MJIFM | MAJAPAHIT JOURNAL OF ISLAMIC FINANCE AND MANAGEMENT

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

THE INFLUENCE OF WOMEN'S EMPLOYMENT IN INDONESIA

Cindy Alfina Damayanti[1]
Universitas Muhammadiyah Surakarta, Indonesia
b300220181@student.ums.ac.id

Muhammad Anas[2]
Universitas Muhammadiyah Surakarta, Indonesia
ma912@ums.ac.id

Abstract

Gender equality is important in efforts to reduce poverty because it can increase women's access to education, employment, and economic opportunities. However, current conditions show that women's labor participation is still lower than that of men, reflecting gender inequality in the labor market. This study aims to estimate the direction and magnitude of the influence of the average wages of formal and informal sector workers, the open unemployment rate (TPT), the number of female workers, the average length of female schooling, and women's productivity on the percentage of poor people in each province in Indonesia in 2020–2024 by regressing the *data of the Random Effects Model* panel(REM). The regression results showed that the average wages of informal sector workers and the average length of female schooling had a negative effect on poverty rates, while the open unemployment rate (TPT), the number of female workers, and women's productivity had a positive effect on poverty. Then, the average wages of formal sector workers have no effect on the percentage of the poor. The government needs to pay attention to the quality of education and skills of the workforce in order to be able to compete in an increasingly competitive job market. In addition, the quality of work needs to be improved through the provision of decent, stable, and social security jobs so that their contribution to improving welfare can be more optimal.

Keywords: Percentage of Poor Population, Average Wages of Formal Sector Workers, Average Wages of Informal Sector Workers, Open Unemployment Rate, Number of Female Workers, Average Length of Schooling of Women, Productivity of Women, Random Effects Model

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

INTRODUCTION

Gender equality has an important role in poverty alleviation because equality between men and women can increase their contribution to economic and social growth. Rohmatilah (2023) explained that the increase in the gender development index (GDI) significantly reduces the poverty rate in Indonesia, especially through increasing women's participation in the formal sector. This is in line with the principle *Sustainable Development Goals* (SDGs), which place gender equality as one of the important prerequisites as an effort to alleviate poverty. In other words, gender equality not only promotes social justice, but is also an effective strategy to create inclusive and sustainable development.

Poverty alleviation in Indonesia is not only related to increasing income, but also includes economic growth, community empowerment, human resource enhancement, and expanding access to public services and employment opportunities. Ishartono and Raharjo (2016) emphasizing that poverty alleviation must be understood as a global and humanitarian problem, because poverty contains a dimension of human rights violations. In the framework Sustainable Development Goals (SDGs), poverty alleviation is set as the main goal (No Poverty), which shows that eradicating poverty is the foundation for achieving sustainable development in the fields of health, education, gender equality, and social welfare.

Table 1
Number of Women Workers (Million People), Ratio of Women Workers to Total Workers, and Women's Productivity (Million Rupiah Per Person) in Indonesia in 2020-2024

Year	Number of Employees Women	Worker Ratio Women	Productivity Women
2020	50,699158	39,46	209,87
2021	51,787209	39,51	215,94
2022	52,742753	38,98	224,94
2023	54,615804	39,04	231,19
2024	57,429729	39,69	233,48

Source: Central Statistics Agency (BPS) Description: *) Productivity is calculated by dividing GDP by the number of workers

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

Based on Table 1, it can be seen that the number of female workers in Indonesia continues to increase from 50.7 million people in 2020 to 57.4 million people in 2024, which indicates that more and more women are entering the labor market. However, judging from the ratio of female workers to total workers, it still tends to be stagnant at 39%. This shows that women's involvement in the world of work is not balanced with men. Putri et al. (2024) explained that the main challenges of women workers are low wages, domestic double burdens, and lack of job training, so the increase in the number of female workers does not necessarily guarantee an improvement in their welfare. The low ratio of female workers shows that there are structural barriers, as well as a patriarchal culture that places women in domestic roles as one of the limiting factors in developing their potential (Pramiswari et al., 2023).

The productivity of female workers has also increased, from 209.87 million rupiah per person in 2020 to 233.48 million rupiah per person in 2024, which means that women's contribution to producing economic output per workforce is improving. However, female workers with lower secondary education are more absorbed in informal jobs because it is difficult to penetrate the formal sector that demands higher skills (Stuart, 2021). The same thing is also affirmed Setyanti (2020) that low education encourages workers, especially women, to enter the informal sector with low productivity. As such, many women choose the informal sector due to limited access to education, although the informal sector does not guarantee a long-term increase in productivity (Yuniashri et al. 2023).

Table 2
Open Unemployment Rate (TPT), Percentage of Formal and Informal Sector Workers, and Wages of Formal and Informal Sector Workers (Rupiah) in Indonesia in 2020-2024

Year	TPT	Percentage of Workers		Employee Wages	
		Formal	Informal	Formal	Informal
2020	7,07	39,53	60,47	2.756.345	1.596.573
2021	6,49	40,55	59,45	2.736.463	1.478.608
2022	5,86	40,69	59,31	3.070.756	1.862.958
2023	5,32	40,89	59,11	3.178.227	1.909.700
2024	4,91	42,05	57,95	3.267.618	1.948.995

Source: BPS

Table 2 shows that the open unemployment rate in Indonesia decreased from 7.07% in August 2020 to 4.91% in 2024. The decline was due to the post-

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

pandemic economic recovery *Covid-19*. This recovery is driving increased labor demand in sectors such as trade, manufacturing, agriculture, and the service sector where there were previously many layoffs. As aggregate demand increases, companies need to expand production and recruit new workers, which directly reduces the unemployment rate. From the global side, Arsenio et al. (2022) explains that regarding the post-recovery policy *Covid-19*, stimulus measures and support from productive sectors are considered effective in creating millions of jobs that were previously lost due to the crisis.

