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ANALYSIS OF FACTORS AFFECTING LABOR ABSORPTION IN THE TAPAL KUDA REGION OF EAST JAVA

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Abstract

The research examines how labor absorption in East Java's Horseshoe region is influenced by several key factors: population, average years of schooling, TPAK, minimum wage, and GRDP per capita. Using panel data regression analysis through the Fixed Effect Model (FEM), determined by Chow and Hausman testing, the investigation adopts a quantitative methodology. The analysis draws on secondary data spanning 2014-2023, sourced from the Central Bureau of Statistics of the corresponding region. The results show that the variables of Total Population and TPAK have a positive and significant effect on employment. Meanwhile, the variables of Average Years of Schooling, Minimum Wage, and GRDP Per Capita have no significant effect, and even tend to be negative. This finding indicates that an increase in the active working-age population contributes to labor absorption, while formal education and wage policies have not been able to optimally encourage labor absorption in the region's dominant informal sector. This study provides policy implications for local governments in encouraging inclusive and quality-based employment growth.

Keywords: *Labor Absorption, Population, Average Years of Schooling, TPAK, Minimum Wage, GRDP Per Capita.*

INTRODUCTION

As the nation with the fourth-largest population globally, Indonesia continues to face significant employment challenges. These workforce-related difficulties stem from the yearly growth in population that outpaces the creation of available employment opportunities for job seekers. Of course, the cause of the employment problem in Indonesia is due to the uneven economic development in each region, whether it be development at the provincial, district/city, or remote small area levels. A development activity that is about to be or is currently being implemented must be enjoyed by all layers of society, whether upper, middle, or lower class, as an effort to prosper the community.

Economic development is usually measured through the number of production processes and labor absorption in a country, focusing on the implementation of rapid industrialization to create equitable economic and social growth. This aligns with the broad definition of development as a multidimensional process aimed at bringing about better changes, including accelerated economic growth, social structure, unemployment, inequality, and poverty alleviation[1]. In this case, it can be said that the expansion of the labor force needs to be balanced with the Labor Force Participation Rate that has entered the labor market in relation to labor absorption, because if labor absorption is high, the income generated will also be high.

In East Java Province there are 38 regencies / cities consisting of 29 regencies and 9 districts / cities which certainly have the uniqueness and diversity of each region. Located in the easternmost section of East Java Province lies a distinctive region renowned for its diverse cultural heritage, historical significance, and natural resources, along with its appealing tourist destinations. Known as the Horseshoe area due to its arc-like geographical formation, this region encompasses nine territories: Pasuruan Regency, Pasuruan City, Probolinggo Regency, Probolinggo City, Lumajang Regency, Jember Regency, Situbondo Regency, Bondowoso Regency, and Banyuwangi Regency. Despite its rich potential and diversity, the Horseshoe region continues to lag behind other parts of East Java Province in terms of development. This developmental gap stems primarily from inadequate educational standards affecting human resource quality, coupled with a workforce largely concentrated in low-value occupations, resulting in limited labor absorption throughout the region.

The increase in population and workforce directly influences labor absorption within a region. According to data from the Central Statistics Agency of East Java Province, while labor absorption showed an overall upward trend from 2019-2023, several districts within the Horseshoe region experienced inconsistent employment patterns during this five-year period, highlighting ongoing challenges in the labor market.

[1] Todaro & Smith, *Economic Development* (Jakarta: Erlangga, 2015).

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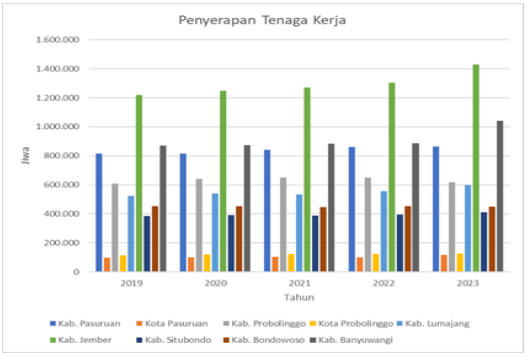
Figure 1.1

