

Analysis of the Influence of Labor, Employment and Investment on Employment Opportunities in East Java Province

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ABSTRACT

Employment opportunities are one of the basic human needs as well as an important economic indicator to assess the level of success of a region. This indicator is also a reference for the government in formulating economic policies. One of the main problems of employment in East Java Island is the low level of employment opportunities. In addition, there is a mismatch between the skills of the workforce and the needs of the business world. Many industrial sectors require workers with special skills, while most of the workforce does not have these qualifications. This study aims to analyze the effect of the number of workers, employment, and investment on employment opportunities in East Java Province during the period 2008 to 2023. This study uses a quantitative approach with the multiple linear regression analysis method and SPSS version 29 tools. The data used are secondary data obtained from the BPS website of East Java Province for that period. The results of the study show that the number of workers has a positive and significant effect on employment opportunities in East Java.

INTRODUCTION

Java Island is the center of national economic activity and the most densely populated region in Indonesia. Although it covers only about 6.9% of the country's land area, more than half of Indonesia's population resides on this island. The high population concentration makes Java—particularly East Java Province a critical point in national economic and social development. This concentration impacts not only economic activity growth but also presents major challenges in ensuring balanced and sustainable employment opportunities. The steadily increasing number of people in the productive age group demands the consistent creation of new jobs to prevent a significant rise in unemployment rates.

Unfortunately, the growth in the labor force has not always been accompanied by adequate job creation. The imbalance between labor supply and demand remains a structural issue in several provinces across Java, including East Java. Uneven development, disparities in regional investment, and the dominance of the informal sector further aggravate employment issues in this region. Amid the dynamics of economic change and structural transformation, local governments are challenged to ensure that economic growth not only boosts the Gross Regional Domestic Product (GRDP) but also contributes significantly to inclusive employment expansion.

As one of the most populous and geographically extensive provinces, East Java plays a strategic role in national development. The province's economy is diverse, encompassing agriculture, trade, manufacturing, and services sectors. This diversity should represent a substantial potential to absorb a large labor force. Data shows that the number of workers in East Java increased significantly from around 18 million in 2008 to over 22 million in 2023. However, this increase has not been fully matched by proportional growth in employment opportunities, particularly in the formal sectors that offer worker protection and welfare.

Since the early 2000s, East Java has continuously faced challenges in generating enough jobs to accommodate its growing workforce. Urbanization and industrialization have shifted the role of the agricultural sector, which previously served as the backbone of employment absorption. The agricultural sector has steadily lost its capacity to employ large numbers of workers due to factors such as land conversion, mechanization, and the lack of young farmer regeneration. On the other hand, the growing manufacturing sector has yet to optimally absorb labor due to its high demand for specific technical skills, which are not widely held by most job seekers especially those from rural areas with limited educational backgrounds.

A major cause of the relatively high open unemployment rate in East Java, particularly among low-educated graduates and rural communities, is the mismatch between labor skills and industry demands. Most jobs in the formal sectors such as manufacturing and modern services require technical expertise, digital proficiency, or specific certifications. However, the region's education and vocational training systems have not been able to swiftly adapt to the fast-changing dynamics of the labor market. This has led to the phenomenon of "skills

mismatch," where the available workforce does not align with actual business and industrial needs.

In addition, the high proportion of the informal sector in East Java further contributes to labor market issues. The informal sector is generally characterized by low productivity, irregular incomes, and a lack of social protection for workers. While this sector can absorb large numbers of workers—particularly during economic crises its contribution to improving job quality and worker welfare remains limited. Therefore, a structural transformation that supports a shift from the informal to the formal sector is essential in efforts to create quality employment in the province.

Investment, in theory, has significant potential to generate new job opportunities, especially if it is directed toward labor-intensive sectors. However, the effectiveness of investment in absorbing labor largely depends on other supporting factors, such as the number and type of incoming industries, minimum wage levels, regional employment policies, and infrastructure readiness. If investment is only focused on economic growth or capital efficiency, job creation can become a neglected goal. Therefore, it is crucial to design investment policies that not only stimulate GRDP growth but also prioritize employment absorption as a key measure of success.

The East Java provincial government needs to adopt a holistic and integrated approach in formulating economic development and investment policies. These policies must include efforts to improve human resource quality, increase access to and the quality of vocational education, strengthen industry-based job training, and develop an investment roadmap focused on labor-intensive sectors that align with the region's characteristics. Strengthening collaboration between the government, private sector, and educational institutions is also necessary to build a labor ecosystem that is adaptive to technological change and market demand.

