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Impacts of COVID-19 Pandemic on Informal Workers in Thailand

Kaewkwan Tangtipongkul

Faculty of Economics, Thammasat University, Bangkok 10200, Thailand

E-mail: kaewkwan@econ.tu.ac.th

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Abstract

The impact of the COVID-19 pandemic outbreak in Thailand has negatively affected the promotion of continuous economic growth and productive employment. This study uses data from the Thai National Statistical Office's Informal Worker Survey 2011-2021 from households sampling in Thailand. This study's early analysis used annual data from 2011-2021 to reflect changes related to the labor market, occupations, economic activities, and number of employments. The results of the study are shown by using diagrams to illustrate trends and changes over 10 years. In addition, the study provided an analysis of COVID-19's impact on the labor market in Thailand by the mean differences between before the COVID-19 (2019) and during the COVID-19 pandemic (2020 and 2021) on estimated monthly income and total weekly working hours of the sample group by gender, educational level, occupation, and type of industry. The Thai National Statistical Office defines informal employment as employed persons with no social security from their employers. According to the annual data from 2011-2021, it was found that the number of informal employments in Thailand from the age of 15 to 55 years has decreased continuously during the COVID-19 pandemic outbreak in 2020 and 2021. The average weekly working hours for female and male informal workers decreased significantly statistically during the COVID-19 pandemic compared to pre-COVID-19. The average monthly earnings for male informal workers decreased significantly statistically during the COVID-19 pandemic compared to pre-COVID-19, while the average monthly earnings for female informal workers remained statistically insignificant. The average monthly earnings and average total weekly working hours of informal workers in all educational levels during the COVID-19 pandemic declined statistically significantly, except for informal workers with a secondary education level and above where only the average weekly working hour declined statistically significantly. In addition, the average weekly working hours for all occupations decreased significantly statistically during the COVID-19 pandemic. Agriculture, forestry, fisheries, construction, and service occupations experienced a statistically significant decline in average monthly earnings during the COVID-19 pandemic. Utilizing various financial assistance measures to alleviate the issues of the informal labor market and the economic situation affected by the COVID-19 pandemic may be the path to economic recovery.

Keywords: COVID-19; informal labor market; employment; earnings; working hours; Thailand

1. Introduction

The rapid spread of COVID-19 has caused anxiety and economic stagnation due to lockdown measures and border closures affecting millions of people worldwide. According to the Thailand Economic Monitor by the World Bank in June 2020, Thailand's Gross Domestic Product (GDP) growth rate is expected to be the lowest in the past five years, considered to be the most severe among Southeast Asian countries and the Asia-Pacific region. The tourism sector is projected to be the most negatively impacted sector from international travel restrictions. The crisis significantly affected households lacking economic stability. The population with an average daily income below 170 baht is expected to double from 4.7 million in the first quarter of 2020 to 9.7 million in the second quarter of 2020 and will recover slightly, dropping to 7.8 million in the third quarter of the same year. Government subsidies provide relief and help achieve economic recovery (World Bank, 2020).

Thai workers have faced challenges with social sustainability issues caused by disturbance events from 1997 to 2021 (Figure 1). These events consist of financial and economic crises, natural disasters, pandemics, and trade barriers caused by labor rights and welfare reasons. In 1997, the Asian Financial Crisis or the Tom Yum Kung Crisis caused bankruptcy and unemployment across the country. The government has initiated measures to solve the problems faced by financial institutions to revive the country's economy and promote domestic worker employment in the following year. In 2010 Thai workers faced trade barriers due to restrictive labor rights. In 2015, the European Union (EU) issued a yellow card for illegal, unreported, and unregulated (IUU) fishing which affects seafood and processed products exports and workers in the fishery sector and its relevant industries. The impact of the 2004 Indian Ocean earthquake and tsunami affected more than 500,000 workers and caused damage to the tourism and service sectors in Ranong, Phang Nga, Phuket, Krabi, Trang, and Satun provinces (Center for Assistance for Tsunami Victims, 2005). The 2011 floods resulted in the unemployment of Thai and migrant workers alike in manufacturing, agriculture, and service sectors.

In 2020 and 2021, the COVID-19 crisis had an immediate impact on the service sector, the tourism industry, and workers in the hospitality industry. In terms of domestic travel, international travel, and the absence of tourists in Thailand, the total income from international tourists showed a 40% decrease from 557 billion baht in 2019 to 333 billion baht in the first three months of 2020 (International Labour Organization (ILO), 2020a). Businesses and employment were disrupted by the curfew at the beginning of the second quarter of 2020. Migrant workers returned home whereas domestic workers suffered shutdowns in the hospitality industry. The lockdown measures eased, and the employment situation began to improve in the last quarter of 2020. The labor crisis in 2021 was caused by a new wave of COVID-19 at the end of 2020 and the beginning of 2021 which initially affected Samut Sakhon province and later spread to other 22 provinces. The new wave mostly affected migrant and Thai workers in the fishery industry, seafood processing industry, fish and shrimp rafts businesses, and food markets. The World Bank (2020) forecasted that the Thai economy will shrink by 5 percent in 2020 due to a slowdown in exports and lower income in tourism and global trade. In addition, data from the United Nations Industrial Development Organization (UNIDO) and the United Nations (UN) in 2020 identified small and low-technology enterprises that received the least government support and were most affected by lockdown measures. Data in the report suggests that shrinking business incomes and lower wages for workers could lead to an employment crisis. More than 50 percent of entrepreneurs identified workers' wages and social security expenses as their biggest financial burdens in conducting businesses.

Studies on the impact of COVID-19 on labor markets in various contexts both in Thailand and abroad, showed similar results. First of all, the number of employment and working hours significantly declined during the COVID-19 outbreak when compared to the pre-COVID-19 period in European countries, (The European Commission's Science and Knowledge Service, 2020), developing countries in Latin America and the Caribbean (Khamis et al., 2021), South Korea (Aum, Lee, & Shin, 2021), Canada (Béland, Brodeur, & Wright, 2023; Lemieux, Milligan, Schirle, & Skuterud, 2020), Japan (Kikuchi, Kitao, & Mikoshiba, 2021), Thailand (International Labour Organization (ILO), 2020b; Lekfuangfu, Piyapromdee, Porapakkarm, & Wasi, 2020), Bangladesh (Genoni, Khan, Krishnan, Palaniswamy, & Raza, 2020; Sarker, 2020), the United States of America (Bartik, Bertrand, Lin, Rothstein, & Unrath, 2020; Chetty, Friedman, & Stepner, 2024; Coibion, Gorodnichenko, & Weber, 2020; del Rio-Chanona et al., 2020; Forsythe, Kahn, Lange, & Wiczer, 2020), Australia (Güven, Sotirakopoulos, & Ulker, 2020), and Israel (Miaari, Sabbah-Karkabi, & Loewenthal, 2020). Coibion et al. (2020) found that the proportion of employment to the population in the United States fell sharply from 60 percent in the pre-COVID-19 period to 52.2 percent in April 2020, the peak of the COVID-19 pandemic. Nearly 20 million workers in the United States lost their jobs, which greatly exceeded the numbers from all previous crises. A study by Kahn, Lange, & Wiczer (2020). found that the labor market was in a widespread recession across almost every industry; nonetheless, several job openings are constantly announced for jobs in demand, such as nurses and retail workers, resulting in the reallocation of workers. Alon, Doepke, Rumsey, and Tetilt (2020) found that COVID-19 greatly affected service workers, particularly women working as restaurant workers and receptionists. Studies also found that changes in working hours in the United States resulted in male workers having a higher rate of working hours fluctuation than female workers. In Canada and

developing countries, such as Bangladesh, female workers were more likely to be affected by the COVID-19 crisis than male workers (Lemieux et al., 2020; Genoni et al., 2020; Sarker, 2020).

