

## Answering the Employment Challenge: The Influence of Private Investment, Education, and Population Growth on Labor Absorption in North Luwu Regency

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**Abstract:** *This study aims to analyze the effect of private investment, education level, and population growth on labor absorption in North Luwu Regency during the period 2010–2024. The method used is a quantitative approach with multiple linear regression analysis, based on secondary data from the Central Statistics Agency (BPS) and DPMPTSP of North Luwu Regency. The results of the study indicate that simultaneously, the three independent variables have a significant effect on labor absorption, as indicated by the F-statistic probability value of 0.001 and the determination coefficient value (adjusted R<sup>2</sup>) of 0.644. Partially, only the level of education shows a positive and significant effect on labor absorption, with a regression coefficient of 0.139, a t-count value of 3.647, and a significance of 0.004. Meanwhile, private investment has a regression coefficient of 0.021 (t-count = 1.329; sig. = 0.211) and population growth of 0.041 (t-count = 0.189; sig. = 0.728), both of which are insignificant. This finding underscores the importance of improving the quality of education to increase employment opportunities, and highlights that private investment that is not directed to labor-intensive sectors and population growth that is not balanced with job creation can limit labor absorption. The proposed policy implications include formulating incentives for investors in labor-intensive sectors, skills-based vocational education reform, and integrating population and employment policies to ensure that population growth becomes a potential, not a burden on development.*

**Keywords:** Private Investment, Education, Population Growth, Labor Absorption

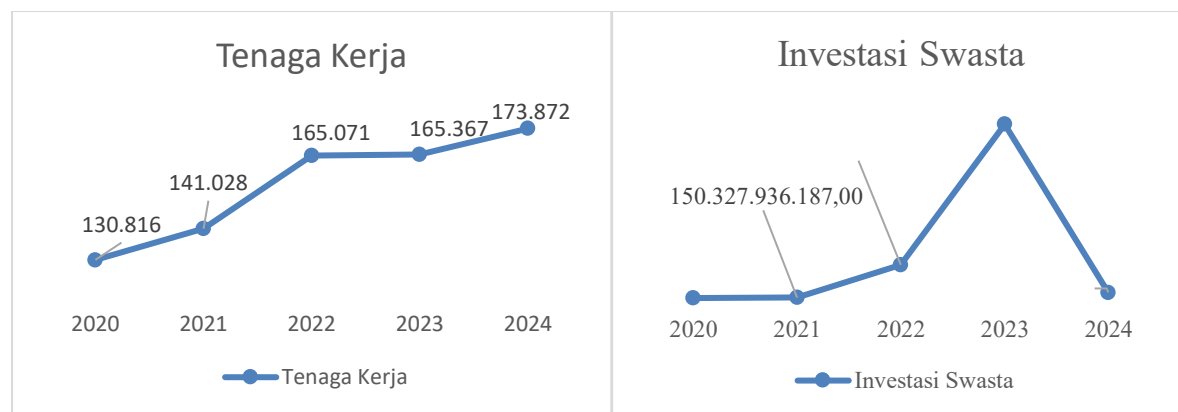
**JEL :** E22, I25, E20, E24

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### 1. INTRODUCTION

Regional development is an inseparable part of national development and takes place continuously which aims to improve the standard of living and welfare of all levels of society. Development is a multidimensional process that includes various fundamental changes to the social structure, attitudes of society and national institutions that pursue the acceleration of economic growth, handling of income inequality, and poverty alleviation or total change of a society/adjustment of the social system as a whole towards better conditions. Development in a country aims to achieve welfare for the community. Community welfare is characterized by the fulfillment of community needs and problems faced by the community can be resolved by the government completely, One of which is the availability of employment opportunities (Wahyuni, 2019).

According to Law No. 13 of 2003, labor refers to every individual who has the ability to carry out work to produce goods and/or services to meet personal or community needs.. The quantity of labor in an area will be greater if the area has a large population, the labor force in North Luwu Regency has increased in several years, balanced with the population increasing every year. (Garcia, 2020).