It can also be seen from Table 2 that there is a proportional shift, where the proportion of formal workers increased from 39.53% to 42.05%, while the proportion of informal workers decreased from 60.47% to 57.95%. The relative increase in formal workers suggests that part of the economic recovery transition also involves the absorption of formal labor, although it is still not dominant. Contributing factors include labor market program policies such as the Pre-Employment Card program in Indonesia, which is designed to improve the skills of workers through training and incentives to narrow the gap between job seeker competencies and market needs. Participation in the program significantly increases the probability of obtaining employment, especially for youth and women. (Budget, 2024).

The conditions regarding the wages of formal and informal workers show that the average wage of formal workers is higher, which is around 3 million rupiah compared to the wages of informal workers which is only 1.7 million rupiah. This wage gap indicates that formal work generally provides better compensation, security, and stability, thus providing an incentive for workers to switch from informal to formal when the opportunity allows. However, it is not easy for informal sector workers to be able to move to formal sector jobs because it requires increasing competence, access to training, supportive regulations, and the provision of formal jobs on a large scale.

Although the number of female workers in Indonesia increased in the 2020-2024 period, their engagement ratio to total workers is still stagnant and is mostly absorbed in the informal sector with very low productivity and wages. This condition shows that there is gender inequality in the labor market which has implications for welfare and poverty alleviation. Based on the background and problem formulation, this study aims to estimate the effect of the average wage of formal workers, the average wages of informal workers, the open unemployment rate (TPT), the number of female workers, the average length of

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

female schooling, and the productivity of the female workforce on the percentage of the poor population in each province in Indonesia in 2020-2024.

LITERATURE REVIEW

Priseptian & Primandhana (2022) by the *Ordinary Least Squares* (OLS) examined the factors that affect poverty in East Java Province in 2005-2020. The results of this study show that the variables of the human development index (HDI) and economic growth have no effect on poverty. Meanwhile, the provincial minimum wage (UMP) has a negative effect, while unemployment has a positive effect on poverty. Then, Kartika et al. (2021) examined the influence of government expenditure on poverty in 29 districts and nine cities in East Java in 2015-2019 using the *Panel Least Squares* (PLS) with *Cross Section Random Effects*. It was found that government spending, GDP, and HDI have a negative effect on poverty levels. The first study emphasizes the role of employment variables and wage policies in influencing poverty, while the second study shows that increasing government development and fiscal capacity is more effective in reducing poverty at the regional level.

Balqis et al. (2025) with the OLS method, researching the influence of education and minimum wage on poverty in Aceh Province in 2011-2023. The results of this study show that education has a negative effect on poverty, while the minimum wage has no effect on poverty in Aceh Province. Then, with the same approach, Azmi and Cholily (2023) examining the influence of labor participation and women's education on poverty in Indonesia in 2010-2020. It was found that women's labor participation and women's education have a negative effect on poverty. Thus, the two studies have similarities in examining the influence of education on poverty and both found that education has a negative effect. The difference is that the first study adds the minimum wage variable at the regional level, while the second study emphasizes the participation of the female workforce at the national level.

Cape et al. (2025) using panel data but with an approach *Path Analysis* (Pathway Analysis) examines the influence of population growth on poverty through per capita income as a mediating variable in Aceh Province in 2018-2023. Results *Path Analysis* with the Sobel Test showing that population growth has a positive effect and per capita income has a negative effect on poverty. Then The mediating variable, namely per capita income, is an intermediary in explaining the relationship between Population growth and poverty. The results show that Population growth does not directly affect the poverty level, but through an increase or decrease in the per capita income of the community. Thus, per capita

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

income becomes a path variable that explains the mechanism of indirect influence Population growth against poverty. This research highlights the importance of policies that control population growth while encouraging income-based economic growth to reduce poverty in Aceh.

Contrary to the staged causal framework used in pathway analysis, the succeeding research adopts a panel regression specification that concentrates exclusively on estimating contemporaneous direct effects on poverty outcomes. Soleman & Soleman (2022) investigated poverty determinants across 12 provinces in Eastern Indonesia during 2011–2021 by employing the Random Effects Model (REM). The estimation results reveal that Islamic banking financing, labor force participation (TPAK), average schooling duration (RLS), life expectancy (UHH), and inflation do not exert a statistically discernible influence on poverty rates. Conversely, Gross Domestic Product (GDP) is identified as having a positive association with poverty, while life expectancy (UHH) exhibits a negative relationship with poverty levels.

Mutmainah et al. (2022) applied the Random Effects Model (REM) to assess poverty determinants in Indonesia during 2015–2020 and reported that government expenditure and investment reduce poverty, whereas unemployment intensifies it. In a related but differently oriented strand of research, later studies shift toward region-specific poverty analysis by positioning human development indicators as central explanatory factors, albeit using comparable econometric approaches. In this context, Anggraini et al. (2023) investigated poverty drivers in the northern coastal region of East Java Province over 2016–2020 and found that both economic growth and the Human Development Index (HDI) exert a significant negative influence on poverty levels. Overall, both studies emphasize the importance of economic and developmental variables in poverty alleviation, yet they diverge in spatial scope and analytical emphasis, where the former adopts a national macroeconomic and labor-oriented perspective, while the latter concentrates on localized coastal vulnerability shaped by human development conditions.