In this way, economic development in East Java can be directed not only to promote growth but also to encourage the creation of decent, inclusive, and sustainable employment. This approach aligns with the goals of the Sustainable Development Goals (SDGs), particularly Goal 8, which emphasizes the importance of inclusive economic growth and decent work for all.

LITERATURE REVIEW

Theory Klasik

Classical Theory argues that employment opportunities can only be achieved if the level of production and prices are balanced at full employment. Meanwhile, equilibrium at the full employment level can only be achieved if the market operates freely without government intervention. Therefore, the existence of a freely operating market mechanism is very important to achieve equilibrium with a full employment level. According to Classical adherents, equilibrium at the full employment level is considered an ideal state in an economy. If unemployment occurs in an economy, it can be said that it is considered a temporary phenomenon that will disappear over time through the free market mechanism. From a Classical perspective, the economy will not

experience a total shortage of demand, which means that all goods produced will definitely sell, while the level of national production and economic activity depend on the available production factors. Therefore, the amount of production is used as a reference to determine employment opportunities. (Simajuntak, 2001)

Theory Keynes

Keynes' theory argues that economic activity is influenced by the demand side, which is related to total spending or expenditure in an economy in a certain period. Based on Keynes' Theory, the problem of unemployment arises because of low aggregate demand. This is contrary to what is conveyed by classical theory. Therefore, the delay in economic growth is caused by low levels of consumption, not by low production. Keynes recommends that the government intervene to maintain the level of aggregate demand, aiming to create more jobs and ensure that people's incomes are maintained so that their purchasing power can be maintained. (Simajuntak, 2001) H2: Hypothesis two and so on here

Theory Human Capital

This theory explains that investment in education and training contributes to improving individual abilities, which will then expand job opportunities. Based on Becker's (1993) view in his work, quality education and skills that are in accordance with the demands of the labor market can strengthen a person's competitive position in finding a job. Human Capital describes how individuals observe an object and try to understand something they have observed, where this understanding is truly based on the personal behavior of the individual who makes the observation, such as attitudes, interests, hopes, goals, motivations, and experiences. This Human Capital Theory includes the process of interaction and learning experienced by a person from birth to the end of his life in the context of the culture of society. This means that human capital reflects the mastery of skills and capabilities that individuals have had since birth, and this factor is very significant in the world of work. If a person already has skills from birth, then this can make a major contribution to the progress and development of the company where they have a career. (Becker, 1993)

METHODOLOGY

This study uses a quantitative methodology that uses a descriptive approach. The selection of quantitative methods was carried out because the data in the study were in the form of numbers and were analyzed using statistical techniques. The objectives to be achieved are to understand and analyze the influence of labor, employment and investment on employment opportunities in East Java Province. (Sugiyono, 2017). This study uses secondary data that can be managed from 2008 to 2023. The study utilized secondary data taken from the East Java Central Statistics Agency (BPS). In addition, using data collection techniques such as reading journals, literature books, and previous research to collect information about the literature review. The website is also a supporting tool for finding information on the study conducted.

In this study, the multiple linear regression analysis method was used because there are several independent variables. This method is used to observe how the independent variable influences the dependent variable, using data processing using the SPSS application. Before carrying out multiple linear regression analysis, it is important to carry out the classical assumption test to ensure the quality of the findings obtained. In order for the regression results to be optimal, the normality assumption must be met by the model and does not experience multicollinearity, heteroscedasticity, and autocorrelation problems. If all of these assumptions are met, then the model is believed

