Determinants of labor markets inequality in Southeast Asia and the Effects of COVID-19

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Abstract

The COVID-19 pandemic has profoundly disrupted global labor markets, intensifying pre-existing socioeconomic inequalities worldwide, particularly in developing countries like Southeast Asia. This paper explores the multifaceted impacts of the pandemic on employment structures, regional labor patterns, gender disparities, and the interrelations among labor, health, gender, education level, and environmental conditions. Drawing from a range of empirical studies and labor force data, the analysis is structured into four key areas: The impact of COVID-19 on employment structure and regional patterns, The impact of Covid-19 on labor market, gender disparities, Economic Growth and Unemployment Pattern and the pandemic impact on Labor, Health, Gender, and the Environment. The findings reveal that vulnerable groups, such as women, informal workers, and those with lower education, were disproportionately affected. This study also discusses policy implications, emphasizing the need for inclusive labor policies, investment in education and health, and gender-sensitive recovery strategies to foster sustainable and equitable economic growth in the post-pandemic era.
Keywords: COVID-19 pandemic, labor market, gender disparities, economic growth, unemployment pattern

I. Background and Statement of the problem

The sharply rising economy of Southeast Asia has become a key player in the global economy, due to its strategic location and abundant labor market. Despite the impressive economic growth in Southeast Asia over the past few decades, job loss, income loss, and income inequality remain persistent issues. Due to the COVID-19 pandemic, there have been significant job losses in hard-hit sectors such as tourism, retail, and construction, and some job growth in higher-skilled services sectors. The pandemic has intensified these challenges, disrupted labor markets, and disproportionately affected vulnerable groups such as women, informal workers, and low-skilled workers. The impact of the COVID-19 pandemic on employment and livelihoods in Asia and the Pacific, hit the poor and vulnerable, including women, migrant workers, and daily wage laborers, the hardest, and the pandemic has been a huge setback. This paper examines and reviews two analytical questions: What are the determinants of labor market inequality in Southeast Asia, and how has COVID-19 affected the existing labor market in the region?

The heterogeneous effects of the COVID-19 pandemic, particularly the effects of the lockdown, on labor markets have been studied in several countries. Otherwise, in developed nations, the most vulnerable workers who were particularly affected during the pandemic were low-wage-earning women (Cajner et al. 2020; Cowan 2020; Montenovo et al. 2020), young workers aged 20 to 24 (Montenovo et al. 2020), and minority and non-native workers (Couch et al., 2020). All these workers had a higher chance of being unemployed, switching to part-time work, decreasing their working hours, and leaving the labor force. The purpose of this paper is to systematically explore the theoretical and methodological framework, which is presented, providing insights into drivers of labor market inequality. Moreover, empirical evidence is examined to highlight the impact of Covid-19 on labor markets in the region. Finally, this paper intends to provide a conclusion to mitigate labor market disruptions caused by Covid-19 and intends to provide valuable insights for developing and implementing effective labor market strategies for the region. The rest of the paper is organized as follows: Section 2 describes the theoretical framework and methodology, Section 3 presents empirical evidence from selected studies, and the conclusion in Section 4.

II. Theory and Methodology

2.1. Theoretical Framework

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). Unequal opportunities in life, as one aspect of "inequality" are objectionable to almost anyone if they abstract from their own position. By the same token, if rising inequality brings sufficient benefits to the least advantaged, then it may be considered Justified (Ravallion., 2018). The significant causes of labor market inequality are shaped by economic structures, urban-rural disparities, gender, and educational and skills disparities. The key idea of Human capital theory highlights the role of education and skill development, which enhances worker productivity, resulting in better wages and job opportunities, is important in understanding both investment incentives and the structure of wages and earnings. However, unequal access to education creates barriers for disadvantaged groups, perpetuating income disparities. When children's schooling entails the payment of fees, low-income cash cash-constrained households lean on culture to select the gender of children whose schooling will be sacrificed to enhance survival (Dessy et al., 2023). While workers with higher education and skills tend to secure better-paying and more stable jobs, while those with limited education are often relegated to low-paying, insecure job and precarious roles. The higher education levels significantly correlate with higher-paying formal sector jobs, leading to wage disparity between skilled and unskilled workers.

