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THE EFFECT OF THE QUALITY OF REGIONAL SPENDING ON THE ECONOMIC GROWTH OF DISTRICTS AND CITIES IN CENTRAL JAVA PROVINCE

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Abstract

This study examines the effects of capital expenditure, education expenditure, and health expenditure on economic growth in regencies and cities of Central Java Province, with fiscal autonomy as a moderating variable. The study addresses the inconsistent evidence regarding the effectiveness of regional government expenditure in promoting economic growth and the role of fiscal autonomy under fiscal decentralization. A quantitative approach was employed using balanced panel data from 24 regencies and cities in Central Java Province during the 2020–2025 period, resulting in 144 observations. The data were analyzed using panel data regression and Moderated Regression Analysis (MRA), with the Common Effects Model identified as the most appropriate estimation model. The results indicate that capital expenditure has a positive and significant effect on economic growth, whereas education expenditure and health expenditure do not have significant effects. Fiscal autonomy has a significant negative direct effect on economic growth. Moreover, fiscal autonomy significantly strengthens the positive relationship between capital expenditure and economic growth, suggesting that regions with greater fiscal capacity can utilize capital expenditure more effectively to stimulate economic performance. However, fiscal autonomy does not significantly moderate the effects of education expenditure or health expenditure on economic growth. These findings highlight the importance of effective expenditure allocation and stronger fiscal capacity in promoting sustainable regional economic growth.

Keywords: capital expenditure, education expenditure, health expenditure, fiscal autonomy, economic growth

INTRODUCTION

Fiscal decentralization has strengthened the role of local governments in promoting regional economic development through the management of the Regional Revenue and Expenditure Budget (APBD). Regional expenditure is expected to improve public infrastructure, enhance human capital, and stimulate economic activities that ultimately contribute to economic growth. However, increasing government expenditure does not automatically lead to higher economic growth. The effectiveness of public expenditure depends not only on the amount of spending but also on the quality of budget allocation, implementation efficiency, and fiscal governance. Consequently, recent studies have shifted their attention from the concept of spending more to spending better, emphasizing that productive and well managed public expenditure generates greater economic benefits than merely increasing budget allocations.

Among the components of regional expenditure, capital expenditure, education expenditure, and health expenditure are considered strategic instruments for stimulating sustainable economic growth. Capital expenditure contributes through infrastructure development and the provision of productive public assets, while education and health expenditures enhance human capital by

improving workforce quality and productivity. Nevertheless, empirical evidence regarding the effectiveness of these expenditure categories remains inconclusive. Several studies report that productive public expenditure positively affects economic growth, whereas other studies find insignificant or inconsistent relationships due to differences in institutional quality, budget efficiency, and regional fiscal capacity. These mixed findings indicate that the relationship between government expenditure and economic growth is context dependent and influenced by various fiscal and institutional factors.

In Indonesia, disparities in fiscal capacity among local governments create additional challenges in achieving effective public expenditure. Many regencies and cities continue to rely heavily on intergovernmental transfers, limiting their fiscal flexibility and reducing incentives to allocate resources efficiently. In contrast, regions with stronger fiscal autonomy have greater capacity to prioritize productive expenditure and implement development programs that better support regional economic performance. Central Java Province provides an appropriate context for examining this issue because its regencies and cities exhibit substantial variation in economic growth, expenditure composition, and fiscal autonomy despite operating under the same fiscal decentralization framework. These variations offer an opportunity to investigate whether fiscal autonomy influences the effectiveness of regional expenditure in promoting economic growth.

Although previous studies have extensively examined the relationship between government expenditure and economic growth, several research gaps remain. First, existing findings concerning the effects of capital expenditure, education expenditure, and health expenditure are still inconsistent. Second, most previous studies focus primarily on the direct effects of government expenditure, while limited attention has been given to the moderating role of fiscal autonomy. Third, empirical evidence at the regency and city level in Central Java Province remains relatively limited despite considerable differences in fiscal capacity across regions. Addressing these gaps is important to obtain a more comprehensive understanding of how fiscal autonomy influences the effectiveness of regional expenditure in supporting economic growth.

Accordingly, this study aims to examine the effects of capital expenditure, education expenditure, and health expenditure on economic growth in the regencies and cities of Central Java Province. In addition, the study investigates whether fiscal autonomy moderates the relationship between each expenditure category and economic growth. The analysis employs balanced panel data from 24 regencies and cities during the 2020 to 2024 period using panel data regression and Moderated Regression Analysis (MRA).

