

Analysis of the Relationship Between High School Education Levels and Poverty in Indonesia (2019-2023)

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Abstract

This study investigates the relationship between poverty and high school education and involvement in the formal labor force in 30 provinces in Indonesia from 2019 to 2023. This study is sourced from the Central Statistics Agency (BPS). The study sample includes various groups that were randomly selected. Data were collected and analyzed using Pearson correlation to understand the relationship between poverty, education level, and formal labor. The findings show that (i) there is a negative correlation between poverty and education, where an increase in poverty tends to be followed by a decrease in high school education levels. (ii) there is a positive correlation, where the higher the level of high school education, the higher the participation in the formal labor force, and (iii) there is a negative correlation, where the higher the level of poverty, the lower the participation in the formal labor force. This study differs from previous studies because it also explores how these three variables are interconnected and that investment in education and poverty alleviation can be essential strategies to increase participation in the formal labor sector.

INTRODUCTION

One of the main problems hindering economic development is poverty. Both developing and developed countries face this problem. Although developed countries have relatively lower poverty rates (Walia & Walia, 2011), they still face this challenge. In Indonesia, poverty is a serious problem that requires special attention. The Central Bureau of Statistics (BPS) observes that poverty in our country is measured using the basic needs fulfillment approach (Rahmaningtyas & Adianita, 2023).

Poverty in Indonesia is influenced by various factors, including education and participation in the formal labor force. Education level plays an important role in determining one's employment opportunities in the formal sector. Workers with higher education tend to have better skills and knowledge, making it easier for them to find stable employment and earn sufficient income. Conversely, the lack of

access to quality education can hinder someone from improving their skills and obtaining advantageous positions in the job market, which can ultimately lead to them being trapped in poverty (Saputri & Udjiyanto, 2023).

Formal labor plays a crucial role in reducing poverty. Formal jobs usually offer better social protection, such as health insurance and pension programs, and more stable wages than informal jobs. However, many workers in Indonesia still face various significant challenges in the formal sector, including wage disparities between low-skilled and high-skilled workers and gender discrimination that often results in women receiving lower wages than men for the same work. (Saputri & Udjiyanto, 2023).

The relationship between education, formal labor, and poverty is very close and mutually influential. Better education can enhance workers' skills and productivity, increasing their chances of obtaining formal jobs with sufficient income. Thus, improving access to and the quality of secondary and higher education is an important step in reducing poverty. In addition, improving working conditions in the formal sector, including addressing wage disparities and gender discrimination, is also important to ensure worker welfare and reduce overall poverty levels. (Saputri & Udjianto, 2023).

Education and engagement in formal employment play a uniquely important role in alleviating poverty. A good education can help reduce poverty by opening up better job opportunities in the formal sector (Rahman, 2006). On the other hand, lack of access to education can increase poverty because it prevents someone from obtaining a profitable and sufficient position. Therefore, it is important to understand how education level and formal employment are interconnected and influence each other (Rahmaningtyas & Adianita, 2023).

In addition, the high school education level plays an important role in determining job opportunities in the formal sector. Secondary education provides the foundational skills and knowledge necessary to enter the job market and compete in the formal sector. Workers with a high school education tend to have better opportunities to secure stable and adequately paid jobs than those with only a basic education. Studies show that higher education can enhance workers' skills and productivity, reducing the risk. (Indyastuti *et al.*, 2021). Therefore, improving access to and the quality of secondary education is an important step in reducing poverty and enhancing workers' welfare.

In Indonesia, formal labor remains a major topic closely related to the poverty rate. Many formal workers face significant challenges, especially in terms of wage disparity. Low-skilled workers often receive minimum wages that are much lower compared to high-skilled workers. This disparity creates economic injustice and worsens workers' welfare in the lower strata of society. (Priebe *et al.*, 2015).

Besides wage issues, social protection

for formal workers is also crucial. Many workers do not have access to adequate health insurance or pension programs, leaving them vulnerable when facing health issues or retirement. The lack of social security adds to the economic burden and reinforces the cycle of poverty. (Priebe *et al.*, 2015).

The issue of gender equality in the formal sector is also a serious concern. Female workers often receive lower wages than their male counterparts for the same work. This discrimination not only reduces women's income but also reinforces gender inequality in the workplace. This situation reflects systemic injustice that needs to be addressed immediately. (Priebe *et al.*, 2015).