According to Becker theory, more schooling is crucial for escaping poverty and achieving economic growth at both national and individual levels. The lower level of education can only persuade low-skilled jobs, while achieving higher levels of education would lead to finding gender parity in skilled jobs. Labor market inequality is also reflecting significant regional disparities, with rural areas facing underdeveloped economic growth compared to urban areas. The most populated and urban cities must become hubs with opportunities in the formal and high skills jobs, but workers from rural areas are more likely to be employed in agriculture and informal jobs where wages are lower, and job security is weaker. Structural Inequality Theory emphasizes how historical and systemic factors embedded in economic systems perpetuate disparities across different demographic groups. Urbanization and industrialization have created disparities, resulting in the income gap between rural-urban areas with urban workers earning more than rural workers with secure job opportunities. For example, in Indonesia, about 60.5% of the Indonesian working population is employed informally, however informal employment is still viewed as one of the major problems for the local economy (Nazara., 2010).

Moreover, gender gaps in labor markets also exacerbate inequalities. Women are overrepresented as contributing family members in low-skilled and low-productivity sectors and informal work arrangements. The gender inequality in the labor market can cause wage disparities and occupational segregation. According to Human Capital Theory, gender differences in employment and education contribute to mention inequalities. Human-capital factors, gender differences in location in the labor market, a factor long highlighted in research on the gender wage gap, remain exceedingly relevant (Blau et al., 2017). The effect of gender pay transparency as a measure to reduce gender pay discrimination within firms is challenging because it requires finding both exogenous variation in transparency and detailed information on employee wages (Bennedsen et al., 2023). 510 million or 40 per cent of all employed women around the world work in hard-hit sectors compared with 36.6 per cent of employed men and 55 million or 72.3 per cent of domestic workers around the world were at significant risk of losing their jobs and incomes due to the lockdown and the lack of effective social security coverage (Lee et al.,2020). Moreover, women represent the bulk of frontline workers who face the direct risks of responding to the virus, they tend to be engaged in low-skilled and lower-paid jobs.

In Myanmar, women appear to have higher returns to education, whereby both the composition effect and the wage structure effect suggest that female workers should have higher wages than male workers because female wage workers receive substantially lower wages than male workers all along the wage distribution (Hansen et al.,2022). The increase in female education as the main contributor to the decline of the gender wage gap from 1985 to 2017, and found that females are in far better positions than 20 years ago (Nakavachara., 2010). Unequal labor force participation is generally reflective of inadequate paid employment opportunities and unfavorable work conditions for women.

Overall, Disparities in access to quality education and skill development have a significant effect on labor market inequalities, influencing earning potential and job opportunities. The decision to work in the formal sector or the informal sector is a distinct choice for women that should be accounted for in modelling their labor force participation decision (Gallaway et al., 2002). They also provide some confirmation of the inferiority of

the informal sector relative to the formal sector. Workers in the informal sector, often lacking access to social protections and rights, tend to face lower wages and job insecurity, exacerbating inequality (Chandran et al., 2018). Formal sector workers tend to experience better working conditions and higher wages, contributing to wage disparity across sectors (Koh et al., 2020). In Philippine, It is plausible that while both males and females respond to parenthood by dropping out of school and entering the labor market to manage the increased domestic and economic responsibilities, the larger labor market response of fathers may be at least partly due to the influence of traditional gender roles as well as the possibility that males receive higher returns to labor market participation (Chakraborty et al., 2024).

Moreover, the Covid-19 pandemic has exacerbated these existing disparities. 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 (Howell et al., 2021). These challenges and theoretical frameworks highlight the persistent role of economic structures, education gaps, and gender disparities in appearing labor market inequalities. The income risks for informal workers that is much higher during this pandemic compared to previous global crises of comparable scale (Lee et al., 2020).