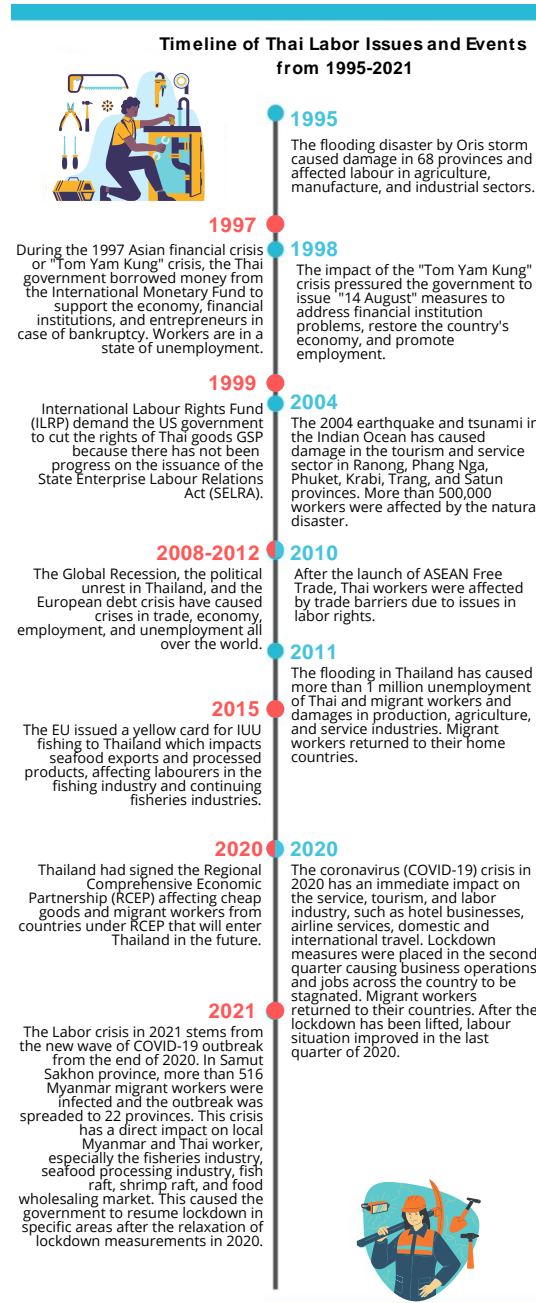


Figure 1 Timeline of Thai Labor Events from 1995-2021
 Source: compiled by the author

The job's nature and flexibility and the industry's importance all affect employment conditions. del Rio-Chanona et al. (2020) have created the Remote Labor Index (RLI) in their study for all occupations. It is calculated from the proportion of occupational activities that can be done at home. RLI equals 1 means that the occupation-related activities can be done at home. In contrast, if the RLI equals 0, there were no occupational-related activities that could be done at home. The results of the analysis found that 1) occupations with relatively low RLI scores meant working from home were less likely and were also more likely to be found in less important industries, such as dishwashing, carpenters, and roofers. Social distancing measures greatly affect workers in these occupations, such as reduced working hours and the risk of losing their jobs, 2) occupations with a high RLI score were likely to be found in important industries, such as credit analysts, politicians, scientists, and operational researchers. These occupations with high RLI scores were at a lower risk of a supply-side shock than the occupations with low RLI scores. Due to the nature of the industry that requires onsite work, some occupations with relatively low RLI can also be important industries, such as farm workers and healthcare workers. These occupations have low liability for economic instability and supply-side shock.

The studies on the impact of COVID-19 on the labor market in Europe and Thailand are consistent with those in the United States. The results show that bankrupted economic activities account for an average of 10 percent of total employment in each European country. The COVID-19 lockdown measures most affected vulnerable and disadvantaged groups with low wages and worse employment conditions. Female and young workers appear to be impacted more. (The European Commission's Science and Knowledge Service, 2020). A study by Lekfuangfu, Piyapromdee, Porapakkarm, & Wasi (2020) analyzed the Thai Labor Force survey data in the third quarter of 2019 to create an index of ease of workplace adjustment and risks of virus spread. It was found that the occupation groups most affected by the lockdown measures were service workers, retail, and market workers.

The unemployment rate increased during the COVID-19 pandemic (Béland et al. 2023; Coibion et al., 2020; Guven et al., 2020; Juranek, Paetzold, Winner, & Zoutman, 2020; Radulescu et al., 2020). The study by Coibion et al. (2020) found that the unemployment rate in the United States rose from 4.2 percent to 6.3 percent, which is relatively low when compared to a sharp decrease in the employment-to-population ratio of 7.4 percent. Workers who lost their jobs during COVID-19 did not immediately look for a new job, meaning that the laborers left the labor market. As a result, the employment-to-population ratio decreased notably, and the unemployment rate only increased slightly. This is known as "discouraged workers". The Nordic labor market has also been greatly affected by the COVID-19 pandemic despite implementing different Non-Pharmaceutical Interventions (NPIs) in each country. From the 11th week of 2020, the unemployment rate increased rapidly in Norway, Denmark, and Finland. In Sweden, the unemployment rate also reached its peak 2-3 weeks later compared to other countries. When the lockdown measures were lifted, daily life and the labor market did not immediately return to normal but rather slowly recovered (Juranek et al., 2020). The studies by Kahn, Lange, & Wiczer (2020) and Kong, and Prinz (2020) analyzed US unemployment insurance claim data and found that the amount of unemployment insurance increased during the COVID-19 pandemic. The study on the impact of COVID-19 on the unemployment rate in Thailand is consistent with the results of the studies in the United States. The TDRI's study (2020) modeled the relationship between GDP and the unemployment rate of the Thai service sector. The estimation shows that if the GDP in the service sector declines by 1 percent, the unemployment rate in the service sector will increase by 7.64 percent.

