COVID-19 Pandemic: Its Impacts on Economic Growth, Unemployment, and Poverty in Indonesia

Sukamdi
Faculty of Geography, Universitas Gadjah Mada, Yogyakarta Indonesia
Corresponding author: sukamdi@ugm.ac.id
Lina Agustina Pujiwati
The Graduate School, Universitas Gadjah Mada, Yogyakarta Indonesia
Nufi Alabshar
The Graduate School, Universitas Gadjah Mada, Yogyakarta Indonesia
Nanang Widaryoko
The Graduate School, Universitas Gadjah Mada, Yogyakarta Indonesia
Titik Munawaroh
The Graduate School, Universitas Gadjah Mada, Yogyakarta Indonesia
Eka Putra Setiawan
The Graduate School, Universitas Gadjah Mada, Yogyakarta Indonesia

Abstract

The first COVID-19 case in Indonesia was discovered in March 2020. Since then, cases of COVID-19 infection have rapidly spread to all regions, albeit at varying intensities. The government responded with a variety of policies, including social restrictions, to prevent the spread of COVID-19 cases. This policy may eventually reduce the pandemic, but it has significant economic consequences. One of them is a recession in early to mid-2021. Will it have an effect on poverty and unemployment as well? This research aims to provide an answer to this question. The study's goal is to determine how COVID-19 affects economic growth, unemployment, and poverty. Analytical methods used in this study include quadrant analysis and path analysis. According to quadrant analysis, COVID-19 has an impact on both economic

growth and unemployment, whereas path analysis shows that COVID-19 has a negative impact on both economic growth and poverty.

Keywords: COVID-19, poverty, economic growth, unemployment.

1. INTRODUCTION

The COVID-19 pandemic, which began in Wuhan, China, in December 2019, has spread to almost every country in the world (Liu et al., 2020). The World Health Organization (WHO) declared the COVID-19 pandemic a global pandemic by March 11, 2022, citing more than 3 million cases and 207,973 deaths in 213 countries and regions. COVID-19 is not only a global pandemic and public health crisis, but it is also a massive blow to the global economy and financial markets. Reduced productivity, loss of life, business closures, trading breakdowns, and the death of the tourism industry have all had a significant economic impact all over the world (Pak et al., 2020). In other words, the COVID-19 pandemic has caused a global health crisis that has quickly turned into a major shock to the economy and labor market, culminating in a never-before-seen global job crisis (Lee et al., 2020). The global effects of the pandemic forced various countries to implement the lockdown policy. As a result of this policy, the global economy has contracted significantly. According to the World Bank, the global economy will contract by 5.20 percent this year, the worst since World War II (World Bank Group, 2020).
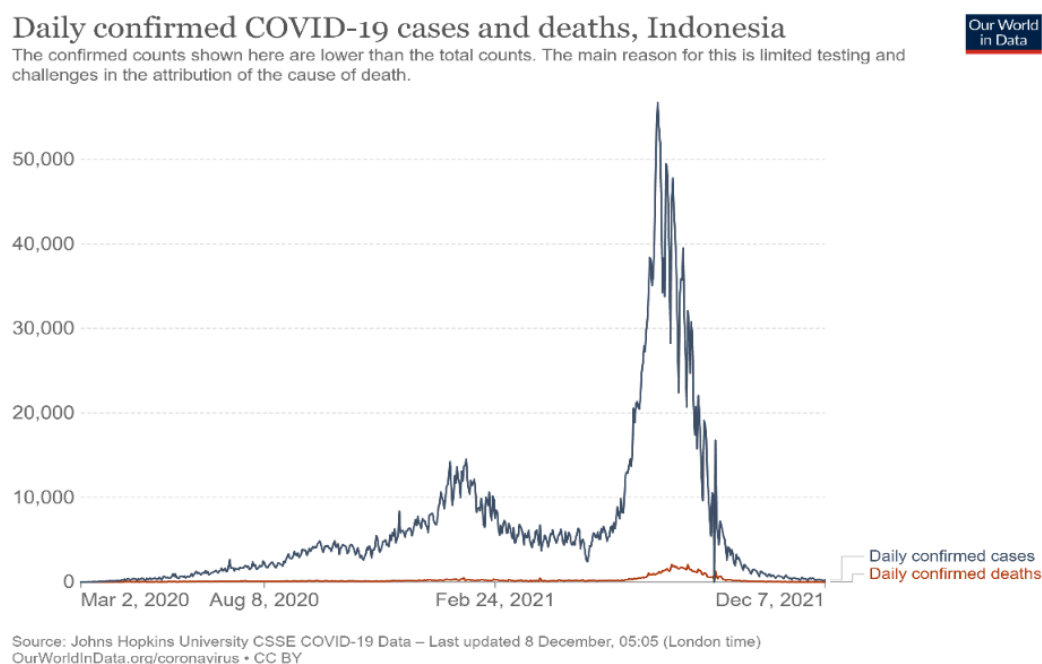
The International Labor Organization (ILO) recognizes the COVID-19 pandemic as an economic and employment crisis as well as a health crisis. Several countries' economic activity has been stifled in order to prevent a pandemic outbreak. It has been established that trade and supply chain disruptions cause negative growth in developing countries (Walter, 2020). At the same time, the International Labor Organization reports that the crisis has increased unemployment and underemployment.

On March 14, 2021, following WHO's lead, the Indonesian government officially declared COVID-19 a national disaster. Since then, the number of

COVID-19 cases has been steadily increasing, continuing until December 7, 2021, as depicted in Figure 1. Indonesia experienced two distinct waves of COVID-19-positive cases. The first wave occurred from January 16 to January 29, 2021, with the second wave emerging on July 14, 2021. The initial wave was triggered by the Christmas and New Year's holidays in 2021 and 2022, causing a dramatic surge in positive case confirmations, peaking at approximately 13,000 cases (Joyosemito & Nasir, 2021). Subsequently, the second wave was spurred by the appearance of the Delta variant, known for its faster transmission rate, leading to a daily confirmation count of 56,000 cases (Yakhamid & Zaqi, 2021).

In response to these challenges, the Indonesian government introduced a policy for managing COVID-19, as detailed in Government Regulation of the Republic of Indonesia Number 21 of 2020. The government's strategy for transmission prevention is straightforward: They aim to reduce transmission risks at three critical junctures, i.e., within households, during travel, and during outdoor activities. These principles are operationalized through Large Scale Social Restrictions (PSBB), which were implemented on March 31, 2020 (covid19.go.id). The PSBB, often interpreted as a partial lockdown, restricts public mobility by transitioning traditional offline activities, such as schools, offices, and religious gatherings, to online platforms and by limiting public transportation options.

Figure 1. Development of COVID-19 positive case confirmations in Indonesia

Source: John Hopkins University CSSE COVID-19 Data; OurWordlinData.org/coronavirus

The government's lockdown policy has had a substantial impact on global economic activity. In response, communities have curtailed their mobility and economic engagements, leading to disruptions in business operations. Simultaneously, this economic transition has influenced both companies' demand for workers and the willingness and capacity of individuals to perform their jobs. This raises an intriguing question: When the economy experiences a shock, how does it affect employment conditions? Regrettably, most available post-crisis data pertains to high-income countries, leaving us with limited systematic knowledge about the crisis's impact on labor markets in developing countries (Khamis et al., 2021).

The government's policy of Large-Scale Social Distancing has significant implications for the health, social, economic, security, and political domains. These ramifications extend to heightened poverty and increased

unemployment (Azis, 2021). Large-Scale Social Distancing, which was subsequently replaced by the Restriction Against Community Activities on January 7, 2021 (Nugroho, 2021), has left a lasting imprint on various facets of Indonesian society.

Indonesia is currently facing a recession characterized by a series of ongoing declines in economic growth. This situation has a tangible impact, putting millions of people at risk of falling into poverty. Research highlights that the economic upheaval caused by the pandemic has resulted in decreased economic activity and reduced household spending, further intensifying the issue of poverty. Nevertheless, there is still a need for in-depth exploration regarding the extent to which these economic shocks affect poverty and the specific mechanisms through which this impact is felt, particularly within the context of Indonesia.

