

The Effects of Investment, Labor Productivity, Household Consumption, Government Spending, and Technology on Economic Growth in Southeast Sulawesi

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Abstract

This study aims to analyze the influence of investment, labor productivity, household consumption, government expenditure, and technology on the economic growth of regencies/cities in Southeast Sulawesi Province. This study uses secondary data from the Central Bureau of Statistics in the form of panel data covering 17 regencies/cities in Southeast Sulawesi Province for the period 2017-2024. The analysis method used is panel data regression to determine the influence of independent variables on the dependent variable. The results of the study indicate that partially investment has a positive and significant effect on economic growth, labor productivity has a positive and significant effect on economic growth, household consumption has a positive and significant effect on economic growth, government expenditure has a positive and significant effect on economic growth, technology has a positive and significant effect on economic growth. Simultaneously, investment, labor productivity, household consumption, government expenditure, and technology have a significant effect on economic growth in Southeast Sulawesi Province. The implication is that regional economic development policies must be focused on increasing investment effectiveness, developing skills and workforce competitiveness, strengthening people's purchasing power through stable household consumption, and managing government expenditure efficiently and productively. In addition, the use of technology in various economic sectors is also an important catalyst in increasing productivity and innovation. Therefore, the regional government is expected to formulate a comprehensive development strategy, encompassing improvements in human resource quality, fiscal policy reform, support for digital transformation, and the creation of a conducive investment climate. With this approach, Southeast Sulawesi Province has significant potential to achieve sustainable economic growth.

Keywords: Investment, Labor Productivity, Household Consumption, Government Spending, Technology, Economic Growth

Introduction

Economic growth is a key indicator of a country's progress, measured by the percentage increase in real national income or Gross Domestic Product (GDP) (Jabbour et al., 2020; Widarni & Bawono, 2021). Historically, classical growth theory, proposed by Adam Smith, David Ricardo, and Thomas Malthus, emphasized the importance of capital accumulation, labor, and production efficiency. Smith emphasized the division of labor and free market mechanisms as drivers of productivity, while Ricardo emphasized comparative advantage and Malthus cautioned against resource limitations. Modern theory developed through Solow-Swan (1956), who included technology as a key factor, and Romer (1990) and Lucas (1988), who emphasized innovation and the quality of human resources as drivers of sustainable growth. In the global context, economic growth dynamics for the 2017–2023 period show significant fluctuations: from 3.45% in 2017 to -2.88% in 2020 due to the COVID-19 pandemic, then jumping to 6.35% in 2021 before plateauing to 2.83% in 2023 (Macrotrends, 2023). In the ASEAN region, average growth from 2017–2024 reached around 3.5% per year, with a sharp contraction in 2020 but a steady recovery above 4% after 2022. Indonesia also exhibited a similar pattern, with GDP growing steadily above 5% post-pandemic, reaching IDR 12,920.3 trillion in 2024 (BPS, 2017–2024). This underscores the resilience of the national economy to global shocks through the role of domestic consumption, investment, and exports.

Southeast Sulawesi's economic growth during 2017–2024 also experienced similar dynamics, growing steadily in the range of 6.4–6.8% before contracting by -0.65% in 2020, then recovering to 5.4% in 2024 (BPS, 2017–2024). The main driver of regional growth is household consumption, which contributes approximately 46% of GRDP, accompanied by increased investment in the construction and manufacturing sectors. Konawe Regency recorded the highest growth rate, reaching 11.82% in 2024, while West Muna Regency recorded the lowest at 3.07%. Dependence on mineral exports makes the regional economy vulnerable to external fluctuations, but domestic consumption and investment serve as the main pillars.

Key factors influencing economic growth include investment, labor, technology, and government spending (Batrancea et al., 2022). Investment, both Foreign Direct Investment (FDI) and Domestic Direct Investment (PMDN), has been shown to play a significant role in increasing output (Hastin, 2022), although some studies show conflicting results (Lebang et al., 2019; Supiansyah et al., 2021). Labor productivity is also a crucial element; developing countries such as China and India have recorded annual productivity increases of 6–7% over the past decade (Global Productivity Brief,

2023). In Southeast Sulawesi, labor productivity has fluctuated but shows a post-pandemic recovery trend, with Kendari and Kolaka cities as the highest contributors.