Wages and incomes during COVID-19 declined compared to pre-COVID-19 in European countries (The European Commission's Science and Knowledge Service, 2020), Bangladesh (Genoni et al., 2020), Singapore (Kim, Koh, & Zhang, 2020), the UK (Crossley, Fisher, & Low, 2021), and the United States (del Rio-Chanona et al., 2020). A study on the impact of COVID-19 confinement measures on the EU labor market by the European Commission's Science and Knowledge Service (2020) found that economic activities in groups that were required to suspend their operations were leisure, service, nursing, and other service work. According to a study by del Rio-Chanona et al. (2020), businesses that had to close their operations had the lowest average wages. The US economy's overall wage and employment were estimated at 17 percent and 24 percent respectively. The COVID-19 impact on the labor market was greater than the Global Financial Crisis, where employment fell 3.28 percent during COVID-19 compared to 2.17 percent during the Global Financial Crisis. In addition, the study by Sumner, Hoy, and Juarez (2020) found that the

potential impact of the COVID-19 pandemic could pose a challenge to the United Nations' Sustainable Development Goals (SDGs) which aim to eliminate poverty by 2030. The shrinking economy could result in new poor countries, defined as countries below the World Bank's poverty line, in the world's poorest regions such as the sub-Saharan Africa (SSA) countries and South Asia.

2. Objectives

The main objectives examine the analysis of the Thai informal labor market before and throughout the COVID-19 pandemic outbreak on the number of employment, average monthly earnings, and average weekly working hours.

3. Materials and Methods

This study uses data from the Thai National Statistical Office's Informal Worker Survey 2011-2021 from households sampling in Thailand. This study's early analysis used annual data from 2011-2021 to reflect changes related to the labor market, occupations, economic activities, and number of employments. The results of the study are shown by using diagrams to illustrate trends and changes over 10 years.

In addition to the overall analysis of the data, the second part of the study analyzed the sample group of informal workers. It is mean difference analysis of the COVID-19 impact on the labor market in Thailand by comparing the estimated monthly income and total weekly working hours of the sample group by gender, educational level, occupation, and type of industry in 2019, 2020, and 2021. The details are as follows. Gender can be classified into 2 groups: (1) male and (2) female. Education level can be classified into 4 groups: (1) lower than primary school, (2) primary school, (3) secondary school and diploma, and (4) bachelor's degree and above. Occupation can be classified into 5 groups: (1) legislators, professionals in various technical fields and related occupations, (2) service personnel and sales personnel in markets and retails, (2) skilled workers in agriculture and fishery, (4) craft workers in related trades, and (5) basic occupations in sales and service. Industry can be classified into 4 industries: (1) agriculture, (2) manufacturing, mining, and quarrying, (3) construction, and (4) services.

4. Results

Overview of Thailand's Labor Market for Sustainable Development Before and During the COVID-19 Outbreak

The results of the first part of the analysis are based on the data from the National Statistical Office's Informal Worker Survey 2011-2021. The trends and changes occurring before and during the COVID-19 outbreak were illustrated over 10 years to see changes related to the labor market in employment, education, occupation, and work hours are as follows:

The current employment situation across the country from 2011 to 2021 is shown in Figures 2-5. It can then be derived from the data that there has been a declining trend in the labor force over the 10 years before and during the COVID-19 pandemic. This change must be monitored as it relates to 1) changing work trends in the context of the environment, economy, and changing technology, 2) new skills, working environment, and job formats needed in the labor market, and 3) a social security system related to the number of the labor force and workers in the employment system, changing population structure, and aging society.

The education levels of the informal workers were divided into 8 groups as follows: 1) uneducated, 2) below elementary school, 3) elementary school, 4) lower secondary school, 5) upper secondary school, 6) higher education, 7) other, and 8) unknown. When comparing the period before and during COVID-19 in 2020 and 2021, it was found that the average number and proportion of employed people in the uneducated and below elementary school, elementary school, and lower secondary school groups declined while the average number and proportion of employed people in the upper secondary school and higher education groups increased (Figure 6). The levels of education of employed individuals could reflect the adaptability of employed individuals during a crisis.

Figure 7 shows the number of employed informal workers classified by occupations in Thailand. From 2011 to 2021, occupations of employed informal workers are divided into 7 groups as follows (1) legislators, senior, professionals, and technicians, (2) clerks, (3) service personnel and sales personnel in markets and retail, (4) skilled

workers in agriculture and fishery, (5) skilled workers in related trades and handicrafts, (6) factory and machine operators and assembly-line workers, and (7) elementary occupations. All occupations of employed workers declined during COVID-19. In addition, figure 8 illustrates the number of employed informal workers classified by industries in Thailand. From 2011 to 2021, industries of employed informal workers are divided into 5 groups as follows (1) agricultural sector, (2) manufacturing sector, (3) construction sector, (4) services sector, and (5) others. The number of employed informal workers in all industries declined during Covid-19.

The proportion of informal employment by hours worked per week is shown in Figure 9. The proportion of informal employment with 40 work hours and above per week declined sharply during the Covid 19. The zero hour refers to employed persons with a regular job, however, these people did not work. The number of informal employees who experienced zero hour in 2020 and 2021 is more than double compared to the previous year.

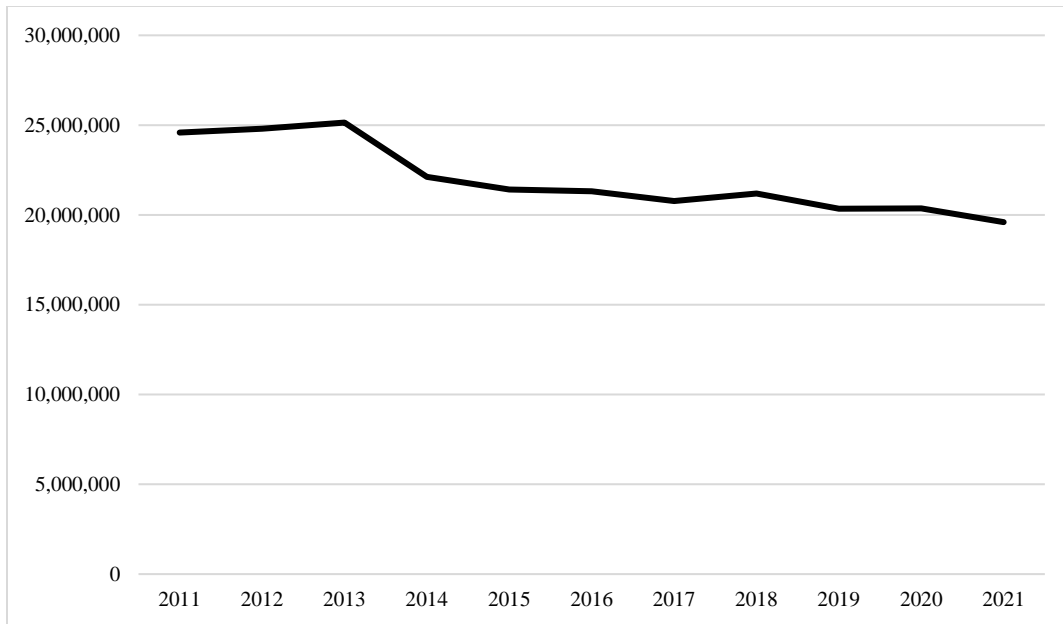


Figure 2 Number of informal employment, 2011 – 2021.