2.2. Methodology

This paper employs a review of theoretical and empirical studies, focusing on labor market inequality and the effects of COVID-19 on existing inequalities. The inclusion criteria for selecting these papers were based on their relevance to the research topic. The data from the 2020 Indonesia National Labor Force Survey (Sakernas), covers over 290,000 observations across all provinces and most sub-provinces. By employing logistic regression analysis to examine the likelihood of income and job loss based on employment type, education, demographic variables, and access to telework infrastructure. Additionally, propensity score matching (PSM) is used to estimate the causal effect of COVID-19 mobility restrictions on job and income loss probabilities. The paper analyzes the key variables, including labor market inequality, which includes wages, gender, regional disparities, economic structure, skills, and education. The confidential individual Labor Force Survey (LFS) data from the National Statistical Office of Thailand (NSO) between 2020 and 2021 were used to analyze unemployment and absence from work, based on individual and firm characteristics. The paper also uses path analysis to emphasize a direct correlation between COVID-19 and poverty. These are analyzed to identify a nuanced understanding of labor market inequality and its drivers, and the approach is enough to highlight the COVID-19 impact on existing inequalities and thus answer the analytical question of this paper. This framework is based on the concept of health equity, considering the dimensions of human rights and equal access to healthcare. At the macro level, it is influenced by geographical, economic, and institutional factors. However, in this study, the focus was mainly on the supply side from the perspective of the providers, as there were challenges in collecting data across workers, who were key demand-side informants during the COVID-19 crisis. Moreover, the framework was applied by accounting for the effect of COVID-19 on the health system factors.

III. Empirical Evidence

3.1. The impact of Covid-19 on employment structure and regional patterns

By analyzing Indonesia's National Labor Force Survey 2020 data, which studied regional patterns of income loss and job loss, the most populated regions were experiencing the most substantial drops in activities because of lockdown measures caused by the COVID-19 outbreak (Putra et al., 2023). The study poses the following hypothesis: informally employed workers, such as ''self-employed'' and ''temps'', have suffered higher magnitudes of income loss and job loss than formally employed workers.

Table 1 The estimated coefficients and marginal effects of logit regressions for the income loss

	Model 1		Model 2	
	Coefficient	ME	Coefficient	ME
Gender *(base group = Female)*	0.252***	0.058***	0.256***	0.061***
	(0.009)	(0.002)	(0.011)	(0.003)
Education (base group = less than high school)				
High school	−0.141***	−0.038***	−0.128***	−0.038***
	(0.010)	(0.002)	(0.010)	(0.002)
Diploma I/II/III	−0.639***	−0.148***	−0.573***	−0.142***
	(0.025)	(0.005)	(0.026)	(0.005)
Bachelor/Diploma IV	−0.920***	−0.211***	−0.804***	−0.198***
	(0.015)	(0.003)	(0.017)	(0.003)
Employment (base group = Regular)				
Self-employed	1.106***	0.254***	1.082***	0.248***
	(0.013)	(0.003)	(0.013)	(0.003)
Temporary	0.572***	0.149***	0.541***	0.144***
	(0.016)	(0.004)	(0.016)	(0.004)
Urban area *(base group = Rural area)*	0.217***	0.074***	0.257***	0.084***
	(0.012)	(0.003)	(0.012)	(0.003)
Employment × residency (base group = "Regular × Urban")				
Self-employed × Urban	0.453***	–	0.453***	–
	(0.018)		(0.018)	
Temporary × Urban	−0.047	–	−0.057*	–
	(0.025)		(0.025)	
Age			−0.010***	−0.002***
			(0.001)	(0.001)
Internet usage			−0.039***	0.005
			(0.011)	(0.003)
Work from home			−0.037*	−0.006
			(0.017)	(0.004)
Household head			0.114***	0.023***
			(0.012)	(0.003)
Married			0.167***	0.039***
			(0.014)	(0.003)
Income			−0.138***	−0.032***
			(0.004)	(0.001)
Intercept	−0.845***		1.281***	
	(0.039)		(0.066)	
Regional effects	NO		YES	
AIC	356 723.959	3 602 18.686	354 514.367	358 209.238
Log likelihood	−178 318.980	−180 099.343	−177 208.184	−179 088.619
Num. obs.	291 919	291 919	291 919	291 919

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$.

Table 2 The estimated coefficients and marginal effects of logit regressions for the job loss