Mustika et al. (2023) conducted an econometric examination using the Common Effects Model (CEM) to identify the driving forces behind poverty and inequality across 17 provinces in the Sumatra and Java regions over the 2019–2021 period. The findings reveal marked regional divergence in variable behavior. In Sumatra, improvements in the Human Development Index (HDI) are associated with reductions in both poverty and inequality, while increases in Gross Domestic Product (GDP) contribute to lower poverty levels; however, higher

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

poverty levels are found to reinforce inequality. The open unemployment rate (TPT) contributes to rising poverty but does not significantly alter inequality, whereas population size shows no meaningful effect on either poverty or inequality. In the Java region, HDI is observed to reduce poverty but remains unrelated to inequality, GDP does not exhibit a significant relationship with either poverty or inequality, TPT increases poverty without influencing inequality, and population size similarly shows no significant effect on both variables.

Then, with a different approach, Prasada et al. (2020) examined the determinants of poverty level on the island of Java using data from six provinces (DI Yogyakarta, Banten, East Java, Central Java, West Java, and DKI Jakarta) in 2006-2018 using panel data analysis with the FEM model. It was found that the inflation rate has a positive effect on the poverty rate, while the human development index (HDI) has a negative effect on the poverty rate. Thus, the two studies have similarities in emphasizing the importance of human quality through HDI to reduce poverty and this study indicates that poverty alleviation efforts in Indonesia require an approach that not only strengthens human development, but also maintains economic stability in each region.

Kurniasih et al. (2022) undertook an empirical assessment of gendered labor-market indicators on poverty outcomes across 12 regencies/cities in Riau Province during 2017–2020 by applying the Fixed Effects Model (FEM), and the findings indicate that female labor force participation along with women's income share exhibit a poverty-reducing effect, whereas female open unemployment does not produce a statistically meaningful influence. In another investigation with a wider spatial scope, Dewi et al. (2025) explored the nexus between women's educational endowment and poverty across 514 regencies/cities in Indonesia for the 2019–2023 period, revealing that both actual schooling duration and expected schooling attainment contribute to lowering poverty incidence. Despite methodological and geographical differences, both studies converge on the significance of women-centered human capital variables in alleviating poverty, while simultaneously differing in coverage scale, variable composition, and analytical orientation.

Pratama et al. (2022) analyzed poverty determinants in Medan (1998–2021) using an Error Correction Model and found that economic growth, education, and open unemployment negatively affect poverty in both the short and long run. In contrast, Batubara et al. (2023) examined inflation, investment, and unemployment in North Sumatra (2001–2020) and reported mixed results: inflation and investment increase poverty in the short run, while unemployment reduces it; in the long run, inflation and unemployment raise poverty, whereas

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

investment reduces it. Although both studies employ ECM and focus on North Sumatra, they differ in scope, variables, and result consistency across time horizons, indicating that poverty dynamics are highly dependent on regional economic structures and require context-specific policy responses.

Liu (2019) researching the poverty of women workers through a mixed methods approach with the design of a comparative analysis, qualitative, and quantitative descriptive study in Belgium in 2015 and China in 2010. The results of this study show that women are more susceptible to experiencing poverty even though they have worked, which is caused by the dominance of low-wage jobs and low work quality. In addition, the increase in women's labor participation does not significantly reduce poverty due to the factors of job segregation, low education, and the influence of gender norms and stereotypes.

This study has a different contribution compared to previous studies because it focuses on poverty analysis through a gender perspective. While previous studies have generally highlighted the determinants of poverty from macro aspects such as GDP, HDI, inflation, government spending, and unemployment in aggregate, this study emphasizes the role of women in the economy. This is reflected in the use of variables such as the number of female workers, the average length of female schooling, and women's productivity in each province in Indonesia as independent variables. Thus, this study provides a new perspective that improving the quality and involvement of women in the labor market has the potential to be an important factor in efforts to reduce poverty rates.

RESEARCH METHOD

This study is situated within a quantitative methodological framework and relies on secondary datasets procured from the Central Statistics Agency (BPS) covering the 2020–2024 period. The empirical dataset employed is panel data, constituting a confluence of cross-sectional and longitudinal observations. In this configuration, the cross-sectional component comprises 34 provinces across Indonesia, while the temporal dimension extends over the 2016–2024 span. The econometric specification developed to examine the influence of formal-sector remuneration, informal-sector earnings, the open unemployment rate (TPT), female labor force magnitude, women's mean years of schooling, and female productivity on poverty incidence is formulated as follows:

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

$$PPM_{it} = \beta_0 + \beta_1 LogUPAHF_{it} + \beta_2 LogUPAHI_{it} + \beta_3 TPT_{it} + \beta_4 LogJPBP_{it} + \beta_5 RLSP_{it} + \beta_6 LogPRODP_{it} + e_{it}$$

where:

PPM	: Percentage of poor population (%)
β_0	: Constant
$\beta_1, , , , , \beta_2\beta_3\beta_4\beta_5\beta_6$	: Independent variable coefficients
RUPF	: Average wages of formal sector workers (rupiah)
RUPEE	: Average wages of informal sector workers (rupiah)
TPT	: Open unemployment rate (%)
JPBP	: Number of female workers (people)
RLSP	: Average length of schooling for girls (years)
PRODP	: Women's productivity
i	: *Cross section* (34 provinces in Indonesia)
t	: *Time series* (year 2016-2024)
e	: *Error term*

This investigation utilizes a panel regression apparatus to interrogate the influence of explanatory constructs upon the dependent variable. The estimation procedure is operationalized through three econometric paradigms, namely the Pooled/Common Effects Model (CEM), Fixed Effects Model (FEM), and Random Effects Model (REM). Subsequently, model adjudication is executed via a sequential inferential protocol, initiating with the Chow diagnostic to discriminate between CEM and FEM, and continuing with the Hausman specification test to determine the more tenable framework between FEM and REM. The finally endorsed model is thereafter employed as the computational basis for quantifying the nexus between predictor variables and the outcome variable within this research.

The joint significance evaluation, operationalized through the F-statistic, is utilized to determine whether the aggregate of explanatory variables within the econometric specification exerts a collective explanatory power over the dependent variable, namely the proportion of the population classified as poor. Under the null formulation, all slope coefficients are constrained to zero, signifying that variables such as remuneration in the formal sector, earnings in the informal sector, unemployment incidence (TPT), female labor force size, educational duration among women, and women's productivity exert no simultaneous explanatory effect on interprovincial poverty variation in Indonesia. *H0* is denied if the F-statistical probability < α.

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

Then, *the t-test* was carried out to test the influence of each independent variable partially on the dependent variable, namely the percentage of the poor population. *H0* states $\beta 1 = 0$ (i = 1-6), which means that average formal wages, average informal wages, open unemployment rate (TPT), number of female workers, average length of schooling for women, and individual women's productivity have no effect on the percentage of the poor. Meanwhile, *HA* states that $\beta j < 0$ (j = 1=5), which means the average formal wage, the average informal wage, the number of female workers, the average length of female schooling, and the productivity of women respectively have a negative effect on the percentage of the poor population, while $\beta k > 0$ (k = 6), which means that the open unemployment rate (TPT) has a positive effect on the percentage of the poor population. *H0* is rejected if the *probability of t-statistics* is less than α.

RESULTS AND DISCUSSION

The econometric evaluation of panel data is implemented using three alternative model specifications, encompassing the Common Effects, Fixed Effects, and Random Effects frameworks. The empirical outputs derived from these estimation procedures are subsequently summarized in Table 3.

Table 3
CEM, FEM and REM Regression Results

Variable	Regression Coefficients		
	EMC	FEM	REM
C	27,240	21,117	21,173
LOG(UPAHF)	6,731	0,417	0,666
LOG(UPHI)	-6,019	-1,106	-1,119
TPT	0,125	0,108	0,098
LOG(JPBP)	-1,232	0,971	0,682
RLSP	-2,042	-1,586	-1,591
LOG(PRODP)	-1,806	0,960	0,682
R2	0,308	0,990	0,554
Prob F-stats	0,000	0,000	0,000

1) Chow Test

Cross-section F (33, 266) = 523,615; Prob. *F* = 0.000

2) Hausman Test

Cross-section random χ^2 (6) = 11,143; Prob = 0.084χ^2

MJIFM | MAJAPAHIT JOURNAL OF ISLAMIC FINANCE AND MANAGEMENT
Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

Subsequent to the derivation of estimations under the CEM, FEM, and REM specifications, a model selection process is undertaken through two diagnostic comparisons. Initially, the Chow procedure is implemented to discriminate between the CEM and FEM frameworks, followed by the application of the Hausman diagnostic to ascertain the more appropriate specification between FEM and REM.

Model selection relies on Chow and Hausman tests. While the Chow test (p = 0.0000) suggests FEM, the Hausman test (p = 0.0840) supports REM, making the Random Effect Model more appropriate.

Table 4
REM Estimation Results

$$\widehat{PPM}_{it} = \underset{}{21{,}174} + \underset{(0{,}4034)}{0{,}666}LOG(UPAHF)_{it} - \underset{(0{,}0160)^*}{1{,}119}LOG(UPAHI)_{it} + \underset{(0{,}0463)^*}{0{,}098}(TPT)_{it} + \underset{(0{,}0122)^*}{0{,}682}LOG(JPBP)_{it} - \underset{(0{,}0000)^*}{1{,}591}(RLSP)_{it} + \underset{(0{,}0106)^*}{0{,}682}LOG(PRODP)_{it}$$

R2 = 0.554; *F-stat* = 62,043; *Prob F-stat* = 0.000

Remarks: *Significant coefficient at α 0.05

Table 4 indicates an F-test probability of 0.0000, below 0.05, confirming the rejection of the null hypothesis. This implies that all explanatory variables collectively have a significant effect on poverty levels across provinces in Indonesia during 2016–2024.

An assessment of model fit reveals that the set of explanatory variables incorporated in the analysis accounts for approximately 55.46% of the observed variation in poverty incidence, as indicated by the R^2 value of 0.554571. This implies that shifts in factors such as earnings in both formal and informal sectors, unemployment conditions (TPT), female labor participation, educational attainment among women, and productivity levels collectively contribute to explaining more than half of the changes in poverty levels. Meanwhile, the remaining 44.54% of the variation is driven by other influences not captured within the specified model.