RESEARCH RESULT

Normality Test

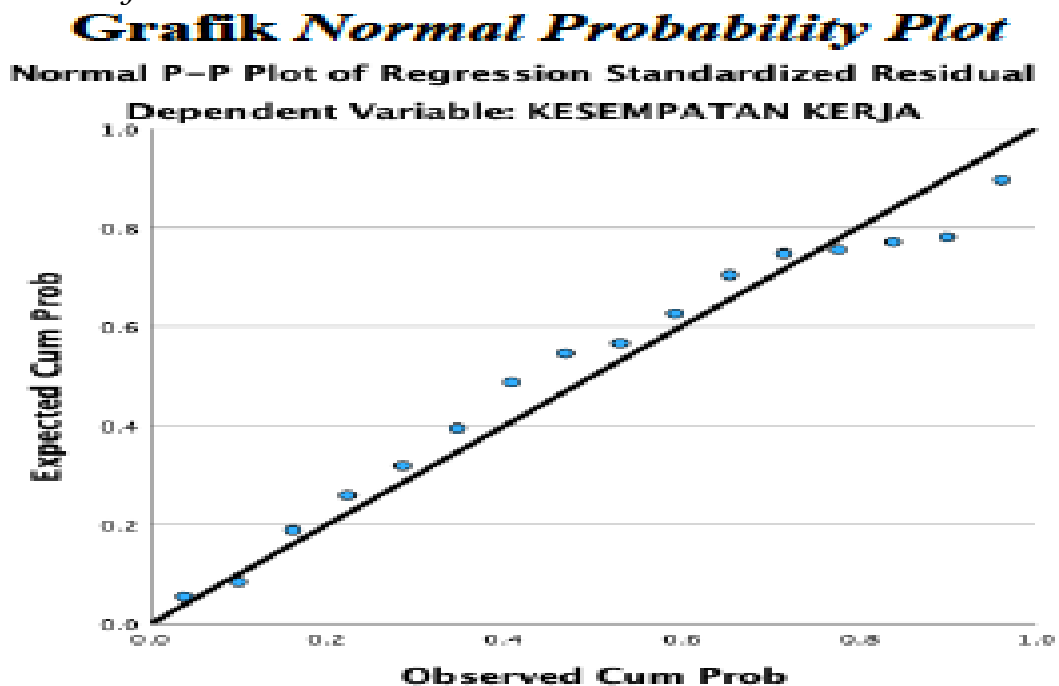


Figure 1. Observed Cum Prob

It can be seen that the normal probability plot graph shows a normal graph pattern. This can be seen from the data distribution points that are spread around the diagonal line and the distribution follows the direction of the diagonal line. Therefore, it can be concluded that the regression model is feasible to use because it has met the assumption of normality.

Multicollinearity Test

Table 1. Multicollinearity Test

Variabel	Tolerance	VIF
Labor (X1)	0,284	3,515
Jobs (X2)	0,806	1,241
Investment (X3)	0,316	3,165

These are the results of multicollinearity testing in multiple linear regression analysis showing that the three independent variables (Labor Force, Employment and Investment) have a Tolerance value greater than 0.10 and a VIF value <10. So, it can be concluded that the regression model does not show symptoms of multicollinearity.

Heteroscedasticity Test

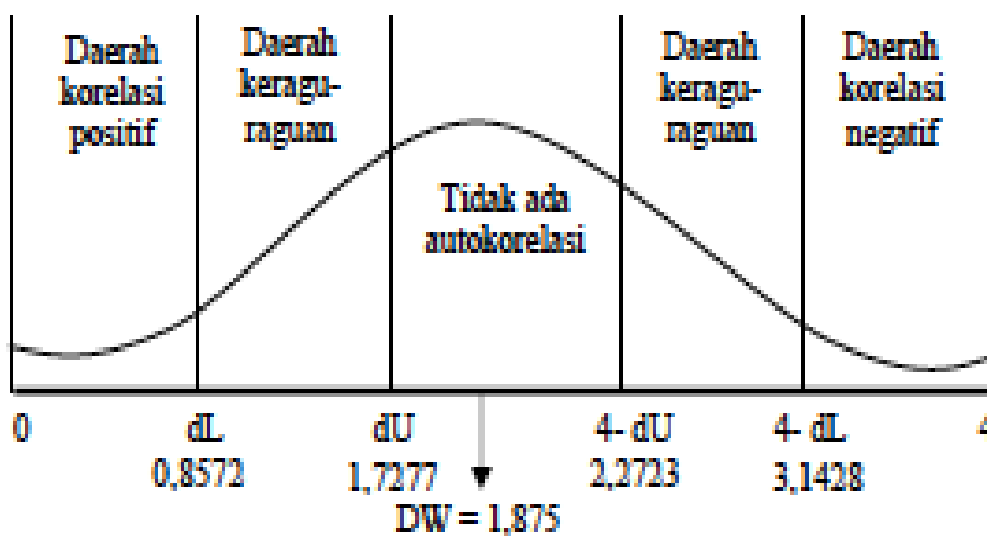
Table 2. Heteroscedasticity Test

Variabel	Nilai Sig. (2-tailed)
Laor (X1)	0,672
Jobs (X2)	0,897
Investment (X3)	0,617

The results of the heteroscedasticity test show that the Spearman Rank correlation coefficient and the Sig. (2-tailed) value of the three variables, namely Labor, Employment and Investment, are greater than 0.05. This indicates that the regression model used does not experience heteroscedasticity.