	Model 1		Model 2	
	Coefficient	ME	Coefficient	ME
Gender *(base group = Female)*	0.330***	0.006***	0.250***	0.004***
	(0.029)	(0.001)	(0.037)	(0.001)
Education (base group = less than high school)				
High school	−0.019	−0.001	−0.043	−0.001**
	(0.030)	(0.001)	(0.032)	(0.001)
Diploma I/II/III	−0.559***	−0.009***	−0.487***	−0.008***
	(0.098)	(0.001)	(0.100)	(0.001)
Bachelor/Diploma IV	−0.800***	−0.012***	−0.586***	−0.010***
	(0.060)	(0.001)	(0.066)	(0.001)
Employment (base group = Regular)				
Self-employed	0.112*	0.001	0.080	0.001
	(0.044)	(0.001)	(0.045)	(0.001)
Temporary	0.458***	0.012***	0.435***	0.011***
	(0.047)	(0.001)	(0.048)	(0.001)
Urban area *(base group = Rural area)*	−0.143***	−0.001	−0.090*	0.000
	(0.042)	(0.001)	(0.042)	(0.001)
Employment × residency (base group = "Regular × Urban")				
Self-employed × Urban	0.341***	–	0.337***	–
	(0.059)		(0.059)	
Temporary × Urban	0.369***	–	0.375***	–
	(0.068)		(0.068)	
Age			−0.024***	−0.001***
			(0.001)	(0.001)
Internet usage			−0.149***	−0.001*
			(0.035)	(0.001)
Work from home			−0.178**	−0.003**
			(0.066)	(0.001)
Household head			0.251***	0.004***
			(0.039)	(0.001)
Married			0.189***	0.003***
			(0.044)	(0.001)
Income			−0.152***	−0.003***
			(0.005)	(0.000)
Intercept	−3.696***		−0.810***	
	(0.108)		(0.136)	
Regional effects	NO		YES	
AIC	58 897.301	59 366.858	57 849.194	58 290.979
Log likelihood	−29 405.650	−29 673.429	−28 875.597	−29 129.490
Num. obs.	291 919	291 919	291 919	291 919

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$.

The findings indicate that People facing precarious employment conditions are also the ones who experienced idiosyncratic risks stemming from the initial COVID-19 outbreak. Among them, ‘‘self-employed’’ appear to be particularly vulnerable. Their chances of losing income are 25% higher than those of the regularly employed. And additionally marginal effect (ME) of income loss for the self-employed remains robust both with and without including the control variables. The situation is further exacerbated for the self-employed who reside in urban areas. They have higher probabilities of losing both income and job as compared to rural self-employed. Another group that sustained a large damage due to the COVID-19 pandemic are the ‘‘temporarily employed’’. Although they are 11% less likely to lose income than self-employed, their associated probabilities of income loss and job loss are, respectively, 14% and 1% higher than for regulars.

3.2. The impact of Covid-19 on labor market gender disparities

The confidential individual Labor Force Survey (LFS) data from the National Statistical Office of Thailand (NSO) between 2020 and 2021 were used to analyze unemployment and absence from work, based on individual and firm characteristics (Chairassamee et al., 2022). They find that less-educated workers and the elderly were more likely to be absent from work. Additionally, workers in large firms were more likely to be unemployed, suggesting that the pandemic disproportionately affected large firms rather than micro, small or medium-sized enterprises. The results also vary based on industry, such as agriculture, manufacturing, and services.

Table 3. The Effects of the Pandemic on the Thai Labor Market by Sector

	Dependent Variable					
	Unemployment			*Absent from Work*		
	Agricultural	*Manufacturing*	*Services*	*Agricultural*	*Manufacturing*	*Services*
Female	–0.001	–0.008***	–0.005*	–0.000	0.005***	–0.001
	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Age						
Below 18	0.016	0.002	0.025	0.013	0.038	–0.010
	(0.013)	(0.014)	(0.021)	(0.014)	(0.034)	(0.013)
18–25	0.003	0.014***	0.012***	0.001	–0.001	0.001
	(0.003)	(0.004)	(0.003)	(0.005)	(0.002)	(0.003)
60 and above	–0.000	0.002	–0.005	0.012**	0.002	0.010**
	(0.002)	(0.004)	(0.003)	(0.005)	(0.004)	(0.004)
Education						
Less than high school	0.005*	–0.008*	0.000	–0.006	–0.001	0.015***
	(0.003)	(0.004)	(0.003)	(0.011)	(0.003)	(0.003)
High school or equivalent	0.010**	–0.004	–0.003	–0.014	–0.000	0.010***
	(0.004)	(0.005)	(0.002)	(0.012)	(0.003)	(0.003)
Firm Size						
Fewer than five employees	0.004	–0.018***	–0.014**	–0.007	0.011*	–0.014**
	(0.011)	(0.004)	(0.006)	(0.007)	(0.006)	(0.006)
5–49 employees	0.011	–0.003	–0.001	0.004	0.004	–0.003
	(0.011)	(0.003)	(0.004)	(0.008)	(0.004)	(0.004)
50–199 employees	0.022	0.003	0.001	0.017	–0.000	–0.002
	(0.015)	(0.003)	(0.002)	(0.022)	(0.003)	(0.007)
Observations	30,630	44,888	77,845	24,820	39,036	61,771
R^2	0.0671	0.0517	0.0633	0.0801	0.1225	0.1833

