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SOCIAL SCIENCE AND EDUCATION | RESEARCH ARTICLE

Analysis of The Effect of Education Level on Labor Absorption in Mamuju District, Indonesia

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Abstract: This study aims to analyze the effect of education level on labor absorption in Mamuju Regency during the 2014-2023 period. The data used in this study consists of time series data on the number of labor forces absorbed, categorized by education level: elementary school, junior high school, high school, and university. The data analysis was conducted using the multiple linear regression method to test the effect of each education variable on labor absorption. The results reveal that none of the education level variables have a significant influence on labor absorption, either partially or simultaneously. These findings suggest that labor absorption in Mamuju Regency is influenced more by factors other than formal education, such as practical skills and local labor market demands. This underscores the need for economic diversification and the development of relevant skills training programs to enhance the competitiveness of the local workforce.

Keywords: Education Level, Labor Absorption, Multiple Linear Regression, Institutional Quality.

1. INTRODUCTION

The availability of a skilled and qualified workforce is a crucial factor in determining a region's competitiveness. A region's ability to adapt to technological advancements and shifting market demands largely depends on the educational level of its labor force. This is especially relevant for regions like Mamuju Regency in Indonesia, where a growing gap between educational attainment and labor market needs presents both a challenge and an opportunity. In recent years, Mamuju has experienced fluctuations in its labor force across various levels of education. This dynamic highlights the urgent need to analyze how educational qualifications influence the ability of individuals to secure employment, ultimately impacting the region's economic competitiveness. A significant challenge arises from the fact that many workers, despite having completed certain levels of education, remain underemployed or engaged in the informal sector — a situation that hampers broader economic development. Therefore, this study aims to investigate the relationship between education and labor absorption in Mamuju Regency. Specifically, it will examine trends in labor force participation and employment rates across different educational levels from 2021 to 2023, providing insights into how education shapes workforce outcomes and regional growth.

Numerous studies have explored the relationship between education and labor absorption, examining how different levels of educational attainment influence employment opportunities and economic development. Research consistently shows that higher education correlates with a greater likelihood of securing formal employment and earning higher wages, ultimately enhancing regional competitiveness. A study by McKinsey (2018), for example, highlighted that regions investing in higher education and skills training tend to experience improved economic outcomes due to a more adaptable workforce. In the context of Indonesia, several studies have noted a growing demand for skilled labor, particularly in sectors such as manufacturing, technology, and services — industries that increasingly require higher educational qualifications. Furthermore, the rising number of tertiary-educated individuals has led to a shift in job availability, with many sectors now seeking employees



equipped with advanced education and specialized skills (BPS, 2020). However, despite these advancements, the labor market remains segmented. A significant portion of the workforce is still engaged in the informal sector or confined to low-skill positions, especially among those with only primary or secondary education.

Studies focusing on rural and peri-urban regions like Mamuju have revealed a concerning trend: although educational attainment is gradually increasing, the rate of labor absorption remains sluggish, particularly for individuals with lower levels of education. Research by Syahril et al. (2021) underscores the persistent issue of underemployment in areas with limited access to tertiary education and vocational training. A key challenge lies in the misalignment between educational outcomes and labor market demands. Even individuals with higher levels of education often struggle to secure jobs that match their qualifications, highlighting a gap between the skills offered by the workforce and those required by employers. This misalignment is especially evident in Mamuju Regency, where improvements in education levels have not been accompanied by proportional increases in labor absorption. As a result, a critical gap remains in understanding how different educational levels specifically impact employment opportunities within the region. This has prompted the need for a focused investigation into the relationship between education and labor absorption in Mamuju. While existing literature offers valuable insights into the relationship between education and employment across various regions, there remains a significant gap in empirical studies specifically examining the impact of educational attainment on labor absorption in Mamuju Regency. Most prior research has focused on national or urban-level data, often overlooking regional variations — particularly in less developed areas. The current body of work does not provide a nuanced understanding of how individuals with different educational backgrounds experience varying rates of employment absorption in Mamuju. Although it is widely acknowledged that higher education generally enhances employment prospects, the local context of Mamuju — shaped by its unique socio-economic and cultural dynamics — calls for a more focused, region-specific analysis.