The novelty of this study lies in integrating three major categories of regional expenditure within a single empirical framework while simultaneously examining fiscal autonomy as a moderating variable rather than merely an explanatory variable. Furthermore, this study provides recent empirical evidence from regencies and cities in Central Java Province using panel data for the 2020 to 2024 period, thereby extending previous studies that generally focus only on the direct effects of government expenditure.

This study contributes theoretically by enriching the literature on fiscal decentralization, public expenditure, and regional economic growth through incorporating fiscal autonomy as a moderating mechanism. Practically, the findings provide evidence based recommendations for local governments regarding the allocation of productive public expenditure and the strengthening of fiscal capacity to improve regional economic performance. The empirical results indicate that capital expenditure positively and significantly affects economic growth, whereas education expenditure and health expenditure do not have significant effects. Fiscal autonomy strengthens the positive effect of capital expenditure on economic growth but does not significantly moderate the effects of education expenditure and health expenditure. These findings imply that improving regional economic performance requires not only larger government expenditure but also stronger fiscal capacity and more effective allocation of public resources toward productive sectors.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

Fiscal Decentralization and Public Expenditure

Fiscal decentralization provides local governments with greater authority to manage public finances and allocate resources according to regional priorities. Under this framework, regional expenditure becomes an important fiscal instrument for promoting economic growth through infrastructure development, public service improvement, and human capital investment. The effectiveness of fiscal decentralization, however, depends on the quality of fiscal governance and the ability of local governments to utilize available financial resources efficiently. Consequently, public expenditure should be evaluated not only from the perspective of budget size but also in terms of expenditure quality and its contribution to regional economic performance.

Capital Expenditure and Economic Growth

Capital expenditure represents government investment in fixed assets such as roads, bridges, public facilities, and other infrastructure that supports economic activities. According to Public Expenditure Theory, productive government spending increases production capacity, improves regional connectivity, reduces transaction costs, and stimulates private sector investment. Infrastructure development also creates multiplier effects by encouraging business expansion and increasing employment opportunities.

Previous empirical studies generally indicate that capital expenditure positively contributes to regional economic growth because productive infrastructure enhances economic efficiency and regional competitiveness. Therefore, greater capital expenditure is expected to generate higher economic growth by improving the productivity of regional economic activities.

H1: Capital expenditure has a positive effect on economic growth.

Education Expenditure and Economic Growth

Human Capital Theory emphasizes that education is a long-term investment that enhances the knowledge, skills, and productivity of the labor force. Government expenditure on education improves educational facilities, increases access to education, and develops human resources capable of supporting innovation and sustainable economic development.

Previous studies suggest that education expenditure contributes positively to economic growth through improvements in labor quality and productivity. Better educational outcomes enable regions to develop a more competitive workforce, which subsequently supports higher economic performance. Accordingly, education expenditure is expected to positively influence regional economic growth.

H2: Education expenditure has a positive effect on economic growth.

Health Expenditure and Economic Growth

Health expenditure is another important form of human capital investment because healthy individuals are generally more productive and capable of participating effectively in economic activities. Government investment in healthcare services improves public health status, reduces productivity losses caused by illness, and strengthens labor productivity.

Empirical evidence generally supports the argument that health expenditure contributes positively to long term economic growth by improving the quality of human resources. Therefore, higher health expenditure is expected to promote stronger regional economic growth through enhanced workforce productivity and better public health outcomes.

H3: Health expenditure has a positive effect on economic growth.

Fiscal Autonomy as a Moderating Variable

Fiscal autonomy reflects the ability of local governments to finance development through locally generated revenue, thereby reducing dependence on transfers from the central government. Regions with higher fiscal autonomy generally possess greater flexibility in determining development priorities, allocating budgets efficiently, and implementing fiscal policies that match local economic conditions.

Greater fiscal autonomy enables local governments to optimize productive expenditure, particularly capital expenditure, because budget allocation decisions can be made according to regional development needs. Consequently, infrastructure investment is expected to generate greater economic benefits in regions with stronger fiscal capacity.

H4: Fiscal autonomy strengthens the positive effect of capital expenditure on economic growth.

Fiscal autonomy is also expected to improve the effectiveness of education expenditure. Financially independent local governments have greater flexibility to enhance educational infrastructure, improve education quality, and implement programs that are more responsive to regional human capital needs. Therefore, the contribution of education expenditure to economic growth is expected to be stronger in regions with higher fiscal autonomy.

H5: Fiscal autonomy strengthens the positive effect of education expenditure on economic growth.