These conditions indicate a significant positive relationship between poverty and formal labor force participation. Wage inequality, lack of social protection, and gender discrimination all contribute to the high poverty rate among formal workers. More serious efforts are needed to reduce poverty and improve workers' welfare, improve working conditions, and ensure justice for all workers in Indonesia. (Priebe *et al.*, 2015).

This study explored the relationship between poverty, high school education, and involvement in formal employment in Indonesia from 2019 to 2023. Data from the Central Statistics Agency (BPS) will be analyzed to provide insights on how improving education levels can help reduce poverty and increase participation in formal employment (Asri *et al.*, 2023).

This is contrary to previous research, which found that, according to the R-squared value of 0.885, improvements in the economy, education, and health impact poverty in Indonesia by 88.5% (Efendi *et al.*, 2019).

The following table presents data on the average poverty percentage, high school education levels, and formal labor force participation across various regions of Indonesia. This data will help us understand how these three variables are interconnected and influence society's economic conditions.

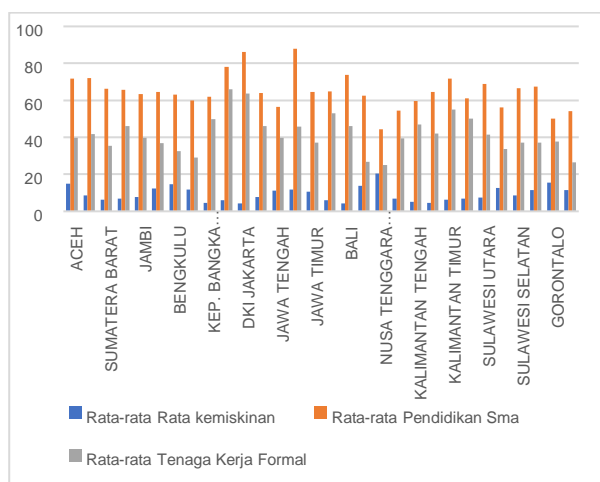


Figure 1. The average percentage of 30 provinces in Indonesia is related to poverty, high school education, and formal labor from 2019 to 2023. Source: Central Statistics Agency (BPS)

LITERATURE REVIEW

Poverty is when someone cannot meet their basic needs. The problem of poverty is not only felt by developing countries but also by developed countries. According to Todaro (2006:329), Malthus's theory explains that long-lasting poverty is caused by very rapid population growth in a country. Population growth will increase rapidly, according to an arithmetic series. At the same time, food production will develop more slowly, according to the geometric series, because production factors such as land production and its addition are less (Fitri & Aimon, 2019). The trickle-down effect theory explains that the progress achieved by certain social groups will automatically flow downwards, creating job opportunities and economic changes that will encourage a more equitable distribution of the results of economic growth. According to this theory, the vertical flow from the rich to the poor naturally occurs during economic growth (Airus, 2012).

Education is widely recognized as an important factor that plays a role in economic growth. (Kudaisi & Martins, 2014). Therefore, education continues to be developed because it has been proven to enhance social welfare and reduce poverty (Bloom, 2006). In the long term, the most important aspect is Education in Indonesia and other countries (Qin, 2023). Indirectly, this goal is achieved through the overall increase in efficiency and productivity, and directly, this goal is achieved by providing training for underprivileged communities to

equip them with the necessary skills as a productivity enhancement, which in turn will increase their income (Susanto & Pangesti, 2019).

Research shows that formal labor plays an important role in reducing poverty. Formal workers tend to have better social protection, such as health insurance and pension programs, and more stable wages compared to informal workers. However, many formal workers in Indonesia still face significant challenges, such as wage disparities between low-skilled and high-skilled workers and gender discrimination in the workplace. (Priebe *et al.*, 2015).

This research reinforces Faharuddin's (2022) findings, which state that the poverty rate among formal workers is still quite high despite their employment. One of the main factors is the income that must be shared among many family members, including children and non-working parents. This research also highlights the importance of secondary and higher education in improving workers' chances of escaping poverty. (Faharuddin & Endrawati, 2022).