Source: Compiled by the author based on the Informal Worker Survey 2010 – 2021 by the National Statistical Office.

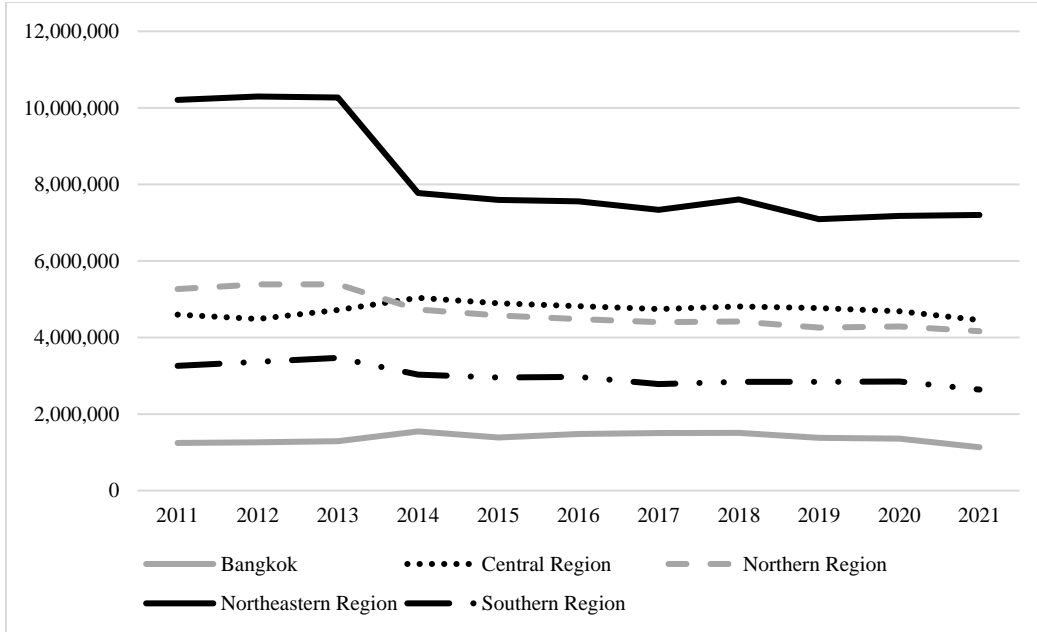


Figure 3 Number of informal employment by geographic region, 2011 – 2021.

Source: Compiled by the author based on the Informal Worker Survey 2010 – 2021 by the National Statistical Office.

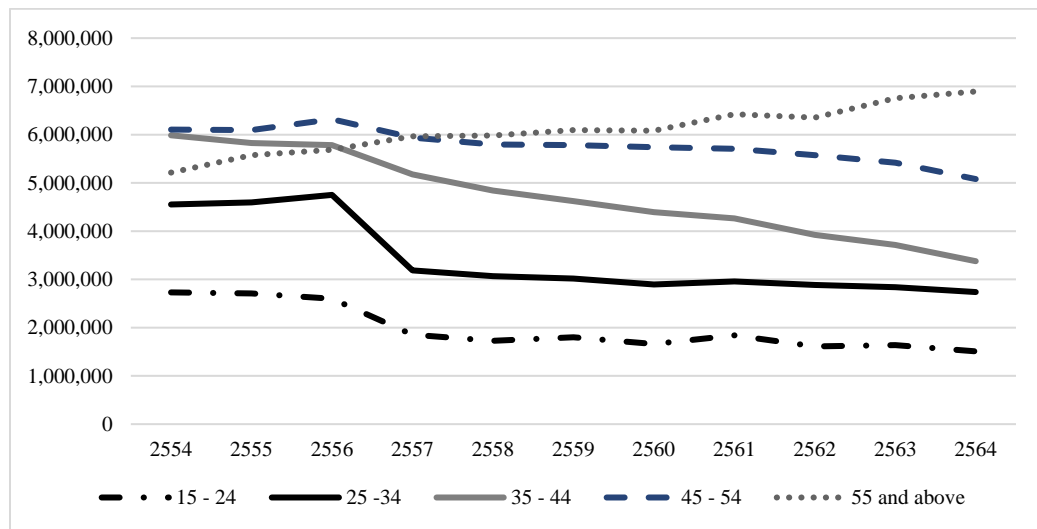


Figure 4 Number of informal employment by age group, 2011 – 2021.

Source: Compiled by the author based on the Informal Worker Survey 2010 – 2021 by the National Statistical Office.

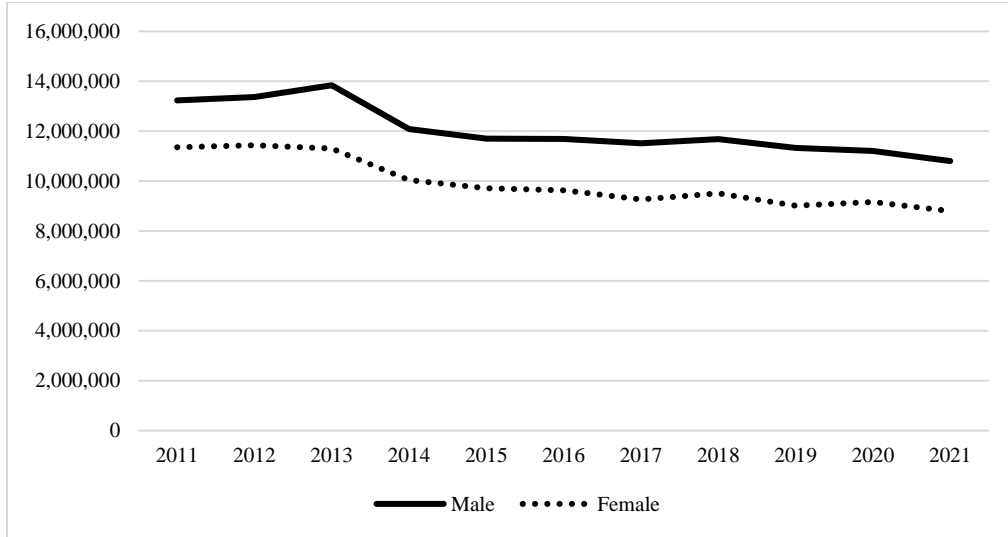


Figure 5 Number of informal employment by gender, 2011 – 2021.

