSS 27 output, processed by the authors, 2026.

The Kolmogorov–Smirnov test produces an Asymp. Sig. (2-tailed) value of **0.200**, which is greater than the 0.05 significance threshold. Therefore, there is insufficient statistical evidence to reject the assumption that the regression residuals are normally distributed.

b. Multicollinearity Test

The multicollinearity test was performed to determine whether substantial linear relationships existed between the independent variables. The assessment was based on the **Tolerance** and **Variance Inflation Factor (VIF)** values.

Table 5. Multicollinearity Test Results

Independent Variable	Tolerance	VIF
Investment	0.292	3.419
Government Expenditure	0.292	3.419

Dependent variable: Economic Growth

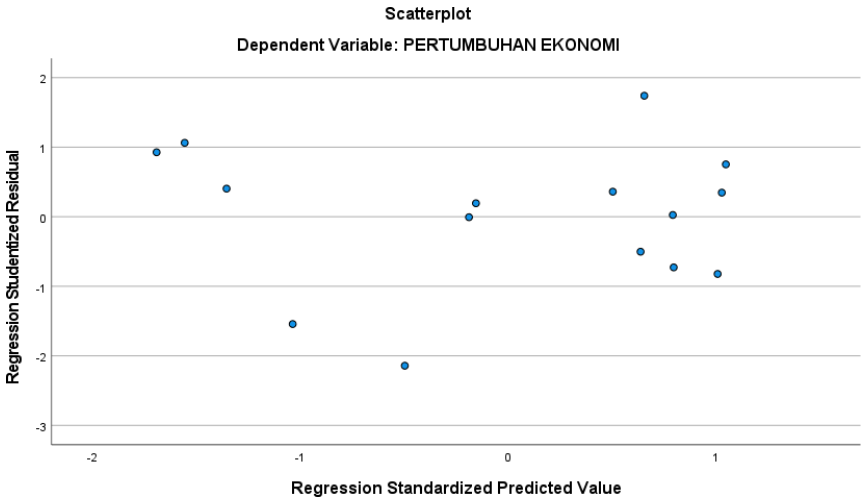
Source: SPSS 27 output, processed by the authors, 2025.

The results indicate that both independent variables have a tolerance value of **0.292**, which is above the commonly applied minimum threshold of 0.10. The VIF values are **3.419**, which are below 10. These results indicate that the regression model does not exhibit severe multicollinearity between investment and government expenditure.

c. Heteroskedasticity Test

Heteroskedasticity was assessed using both a residual scatterplot and the **Glejser test**. The purpose of the analysis was to determine whether the variance of the regression residuals remained relatively constant across observations.

Figure 6. Scatterplot for Heteroskedasticity Assessment



Source: SPSS 27 output, processed by the authors, 2026.

The scatterplot indicates that the residual points are dispersed around the zero value without forming a clear systematic pattern. This visual evidence suggests that the regression model does not exhibit an obvious heteroskedasticity problem.

Table 6. Glejser Heteroskedasticity Test

Variable	B	Std. Error	Beta	t	Sig.
Constant	1.482	1.392	—	1.064	0.308
Investment	1.218E−6	0.000	−0.564	1.109	0.289
Government Expenditure	−1.979E−6	0.000	0.504	0.341	0.341

Source: SPSS 27 output, processed by the authors, 2026.

The Glejser test results show significance values of **0.289** for investment and **0.341** for government expenditure. Both values exceed 0.05, indicating that the independent variables do not exhibit a statistically significant relationship with the absolute residuals. Thus, the results provide no evidence of heteroskedasticity in the estimated model.

d. Autocorrelation Test

Because the study employs annual time-series observations, an autocorrelation test was conducted to determine whether residuals were systematically correlated across observations.

Table 7. Runs Test for Autocorrelation

Statistic	Value
Test Value	0.37175
Cases < Test Value	7
Cases ≥ Test Value	8
Total Cases	15
Number of Runs	8
Z	0.000
Asymp. Sig. (2-tailed)	1.000

Source: SPSS 27 output, processed by the authors, 2026.

The Runs Test produces an Asymp. Sig. (2-tailed) value of **1.000**, which is substantially greater than 0.05. Therefore, the null hypothesis of randomness cannot be rejected, indicating no evidence of systematic autocorrelation in the residual sequence based on this test.