The research gap lies in the underrepresentation of how Mamuju's labor market absorbs its highly educated workforce, particularly amid regional disparities in job creation and the prevalence of the informal economy. While national reports highlight generally low unemployment rates, they often overlook the quality of employment and the extent to which education directly influences workers' ability to secure stable, formal jobs at the regional level. In Mamuju, limited industrial diversification and the dominance of the agricultural and informal sectors may impede labor absorption, especially for those with higher educational qualifications. As a result, although data on education levels and employment figures are available, the relationship between these two factors within Mamuju's unique economic context remains insufficiently explored. This study aims to address the research gap identified in the previous section by analyzing the specific impact of educational attainment on labor absorption in Mamuju Regency. The primary objective is to examine how various education levels — from no formal education to a bachelor's degree — influence individuals' likelihood of securing stable employment within the region. Focusing on the period from 2021 to 2023, this research will explore the relationship between the labor force's educational composition and employment outcomes. Furthermore, it will assess whether higher educational qualifications, such as bachelor's degrees, correspond to improved job quality or if these individuals remain underemployed or engaged in the informal sector.

This research aims to provide novel insights into the labor market dynamics of Mamuju Regency by offering data-driven recommendations for local policymakers. By focusing on the regional context, the study seeks to present a nuanced understanding of the relationship between education and employment, particularly in a developing region where labor absorption is shaped by factors such as industry structure and access to job opportunities. The findings are expected to inform targeted interventions to enhance labor absorption, including expanding vocational training programs, improving access to higher education, and promoting industrial diversification to generate more formal employment opportunities. Ultimately, this research hopes to support ongoing efforts to strengthen Mamuju Regency's economic competitiveness and foster sustainable regional growth.

2. LITERATURE REVIEW

2.1. Economic Development

Economic development is a continuous process aimed at increasing per capita income over the long term, accompanied by structural economic transformation and advancements in science and technology. According to Nurul Oktima (2012), economic development encompasses efforts to enhance the quality of life and human capabilities, including living standards, self-esteem, and individual freedom. Todaro (2011) outlines three primary objectives of development: first, to increase the availability and distribution of basic goods; second, to improve living standards, which cover income, education, and health; and third, to expand economic and social choices, allowing individuals to break free from dependence and poverty (Todaro, 2011). Conway (2011) emphasizes that the primary goal of economic development is to lift people out of poverty. However, as noted by Collier in Conway (2011), economic development is often hindered by four traps: civil war, natural resource dependency, landlocked geography, and poor governance. Jhingan (2014) highlights several essential conditions for economic development, including self-reliance, the elimination of market imperfections, structural transformation, capital formation, strategic investment, as well as socio-cultural support and effective governance. The process of economic development relies on various interconnected factors. These include structural shifts from an agrarian to an industrial society, capital formation as a pivotal driver, and the promotion of socio-cultural values that foster progress (Jhingan, 2014).

2.2. Definition of Education

Education is a process of developing individual qualities through the transfer of knowledge, skills, and experiences from one generation to the next. Idris (2016) emphasizes that education also plays a crucial role in preparing a qualified workforce. According to Hasbullah (2012), education is an effort to shape individuals' personalities in alignment with societal and cultural values. Furthermore, the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System defines education as a conscious and planned effort to create a learning environment that enables students to develop their full potential. Education encompasses both physical and spiritual dimensions, ultimately aiming to achieve the perfection of life (Muhammad Yunus in Umar and La Sulo, 2015).

2.3. Education Function

According to Law No. 20 of 2003, national education functions to develop individual abilities, shape character, and enhance the nation's intellectual capacity. Education also serves two key roles: preserving culture (the preservative function) and acting as an agent of social change (the directive function). Tirtarahardja and La Sulo (2015) emphasize that education prepares individuals to become productive members of the workforce. Beyond that, it plays a crucial role in cultural transformation, personal development, civic preparation, and workforce readiness. Education encompasses three main domains — cognitive, affective, and psychomotor — all of which contribute to shaping well-rounded, competent individuals (Tirtarahardja and La Sulo, 2015; Saidah, 2016).

2.4. Education Objectives

Hasbullah (2012) identifies four levels of educational goals: national, institutional, curricular, and instructional. These goals provide direction and guidance in the learning process, aiming to cultivate qualified and competent individuals who meet the needs of both society and the state.

2.5. Education Indicator

According to Law No. 20 of 2003, education indicators include education levels and the relevance of academic majors. Education levels are categorized into primary, secondary, and tertiary education.

Various factors influence an individual's level of education, including ideology, socio-economic conditions, socio-cultural dynamics, advancements in science and technology, and psychological aspects (Law No. 20/2003).

