



## Open Unemployment Rate Based on Education Level at 2015-2018

Amries Rusli Tanjung<sup>a</sup>, David David<sup>a\*</sup>, Nicholas Renaldo<sup>b</sup>, Rizaldi Putra<sup>c</sup>, Sulaiman Musa<sup>d</sup>

<sup>a</sup>Business Faculty, Institut Bisnis dan Teknologi Pelita Indonesia, Indonesia

<sup>b</sup>Bond Business School Participant, Bond University, Australia

<sup>c</sup>Faculty of Business and Communications, Limkokwing University of Creative Technology, Malaysia

<sup>d</sup>School of Business and Economics, Universiti Brunei Darussalam, Brunei Darussalam

\*Corresponding Author: [david@lecturer.pelitaindonesia.ac.id](mailto:david@lecturer.pelitaindonesia.ac.id)

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### ABSTRACT

The research aims to examine the relationship between education levels and the Open Unemployment Rate (TPT) in Indonesia from 2015 to 2018. This study employs a quantitative research approach using secondary data analysis. A descriptive and inferential statistical approach will be used to identify trends and correlations between education and unemployment. While vocational education shows promising results in reducing unemployment, general high school graduates face higher unemployment risks due to a lack of specialized skills. However, statistical analysis suggests that education alone is not the sole determinant of unemployment, and other factors such as economic conditions, skill mismatches, and technological changes must also be considered. The analysis covers only 2015-2018 data, which may not fully capture long-term employment trends or the impact of recent economic and technological shifts. Future research can expand the research period beyond 2015-2018 to analyze how unemployment trends change over time, especially in response to economic crises or technological advancements.

**Keywords:** Open Unemployment Rate; Education Level

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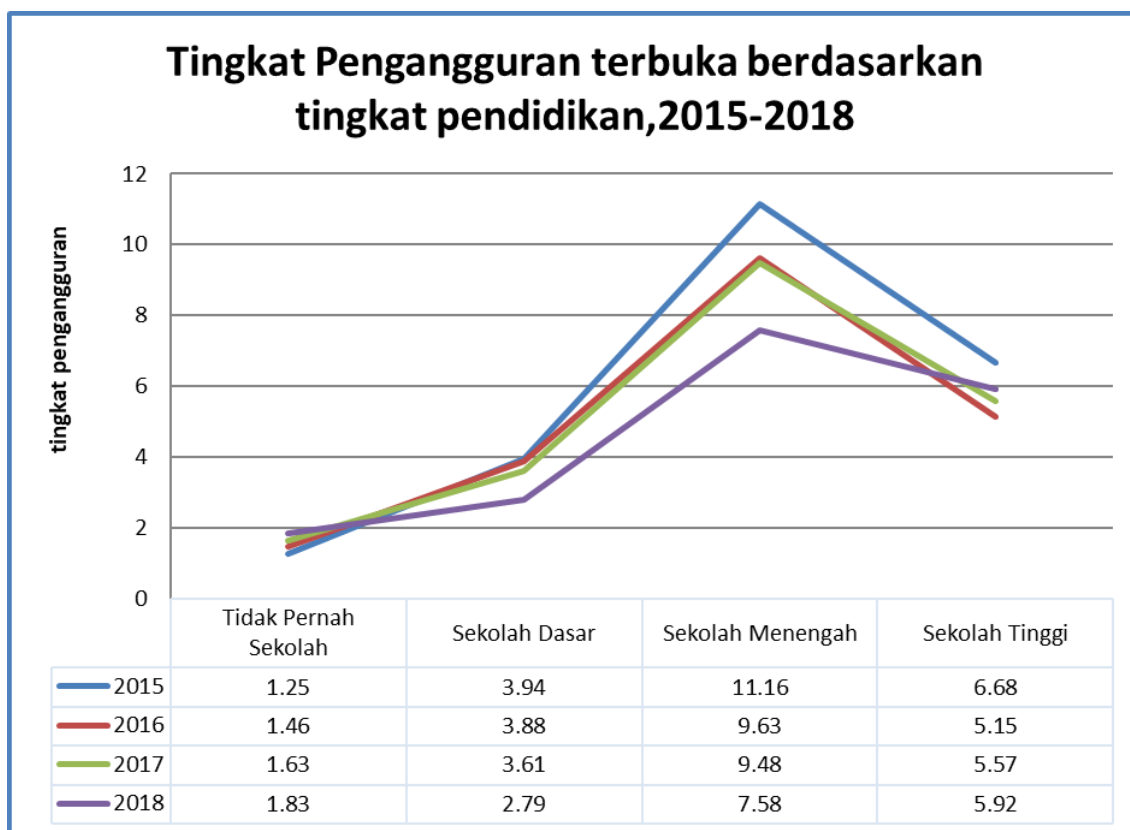
**SDG's:** Quality Education (4); Decent Work and Economic Growth (8); Industry, Innovation, and Infrastructure (9); Reduced Inequalities (10)