4.1.4 Multiple Linear Regression Analysis

Multiple linear regression was employed to estimate the effects of investment and government expenditure on economic growth in Bulukumba Regency.
The estimated regression model is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Based on the regression output, the estimated equation is:

$$Y = 9.168 - 0.000004934 X_1 + 0.000004711 X_2 + \varepsilon$$

where **Y** represents economic growth, X_1 represents investment, and X_2 represents government expenditure.

Table 8. Multiple Linear Regression Results

Variable	B	Std. Error	Beta	t	Sig.
Constant	9.168	2.302	—	3.982	0.002
Investment	−4.934E−6	0.000	−1.074	−2.718	0.019
Government Expenditure	4.711E−6	0.000	0.564	1.428	0.171

Dependent variable: Economic Growth

Source: SPSS 27 output, processed by the authors, 2026.

The constant coefficient of **9.168** indicates the estimated level of economic growth when investment and government expenditure are held at zero within the mathematical specification of the model. The investment coefficient is **−4.934E−6**, indicating a negative estimated relationship between investment and economic growth, holding government expenditure constant. The negative sign indicates that an increase in investment is associated with a decrease in the measured economic growth rate within the estimated model. The government expenditure coefficient is **4.711E−6**, indicating a positive estimated relationship between government expenditure and economic growth, ceteris paribus. However, the statistical significance of this relationship must be evaluated based on the partial hypothesis test.

4.1.5 Hypothesis Testing

a. Partial Effect of Investment and Government Expenditure

The *t*-test was used to assess whether each independent variable had a statistically significant partial effect on economic growth. Statistical significance was evaluated at the 5% level.

Table 9. Partial Regression Test Results

Variable	B	Beta	t	Sig.	Decision
Investment	−4.934E−6	−1.074	−2.718	0.019	Significant, negative
Government Expenditure	4.711E−6	0.564	1.428	0.171	Not significant

Source: SPSS 27 output, processed by the authors, 2026.

The results demonstrate that **investment has a statistically significant negative effect on economic growth**. The significance value is **0.019**, which is below 0.05, while the *t*-statistic is **−2.718**. Therefore, the null hypothesis concerning the absence of an investment effect is rejected. The finding indicates that, within the estimated model, higher investment is statistically associated with lower economic growth. In contrast, **government expenditure has a positive but statistically insignificant**

effect on economic growth. The estimated coefficient is positive (**4.711E−6**), but its significance value of **0.171** exceeds the 0.05 threshold. Therefore, there is insufficient statistical evidence to conclude that government expenditure has a significant partial effect on economic growth during the 2010–2024 observation period.

b. Simultaneous Effect of Investment and Government Expenditure

The F-test was conducted to determine whether investment and government expenditure jointly explain variations in economic growth.

Table 10. Simultaneous F-Test Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	40.230	2	20.115	4.952	0.027
Residual	48.746	12	4.062	—	—
Total	88.975	14	—	—	—

Dependent variable: Economic Growth
Predictors: Investment and Government Expenditure
Source: SPSS 27 output, processed by the authors, 2026.

The F-test produces an **F-statistic of 4.952** with a significance value of **0.027**. Since the significance level is below 0.05, the null hypothesis that the independent variables have no joint effect is rejected. Thus, **investment and government expenditure jointly have a statistically significant effect on economic growth in Bulukumba Regency during 2010–2024**. This result indicates that although government expenditure does not have a statistically significant partial effect and investment exhibits a negative partial effect, the two variables collectively provide statistically significant explanatory information regarding variations in regional economic growth.

c. Coefficient of Determination

The coefficient of determination was examined to assess the explanatory power of the regression model.

Table 11. Model Summary and Coefficient of Determination

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Durbin–Watson
1	0.672	0.452	0.361	2.01547	1.501

Predictors: Investment and Government Expenditure
Dependent variable: Economic Growth
Source: SPSS 27 output, processed by the authors, 2026.