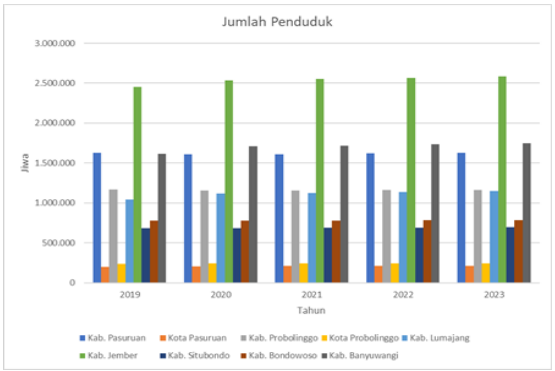


Source: *Central Statistics Agency 2025 (Processed Data)*

Data from the Central Bureau of Statistics shows that a number of regions in East Java experienced fluctuations in employment, such as Pasuruan City, which decreased by 4,457 people in 2022, Probolinggo Regency, which decreased by 1,529 people in 2022 and 32,333 people in 2023, and Lumajang, Situbondo, and Bondowoso Regencies, which also experienced significant decreases in 2020-2023. Although provincially there has been an increase in labor absorption, this is not evenly distributed, presumably due to the limited availability of jobs in some regions.

Related to this, there are also a few factors that can have a significant impact on the Labor absorption in the Tapal Kuda region of the Province of Jawa Timur so that there is no inequality with other regions of the Province of Jawa Timur, including the number of resident. An increase in the number of employees may be viewed as a factor impeding the development of a particular area since it may also increase the number of employees. The high unemployment rate is correlated with the high labor force and does not coincide with the availability of working land [2].

Figure 1.2



Source: *Central Statistics Agency 2025 (Processed Data)*

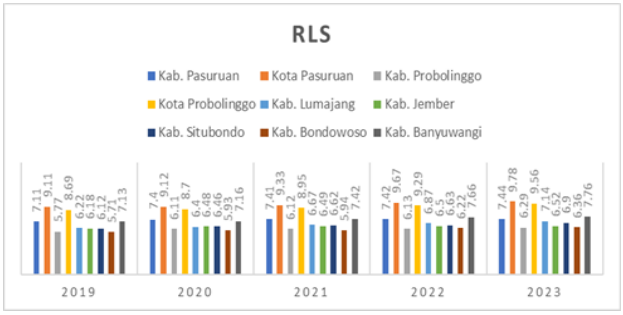
According to East Java's BPS statistics, while the province saw overall population growth from 2019 to 2023, certain areas within the Tapal Kuda region experienced

[2] Fadhila Aulia Yanda, Sri Endang Saleh, and Sri Indriyani. S Dai, 'Pengaruh Pertumbuhan Ekonomi Dan Upah Minimum Terhadap Penyerapan Tenaga Kerja Di Sulawesi', *POINT: Jurnal Ekonomi Dan Manajemen*, 4.2 (2022), 101–11 <https://doi.org/10.46918/point.v4i2.1635>.

demographic declines. Notably, Pasuruan and Probolinggo regencies recorded decreases of 21,427 and 15,966 residents respectively in 2020. While this situation highlights human resource management issues, it also presents potential economic advantages if the working-age population is effectively utilized during the demographic bonus period. Success in this area depends on creating sufficient employment opportunities to address unemployment concerns as the population continues to expand.

Thus, one of the key factors influencing labor absorption is education. A high degree of education is seen to raise people's living standards and help them become better people, making it a long-term investment in human resources[3]. According to Hepi & Zakiah (2018), the Human Capital hypothesis states that educational attainment can enhance the caliber of human resources since high-caliber human resources are thought to have a multiplier effect on a region's economic growth[4].

Figure 1.3



Source: *Central Statistics Agency 2025 (Processed Data)*

The average duration of education in the Tapal Kuda region has steadily increased between 2019 and 2023, according to data from BPS Jawa Timur. While other regencies/cities like Probolinggo (5.77 to 6.29 years), Situbondo (6.12 to 6.9 years), Jember (6.18 to 6.52 years), Lumajang (6.22 to 7.14 years), Pasuruan (7.11 to 7.44 years), and Banyuwangi (7.13 to 7.76 years) also saw improvements, Bondowoso Regency recorded the lowest figure in 2019 at 5.71 years, which rose to 6.36 years in 2023. Due to greater access to and involvement in education, Probolinggo City (8.69 to 9.56 years) and Pasuruan City (9.11 to 9.78 years) have the longest average length of schooling.

Another indicator for evaluating regional workforce dynamics is the Labor Force Participation Rate. According to the Central Bureau of Statistics (2023), this measure represents the percentage of individuals aged 15 and above who are either employed or seeking employment within the labor market.