### INTRODUCTION

Unemployment in Indonesia is a problem that continues to be a topic of discussion (Purwati & Angelina, 2021). The development of a country can be seen from various economic indicators, as we know one of them is the unemployment rate. Based on the unemployment rate, the condition of a country can be seen, whether the economy of a country is categorized as developing or on the contrary experiencing decline.

The Open Unemployment Rate (TPT) is one indicator that can be used to measure the level of labor supply that is not used or absorbed by the labor market (Alimi & Chakroun, 2022). Unemployment is a measure that is carried out if someone does not have a job but they are actively trying to find a new job in the last four weeks. Unemployment can occur due to an imbalance in the labor market. This shows that the labor offered exceeds the number of workers requested (Draissi & Rong, 2023).

Education is an effort to develop a person's thinking skills (Jakobsen et al., 2019). because in the current global era, competition is increasing and is also accompanied by increasingly sophisticated technological advances (Sudarno et al., 2022). One of the variables that affects the unemployment rate is the level of education, where the level of education of a worker greatly influences the unemployment rate. Based on data from the Central Statistics Agency from 2015 to 2018, the open unemployment rate based on education level is as follows:



**Figure 1. Phenomena Data**

*Source: Central Statistics Agency, 2019*

The open unemployment rate based on education level is clearly seen to have decreased every year at the Elementary and Middle School education levels, while at other education levels there has been an increase and a decrease.

This study aims to analyze the relationship between education levels and the Open Unemployment Rate (TPT) in Indonesia. Specifically, the research seeks to: Examine Trends – Identify and analyze trends in unemployment rates based on education levels from 2015 to 2018, Assess the Impact of Education – Determine the extent to which different education levels influence unemployment rates, Identify Contributing Factors – Investigate the possible factors causing fluctuations in unemployment rates at various education levels, and Provide Policy Recommendations – Offer insights and policy recommendations to reduce unemployment through improvements in the education system and workforce readiness.

## LITERATURE REVIEW

### Unemployment and Economic Development

Unemployment is a crucial economic indicator that reflects a country's economic condition. According to Todaro & Smith (2015), high unemployment rates indicate inefficiencies in labor market absorption, which can hinder economic growth. Countries with high unemployment often experience lower consumer spending, reduced economic productivity, and social issues such as poverty and inequality (Blanchard, 2017).

Indonesia, as a developing country, continues to face unemployment challenges despite economic growth. The Open Unemployment Rate (TPT) serves as an essential measure of the workforce not absorbed by the labor market. BPS (2019) defines TPT as the proportion of unemployed individuals actively seeking jobs within the last four weeks relative to the total labor force.

### Education and Unemployment

Education is a key factor influencing employment opportunities. Becker (1993) in his Human Capital Theory argues that higher education improves individuals' skills and productivity, making them more competitive in the job market. However, in developing countries, a mismatch between education and labor market needs can lead to educated unemployment (McGuinness, 2006).

Studies in Indonesia indicate that unemployment rates among highly educated individuals fluctuate. BPS (2019) data show that while unemployment at the elementary and middle school levels has declined, fluctuations occur at higher education levels. This may be attributed to skill mismatches, limited job opportunities in specialized fields, and increased competition among graduates (Suryadarma et al., 2012).