The model produces an **R^2 value of 0.452**, indicating that investment and government expenditure jointly account for approximately **45.2%** of the variation in economic growth in the sample. After adjusting for the number of predictors and observations, the **Adjusted R^2 is 0.361**, indicating that approximately **36.1%** of the variation in economic growth can be explained by the two independent variables included in the model. The remaining **63.9%** of the variation is attributable to other factors not incorporated into the present model. These may include labor-market conditions, human capital, technological development, inflation, trade, sectoral productivity, household consumption, private-sector activity, and other regional economic factors. These factors, however, were not directly tested in the present study and therefore should not be interpreted as empirically established determinants based on this model.

4.2. Discussion

This section discusses the empirical findings regarding the effects of investment and government expenditure on economic growth in Bulukumba Regency. The discussion focuses on the interpretation of the estimated coefficients, their statistical significance, and their relevance to the theoretical and empirical literature.

4.2.1. The Effect of Investment on Economic Growth in Bulukumba Regency

The partial regression test indicates that investment has a **statistically significant negative effect** on economic growth in Bulukumba Regency. The estimated coefficient for investment is $\mathbf{-4.934 \times 10^{-6}}$, with a *t*-statistic of **−2.718** and a significance level of **0.019**, which is below the 5% threshold. Therefore, the null hypothesis of no partial effect is rejected, indicating that investment is significantly associated with economic growth, but in a negative direction. The negative coefficient suggests that increases in Gross Fixed Capital Formation (GFCF/PMTB) were associated with lower economic growth during the 2010–2024 observation period, holding government expenditure constant. This finding is noteworthy because conventional economic growth theory generally predicts a positive relationship between capital accumulation and economic growth. The empirical result therefore suggests that the effect of investment in Bulukumba Regency may depend not only on the amount of investment but also on its **quality, allocation, productivity, and timing**.

One possible explanation is that increases in investment do not necessarily generate immediate increases in regional output. Investment projects may require substantial time before becoming operational and generating productive returns. Consequently, a time lag may exist between the realization of capital formation and its contribution to economic growth. In addition, if investment is concentrated in sectors with relatively weak linkages to the local economy, its multiplier effect on regional output may be limited. The finding may also reflect differences in the productivity and efficiency of capital utilization. Investment contributes more strongly to economic growth when it is supported by adequate human capital, technological capabilities, infrastructure, institutional quality, and efficient resource allocation. Therefore, an increase in the nominal value of PMTB does not automatically imply a proportional increase in productive capacity or regional output.

This interpretation is particularly relevant to the empirical conditions of Bulukumba Regency. The investment data show a persistent increase in PMTB throughout 2010–2024, whereas economic growth experienced considerable fluctuations, including a substantial slowdown during 2020–2021. The divergence between the long-term increase in investment and the fluctuating pattern of economic growth indicates that the magnitude of investment alone may not be sufficient to explain short- and medium-term changes in regional economic performance. From a theoretical perspective, this finding does not fully correspond with the **Neoclassical growth framework** and the **Harrod–Domar model**, both of which emphasize capital accumulation as an important source of productive capacity and economic growth. However, the empirical result does not necessarily invalidate these theoretical perspectives. Rather, it suggests that the growth effect of capital accumulation is conditional on the effectiveness with which investment is transformed into productive economic activity.

The finding is consistent with **Marpaung and Suharianto (2023)**, who reported a negative and significant effect of PMTB investment on economic growth. Their findings similarly suggest that the contribution of investment to economic growth depends on the effectiveness and productivity of capital utilization. Thus, the present study reinforces the argument that investment policy should focus not merely on increasing investment volume but also on improving investment quality, sectoral targeting, productivity, and integration with the local economic structure.

Therefore, Hypothesis 1 is not supported.

4.2.2. The Effect of Government Expenditure on Economic Growth in Bulukumba Regency

The partial regression results indicate that government expenditure has a **positive but statistically insignificant effect** on economic growth in Bulukumba Regency. Government expenditure has an estimated regression coefficient of $\mathbf{4.711 \times 10^{-6}}$, a *t*-statistic of **1.428**, and a significance level of **0.171**. Because the significance level exceeds 0.05, there is insufficient statistical evidence to establish a significant partial effect of government expenditure on economic growth. The positive coefficient nevertheless indicates that higher government expenditure tends to be associated with higher economic growth, although the relationship is not sufficiently strong to achieve statistical significance within the estimated model. This finding implies that the direction of the relationship is consistent with the expectation that fiscal expenditure can support economic activity, but the magnitude of its contribution may be limited.