NOTES: Base groups are male, aged 26–59, holding a college degree, and working in a firm with more than 199 employees. Standard errors are clustered at the provincial level. All models control for provincial-, occupational-, industry-, and month-fixed effects. *, **, and *** denote statistical significance at the 10, 5, and 1 per cent levels, respectively.
SOURCE: Authors' calculations.

The findings show the effects of the pandemic on the labor market by sector. Female workers in this sector had a 0.8 per cent lower chance than male workers to lose their jobs; however, female workers had a higher chance of being absent from work. Concerning different education levels, workers in the agricultural sector who held less than a college degree were more likely to lose their jobs. In the services sector, however, less-educated workers had a higher chance of being absent from work than college workers. Surprisingly, in the manufacturing sector, workers who held less than a high school diploma were less likely to be unemployed. The Blinder-Oaxaca technique, which can illustrate how the gender earnings gap at a time point can be decomposed at their mean values (Nakavachara., 2010). That method allows an entire distribution of earnings to be decomposed into an unexplained portion and a portion explained by the differences in the distributions, the observable characteristics of males and females.

Table 4 Blinder–Oaxaca (1973) results on gender earnings gaps

	Panel A					
	1985		1995		2005	
Total difference (T)	0.3396	100.00%	0.2087	100.00%	0.0898	100.00%
Explained (E)	0.0904	26.62%	−0.0014	−0.68%	−0.0849	−94.59%
Unexplained (U)	0.2492	73.38%	0.2101	100.68%	0.1747	194.59%
	Panel B: explained (detail)					
	1985		1995		2005	
Education	0.0004	0.13%	−0.0407	−19.50%	−0.0823	−91.64%
Primary	−0.0063		0.0019		0.0119	
Lower secondary	0.0304		0.0198		0.0235	
Upper secondary	0.0026		0.0045		0.0123	
University	−0.0263		−0.0669		−0.1300	
Age and age-squared	0.0617	18.17%	0.0438	20.99%	0.0176	19.64%
Age	0.1872		0.1220		0.0363	
Age-squared	−0.1255		−0.0782		−0.0187	
Urban	−0.0018	−0.52%	−0.0034	−1.62%	−0.0060	−6.74%
Married	0.0288	8.49%	0.0100	4.79%	0.0033	3.69%
All regions	0.0012	0.35%	−0.0112	−5.35%	−0.0175	−19.55%
Explained (E)	0.0904	26.62%	−0.0014	−0.68%	−0.0849	−94.59%
	Panel C: unexplained (detail)					
	1985		1995		2005	
Advantage of male	0.0972	28.63%	0.0864	41.38%	0.0793	88.32%
Disadvantage of female	0.1520	44.75%	0.1238	59.30%	0.0954	106.27%
Unexplained (U)	0.2492	73.38%	0.2101	100.68%	0.1747	194.59%

The finding results show that a substantial increase in the education of females was the major source of the narrowing of the gender earnings gap in Thailand from 1985 to 2005. In fact, in the wage and salary sector, improvements in the education of female workers surpassed that of male workers. In later years, females have possessed superior observable characteristics compared to males, but did not earn higher income than males due to unobservable factors. However, these unobservable factors have been changing in ways that have improved the position of females in the Thai labor market.

3.3. Economic Growth and Unemployment Pattern

The path analysis found a direct correlation between COVID-19 and poverty, with a coefficient of (-0.31) (Sukamdi., 2024). Economic growth is an intervening variable that does not statistically function because its direct effect is smaller than its path coefficient and determinant coefficient.