Furthermore, government spending and household consumption play a crucial role in maintaining economic growth. State budget realization increased from IDR 2,786 trillion (2021) to IDR 3,169 trillion (2022) (BPS, 2023), while in Southeast Sulawesi, the highest government spending came from Kendari City. National household consumption continued to increase by 8.96% in 2019, and in Southeast Sulawesi, it grew by an average of 5% per year. Studies show that consumption has a positive effect on economic growth (Yusup & Istiqomah, 2022), although other results indicate it is insignificant (Husin, 2022). The effectiveness of government spending depends on the productivity of its use (Othman et al., 2018).

Technological factors are also increasingly determining the direction of economic growth through digitalization and a knowledge-based economy. According to endogenous growth theory (Romer, 1986; Lucas, 1988), advances in information technology create efficiency and innovation across sectors. Global internet usage is projected to reach 5.18 billion people by 2023, and in Indonesia, it has reached 62.1% of the population (BPS, 2023). In Southeast Sulawesi, internet users increased from 26.17% (2017) to 88.67% (2024) in Kendari City. A study by Wahab et al. (2020) showed a significant positive relationship between the number of internet users and GDP per capita, confirming that digitalization is a new driver of economic growth. Therefore, economic growth remains relevant to study as a basis for adaptive development policies to global transformation (Ashraf & Goodell, 2022).

Literature Review

Investment

Investment is the activity of investing capital to obtain future profits and plays a crucial role in driving long-term economic growth. According to Sukirno (2016), investment is spending on capital goods and production equipment to increase production capacity. Meanwhile, Todaro and Smith (2015) state that investment is a key component of aggregate demand that influences economic growth. In a macroeconomic context, investment is divided into three types: private investment (by individuals or companies), government investment (for infrastructure development and public services), and foreign direct investment (FDI) originating from abroad in the form of company ownership or management.

The main investment indicator in economic analysis is Gross Fixed Capital Formation (GFCF), which measures the addition of new fixed assets

such as buildings, machinery, transportation equipment, and infrastructure (BPS, 2023). GFCF serves to indicate a country's level of physical investment because it reflects capital addition activities that increase the production capacity of goods and services. The main characteristic of GFCF is that it is long-term, not for sale, and includes tangible and intangible assets such as software or patents. Sources of PMTB come from the government sector through infrastructure development, the private sector through business expansion, and the household sector through housing development. Thus, investment is a key driver in strengthening the foundations of the economy and expanding national production capacity.

Labor Productivity

Labor productivity is a measure of the workforce's ability to produce goods and services within a given period by efficiently utilizing available resources. According to Simanjuntak (1990), the workforce is the population who are working, seeking work, or have the ability to work and can participate in production activities at any time. Hasibuan (1993) adds that the workforce includes all people who are capable and qualified to work according to labor regulations. In an economic context, labor is a primary factor of production alongside capital, land, and technology. Productivity itself is defined as the ratio between output (results) and input (sacrifices) in the production process (Sinungan, 2003; Hasibuan, 2003).

Philosophically, productivity reflects a mental attitude to continually improve the quality of life, while technically, it is measured by the efficiency and effectiveness of work in producing output (Simanjuntak, 1998). High productivity indicates that the workforce is able to produce greater output with the same resources through improved skills, time efficiency, production techniques, and sound work systems. Factors such as knowledge, skills, abilities, attitudes, and behaviors play a major role in determining the level of labor productivity (Gomes, 1995). Therefore, labor productivity is not only an indicator of economic efficiency but also reflects the quality of human resources in supporting a region's economic growth.