[3] N. Gregory Mankiw, *Pengantar Ekonomi Makro*, 7th edn (Jakarta: Salemba Empat, 2019).

[4] HEPI HEPI and WIWIN ZAKIAH, 'Influence of Life Expectancy Rate And Old School Rate To GRDP Percapita and Economic Growth In Central Kalimantan Province 2011-2015', *Journal Magister Ilmu Ekonomi Universtas Palangka Raya : GROWTH*, 4.1 (2018), 56–68 <https://doi.org/10.52300/grow.v4i1.2277>.

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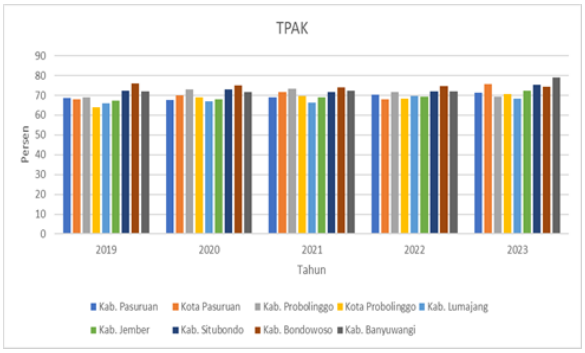
Figure 1.4

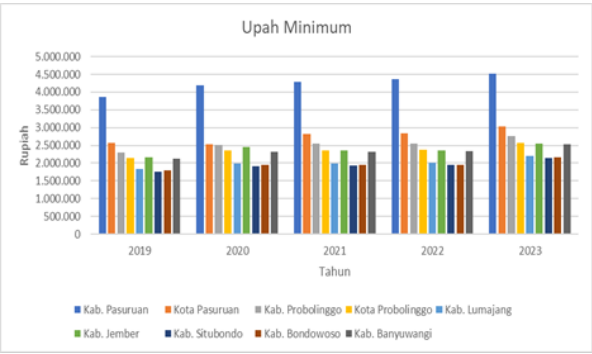


Source: *Central Statistics Agency 2025 (Processed Data)*

Between 2019 and 2023, the East Java Province's Tapal Kuda region's worker participation rate fluctuated, declining by 0.33 percent in 2021. Additionally, over the last five years, worker participation rates have continued to fluctuate in a number of locations. In a number of districts, the Army involvement rate has declined. In 2021 and 2023, Lumajang Regency saw declines of 0.73% and 1.26%, respectively. In 2021, Situbondo Regency saw a 1.54% decline. In 2021, 2022, and 2023, Bondowoso Regency saw declines of 0.92%, 1.26%, and 0.22%, respectively. In 2020 and 2022, Banyuwangi Regency saw declines of 0.33% and 0.32%, respectively.

Additionally, it is thought that the Minimum Wage plays a crucial role in labor absorption and has a considerable influence. Keynesian theory states that if supply cannot keep up with demand, the company's output will likewise decline, and it will also reduce its workforce[5].This implies that if wages are too high, a business may be reluctant to hire a large number of people because of the poor demand. Given the limited workforce absorption, this may undoubtedly result in a rise in the unemployment rate.

Figure 1.5



Source: *Central Statistics Agency 2025 (Processed Data)*

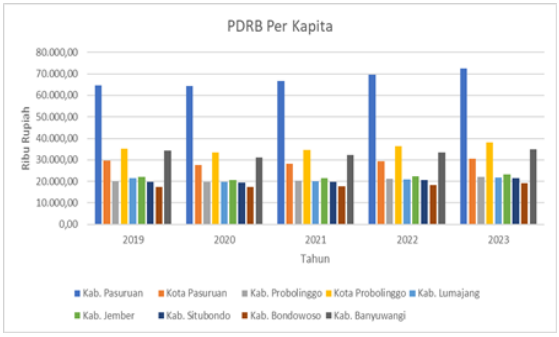
Data from the Central Statistics Agency of Malang City shows shifts in the minimum wage across East Java's Tapal Kuda region between 2019 and 2023. In

[5] Deliarnov, *Perkembangan Pemikiran Ekonomi*, Edisi Keti (Depok: Rajawali Pers, 2018).