Several studies have found that COVID has an effect on economic performance. Khamis et al. (2021) found that COVID-19 had a severe negative impact on the labor market in all regions. Drawing from high-frequency telephone survey data, they demonstrate that across all nations, there has been a significant reduction in the number of jobs. This decrease in employment is evident through work stoppages, reduced work hours, and the broad economic repercussions of the pandemic, resulting in substantial income losses. Additionally, further disruption is observed in the form of partial or absent wage payments to workers and shifts in employment status.

Suparmono (2020) analyzes the impact of the COVID-19 pandemic on poverty in Kulon Progo Regency and concludes that COVID-19 increased the number of poor people. This finding aligns with UNICEF's (2021) research, which emphasizes the significant economic hardship caused by COVID-19 on household finances. In the report, UNICEF presented five key findings as
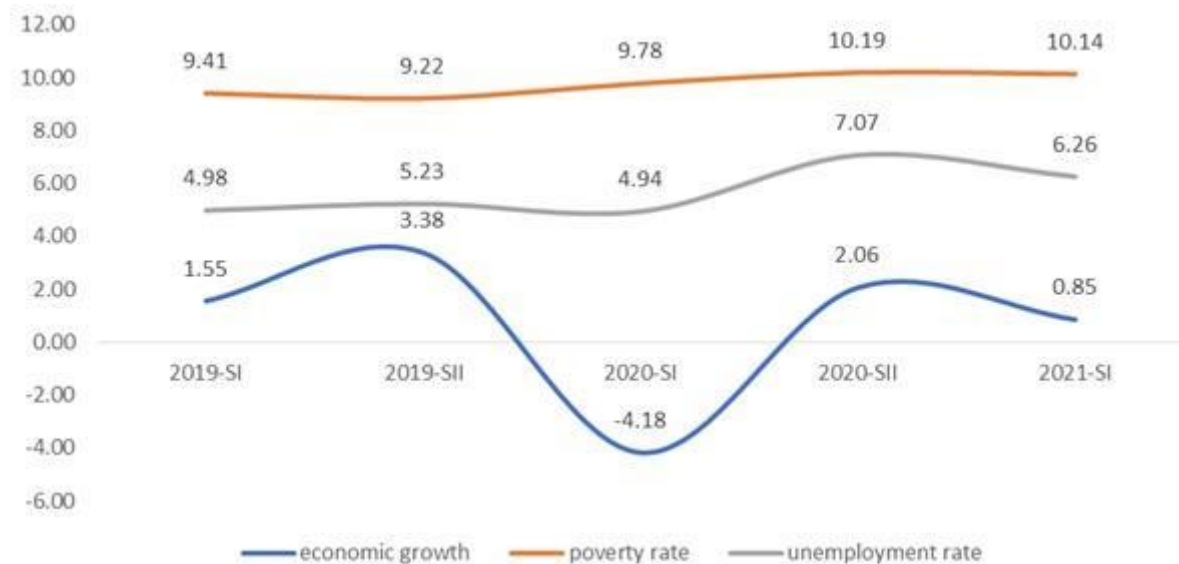
follows: 1) the severe impact of COVID-19 on household finances, 2) while social assistance is reaching most individuals in need, it's not reaching everyone, 3) the unfortunate trend of children missing out on education and healthcare, 4) the increased caregiving responsibilities taken on by women, and 5) the emerging concern of food insecurity among vulnerable groups.

Gotu and Tadesse (2023) researched the effects of COVID-19 on inflation, unemployment, and GDP in Africa. This research uses a spatial approach to analyze the effect of COVID-19 on economic performance and finds that it has a negative effect on unemployment, inflation, and GDP in Africa.

Suryahadi et al. (2020) assessed the effects of COVID-19 on poverty through economic growth. Under the most conservative economic growth scenario, COVID-19 is projected to raise poverty rates by 0.5 percent. Conversely, if the worst-case scenario for the impact of poverty on economic growth materializes, COVID-19 could result in a 3.2 percent increase in the number of people living in poverty.

This study will align with earlier research, commencing by outlining two main problems: 1) to what extent the economic crisis caused by the COVID-19 pandemic impacts economic growth in Indonesia, and 2) whether the change in economic growth during the pandemic impacts the number of Indonesians who are unemployed or living in poverty.

Figure 2. The trend of economic growth, unemployment, and poverty level 2019–2021 in Indonesia

Source: BPS, multiple periods (accessed from bps.go.id), and data processing results

Figure 2 illustrates Indonesia's economic growth, poverty levels, and poverty rates by semester, spanning from the first semester of 2019 (pre-pandemic) to the first semester of 2021 (post-pandemic recovery). The graph offers a clear snapshot of the interconnected shifts in economic growth, unemployment rates, and poverty as the pandemic unfolds. However, discerning whether these changes are directly attributable to the pandemic, particularly in terms of its impact on unemployment and poverty, remains a challenge. None of the studies conducted previously have discussed the impact of the COVID-19 pandemic on economic growth, unemployment, and poverty and its transmission mechanisms. Consequently, there is a pressing need for research that investigates the pandemic's influence on economic growth, unemployment, and poverty, including both direct and indirect mechanisms. This is particularly relevant in the context of developing countries like Indonesia. To the best of our knowledge, no similar study has been conducted

in Indonesia to address these critical questions. This research gap will be filled by this paper.

2. LITERATURE REVIEW

2.1 COVID-19 Pandemic

Before the COVID-19 pandemic, the world already had experience with coronaviruses (Inegbedion, 2021). SARS, which occurred from 2002 to 2003, and the Middle-East Respiratory Syndrome (MERS), which attacked several Middle Eastern countries and others in 2012 (Zhong et al., 2003), demonstrated that coronavirus was not the first crisis in the world.

SARS has not had a disastrous impact. It only causes a mild infection in immunocompromised people and was not thought to be highly pathogenic in humans until it circulated in China's Guangdong province in 2002 and 2003 (Zhong et al., 2003). The total number of infections reached 8,437. Of these, 813 (9.6%) were fatal, while 7,452 (90.4%) were declared cured (WHO, 2003).

MERS was detected in only a few cases. Despite this, the MERS mortality rate is around 60% (WHO, 2013). As a result, the total number of SARS and MERS cases is 8,492. Jordan reported the first documented case of MERS in early 2012. There are currently 55 laboratory-confirmed cases worldwide. The remainder came from countries in the Middle East (Qatar and the United Arab Emirates), as well as Tunisia, France, Germany, Italy, the United Kingdom of Great Britain, and Northern Ireland in Europe (WHO, 2013).

The coronavirus, also known as COVID-19, first appeared in China in 2019. It is known as SARS-CoV-2 and is related to the Coronavirus (Zhu et al.,

2020). This new coronavirus type has never been identified in humans, and the disease it causes has been designated as Coronavirus 2019 (COVID-19) by the World Health Organization (Bawazir et al., 2020). Since its discovery in 2019, the virus has spread to over 166 countries, causing severe morbidity and mortality (Wu et al., 2020). The world had 5,103,006 COVID-19 cases on May 14, 2020, with 109,536 deaths (2.15% of total infections).

2.2 COVID-19 Pandemic, Economic Activities, Unemployment, and Poverty

The COVID-19 crisis has precipitated substantial changes in every aspect of society and led to economic limitations, the implementation of physical distancing policies, and a reduction in demand for oil products (Ozili, 2020b). The pandemic triggered a severe economic crisis that had an unprecedentedly massive impact on the entire global economy, severely restricting economic activity in every country (Copenhagen Economics, 2020). COVID-19 is likely to increase the fiscal deficit and monetary burden, raise the risk of macroeconomic instability, decrease migration and remittances, reduce income from travel and tourism, and result in the demise of micro, small, and medium-sized enterprises and informal businesses. This could deepen poverty and heighten the risks of hunger and food insecurity (Rasul et al., 2021).

A lockdown restricts human activity movement and has a significant impact on both rural and urban communities. This affects the economy of the country. Lewis (1954) assumed that the economy of a country was divided into two parts: traditional and modern. Traditional rural economies are dominated by agriculture, while modern urban economies are fueled by industry. The COVID-19 pandemic, which requires travel restrictions, has significantly impacted a number of economic sectors, e.g., trade, industry, education, and

lodging services. The drop in economic activity in various sectors reduced GDP and slowed the rate of economic growth (Aliah, 2020; Rahayu & Muharam, 2021).