Household Consumption

In economics, consumption is defined as the activity of using goods and services to meet human needs, not just food and beverages, but also encompassing all expenditures other than savings (Soeharno, 2007). According to Samuelson (2004), household consumption is spending on final goods and services that provide satisfaction and reflect the level of prosperity of an individual or family. Meanwhile, Sukirno (1994) explains that household consumption is the value of spending made by a household in a given year to

meet needs such as food, education, transportation, and housing. The amount of consumption is highly dependent on income levels; the higher the income, the greater the consumption expenditure (Dumairy, 1986).

In general, consumption includes the use of non-durable goods such as food and clothing, durable goods such as vehicles and household appliances, and services such as education and healthcare (Mankiw, 2000). According to Diulio (1993), consumption is divided into routine consumption—spending made on an ongoing basis—and temporary consumption—which is unpredictable. Thus, consumption can be understood as all expenditure made by individuals or households to purchase goods and services, either routinely or occasionally, with the main aim of fulfilling needs and obtaining life satisfaction.

Government Spending

Government spending is the primary instrument of fiscal policy used to achieve economic and social development goals by financing various public activities (Sukirno, 2016). In general, government spending includes spending on capital goods, consumer goods, and services to support public services and improve public welfare. Based on Minister of Home Affairs Regulation No. 13 of 2006, regional government spending is divided into direct spending—directly related to the implementation of programs and activities, such as personnel, goods/services, and capital expenditures—and indirect spending, which includes employee salaries, subsidies, grants, social assistance, revenue sharing, financial assistance, and unexpected expenditures. Government spending plays a strategic role in maintaining macroeconomic stability, expanding access to public services, and creating a multiplier effect on economic activity by increasing productivity and aggregate demand (Marzuki Ilyas; Musgrave & Musgrave, 1989).

Theoretically, Wagner (1883) stated that growth in public income will drive an increase in the proportion of government spending to GDP because the need for public services also increases. Keynes (1930s) emphasized that an active role of the government through fiscal policy can maintain economic stability and growth. Peacock and Wiseman (1961) added the concept of the displacement effect, which is the tendency for government spending to increase after a crisis. Meanwhile, Rostow and Musgrave (1969) emphasized that spending patterns change according to the development stage: from basic infrastructure to social services. Empirically, research by Barro (1990) shows that productive spending on education, health, and infrastructure drives economic growth, while consumptive spending hinders it. Other studies by Kuncoro (2015) and Rahman & Yusuf (2017) also found that capital

expenditure has a positive effect on regional growth, while routine spending has a less significant impact.

Technology

Technology is the application of science to solve practical problems and increase efficiency in human life. In an economic context, technology plays a crucial role in increasing productivity and economic growth because it optimizes production, distribution, and innovation processes. One of the most significant forms of technological advancement is information and communication technology (ICT), which, according to the OECD (2017), encompasses various electronic communication networks that enable the processing and exchange of information. UNESCO (2021) adds that ICT includes devices such as computers, the internet, radio, television, and telephones that function to store, transmit, and share information. The development of ICT has created efficiencies in costs, time, and energy, and expanded access to information, thus having a significant impact on social and economic progress.

Within the framework of endogenous growth theory (Romer, 1986; Lucas, 1988), advances in ICT are a key factor in economic growth because they drive innovation, accelerate the flow of information, and improve the quality of human resources. The internet, as the most influential form of ICT, has become a key infrastructure for the digital economy by facilitating global communication, business transactions, and the creation of new jobs. A study by Sojka & Pietrucha (2024) showed that internet usage has a significant positive relationship with GDP growth in 88 countries, while Chu (2013) found that every 10% increase in internet penetration can increase GDP by 0.57–0.63 percentage points. Furthermore, research by Bahrini & Qaffas (2019) demonstrated that the adoption of digital technology in developing countries such as Asia and Africa drives efficiency and economic expansion. Thus, advances in ICT—particularly the internet—have become a major catalyst for the global economic transformation toward a knowledge-based economy and sustainable digitalization.