**Figure 1.**Private Employment and Investment, 2020-2024 (Life & Rupiah)

Source: Central Statistics Agency of North Luwu Regency (2024)

The graphs of “Employment” and “Private Investment” from 2020 to 2024 show contrasting trends: the number of workers increases consistently from 130,816 in 2020 to 141,028 in 2021 (up 10,212), jumps sharply to 165,071 in 2022, rises slightly to 165,367 in 2023, and reaches 173,872 in 2024, with a total increase of 43,056, indicating a post-pandemic economic recovery especially in 2021-2022; On the other hand, private investment fluctuates, starting from 131,702,769,993 in 2020, rising slightly to 150,327,936,187 in 2021, soaring to a peak of 1,498,404,944,158 in 2022 and then sharply rising to 7,296,335,142,570 in 2023 and then sharply falling to 363,120,818,466 in 2024, reflecting the instability of private investment despite continued growth in employment.

One way to increase the workforce is by increasing investment, especially private investment. Investment can be done by the private sector, the government, or through cooperation between the two. Investment is also an initial step taken by the government to encourage an increase in the workforce that can improve the standard of living of the community. As a major component in driving the economy of a region, increasing investment will theoretically encourage the development of trade and production. This, in turn, will expand productive employment opportunities and increase the per capita income of the community.(Hafiza & Farlian, 2018).

Labor absorption in North Luwu Regency is dominated by the agricultural sector, with 46.87% of total workers in this sector in August 2024. However, the growth of the Gross Regional Domestic Product (GRDP) in the agricultural sector and the area of agricultural land did not significantly affect the increase in labor absorption. This shows that this sector has not been able to create new jobs optimally. Compared to the service sector at 43.15% and the manufacturing sector at 9.98% (BPS, 2024). Dependence on the agricultural sector and lack of economic diversification have limited employment opportunities in other sectors. Micro, Small, and Medium Enterprises (UMKM) have an important role in absorbing labor. However, many UMKM in North Luwu face obstacles in accessing technology and capital. Lack of knowledge in technology and financial management is an obstacle to business development and creating new jobs.

The low level of education and skills of the workforce is an obstacle in absorbing labor in the formal sector. Many workers do not have the qualifications that match the needs of the labor market, especially in the industrial and service sectors. This causes a mismatch between the supply and demand of labor. On the other hand, population growth can be both a challenge and an opportunity, depending on the ability of the region to balance the supply and demand of labor. Uncontrolled population growth can put pressure on economic resources, including employment.

In terms of labor, both quantity and quality play an important role. The quality of the workforce itself is influenced by several aspects, such as education and health, with education considered the most significant factor in improving human quality. The implication is that the higher the level of education, the better the quality of life of a person. Nationally, the better the quality of life of a nation, the higher the level of welfare that can be achieved. With the increasing level of education of the workforce, productivity will also increase (Arifin, 2019). One of the factors that can inhibit labor absorption is the population growth rate. If the growth rate is very fast, this can have a negative impact on a country. In developed countries, population growth can actually support growth because

the country has sufficient capital and a shortage of labor, but in developing countries it can inhibit development if it is not balanced with labor absorption (Hafiza & Farlian, 2018). Although there have been many studies examining the relationship between economic variables such as private investment, education level, and population growth on labor absorption, there are still various limitations that have not been overcome. Previous studies generally do not consider regional specificities, so the results are difficult to generalize to areas such as North Luwu Regency which have unique demographic and economic characteristics. For example, research by (Hafiza & Farlian, 2018) as well as (Liana et al., 2020), showed inconsistent results regarding the influence of private investment on labor absorption. This is because most studies do not highlight local issues such as the dominance of capital-intensive investment or the weak participation of local business actors, which can limit job creation. Likewise, the education variable is often considered as a single factor without considering the relevance and quality of education to labor market needs, which causes a mismatch between labor supply and demand. In addition, although population growth is recognized as a factor of pressure on employment, its dual role as a challenge and opportunity is still rarely analyzed in depth, especially in the context of developing regions. This study seeks to address this gap by focusing on North Luwu Regency, using the latest time series data (2010–2024) and considering contextual factors such as the distribution of labor sectors and investment fluctuations. Thus, this study provides a deeper and more relevant understanding of the factors that influence labor absorption in local areas of Indonesia.