Autocorrelation Test

Table 3. Autocorrelation Test



Durbin-Watson results are in the region indicating "No Autocorrelation". These results indicate that the regression model used does not experience autocorrelation problems. This means that there is no correlation between errors at different time periods in the regression model so that the results of the analysis can be interpreted correctly.

Coefficient of Determination Test (R^2)

It can be concluded that the coefficient of determination reaches 0.780 or equivalent to 78%. This identifies that the variables of Labor (X1), Employment

(X2), and Investment (X3) are able to explain most of the variation in Employment Opportunities (Y) reaching 78%. The rest, $100\% - 78\% = 22\%$. Possibly influenced by other variables not included in the model used.

Test F

From these results, it can be concluded that the calculated F value of 14.195 is greater than the F table of 3.49; so that H₀ is rejected and H₁ is accepted. Therefore, it can be concluded that simultaneously, the variables of Labor (X1), Employment (X2), and Investment (X3) have a significant influence on Employment Opportunities in East Java Province.

Test t

From the data obtained, the Labor Variable has a t-value of 4.366; while the t-table value is 2.178. This shows that the t-value of $4.366 > t\text{-table of } 2.178$. The resulting level of significance is $0.001 < 0.05$. While the Employment Field Variable has a t-value of 1.902, while the t-table value is 2.178. This shows that the t-value of $1.902 < t\text{-table of } 2.178$. The resulting level of significance is $0.081 > 0.05$. Then From the data obtained, the Investment Variable has a t-value of -2.297 while the t-table value is 2.178. This shows that the t-value of $-2.297 > t\text{-table of } 2.178$. The resulting level of significance is $0.040 < 0.05$.

DISCUSSION

Based on the results of the data analysis conducted, it can be concluded that the variables of Labor (X1), Employment Field (X2), and Investment (X3) collectively (simultaneously) exert a significant influence on the Employment Opportunity variable in East Java Province during the period 2008–2023. This finding is supported by the results of the F-test, which indicate that the model as a whole is statistically significant. This implies that, when considered together, changes in the labor force, the availability of employment fields, and the level of investment have a joint impact on the dynamics of employment opportunities in the province.

However, further analysis using the partial t-test reveals that not all independent variables individually have a significant effect on the dependent variable. Specifically, only the Labor variable (X1) shows a statistically significant positive effect. This indicates that as the labor force increases, employment opportunities also tend to rise. This is a logical outcome, as a larger labor force can potentially stimulate economic sectors that require labor input, especially if aligned with appropriate policy support and sectoral growth.

On the other hand, the Investment variable (X3) shows a significant negative effect on employment opportunities in East Java. This counterintuitive result suggests that increased investment during the study period may not have directly contributed to job creation. One possible explanation is that the nature of the investment flowing into the province may have been capital-intensive rather than labor-intensive. In other words, investments may have been directed toward sectors that prioritize automation, machinery, or technology over human

labor, thus reducing the number of employment opportunities created per unit of investment.

Meanwhile, the Employment Field variable (X2) does not show a statistically significant influence on employment opportunities. This indicates that merely increasing the number or types of employment sectors does not automatically lead to increased employment opportunities. This may be due to several factors, such as the mismatch between the skills of the labor force and the demands of available sectors, or the possibility that new sectors are not yet developed enough to absorb labor in large numbers. Additionally, it is possible that the expansion of employment fields is more qualitative than quantitative – focusing on higher productivity rather than increased labor absorption.

In summary, while the labor force size plays a key role in expanding employment opportunities, investment must be carefully directed toward labor-intensive sectors to yield the desired employment outcomes. Furthermore, diversification of employment fields alone is insufficient without alignment with labor readiness and sectoral maturity. Therefore, policymakers should not only encourage increased investment and sectoral growth but also ensure that such developments are inclusive and capable of generating sustainable employment opportunities.