Economic Growth

Economic growth is the process of increasing an economy's capacity to produce goods and services, characterized by increased national income and social welfare (Ratih et al., 2017; Sukirno, 2011). The main indicator of economic growth is Gross Regional Domestic Product (GRDP), which reflects the added value of all economic activities within a region (Widodo, 2006). GRDP at current prices reflects added value based on current prices, while at constant prices reflects real economic growth without the influence of inflation

(Saberan, 2002). Economic growth is also defined as a dynamic process that reflects increases in real output and per capita income over the long term (Rapanna, 2017). In the context of development, economic growth not only indicates an increase in statistical figures but also structural changes in a society's social, political, and economic systems (Daengs, 2020).

Theoretically, economic growth is explained by various approaches. Classical theories (Adam Smith, Ricardo, Malthus) emphasize the role of the division of labor, capital accumulation, and natural resources as the primary drivers. The Harrod-Domar theory highlights the importance of investment and capital productivity, while the Lewis theory emphasizes the contribution of surplus labor to capital accumulation. The Solow-Swan model further expands the analysis by adding technological progress as a key factor in long-term growth. Meanwhile, endogenous growth theory (Lucas & Romer) views growth as being generated within the economic system through improvements in the quality of human resources, knowledge, and technological innovation. Economic factors such as natural resources, capital, labor, management, and technological progress, along with non-economic factors such as political stability, work culture, and the legal system, interact to determine the rate of economic growth in a region (Jhingan, 2010; Rapanna, 2017).

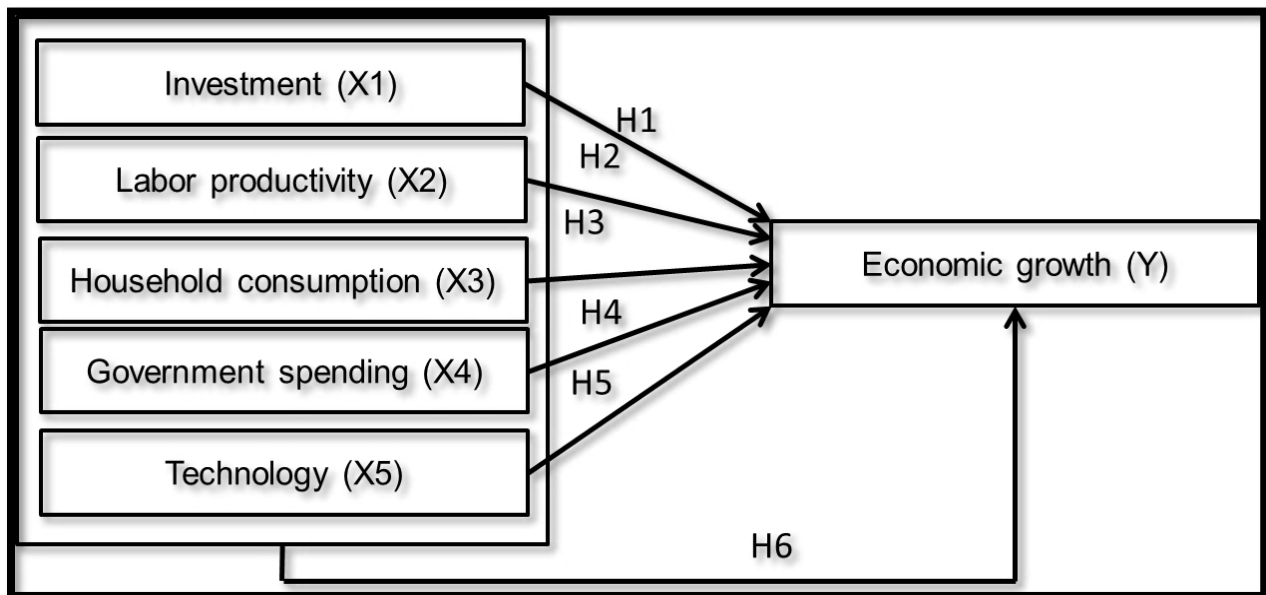


Figure 1 Conceptual Framework

Research Hypothesis

- H1.** Investment has a significant impact on economic growth in Southeast Sulawesi Province.
- H2.** Labor productivity has a significant impact on economic growth in Southeast Sulawesi Province.