### **The Role of Technological Advancement and Globalization**

Technological advancements and globalization have reshaped labor markets. Brynjolfsson & McAfee (2014) highlight that automation and digitalization create new job opportunities while simultaneously rendering some traditional jobs obsolete. This transformation demands a workforce equipped with digital literacy and adaptable skills.

In Indonesia, the rise of Industry 4.0 increases the demand for highly skilled labor, particularly in STEM (Science, Technology, Engineering, and Mathematics) fields (Ministry of Manpower, 2020). However, many graduates struggle to secure employment due to gaps between educational curricula and industry needs (Rizky & Raharjo, 2021).

### **Policy Interventions to Reduce Unemployment**

Governments play a vital role in addressing unemployment through policies that align education with labor market demands. According to the World Bank (2020), strategies such as vocational training, entrepreneurship programs, and industry-academia collaborations help reduce unemployment by equipping individuals with job-ready skills.

In Indonesia, programs like Link and Match in vocational education aim to synchronize graduates' competencies with industry needs (Istiana et al., 2022). However, challenges remain in ensuring equal access to quality education and fostering innovation-driven employment.

## **METHODOLOGY**

### **Research Design**

This study employs a quantitative research approach using secondary data analysis (Sekaran & Bougie, 2016). The research aims to examine the relationship between education levels and the Open Unemployment Rate (TPT) in Indonesia from 2015 to 2018. A descriptive and inferential statistical approach will be used to identify trends and correlations between education and unemployment.

### **Data Sources**

The study utilizes secondary data obtained from:

- Central Statistics Agency (BPS) – Data on the Open Unemployment Rate (TPT) based on education levels.
- Ministry of Manpower (Kemnaker) – Reports on labor market trends and employment policies.
- World Bank & Other Research Publications – Comparative studies on education and unemployment.

### **Data Collection Techniques**

Data will be collected through:

- Document Analysis – Reviewing official reports and publications from BPS, Kemnaker, and international organizations.
- Statistical Data Extraction – Extracting relevant figures on unemployment rates for different education levels from 2015 to 2018.

### **Data Analysis Methods**

The data will be analyzed using the Descriptive Analysis, identifies unemployment trends across different education levels, and Compares year-to-year changes in unemployment rates.

## **RESULTS AND DISCUSSION**

### **Results**

From the data above, it can be observed that the Open Unemployment Rate (TPT) is higher at the Secondary School education level. Based on the contingency table analysis, there is no significant influence of education level on the unemployment rate, as indicated by the chi-square test results:  $X^2 = 16.919$  and  $X^2$

calculated = 0.67821, with a significance level of  $\alpha = 5\%$  and  $f_o$  representing the total number of unemployed individuals from 2015 to 2018.

According to the results of the National Labor Force Survey (Sakernas) conducted by the Central Statistics Agency (BPS) from 2016 to 2018, Vocational High School (SMK) graduates consistently experienced a decline in their open unemployment rate each year.

## **Discussion**

### **The Relationship Between Education Level and Unemployment**

The findings indicate that the Open Unemployment Rate (TPT) is higher among individuals with a secondary school education, particularly among high school graduates. This suggests that general secondary education does not always provide sufficient skills or qualifications required by the labor market. Vocational education, on the other hand, shows a declining unemployment trend, indicating a better alignment between vocational training and industry demands.

However, the contingency table analysis reveals that there is no statistically significant relationship between education level and unemployment, as the chi-square test results ( $X^2 = 16.919$ ,  $X^2$  calculated = 0.67821,  $\alpha = 5\%$ ) indicate an absence of strong correlation. This suggests that other external factors, such as economic conditions, technological advancements, and job market dynamics, may have a greater influence on unemployment rates than education level alone.

### **High Unemployment Among High School Graduates**

The data shows that unemployment rates are highest among general high school (SMA) graduates. One possible explanation is that high school education primarily focuses on academic knowledge rather than practical or technical skills required by employers. As a result, many high school graduates struggle to compete in the job market, leading to higher unemployment rates in this group.