Pasuruan Regency, figures moved from 3,861,518.00 to 4,515,133.19, while also showing changes from 2,575,616.61 to 3,038,837.64. For Probolinggo Regency, the numbers shifted from 2,306,944.93 to 2,753,265.95, alongside movement from 2,137,864.48 to 2,576,240.63. Lumajang Regency saw changes from 1,826,831.72 to 2,200,607.20, while Jember Regency moved from 2,170,917.80 to 2,555,662.91. In Situbondo Regency, figures adjusted from 1,763,267.65 to 2,137.0. These minimum wage adjustments by the government align with Keynesian theory, which suggests that declining productivity leads to higher unemployment rates[6].

Studies show that GRDP per capita, which reflects individual annual earnings and societal wellbeing, has a significant impact on labor absorption. Interestingly, when economic demand for goods and services increases, the workforce tends to experience reduced labor absorption[7]. Research conducted by Putri et al. (2022) shows that increased GDP typically leads to higher employment levels, as GDP serves as a key indicator of economic expansion. The GDP value also reflects regional development progress. This suggests that human economic activities drive production expansion, with rising GDP indicating regional economic achievement[8].

Figure 1.6



Source: *Central Statistics Agency 2025 (Processed Data)*

Data from East Java's Central Statistics Agency reveals fluctuations in the province's GRDP per capita from 2019 to 2023. A notable decline of 1,826,000 thousand rupiah occurred in 2020, followed by a recovery in the subsequent year. The Tapal Kuda region experienced similar economic variations during this five-year period, as evidenced by Pasuruan Regency, which recorded a decrease of 362.20 thousand rupiah in 2020 before showing improvement in the following year. The city of Pasuruan saw a 2,244,800 thousand rupiah decline in 2020, although it rose once more the following year. Probolinggo Regency saw a 128.70 thousand rupiah decline in 2020,

[6] Deliarnov.

[7] Esthi Bhakti Warapsari, Wahyu Hidayat, and Arfida Boedirochminarni, 'ANALISIS PENGARUH INFLASI, PDRB, DAN UPAH MINIMUM TERHADAP PENYERAPAN TENAGA KERJA DI JAWA TIMUR', *Jurnal Ilmu Ekonomi JIE*, 4.2 (2020), 194–207 <https://doi.org/10.22219/jie.v4i2.11445>.

[8] Eka Putri, Eni Setyowati, and Imron Rosyadi, 'Pengaruh Produk Domestik Bruto (PDRB), Upah Minimum Kota/ Kabupaten (UMK), Dan Indeks Perkembangan Manusia (IPM) Terhadap Penyerapan Tenaga Kerja Di Provinsi Jawa Tengah Tahun 2016-2019', *Ekonomis: Journal of Economics and Business*, 6.2 (2022), 651 <https://doi.org/10.33087/ekonomis.v6i2.594>.

but a gain the following year. The next year witnessed an increase, although Probolinggo City also saw a drop of 1,529.10 thousand rupiah. Lumajang Regency saw a 2,006.10 thousand rupiah decline in 2020, but a gain the following year. Jember Regency saw a 1,343.70 thousand rupiah decline in 2020 before seeing a gain. Situbondo Regency saw a 521.80 thousand rupiah decline in 2020, but the next year saw a gain. Bondowoso Regency saw a 227.60 thousand rupiah decline in 2020, but it began to rise the following year. Banyuwangi Regency saw a 2,985.00 thousand rupiah decline in 2020, although the value of the currency rose the following year. East Java Province and the Tapal Kuda region saw a loss in per capita GDP in 2020 amid the COVID-19 pandemic. This decline was accompanied by a rise in poverty, a fall in household spending, and a decline in economic activity. In the upcoming years, this state will undoubtedly present major challenges to economic recovery.

RESEARCH METHODS

This study employs quantitative methods utilizing panel data gathered from secondary sources, specifically from official statistical databases of East Java's Tapal Kuda region municipalities and the provincial statistics office. Additional supporting materials include relevant academic literature, such as scholarly journals, books, and research reports, which strengthen the theoretical framework. The study implements multiple linear regression analysis using E-Views 10 software. The research examines five independent variables' effects on labor absorption (Y): population (X1), average years of schooling (X2), TPAK (X3), minimum wage (X4), and GRDP per capita (X5).