- H3.** Household consumption has a significant impact on economic growth in Southeast Sulawesi Province.
- H4.** Government spending has a significant impact on economic growth in Southeast Sulawesi Province.
- H5.** Technology has a significant impact on economic growth in Southeast Sulawesi Province.
- H6.** Investment, labor productivity, household consumption, government spending, and technology simultaneously influence economic growth in Southeast Sulawesi Province.

Research Methods

This research was conducted in Southeast Sulawesi, covering 17 regencies/cities. This study will use secondary data with research variables consisting of independent variables (investment, labor productivity, household consumption, government expenditure, and technology) and the dependent variable of economic growth of regencies/cities in Southeast Sulawesi Province in 2017-2024. Data analysis in this study uses a panel data regression model. There are three approaches often used in estimating panel regression models, including the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). In the CEM and FEM parameter estimation, both use the Ordinary Least Square (OLS) approach. However, in the FEM, the intercept is expressed as a dummy variable or Least Square Dummy Variable (LSDV), while in the REM estimation, the Generalized Least Square (GLS) approach is used.

This study uses economic growth as the dependent variable, which is measured through the increase in the value of production of goods and services based on GRDP data of districts/cities in Southeast Sulawesi Province at constant prices according to expenditure in 2017–2024 (percentage units). The independent variables consist of five factors, namely investment, labor productivity, household consumption, government spending, and internet technology. Investment is measured through Gross Fixed Capital Formation (PMTB) in rupiah units; labor productivity is calculated from the ratio of GRDP to the number of workers; household consumption reflects public spending on goods and services; government spending is taken from government consumption data in GRDP; while internet technology is measured based on the percentage of internet users in each district/city during the 2017–2024 period according to data from the Central Statistics Agency (BPS).

Research Result

The estimation results using the Fixed Effects model can be seen in the following table, which illustrates the influence of the independent variables on

the dependent variable, taking into account differences in time-invariant characteristics between observation units. This model is used to identify the specific effects of each entity that do not change over time, thus better representing the actual relationships between variables in panel data.

Table 1 Estimasi Model Fixed Effect

Dependent Variable: Grwt				
Method: Panel Least Squares				
Total panel (balanced) observations: 136				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-52.04903	6.866363	-7.580291	0.0000
INV	3.112280	1.127198	2.761077	0.0067
PTK	0.000577	0.000193	2.984033	0.0035
KRT	3.012122	1.095007	2.750777	0.0069
PP	2.426717	1.095137	2.215902	0.0287
TEK	0.000113	0.000116	2.979605	0.0329
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.679759	Mean dependent var	4.732647	
Adjusted R-squared	0.620768	S.D. dependent var	3.064693	
S.E. of regression	1.887295	Akaike info criterion	4.255239	
Sum squared resid	406.0545	Schwarz criterion	4.726404	
Log likelihood	-267.3562	Hannan-Quinn criter.	4.446708	
F-statistic	11.52296	Durbin-Watson stat	1.421404	
Prob(F-statistic)	0.000000			

Source: Processed primary data, 2025

The estimation results above indicate that the model used in this study is good enough to explain the research results. This can be seen from the adjusted R-Square value of 0.620768 which indicates that 62.1% of investment, labor productivity, household consumption, government expenditure and technology contribute to changes in economic growth in Southeast Sulawesi. The remaining 37.9% is explained by other variables outside this model. The above results are also supported by the results of the simultaneous test which shows that together investment, labor productivity, household consumption, government expenditure and technology have a significant effect on changes in economic growth in Southeast Sulawesi. This result can be seen from the Prob (F-statistic) value of 0.000000 which is smaller than the α value of 0.005. This means that the variables Investment, Labor Productivity, Household Consumption, Government Expenditure and Technology Use simultaneously influence Economic Growth in Southeast Sulawesi Province in 2017-2024.