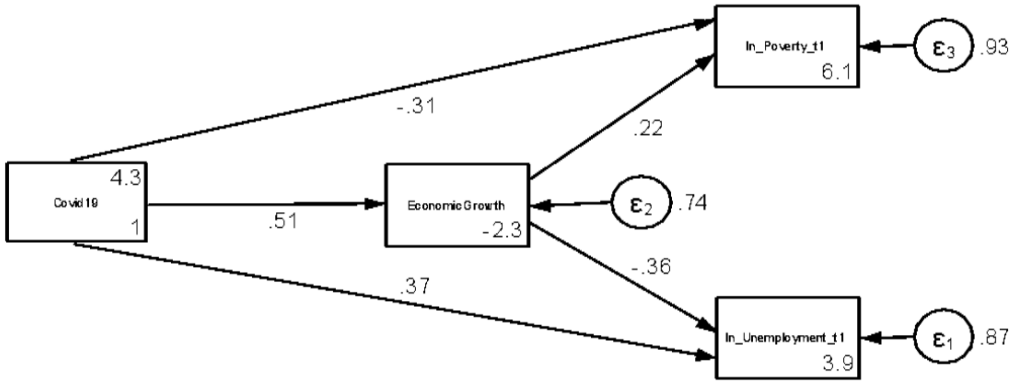

Figure 1 Path analysis's result of the relationship between COVID-19 case, economic growth, unemployment, and poverty

The findings demonstrate that 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 their 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 author found the result that COVID-19 and poverty have a negative relationship both directly and indirectly. These findings carry substantial implications for economic development and preparedness in the face of future pandemics.

3.4. Comparison between pandemic and other infectious diseases and their impacts

Various diseases and outbreaks, the main affected world regions, the time, and the number of infections and deaths as estimated by various sources (Bloom et al., 2022). They indicate the prospect of reemergence exists should containment efforts be relaxed in the case of some diseases, which is particularly true for poliomyelitis. Unfortunately, in this context, efforts to rein in COVID-19 through social distancing and lockdowns might lead to reductions in vaccination against other diseases, which could foster their reemergence.

Table 5 Important Infectious Diseases, Notable Outbreaks over the Last Decades, and Their Human Toll

Disease	Region	Time	Infections and deaths
HIV/AIDS	Worldwide	1981–ongoing	75 million people infected and 32 million people have died as of the end of 2018 (UNAIDS 2019)
Malaria	Mainly Africa, South Asia, and South America	Ongoing	228 million cases in 2018 (down from 251 million in 2010) and 405,000 deaths (down from 858,000 in 2010), according to the World Health Organization (2019a)
Measles	Worldwide	Ongoing	140,000 deaths in 2018 globally, with the majority of deaths among children below the age of five (World Health Organization 2019d)
Cholera	Frequent outbreaks reported mainly in Africa and South Asia	Ongoing	2.86 million estimated cases per year and 95,000 estimated deaths (Ali et al. 2015)
Hepatitis	Worldwide	Ongoing	1.34 million estimated deaths in 2015 (World Health Organization 2017)
Dengue fever	Africa, the Americas, the Eastern Mediterranean, Southeast Asia, the Western Pacific	Ongoing	390 million cases estimated per year in 2015 (World Health Organization 2021), with incidence increasing strongly over the past decades; 40,500 estimated deaths per year according to Global Burden of Disease 2017 Causes of Death Collaborators (2018)
SARS	Worldwide	2002–04	8,096 infected and 774 deaths (World Health Organization 2015)
H1N1 (swine flu pandemic of 2009)	Worldwide	2009–10	18,500 confirmed deaths and 201,200 estimated deaths (Dawood et al. 2012)
MERS	Worldwide	2012–ongoing	2,494 confirmed cases and 585 deaths by the end of November 2019 (World Health Organization 2020b)
Rabies	Africa, Asia, Central and South America	Ongoing	59,000 estimated deaths in 2017 (World Health Organization 2020c)
Tuberculosis	Worldwide	Ongoing	10 million new infections and 1.5 million deaths in 2018 (World Health Organization 2019b)
Ebola (Western African Epidemic of 2014–16)	Mainly Africa (Guinea, Liberia, Sierra Leone)	2014–16	15,261 total confirmed cases and 11,325 total deaths (Centers for Disease Control and Prevention 2020a)
Zika	Worldwide (mainly the Americas)	2015–16	51 reported deaths as of 2019 (Cardona-Ospina et al., 2019)
Poliomyelitis	Previously worldwide, as of 2020 endemic transmission only in Afghanistan and Pakistan	Ongoing	33 reported cases in 2018, down from 350,000 estimated cases in 1988 (World Health Organization 2019c). If the disease is not fully eradicated, a global relapse and 200,000 new cases per year within 20 years are projected.
Influenza	Worldwide	Ongoing	389,000 estimated global deaths per year over the time frame 2002–11 (Paget et al. 2019)
Yellow fever	Tropical and subtropical areas in South America and Africa	Ongoing	200,000 estimated cases and 30,000 estimated deaths per year (Centers for Disease Control and Prevention 2020b)
Japanese encephalitis	Southeast Asia and Western Pacific	Ongoing	100,308 estimated cases and 25,125 estimated deaths in 2015 (Quan et al. 2019)
COVID-19	Worldwide	2019–ongoing	23 million confirmed cases and 800,000 deaths globally as of August 21, 2020