RESULT AND DISCUSSION

1. Selection of Panel Data Regression Estimation Model

a. Chow Test

The Chow test serves as a statistical method for determining whether to use the Common Effect Model (CEM) or Fixed Effect Model (FEM) in data analysis. Below are the findings from our data processing:

Table 1. Chow Test Results

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.057979	(8,76)	0.0049
Cross-section Chi-square	25.115802	8	0.0015

Source: Data Processed Eviews 10, 2025

The Chow Test findings presented in table 1 indicate a probability value of 0.0015, which falls below 0.05, suggesting the Fixed Effect Model (FEM) as the appropriate choice. However, selecting FEM based solely on the Chow Test is insufficient, and additional model testing must be conducted to determine the most suitable approach.

b. Hausman Test

The Hausman test serves as a statistical method to evaluate whether the Fixed Effect Model (FEM) or Random Effect Model (REM) is more appropriate for the analysis. Below are the findings from the data analysis:

Table 2. Hausman Test Results

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	13.703853	5	0.0176

Source: Data Processed Eviews 10, 2025

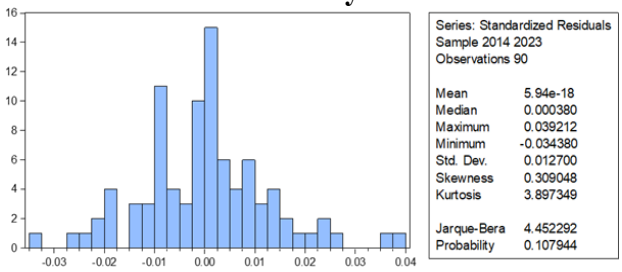
The statistical analysis revealed a Prob value of 0.0176, which falls below 0.05, indicating that the Fixed Effect Model (FEM) is the appropriate choice based on the Hausman Test. Since both the Chow Test and Hausman Test confirmed FEM as the most suitable model, conducting the Lagrange Multiplier (LM) Test became unnecessary, as this test only determines whether to use the Random Effect Model (REM) or Common Effect Model (CEM).

2. Classical Assumption Test (BLUE)

a. Normality Test

The purpose of the Normality Test is to determine whether both independent and dependent variables follow a normal distribution pattern. This test employs the Jarque-Bera (JB) method, where a JB probability value exceeding 0.05 indicates normal data distribution, while a value equal to or less than 0.05 suggests non-normal distribution.

Table 3. Normality Test Result



Source: Data Processed Eviews 10, 2025

The normality test results presented in Table 3 indicate normal data distribution, as evidenced by the probability value of 0.107944, which exceeds the 0.05 threshold.

b. Multicollinearity Test

The multicollinearity test examines whether correlations exist between independent variables within the regression model.

Table 4. Multicollinearity Test Result

Variance Inflation Factors
Date: 04/13/25 Time: 05:11
Sample: 1 90
Included observations: 90

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	4.27E+09	599.9319	NA
JP	2.50E-05	5.899624	1.683408
RLS	8929822.	62.63548	1.896863
TPAK	73.65478	502.6809	1.158188
UM	4.73E-05	32.96258	3.552945
PDRBPERKAPITA	0.135788	18.14110	3.530112

Source: Data Processed Eviews 10, 2025

The multicollinearity test results in Table 4 reveal VIF scores for each independent variable: population (1.683408), average years of schooling (1.896863), TPAK (1.158188), minimum wage (3.552945), and GRDP per capita (3.530112). These values indicate no multicollinearity exists between the independent variables.

c. Heteroscedasticity Test

To assess the uniformity of residual variances across observations in the regression model, we conducted a heteroscedasticity test. We implemented the Breusch-Pagan-Godfrey (BPG) statistical method, where a probability value exceeding α 0.05 indicates the absence of heteroscedasticity issues in the model.

Table 5. Heteroscedasticity Test Result

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.181230	Prob. F(5,84)	0.3253
Obs*R-squared	5.912313	Prob. Chi-Square(5)	0.3148
Scaled explained SS	3.189539	Prob. Chi-Square(5)	0.6708

Source: Data Processed Eviews 10, 2025

The transformed data shown in Table 5 reveals a Prob. Chi-Square value of 0.3148, which exceeds the α value of 0.05. This statistical evidence confirms that the study does not suffer from heteroscedasticity issues.

d. Autocorrelation Test

The Durbin Watson test method was employed to check for autocorrelation in the linear regression model. This test examines whether error terms are correlated between consecutive time periods (t and t-1). The absence of autocorrelation is confirmed when the DW value falls between DU and (4-DU).