The statistical procedure applied focuses on examining the isolated contribution of each explanatory factor to variations in the outcome variable. From the empirical evidence displayed in Table 4, it can be discerned that

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

increases in informal-sector earnings and extended educational attainment are associated with a contraction in poverty levels. In contrast, a rise in open unemployment (TPT), the expansion of the female labor force, and higher levels of women's productivity correspond to an escalation in the proportion of the population experiencing poverty. Meanwhile, remuneration within the formal sector does not demonstrate any meaningful influence on poverty dynamics across the 34 provinces of Indonesia throughout the 2016–2024 period. A consolidated overview of these individual testing results is subsequently outlined in Table 5.

Table 5
Results of the t test

Variable	Coefficients	Prob. *t*	Conclusion
LOG(UPAHF)	0,666	0,403	*β1* is insignificant
LOG(UPHI)	-1,119	0,016	*β2* significant at *α* 0.05
TPT	0,098	0,046	*β3* is significant at *α* 0.05
LOG(JPBP)	0,682	0,012	*β4* is significant at *α* 0.05
RLSP	-1,591	0,000	*β5* significant at *α* 0.05
LOG(PRODP)	0,682	0,010	*β6* significant at *α* 0.05

In contrast, two predictors demonstrate statistically meaningful effects with a negative direction of association. The estimated log parameter for informal-sector remuneration (WAG), recorded at −1.118, indicates that a one-percent rise in earnings within this segment corresponds to an approximate decline of 0.01118 percent in poverty incidence. Likewise, the coefficient attached to female educational attainment (RLSP), valued at −1.590, implies that an additional year in schooling is associated with a reduction of around 0.01590 percent in the proportion of individuals living below the poverty threshold.

Conversely, three predictors display statistically meaningful coefficients with a positive direction of association. The estimated parameter for the open unemployment rate (TPT), amounting to 0.098, signifies that a one-percent escalation in unemployment is followed by an approximate 0.098 percent rise in the poverty proportion. In addition, the logarithmic estimate for the female labor force variable (JPBP), recorded at 0.682, indicates that a one-percent expansion in the number of employed women corresponds to an increase of about 0.00682 percent in the share of the poor population. A comparable pattern is observed for the logarithmic

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

coefficient of female productivity (PRODP), valued at 0.681, which implies that a one-percent improvement in women's productivity is associated with an increment of roughly 0.00681 percent in poverty levels. In contrast, the parameter attached to LOG(UPAHF) is not further interpreted, as it does not meet the threshold of statistical significance.

Based on the regression results, it is known that the average wages of workers in the formal sector have no effect on poverty. The wage increase that has occurred in recent years is relatively not large enough to significantly improve household welfare. Table 2 shows that the average formal wage of workers in Indonesia has gradually increased from around 2.7 million rupiah in 2020 to 3.2 million rupiah in 2024. Despite the increase, the increase is relatively small when compared to people's living needs. Based on BPS data, the Decent Living Needs (KHL) during the 2020-2024 period grew by around 11.01 million rupiah per year to 12.34 million rupiah per year, while wages increased by around 2.7 million to Rp3.2 million per month. Although wages are nominally higher than the needs of a decent living, the ratio is not entirely proportional because KHL is calculated per capita, while wages are used to meet household needs, so an increase in wages is not necessarily able to improve welfare optimally, especially if the number of dependents in the household is large enough. In addition, the national poverty line has also increased by 458.9 thousand per capita per month in 2020 to 595.2 thousand per capita per month in 2024. If the poverty line increases faster than the wage increase, then people's purchasing power tends to decrease so that wages become less effective in improving welfare and reducing poverty. Thus, the increase in formal wages has not been able to reduce poverty because it does not adequately compensate for the increase in the need for a decent living and the poverty line.

The results of this study are in line with the findings Balqis et al. (2025) which states that the minimum wage has no effect on the poverty level in Aceh Province in 2011-2023. Increasing the minimum wage is not always able to reduce poverty because poverty is a multidimensional problem. This means that the condition of poverty is not only influenced by income or wages, but also by other factors such as the level of education, the quality of human resources, access to health services, and available employment opportunities. Poor households generally have limitations in education and skills, making it difficult to get higher-paying jobs. Therefore, even though there is an increase in formal wages, the impact on

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

poverty reduction does not always have an effect because the improvement of people's welfare is also influenced by various other development factors.

However, the results of this study are not in line with the findings Priseptian and Primandhana (2022) which states that the minimum wage has a negative effect on the poverty rate in East Java Province in 2005-2020. An increase in the minimum wage can reduce the number of poor people. Interpretively, the increase in the minimum wage is able to increase workers' income, especially for workers in the formal sector, so that people's purchasing power increases and the ability of households to meet basic needs to be better. Thus, increasing the minimum wage can play a role as one of the policy instruments that help reduce poverty levels.

Another variable whose influence is not in accordance with the research hypothesis is the number of working women which has been proven to have a positive effect on the percentage of the poor population. These findings are in line with the findings Liu (2019) shows that the increase in the number of working women has not necessarily reduced poverty rates in Belgium in 2015 and in China in 2010. The study explained that women tend to concentrate on low-quality work, lower wages, and low levels of job security. This condition causes many women to be included in the group *Working Poor*, that is, individuals who remain in poor conditions even though they have worked. Thus, the increase in the number of female workers in the labor market under several conditions can actually be positively correlated with poverty. International organizations show that women have a higher vulnerability to poverty. *World Bank* (2022) stated that women often face limited access to productive jobs, economic assets, and job opportunities, making them more vulnerable to being in poverty. In addition, the report OECD (2021) shows that the gender wage gap still occurs where women earn lower incomes than men. This condition is reinforced by the findings UNESCO (2016) which states that women are more classified as *Working Poor*, namely individuals who work but remain in poverty due to low job quality and wage levels.