CONCLUSIONS AND RECOMMENDATIONS

The workforce has been proven to have a positive and significant influence on employment opportunities in East Java during 2008–2023. This means that increasing the number of workers accompanied by increasing quality and productivity can encourage the creation of new jobs. The workforce plays an active role in the development of productive labor-intensive sectors. Therefore, improving the quality of the workforce through vocational training, skills education, and programs that are in accordance with industry needs is important. The government also needs to establish close cooperation with the business world and expand access to employment information so that the matching of the workforce and the job market is more effective.

The results of the study show that employment has no significant effect on employment opportunities in East Java Province for the period 2008–2023. This indicates that increasing the number of jobs has not directly increased employment opportunities. The mismatch between the types of jobs available and the skills of the workforce, as well as the dominance of the unstable informal sector, are the contributing factors. Therefore, job creation needs to be directed at improving quality and relevance to market needs. Local governments need to focus on developing jobs that are in accordance with regional potential and local workforce qualifications, as well as encouraging the transformation of the informal sector into the formal sector to ensure long-term job stability.

Investment in East Java in the period 2008–2023 showed a negative impact on employment opportunities. Increased investment, especially in capital-intensive and high-tech sectors, does not always increase labor absorption. In many cases, automation replaces the role of humans, reducing the need for workers. This shows that investment that is not directed to labor-intensive sectors

or MSMEs can worsen inequality in employment opportunities. Therefore, the government needs to encourage investment in sectors with high absorption capacity such as the creative industry, agribusiness, tourism, and MSMEs. In addition, incentives and regulations are needed that require the absorption of local labor in investment projects, as well as efforts to balance the use of technology with job creation to support inclusive economic growth.

ADVANCED RESEARCH

Further researchers are advised to expand the scope of the study by adding variables such as education level, unemployment, labor productivity, and the role of the informal sector to enrich the analysis. The use of more complex methods, such as panel data analysis between districts/cities or a long-term time series approach, can also produce a deeper understanding. In addition, the division of the work sector into formal and informal and the analysis of investment types by sector will help identify factors that specifically affect employment opportunities in East Java.

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REFERENCES

- Fachrizal, F., Zamzami, Z., & Safri, M. (2021). Analisis pengaruh jumlah tenaga kerja, tingkat pendidikan dan investasi terhadap pertumbuhan ekonomi melalui kesempatan kerja di Provinsi Jambi. *Paradigma*, 16(1 (202), 167-190.
- Inradewa, I. G. A., & Natha, K. S. (2015). Pengaruh inflasi, PDRB dan Upah Minimum terhadap penyerapan tenaga kerja di provinsi Bali. *E-Jurnal Ekonomi Pembangunan Universitas Udayana*, 4(8), 44563.
- Rizki, M., & Haryadi, H. (2021). Analisis investasi serta pengaruhnya terhadap kesempatan kerja dan pertumbuhan ekonomi di Indonesia. *E-Journal Perdagangan Industri dan Moneter*, 9(3), 193-200.
- Sun'an, M., & Astuti, E. (2018). Analisis Investasi, Pengeluaran Pemerintah dan Pertumbuhan Ekonomi Terhadap Kesempatan Kerja di Propinsi Nusa Tenggara Barat. *IQTISHODUNA*, 3(1).
- Wahyuni, D. P. E., Arisetyawan, K., Rachmawati, L., & Fisabilillah, L. W. P. (2024). Pengaruh Investasi Terhadap Penyerapan Tenaga Kerja pada Sektor Industri Besar di Kabupaten Sidoarjo. *Jurnal Simki Economic*, 7(1), 63-71. <https://jipred.org/index.php/JSE/article/download/521/292>
- Wijayanti, D., & Mufarrah, R. (2024). Analisis Dampak PDRB, Investasi, Rata-rata lama Sekolah dan Upah Minimum terhadap Kesempatan Kerja: Sebuah Studi Empiris Di Jawa Tengah tahun 2018-2022. *Jurnal Aplikasi Bisnis*, 553-560.
- Zasriati, M., Putri, O. H., & Harahap, E. F. (2024). Analisis Pengaruh Pertumbuhan Ekonomi Dan Indeks Pembangunan Manusia (IPM) Terhadap Kesempatan Kerja Di Provinsi Jambi. *JEMSI (Jurnal Ekonomi, Manajemen, dan Akuntansi)*, 10(1), 229-233. <https://doi.org/10.35870/jemsi.v10i1.1868>