Source: Compiled by the author based on the Informal Worker Survey 2010 – 2021 by the National Statistical Office.

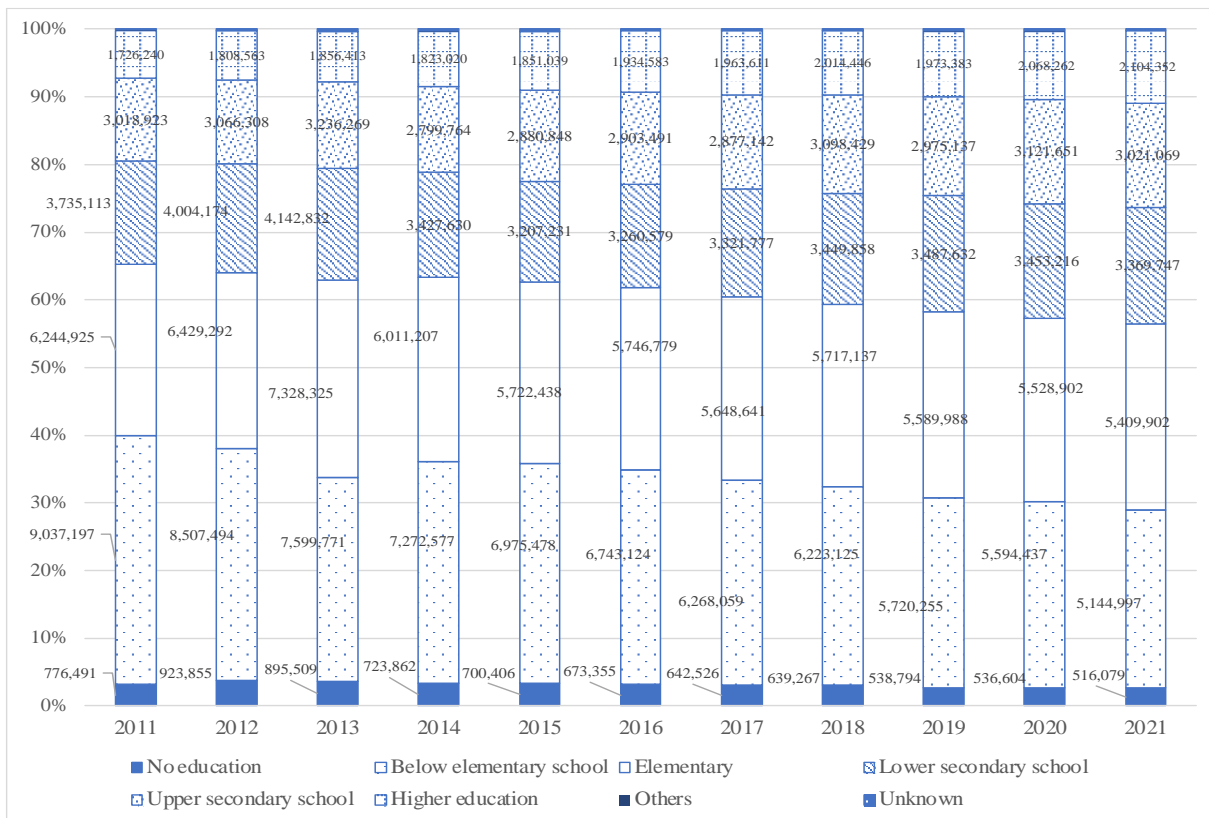


Figure 6 Proportion of informal employment by level of education completed, 2011 – 2021.

Source: Compiled by the author based on the Informal Worker Survey 2010 – 2021 by the National Statistical Office.

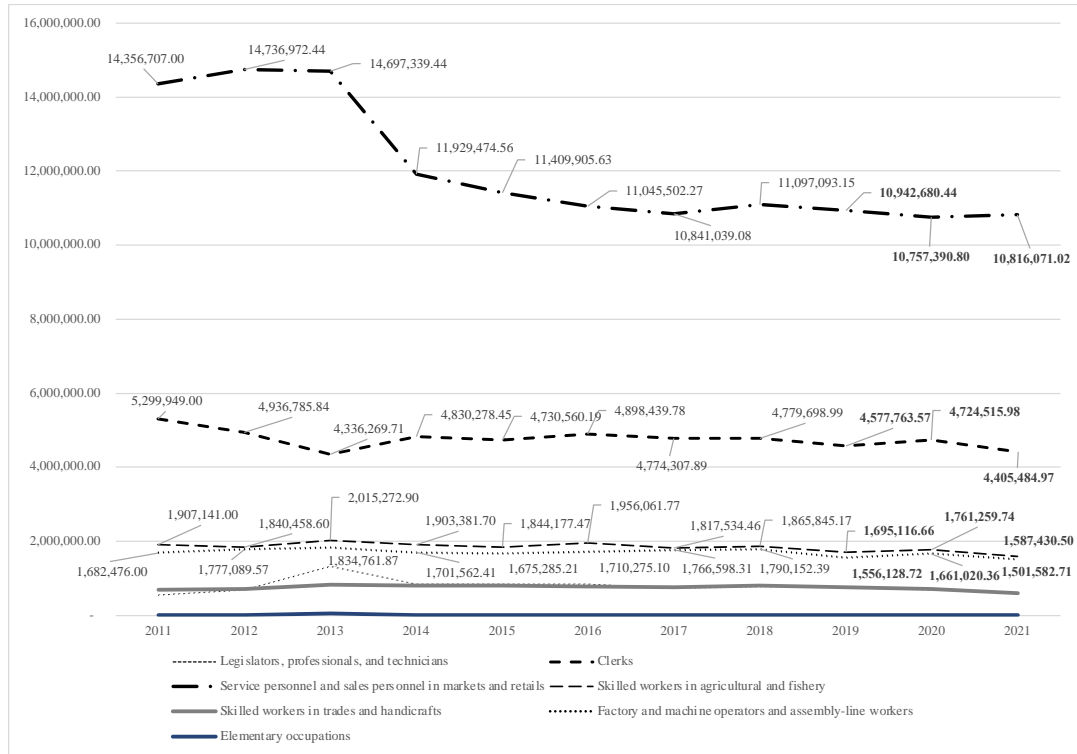


Figure 7 Number of informal employment by occupation, 2011 – 2021.

Source: Compiled by the author based on the Informal Worker Survey 2010 – 2021 by the National Statistical Office.