However, the results of this study are not in line with the findings Kurniasih et al. (2022) which states that the participation of women's labor has a negative effect on poverty in districts/cities in Riau Province in 2017-2021. Increasing women's participation in the labor market can increase

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

household income because women are also an additional source of income. With this additional income, the ability of households to meet basic needs such as food, education, and health becomes better so that the poverty rate can decrease.

The last variable whose effect is not in accordance with the research hypothesis is women's productivity, which has been shown to have a positive effect on the percentage of the poor population. These findings are in line with the findings Azmi and Cholily (2023) which states that the participation of women's labor has a positive effect on poverty in Indonesia in 2010-2020. The positive effect of productivity or the number of female workers on poverty can be caused by low quality of work, low wages, limited access to education, economic capital, and narrower formal employment opportunities than men, as shown in Table 6. This limitation has caused an increase in women's work participation to be unable to contribute to improving household welfare so that the poverty rate is still high.

Table 6
Number of Formal Workers by Gender (Million People)

Year	Male	Women
2020	17,1	6,8
2021	18,1	7,5
2022	18,9	7,4
2023	19,4	7,7
2024	21,1	8,4

Source: BPS

An examination of Table 6 reveals a steady expansion in formal employment across Indonesia for both male and female workers over the 2020–2024 period. Despite this upward movement, a substantial gender imbalance remains evident, with female representation in the formal sector significantly trailing that of men. At the outset in 2020, women accounted for only about 6.8 million formal workers, whereas the male workforce reached approximately 17.1 million. Although by 2024 the number of female employees increased to roughly 8.4 million, it still fell considerably short of the male total, which climbed to 21.1 million. Such a disparity underscores the persistent structural limitations faced by women in accessing formal employment opportunities.

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

A variable identified as exerting a significant influence on poverty is the mean income level within Indonesia's informal workforce over the 2016–2024 horizon, where econometric estimation indicates an inverse association. This outcome implies that increments in remuneration in this segment are capable of strengthening the purchasing capacity of economically vulnerable households, given that a large share of low-income populations relies on informal employment for subsistence. Furthermore, the informal economy serves as a labor absorption mechanism when opportunities in the formal domain are constrained, positioning it as a crucial fallback employment channel. As such, rising earnings in this sector can facilitate poverty reduction by enhancing household income streams and improving the ability to satisfy basic living requirements.

The results of this study show that women's education has a negative effect on poverty, which is in line with the findings Balqis et al. (2025) and Dewi et al. (2025) who also found that education can reduce poverty. In addition, the positive effect of TPT on poverty is also consistent with research Priseptian and Primandhana (2022). However, there are differences in the employment variables, where this study found that the number of female workers and female productivity have a positive effect on poverty, while the study Azmi and Cholily (2023) Instead, they found a negative influence. This difference indicates that the increase in women's work participation in this study has not been followed by adequate quality of work. These results are more in line with Liu (2019) which states that women tend to work in low-wage sectors so that they are not able to significantly reduce poverty. Thus, this study confirms that the work quality factor is the main differentiator in explaining the influence of women's labor force on poverty.

A further explanatory factor demonstrating an inverse association with poverty is the mean duration of female educational attainment. This relationship suggests that prolonged schooling among women is linked to a contraction in poverty incidence. Educational attainment serves as a strategic investment in human capital, as it elevates workforce capability, augments productivity capacity, and enlarges access to more remunerative employment pathways. Women who possess higher academic credentials are typically endowed with broader competencies, enriched cognitive resources, and greater penetration into labor market opportunities,

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

thereby facilitating increased household earnings and diminishing susceptibility to impoverishment. These outcomes are corroborated by Dewi et al. (2025), whose analysis identifies a similar negative correlation between years of schooling and poverty levels in Indonesia during the 2018–2023 period, highlighting that enhanced educational attainment expands occupational prospects and income-generating capacity, ultimately contributing to poverty alleviation.

However, these results are not in line with the findings Soleman and Soleman (2022) which states that the average length of school has a positive effect on poverty in 12 provinces in Eastern Indonesia for the 2011-2021 period. An increase in the average length of schooling is not always followed by an increase in community welfare. This condition can occur because the improvement of education is not necessarily balanced with the availability of adequate jobs, so that many education graduates still have difficulty in getting a decent job. In addition, the high average length of school can increase the number of education graduates entering the job market, but if the growth of job opportunities is not able to absorb the educated workforce optimally, it will increase educated unemployment. Thus, this condition causes some people to remain in vulnerable economic conditions so that it has the potential to increase poverty.

The last variable that affects poverty is the open unemployment rate, where regression results show positive results. Higher unemployment rates will tend to increase poverty. Theoretically, unemployment causes individuals to not earn income from economic activities so that people's ability to meet basic needs is limited. In addition, the high unemployment rate also reflects the limited employment opportunities in a region. When the number of workers is greater than the available jobs, some people cannot be absorbed into the labor market, so household income decreases and poverty increases. Support for these findings can be traced to the study conducted by Mustika et al. (2023), which reveals a direct relationship between open unemployment and poverty across 17 provinces in Sumatra and Java during the 2019–2021 period. An expansion in the population without employment diminishes access to stable earnings, ultimately leading to an increase in the incidence of poverty.