COVID-19 has had an adverse impact on unemployment and GDP (Gotu & Tadesse, 2023). The unemployment rate has significantly increased since the outbreak of the pandemic. A comparison of countries' GDP before and after the pandemic indicates a substantial decline, albeit varying across nations. The 2021 World Economic Outlook by the International Monetary Fund (IMF) indicates that the global economy contracted by approximately 3.2% in 2020 when measured on an annualized basis (International Monetary Fund, n.d.). COVID-19 also has significant implications for social policies and the socioeconomic well-being of citizens, particularly the sharp decline in economic activity (Ozili, 2020a). Barnett-Howell and Mobarak's (2020) findings suggest that the economic and social cost of lockdowns in the world's poorest countries may be higher because of the disruption to economic activity in the face of public health threats as well as to people's lives.

2.3 Empirical Review

Numerous studies have analyzed the relationship between COVID-19, economic performance, unemployment, and poverty, encompassing a range of countries at different scales. This section will review pertinent research for this paper.

2.3.1 Crisis and Economic Growth

In Indonesia, UNICEF conducted a study on the impact of COVID-19 on household socioeconomics involving 12,216 households from 34 provinces. According to this study, nearly three-quarters (74.3 percent) of households interviewed in October-November 2020 reported lower income than in January

2020. The COVID-19 pandemic resulted in a greater drop in income for urban households than for rural households. Many previously prosperous households have become or are on the verge of becoming impoverished. Furthermore, the study discovered that lost income was not the primary challenge during the COVID-19 pandemic. Almost a quarter of respondents (24.4 percent) reported an increase in their spending, particularly on groceries and other necessities such as internet and cell phone costs (UNICEF et al., 2021).

Brata et al. (2021) looked at how COVID-19 affected inequality as measured by the Gini Index. According to the findings, provinces with more COVID-19 cases saw an increase in urban inequality while rural inequality decreased. This means that COVID-19 affects cities more than rural areas. According to the study, provinces with a high number of COVID-19 cases and deaths have a lower proportion of poor people. This study provides preliminary evidence that COVID-19 has a distinct impact on spatial inequality and poverty rate.

COVID-19 caused an economic crisis in many East Asian countries. The measures taken to control the pandemic led to significant economic consequences, such as disruptions to tourism and travel, supply chains, and labor availability, resulting in reduced economic growth. The current situation is leading to a sharp increase in unemployment and poverty (Menon, 2020).

The economic crisis that occurred after March 2020 had a significant impact on all sectors of the Indian economy. In agriculture, farmers encountered disrupted supply chains, limited market access, weakened demand, and declining output prices. Micro and small enterprises in the industry were the most severely affected. The crisis ultimately resulted in a minimum loss of 15 million jobs (Ramakumar & Kanitkar, 2020).

2.3.2 Crisis and Unemployment

The government and economic actors are still working on crisis solutions. As a result, it is critical to comprehend how the pandemic affects labor markets in developing countries (Khamis et al., 2021), as unemployment has a negative impact on the country's economy by reducing the demand for goods and services and wasting human resources invested in education.

According to a study conducted in Bangladesh, COVID-19 has a significant negative impact on the lives of the country's marginal population. Many people in the informal sector have lost their jobs and income as a result of the pandemic. Across the country, unemployment and poverty have increased in both urban and rural areas. Bangladesh's non-inclusive economic welfare has prevented economic growth success over the last few decades by preventing the poor from becoming extremely poor. As a result, the Bangladesh government must implement more job-oriented economic policies in order to increase job opportunities and reduce poverty and disparities (Hossain, 2021).

In South Africa, COVID-19 interventions have worsened the pre-existing high rates of unemployment and poverty. The health response to COVID-19 led to the temporary closure of the South African economy and limited in-person services in the tourism, hospitality, and personal service industries. These industries, however, are the primary job creators in middle- and high-income nations (Altman, 2022).

2.3.3 Crisis and Poverty

According to the 2020 Fiscal Policy Agency-Ministry of Finance, the economic shocks caused by the COVID-19 pandemic affected all Indonesians. However, children and youth suffered disproportionately as a result of household income decline and the inability to improve their economic situation.

Nonetheless, the government's social protection program in 2020 was able to mitigate the pandemic's impact on poverty. Without sustainable emergency action, Indonesia risks falling behind schedule in meeting the Sustainable Development Goals.

The lockdown efforts have affected the Indonesian economy, causing it to contract. This is due to the high level of uncertainty, which discourages businesses from investing. As a result, unemployment levels have increased, affecting the sustainability of businesses. Furthermore, the rise in unemployment leads to an increase in poverty in society (Fatmawati & Preatin, 2022), especially among those directly affected by COVID-19 (Yulianto, 2020).

3. METHODOLOGY

3.1 Data Source

This study makes use of secondary data obtained from a variety of sources, including: 1) the official publications of the National Statistics Office (BPS-Statistic of Indonesia) for various time periods (accessed from bps.go.id), 2) the ourworldindata.org website, and 3) the kawalcovid19.id website for comparability purposes of the data of COVID-19 cases covered into natural logarithm.

3.2 Data Analysis Method

This study employs quadrant and path analysis. A quadrant analysis is a descriptive analysis that is performed to map one variable to another (Bahri, 2004). Martilla and James (1977) were the first to propose quadrant analysis, also known as Importance Performance Analysis (IPA) (Suhendra & Prasetyanto, 2016). Martilla and James used IPA for the first time in marketing

research and consumer behavior. Quadrant analysis has recently been applied to other types of research, including hospital services and government economic development performance (Martilla & James, 1977).

The basic idea behind IPA is to divide research objects into two-dimensional quadrants based on variables. The average value of all objects or the value of objects at a higher level serves as the boundary variable between quadrants (Martilla & James, 1977). Quadrant analysis is used in this study to map out provinces based on economic growth, unemployment rate, and poverty rate.

Path analysis is a technique for determining the indirect relationship between two variables via intermediate variables (Narimawati et al., 2020). This method is also referred to as causal modeling. Path analysis is used in this study to determine two models. First, through the intermediary variable, there is an indirect relationship between the COVID-19 case variable and the poverty rate variable (economic growth rate and the unemployment rate). Second, through the intermediary variable, there is an indirect relationship between the COVID-19 case variable and the unemployment rate variable, as well as the COVID-19 case variable and the poverty level variable (economic growth rate). Figure 3 depicts the path analysis model.
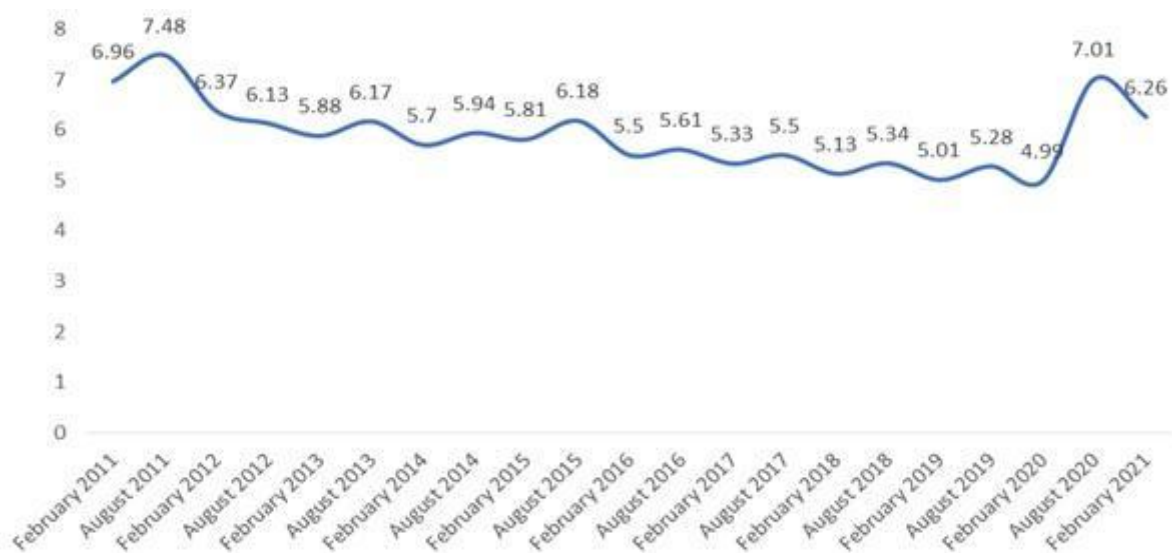
Figure 3. Path analysis model

4. DISCUSSION

4.1 General Overview

In Indonesia, the unemployment rate has generally decreased over the last ten years. According to Figure 4, the highest unemployment rate occurred in August 2011, while the lowest occurred in February 2020. The unemployment rate rose again in August 2020, just a few months after the COVID-19 virus entered Indonesia. The pandemic resulted in the unemployment of 2.56 million Indonesians in August 2020, according to BPS-Statistics. This equates to approximately 1.26 percent of the total working-age population. Meanwhile, it is estimated that 1.77 million people are temporarily unable to work due to COVID-19, accounting for 0.87 percent of the total working-age population (BPS, 2020).