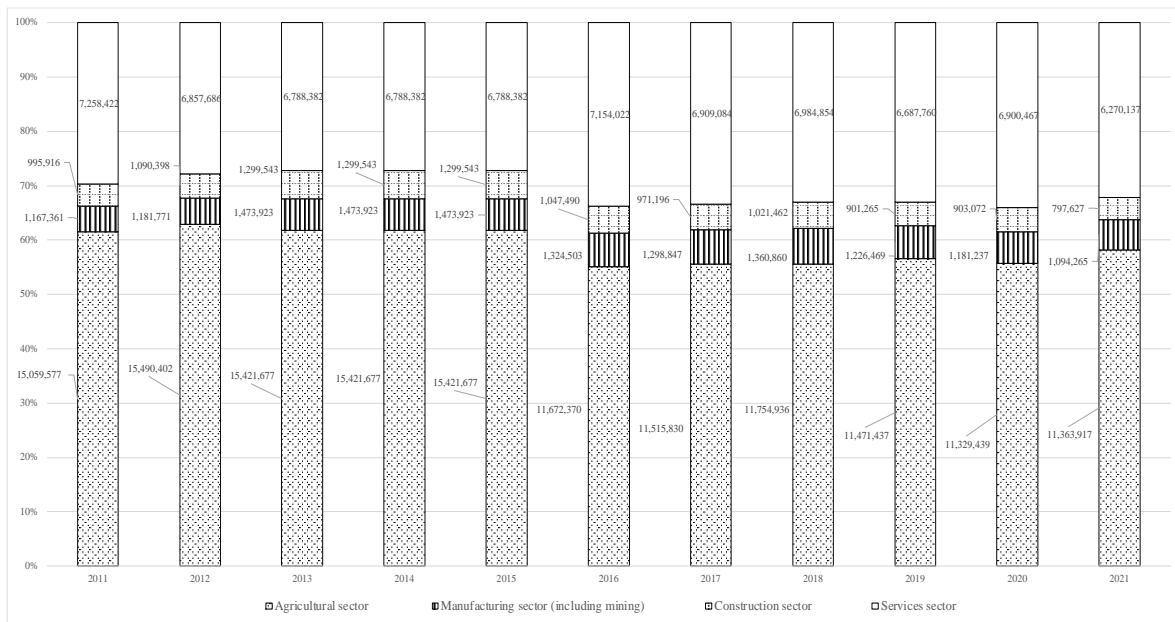


Figure 8 Proportion of informal employment by industry, 2011 – 2021.

Source: Compiled by the author based on the Informal Worker Survey 2010 – 2021 by the National Statistical Office.

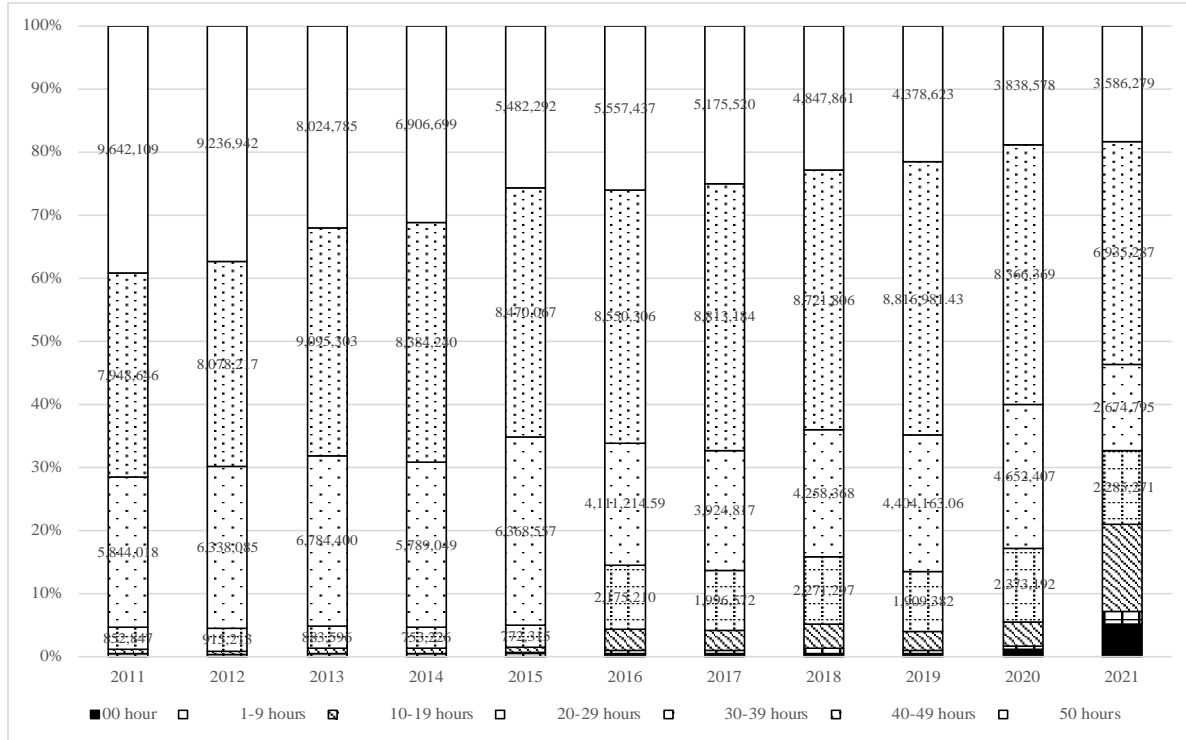


Figure 9 Proportion of informal employment by hours worked per week, 2011 – 2021.

Source: Compiled by the author based on the Informal Worker Survey 2010 – 2021 by the National Statistical Office.

Impact of COVID-19 on the informal workers in Thailand

The mean differences before the COVID-19 (2019) and during the COVID-19 pandemic (2020 and 2021) on estimated monthly earnings and total weekly working hours are illustrated in Table 1. The sample group is limited to informal workers in Thailand. The average weekly working hours for female and male informal workers decreased significantly statistically during the COVID-19 pandemic compared to the pre-COVID-19. The average monthly earnings for male informal workers decreased significantly statistically during the COVID-19 pandemic compared to the pre-COVID-19, while the average monthly earnings for female informal workers remained statistically insignificant. The average monthly earnings and average total weekly working hours of informal workers declined significantly statistically in all educational levels during the COVID-19 pandemic, except for informal workers with a secondary education level and above where only the average weekly working hours declined statistically significantly.

The average weekly working hours of informal workers in all geographic regions decreased significantly statistically during the COVID-19 pandemic compared to pre-COVID-19. The average monthly earnings for informal workers in the central region are the only region that experienced positive statistically significant during the COVID-19 pandemic compared to the pre-COVID-19.

The average weekly working hours for all occupations decreased significantly statistically during the COVID-19 pandemic compared to pre-COVID-19. Basic occupations in sales and service experienced a statistically significant decline in average monthly earnings during the COVID-19 pandemic. The average weekly working hours for all industries decreased statistically during the COVID-19 pandemic. Agriculture, forestry, fisheries, construction, and services experienced a statistically significant decline in average monthly earnings during the COVID-19 pandemic.