2.6. Human Capital Theory

Human capital refers to the value and quality of individuals or labor, which directly influences their productivity. According to Saidah (2016), human capital encompasses education, training, and health — all of which contribute to enhancing employment opportunities and income levels. Suaidah and Cahyono (2015) emphasize that investing in education is a form of human capital investment, capable of boosting both productivity and earnings. Similarly, Mukminin and Mahmudah (2017) highlight that human capital plays a crucial role in community development, as skilled human resources are essential for mastering technology and driving economic productivity. Education, therefore, serves as a key factor in developing human capital, ultimately contributing to economic growth and improving societal well-being (Amiruddin, 2016).

2.7. Employment

Labor is a crucial factor of production in economic development. The Central Bureau of Statistics (BPS) classifies the working-age population (15–65 years) into two categories: the labor force and the non-labor force. The labor force consists of those who are employed and those who are unemployed, while the non-labor force includes students, housewives, and others not actively seeking work (BPS Mamuju, 2023). According to BPS Mamuju (2023), individuals aged 15 years and above in Mamuju Regency are engaged in various types of work, including self-employment, wage labor, salaried employment, and family work. Additionally, classifying the workforce by education level is essential for analyzing labor absorption and understanding how education influences employment outcomes.

2.8. Relationship between Education and Labor Absorption

In a rapidly advancing economy, education plays a crucial role in labor absorption. Sukirno (2015) asserts that educated workers are better equipped to manage modern enterprises and enhance production output. Higher levels of education are generally associated with increased productivity and income, as well as the ability to occupy technical and complex job positions (Yusuf, 2015). The level of education plays a crucial role in labor absorption. Jobs requiring specialized skills are more likely to be filled by educated workers, whereas simpler, less technical jobs are generally occupied by those with lower levels of education.

2.9. Previous Research

Previous research serves as a valuable reference and comparison for this study. For instance, a study by Henrikus Tjiu and Rosianti (2022) found that education levels significantly influence labor absorption in Merauke Regency. Similarly, research by Rifaldo Silalahi, Vecky A.J. Masinambow, and Mauna Th. B. Maramis (2023) revealed that both education and investment have a notable impact on labor absorption in North Sulawesi. However, other studies offer a different perspective. For example, Adamas Adhy Prasetya (2021) found that education levels do not always have a significant effect on employment in Indonesia, highlighting the influence of other contributing factors. These studies provide diverse insights into the role of education in employment, helping to better understand the dynamics of labor absorption across various regional contexts.

2.10 Research Hypothesis

Hypothesis 1 (H1): The elementary school education level and below has a significant impact on labor absorption in Mamuju Regency.

Hypothesis 2 (H2): The junior high school education level has a significant impact on labor

absorption in Mamuju Regency.

Hypothesis 3 (H3): The high school education level has a significant impact on labor absorption in Mamuju Regency.

Hypothesis 4 (H4): The bachelor's degree level (S1, S2, S3) has a significant impact on labor absorption in Mamuju Regency.

Hypothesis 5 (H5): The education levels of elementary school, junior high school, high school, and bachelor's degree collectively have a significant impact on labor absorption in Mamuju Regency.

3. RESEARCH METHOD AND MATERIALS

This study employs both quantitative and qualitative data sources. The quantitative data is derived from secondary data provided by BPS Mamuju Regency, consisting of time series data from 2014 to 2023 on labor force education levels and employment figures. The dependent variable in this study is labor absorption, defined as the number of individuals successfully integrated into the workforce. Meanwhile, the independent variables are education levels, categorized into elementary school, junior high school, senior high school, and bachelor's degree. Data collection techniques involve observation and literature studies, with a particular focus on inflation and poverty data obtained from BPS Mamuju. The data will be analyzed using multiple linear regression through SPSS software, accompanied by t-tests and F-tests to assess the significance of each independent variable's influence on labor absorption. The operational definitions used in this study include education levels, ranging from elementary school to bachelor's degree, and labor absorption, referring to the number of employed individuals across various sectors.

4. RESULTS AND DISCUSSION

4.1. Analysis Result

- Effect of Education Level on Labor Absorption

This study aims to analyze the impact of education levels on labor absorption in Mamuju Regency from 2014 to 2023. The research utilizes time series data spanning the past nine years, covering education levels — including elementary, junior high, high school, and higher education — alongside data on the number of workers absorbed into the labor market.