This study aims to determine how much the three variables affect labor absorption. Therefore, it is important to examine how private investment, education, and population growth affect labor absorption in North Luwu Regency.

## **2. LITERATURE REVIEW**

### **2.1 Private Investment**

Investment, often referred to as capital investment or capital formation, is the second component that determines the level of aggregate expenditure. Investment can be defined as spending on purchasing capital goods and production equipment by companies, in order to increase the production capacity of goods and services available in the economy. Regional economic growth can be accelerated by the presence of private investment through the launch of integrated regional development programs (Wahyuni, 2019). In Keynes' theory, which states that the labor market only follows what happens in the goods market, if the output produced increases, the number of workers will also increase. Therefore, the demand for goods and services in the economy can affect the level of output that must be produced, so that the increase in the number of goods produced will have an impact on the use of labor (Iksan et al., 2020).

In various international studies, private investment is recognized as a major driver of job creation, especially in developing countries. According to a World Bank report (World Bank, 2022), increased private investment directed to labor-intensive sectors can significantly reduce the unemployment rate. However, this impact is not automatic, but rather depends on the type of investment and the labor-intensiveness of the targeted sector. This is in line with findings from (International Labor Organization, 2022), which states that investment in the high-tech sector can actually replace human labor if it is not balanced with retraining (reskilling), investment directed at labor-intensive sectors significantly contributes to job creation and poverty reduction, especially in developing countries.

The amount of private investment in a region is directly proportional to the value of production generated. The higher the amount of private investment, the higher the cost of production, which in turn will drive demand for more labor (Suharto & Dharmala, 2016). There is a positive influence between private investment and labor absorption. When private investment increases, industries or companies will grow more rapidly, which encourages the emergence of new industries and increases labor absorption. This in turn will increase labor productivity in the area. With greater investment, job opportunities will increase (Amalia & Woyanti, 2020).

Many previous studies, such as by (Suharto & Dharmala, 2016) And (Amalia & Woyanti, 2020), shows that private investment significantly increases labor absorption, especially in areas with

advanced and diversified economies. However, these studies generally focus on urban areas or large provinces that have supporting infrastructure and more dynamic labor markets. In contrast, North Luwu Regency as a developing area dominated by the agricultural sector and limited access to technology shows different investment characteristics, where investment is more capital intensive and does not always absorb labor optimally. For example, research (Liana et al., 2020) in Pelalawan Regency found that private investment was not significant in absorbing labor due to the imbalance between the type of investment and local labor needs. Thus, this study fills the gap in empirical studies that examine the impact of investment in areas with special economic characteristics such as North Luwu, and emphasizes the need for a more contextual and specific approach.

## **2.2 Education**

The level of education is a process undertaken by students to improve their knowledge and skills according to the level of education they will take next. This education is carried out in an organized or managerial manner (Adolph, 2016). Frank & Bemanke argue that human capital is a combination of education, experience, training, skills, habits, health, energy and initiative that influence human productivity (Nurkholis, 2018).

Education is a very important factor for the workforce, because if the number of workers is large but not supported by appropriate skills, expertise, and qualifications, and there are no adequate jobs, it will cause its own problems. One example is competition with foreign workers who have a better level of education and skills than local workers, so education becomes very crucial. In Gorontalo Province, the level of education has a positive and significant influence on the amount of available labor absorption (Nugroho, 2018). Global studies such as those conducted by (Hanushek & Woessmann, 2021), shows that the quality of education, not just its level, has a strong correlation with productivity and employment. Countries with strong vocational education systems such as Germany and South Korea have succeeded in reducing the skills mismatch between job seekers and industrial needs.