In the absence of complete and reliable evidence, much of the analysis on the economic burden of COVID-19 remains somewhat tentative. The authors focus here on a selection of studies that illustrate the scale of the issue. The finding shows that corresponding to the very strong behavioral and policy- induced reductions in consumption and labor supply that are rooted in the fast spread of a new and dangerous pathogen, and consumption goods are produced with labor only, and both production and consumption entail the risk of infection.

3.5. The pandemic impact on Labor, Health, Gender, and the Environment

The developing and rapidly growing literature on the economic consequences of COVID-19 to summarize the literature on the socioeconomic consequences of COVID-19, focusing on those aspects related to labor, health, gender, discrimination, and the environment (Brodeur et al., 2021). Their study delved into the research related to the economics of COVID-19 that has been released over a short period. Before covering the impacts of COVID-19, they documented the most popular data sources that are exploited to measure the known

cases and deaths resulting from COVID-19, as well as the social distancing activities. They found that declines in consumer and investor confidence reinforce negative multiplier effects in a downward spiral between labor and output markets, which can be partially attenuated by stimulative fiscal and monetary policies. They also focus on the impact of the pandemic and the social distancing measures on outcomes in four areas: the labor market, mental health and well-being, racial and gender inequality, and the environment. In terms of the labor market outcomes, research has shown that there is a high degree of heterogeneity in the pattern of job losses. This contributes to the disproportionate effect of the pandemic on workers in certain industries and occupations, many of which have a relatively high concentration of lower-skilled and/or less educated workers.

IV. Conclusion

This paper illustrates the heterogeneous effects of the COVID-19 pandemic in the existing body of the labor market inequalities of Southeast Asia Countries. Significant macroeconomic after-effects of pandemics persist for decades due to reductions in the relative labor supply (Jordà et al., 2020). The labor markets in this region have been severely affected by the COVID-19 epidemic, which has changed job patterns and exacerbated already-existing social inequities. The disparate effects across genders, regions, wages, education, economic structure, and skills have been emphasized in this paper. Unstable worker groups with low skills and informal jobs suffered disproportionately, losing their jobs during and after the pandemic (Putra et al., 2023). The most vulnerable categories were highlighted in the region's ongoing gender and educational disparities.

Due to many empirical findings that address the inequality of the labor market, many empirical findings indicate the need to strengthen labor protections, access to education, and technology that benefits both urban and rural populations. The disproportionate effect of the pandemic on employment, industries, and occupations, many of which have a relatively high concentration of skill / low-skilled, and educated or less educated workers (Brodeur et al., 2021). While discussing labor market disparity in the region going forward, empirical studies prove that policy interventions that prioritize gender equality, education, digital inclusion, and inclusive economic growth will be essential. By addressing these factors, Southeast Asian countries can unlock their potential for increased sustainable post-pandemic labor markets without inequality, wage gaps, and skills.

Additionally, offering skill-development initiatives to meet the labor demands following the pandemic. Furthermore, encouraging women to enter higher-paying fields and leadership positions can help to advance efforts for gender equality. To provide more thorough insights into sustainable and potent economic growth in Southeast Asia, additional study is required to delve further into labor settings, national regulations, and new labor market trends. Labor market policies can effectively decrease the level of inequality if they focus on enhancing the efficiency of formal job search methods (Horvath et al., 2018). The pandemic has brought attention to how vulnerable labor markets are, but it also presents a chance to address systemic injustices. Southeast Asia can create a more robust and inclusive labor market that can survive future economic shocks by promoting sustainable labor policy and utilizing regional cooperation. Overall, these findings suggest how to approach improving the inequality of the labor market and how we can improve the impact of COVID-19 on the labor market in the region to avoid labor market disparities.

