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**NAVIGATING THE TIDES OF CHANGE: A COMPREHENSIVE  
ANALYSIS OF EMPLOYMENT AND UNEMPLOYMENT  
DYNAMICS IN INDONESIA**

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**Abstract**

Labor dynamics play a pivotal role in the economic growth of a country. This study aims to fill the research gap by conducting a descriptive analysis comparing the working population and unemployment in Indonesia from 2011 to 2020. Data are sourced from BPS statistical records, including the number of working individuals, unemployed persons, and variables such as wage rates, economic growth, employment opportunities, and education. The study employs descriptive statistical techniques to examine labor trends over the past decade. Key changes in unemployment and employment rates are explored in relation to the global economic crisis, technological advancements, and the COVID-19 pandemic. Findings show an upward trend in employment, while unemployment experienced significant fluctuations, especially during the pandemic, with precise figures illustrating these patterns. The study highlights education, structural transformation, and economic growth as crucial determinants of labor market dynamics, providing more targeted policy implications. These implications offer actionable insights to enhance inclusive growth, improve job quality, and strengthen labor market resilience. The study provides a solid foundation for adaptive and responsive policy formulation aimed at creating a more sustainable employment environment.

**Keywords:** Employment Dynamics, Indonesia Labor Market, Unemployment Trends



## INTRODUCTION

Labor dynamics play a pivotal role in shaping the economic growth of a nation. This study provides a detailed descriptive analysis of the employment and unemployment trends in Indonesia between 2011 and 2020. The dataset is sourced from BPS statistical records and includes key variables such as the number of employed persons, unemployment figures, wage rates, economic growth, and education levels. Using a descriptive approach, this research examines shifts in the labor market, focusing on factors like the global economic crisis, technological advancements, and the impact of the COVID-19 pandemic.

The Human Capital Theory emphasizes the role of education and skills in determining an individual's employability and productivity (Becker, 1964; Schultz, 1961). According to this theory, investments in education and training can increase an individual's human capital, making them more valuable to employers and reducing their risk of unemployment. This suggests that the level and quality of education in a country can have significant impacts on its unemployment rate.

Unlike previous studies, this research offers a unique longitudinal perspective that spans a decade and emphasizes structural transformations in Indonesia's labor market. It goes beyond simple employment metrics by integrating education levels and institutional policies into the analysis, providing a more comprehensive view of the determinants of employment dynamics. The findings indicate a fluctuating employment trend with a notable increase post-crisis, while unemployment rates reflect significant variability, peaking during the pandemic.

Job Search Theory presents a useful framework for understanding the dynamics of employment in Indonesia. The theory focuses on individual behavior in the job search process, including the decision to participate in the labor force, the setting of reservation wages, and the duration of unemployment (Mortensen, 1970; McCall, 1970). In the Indonesian context, this theory can help explain how factors such as wage rates, economic growth, and employment opportunities affect individuals' decisions to seek employment or remain unemployed. In addition, Human Capital Theory emphasizes the importance of

education and skills in determining employment opportunities and individual productivity (Becker, 1964; Schultz, 1961).

This theory is relevant to understanding how the level and quality of education in Indonesia can affect the dynamics of employment. In the 2011–2020 period, an increase in the level of education in Indonesia may contribute to changes in the structure of employment and the demand for skilled labor. The labor market segmentation theory can also be applied to analyze the dynamics of employment in Indonesia. This theory explains that the labor market consists of different segments, such as primary and secondary sectors, with different characteristics, working conditions, and job stability (Doeringer & Piore, 1971; Reich, Gordon, & Edwards, 1973). In the Indonesian context, this theory can help explain the differences in job quality and unemployment rates across different sectors of the economy. By adding a more in-depth discussion of these theories and linking them to the Indonesian context, the article will have a stronger theoretical foundation to analyze the dynamics of employment and unemployment in Indonesia during the 2011–2020 period.