One possible explanation is that the **composition and effectiveness of government expenditure** are more important than its aggregate value. An increase in government expenditure will not necessarily produce a substantial economic-growth effect if a considerable proportion of the budget is allocated to routine expenditure rather than productive expenditure. Productive expenditure, particularly expenditure on infrastructure, education, healthcare, economic development, and other activities that enhance productivity, has a greater potential to generate long-term economic effects.
The absence of a statistically significant effect may therefore indicate that the increase in government expenditure in Bulukumba Regency has not yet been fully translated into productive economic capacity. Fiscal resources may generate benefits through public services and household income without necessarily producing sufficiently large changes in aggregate regional output during the observation period.

This interpretation is consistent with the **Rostow–Musgrave perspective**, which emphasizes the role of government expenditure in supporting different stages of economic development through the provision of public infrastructure and essential services. However, the economic impact of government expenditure depends on the efficiency, allocation, and effectiveness of public spending. Expenditure that is not sufficiently targeted toward productive activities may have a limited multiplier effect on regional economic growth. The finding is also consistent with **Aswar et al. (2025)**, who found that government expenditure had a positive but statistically insignificant effect on economic growth. The consistency between the two studies suggests that increases in government expenditure do not automatically translate into significant improvements in regional economic growth. Instead, the quality and composition of fiscal expenditure should receive greater attention.

For Bulukumba Regency, this finding implies that regional fiscal policy should move beyond simply increasing expenditure and focus on **improving expenditure efficiency, strengthening productive public investment, and directing fiscal resources toward sectors with strong linkages to the regional economy**. Such an approach may increase the potential multiplier effect of government expenditure on regional economic activity.
Therefore, Hypothesis 2 is not supported.

4.2.3. The Joint Effect of Investment and Government Expenditure on Economic Growth

The simultaneous test provides evidence that investment and government expenditure jointly have a **statistically significant effect on economic growth** in Bulukumba Regency. The regression model produces an **F-statistic of 4.952** with a significance level of **0.027**, which is below the 5% significance threshold. This result indicates that the independent variables, when considered jointly,

provide statistically significant explanatory information regarding variations in regional economic growth during 2010–2024.

The simultaneous significance of the model, despite the insignificant partial effect of government expenditure, indicates that economic growth is better understood through the **combined contribution of capital formation and fiscal activity** rather than through either variable in isolation. Investment provides productive capital, while government expenditure can support the infrastructure, public services, and institutional environment required for productive economic activity. The finding also indicates that the relationship between regional investment, fiscal expenditure, and economic growth is multidimensional. The effectiveness of investment may depend partly on public infrastructure and services, while the effectiveness of government expenditure may depend on the expansion of private-sector productive capacity. Consequently, coordination between investment policy and regional fiscal policy may be important for strengthening the transmission of capital accumulation into economic growth.

The model's **R^2 value of 0.452** indicates that investment and government expenditure jointly explain approximately **45.2%** of the variation in economic growth. After adjusting for the number of explanatory variables and the sample size, the **Adjusted R^2 is 0.361**, meaning that approximately **36.1%** of the variation in economic growth is explained by the two variables included in the model. The remaining **63.9%** is associated with other factors outside the scope of the present model. The unexplained component suggests that economic growth in Bulukumba Regency is influenced by a broader set of economic and structural factors. These may include sectoral productivity, labor-market conditions, human capital, technological development, household consumption, trade activity, inflation, and other regional economic characteristics. However, these factors were not directly tested in the present study and therefore cannot be interpreted as empirically established determinants based on the current regression model. Overall, the findings indicate that **investment and government expenditure are jointly relevant to regional economic growth, but their individual effects differ substantially**. Investment exhibits a significant negative relationship, while government expenditure shows a positive but statistically insignificant relationship. This divergence highlights the importance of evaluating not only the scale of investment and public expenditure but also their **quality, efficiency, allocation, productivity, and transmission mechanisms** within the regional economy.