Figure 4. Unemployment trend in Indonesia

Source: BPS (2021)

The additional unemployed population increased by 1.84 percentage points between 2019 and 2020, reaching 2.67 million people (Table 1). According to regional typology, the increase in unemployment in urban is

greater, with an incremental open unemployment rate of 2.69 percentage points. The labor force participation rate (LFPR) increased by 0.24 percentage points, with females increasing while males decreased.

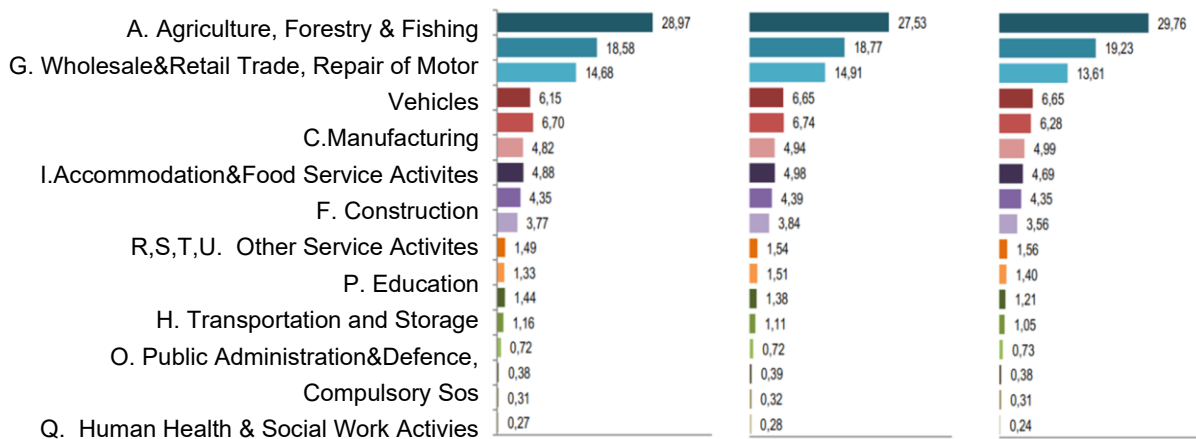Table 1. The working age population and the workforce in Indonesia 2018–2019

Status of Employment Situation	August 2018	August 2019	August 2020	Changes in August 2018 – August 2019		Changes in August 2019 – August 2020	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Million People	Million People	Million People	Million People	Million People	Million People	Million People
Working-Age Population	198.13	201.19	203.97	3.06	1.54	2.78	1.38
Workforce	133.36	135.86	138.22	2.50	1.87	2.36	1.74
Employed	126.29	128.76	128.45	2.47	1.96	-0.31	-0.24
Unemployed	7.07	7.10	9.77	0.03	0.42	2.67	37.61
Non-Workforce	64.77	65.33	65.75	0.56	0.86	0.42	0.64
	Percent	Percent	Percent	Percent Point		Percent Point	
Unemployment	5.30	5.23	7.07	-0.07		1.84	
Urban	6.44	6.29	8.98	-0.15		2.69	
Rural	3.97	3.92	4.71	-0.05		0.79	
Workforce Participation	67.31	67.53	67.77	0.22		0.24	
Male	82.80	83.25	82.41	0.45		-0.84	
Female	51.80	51.81	53.13	0.01		1.32	

Source: BPS (2020)

The unemployment rate in Indonesia in 2020 has risen (Table 1). It has been suggested that social mobility constraints have contributed to the rise in unemployment. The unemployment rate should ideally be broken down by sector to provide a clear picture of which industries are significantly impacted. However, because sector-specific unemployment data are unavailable, it can be approached by examining the distribution of the working population by

economic sector. According to Indonesia's BPS-Statistics, manufacturing, construction, and education have all experienced a decline in labor absorption. On the contrary, employment in trade, services, information, communication, and agriculture has increased. The fastest-growing trend in employment is in the agricultural sector.

Figure 5. Percentage of working population by main occupation

Source: BPS (2020)

In contrast, the population that was employed in 2020 as laborers or employees saw the biggest decline, with a 4.28 percentage point decline. On the other hand, there was a 2.8 percentage point rise in family/unpaid employees. In addition, the proportion of workers in the unorganized sector rose by 4.56 percentage points in 2020. Workers who work fewer than 35 hours per week on a part-time basis climbed by 7.19 percentage points.

4.2 Quadrant Analysis

4.2.1 Economic Growth and Unemployment Pattern

A spatial description of the relationship between economic growth and the unemployment rate can be provided via quadrant analysis (Figure 6). A time reference group must be established, including before the occurrence of

COVID-19, when COVID-19 first appeared (Semester I 2020), in the middle of COVID-19's occurrence (Semester II 2020), and the current conditions, in order to determine the extent to which COVID-19 influences the pattern of the relationship between the two variables (Semester I 2021).

Figure 6. Pattern of relationship between economic growth and unemployment before COVID-19 and at the beginning of COVID-19

High Economic Growth Low Unemployment	High Economic Growth High Unemployment		High Economic Growth Low Unemployment	High Economic Growth High Unemployment
South Sumatera, Bengkulu, Lampung, Central Java, Yogyakarta, East Java, Bali, West Nusa Tenggara, East Nusa Tenggara, West Borneo, Central Borneo, South Borneo, Central Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, North Maluku	North Sumatera, West Sumatera, Special Capital Region of Jakarta, West Java, Banten, North Borneo, North Sulawesi, South Sulawesi, Maluku		North Sumatera, Jambi, South Sumatera, Bengkulu, Lampung, Central Borneo, Central Sulawesi, Gorontalo, North Maluku	Nanggroe Aceh Darussalam, West Java, East Borneo, North Borneo, Maluku
Low Economic Growth Low Unemployment	**Low Economic Growth High Unemployment**		**Low Economic Growth Low Unemployment**	**Low Economic Growth High Unemployment**
Jambi, Bangka Belitung, Papua	Nanggroe Aceh Darussalam, Riau, Riau Island, East Borneo, West Papua		Riau, Bangka Belitung, Central Java, Yogyakarta, East Java, Bali, West Nusa Tenggara, East Nusa Tenggara, West Borneo, South Borneo, Southeast Sulawesi, West Sulawesi, Papua	West Sumatera, Riau Island, Special Capital Region of Jakarta, Banten, North Sulawesi, South Sulawesi, West Papua

Before COVID-19   **Beginning of COVID-19**

Note: High: Above National Level; Low: Below National Level

Source: Processed Data from BPS (2021)

Before COVID-19, there was strong economic growth and low unemployment in South Sumatra, Bengkulu, Lampung, Central Java, Yogyakarta, East Java, Bali, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Southeast Kalimantan, South Kalimantan, Gorontalo,

West Sulawesi, and North Maluku. When COVID-19 started to enter Indonesia, which is anticipated around March 2020, there was a change in stance. The provinces of Central Java, Yogyakarta, East Java, Bali, West Nusa Tenggara, South Kalimantan, Southeast Sulawesi, and West Sulawesi were moved to a collection of provinces with low rates of growth and unemployment. These provinces' economic performance is impacted by the existence of COVID-19. However, adjustments to economic development are not necessarily detrimental.