Applying the Labor Market Segmentation Theory to the analysis of Indonesia's manpower issues can provide valuable insights into the structural factors contributing to unemployment and underemployment. By recognizing the distinct characteristics and challenges of different labor market segments, policymakers can develop targeted interventions to promote better working conditions, reduce inequalities, and foster inclusive economic growth. However, more research is needed to fully understand the dynamics of labor market segmentation in Indonesia, particularly in light of ongoing structural changes and technological advancements. Future studies could examine the factors that contribute to the persistence of the informal sector, the barriers to mobility between sectors, and the impact of policies aimed at promoting formal employment and improving working conditions.

Through descriptive analysis, this article will outline key trends in the world of work during the period, investigating key factors that played an important role in the decline or increase in employment. In addition, unemployment comparisons will provide insight into the extent to which government policies, economic developments, and structural changes affect employment opportunities and unemployment rates across populations. The period



from 2011 to 2020 witnessed significant changes in Indonesia's employment landscape, shaped by various economic, social, and technological factors. To understand these trends, it is essential to analyze the interplay between economic growth, capital accumulation, and technological progress, as emphasized by the Solow-Swan Growth Theory (Solow, 1956; Swan, 1956).

The Solow-Swan Growth Theory provides a framework for understanding the long-run determinants of economic growth, focusing on the roles of capital accumulation, labor force growth, and technological progress. In the context of employment trends, this theory suggests that economic growth, driven by investments in physical capital and human capital, as well as technological advancements, can lead to job creation and reduce unemployment. Empirical studies by Irfan Muhammad Al Farrell, Hastarini Dwi Atmanti (2023) and S. Suhandi, Wahyu Wiguna, and Icin Quraysin (2021) have applied this theoretical framework to analyze employment trends in Indonesia during the 2011-2020 period. Their findings highlight the importance of economic growth in driving job creation but also reveal the challenges posed by factors such as the global economic crisis, technological change, and the COVID-19 pandemic.

To further enrich the analysis of employment trends, future research could consider incorporating additional theoretical perspectives, such as the Endogenous Growth Theory (Romer, 1986; Lucas, 1988), which emphasizes the role of human capital and innovation in driving long-run economic growth. This theory could provide insights into how investments in education research and development contribute to job creation and economic transformation. Moreover, the analysis of employment trends could be strengthened by considering the impact of structural change and sectoral shifts in the economy. The Structural Change Theory (Lewis, 1954; Chenery, 1960) highlights the importance of the reallocation of labor from low-productivity sectors, such as agriculture, to high-productivity sectors, such as manufacturing and services, in driving economic growth and job creation. Applying this theory to the Indonesian context could shed light on the role of structural transformation in shaping employment trends over the past decade.

By integrating the Solow-Swan Growth Theory, Endogenous Growth Theory, and Structural Change Theory, future research can provide a more comprehensive understanding of the complex dynamics shaping employment trends in Indonesia. This multifaceted approach can inform the development of evidence-based policies aimed at promoting sustainable job creation, reducing unemployment, and fostering inclusive economic growth in the face of ongoing challenges and uncertainties. The relationship between unemployment and economic growth is a crucial area of investigation for policymakers and researchers alike. The Solow-Swan Growth Theory provides a foundational framework for understanding this relationship, emphasizing the role of capital accumulation, labor force growth, and technological progress in driving long-run economic growth (Solow, 1956; Swan, 1956).

In the context of unemployment, the Solow-Swan Growth Theory suggests that economic growth can lead to job creation and reduce unemployment by increasing the demand for labor. However, the relationship between growth and unemployment is not always straightforward, as evidenced by the phenomenon of "jobless growth" in some countries (Bhattarai, 2016).

Okun's Law, another influential theory, provides a more direct link between unemployment and economic growth (Okun, 1962). This law posits that there is a negative relationship between changes in the unemployment rate and changes in real GDP growth. Specifically, Okun's Law suggests that a one percentage point increase in the unemployment rate is associated with a two percentage point decrease in real GDP growth. Empirical research by Irfan Muhammad Al Farrell, Hastarini Dwi Atmanti (2023) and S. Suhandi, Wahyu Wiguna, and Icin Quraysin (2021) has explored the relationship between unemployment and economic growth in Indonesia. Their findings provide support for the negative relationship between these two variables, consistent with Okun's Law.