Likewise, fiscal autonomy is expected to strengthen the relationship between health expenditure and economic growth. Regions with stronger fiscal capacity are better positioned to improve healthcare infrastructure, increase the quality of health services, and allocate health expenditure more efficiently. As a result, the economic benefits generated by health expenditure are expected to be greater in fiscally autonomous regions.

H6: Fiscal autonomy strengthens the positive effect of health expenditure on economic growth.

RESEARCH METHODS

Basically, this section explains how the research was conducted. The important points of this section are: (1) research design; (2) population and sample (research target); (3) data collection and instrument development techniques; (4) and data analysis techniques. For research that uses tools and materials, it is important to write down the specifications of the tools and materials. The tool specification describes the sophistication of the tool used while the material specification describes the type of material used. For qualitative research such as classroom action research, ethnography, phenomenology, case studies, etc., it is necessary to add the presence of researchers, research subjects, informants who help collect research data, the location and duration of the research and a description of the validity check of the research results (Calibri 11, spacing 1, spacing before 0 pt, after 0 pt).

RESULTS AND DISCUSSION

Table 1 presents the results of the panel data regression analysis using the Common Effects Model (CEM), which was selected as the most appropriate estimation model. The regression model is statistically significant at the 5% level (Prob > F = 0.0203), indicating that the independent variables and moderating variables jointly explain variations in regional economic growth. The coefficient of determination (R^2) is 0.1349, suggesting that 13.49% of the variation in economic growth is explained by capital expenditure, education expenditure, health expenditure, fiscal autonomy, and their interaction terms, while the remaining variation is attributable to other factors not included in the model.

Table 1. Regression Results

Variables	Coefficient	p-value	Result
Capital Expenditure	0.109	0.043	Positive and Significant
Education Expenditure	0.085	0.222	Not Significant
Health Expenditure	-0.026	0.657	Not Significant
Fiscal Autonomy	-0.098	0.033	Negative and Significant
Capital Expenditure × Fiscal Autonomy	0.033	0.017	Positive and Significant
Education Expenditure × Fiscal Autonomy	-0.020	0.119	Not Significant
Health Expenditure × Fiscal Autonomy	-0.021	0.109	Not Significant

Effect of Capital Expenditure on Economic Growth

The empirical results demonstrate that capital expenditure has a positive and statistically significant effect on economic growth. This finding indicates that greater government investment in productive public assets contributes to higher regional economic performance. Capital expenditure allocated to infrastructure development, transportation facilities, irrigation systems, educational facilities, and healthcare infrastructure creates productive assets that facilitate economic activities and improve regional productivity.

This result is consistent with Endogenous Growth Theory, which argues that public investment in productive infrastructure increases production capacity, reduces transaction costs, and encourages private sector investment. Better infrastructure improves connectivity, facilitates the movement of goods and services, and creates multiplier effects that stimulate regional economic activities. Consequently, regions allocating a larger proportion of their budgets to capital expenditure tend to experience stronger economic growth.

The findings also support previous empirical studies reporting that capital expenditure is one of the most effective components of regional government expenditure in promoting sustainable economic growth. From a policy perspective, local governments should prioritize productive capital expenditure while ensuring that infrastructure investment is aligned with regional development priorities and implemented efficiently.

Effect of Education Expenditure on Economic Growth

The results indicate that education expenditure has a positive but statistically insignificant effect on economic growth. Although the estimated coefficient suggests that increasing education expenditure tends to improve economic growth, the relationship is not statistically significant during the observation period.

This finding can be explained by Human Capital Theory, which emphasizes that investment in education generates long term rather than immediate economic returns. Government expenditure on education generally improves educational quality through teacher development, educational facilities, scholarships, and school operational support. However, the economic benefits of these investments become observable only after improvements in educational attainment are translated into higher labor productivity and innovation.

Therefore, the insignificant relationship found in this study does not imply that education expenditure is unimportant. Instead, it indicates that the contribution of education investment

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requires a longer period to influence regional economic performance than the five year observation period examined in this study. These findings suggest that improving education quality and ensuring efficient budget allocation are equally important for maximizing the long term contribution of education expenditure to economic growth.

Effect of Health Expenditure on Economic Growth

The regression results reveal that health expenditure does not significantly affect economic growth. Although investment in healthcare is theoretically expected to improve labor productivity by enhancing public health, the estimated relationship is not statistically significant.

One possible explanation is that a substantial proportion of regional health expenditure is allocated to routine operational activities and curative healthcare services, including administrative expenditures and medical treatment. Such expenditures primarily improve public welfare but may not immediately increase regional productivity or output. In contrast, preventive and promotive health programs generally require a longer implementation period before generating measurable economic benefits.