Figure 7. Relationship pattern between economic growth and unemployment
at the beginning of the COVID-19 outbreak and during the COVID-19 outbreak

High Economic Growth Low Unemployment	**High Economic Growth High Unemployment**	**High Economic Growth Low Unemployment**	**High Economic Growth High Unemployment**
North Sumatera, Jambi, South Sumatera, Bengkulu, Lampung, Central Borneo, Central Sulawesi, North Maluku	Nanggroe Aceh Darussalam, West Java, East Kalimantan, North Kalimantan, Maluku	Nanggroe Aceh Darussalam, West Sumatera, Riau, Jambi, Bangka Belitung, Yogyakarta, East Java, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, South Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, North Maluku, Papua	Special Capital Region of Jakarta, North Sulawesi
Low Economic Growth Low Unemployment	**Low Economic Growth High Unemployment**	**Low Economic Growth Low Unemployment**	**Low Economic Growth High Unemployment**
Riau, Bangka Belitung, Central Java, Yogyakarta, East Java, Bali, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, South Kalimantan, Southeast Sulawesi, West Sulawesi, Papua	West Sumatera, Riau Island, Special Capital Region of Jakarta, Banten, North Sulawesi, South Sulawesi, West Papua	North Sumatera, South Sumatera, Bengkulu, Lampung, Central Java, Bali, Central Kalimantan, East Kalimantan, North Kalimantan, Gorontalo, West Sulawesi, West Papua	Riau Island, Banten, West Java, Maluku

Beginning of COVID-19   **During COVID-19**

Note: High: Above National Level; Low: Below National Level

Source: Processed Data from BPS (2021)

Figure 7 shows that despite a strong economic performance, the number of COVID-19 cases in Indonesia increased in Semester II 2020 (mid-COVID-19). West Java Province, which had previously been in the quadrant with high economic growth and high unemployment, moved to the group with a low growth rate and high unemployment during this time, in contrast to The Special Capital Region of Jakarta. Yogyakarta, East Java, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, and South Kalimantan, meanwhile, have achieved economic growth and unemployment levels similar to those of pre-COVID-19.

In the first semester of 2021, the COVID-19 pandemic is still causing cases. Since the pandemic started, the state of the economy has mostly improved. On the other hand, compared to last semester, this semester's national economic growth was a little bit more sloped. Figure 8 shows the West Java province, which was earlier categorized as having low economic growth, moving back onto the path of strong economic growth. The province's unemployment rate, however, is still very high. East Kalimantan's transition from the low economic growth and low unemployment cluster to the high economic growth cluster is a fascinating result. As a result, in Semester I 2021, East Kalimantan's GDP grew. The province's unemployment rate has increased concurrently with Yogyakarta, Central Java, and East Java all during this time period.

Figure 8. Relationship pattern between economic growth and unemployment
during COVID-19 outbreak and the recent conditions

High Economic Growth Low Unemployment	High Economic Growth High Unemployment
Nanggroe Aceh Darussalam, West Sumatera, Riau, Jambi, Bangka Belitung, Yogyakarta, East Java, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, South Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, North Maluku, Papua	Special Capital Region of Jakarta, North Sulawesi
Low Economic Growth Low Unemployment	**Low Economic Growth High Unemployment**
North Sumatera, South Sumatera, Bengkulu, Lampung, Central Java, Bali, Central Kalimantan, East Kalimantan, North Kalimantan, Gorontalo, West Sulawesi, West Papua	Riau Island, Banten, West Java, Maluku

High Economic Growth Low Unemployment	High Economic Growth High Unemployment
Bengkulu, Lampung, Bangka Belitung, Central Java, Yogyakarta, West Kalimantan, North Kalimantan, Central Sulawesi, North Maluku, Papua	Riau Island, Special Capital Region of Jakarta, West Java, Banten, East Kalimantan, Maluku
Low Economic Growth Low Unemployment	**Low Economic Growth High Unemployment**
Nanggroe Aceh Darussalam, North Sumatera, Riau, Jambi, South Sumatera, East Java, Bali, West Nusa Tenggara, East Nusa Tenggara, Central Kalimantan, South Kalimantan, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi	West Sumatera, North Sulawesi, West Papua

During COVID-19   **Recent Conditions**

Note: High: Above National Level; Low: Below National Level

Source: Processed Data from BPS (2021)

4.2.2 Unemployment and Poverty Rate Pattern

The provinces of Central Java, Yogyakarta, East Java, and Bali are shown in Figure 9 as having secure conditions, including low unemployment and low poverty. These provinces didn't move much when COVID-19 started to invade Indonesia. In a similar vein, even if COVID-19 has started to enter the provinces of Nanggroe Aceh Darussalam, Maluku, and West Papua, they still hold the distinction of being places with high unemployment and poverty.

Instead, the previously high unemployment-rate provinces of North Sumatra and Riau switched to the low-unemployment groupings.

Figure 9. Relationship pattern between unemployment and poverty
before and at the beginning of the COVID-19 outbreak in Indonesia

High Unemployment Low Poverty	High Unemployment High Poverty		High Unemployment Low Poverty	High Unemployment High Poverty
North Sumatera, West Sumatera, Riau, Riau Island, Special Capital Region of Jakarta, West Java, Banten, East Kalimantan, North Sulawesi	Nanggroe Aceh Darussalam, Maluku, West Papua		West Sumatera, Riau Island, Special Capital Region of Jakarta, West Java, Banten, East Kalimantan, North Kalimantan, North Sulawesi, South Sulawesi	Nanggroe Aceh Darussalam, Maluku, Papua
Low Unemployment Low Poverty	**Low Unemployment High Poverty**		**Low Unemployment Low Poverty**	**Low Unemployment High Poverty**
Jambi, South Sumatera, Lampung, Bangka Belitung, Central Java, Yogyakarta, East Java, Bali, West Kalimantan, Central Kalimantan, South Kalimantan, North Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, West Sulawesi, North Maluku	Bengkulu, West Nusa Tenggara, East Nusa Tenggara, Gorontalo, Papua		North Sumatera, Riau, Jambi, South Sumatera, Lampung, Bangka Belitung, Central Java, Yogyakarta, East Java, Bali, West Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, Central Sulawesi, Southeast Sulawesi, West Sulawesi, North Maluku	Bengkulu, East Nusa Tenggara, Gorontalo, Papua

Before COVID-19   **Beginning of COVID-19**

Note: High: Above National Level; Low: Below National Level

Source: Processed Data from BPS (2021)

A small change to Semester II 2020 is depicted in Figure 10. The provinces of West Papua and Nanggroe Aceh Darussalam relocated to places with better conditions, such as those with lower levels of poverty, yet both continue to be in high unemployment areas. The adverse condition was present in a number of provinces, including West Nusa Tenggara, Yogyakarta, East Java, and Central Java, where poverty remained at a low level, but unemployment increased. Since before the pandemic, the provinces of the

Special Capital Region of Jakarta, West Java, and Banten have continued to experience high unemployment and low poverty.

Figure 10. Relationship pattern between unemployment and poverty
at the beginning of COVID-19 and during COVID-19

High Unemployment Low Poverty	High Unemployment High Poverty		High Unemployment Low Poverty	High Unemployment High Poverty
West Sumatera, Riau Island, Special Capital Region of Jakarta, West Java, Banten, East Kalimantan, North Kalimantan, North Sulawesi, South Sulawesi	Nanggroe Aceh Darussalam, Maluku, West Papua		Riau Island, Special Capital Region of Jakarta, West Java, Banten, North Sulawesi	Maluku
Low Unemployment Low Poverty	**Low Unemployment High Poverty**		**Low Unemployment Low Poverty**	**Low Unemployment High Poverty**
North Sumatera, Riau, Jambi, South Sumatera, Lampung, Bangka Belitung, Central Java, Yogyakarta, East Java, Bali, West Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, Central Sulawesi, Southeast Sulawesi, West Sulawesi, North Maluku	Bengkulu, East Nusa Tenggara, Gorontalo, Papua		North Sumatera, Riau, Jambi, Bangka Belitung, Bali, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, North Kalimantan, South Sulawesi, North Maluku	Nanggroe Aceh Darussalam, South Sumatera, Bengkulu, Lampung, Central Java, Yogyakarta, East Java, West Nusa Tenggara, East Nusa Tenggara, Central Sulawesi, North Sulawesi, Gorontalo, West Sulawesi, West Papua, Papua