- Multiple Linear Regression Analysis

To examine the effect of education levels on labor absorption, this study employs multiple linear regression analysis using SPSS version 23. The results of the multiple linear regression analysis are presented in Table 1 below:

Table 1. Multiple Linear Regression Analysis Results

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	
(Constant)	107729.150	22346.491		4.821
SD	-.254	.632	-.440	-.401
SMP	.341	2.829	.108	.121
High School	1.563	.891	1.023	1.755
Univeristy	-.816	1.870	-.548	-.436

Based on the analysis results in Table 1, the multiple linear regression equation obtained is:

$$Y=107729.150-0.254X_1+0.341X_2+1.563X_3-0.816X_4+e$$

The interpretation of the regression results is as follows:

1. Constant (a = 107729.150): The constant value indicates that if all independent variables the education levels of elementary school (SD), junior high school (SMP), senior high school (SMA), and higher education (PT) are assumed to be zero, the predicted number of employed individuals in Mamuju Regency would be 107,729.150 people.
2. Coefficient b1 (SD = -0.254): This coefficient indicates that for every additional worker who graduates from elementary school, employment in Mamuju Regency is expected to decrease by 0.254 people, assuming all other variables remain constant.
3. Coefficient b2 (SMP = 0.341): For every additional worker who graduates from junior high school, employment in Mamuju Regency is estimated to increase by 0.341 people, assuming all other variables remain constant.
4. Coefficient b3 (SMA = 1.563): For every additional worker who graduates from senior high school, employment in Mamuju Regency is estimated to increase by 1.563 people, assuming all other variables remain constant.
5. Coefficient b4 (PT = -0.816): For every additional worker who graduates from university, employment in Mamuju Regency is expected to decrease by 0.816 people, assuming all other variables remain constant.

- T-test / Partial Test

To test the significance of the effect of each independent variable on the dependent variable (labor absorption), a t-test is used. The results of the comparison between the t-value (t-count) and the critical value (t-table) are presented in Table 2 below.

Table 2. Comparison between t-Count and t-Table

No.	Variables	t Count	t Table
1	SD	-0.401	2.77645
2	SMP	0.121	2.77645
3	High School	1.755	2.77645
4	University	-0.436	2.77645

The interpretation of the t-test results is as follows:

1. The effect of the elementary school graduate variable on labor absorption shows t-count < t-table (-0.401 < 2.77645), indicating no significant effect.
2. The effect of the junior high school graduate variable on labor absorption shows t-count < t-table (0.121 < 2.77645), indicating no significant effect.
3. The effect of the high school graduate variable on labor absorption shows t-count < t-table (1.755 < 2.77645), indicating no significant effect.
4. The effect of the college graduate variable on labor absorption shows t-count < t-table (-0.436 < 2.77645), indicating no significant effect.

- F Test / Simultaneous Test

To test the significance of the simultaneous effect of the independent variables on the dependent variable, the F test is used. The results of the comparison between F-count and F-table are shown in Table 3 below:

Table 3. Comparison of f-Table with f-Count

Model	Sum Of Squares	Df	Mean Square	F	Sig.
Regression	560497173.756	4	140124293.439	1.296	.404
Residuals	432502134.244	4	108125533.561		
Total	992999308.000	8			

Based on the table 3, the F count is 1.296, while the F table value is 6.39. Since F count < F table (1.296 < 6.39), it can be concluded that the education level variables—elementary, junior high, high school, and university—do not simultaneously have a significant influence on labor absorption in Mamuju Regency. The results indicate that none of these education level variables significantly affect labor absorption, either individually or collectively. This finding suggests that in Mamuju Regency, labor absorption is not directly influenced by the level of education. It contradicts the initial hypothesis, which assumed a positive correlation between education level and labor absorption. Therefore, other factors that may have a more substantial impact on labor absorption in Mamuju Regency need to be explored further. One possible explanation is that the dominant sectors in the region, such as agriculture or other labor-intensive industries, may not require high levels of formal education. Additionally, many university graduates may have secured employment outside the region or obtained jobs prior to graduation, resulting in their exclusion from the data on new labor absorption in Mamuju Regency. These research findings align with those of Adamas Adhy Prasetya (2021), who also discovered that education level does not always have a significant effect on employment in Indonesia. Similar results were reported by Ida Bagus Bayu Windayana and Ida Bagus Darsana (2020) in Bali Province. However, these findings contrast with the research of Henrikus Tjiu and Rosianti (2022) in Merauke Regency, which concluded that education level significantly influences labor absorption. These differences may stem from variations in regional characteristics, dominant economic sectors, and labor demands specific to each area.