These findings indicate that increasing health expenditure alone is insufficient to stimulate economic growth unless accompanied by improvements in expenditure efficiency and program effectiveness. Consequently, local governments should focus not only on increasing health budgets but also on strengthening preventive healthcare programs and improving service quality to maximize long term economic benefits.

Moderating Role of Fiscal Autonomy

The analysis demonstrates that fiscal autonomy significantly strengthens the positive effect of capital expenditure on economic growth. The positive and significant interaction coefficient indicates that regions with stronger fiscal capacity are able to utilize capital expenditure more effectively in promoting regional economic performance.

This finding suggests that fiscally independent local governments possess greater flexibility in determining development priorities, allocating investment according to regional needs, and maintaining public infrastructure without excessive dependence on intergovernmental transfers. Consequently, infrastructure investment becomes more productive and generates greater economic returns. The result reinforces the argument of Fiscal Decentralization Theory, which states that local governments with stronger fiscal capacity are better positioned to allocate public resources efficiently and respond to local development needs.

In contrast, fiscal autonomy does not significantly moderate the relationships between education expenditure and economic growth or between health expenditure and economic growth. These findings indicate that greater fiscal capacity alone does not automatically improve the effectiveness of education and health expenditure in stimulating economic growth. The economic returns from investments in education and health depend not only on financial capacity but also on institutional quality, program effectiveness, governance, service quality, and the long term development of human capital.

Overall, the findings imply that strengthening fiscal autonomy should be accompanied by improvements in expenditure quality and public sector governance. While stronger fiscal capacity enhances the productivity of capital expenditure, maximizing the economic benefits of education and health expenditure requires more effective program implementation and sustained investment in human capital development.

Table 2. Summary of Hypothesis Testing

Hypothesis	Relationship	Expected	Result

H1	Capital Expenditure → Economic Growth	Positive	Accepted
H2	Education Expenditure → Economic Growth	Positive	Rejected
H3	Health Expenditure → Economic Growth	Positive	Rejected
H4	Fiscal Autonomy × Capital Expenditure → Economic Growth	Strengthens	Accepted
H5	Fiscal Autonomy × Education Expenditure → Economic Growth	Strengthens	Rejected
H6	Fiscal Autonomy × Health Expenditure → Economic Growth	Strengthens	Rejected

CONCLUSION

This study examines the effects of capital expenditure, education expenditure, and health expenditure on economic growth in the regencies and cities of Central Java Province, with fiscal autonomy serving as a moderating variable. The findings indicate that capital expenditure has a positive and significant effect on economic growth, suggesting that investment in productive public infrastructure contributes to improving regional economic performance. In contrast, education expenditure and health expenditure do not significantly affect economic growth during the observation period. Fiscal autonomy has a significant negative direct effect on economic growth but significantly strengthens the positive relationship between capital expenditure and economic growth. However, fiscal autonomy does not significantly moderate the relationships between education expenditure and economic growth or between health expenditure and economic growth.

The findings have important practical implications for local governments. Regional governments should prioritize productive capital expenditure, particularly investment in infrastructure that supports economic activities and regional competitiveness. In addition, strengthening fiscal capacity through the optimization of locally generated revenue is essential to improve the effectiveness of public expenditure. For education and health expenditure, policy makers should emphasize expenditure quality, program effectiveness, and efficient budget allocation rather than focusing solely on increasing budget amounts.

This study has several limitations. First, the analysis is limited to 24 regencies and cities in Central Java Province during the 2020 to 2024 period, which may limit the generalizability of the findings to other regions. Second, the model explains only a portion of the variation in economic growth, indicating that other economic, institutional, and demographic factors may also influence regional economic performance but were not included in this study.

Future research is encouraged to expand the geographical coverage by including provinces across Indonesia and extending the observation period to capture long term effects of public expenditure. Further studies may also incorporate additional variables, such as institutional quality, governance, investment, employment, or digital transformation, to provide a more comprehensive understanding of the determinants of regional economic growth under fiscal decentralization.

Equation

$$EG_{it}=\beta_0+\beta_1 CE_{it}+\beta_2 EE_{it}+\beta_3 HE_{it}+\beta_4 FA_{it}+\beta_5(CE\times FA)_{it}+\beta_6(EE\times FA)_{it}+\beta_7(HE\times FA)_{it}+\varepsilon_i$$

EG = Economic growth
CE = Capital expenditure
EE= Education Expenditure
HE = Health Expenditure
FA = Fiscal Autonomy
α = constant
β = Regression coefficient
i = Regency/city
t = Research year
ε = Error term

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