A study by Sulasih and Novandari (2023) shows that education has a significant impact on poverty. However, this was not discussed in detail in the research on the impact of unemployment, education, and inflation on poverty in Indonesia during the period 2014-2020 (Sulasih *et al.*, 2023). The research indicates that better education can enhance workers' skills and productivity, ultimately increasing their chances of obtaining formal employment with sufficient income. (Sulasih *et al.*, 2023).

Various previous studies have revealed that appropriate investments in education and labor can address poverty. For example, Nurias (2022) stated that local government spending on education and infrastructure can significantly reduce poverty by increasing community productivity and reducing economic disparities. (Nurias *et al.*, 2023). Furthermore, Eki (2023) shows that empowering poor communities through education and skills training can drive inclusive economic growth and enhance individuals' ability to escape poverty. (Kloee Titu Eki *et al.*, 2024).

Furthermore, Balqis's (2023) research emphasizes the importance of investment in the education and labor sectors in supporting the growth of the manufacturing industry in Indonesia. (Balqis *et al.*, 2024) This investment creates more job opportunities and enhances workers' skills, which can ultimately reduce poverty. This is in line with Priebe's (2015) findings that formal workers tend to have better social protection and more stable wages than informal workers. (Priebe *et al.*, 2015).

The existing literature supports the argument that investment in education and skills training is key to reducing poverty and supporting sustainable economic growth. Formal education and skills training not only increase productivity but also open up more job opportunities for underprivileged communities, enhancing social welfare and reducing economic inequality.

Thus, investment in education and labor is an effective strategy to combat poverty. This investment increases productivity and social welfare and supports inclusive and sustainable economic growth. (Balqis *et al.*, 2024) Therefore, the government and policy-makers must continue encouraging investment in these sectors to reduce poverty significantly and improve community welfare overall. (Kloee Titu *Eki et al.*, 2024).

Instruction is vital for expanding individuals' access to work markets and assists instructive openings, which can successfully offer assistance to ease poverty. With the rise of data and communication innovation (ICT), instructive assets have become more available and broad, empowering individuals to procure abilities and information that adjust with the requests of the modern work showcase. Through instruction, people can make strides in their capacities, making them better prepared to compete for employment. This adjusts with investigations demonstrating that formal instruction and aptitude preparation can upgrade efficiency and create more business openings for distraught communities.

Additionally, by leveraging advanced innovation, instructive education education can offer adaptable and available learning stages for those in further areas. This broadens the scope of instruction and permits more people to create their aptitudes, expanding their prospects of securing great occupations.

Subsequently, contributing to instruction and aptitudes preparing through advanced innovation can effectively battle poverty and advance comprehensive and economical financial advancement.

In outline, the current writing proposes that instruction improved by data and communication innovation can increase access to work advertised and advance a person's aptitudes. Contributing to advanced instruction holds considerable promise for diminishing poverty levels by making better opportunities for communities to improve their well-being and lock in effectively within the worldwide economy.

(RocheskaSlavica, AngeleskiMarjan, Nikolski Dimitar, 2016).

RESEARCH METHOD

This research examines the relationship between high school education levels, poverty, and involvement in the formal labor force in Indonesia from 2019 to 2023. The data used in this study is panel data obtained from BPS. Panel data allows for the analysis of variable changes over time and across individuals in 30 provinces in Indonesia.

The factors in this ponder are based on their pertinence and centrality to the explored issues. Tall school instruction was chosen since it could be a basic arrangement that influences an individual's capacity to enter the formal labor showcase. According to Rizal (2015), higher instruction is regularly related to better job openings and higher pay. (Rizal, 2015). Cooperation within the formal labor constraint is chosen since formal labor tends to have superior social assurance and financial stability compared to casual labor. (Priebe *et al.*, 2015) Poverty was chosen as the most variable because it is the essential marker of the community's financial well-being, which is the center of this investigation.

The information for this investigation was collected by downloading freely accessible information from the Central Bureau of Statistics" or BPS. It is the government agency responsible for collecting and analyzing statistical data in Indonesia. The collected information incorporates data on instruction levels, poverty, and cooperation within the formal workforce in over 30 areas in

Indonesia from 2019 to 2023. This information is then handled and analyzed using measurables. An investigation program will be conducted to investigate the connections between these factors. By utilizing board information, this inquiry permits dissecting variable changes over time and between people, resulting in more profound and comprehensive experiences.