References

Barnett-Howell, Z., Watsonb, O. J., & Mobarakc, A. M. (2021). The benefits and costs of social distancing in high- and low-income countries. *Trans R Soc Trop Med Hyg*, 115, 807–819. doi:10.1093/trstmh/traa140

Bennedsen, M., Larsen, B., Wei, J. (2023). Gender wage transparency and the gender pay gap. *Journal of Economic Survey*, DOI: 10.1111/joes.12545

Blau, F. D., & Kahn, L. M. (2017). The gender wage gap: extent, trends, and explanations. *Journal of Economic Literature*, 55(3), 789–865.

Bloom, D. E., Michael Kuhn, and Klaus Prettner (2022). Modern Infectious Diseases: Macroeconomic Impacts and Policy. *Journal of Economic Literature*, 60(1), 85–131 https://doi.org/10.1257/jel.20201642

Brodeur A, Gray D, Islam A, Bhuiyan S (2021). A literature review of the economics of COVID-19. *Journal of Economic Surveys*. 2021; 35:1007–1044. https://doi.org/10.1111/joes.12423

Cajner, T., Leland, D. C., Ryan, A., Grigsby, J. D., Hamins-Puertolas, A., Hurst, E., Kurz, C., & Yildirmaz, A. (2020). The U.S. Labor Market during the Beginning of the Pandemic Recession. *NBER Working Paper* 27159. Cambridge, MA: National Bureau of Economic Research.

Chairassamee, N. & Hean, O. (2022). Effects of the COVID-19 Pandemic on the Labour Market in Thailand. *Journal of Southeast Asian Economies*, December 2022, https://www.jstor.org/stable/10.2307/27193073

Chandran, M., Goh, C., & Tan, A. (2018). The role of the informal economy in Southeast Asia: A socio-economic analysis. *Asian Economic Policy Review*, 13(2), 156-172.

Chakrabortya, K. S., Villa, K. M. (2024). Teen parent trap? The education and labor implications of motherhood and fatherhood during the transition from adolescence to adulthood in Cebu, the Philippines. *Economics and Human Biology*, 55(2024), 101443

Couch, K. A., Robert, W. F., & Xu, H. (2020). "Early Evidence of the Impacts of COVID-19 on Minority Unemployment". *Journal of Public Economics 192: 104287.*

Gallaway, J. H., & Bernasek, A. (2002). Gender and Informal Sector Employment in Indonesia. *Journal of Economic Issues*, 36(2), 313-321. https://www.jstor.org/stable/4227780

Horvatha, G., Zhangb, R. (2018). Social network formation and labor market inequality. *Economics Letters* 166 (2018) 45–49

Hansen, H., Rand, J., & Ngu Wah Win (2022). The gender wage gap in Myanmar: Adding insult to injury? *Journal of Asian Economics, 81*, 101511.

Jordà, Ò., Singh, S.R. & Taylor, A.M. (2020). *Long-run Economic Consequences of Pandemics*. NBER Working Paper.

Koh, H., Tan, W., & Jomo, K. (2020). Labor market inequalities in Southeast Asia: The role of education and technological change. *Journal of Southeast Asian Studies*, 51(3), 387-407.

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

Montenovo, L., Jiang, X., Rojas, F. L., Schmutte, Ian M., Simon, K. I., Weinberg, B. A. & Wing. C. (2020). Determinants of Disparities in COVID-19 Job Losses. *NBER Working Paper* 27132. Cambridge, MA: National Bureau of Economic Research.

Nakavachara, V. (2010). Superior female education: Explaining the gender earnings gap trend in Thailand. *Journal of Asian Economics, 21*(2010), 198–218.

Nazara, S. (2010). *The informal economy in Indonesia: Size, composition and evolution.* International Labour Organization.

Ravallion, M. (2018). Inequality and Globalization. *Journal of Economic Literature, 56*(2), pp.620-642.

Rendra A.A. Putra, Kostiantyn Ovsiannikov, Koji Kotani COVID-19-associated income loss and job loss: Evidence from Indonesia. *Journal of Asian Economics, 87*(2023), 101631

Sukamdi (2024). COVID-19 Pandemic: Its Impacts on Economic Growth, Unemployment, and Poverty in Indonesia. *Journal of Southeast Asian Economics, 12*(3), 1-36.

Sylvain Dessy, Luca Tiberti, David Zoundi (2023). The gender education gap in developing countries: Roles of income shocks and culture. *Journal of Comparative Economics, 51*(2023), 160–180.