However, it is important to recognize that the relationship between unemployment and economic growth can be influenced by various factors, such as labor market rigidities, the nature of economic growth (e.g., capital-intensive vs. labor-intensive), and the sectoral composition of the economy. The Structural Change Theory (Lewis, 1954; Chenery, 1960) can provide additional insights into how the reallocation of labor across sectors can impact



unemployment and economic growth. To deepen the understanding of the linkages between unemployment and economic growth in Indonesia, future research could consider the following avenues: Investigating the applicability of Okun's Law in the Indonesian context, taking into account potential variations across regions, sectors, and periods. Examining the role of structural change and sectoral shifts in shaping the relationship between unemployment and economic growth, drawing on the insights of the Structural Change Theory.

Analyzing the impact of labor market policies and institutions, such as minimum wage laws, employment protection legislation, and active labor market policies, on the unemployment-growth nexus. Exploring the potential asymmetries in the relationship between unemployment and economic growth, such as the differential impact of economic expansions and recessions on job creation and destruction. By integrating theoretical perspectives from the Solow-Swan Growth Theory, Okun's Law, and the Structural Change Theory, and pursuing these research avenues, future studies can contribute to a more nuanced understanding of the complex linkages between unemployment and economic growth in Indonesia. This study not only enhances the understanding of labor dynamics in Indonesia but also provides valuable insights for policymakers. The policy implications emphasize fostering inclusive growth, improving job quality, and building labor market resilience to navigate future challenges.

## **LITERATURE REVIEW**

Irfan Muhammad Al Farrell and Hastarini Dwi Atmanti's research from 2023 explores how pay levels, economic growth, work prospects, and education influence the open unemployment rate across 34 Indonesian provinces. Their empirical findings provide valuable insights into the dynamics of Indonesia's employment landscape, making this study highly relevant. However, the review lacks critical engagement with recent studies (2022–2024), which would offer more up-to-date perspectives on post-pandemic economic recovery

and labor dynamics, including factors such as digital transformation and government policies on unemployment reduction.

Suhandi, Wiguna, and Quraysin's (2021) work delves further into labor market challenges in Indonesia, examining issues like technological disruption and educational mismatches. Their exploration of structural changes provides a more comprehensive view, but again, more recent literature should be considered to assess how these factors evolved in recent years, particularly with the acceleration of remote work and automation post-pandemic.

Additionally, key theoretical frameworks from studies such as Blanchard and Diamond (1990), Gottschalk and Moffitt (1994), and Katz and Krueger (1999) are discussed. However, these studies, conducted in the U.S. context, require a more detailed comparative analysis to ensure their applicability to Indonesia's labor dynamics. This review would benefit from a deeper integration of labor market theories specifically adapted to emerging economies like Indonesia, providing clearer conceptual links between wage level, economic growth, and unemployment.

## **RESEARCH METHOD**

This study employs a comprehensive methodological approach to examine employment and unemployment dynamics in Indonesia during the 2011–2020 period, using data sourced from the statistical records of Indonesia's Central Bureau of Statistics (BPS). However, several improvements are required to align the methodology with Scopus standards.

First, a stronger justification for the chosen data analysis techniques is necessary. The study employs descriptive statistical analysis, time trend analysis, correlation analysis, and comparative analysis, but does not explain why these methods are the most suitable to achieve the research objectives. By providing a clear rationale, the methodological choice can be better aligned with the research questions, ensuring clarity and rigor.

Additionally, the study should include discussions on data validation and robustness checks. Time-series data, such as that used in this study, is often subject to issues like



multicollinearity or autocorrelation, which can distort the results if not addressed. It is essential to ensure data quality by performing diagnostic tests and robustness checks, which will increase the reliability of the results.