This investigation employs an information investigation strategy that includes a few steps. To begin with, an ordinariness test guarantees that the information is ordinarily conveyed. After that, a Pearson relationship examination was conducted to determine the quality and course of the straight relationship between the two factors. This study utilized the Pearson relationship examination to examine the relationship between instruction and poverty levels and between education level and support within the formal work constraint.

To understand the operational definitions of the key variables used in this research, here is a table explaining the operational definitions, indicators, and sub-indicators of each variable:

Table 4.1 Operational Definition of Variables

Variable	Operational Definition	Indicator	Sub Indicator
Poverty	The inability from an economic standpoint to meet basic needs	Poverty Rate	Average percentage of the poor population
Education	Level of formal education achievement	Level of Education	Average percentage of high school graduation
Labor Force Participation	Formal activities of individuals that generate income	Labor Force Participation Rate	Average percentage of formal labor force participation

Source: (Elvira Luthan, 2015)

In this study, poverty, education, and labor force participation are interrelated variables that are important for understanding their relationship. Previous research has shown that education effectively reduces poverty and increases labor force participation. (Rizal, 2015).

The operational definitions of the key variables used in this study must be understood before proceeding to the analysis and discussion of the findings. Labor force participation, education, and poverty are interrelated factors that require careful investigation. Poverty affects access to education and job prospects and reflects an unfavorable economic situation. On the other hand, education is often seen as a way to escape poverty because it can enhance a person's knowledge and skills, leading to better job prospects. Good education also contributes to workforce participation, which supports social stability and economic progress.

RESULTS AND DISCUSSION

Poverty remains one of Indonesia's biggest challenges in endeavoring to ensure its individuals' welfare. Based on information from the Central Measurements Office (BPS), in 2024, the poverty rate in Indonesia reached 9.22% of the entire populace. This figure is an increase compared to the past year due to different components, including the effect of widespread and worldwide financial insecurity. Poverty not only influences the community's quality of life but also impacts their access to instruction and conventional work openings.

Education is pivotal in easing poverty and expanding cooperation within the formal labor drive. BPS information appears that the normal length of tutoring for the Indonesian populace in 2024 is 8.5, suggesting numerous inhabitants have not completed upper auxiliary instruction. Even though there are different endeavors from the government to extend school support rates, particularly in farther ranges with tall poverty levels, challenges remain. Grant programs and the advancement of instructive foundations are anticipated to empower more children to continue their instruction to higher levels. Progressing the quality of instruction is additionally a center to guarantee that graduates are prepared to compete within the worldwide work market.

Participation in the formal labor drive is imperative to a country's financial well-being. In 2024, the labour-drive interest rate within the formal segment in Indonesia came.

55% were in formal employment, whereas the rest were in the casual segment. Formal employment provides superior stability and social security compared to casual jobs. Therefore, expanding support within the formal labor force has become one of the most important goals for progressing community welfare. Quality instruction and important aptitudes are key to entering the formal labor market and decreasing reliance on the casual segment.

With this background, we conducted an examination to help understand the relationship between poverty, instruction, and participation within the formal labor constraint in Indonesia. The results of this analysis are anticipated to provide more profound insights into the significance of instruction in endeavors to reduce poverty and increase interest within the formal labor constraint.

RESULTS

Analysis of Normality Test

At the initial stage, a normality test will be conducted to determine if the data is usually distributed. This test uses Skewness/Kurtosis to determine the statistical information present in the data processing results.

Table 5.1 Results Skewness/Kurtosis tests for Normality

Variable	Obs	Pr (Skewness)	Pr(Kurtosis)	Adj chi2 (2)	Prob>chi2
Poor	30	0.0684	0.5771	3.89	0.1426
Education Senior High School	30	0.2513	0.1633	3.58	0.1669
Labor	30	0.1391	0.3830	3.23	0.1985

Source: Data Processed by the Author

Based on the normality test results using skewness and kurtosis, the data on poverty, high school education, and formal labor show a balanced distribution. The skewness value approaching 0 indicates a nearly symmetric distribution, while the kurtosis value also approaching 0 indicates a distribution that is not significantly different from a normal distribution. Furthermore, the chi-square probability value 0.05 indicates no evidence to reject the null hypothesis that the data is usually distributed. Thus, the data can be normally distributed, which is a good indication for further statistical analysis.