Table 1 Statistical Test Results of Average Difference Between before the COVID-19 (2019) and During the COVID-19 Pandemic (2020 and 2021)

Variable	Mean difference between before the COVID-19 (2019) and during the COVID-19 pandemic (2020 and 2021)	
	Estimated monthly earnings	Estimated total weekly working hours
Gender		
Female informal workers	18.2215 (80.2228)	-1.2694*** (0.1044)
Male informal workers	-151.4435** (64.1200)	-1.5130*** (0.0932)
Specific age group		
Youth informal workers (Age between 15-24 years old)	191.3123 (137.6250)	-1.4594*** (0.3149)
Older informal workers (Age 60 years and above)	-180.7376 (148.2146)	-1.3247*** (0.1547)
Geographic regions		
Bangkok	-1516.3890 (1341.3540)	-1.3565*** (0.3896)
Central	-201.8380** (82.2731)	-1.8400*** (0.1391)
Northern	-11.7971 (83.7009)	-1.3120*** (0.1339)
Northeastern	55.3349 (104.6969)	-1.1621*** (0.1086)
Southern	-257.6278 (162.3975)	-1.4700*** (0.2010)
Education level		
Below elementary school	-201.9201** (78.9216)	-1.4325*** (0.1197)
Elementary education Level	-197.3870** (79.0141)	-1.2928*** (0.1281)
Secondary education level and diploma	-76.3524 (87.5834)	-1.5324*** (0.1235)
Higher education level	-742.3452 (640.8912)	-1.3496*** (0.2812)
Occupational group of informal workers		
Legislators, Professionals in various technical fields and related occupations	-178.1169 (732.7708)	-0.9960** (0.3887)
Service personnel and sales personnel in markets and retails	75.9648 (196.4914)	-1.2268*** (0.1446)
Skilled workers in agriculture and fisheries	-109.9192 (152.7883)	-1.3364*** (0.0863)
Craft workers and related trades	-87.03906 (123.3572)	-2.2764*** (0.2060)
Basic occupations in sales and service	-109.5757** (52.5866)	-2.2697*** (0.2130)
Type of industry of the informal workers		
Agriculture, Forestry and Fisheries	-154.6059** (65.3886)	-1.3384*** (0.0842)
Manufacturing, Mining, and quarrying	40.62143 (240.5768)	-2.2059*** (0.2517)
Construction	-146.382* (87.3786)	-2.3022*** (0.2927)
Services	-295.5598 ** (115.0212)	-1.4945*** (0.1220)

Note. *** = significant at 1% level, ** = significant at 5% level, and * = significant at 10% level.

Source: Compiled based on the Informal Worker Survey 2019 – 2021 by the National Statistical Office.

5. Discussion and Conclusion

An analysis of the Thai informal workers before and during the COVID-19 pandemic on the number of employment, education, occupation, and working hours was made by analyzing data from the Thai National Statistical Office's Informal Worker Survey 2011-2021. It was found that during COVID-19, the labor issues such as the number of employed people decreased in 2020.

In terms of education and occupation, the average number and proportion of employed informal workers with an education level of uneducated, lower than elementary, and lower secondary declined during the COVID-19 pandemic. The average number and proportion of employed persons in the upper secondary and higher education levels increased during the COVID-19 pandemic. The education level of employed individuals reflects the adaptability of employed individuals during a crisis.

The average number of employed individuals that are skilled workers in agriculture and fishery, and service personnel and sales personnel in markets and retails decreased during the COVID-19 pandemic. The results are consistent with those of del Rio-Chanona et al. (2020) in the United States. The occupation groups with workplace flexibility tend to be employed in key industries, such as professionals in various fields. They also have a lower risk of sudden changes in labor supply (supply-side shock). Social distancing measures had an opposite effect on the number and proportion of employed individuals in agriculture and fishery, skilled workers and related trades, and basic occupations in sales and service.

An analysis study found that impacts of COVID-19 significantly decrease the average total weekly working hours of informal workers in Thailand with all educational levels and in all occupations during the pre-COVID-19 and during the COVID-19 outbreak. The average monthly earnings of informal workers with below secondary education level also decrease significantly.

The measures to help taxpayers, new employment promotion programs, and the procurement of the COVID-19 vaccines are important to tackle the uncertainty caused by the COVID-19 pandemic and future economic disruptions. The various measures to support domestic expenses include 1) government stimulus packages such as We Win (Rao Chana), Khon La Khrueng, No One Will Be Left Behind (Rao Mai Ting Gun), and Section 33 Rao Rak Kan; 2) subsidies to affected businesses such as the We Travel Together project; 3) utility bill reduction and supportive measures for electricity users; and 4) measures to help reduce expenses and debts of banks and other measures to help taxpayers such as withholding tax rate reduction, expediting VAT refunds for exporters, and extension of time for filing and paying personal and corporate income tax forms.

For the long-term adjustment of the Thai labor market to be more flexible and supportive of unexpected economic disruptions, the labor may potential be increased by creating more accessibility to the general education system and training in fields that are in demand in the labor market, such as emphasizing vocational education system. Financial support measures must be implemented to enhance the capability to help support new informal workers entering the labor market and to promote continual knowledge development. When the COVID-19 situation subsides, financial support alone may be able to provide brief relief during difficult times; however, in the long term, financial support must also bring results that increase informal workers' productivity and capability. The government needs to consider informal workers' welfare in the development of the wage system to suit the changing working conditions, a better social security system for fair and proper working conditions and emphasizing training in further career development towards formal or independent work.