This finding is consistent with previous studies (Suryadarma et al., 2012) that suggest high school graduates often lack specialized skills, making them more vulnerable to job competition. Without additional vocational training or higher education, their chances of securing employment remain lower compared to other educational levels.

### **Declining Unemployment Among Vocational High School (SMK) Graduates**

According to the National Labor Force Survey (Sakernas) from 2016 to 2018, the unemployment rate among Vocational High School (SMK) graduates has shown a steady decline. This trend suggests that vocational education is becoming more effective in preparing students for the workforce. Unlike general high school graduates, SMK graduates receive practical training in specific fields such as engineering, hospitality, and business, which increases their employability.

However, despite the improvement, the unemployment rate for SMK graduates is still relatively high compared to other education levels. This could be due to:

- A mismatch between vocational training and industry demands, where some graduates may not possess the skills currently required by employers.
- Limited job opportunities for fresh graduates, particularly in industries with slow hiring rates.
- The perception that vocational education is less prestigious than university degrees, leading some employers to prioritize university graduates over SMK graduates.

### **The Role of Higher Education in Employment**

For individuals with higher education (diplomas and university degrees), the unemployment rate fluctuates, indicating both challenges and opportunities in the job market. While higher education generally increases job prospects, some graduates still face difficulties in finding employment due to:

- Skill mismatch – Many graduates hold degrees in fields with low job demand.
- Overqualification – Some university graduates apply for jobs that do not require a degree, increasing competition for lower-level positions.
- Lack of experience – Fresh graduates without work experience often struggle to secure jobs.

## External Factors Influencing Unemployment

While education plays a role in shaping employment opportunities, several external factors also contribute to unemployment in Indonesia, including:

- Economic Conditions – Periods of economic slowdown reduce job availability, increasing unemployment rates.
- Technological Advancements – Automation and digitalization are replacing certain job roles, particularly those requiring low to medium skills.
- Government Policies – Initiatives such as vocational training programs, entrepreneurship support, and job market reforms play a crucial role in reducing unemployment.

## CONCLUSION

### Conclusion

This study highlights the complex relationship between education and unemployment in Indonesia. While vocational education shows promising results in reducing unemployment, general high school graduates face higher unemployment risks due to a lack of specialized skills. However, statistical analysis suggests that education alone is not the sole determinant of unemployment, and other factors such as economic conditions, skill mismatches, and technological changes must also be considered. Addressing these challenges requires comprehensive education and labor policies to ensure that the workforce is adequately prepared for evolving job market demands.

### Implication

For Policy Makers: The government should prioritize vocational training programs to equip students with practical skills that match industry demands. Strengthening apprenticeships, internships, and skill certification programs can help bridge the gap between education and employment. For Educational Institutions: Schools and universities should align curricula with labor market needs by incorporating entrepreneurial education, digital literacy, and industry-relevant competencies. Collaboration with industries can provide students with real-world experience before graduation.

### Limitation

The analysis covers only 2015-2018 data, which may not fully capture long-term employment trends or the impact of recent economic and technological shifts. The study does not differentiate unemployment trends across different provinces or urban vs. rural areas, where job market conditions may vary significantly. Factors such as economic cycles, technological advancements, demographic shifts, and social policies were not analyzed in detail, which may influence the unemployment rate independently of education.

### Recommendation

For Policy Makers, Enhance Vocational Education and Training: Expand technical and vocational education (TVET) programs that align with industry demands to improve employability. Encourage Entrepreneurship: Provide financial incentives, training, and mentorship programs to help graduates start their own businesses.

For Educational Institutions. Redesign High School Curricula: Integrate soft skills training, digital literacy, and problem-solving abilities into general high school programs to enhance employability. Promote Work-Based Learning: Introduce internship and cooperative education programs for students to gain hands-on experience before entering the workforce.

### Future Research

Future research can expand the research period beyond 2015-2018 to analyze how unemployment trends change over time, especially in response to economic crises or technological advancements. Investigating how unemployment varies across different regions (urban vs. rural) and industries to develop more targeted employment policies. Examining how automation, artificial intelligence, and digitalization are influencing employment opportunities and skill requirements in Indonesia.

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