Correlation Test Analysis

After studying the results of normality, which indicate if the data is normally distributed, we will next look for the correlation value between poverty and education using Pearson correlation analysis. This analysis will help us understand the relationship between the two variables. In addition, we will also analyze the correlation between education and formal labor to see how education levels affect participation in the formal labor force.

Table 5.2 Results of Correlation

Variables	Poor	Education Senior High School	Labor
Poor	1.0000		
Education Senior High School	-0.4425	1.0000	0.0143
Labor	-0.7081	0.6322	1.0000
	0.0000	0.0002	

Source: Data Processed by the Author

The correlation result above shows the relationship between poverty and high school education levels. The results show a negative relationship due to a correlation coefficient of -0.4425. This is indicating a moderate relationship. This means the higher the poverty level, related to the lower the high school education level.

The relationship between education and formal labor shows positive correlation with a correlation coefficient of 0.6322, indicating a strong relationship. This means that the higher the high school education level related to the higher the participation in the formal labor force.

The relationship between poverty and formal labor shows a negative result with a correlation of -0.7081, indicating a strong relationship. This means that the higher the poverty rate related to the lower the participation in the formal labor force.

These results show that education and formal labor force significantly related to poverty. Improving access to and quality of education can be an effective strategy to address poverty and enhance community welfare.

DISCUSSION

This research supports Subakti's (2023) findings, which found that the increase in the number of literate students and the average duration of schooling is related to

The reduction of poverty in Indonesia. The correlation between literacy rates and poverty in the study is -0.65, With a p-value of 0.0001, indicating a strong relationship. Furthermore, the regression results indicate that each additional year in the average duration of schooling can reduce poverty by 5% (Surbakti *et al.*, 2023)

This result is consistent with the study conducted by Haryana (2023), which shows that education positively affects economic growth and welfare. In Hardana's research, the relationship between education and economic growth correlates 0.58, with a p-value of 0.002, indicating a strong relationship. Higher education tends to contribute to increased economic growth, which can enhance participation in the formal labor force (Hardana, 2023).

Furthermore, these results support Afini's (2020) findings in Riau Province, which indicate that the population size hurts poverty. In Afini's research, the correlation between the population and poverty is -0.47, with a p-value of 0.015, indicating a moderate relationship. The results of this study indicate that an increase in population tends to be associated with an increase in poverty. However, poverty can be reduced by improving the quality of education (Afina, 2020).

Previous research has indicated that women's education significantly impacts poverty reduction in Indonesia, although women's labor force participation does not have a significant effect. (Azmi & Cholily, 2023). Meanwhile, according to Adianita's (2024) findings, the poverty rate does not affect unemployment in Indonesia, but unemployment does affect labor force participation. (Adianita *et al.*, 2024).

Education has become an important aspect, as previous research findings indicate that higher education levels will reduce the unemployment rate in Indonesia, thereby strengthening this research. (Hindun, 2019). Higher education provides better job opportunities and can reduce poverty levels. (Erban, 2012). When the level of education is low, it will cause losses to the labor market. (Heisig *et al.*, 2019).

This investigation has noteworthy sug-

gestions for government approaches, especially in progressing the quality of instruction and workforce planning. Getting quality instruction must be a top need within the open arrangement motivation. This implies guaranteeing that each person can access essential instruction and empowering them to reach the college level. By extending instructive opportunities to higher levels, we guarantee that everybody has the same chance to realize their potential fully.

Higher instruction grant programs are one of the activities that the government can create. This program, not as it were, makes a difference in underprivileged individuals' instruction but also empowers the change of workforce quality in the future. In expansion, the government can create work aptitudes preparing programs planned to prepare understudies by the time they enter the workforce. These preparation programs can incorporate specialized and non-technical abilities significant to the current work showcase needs.

In addition, literacy improvement programs are also an important step. Literacy includes the ability to read and write and digital and financial literacy, which are increasingly important in this modern era. A comprehensive literacy program can help individuals be better prepared to face economic and social challenges and improve their overall well-being.