Many studies have confirmed the important role of education in increasing workforce absorption, such as (Nugroho, 2018) which found that the level of education has a significant effect in Gorontalo Province. However, these studies generally measure education only in terms of quantity, for example the pure participation rate (APM), without looking at the aspect of the suitability of education to the needs of the labor market in different regions. In North Luwu Regency, the low quality of education and skill mismatch are crucial problems that limit the effectiveness of education in absorbing labor. For example, research (Hanushek & Woessmann, 2021) at the international level emphasizes the importance of quality and skills-based education. Therefore, this study deepens the focus of the discussion by emphasizing the relevance of education to the needs of the local labor market, while filling the gap in the literature that rarely discusses how the context of developing regions affects the effectiveness of education in increasing labor absorption.

## **2.3 Population growth**

Population growth dynamics is a common phenomenon in every region. The increase in population in a region must of course be balanced with the handling of various problems related to population, such as social, economic, security, and environmental problems. In the context of economic development, population is one of the most important factors, because the population is a potential workforce that can contribute to the development process, as long as it is utilized optimally (Sari et al., 2017). Internationally, population growth is seen as a double-edged sword. Studies (Nebrija, 2021), shows that in countries with low economic capacity, the population explosion can be a burden rather than a productive potential. However, in some countries such as India, the demographic bonus has become an economic strength because it is accompanied by expanded access to formal education and employment.

According to Malthus, population growth is a result of the development process. However, population growth cannot occur without a commensurate increase in welfare. If the rate of capital

accumulation increases, the demand for labor also increases. This condition encourages population growth. However, population growth will increase welfare only if it increases effective demand (DPR file, 2019).

In classical literature, population growth is often seen as a positive potential for the labor market, as long as the country or region is able to take advantage of the demographic bonus. However, studies such as (Sari et al., 2017) in Jambi City shows that population growth is not always followed by an increase in labor absorption, especially if the area is not yet economically and infrastructurally ready. This study confirms and strengthens these findings in the context of North Luwu Regency which still has limitations in the capacity of job creation and improving the quality of the workforce. This is an important gap because most macro studies tend to generalize the impact of population growth without considering the variability of regional conditions. Thus, this study makes a significant contribution by specifically examining how population growth impacts labor absorption in semi-peripheral areas with different economic and social characteristics from urban areas.

## **2.4 Labor Absorption**

Labor absorption is the number of workers absorbed by a particular industry or business unit company. In the Republic of Indonesia Law No. 13 of 2003 concerning Manpower, it is stated that everything related to manpower before, during and after the employment period. The problem of manpower is closely related to the problem of employment opportunities, manpower and employment (Pal, 2023).

According to Handoko, the theory of labor absorption is influenced by external and internal factors. Externally influenced by the level of economic growth (GRDP), inflation rate, unemployment and interest rate. While internally influenced by wage rate, labor productivity, job satisfaction and capital (Adolph, 2016). The higher the economic growth of a region, the more economic activity is developing, both production, consumption, investment and trade activities in the region, which then has an impact on the absorption of labor (Lebang Abigel Irma & Rotisulu, 2017). The availability and accessibility of employment opportunities are important indicators in increasing employment absorption. However, in reality, not all of the workforce in an area are working or have jobs. Unemployment is often caused by a large number of workers but is not balanced by the availability of sufficient business opportunities and the ability to absorb jobs (Erika Yustitia et al., 2023).

## **3. METHOD**

This research is a descriptive and associative research with a quantitative approach conducted in North Luwu Regency. The data used are secondary data obtained from the Central Statistics Agency (BPS) and the Investment and One-Stop Integrated Service Agency (DPMPTSP) of North Luwu Regency. The research location is in the two agencies and is estimated to last for three months. The research population includes data on private investment, education, population growth, and labor absorption in North Luwu Regency for the past 15 years, namely from 2010-2024. The period 2010 to 2024 was chosen because it includes longitudinal data that is long enough to comprehensively identify trends and patterns of relationships between private investment, education, population growth, and labor absorption in North Luwu Regency.

Since the data analyzed is a time series with annual samples for 15 years, the number of observations is relatively limited so that it can affect the statistical power of the regression analysis. This study does not use primary data that allows the exploration of qualitative factors or direct perceptions from actors in the field, so that the interpretation of the results focuses on the quantitative relationship between the available variables.