The comparative analysis, while useful, lacks specificity regarding the selection of countries for comparison. To strengthen this section, the selection criteria for these countries must be explicitly stated. This would prevent the analysis from appearing arbitrary and improve its relevance in providing a broader international context.

The correlation analysis, while identifying relationships between variables such as wage rates, economic growth, and education, is insufficient for establishing causal relationships. To improve the depth of the analysis, regression models or other econometric techniques should be employed to examine potential causal links between the variables. This would allow the study to move beyond mere correlation and explore how different factors influence employment dynamics.

Furthermore, the inclusion of supporting variables like wage rates, economic growth, and education should be underpinned by theoretical frameworks or existing literature. This would clarify the basis for selecting these variables and demonstrate their relevance to the study. Providing a more detailed explanation of how these factors impact employment and unemployment would enhance the theoretical robustness of the study.

## RESULTS AND DISCUSSION

From 2011 to 2020 Indonesia's economy grew rapidly, generating many new jobs amid growing economic activity, making Indonesia's unemployment rate fall.

**Table 1**  
**Data 2011**

Year	Date	Number of Working Population	Number of Unemployed	Comparison
2011	01/02/2011	11.204.588	837.988	0,92%
	01/08/2011	10.741.631	868.139	0,92%

$$0,92\% = \frac{(11.204.588 - 837.988)}{11.204.588}$$



$$0,92\% = \frac{(10.741.631 - 868.139)}{10.741.631}$$

In 2011, the number of employed population and the number of unemployed population in the 2nd and 8th months had a ratio of 0.92%. The number of workers decreased in August compared to February, while the number of unemployed in August increased from February, due to lack of education this year, elementary school education is still more than undergraduate education and vocational schools (SMK / SMA).

**Table 2**  
**Data 2012**

Year	Date	Number of Working Population	Number of Unemployed	Comparison
2012	01/02/2012	11.406.198	775.783	0,93%
	01/08/2012	11.250.487	734.487	0,93%

$$0,93\% = \frac{(11.406.198 - 775.783)}{11.406.198}$$

$$0,93\% = \frac{(11.250.487 - 734.487)}{11.250.487}$$

In 2012, months 2 and 8 had a ratio of 0.93%. The number of workers and unemployment decreased in August rather than February, so this year the number of workers decreased due to the same cases as in 2011 due to problems with education and lack of skills which resulted in a decrease in the number of jobs.

**Table 3**  
**Data 2013**

Year	Date	Number of Working Population	Number of Unemployed	Comparison
2013	01/02/2013	11.592.961	724.090	0,94%
	01/08/2013	11.276.107	741.093	0,93%

$$0,94\% = \frac{(11.592.961 - 724.090)}{11.592.961}$$

$$0,93\% = \frac{(11.276.107 - 741.093)}{11.276.107}$$

In 2013, in month 2 it had a ratio of 0.94% and in month 8 it had a ratio of 0.93%. The number of workers decreased in August compared to February, while the number of unemployed in August increased from February, due to lack of education this year, the dominance of education this year in elementary school education is still more than undergraduate education and vocational schools (SMK / SMA).

**Table 4**  
**Data 2014**

Year	Date	Number of Working Population	Number of Unemployed	Comparison
2014	01/02/2014	11.816.992	714.707	0,94%
	01/08/2014	11.462.803	724.491	0,94%

$$0,94\% = \frac{(11.276.107 - 714.707)}{11.276.107}$$

$$0,94\% = \frac{(11.462.803 - 724.491)}{11.462.803}$$

In 2014, the 2nd and 8th months had a ratio of 0.94%. The number of workers decreased in August compared to February, while the number of unemployed in August increased from February, due to lack of education this year, the dominance of education this year in elementary school education is still more than undergraduate education and vocational schools (SMK / SMA).