5. CONCLUSION

This study reveals that the level of education including elementary school, junior high school, high school, and university does not have a significant impact on labor absorption in Mamuju Regency during the 2014-2023 period. The results of the regression analysis, both partially and simultaneously, indicate that labor absorption in this region is not determined by formal education levels. These findings suggest that other factors, such as practical skills, individual motivation, and the types of jobs available, play a more influential role in labor absorption in Mamuju Regency. The characteristics of labor absorption in Kabupaten Mamuju reflect a demand for workers who are ready to work in the field, particularly in sectors such as agriculture and manual labor, which do not require higher education. While education remains important, the labor market in this region prioritizes workers with practical skills relevant to field conditions over formal education levels. This trend contrasts with other regions in Indonesia, where formal education may play a more significant role in labor absorption. The findings of this study align with several previous studies, which also concluded that education does not always have a significant impact on labor absorption. However, there are differences in results compared to other studies that suggest otherwise. These discrepancies may be attributed to variations in regional characteristics, economic sectors, and labor demands across different areas. Consequently, labor absorption in Mamuju Regency is more influenced by other factors relevant to local conditions.

REFERENCES

- Amiruddin. (2016). *Pendidikan sebagai Investasi Sumber Daya Manusia*. Jakarta: Raja Grafindo Persada.
- Badan Pusat Statistik Kabupaten Mamuju. (2015-2024). *Data Statistik Ketenagakerjaan Kabupaten Mamuju*. Mamuju: BPS Kabupaten Mamuju.
- Conway, G. (2011). *The Doubly Green Revolution: Food for All in the 21st Century*. Cornell University Press.
- Hasbullah. (2012). *Dasar-Dasar Ilmu Pendidikan*. Jakarta: Rajawali Pers.
- Idris. (2016). *Pengantar Ilmu Pendidikan*. Makassar: Pustaka Pelajar.

- Jhingan, M.L. (2014). *Ekonomi Pembangunan dan Perencanaan*. Jakarta: Rajawali Pers.
- Kanwil Ditjen Perbendaharaan Provinsi Sulawesi Barat (2024). *Kajian Fiskal Regional Tahun 2023*. Mamuju. Kanwil Ditjen Perbendaharaan Provinsi Sulawesi Barat. Diakses dari :
2023_Q4_KFR_Provinsi_Sulawesi_Barat.pdf - Google Drive
- Miles, M.B., & Huberman, A.M. (2012). *Qualitative Data Analysis: A Methods Sourcebook*. Jakarta: UI Press.
- Nazir, M. (2014). *Metode Penelitian*. Bogor: Ghalia Indonesia.
- Nurul Oktima. (2012). *Ekonomi Pembangunan*. Bandung: Alfabeta.
- Saidah, S. (2016). *Pendidikan dan Ketenagakerjaan di Indonesia*. Jakarta: Raja Grafindo Persada.
- Silalahi, U. (2012). *Metode Penelitian Sosial*. Bandung: Refika Aditama.
- Sugiyono. (2012). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
- Sugiyono. (2014). *Statistika untuk Penelitian*. Bandung: Alfabeta.
- Sukirno, S. (2015). *Makroekonomi: Teori Pengantar*. Jakarta: Rajawali Pers.
- Todaro, M.P. (2011). *Pembangunan Ekonomi di Dunia Ketiga*. Jakarta: Erlangga.
- Tirtarahardja, U., & La Sulo. (2015). *Fungsi Pendidikan dalam Masyarakat*. Yogyakarta: Andi Offset.
- Umar, A., & La Sulo, U. (2015). *Sistem Pendidikan Nasional*. Yogyakarta: Deepublish.
- Yusuf, M. (2015). *Manajemen Sumber Daya Manusia*. Jakarta: Mitra Wacana Media.
- Henrikus Tjiu, & Rosianti. (2022). *Pengaruh Tingkat Pendidikan terhadap Penyerapan Tenaga Kerja di Kabupaten Merauke (2013-2018)*. Merauke: Universitas Musamus.
- Prasetya, A.A. (2021). *Pengaruh Tingkat Pendidikan, Upah Minimum, Pertumbuhan Ekonomi dan Inflasi terhadap Penyerapan Tenaga Kerja di Indonesia*. Jakarta: Universitas Indonesia.
- Silalahi, R., Masinambow, V.A.J., & Maramis, M.Th.B. (2023). *Pengaruh Tingkat Pendidikan dan Investasi terhadap Penyerapan Tenaga Kerja di Provinsi Sulawesi Utara*. Manado: Universitas Sam Ratulangi.
- Windayana, I.B.A.B., & Darsana, I.B. (2020). *Pengaruh Tingkat Pendidikan, UMK, Investasi terhadap Penyerapan Tenaga Kerja dan Pertumbuhan Ekonomi Kabupaten/Kota di Provinsi Bali*. Denpasar: Universitas Udayana.