Average years of schooling was chosen as an indicator of education because it is a measure commonly used in labor and human development statistics to describe the average level of education of the population or workforce in a region. This indicator is quite representative to see the development of the quality of human resources in aggregate over a certain period. However, the use of average years of schooling has limitations, namely it does not specifically measure the quality of education, the suitability of skills to labor market needs, or the existence of vocational education that is more relevant to labor absorption. Therefore, although the average years of schooling can provide a



general picture of education, the results of this study need to be interpreted by considering these limitations.

The data analysis technique used is a multiple linear regression equation model. This method aims to explain whether there is a role for private investment, education and population growth in labor absorption in North Luwu Regency in 2010-2024.

The mathematical equation for multiple linear regression in this study is:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e$$

Where :

Y = Labor

X1 = Private Investment

X2 = Education Level

X3 = Population Growth

a = constant

b<sub>1</sub>,b<sub>2</sub>,b<sub>3</sub> = Regression Coefficient

e = error term

## 4. RESULTS AND DISCUSSION

### 4.1 Results

#### 4.1.1. Classical Assumption Test

##### a. Multicollinearity Test

In Research (Syam & Wahab, 2015), Multicollinearity testing is carried out with the aim of testing whether there is a correlation between independent variables in the regression model, if there is a correlation, then it is called a multicollinearity problem (Multicol). To find out whether there are no symptoms of multicollinearity between independent variables is:

- 1) Has a VIF value > 0.100
- 2) Have a TOLERANCE score < 10

**Table 1.**Multicollinearity Test

Variables	Tolerance	VIF
Private Investment	.829	1.206
Level of education	.824	1.214
Population growth	.966	1.036

Source: SPSS 29 processed data, (2025)

The results of the Multicollinearity test in the table above show that there are no symptoms of multicollinearity in the variables of Private Investment, Education and Population Growth because the tolerance value is <10 and the VIF value is > 0.100.

##### b. Heteroscedasticity Test

Thus, heteroscedasticity test is a critical tool to ensure the regression model produces valid and reliable inferences in labor absorption analysis. The significance test of the model uses chi-square statistics. If p-value < 0.05, heteroscedasticity is detected.

**Table 2.**Heteroscedasticity Test

Variables	Probability
Constant	0.943
Private Investment	0.790
Level of education	0.377
Population growth	0.450

Source: SPSS 29 processed data, (2025)

The probability value of the variables Private Investment, Education, and Population Growth is >0.05, so it can be concluded that there are no symptoms of Heteroscedasticity.

#### 4.1.2. Multiple Regression Analysis Test

Multiple linear regression analysis is used to determine how much the independent variables, namely: private investment (X1), Education (Average Length of Schooling) (X2), Population Growth (X3) affect Labor Absorption (Y).

**Table 3.** Multiple Regression Test Results

Variable	Coefficient	t-test	Prob.
Constant	10,223	25,785	0.001
Private Investment	0.021	10,329	0.211
Level of education	0.139	3,647	0.004
Population growth	0.041	0.356	0.728
Prob (F-statistic)			0.001
R2	.720		
R2 adjusted	.644		

Source: SPSS Application Processed Data 29,(2025)

From the results of the table above, the form of the regression equation for the influence of the independent variable on the dependent variable is as follows:

$$Y=10.223+0.021X1+0.139X2+0.041X3+e$$

Based on the results of multiple linear regression, if the private investment, education level, and population growth variables are zero, then labor absorption in North Luwu Regency is estimated at 10,223 people. The coefficient of the private investment variable (X1) of 0.021 indicates that every one-unit increase in private investment, assuming other variables remain constant, will increase labor absorption by 0.021 people. Meanwhile, the coefficient of education level (X2) of 0.139 means that a one-unit increase in the average length of schooling will encourage an increase in labor absorption by 0.139 people, indicating the strongest influence among the three variables. The population growth coefficient (X3) of 0.041 indicates that every one-unit increase in the population growth rate, with other variables held constant, will increase labor absorption by 0.041 people.