**Table 5**  
**Data 2015**

Year	Date	Number of Working Population	Number of Unemployed	Comparison
2015	01/02/2015	12.084.682	745.477	0,94%
	01/08/2015	11.481.920	756.082	0,93%

$$0,94\% = \frac{(12.084.682 - 745.477)}{12.084.682}$$

$$0,93\% = \frac{(11.481.920 - 756.082)}{11.481.920}$$



In 2015, in month 2 it had a ratio of 0.94% and in month 8 it had a ratio of 0.93%. The number of workers decreased in August compared to February, while the number of unemployed in August increased from February, due to lack of education this year, the dominance of education this year in elementary school education is still more than undergraduate education and vocational schools (SMK / SMA).

**Table 6**  
**Data 2016**

Year	Date	Number of Working Population	Number of Unemployed	Comparison
2016	01/02/2016	12.064.770	702.417	0,94%
	02/08/2016	11.841.197	703.178	0,94%

$$0,94\% = \frac{(12.064.770 - 702.417)}{12.064.770}$$

$$0,94\% = \frac{(11.841.197 - 703.178)}{11.841.197}$$

In 2016, the 2nd and 8th months had a ratio of 0.94%. The number of workers decreased in August compared to February, while the number of unemployed in August slightly increased from February, due to lack of education this year, the dominance of education this year in elementary school education is still more than undergraduate education and vocational schools (SMK / SMA).

**Table 7**  
**Data 2017**

Year	Date	Number of Working Population	Number of Unemployed	Comparison
2017	01/02/2017	12.453.885	700.526	0,94%
	01/08/2017	12.102.242	704.032	0,94%

$$0,94\% = \frac{(12.453.885 - 700.526)}{12.453.885}$$

$$0,94\% = \frac{(12.102.242 - 704.032)}{12.102.242}$$



In 2017, the 2nd and 8th months had a ratio of 0.94%. The number of workers decreased in August compared to February, while the number of unemployed in August increased from February, due to lack of education this year, the average vocational school (SMK / SMA) is still the highest education, this year began to be aware of education so that the average education is equivalent and began to have a bachelor's education.

**Table 8**  
**Data 2018**

Year	Date	Number of Working Population	Number of Unemployed	Comparison
2018	01/02/2018	12.947.954	696.346	0,95%
	01/08/2018	12.628.219	707.339	0,94%

$$0,95\% = \frac{(12.947.954 - 696.346)}{12.947.954}$$

$$0,94\% = \frac{(12.628.219 - 707.339)}{12.628.219}$$

In 2018, in month 2 it has a ratio of 0.95% and in month 8 it has a ratio of 0.94%. The number of workers decreased in August compared to February, while the number of unemployed in August increased from February, due to lack of education this year, still the same as in 2017 the highest education of vocational/high school.

**Table 9**  
**Data 2019**

Year	Date	Number of Working Population	Number of Unemployed	Comparison
2019	01/02/2019	13.169.259	689.880	0,95%
	01/08/2019	12.875.527	710.442	0,94%

$$0,95\% = \frac{(13.169.259 - 689.880)}{13.169.259}$$

$$0,94\% = \frac{(12.875.527 - 710.442)}{12.875.527}$$

In 2019, in month 2 it has a ratio of 0.95% and in month 8 it has a ratio of 0.94%. The number of workers decreased in August compared to February, while the number of unemployed in August increased from February, due to lack of education this year, still the same as in 2017 and 2018 the highest education was still SMK / SMA.