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7. References

- Alon, T., Doepke, M., Rumsey, J., & Tetilt, M. (2020). *The impact of COVID-19 on gender equality* (NBER Working Papers No. 26947). Cambridge, UK: National Bureau of Economic Research. <https://doi.org/10.3386/w26947>
- Aum, S., Lee, S. Y. T., & Shin, Y. (2021). COVID-19 doesn't need lockdowns to destroy jobs: The effect of local outbreaks in Korea. *Labour Economics*, 70, Article 101993. <https://doi.org/10.1016/j.labeco.2021.101993>
- Bartik, A.W., Bertrand, M., Lin, F., Rothstein, J., & Unrath, M. (2020). *Measuring the labor market at the onset of the COVID-19 crisis* (NBER Working Papers No. 27613). Cambridge, UK: National Bureau of Economic Research. <https://doi.org/10.3386/w27613>
- Béland, L. P., Brodeur, A., & Wright, T. (2023). The short-term economic consequences of Covid-19: exposure to disease, remote work and government response. *Plos One*, 18(3), Article e0270341. <https://doi.org/10.1371/journal.pone.0270341>
- Center for Assistance for Tsunami Victims. (2005). *Tsunami Victims Assistance Report*. Thailand Department of Employment, Ministry of Labour. Retrieved from http://lib.doe.go.th/ebookdoc/020400003207_0.pdf
- Chetty, R., Friedman, J. N., & Stepner, M. (2024). The economic impacts of COVID-19: Evidence from a new public database built using private sector data. *The Quarterly Journal of Economics*, 139(2), 829-889. <https://doi.org/10.1093/qje/qjad048>
- Coibion, O., Gorodnichenko, Y., & Weber, M. (2020). *Labor markets during the COVID-19 crisis: A preliminary view* (NBER Working Papers No. 27017). Cambridge, UK: National Bureau of Economic Research. <https://doi.org/10.3386/w27017>
- Crossley, T. F., Fisher, P. & Low, H. (2021). The heterogeneous and regressive consequences of COVID-19: Evidence from high quality panel data. *Journal of Public Economics*, 193, Article 104334. <https://doi.org/10.1016/j.jpubeco.2020.104334>
- del Rio-Chanona, R. M., Mealy, P., Pichler, A., Lafond, F., & Farmer, J. D. (2020). Supply and demand shocks in the COVID-19 pandemic: An industry and occupation perspective. *Oxford Review of Economic Policy*, 36(Supplement_1), S94-S137. <https://doi.org/10.1093/oxrep/graa033>
- Genoni, M. E., Khan, A. I., Krishnan, N., Palaniswamy, N., & Raza, W. (2020). *Losing livelihoods: The labor market impacts of COVID-19 in Bangladesh* (Working Papers No. 152986). Retrieved from <http://hdl.handle.net/10986/34449>
- Guyen, C., Sotirakopoulos, P., & Ulker, A. (2020). *Short-term labour market effects of COVID-19 and the Associated National Lockdown in Australia: Evidence from longitudinal labour force survey* (No. 635). GLO Discussion Paper. Retrieved from <https://www.econstor.eu/handle/10419/223013>
- International Labour Organization (ILO). (2020a). *COVID-19 Employment and labour market impact in Thailand* [Briefing note]. Retrieved from http://www.ilo.org/asia/publications/labour-markets/WCMS_747944/lang-en/index.htm
- International Labour Organization (ILO). (2020b). *Impact assessment of COVID-19 on employment and labour market in Thailand* [Briefing note]. Retrieved from <https://thailand.un.org/sites/default/files/2020-06/ILO%20COVID19%20impact%20assessment%20Thailand%20report%20-%20UN%20Thailand%20lo go.pdf>
- Juranek, S., Paetzold, J., Winner, H., & Zoutman, F. (2020). Labor market effects of COVID-19 in Sweden and its neighbors: Evidence from novel administrative data. *NHH Dept. of Business and Management Science Discussion Paper*, (2020/8). Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3660832
- Forsythe, E., Kahn, L. B., Lange, F., & Wiczer, D. (2020). Labor demand in the time of COVID-19: Evidence from vacancy postings and UI claims. *Journal of Public Economics*, 189, Article 104238. <https://doi.org/10.1016/j.jpubeco.2020.104238>
- Kahn, B.L., Lange, F., & Wiczer, G.D. (2020). Labor Demand in the Time of Covid-19: Evidence from Vacancy Postings and UI Claims. *NBER Working Papers*, 27061. <http://doi.org/10.3386/w27061>

- Kikuchi, S., Kitao, S., & Mikoshiba, M. (2021). Who suffers from the COVID-19 shocks? Labor market heterogeneity and welfare consequences in Japan. *Journal of the Japanese and International Economies*, 59, Article 101117. <https://doi.org/10.1016/j.jjie.2020.101117>
- Kim, S., Koh, K., & Zhang, X. (2020). *Short-term impact of COVID-19 on consumption and labor market outcomes: Evidence from Singapore*. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3627056
- 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* (Jobs Working Paper No. 58). Retrieved from <http://hdl.handle.net/10986/35044>
- Kong, E., & Prinz, D. (2020). Disentangling policy effects using proxy data: Which shutdown policies affected unemployment during the COVID-19 pandemic?. *Journal of Public Economics*, 189, Article 104257. <https://doi.org/10.1016/j.jpubeco.2020.104257>
- Lekfuangfu, W. N., Piyapromdee, S., Porapakkarm, P., & Wasi, N. (2020). *On Covid-19: New implications of job task requirements and spouse's occupational sorting*. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3583954
- Lemieux, T., Milligan, K., Schirle, T., & Skuterud, M. (2020). Initial impacts of the COVID-19 pandemic on the Canadian labour market. *Canadian Public Policy*, 46(S1), S55-S65. <https://doi.org/10.3138/cpp.2020-049>
- Miaari, S. H., Sabbah-Karkabi, M., & Loewenthal, A. (2020). *How is the Covid-19 crisis exacerbating socioeconomic inequality among Palestinians in Israel?*. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3695417
- Radulescu, C. V., Ladaru, G. R., Burlacu, S., Constantin, F., Ioanăș, C., & Petre, I. L. (2020). Impact of the COVID-19 pandemic on the Romanian labor market. *Sustainability*, 13(1), Article 271. <https://doi.org/10.3390/su13010271>
- Sarker, M. R. (2021). Labor market and unpaid works implications of COVID-19 for Bangladeshi women. *Gender, Work & Organization*, 28(S2), 597–604. <https://doi.org/10.1111/gwao.12587>
- Sumner, A., Hoy, C., & Juarez, E. (2020). *Estimates of the impact of COVID-19 on global poverty* (WIDER Working Paper 2020/43). Helsinki: UNU-WIDER. <https://doi.org/10.35188/UNU-WIDER/2020/800-9>
- TDRI (2020). *Impact of COVID-19 on employment in the service sector of Thailand*. Retrieved from <https://tdri.or.th/2020/09/services-sectors-affected-by-the-COVID-19/>
- The European Commission's Science and Knowledge Service. (2020). *The impact of COVID confinement measures on EU labour market* [Briefing note]. Retrieved from https://joint-research-centre.ec.europa.eu/system/files/2020-04/jrc.120585_policy.brief_impact.of_.covid-19.on_.eu-labour.market.pdf
- United Nations Industrial Development Organization (UNIDO). (2020). *Impact assessment of COVID-19 on Thai Industrial Sector*. Retrieved from www.unido.org/sites/default/files/files/2020-06/Impacts_of_COVID19_on_Thai_industrial_sector_0.pdf
- United Nations. (2020). *Shared responsibility, global solidarity: Responding to the socio-economic impacts of COVID-19*. Retrieved from <https://unsdg.un.org/sites/default/files/2020-03/SG-Report-Socio-Economic-Impact-of-Covid19.pdf>
- World Bank. (2020). *Thailand economic monitor: Thailand in the time of COVID-19*. World Bank, Bangkok. Retrieved from <http://documents.worldbank.org/curated/en/456171593190431246/Thailand-Economic-Monitor-Thailand-in-the-Time-of-COVID-19>