The study found that the average wages of formal sector workers did not directly affect the percentage of the poor. These findings make it clear that wage increases in the formal sector are not necessarily related to

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

poverty reduction if most of the poor do not work in the formal sector. Accordingly, this research underscores that poverty assessment must extend beyond a narrow emphasis on formal-sector wage regulation, and instead incorporate broader dimensions such as enhancing job quality, strengthening labor productivity, widening educational accessibility, expanding employment prospects, and addressing gender-based income disparities within the labor market.

CONCLUSION

Poverty constitutes a multifaceted socioeconomic phenomenon and remains a persistent obstacle within Indonesia's development trajectory. This research is undertaken to analyze both the directional tendency and the magnitude of the relationships between several determinants—namely the mean earnings of formal-sector labor, average income levels within the informal sector, the open unemployment rate (TPT), the proportion of female labor force participation, women's average years of schooling, and female productivity—and the proportion of the population living below the poverty line across provinces in Indonesia during the 2020–2024 timeframe.

In pursuing the research aims, the analysis employs a panel data approach estimated through a Random Effects specification as the most appropriate model. The empirical estimation reveals that higher earnings in the informal sector and longer educational attainment among women are associated with a reduction in poverty levels. In contrast, increases in the open unemployment rate (TPT), the size of the female workforce, and female productivity are found to correlate with rising poverty incidence. Meanwhile, compensation levels within the formal sector do not exhibit a statistically meaningful relationship with the proportion of individuals living in poverty.

Drawing on the study's evidence, poverty reduction should be reoriented toward recalibrating labor-market arrangements while simultaneously elevating the aggregate quality of human capital. Policy interventions are expected to stimulate the expansion of inclusive and competitive employment ecosystems, with particular emphasis on widening women's access to secure and decent positions within the formal economy. In parallel, intensifying vocational development initiatives and upgrading occupational competencies are crucial to enhance workforce adaptability to shifting market exigencies. At the same time, strategic efforts should be directed toward the upgrading of the informal economy through productivity enhancement and the provision of adequate

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

safeguards, thereby mitigating the risk of workers remaining entrenched in precarious conditions. The government also needs to reduce the employment opportunity gap between men and women through policies that support equal access to employment, education, and economic resources. With these measures, it is hoped that conditions will be created that are more conducive to improving people's welfare, so that poverty reduction is not only short-term but also sustainable in the long term.

REFERENCES

Arsenio, F., Alexandri E., Kiss-Dobronyi, B., & Suta, C-M. (2022). Modelling and comparing the employment impacts of Covid-19 crisis and recovery policies in Indonesia. *International Labour Organization (ILO),* 2–9. https://www.ilo.org/publications/modelling-and-comparing-employment-impacts-covid-19-crisis-and-recovery-0

Anggraini, V., Viphindrartin, S., Santoso, E., Somaji, R. P., & Istiyani, N. (2023). Determinants of poverty levels in the northern coast of East Java. *JAE (Journal of Accounting and Economics), 8*(1), 101–109. https://ojs.unpkediri.ac.id/index.php/akuntansi/article/view/19792/3168

Anggara, R. T. (2024). Pre-Employment Program and Youth Employment Card: Gender-specific outcomes in Indonesia. *Economics and Finance in Indonesia*, *70*(1), 49–62. https://lpem.org/repec/lpe/efijnl/202404.pdf

Azmi, A. A., & Cholily, V. H. (2023). Analysis of the influence of labor participation and women's education on poverty levels in Indonesia in 2010-2020. *Journal of Development Studies*, *2*(1), 37–47. https://talenta.usu.ac.id/jlpsp/article/view/11131/5933

Batubara, R. F., Rahmawati, S., & Hanum, S. (2023). Analysis of the Influence of Inflation, Investment, and Unemployment on Poverty in North Sumatra in 2001-2020. *Journal of Pearl Accounting Sciences*, *1*(2), 310–326. https://ejurnal.stie-trianandra.ac.id/index.php/jumia/article/view/1303/1075

Balqis, M., Sinaga, N. Q., Asnidar., & Hanum, N. (2025). The Effect of Education and Minimum Wage on Poverty in Aceh Province. *Indonesian Journal of Economics and Development*, 1–13. https://journal.areai.or.id/index.php/jepi/article/view/1032

Bank, W. (2022). Poverty and shared prosperity report. https://blogs.worldbank.org/en/voices/end-poverty-we-need-know-what-we-dont-know-about-women-and-girls?utm_source

Dewi, A. K., Septiani, R. E., Rahmah, S., Aini, S. S. Q., & Dewantara, G. F. (2025).