#### 4.1.3. t-test

The results of the study indicate that the private investment variable does not have a significant effect on labor absorption in North Luwu Regency, as indicated by a probability value of 0.211, exceeding the significance threshold of 0.05. This can occur if the investment made is more focused on the use of capital and high technology that is capital intensive, so that it does not directly create many jobs. Likewise, the population growth variable also has no significant effect with a probability value of 0.728. This condition reflects an increase in the population that is not balanced by the growth in the availability of jobs, so that the existence of abundant human resources can actually be a burden if not managed properly. On the other hand, the education variable shows a positive and significant effect on labor absorption, with a probability value of 0.004. This indicates that the higher the level of education, the greater the opportunity for individuals to be absorbed into the labor market. Therefore, it is important to encourage the sustainability and improvement of the quality of education as the main strategy in increasing labor absorption in the region.

#### 4.1.4. F Test

As shown in Table 3, the Probability value (F-statistic) of 0.001 is below the significance threshold of 0.05. This shows that simultaneously, the three independent variables, namely Private Investment, Education Level, and Population Growth, have a significant influence on Labor Absorption in North Luwu Regency.

#### 4.1.5. Coefficient of Determination Test

Table 3 shows the results of the determination coefficient test, where the Adjusted R Square value is 0.644. This means that 64.4% of the variation that occurs in labor absorption

in North Luwu Regency can be explained by the independent variables in the model, namely private investment, education (measured by the average length of schooling), and population growth. Meanwhile, the remaining 35.6% is influenced by other variables or factors outside this research model, such as government policies, development of the informal sector, employment infrastructure, or other social and economic factors that are not the object of study in this study. Thus, although this model is strong enough to explain the relationship between variables, further studies are still needed to explore additional factors that also play a role in determining the level of labor absorption more comprehensively.

## **4.2 Discussion**

### **a. The Impact of Private Investment on Labor Absorption**

In Keynes' theory, which states that the labor market only follows what happens in the goods market, if the output produced increases, the number of workers will also increase. Therefore, the demand for goods and services in the economy can affect the level of output that must be produced, so that the increase in the number of goods produced will have an impact on the use of labor (Iksan et al., 2020). Thus, private investment that drives production is expected to increase labor absorption. However, the results of this study indicate that in North Luwu Regency, private investment does not have a significant effect on labor absorption, with a significance value of 0.211 ( $> 0.05$ ) and t-count (1.329) smaller than t-table (1.770). Although the coefficient is positive, meaning that increased investment still has the potential to increase employment opportunities, the impact has not been seen clearly. This finding is in line with the study (Liana et al., 2020), entitled "The Influence of Private Investment on Labor Absorption in Pelalawan Regency" this study proves that investment does not have a significant effect on employment opportunities in Pelalawan Regency in 2003-2012. Concludes that investment is not significant on labor absorption due to the focus of investment on capital-intensive sectors and the use of high technology. Internationally, this finding is contrary to studies (Afonso et al., 2025) in OECD countries, which shows that private investment significantly increases employment, especially when directed to labor-intensive and local industry-based sectors. This difference can be explained by the structural context of the region, where investment in North Luwu has not fully targeted sectors that absorb local labor and there is still minimal community participation in investment reporting, as conveyed by the head of the Investment Office. For policy makers, this emphasizes the need to design incentives that encourage investment in labor-intensive sectors and improve the reporting system and transparency of investment data at the regional level. The effect of private investment on labor absorption is not always immediately visible. The effects in the short term may only be felt in the long term so that it is not optimal in job creation. And the results of this study are in line with previous studies conducted by,

### **b. The Effect of Education on Labor**

According to Frank & Bernanke, human capital is a combination of education, experience, training, skills, habits, health, energy and initiative that determine a person's productivity (Nurkholis, 2018). The results of this study indicate that the level of education (average length of schooling) has a positive and significant effect on labor absorption in North Luwu Regency, with a significance value of 0.004 ( $< 0.05$ ) and t-count (3.647) greater than t-table (1.753). This shows that the higher the level of education, the greater the possibility of individuals being absorbed in the labor market. These results are consistent with the study (Nugroho, 2018) in Gorontalo Province and is also in line with international findings by (Hanushek & Woessmann, 2021) which states that the quality of education, especially that oriented towards skills, is closely correlated with the level of work participation. In the context of North Luwu, this finding emphasizes the importance of developing education that is not only formal but also based on practical skills, so that educational output is in accordance with the needs of the world of work. For policy makers, this is an important foundation for strengthening vocational education programs and job training based on regional leading sectors, so that educated unemployment due to



skill mismatch can be minimized.