Estimation results using the Fixed Effects model indicate that, simultaneously and partially, all independent variables used in this study

significantly influence economic growth in Southeast Sulawesi. The investment variable has a positive and significant effect, with a t-statistic of 2.761077 and a probability of 0.0067 (<0.05), indicating that every 1 trillion rupiah increase in investment will increase economic growth by 3.1 percent. This confirms that increased investment, both domestic and foreign, is a crucial driver of regional economic expansion. Furthermore, labor productivity also has a positive and significant effect on economic growth, with a t-statistic of 2.984033 and a probability of 0.0035 (<0.05). The coefficient value of 0.000577 indicates that a 1 million rupiah increase in labor productivity will increase economic growth by 0.00057 percent, indicating that improvements in labor efficiency and skills can strengthen regional production capacity.

Furthermore, household consumption and technology have also been shown to have a positive and significant effect on economic growth in Southeast Sulawesi. Household consumption shows a t-statistic value of 2.750777 with a probability of 0.0069 (<0.05) and a regression coefficient of 3.012122, which means that an increase in consumption of 1 trillion rupiah will drive economic growth by 3.01 percent. The technology variable also provides a significant contribution with a t-statistic value of 2.215902 and a probability of 0.0329 (<0.05), and a coefficient of 0.000113. This indicates that every 1 percent increase in technology will increase economic growth by 0.000113 percent. Overall, these results strengthen the finding that investment, labor productivity, household consumption, and technological progress are key factors in accelerating economic growth in Southeast Sulawesi.

Discussion

The Influence of Investment on Economic Growth in Southeast Sulawesi

The research results show that investment has a positive and significant impact on economic growth in Southeast Sulawesi Province from 2017 to 2024, indicating that increased investment plays a crucial role in driving regional economic activity. This finding aligns with the Harrod-Domar theory (in Dumo et al., 2023), which states that economic growth is highly dependent on savings rates and investment efficiency. The higher the productive investment, the greater the additional output generated. This is also supported by Paul Romer's endogenous growth theory (in Chandra, 2022), which emphasizes that investment not only increases physical capital but also strengthens the accumulation of human capital, innovation, and technology, ultimately creating a long-term multiplier effect on regional economic growth. Thus, investment is a strategic instrument in strengthening competitiveness and driving economic expansion in Southeast Sulawesi.

This positive impact of investment on economic growth is inseparable from the support of internal and external factors. Internally, investment success is determined by regional institutional capacity, the quality of governance, and the readiness of human resources to absorb modern technology and production processes (Saragih, 2022; Handayani et al., 2022). Meanwhile, externally, national macroeconomic stability, market openness, and globalization contribute to strengthening investment interest (Kusmiati et al., 2018; Mokodongan, 2023). These results are consistent with the findings of Putri & Siladjaja (2021) and Ain' (2021), which demonstrate that increased investment, both public and private, contributes directly to increased productivity, employment, and strengthening economic infrastructure. Thus, investment in Southeast Sulawesi has proven to be a key driver of sustainable economic growth through synergy between regional policies and a stable national economy.

The Effect of Labor Productivity on Economic Growth in Southeast Sulawesi

The research results show that labor productivity has a positive and significant impact on economic growth in Southeast Sulawesi Province from 2017 to 2024, meaning that increased productivity directly contributes to increased output and regional economic welfare. This finding aligns with Robert Solow's economic growth theory (in Seo, 2023), which positions productivity as a key determinant of long-term growth. The Solow model explains that output growth depends not only on the accumulation of capital and labor, but also on technological progress and the efficiency of production factors. This view is reinforced by Theodore Schultz (in Burnett, 2022), who emphasizes the importance of investing in human resources through education and training as an effort to increase productivity, where the workforce becomes an active agent in driving innovation and production efficiency. Thus, increased productivity reflects the workforce's ability to produce more output with the same resources, thereby strengthening sustainable regional economic growth.

Empirically, these results are supported by research by Supratiyoningsih & Yuliarmi (2022) and Maryati et al. (2021), which found that labor productivity has a significant impact on regional economic growth in eastern Indonesia. Higher labor efficiency has been shown to increase added value and strengthen local economic structures. In the context of Southeast Sulawesi, improving the quality of human resources through formal education, vocational training, and technology adoption has boosted production efficiency and increased the labor sector's contribution to GRDP (Iskandar, 2018; Maryati et al., 2021). In addition to individual factors, performance-based work

management systems, discipline, and the use of technology (Bahren et al., 2019) also strengthen labor productivity. Therefore, labor productivity is a key pillar of regional economic development strategies, where human capacity building and effective work governance create the foundation for inclusive, efficient, and sustainable economic growth.