Beginning of COVID-19   **During COVID-19**
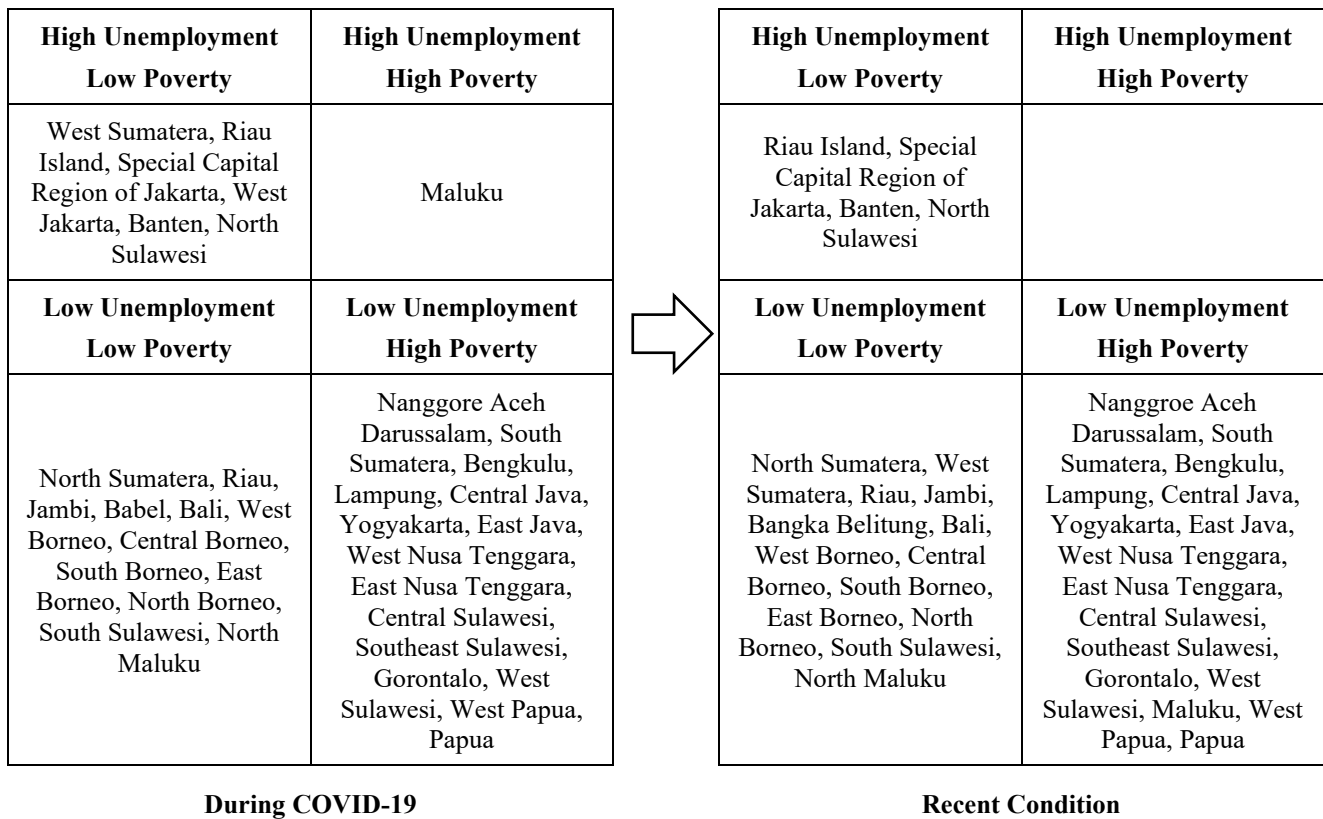
Note: High: Above National Level; Low: Below National Level

Source: Processed Data from BPS (2021)

Figure 11 depicts the various conditions that existed during Semester II 2021. There is no significant poverty or unemployment in any of the provinces. Previously labeled as high-poverty, Maluku province has been shifted to low-poverty. As a result, Maluku prospered better during this time. West Sumatra Province experienced the same scenario, successfully lowering its unemployment rate to the low unemployment and low poverty quadrant.

Figure 11 Relationship pattern between unemployment and poverty
during COVID-19 outbreak and in the recent conditions

High Unemployment Low Poverty	High Unemployment High Poverty	High Unemployment Low Poverty	High Unemployment High Poverty
West Sumatera, Riau Island, Special Capital Region of Jakarta, West Jakarta, Banten, North Sulawesi	Maluku	Riau Island, Special Capital Region of Jakarta, Banten, North Sulawesi	
Low Unemployment Low Poverty	**Low Unemployment High Poverty**	**Low Unemployment Low Poverty**	**Low Unemployment High Poverty**
North Sumatera, Riau, Jambi, Babel, Bali, West Borneo, Central Borneo, South Borneo, East Borneo, North Borneo, South Sulawesi, North Maluku	Nanggore Aceh Darussalam, South Sumatera, Bengkulu, Lampung, Central Java, Yogyakarta, East Java, West Nusa Tenggara, East Nusa Tenggara, Central Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, West Papua, Papua	North Sumatera, West Sumatera, Riau, Jambi, Bangka Belitung, Bali, West Borneo, Central Borneo, South Borneo, East Borneo, North Borneo, South Sulawesi, North Maluku	Nanggroe Aceh Darussalam, South Sumatera, Bengkulu, Lampung, Central Java, Yogyakarta, East Java, West Nusa Tenggara, East Nusa Tenggara, Central Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, West Papua, Papua

During COVID-19   **Recent Condition**

Note: High: Above National Level; Low: Below National Level

Source: Processed Data from BPS (2021)

In conclusion, it can be said that during the COVID-19 era, provinces with high unemployment and poverty rates shifted to areas with high unemployment and low poverty. Additionally, when COVID-19 entered, provinces that had previously been designated as having low unemployment and low poverty moved to regions with high unemployment and low poverty. West Sumatra, the Special Capital Region of Jakarta, West Java, Banten, and North Sulawesi are the provinces that have not changed. This demonstrates that COVID-19 has a favorable effect on unemployment but a detrimental effect on poverty in terms of rates of both. A path analysis of COVID-19 and poverty was carried out to learn more about these phenomena, as described in the following section.

4.3 Path Analysis's Result

The path analysis found a direct correlation between COVID-19 and poverty, with a coefficient of -0.31. Economic growth is an intervening variable that does not statistically function because its direct effect is smaller than its path coefficient and determinant coefficient. The COVID-19 pandemic may be the reason for the decline in poverty. The government also gave social protection support to the community in the form of food and money when COVID-19 reaction regulations such as large-scale social restrictions (PSBB) and community activity restrictions (PPKM) were put into place. It is believed that this aid can reduce poverty in the wake of the COVID-19 outbreak. This is in line with Arafah's (2020) study, which discovered that social aid from the government raises household welfare. Financial stability, food security, and mental health in households can all be greatly enhanced by social support (Londoo-Vélez & Querubin, 2022). Both Muga et al. (2021) and Fadillah and Utami (2022) assert that support from the government can help in meeting essential daily necessities.

Figure 12. Path analysis's result of the relationship between
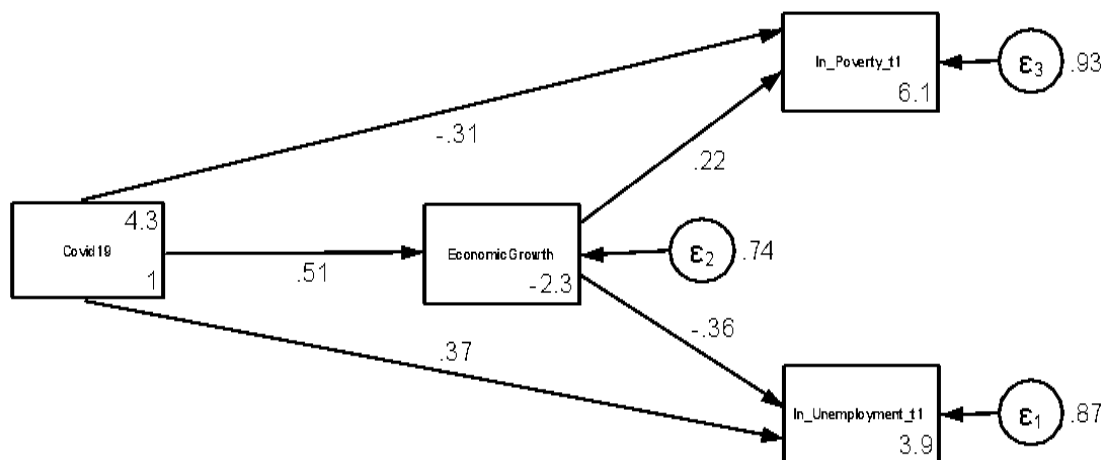COVID-19 case, economic growth, unemployment, and poverty

Figure 12 demonstrates that COVID-19 either directly or indirectly contributes to a rise in unemployment. For the informal employees, the introduction of PPKM and PSBB has created a challenging position. Despite their desire to work, they must remain at home. On the other hand, businesses or organizations are obligated to implement a work-from-home (WFH) system (Purwanto, 2020). Some companies might even have to temporarily cease operations. Due to this entire closure, a number of enterprises whose ability to operate depends on having employees at their site are no longer able to produce. Operating costs and employee salaries must still be paid at the same time. In the end, it was necessary for many enterprises to fire their employees (Muslim, 2020).