Table 6. Autocorrelation Test Result

R-squared	0.136930	Mean dependent var	2.52E-10
Adjusted R-squared	0.063253	S.D. dependent var	24575.56
S.E. of regression	23785.62	Akaike info criterion	23.07624
Sum squared resid	4.64E+10	Schwarz criterion	23.29844
Log likelihood	-1030.431	Hannan-Quinn criter.	23.16584
F-statistic	1.858524	Durbin-Watson stat	1.924965
Prob(F-statistic)	0.087113		

Source: Data Processed Eviews 10, 2025

The Autocorrelation Test findings in table 6 revealed the following values: N = 90, K = 5, Durbin-Watson statistic of 1.924965, DL = 1.5420, DU =

1.7758, 4-DL = 2.458, and 4-DU = 2.2242. Since the DW value falls between DU and (4-Du), where 0 < D < DL, we can conclude that this study does not exhibit autocorrelation issues.

3. Multiple Linear Regression Analysis

According to Ghozali & Ratmono (2017), multiple linear regression serves as a method to examine how multiple independent variables influence a dependent variable[9]. This study analyzes how labor absorption is affected by several factors: population, average years of schooling, TPAK, minimum wage, and GRDP per capita. The findings from the regression analysis are presented below:

Table 7. Multiple Linear Regression Test Result

Dependent Variable: PTK
Method: Panel Least Squares
Date: 03/13/25 Time: 10:14
Sample: 2014 2023
Periods included: 10
Cross-sections included: 9
Total panel (balanced) observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-941899.3	134914.4	-6.981458	0.0000
JP	0.685240	0.094221	7.272656	0.0000
RLS	-20367.33	15112.17	-1.347743	0.1817
TPAK	11311.87	1328.838	8.512602	0.0000
UM	-0.034745	0.015764	-2.204046	0.0305
PDRBPERKAPITA	6.706469	1.961815	3.418503	0.0010

R-squared	0.996286	Mean dependent var	566412.5
Adjusted R-squared	0.995650	S.D. dependent var	350717.2
S.E. of regression	23130.95	Akaike info criterion	23.07777
Sum squared resid	4.07E+10	Schwarz criterion	23.46663
Log likelihood	-1024.499	Hannan-Quinn criter.	23.23458
F-statistic	1568.041	Durbin-Watson stat	1.279693
Prob(F-statistic)	0.000000		

Source: Data Processed Eviews 10, 2025

The Multiple Linear Regression Analysis shown in table 7 yields the following equation:

$$PTKit = -941899.3 + 0.685240JPit - 20367.33RLSit + 11311.87TPAKit - 0.034745UMit + 6.706469PDRB\ PKit + \boldsymbol{e}$$

The interpretation of these findings reveals:

1. When all variables remain unchanged, the constant value of -941899.3 suggests labor absorption will decline by that same amount.
2. Population has a positive and statistically significant effect on labor absorption in the Tapal Kuda region of East Java. Specifically, the regression coefficient of 0.685240 implies that each additional person in the population contributes to an increase of approximately 0.685 in labor absorption, assuming other variables remain constant. This finding is supported by a t-statistic of 99.71812, which exceeds the t-table value of 1.988, and a p-value of 0.0000, which is below the 5% significance level, confirming its statistical significance. These results align with classical economic theories that associate population growth with increased labor supply and potential economic productivity..

   This research is in line with Smith's view, stating that population development can encourage economic development because market expansion

[9] Ghozali & Ratmono, *Analisis Multivariat Dan Ekonometrika*, 2nd edn (Semarang: Badan Penerbit Universitas Diponegoro, 2017).

can increase and accelerate economic activity. As a result, the level of labor productivity is higher and technological development is increasingly encouraged[10]. Kinanti Laras Arum and M.B. Nani Ariani (2022) also emphasized that population dynamics play a significant role in determining the level of labor absorption. An increase in population tends to increase the demand for labor, while a decrease in population can reduce the demand for it[11]. This is in line with Keynes' view that the level of community consumption is one of the main determinants in creating demand for labor[12].

3. The average years of schooling demonstrates an inverse relationship, exhibits a negative and statistically insignificant relationship with labor absorption, as reflected by its coefficient of -20,367.33, a t-statistic of -0.537, and a p-value of 0.5926. This suggests that, in the current context of the Tapal Kuda region, formal education has not yet contributed effectively to increasing employment levels—possibly due to mismatches between education outcomes and local labor market demands.