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

The influence of women's education on poverty in Indonesia. *Economics and Education Journal*, *7*(1), 137–148. https://ejurnal.uibu.ac.id/index.php/ecoducation/article/view/1364/1090

Isbahi, M. B., Zuana, M. M. M., & Toha, M. (2024). The Multi-Social Relation of the Cattle Industry in the Plaosan Subdistrict Animal Market of Magetan Regency. *Malacca: Journal of Management and Business Development*, *1*(1), 31–46. https://doi.org/10.69965/malacca.v1i1.51

Ishartono., & Raharjo, T. S. (2024). Sustainable Development Goals (SDGs) and poverty alleviation. *Urban Sustainability*, *Part F4098*, 41–65. https://jurnal.unpad.ac.id/share/article/view/13198/6032

Kartika, D. A. F. C., Viphindrartin, S., & Diartho, H. C. (2021). Impact of government expenditure on poverty rate reduction in East Java province. *Wiga : Journal of Economic Research*, *11*(2), 120–127. https://ejournal.itbwigalumajang.ac.id/index.php/wiga/article/view/606/427

Kurniasih, C. E., Tampubolon, D., & Ula, T. (2022). Analysis of the influence of female labor market indicators on inter-district/city poverty in Riau province. *National Multidisciplinary Sciences*, *1*(4), 572–584. https://proceeding.unmuhjember.ac.id/index.php/nms/article/view/109/104

Liu, J. (2019). What does in-work poverty mean for women: Comparing the gender employment segregation in belgium and china. *Sustainability*, 11(20) 5725. https://www.mdpi.com/2071-1050/11/20/5725?utm_source

Mutmainnah., Paddu, H., & Hamrullah. (2023). Determinants of poverty in Indonesia. *Journal of Economics* *11*(3), 1930–1936. https://ejournal.seaninstitute.or.id/index.php/Ekonomi/article/view/1056/855

Mustika, C., Nurjanah, R., & Bhayangkari, S. K. W. (2023). Determinants of poverty and income inequality on the Islands of Sumatra and Java. *JPPI (Indonesian Journal of Education Research),* *9*(3), 1533. https://www.researchgate.net/publication/373858691_Determinants_of_poverty_and_income_inequality_on_the_islands_of_Sumatra_and_Java

OECD. (2021). Gender equality in a changing world. https://www.oecd.org/en/publications/gender-equality-in-a-changing-world_e808086f-en/full-report/persistent-gender-gaps-in-paid-and-unpaid-work_cb137837.html?utm_source

Pramiswari, A. A. A. I., Erviantono, T., & Novi, N. W. R. (2023). Gender equality and public health service policies. *Journal of Research and Development of*

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

Science and Humanities, *7*(2), 172–183. https://ejournal.undiksha.ac.id/index.php/JPPSH/article/view/66694

Prasada, I. Y., Yulhar, T. F. M., & Rosa, T. A. (2020). Determinants of poverty rate in Java Island: Poverty alleviation policy. *Journal of Development Economics*, *18*(2), 95–104. https://jep.ejournal.unsri.ac.id/index.php/jep/article/view/11664/pdf_1

Pratama, R. D., Atmaja, A. R., Sirojuzilam., Irsad., Syafii, M., Pratomo, W. R., Yuliaty, T. (2022). Determinants of poverty levels in Medan City in 1998-2021: Error Correction Model approach. *Journal of Economics*, *11*(3), 1575–1583. https://www.ejournal.seaninstitute.or.id/index.php/Ekonomi/article/view/593/759

Priseptian, L., & Primandhana, W. P. (2015). Analysis of the factors that affect poverty in Indonesia. *Economic Forum*, *4*(2), 45–53. https://journal.feb.unmul.ac.id/index.php/FORUMEKONOMI/article/view/10362/1610

Purawati, N. K. (2021). Women's work in the informal sector. *Journal of Clinical Psychology*, *1*(2), 36–44. https://ojs.mahadewa.ac.id/index.php/nirwasita/article/view/1081/883

Putri, R. A., Wati, E. R. K., Nurrizalia, M., Anggelia, R. D., Syakirin, A., & Syawalludin, S. (2024). The reality of women's labour challenges in the informal sector: Contributions, challenges and impacts. *Journal of Non-Formal Education*, *1*(3), 11. https://edu.pubmedia.id/index.php/jpn/article/view/367

Rohmatilah, D. A. (2023). The role of gender equality on poverty alleviation : Case of Indonesia. *Journal of Development Planning. The Indonesian Journal of Development Planning*, *7*(2), 272–287. https://pdfs.semanticscholar.org/8fe0/d989415ea9c66190c066fb07ddf00c35a0f5.pdf

Setyanti, A. M. (2020). Informality and the education factor in Indonesian labor. *Journal of Indonesian Applied Economics*, *8*(2), 71–80. https://jiae.ub.ac.id/index.php/jiae/article/view/300

Soleman, R., & Soleman, R. (2022). Determinants of poverty rate in eastern Indonesia. *Journal of Applied Economics*, *7*(2), 261–275. https://e-journal.unair.ac.id/JIET/article/view/39392

Tanjung, A. A., Ariza, D., Nababan, F., Siboro, R. P., Saputra, Z. E., Nasution, A. R., & Hidayat, N. (2025). Analysis of the influence of population on poverty through per capita income as a mediating variable. *Journal of Economics and Accounting Publications*, *5*(2), 1–15.

Vol. 6 No. 2, 2026, 1978–1999 e-ISSN 2798-0170

https://journalcenter.org/index.php/jupea/article/view/3828
UNESCO. (2016). Global education monitoring report: Education for people and planet. https://gem-report-2016.unesco.org/en/current-report/
Yuniashri, E., Susilo, S., & Wahyudi, S. T. (2023). Is informal sector suitable for female labor? *JEJAK, Journal of Economics, 16*(1), 58–73. https://journal.unnes.ac.id/nju/index.php/jejak/article/view/38590