5. CONCLUSION

Beginning in 2020, the COVID-19 virus was discovered for the first time in Indonesia. According to the forecast, the national economy saw a direct contraction in Semester I 2020. Instead, the rate of unemployment slightly decreased before rising sharply the next semester. It is believed that new business sectors performing staff rationalization in the wake of Semester I's economic crisis are to blame for the delay in falling unemployment. The number of COVID-19 cases is growing, while poverty is increasing at the same time.

The quadrant analysis shows that provincial economic conditions, unemployment rates, and poverty levels have changed. Before the COVID-19 pandemic, provinces that were in the ideal zone moved into the less ideal zone. Therefore, it is possible to make the preliminary conclusion that COVID-19 has

a geographical link with both unemployment and economic growth. However, the correlation between unemployment and poverty has not changed noticeably.

Meanwhile, the path analysis reveals that COVID-19 has an impact on unemployment both directly and indirectly through economic growth. The lockdown policy has prevented commercial domains from using its laborers for a considerable amount of time. On the other hand, because of their restricted mobility, workers in the informal sector are unable to move around freely. The fact that COVID-19 and poverty have a negative relationship both directly and indirectly is an interesting result. This might be due to the existence of government social assistance programs during the epidemic, which has kept poverty under control.

These findings carry substantial implications for economic development and preparedness in the face of future pandemics. The widespread recognition of COVID-19's profound influence on economic growth, unemployment, and poverty underscores the critical value of the insights generated by this study for informed population planning. Policymakers can harness these findings to craft more precise and effective economic development policies. Policies aimed at developing family resilience are required to ensure that the community can withstand and thrive when faced with crises. Aside from direct relief, numerous supplemental initiatives might be pursued, e.g., assisting households and the micro-business sector, strengthening the promotion of their products in digital markets, and improving the caliber of human resources through various training programs, thereby providing individuals with the opportunity to secure long-term and dignified employment.

Nevertheless, it is vital to acknowledge the study's inherent temporal constraints, which, in turn, present promising avenues for future research involving extended observation periods. These longer-term investigations can

offer a more comprehensive understanding of the full spectrum of COVID-19's multifaceted impacts, thereby enriching our knowledge and enhancing the effectiveness of future pandemic response strategies.

Acknowledgements

References

Aliah, N. (2020). The impact of Covid 19 on national economic growth. *International Proceeding of Law and Economics, 62–68.*

Arapah, N. (2020). Analisis pengaruh bantuan sosial PKH dan sembako terhadap tingkat kesejahteraan masyarakat ditengah pandemic Covid 19 di kabupaten Barito utara. *Jurnal Ilmu Ekonomi (Manajemen Perusahaan) Dan Bisnis, 4*(2)*, 57–65.*

Altman, M. (2022). Trajectories for South African employment after COVID-19. *South African Journal of Science*, *18*(5–6). https://doi.org/10.17159/ sajs.2022/13289

Azis, M. A. (2021). Strategi dalam penanganan penyebaran Covid-19 melalui kebijakan PSBB. *JURNAL LITBANG POLRI, 24*(2), 44–63

Bahri, S. (2004). Penilaian variabel kepuasan karyawan menggunakan metode analisis kepentingan dan analisis kuadran (Studi kasus karyawan PDAM kota Kandangan). *Info – Teknik*, *5*(2), 89–95.

Bawazir, A., Yenugadhati, N., Da'ar, O. B., Jradi, H. (2020). Epidemiological trends, characteristics, and distribution of Covid-19: Lessons from SARS and MERS outbreaks and way forward. *Journal of Infectious Diseases and Epidemiology, 6*(3), 127.

Barro, R. J., Ursúa, J. F., & Weng, J. (2022). Macroeconomics of the great influenza pandemic, 1918–1920. *Research in Economics*, *XXXX*, 1918– 1920. https://doi.org/10.1016/j.rie.2022.01.001

Bar Barnett-Howell, Z., & Mobarak, A. (2020). The value of social distancing is not equally distributed. Vox Multimedia. Retrieved from https://voxeu.org/article/value-social-distancing-not-equally-distributed

BPS. (2020). Keadaan ketenagakerjaan Indonesia Agustus 2020. In *Badan Pusat Statistik*.

Brata, A. G., Pramudya, E. P., Astuti, E. S., Rahayu, H. C., & Heron, H. (2021). *Covid-19 and Socio-Economic Inequalities in Indonesia: A Subnational-level Analysis*. (ERIA Discussion Paper Series 371).

Copenhagen Economics (2020). Economic consequences of the COVID-19 pandemic. *Copenhagen Economics*. Retrieved from https://www. copenhageneconomics.com/dyn/resources/Publication/publicationPDF/0/5 30/1585835646/copenhagen-economics_economic-consequen ces-covid-19.pdf

Fadillah, V. & Utami, P. R. (2022). Pelaksanaan program pemerintah pantuan pangan non tunai (BPNT) dalam rangka mitigasi dampak Covid-19 di kelurahan Sokanegara. *Jurnal Riset dan Pengabdian Masyarakat, 2*(2), 120–132.

Fatmawati, F., & Preatin, P. (2022). Extreme poverty trap in Kalimantan barat. *SOCIA: Jurnal Ilmu-Ilmu Sosial*, *19*(2), 32–41.

Fikri, Y., Teguh A., & Gopar, I. A. (2021). Analisis peningkatan angka pengangguran akibat dampak pandemi Covid 19 di Indonesia. *Indonesian Journal of Business Analytics*, *1*(2), 107–116. https://doi.org/10.54259 /ijba.v1i2.59

Fiscal Policy Agency-Ministry of Finance. (2020). Policy brief: The impact of Covid-19 on child poverty and mobility in Indonesia. *UNICEF*, 1–16.

Gotu, B., & Tadesse, H. (2023). Assessing COVID-19 effects on inflation, unemployment, and GDP in Africa: What do the data show via GIS and spatial statistics? *COVID, 3*(7), 956–974. https://doi.org/10.3390/ covid3070069

Gujarati, D. N. (2003). *Basic Econometrics*. (Fourth). McGraw-Hill Higher Education. https://doi.org/10.2307/2230043

Hossain, M. I. (2021). Covid-19 impacts on employment and livelihood of marginal people in Bangladesh: Lessons learned and way forward. *South Asian Survey*, *28*(1), 57–71. https://doi.org/10.1177/0971523121995072

Indayani, S., & Hartono, B. (2020). Analisis pengangguran dan pertumbuhan ekonomi sebagai akibat pandemi Covid-19. *Jurnal Ekonomi & Manajemen Universitas Bina Sarana Informatika*, *18*(2), 201–208. Retrieved from https://ejournal.bsi.ac.id/ejurnal/index.php/perspektif/ article/view/8581

Inegbedion, H. (2021). Impact of Covid-19 on economic growth in Nigeria: Opinions and attitudes. *Heliyon*, *7*(5). https://doi.org/10.1016/j.heliyon. 2021.e06943

International Monetary Fund. (n.d.). *A long and difficult ascent*.