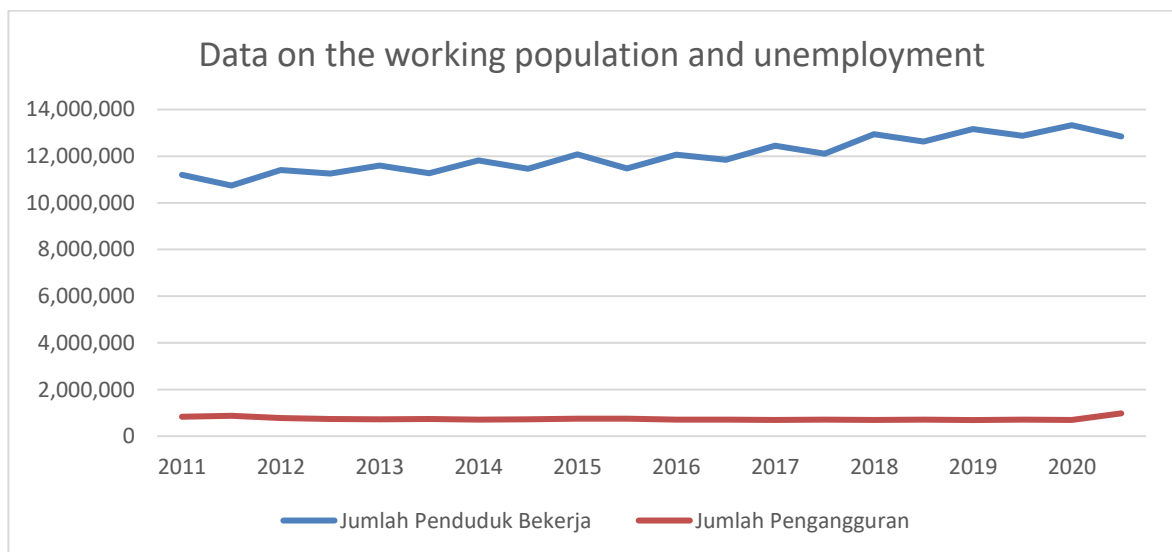
**Table 10**  
**Data 2020**

Year	Date	Number of Working Population	Number of Unemployed	Comparison
2020	01/02/2020	13.329.287	692.549	0,95%
	01/08/2020	12.845.418	976.775	0,92%

$$0,94\% = \frac{(13.329.287 - 692.549)}{13.329.287}$$

$$0,92\% = \frac{(12.845.418 - 976.775)}{12.845.418}$$

In 2020, in month 2 it has a ratio of 0.95% and in month 8 it has a ratio of 0.92%. The number of workers decreased in August compared to February, while the number of unemployed in August greatly increased from February, due to the impact of Covid 19 which made many unemployed due to layoffs due to the company experiencing a financial crisis due to Covid 19.





**Figure 1**  
**Graph**

Blue: Number of Working Population

Orange: Number of Unemployed

## **Discussion**

### **Employment Trend 2011-2020**

During the period 2011–2020, Indonesia experienced fluctuations in the employment rate. From Table 1 to Table 10, it can be seen that the number of working people tends to increase every year in February but decreases in August. This pattern indicates the presence of seasonal factors affecting Indonesia's labor market. Despite the fluctuations, the overall employment rate in Indonesia shows an increasing trend from year to year (see Figure 1). This increase can be attributed to stable economic growth and investment in labor-intensive sectors, such as manufacturing and services (World Bank, 2021). However, it is important to note that this employment growth has not always been evenly distributed across sectors and regions, with some groups of workers facing greater challenges in accessing quality employment opportunities (ILO, 2020).

### **Unemployment Trends 2011-2020**

The unemployment rate in Indonesia shows a more varied pattern over the 2011–2020 period. From Table 1 to Table 10, it can be seen that the number of unemployed people tends to be higher in August compared to February. This pattern indicates the presence of cyclical and structural factors affecting the Indonesian labor market.

Overall, the unemployment rate in Indonesia tended to decline from 2011 to 2019 (see Figure 1). This decline can be attributed to various factors, including economic growth, improved education levels, and government policies that promote job creation (ILO, 2019). However, the COVID-19 pandemic that hit the world in 2020 had a significant impact on Indonesia's labor market, with a sharp increase in the number of unemployed people in August 2020 (see Table 10). This crisis demonstrates the vulnerability of Indonesia's labor market to external shocks and the need for responsive policies in the face of emerging

challenges.