5. Conclusions

4.1. Conclusion

This study examined the relationship between investment, government expenditure, and economic growth in Bulukumba Regency during the 2010–2024 period. The empirical analysis shows that investment and government expenditure jointly have a statistically significant effect on regional economic growth, as indicated by the F-statistic of 4.952 and a significance level of 0.027. However, the individual effects of the two explanatory variables differ. Investment has a statistically significant negative relationship with economic growth, whereas government expenditure has a positive but statistically insignificant relationship. These findings indicate that the contribution of investment and government expenditure to regional economic growth cannot be assessed solely from their nominal increases. The effectiveness, productivity, allocation, and transmission of these resources into productive economic activities are also important considerations in explaining regional growth dynamics.

4.2. Theoretical Implications

The findings provide an important qualification to conventional theories of economic growth that emphasize capital accumulation and government intervention as mechanisms for increasing

productive capacity. The significant negative relationship between investment and economic growth suggests that capital accumulation does not automatically translate into higher regional output. The effectiveness of investment may depend on the productivity of capital, sectoral allocation, technological capacity, human capital, and the time required for investment projects to generate economic returns. Similarly, the positive but statistically insignificant relationship between government expenditure and economic growth indicates that fiscal expansion alone may not be sufficient to generate substantial improvements in regional output. From a theoretical perspective, these findings reinforce the importance of considering the quality and composition of investment and public expenditure, rather than focusing exclusively on their aggregate magnitude.

4.3. Practical Implications

The findings have several implications for regional economic policy in Bulukumba Regency. First, regional investment policy should prioritize productive and strategically targeted investment that generates strong linkages with local economic sectors. Investment projects should be evaluated not only in terms of their financial value but also according to their contribution to employment, local production, technological upgrading, value-chain development, and regional productivity. Second, government expenditure should increasingly emphasize productive spending, particularly infrastructure, human capital development, economic-support programs, and public services that strengthen the capacity of households and businesses. Improving budget efficiency and ensuring that expenditure is aligned with regional development priorities may enhance the economic multiplier generated by public spending. Third, greater coordination between investment policy and fiscal policy is required. Public infrastructure and services can create an enabling environment for private investment, while productive investment can strengthen the effectiveness of government development programs. Such policy integration may improve the transmission of capital accumulation and fiscal expenditure into sustainable regional economic growth.

4.4. Limitations of the Study

This study has several limitations that should be considered when interpreting the findings. First, the analysis is based on annual observations covering 2010–2024, resulting in a relatively small sample of 15 observations. The limited number of observations may constrain the statistical power of the estimated model and should therefore be considered when generalizing the findings. Second, the model incorporates only two explanatory variables, namely investment and government expenditure. The Adjusted R^2 of 0.361 indicates that the model explains approximately 36.1% of the variation in economic growth, while the remaining 63.9% is associated with factors outside the model. Therefore, economic growth in Bulukumba Regency may also be influenced by other variables that were not examined in this study. Third, the analysis does not explicitly distinguish the sectoral composition of investment or the composition of government expenditure. Consequently, the findings cannot determine which specific types of investment or government spending generate stronger economic effects. The interpretation should therefore remain focused on the aggregate relationships estimated in the model.

5. Recommendations for Future Research

Future research should expand the analytical framework by incorporating additional determinants of regional economic growth, including labor productivity, human capital, technological development, inflation, household consumption, exports, sectoral productivity, and private-sector activity. Expanding the observation period and using higher-frequency or panel data across comparable districts may also improve the robustness and generalizability of the findings. Future studies should

also distinguish between productive and non-productive government expenditure and examine investment according to economic sector and ownership characteristics. Such disaggregation would provide greater insight into why aggregate investment in Bulukumba Regency is negatively associated with economic growth despite its continuous nominal increase. In addition, future research could employ more advanced time-series approaches, such as the Autoregressive Distributed Lag (ARDL), Vector Autoregression (VAR), Vector Error Correction Model (VECM), or other dynamic econometric approaches, where appropriate to the properties of the data. These approaches may help identify both short-run and long-run relationships and address potential time lags between investment, government expenditure, and economic growth. Such extensions would provide a more comprehensive understanding of the mechanisms through which regional fiscal policy and capital formation influence economic development in Bulukumba Regency.

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