Joyosemito, I. S., & Nasir, N. M. (2021). Gelombang kedua pandemi menuju endemi Covid-19: Analisis kebijakan vaksinasi dan pembatasan kegiatan masyarakat di Indonesia. *Jurnal Sains Teknologi Dalam Pemberdayaan Masyarakat*, *2*(1), 55–66. https://doi.org/10.31599 /jstpm.v2i1.718

Khamis, M., Prinz, D., Newhouse, D., Palacios-Lopez, A., Pape, U., & Weber, M. (2021). *The early labor market impacts of Covid-19 in developing countries: Evidence from high-frequency phone surveys*. Retrieved from https://documents1.worldbank.org/curated/en/543791611305013434/pdf/T he-Early-Labor-Market-Impacts-of-COVID-19-in-Developing-Countries-Evidence-from-High-frequency-Phone-Surveys.pdf

Kishna, R., & Kumar, S. (2017). Unemployment and poverty paradox in India. *Journal on Contemporary Issues of Law*, *2*(10).

Lee, S., Schmidt-Klau, D., & Verick, S. (2020). The labour market impacts of the Covid-19: A global perspective. *Indian Journal of Labour Economics*, *63*(s1), 11–15. https://doi.org/10.1007/s41027-020-00249-y

Lewis, W. A. (1954). Economic development with unlimited supplies of labour. *The Manchester School*, *22*(2), 139–191. https://doi.org/10.1111/j.1467-9957.1954.tb00021.x

Liu, Y. C., Kuo, R. L., & Shih, S. R. (2020). Covid-19: The first documented coronavirus pandemic in history. *Biomedical Journal, 43*(4), 328–333. https://doi.org/10.1016/j.bj.2020.04.007

Londoño-Vélez, J., & Querubin, P. (2022). The impact of emergency cash assistance in a pandemic: Experimental evidence from Colombia. *Review of Economics and Statistics, 104*(1).

Martilla, J. A., & James, J. C. (1977). Importance-Performance Analysis. *The Journal of Marketing*, *41*(1), 77–79.

Muga, M. P. L., Kiak, N. T., & Maak, C. S. (2021). Dampak penyaluran nantuan sosial tunai pandemi Covid-19 (Studi kasus di kelurahan Sikumana–kota Kupang). OECONOMICUS *Journal of Economics*, 5(2), 105–112.

Muslim, M. (2020). PHK pada masa pandemi Covid-19. *Jurnal Manajemen Bisnis, 23*(3), 357–370.

Narimawati, U., Sarwono, J., Munandar, D., & Budhiningtias, M. (2020). *Metode penelitian dalam implementasi ragam analisis*. Yogyakarta: Andi

Nugroho, H. (2021). A year of Covid-19: A long road to recovery and acceleration of Indonesia's development. *Jurnal Perencanaan Pembangunan The Indonesian Journal of Development Planning*, *V*(1). https://doi.org/10.36574/jpp.v5i1

Onainor, E. R. (2020). What will be the economic impact of Covid-19 in the US? *Rough Estimates Of Disease Scenarios*, *1*, 105–112.

Ozili, P. K. (2020a). Covid-19 pandemic and economic crisis: The Nigerian experience and structural causes. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3567419

Ozili, P. K. (2020b). Covid-19 in Africa: Socio-economic impact, policy response and opportunities. International Journal of Sociology and Social Policy. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3574767

Pak, A., Adegboye, O. A., Adekunle, A. I., Rahman, K. M., McBryde, E. S., & Eisen, D. P. (2020). Economic consequences of the Covid-19 outbreak: The need for epidemic preparedness. *Frontiers in Public Health, 8.* https://doi.org/10.3389/fpubh.2020.00241

Prasetyo, P. E. (2008). Peran usaha mikro kecil dan menengah (UMKM) dalam kebijakan penanggulangan kemiskinan dan pengangguran. *Akmenika UPY, 2.*

Purwanto, A. (2020). Studi eksplorasi dampak Work from Home (WFH) terhadap kinerja guru selama pandemi Covid-19. *Journal of Education, Psychology and Counseling, 2*(1), 92–100.

Rahayu, N. T., & Muharam, H. (2021). The Impact of the Covid-19 pandemic on provincial economic performance in Indonesia. *Management Analysis Journal, 10*(1), 23–36.

Ramakumar, R., & Kanitkar, T. (2020). Impact of Covid-19 pandemic on the Indian economy: A critical analysis. *Investigacion Economica*, *80*(315), 3–32. https://doi.org/10.22201/FE.01851667P.2021.315.76845

Rasul, G., Nepal, A. K., Hussain, A., Maharjan, A., Joshi, S., Lama, A., . . . Sharma, E. (2021). Socio-economic implications of COVID-19 pandemic in South Asia: Emerging risks and growing challenges. *Frontiers in Sociology*, *6.* https://doi.org/10.3389/fsoc.2021.629693

Saunders, Peter. (2002). *The direct and Indirect effect of unemployment on poverty and inequality*. University of New South Wales: The Social Policy Research Centre.

Suhendra, A., & Prasetyanto, D. (2016). Kajian tingkat kepuasan pengguna trans metro Bandung koridor 2 menggunakan pendekatan importance-performance analysis. *Jurnal Online Institut Teknologi Nasional*, *2*(2), 59–70.

Suparmono, S. (2020). Estimating the impact of the Covid-19 pandemic on poverty levels in Kulon Progo regency, Yogyakarta special region, Indonesia. *Jurnal Ekonomi Dan Bisnis*, *14*(2), 83–89.

Suryahadi, A., al Izzati, R., & Suryadarma, D. (2020). *The impact of Covid-19 outbreak on poverty: An estimation for Indonesia (Draft).* SMERU Working Paper April 2020. Retrieved from https://smeru.or.id/sites/default/files/publication/wp_covid19impact_draft.pdf

UNICEF. (2021). Analysis of the social and economic impacts of Covid-19 on households and strategic policy recommendations for Indonesia. Retrieved from https://www.unicef.org/indonesia/media/9411/file/Analysisofthe SocialandEconomicImpactsofCOVID-19onHouseholdandStrategic PolicyRecommendationsforIndonesia.pdf

Walter, D. (2020). Implications of Covid - 19 for labour and employment in India. *The Indian Journal of Labour Economics*, *63*(s1), 47–51. https://doi.org/10. 1007/s41027-020-00255-0

Wan, G., & Francisco, R. (2009). *How is the global recession impacting on poverty and social spending? An ex ante assessment methodology with applications to developing.* Asia Asian Development Bank Sustainable Development Working Paper Series. Retrieved from https://www.adb.org/publications /how-global-recession-impacting-poverty-and-social-spending-ex-ante-assessment

Whitehead, M., Taylor-Robinson, D., & Barr, B. (2021). Poverty, health, and Covid-19. *The BMJ, 372*, 1–2. https://doi.org/10.1136/bmj.n376

WHO. (2013). Middle East respiratory syndrome coronavirus. Retrieved from https://www.emro.who.int/surveillance-forecasting-response/photo-galleries/middle-east-respiratory-syndrome-coronavirus-mers-cov.html

World Bank Group. (2020). *Global economic prospects* (Issue June). Retrieved from https://openknowledge.worldbank.org/entities/publication/d29e6c95-4753-58e8-b368-d03c78cacab5

Wu, Y., Jing, W., Liu, J., Ma, Q., Yuan, J., Wang, Y., Du, M., Liu, M. (2020). Effects of temperature and humidity on the daily new cases and new deaths of Covid-19 in 166 Countries. *Science of the Total Environment, 729, 139051.*

Yakhamid, R. Y, & Zaqi, N. A. R. (2021). Efektivitas PPKM darurat dalam penanganan lonjakan kasus Covid-19: Studi kasus 128 kabupaten/kota di pulau Jawa dan Bali. *Seminar Nasional Official Statistics*, *2021*(1), 235–244.

Zhong, N. S, Zheng, B. J., Li, Y. M., Poon, L., Xie, Z. H., . . . Guan, Y. (2003). Epidemiology and cause of severe acute respiratory syndrome (SARS) in Guangdong, People's Republic of China, in February, 2003. *Lancet, 362*(9393), 1353–1358.

Zhu, N., Zhang, D., Wang, W., Li, X., Yang, B., Song, J., . . ., Zhao, X. (2020). A novel coronavirus from patients with pneumonia in China, 2019. *New England Journal of Medicine, 382*(8), 727–733.

Websites:

https://www.bps.go.id/id, accessed 9 December 2021

http://www.covid19.go.id, accessed 9 December 2021