c. The Effect of Population Growth on Labor

According to Malthus' theory, population growth can support economic development if it is accompanied by increased welfare and effective demand (DPR file, 2019). However, the results of this study indicate that population growth in North Luwu Regency has a positive but insignificant effect on labor absorption, with a significance value of 0.728 ( $> 0.05$ ) and t-count (0.189) smaller than t-table (1.753). This condition indicates an imbalance between the increasing population and the limited provision of employment opportunities and the low quality of the workforce. This finding is consistent with research (Sari et al., 2017), entitled "The effect of economic growth, population growth and labor productivity on labor absorption in Jambi City". This study shows that population growth is not significant on labor absorption in Jambi City with a probability value greater than 0.05". which also shows that population growth is not significant to labor absorption. Globally (Hanushek, 2016) explains that the benefits of the demographic bonus will only emerge if the country is able to invest sufficiently in education, health, and job creation. In the context of North Luwu, the failure to fulfill these prerequisites explains why population growth has not had a significant impact on employment. For policy makers, this is an important warning that population growth without systemic support for job creation can actually increase unemployment rates. Therefore, a population management strategy is needed that is integrated with workforce planning and improving the quality of human resources.

## 5. CONCLUSION AND SUGGESTIONS

### CONCLUSION

This study examines the influence of private investment, education level, and population growth on labor absorption in North Luwu Regency during the period 2010–2024. Simultaneously, the three variables are proven to have a significant effect on labor absorption, as indicated by the F-statistic probability value of 0.001 ( $< 0.05$ ) and the adjusted  $R^2$  value of 0.644, which means that the model explains around 64.4% of the variation in labor absorption. However, partially, only the level of education (measured by the average length of schooling) shows a positive and significant effect ( $p = 0.004$ ). In contrast, the private investment variables ( $p = 0.211$ ) and population growth ( $p = 0.728$ ) do not show a significant effect even though they have a positive relationship direction.

These findings indicate that education is the most important factor in absorbing labor, while private investment and population growth have not been able to fully support effective job creation. This emphasizes the importance of strengthening the quality of education and skills-based training that is relevant to the needs of the local labor market. Meanwhile, insignificant private investment reflects the dominance of capital-intensive sectors and low community involvement in investment reporting, while high population growth without adequate job creation has the potential to increase unemployment rates.

### SUGGESTION

Based on the research results, although simultaneously private investment, education level, and population growth have a significant effect on labor absorption in North Luwu Regency, partially only education level shows a positive and significant effect, while private investment and population growth are not significant. This indicates the need for more targeted and contextual policies from the local government. To that end, the government needs to encourage the reorientation of private investment to labor-intensive sectors such as light industry and modern agriculture by providing incentives and ease of licensing, as well as improving the investment reporting system to be more accurate and transparent. On the other hand, education must be strengthened not only in terms of quantity but also quality through curriculum reform that adapts to the needs of the local workforce and the development of vocational training that is integrated with the industrial sector. Regarding population growth, the local government needs to integrate population policies with job creation through long-term workforce planning, family planning programs, and empowerment of the productive age population through labor-intensive programs and training. These efforts need to be supported by local economic diversification and

strengthening of basic infrastructure that allows the shift of the workforce to more productive sectors, as well as the establishment of cross-agency coordination forums to formulate more strategic, measurable, and data-based employment policies.

## ACKNOWLEDGMENTS

With all sincerity, I express my deepest gratitude to my beloved parents, whose prayers and affection have been the light in every step I take, to my siblings who have never tired of giving me encouragement and have been a place to return to when I was tired, to my friends and fellow fighters who have been there with support, laughter, and togetherness that strengthens me and to my supervisors who have patiently and wisely guided me through every challenge in this research process. Without their presence and love, this journey would never have felt as complete and meaningful as this.

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