### **Factors Affecting Labor Dynamics**

The dynamics of employment in Indonesia are influenced by various factors, both on the supply and demand sides of labor. On the supply side, the education and skill levels of the workforce play an important role in determining access to employment and the quality of employment obtained. Data shows that the average education level of the Indonesian workforce increased over the 2011–2020 period, with more workers having secondary and tertiary education (BPS, 2021). This increase contributes to improving labor productivity and Indonesia's competitiveness in the global labor market.

On the demand side, Indonesia's economic growth and economic structure affect job creation and the types of jobs available. During the 2011–2020 period, Indonesia underwent a structural transformation with a decline in the share of agriculture and an increase in the share of manufacturing and services in the economy (World Bank, 2021). This transformation creates new employment opportunities in more productive sectors but also poses challenges in ensuring that the workforce has skills that match market needs. Institutional factors, such as minimum wage policies and labor market regulations, also affect the dynamics of employment in Indonesia. Minimum wage policies set by the government can influence firms' decisions on hiring labor and the level of wages offered (Chun & Khor, 2010). Meanwhile, labor market regulatory reforms, such as regulations on employment contracts and employment protection, can affect labor market flexibility and job creation (ILO, 2017).

### **The Impact of the Global Economic Crisis and the COVID-19 Pandemic**

The period 2011–2020 was marked by two significant events that impacted Indonesia's labor dynamics: the global economic crisis in 2008–2009 and the COVID-19 pandemic in 2020. The global economic crisis had a relatively limited impact on Indonesia's labor market, with the unemployment rate increasing only slightly and recovering quickly in the following years (ILO, 2011). This demonstrates the resilience of the Indonesian economy in the face of external shocks.

However, the COVID-19 pandemic had a much more significant impact on



Indonesia's labor market. Social distancing measures and workplace closures to control the spread of the virus led to a sharp increase in unemployment, especially in hard-hit sectors such as tourism, retail, and transport (BPS, 2021). The crisis also accelerated the trend of automation and digitalization across sectors, which could have long-term implications for labor demand and the types of skills needed (World Bank, 2021). In dealing with the impact of the pandemic, the Indonesian government implemented various policies to protect workers and promote economic recovery, including wage subsidies, social assistance, and pre-employment card programs (OECD, 2021). However, the effectiveness of these policies in addressing structural challenges in Indonesia's labor market still needs to be further evaluated. Comprehensive and responsive policies are needed to ensure an inclusive and sustainable recovery from this crisis.

## CONCLUSION

The analysis of employment and unemployment trends in Indonesia during the 2011–2020 period reveals intricate dynamics shaped by various factors, such as economic growth, education levels, structural transformation, and institutional policies. Although Indonesia displayed resilience during the global economic crisis, the COVID-19 pandemic has posed substantial challenges to the labor market. To mitigate these challenges and ensure an inclusive and sustainable recovery, comprehensive and adaptable policies are essential. Further research is required to examine the long-term effects of the pandemic on labor dynamics and identify strategies to generate quality employment and improve worker welfare.

This study provides key insights into the employment dynamics in Indonesia, focusing on fluctuations in the workforce and unemployment rates. Notably, employment trends show a consistent annual increase in February, followed by a decline in August. However, the overall employment rate has risen, while unemployment rates generally decreased from 2011 to 2019, only to spike during the pandemic. Factors influencing employment include education levels, economic growth, structural shifts, and institutional policies. Higher education levels contribute to workforce productivity, while economic



growth and structural changes create job opportunities in more productive sectors. The limited impact of the 2008–2009 global crisis on Indonesia's labor market underscores its resilience, but the pandemic accelerated unemployment and technological shifts.

The findings emphasize the necessity of policies promoting education and skill development to enhance workforce competitiveness, as well as strategies for inclusive economic growth and social protection. To address emerging labor challenges, there is a need for innovation and collaboration between government and private sectors, especially in times of technological disruption. Future research should explore post-pandemic impacts on regional and sectoral labor markets and evaluate employment policy effectiveness.

This study contributes to a deeper understanding of Indonesia's employment complexities, facilitating more effective policy interventions for a resilient and adaptive labour market.

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