The Influence of Household Consumption on Economic Growth in Southeast Sulawesi

The research results show that household consumption has a positive and significant impact on economic growth in Southeast Sulawesi Province for the 2017–2024 period, confirming that consumer consumption patterns are a key factor in driving regional economic dynamics. This finding aligns with Keynesian theory (as cited in Chandra, 2022), which positions consumption as the largest component of a country's or region's aggregate expenditure. Increased household consumption will drive aggregate demand, trigger increased production, and expand employment. In the context of Southeast Sulawesi, household consumption is the primary driver of economic activity because most economic activity relies on domestic demand. Furthermore, the business cycle theory proposed by Samuelson and Solow (as cited in Seo, 2023) also supports this finding, stating that consumption plays a crucial role in determining the phase of economic expansion or contraction, making it a sensitive indicator of purchasing power and economic stability.

Empirically, these results are supported by research by Almaya et al. (2021) and Haniko et al. (2022), which found that household consumption is a major contributor to economic growth, particularly in eastern Indonesia. Increased consumption reflects dynamic and sustainable economic activity because it drives increased demand for goods and services (Rachmawati, 2011). Internally, rising incomes, stable prices for basic necessities, and the development of the MSME sector strengthen household purchasing power (Haniko et al., 2022). A consumptive lifestyle among the middle class and advances in digitalization also expand spending patterns (Hamijaya & Suryaman, 2023). Meanwhile, externally, national macroeconomic stability, government social policies, market openness, and ease of distribution of goods strengthen consumer spending power (Sasmita et al., 2021). Thus, household consumption is not only an indicator of welfare but also a crucial instrument in maintaining stability and accelerating economic growth in Southeast Sulawesi Province.

The Effect of Government Expenditure on Economic Growth in Southeast Sulawesi

The research results show that government spending has a positive and significant impact on economic growth in Southeast Sulawesi Province from 2017 to 2024, confirming that regional fiscal policy through public spending has a significant contribution to driving increased economic output. This finding aligns with Keynesian theory (in Helmiah & Nasrudin, 2021), which emphasizes the importance of government fiscal intervention to stimulate aggregate demand, especially when private sector activity is suboptimal. In this context, government spending allocated to productive sectors such as infrastructure, education, and health can increase public income, expand consumption, and accelerate output growth. Furthermore, Wagner's theory (in Zungu & Greyling, 2022) supports this finding by explaining that as economic complexity increases, the role and expenditure of government tends to increase to meet public needs and strengthen regional economic competitiveness.

Empirically, these results are consistent with research by Supratyoningsih & Yuliarmi (2022) and Wibowo & Kurniasih (2020), which shows that effective government spending allocation positively impacts regional economic growth, particularly when directed toward productive public investment. In the context of Southeast Sulawesi, this significant influence is driven by internal factors such as improved fiscal management, bureaucratic efficiency, and increased institutional capacity in budget management (Santoso & Atok, 2022). Local governments capable of timely budget planning and implementation will accelerate economic growth and create a multiplier effect on the real sector. Furthermore, external factors such as support from national fiscal policy through the General Allocation Fund (DAU) and the Special Allocation Fund (DAK), as well as a positive private sector response to infrastructure development, also strengthen this relationship (Mamonto et al., 2020; Irwan et al., 2023).

The Influence of Internet Technology on Economic Growth in Southeast Sulawesi

The research results show that technology has a positive and significant impact on economic growth in Southeast Sulawesi Province from 2017 to 2024. Empirically, this confirms that advances in information and communication technology are a key driver of regional economic dynamics. This finding aligns with Joseph Schumpeter's view (as cited in Chandra, 2022), which positions innovation as the primary driver of economic growth through a process of creative destruction, where the application of new technologies creates efficiency, accelerates productivity, and opens up new market opportunities.