   This research is in line with (Izzah et al., 2021) which reveals that the Average Years of Schooling has a negative and insignificant effect on Labor Absorption in the Greater Solo Region for the 2010-2019 period[13]. In this case, this study certainly contradicts Human Capital Theory, which states that an industry does not only include physical capital such as raw materials and equipment, but also human capital, which includes skills and education. In optimizing investment, of course, human resources are needed as the driving force of technology in it. Todaro & Smith (2020) also emphasize that in the current era of globalization, high levels of education can certainly give birth to workers who are adaptable and familiar with modern technological developments in the world of work[14]. This means that education not only provides more job opportunities, but also increases competitiveness in the modern labor market. The high level of education can certainly increase labor absorption.

   This study is also not in line with the results of the Hepi & Zakiah study (2018), which states that basically, education is the main goal in sustainable

[10] M. Hasan & M. Azis, *1| Pembangunan Ekonomi*, 2018 <http://eprints.unm.ac.id/10706/1/Buku pembangunan ekonomi contoh fix.pdf>.

[11] Kinanti Laras Arum & MB. Nani Ariani, 'Faktor Yang Memengaruhi Tenaga Kerja Di Jawa Barat', *Jurnal Indonesia Sosial Sains*, Vol. 3, No (2022) <https://doi.org/https://doi.org/10.59141/jiss.v3i02.532>.

[12] Deliarnov.

[13] Citra Islamiatus Izzah, 'Analisis Faktor Faktor Yang Mempengaruhi Penyerapan Tenaga Kerja Di Wilayah Solo Raya', *Equilibrium: Jurnal Penelitian Pendidikan Dan Ekonomi*, 18.02 (2021), 90–101 <https://doi.org/10.25134/equi.v18i2.4322>.

[14] Todaro & Smith, *ECONOMIC DEVELOPMENT THIRTEENTH EDITION*, 13th edn (United Kingdom, 2020).

development in a country, because to achieve sustainable growth with modern-based potential development, good quality education is needed[15].

4. TPAK shows a strong and significant positive impact on employment, with a coefficient of 11,311.87, a t-statistic of 12.53371, and a p-value of 0.0000. This indicates that increased participation in the labor force is closely associated with higher employment, emphasizing the importance of integrating the working-age population into productive economic activities.

   This research is in line with the explanation from the Central Bureau of Statistics, which states that if the TPAK increases, the absorption of labor will certainly increase, because more and more people are entering the workforce. Basically, TPAK is influenced by several aspects, namely, family income level; education level; number of people still in school; age structure; wage level; number of people who take care of the household; and economic activity. The high TPAK is certainly said to be good, because the level of population participation to do work is certainly increasing, but it can also result in high levels of unemployment because TPAK goes hand in hand with the decline in population participation to work[16].

5. The minimum wage demonstrates a negative and statistically insignificant effect on labor absorption, with a coefficient of -0.034745, a t-statistic of -0.871391, and a p-value of 0.3860. This may suggest that wage increases have not been matched by proportional gains in productivity or job creation, particularly in sectors dominated by informal or low-skilled labor.

   This study is in line with Keynes' theory, which is believed by the classics to say, when resources are in an equilibrium position, they will certainly absorb full labor[17]. The results of this study are certainly in line with the statement (Wajdi, 2020) stating that the minimum wage is a minimum monthly income from business owners to workers for completing their work and is given in the form of money determined in accordance with the employment agreement for the workers themselves or their families[18].

   In line with research (Warapsari et al., 2020) said that the existence of a policy in determining wages certainly has a goal for the welfare of all employees / laborers to meet their needs[19]. That way, the labor market will create competitive competitiveness to get decent workers with decent salaries too. An

[15] Hepi and Wiwin Zakiah, 'Pengaruh Angka Harapan Hidup Dan Rata-Rata Lama Sekolah Terhadap PDRB Perkapita Serta Pertumbuhan Ekonomi Di Provinsi Kalimantan Tengah 2011-2015', *Palangka Raya*, 4.1 (2018), 56–68.

[16] S. Mulyadi, *Ekonomi Sumber Daya Manusia Dalam Perspektif Pembangunan* (Jakarta: Raja Grafindo Persada, 2014).

[17] Deliarnov.