Actualizing these arrangements will have a positive effect in the long term. Enhancing instruction and workforce arrangements will help diminish poverty levels and increase support within the formal work advertisement. In addition, this approach can energize more comprehensive and maintainable financial development.

In any case, this ponder has a few restrictions that should be considered. The restricted test estimate centers on, as it were, some primary factors that may limit the generalization of the inquiry about discoveries. Future inquiries should incorporate a larger and more different test to ensure more agent and generalizability comes about. In expansion, it is additionally critical to consider other factors that will have a noteworthy effect on the relationship between instruction and poverty, such as the quality of instruction itself, getting to

Innovation and neighborhood financial components can change in each locale.

Encouraged research should also investigate the long-term impacts of instructional approaches on the flow of poverty and labor showcase. This may incorporate a more in-depth examination of how particular instructional approaches influence social and financial results over a longer period and how instructional mediations can be custom-fitted to meet the particular needs of different community groups.

Hence, this investigation not only gives a more profound understanding of the relationship between instruction and poverty but also offers profitable direction for policymakers in planning more compelling programs and activities to move community welfare forward. Through suitable arrangements, it is trusted that the enhancement of get and quality of instruction can become a capable instrument to diminish poverty, increment support within the formal labor constraint, and energize feasible financial development.

CONCLUSION

Ponders appear critical, showing a relationship between poverty levels, instruction, and interest in formal business in Indonesia. (Ramadhani & Putra, 2019). It is accepted that instruction can increment interest and decrease poverty in formal work. (M. Shabri Abd. Majid, 2014). On the other hand, over the top, poverty adversely impacts scholastic execution and morals regarding formal work. By making strides to improve the quality of instruction, society can procure superior aptitudes to improve their results and benefits, making a difference and breaking the cycle of poverty.

Based on these discoveries, contributing to instruction, particularly within the destitute divisions, is vital to decreasing poverty and incrementing interest within the formal work showcase. (Fisher *et al.*, 2008). The government and the instruction community must prioritize improving instruction quality to bolster comprehensive and varied financial advancement.

Expanding and improving equitable education programs, especially in areas

with high poverty levels, is very important to support poverty alleviation. In addition to improving access to basic education, it is also necessary to ensure that the community can continue their education to higher levels. This includes providing scholarships and other educational assistance programs for underprivileged students. By providing broader opportunities to continue education, a generation more prepared to face economic and social challenges can be created.

To prepare graduates for the official job market, skill training programs must be incorporated into the curriculum. The preparedness of graduates to join the formal labor market is improved by skill-based education. Tangible actions must be taken, like incorporating hands-on training into the curriculum, increasing educational opportunities in rural regions, constructing school facilities, offering sufficient transportation, and putting teacher training and scholarship programs in place. Government, academic, and business sector collaborations are crucial for developing internship and job training programs that meet industry demands.

Awareness campaigns to increase public understanding of the importance of education and skills in reducing poverty also need to be conducted. This can be done through various media and community activities so that information about the benefits of education can be widely disseminated and accepted by all layers of society. A good education will not only improve individual welfare but also positively impact the economy as a whole.

Building a profitable monitoring and appraisal system is also noteworthy for choosing the amplexness of exercises that reduce desperation and advance instruction. This system must gauge how these exercises satisfy their objectives and prescribe advancing enhancement. The government and related organizations can update the adequacy of instruction and desperation-decrease activities by making the

Required alterations with advancing assessment.

By taking these activities, it is imagined that instruction and poverty reduction will work together to advance community welfare in the long run. With the open division, corporate segment, and instructive education, the community can also establish an atmosphere that bolsters impartial and maintainable financial development.

Education levels, especially at the high school level, have a significant positive effect on reducing poverty. High school-trained people receive better employment opportunities, leading to improved income levels and economic stability. The study emphasized a strong correlation between education and economic development. Areas with higher secondary registration rate tend to undergo lower and better economic efficiency rate.

Despite the positive impact of education, challenges such as uneven approach with secondary studies, especially in rural areas and disadvantages, are still an obstacle for poverty reduction. Factors such as socio-economic status, gender inequality and limited infrastructure contribute to this difference. Investing in secondary studies not only reduces short-term poverty, but also contributes to long-term economic growth and social development. Education allows people with skill and knowledge, allowing them to break the poverty cycle.

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