Similarly, Romer's endogenous growth theory asserts that investment in information technology enriches the accumulated knowledge of society and drives increased economic output through increased productivity (Chandra, 2022). In the context of Southeast Sulawesi, internet penetration and digital transformation have been shown to strengthen the integration of the regional economy with global networks, accelerating production, distribution, and consumption activities, which have direct implications for economic growth.

Empirically, these results are consistent with research by Rochmahwati (2023) and Siringo-ringo (2023), which shows that expanding internet access significantly impacts economic efficiency and the development of small and medium enterprises, particularly in eastern Indonesia. Digital technology has been proven to reduce transaction costs, expand markets, and accelerate the flow of information, even in areas with limited physical infrastructure (Rohmah, 2022). These positive impacts are reinforced by internal factors such as increased digital literacy, internet network availability, and the decreasing price of digital devices, enabling the public and businesses to adapt to a technology-based economy (Supratman, 2018; Bangsawan, 2023). Meanwhile, external factors such as support for national digital transformation policies, private investment in the telecommunications sector, and the development of global digital platforms expand regional economic inclusion (Siddik & Sirait, 2018; Yunita, 2021).

The Effect of Investment, Labor Productivity, Household Consumption, Government Expenditure and Technology on Economic Growth (Y) in Southeast Sulawesi

The results of the regression analysis show that the coefficient of determination (Adjusted R-Squared) is 0.620768, meaning that 62.1% of the variation in economic growth can be explained by five independent variables—investment, labor productivity, household consumption, government spending, and internet technology—while the remaining 37.9% is influenced by other factors outside the model. These results indicate that these variables simultaneously have a positive and significant influence on economic growth in Southeast Sulawesi Province during the 2017–2024 period. Theoretically, this finding is in line with the Solow-Swan growth theory (in Dachner et al., 2021), which emphasizes that economic growth is determined by the accumulation of capital, labor, and technological progress. However, there are still contributions from external factors that cannot be directly measured—known as the Solow residual—such as institutional efficiency, policy stability, and social and political factors. In the context of regional economics, these variations can also be caused by geographical conditions, the distribution of natural resources,

and the community's readiness to adopt new technologies (Hartono et al., 2023).

These results align with research by Maliha (2024) and Irwan et al. (2023), which showed that regional economic regression models with five to six strategic variables generally only explain 40–55% of the variation in economic growth. Therefore, although the five main variables proved significant, other external factors still influence regional economic dynamics. Based on these results, regional governments need to implement integrated economic development strategies based on strengthening these significant variables. Recommended efforts include: increasing investment realization through simplifying licensing and ensuring legal certainty; strengthening workforce productivity through vocational training and education; maintaining household consumption through social protection policies and price stabilization; optimizing government spending in productive sectors such as infrastructure, education, and health; and expanding digital infrastructure to ensure optimal use of internet technology in various sectors (Maryati et al., 2021; Ritonga et al., 2021; Susanti, 2021). Furthermore, since there are still around 37.9% of other factors outside the model, improving governance, strengthening institutions, and anticipating global risks need to be made an integral part of development policies so that Southeast Sulawesi's economic growth becomes more inclusive, high-quality, and adaptive to global changes.

Conclusion

Investment has a positive and significant influence on economic growth in Southeast Sulawesi. Labor productivity has a positive and significant partial effect on economic growth. Household consumption has a positive and significant effect on economic growth. Government spending has a positive and significant effect on economic growth. Technology has a positive and significant effect on economic growth in Southeast Sulawesi. Simultaneously, the five independent variables—investment, labor productivity, household consumption, government spending, and technology—have a significant effect on economic growth in Southeast Sulawesi. The regional government needs to continue encouraging increased investment through policies that support the acceleration of infrastructure development and physical investment. The regional government can provide fiscal incentives and regulatory easing to attract investment in productive sectors. For further research, it is recommended to expand the data coverage and consider other variables to provide a more comprehensive picture of the factors influencing regional economic growth.

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