[18] Zulfikar Putra; Darmawan Wiridin; Farid Wajdi, *IMPLEMENTASI UPAH MINIMUM TERHADAP KESEJAHTERAAN PEKERJA* (Malang, 2020).

[19] Warapsari, Hidayat, and Boedirochminarni.

increase in wages directly has the potential to reduce the level of labor absorption. In addition, if wages increase while other input costs remain stable, then labor costs will be relatively higher than other inputs.

6. GRDP per capita exhibits a positive yet statistically insignificant relationship with labor absorption. The coefficient of 6.706469, coupled with a t-statistic of 1.034529 and a p-value of 0.3039, implies that while economic growth per capita tends to be associated with higher employment, the effect is not strong enough to be deemed statistically significant in this model.

Basically, GRDP per capita is often used to see a prosperous society in an area, this is the greater the acquisition of GRDP per capita, the more there is an increase in prosperity that can be enjoyed by the population[20]. The results of research in the East Java Horseshoe region are not in line with the study conducted by Putri et al (2022) which reveals that GRDP is a measure of development in the economic sector, and can also affect the number of labor forces with the assumption that if the acquisition of GRDP increases, the total output will also increase, and the GRDP value indicates the progress of development in a region[21]. In this case it can be said that, increasing the amount of production certainly requires humans as drivers, and the economic development of a region is said to be advanced if the GRDP value has increased.

4. Hypothesis Testing

a. Determination Coefficient Test (R^2)

This statistical test evaluates the extent to which independent variables explain variations in the dependent variable within the model.

Table 8. Determination Coefficient Test Result

R-squared	0.996286
Adjusted R-squared	0.995650

Source: Data Processed Eviews 10, 2025

The R-Squared value of 0.996286 shown in Table 4.15 approaches 1, indicating the regression model's strong explanatory power. Specifically, 99% of the variance in labor absorption can be explained by the combined effects of population, average years of schooling, TPAK, minimum wage, and GRDP per capita. Only 1% of the variation stems from factors not included in this research model.

b. Simultaneous Test (Uji-F)

The F-test evaluates the collective impact of all independent variables on the dependent variable. Using a significance threshold of $\alpha = 5\%$ (0.05), the decision criteria are straightforward: when the calculated F value exceeds the F table value, H0 is rejected while H1 is accepted, indicating that all independent variables jointly have a significant effect on the dependent variable. Conversely,

[20] Todaro & Smith, *ECONOMIC DEVELOPMENT THIRTEENTH EDITION*.

[21] Putri, Setyowati, and Rosyadi.

if the calculated F value is less than the F table value, H0 is accepted and H1 is rejected, showing that the independent variables collectively have no significant impact on the dependent variable.

Table 9. Simultaneous Test Result

F-statistic	1568.041
Prob(F-statistic)	0.000000

Source: Data Processed Eviews 10, 2025

The F-test findings presented in Table 9 reveal an F-count of 1568.041 with 0.000000 significance. The F-table value of 2.47 was determined using df1 (k-1) = 4 and df2 (n-k) = 85, where k represents variables and n represents observations at $\alpha = 0.05$. Since the F-count (1568.041) exceeds the F-table value (2.47), we reject H0 and accept H1. This indicates that population, average years of schooling, TPAK, minimum wage, and GRDP per capita collectively demonstrate a significant effect on labor absorption across East Java's Horseshoe Region.

CONCLUSION

The panel data regression analysis examining labor absorption in East Java's Horseshoe Region revealed that two independent variables demonstrated significant positive effects. Specifically, Total Population (X1) and TPAK (X3) emerged as key factors driving employment levels in the region. These findings indicate that growth in both population size and workforce participation directly enhances labor absorption opportunities. When more working-age individuals actively seek employment and the population expands, the region experiences greater capacity to absorb available labor.

The analysis reveals that average years of schooling (RLS), minimum wage, and GRDP per capita had no significant effect on labor absorption. Notably, average years of schooling demonstrated a negative relationship, suggesting that formal education has been ineffective in boosting labor absorption - particularly since the primary industries in the Horseshoe region typically don't demand high educational qualifications. Similarly, the Minimum Wage and GRDP Per Capita, which have negative and insignificant effects, indicate that wage policies and economic growth have not directly contributed to the increase in absorbed labor, most likely because the informal sector still dominates and labor productivity has not been in line with wage increases.

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