

Research article

The effect of economical phenomenon on informal construction workers earnings within Covid-19 pandemic: A mixed method analysis

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ABSTRACT

The informal sector is an alternative to getting a job without special conditions such as education level or job skills. These informal workers are often found in the construction sector. Informal construction workers have no social protection and are economically marginalized, making their economy worse during the Covid-19 pandemic. This study investigates informal construction workers' economic phenomenon, from big cities in Java Island, Indonesia, when facing difficult situations due to the pandemic of Covid-19 with the mixed method. First, the quantitative method gathered the questionnaire from 225 informal workers in the construction sector who experienced a drastic reduction in their regular income, even weekly or monthly. They take advantage of savings and increase debt to cover the reduced income. Then, the qualitative method was conducted to investigate the informal construction worker's economical phenomenon with in-depth interviews with five foremen and five construction field managers. During the pandemic, government programs to provide income support for informal workers have contributed less to informal sector workers. Thus, the results of this research can be used by the government or other parties to help provide better social protection to informal sector workers from a more significant economic recession due to the pandemic.

1. Introduction

Like developing countries, Indonesia has an informal sector that plays a significant role in its economy (Acharya, 1983; Etim and Daramola, 2020; Lukiyanto and Wijayaningtyas, 2020). The informal sector's significant role impacts the large absorption of labour, and they are often called informal workers (Surendro et al., 2020). However, many industries or traditional occupations employ workers informally—one of the formal sectors that primarily uses informal workers in the construction sector. The Indonesian Central Bureau of Statistics report shows that 99% of the construction workforce are informal workers. Those conditions cause the number of informal workers in Indonesia to continue to increase from year to year; for example, in 2020, there were 77.68 million people (60.47 per cent), up 4.59 per cent compared to August 2019 (BPS, 2020).

According to the ILO (International Labour Organization), informal sector workers are workers without a work bond and social security of employment (Social Protection for Domestic Workers: Key Policy Trends and Statistics, 2016). In simple terms, informal workers are workers who

work irregularly, do not need skills, are without insurance or other social guarantees and are often underpaid. There are 3D terms to describe informal sector jobs: dirty, dangerous, and difficult.

A study conducted in Thailand showed a drastic decrease in the monthly income of workers in all informal sectors during the pandemic period in the country (Komin et al., 2021). Likewise, with research in Bangladesh (Swarna et al., 2022). However, there has been no research-related explicitly to informal construction workers. So by knowing the situation and how to survive informal workers in the construction sector facing the economic crisis due to the COVID-19 pandemic, it is hoped that the results of this study can be used as a reference for the government or anyone involved. in the problem of poverty alleviation to make the right policies for their future. Currently, efforts have been made to help them, but it is still far from expectations because it is not based on the actual situation. The similarity between the situation of informal workers and economic patterns in developing countries (Lukiyanto, 2018; Mehrotra, 2009; Wijayaningtyas and Lukiyanto, 2019). The results of this study can also be used as a reference to solve the same problem in other developing countries.

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2. Literature reviews

Informal workers are not economically secure; therefore, they are very vulnerable to an economic decline (Mehrotra, 2009; Wijayaningtyas and Lukiyanto, 2019). They generally work only by relying on physical strength, so they get paid when they work. The characteristics of workers in the informal sector are low level of education and minimal income, so their economic opportunities are limited (Senanuch and Suntonanantachai, 2018). This condition limits them from getting financial assistance with low loan interest from conventional lending institutions such as banks (Etim and Daramola, 2020) when they want to venture out independently. Social welfare protection from informal workers mostly comes from public or private assistance programs (Komin et al., 2021).

Workers are the ones who receive the most losses when in informal relationships. The International Labour Organization (ILO) report in Nairobi, Kenya, shows that informal workers in the construction sector lose the various facilities they are entitled to (Social Protection for Domestic Workers: Key Policy Trends and Statistics, 2016). They do not get work contracts, social security, health insurance, and workers' rights, such as sick leave. The fact is that while working, they experience various health problems and what happened in Indonesia, and work accidents constantly threaten them (Lukiyanto and Wijayaningtyas, 2020; Wijayaningtyas et al., 2017).

Companies are not directly related or tied to informal workers; informal workers are usually joined in a group with a leader. This leader is associated with the company, while informal workers only follow their leader. This phenomenon occurs in all developing countries (Boadu et al., 2020; Toor and Ofori, 2008); group leaders have different designations for each country, such as Indonesia - Foreman (Lukiyanto and Wijayaningtyas, 2017), Korea - Oyaji (Yoon and Kang, 2000), Brazil - Gato (Leonard, 2000), Nepal - Naikha (Jha, 2002).

Related to the company, workforce only relate to the group leader, including the workplace safety which is the group leader's responsibility. Therefore, when they work, they are required to provide security independently (Lukiyanto, 2018). These conditions are pretty burdensome for them because the price is relatively high; in the end, it is limited to what is provided/borrowed by the group leader, such as a head helmet. They often have to provide other equipment, such as safety uniforms, masks, goggles, earplugs, and shoes. To avoid increasing expenses, they prefer to use makeshift equipment or even not use it. That is why informal workers often use school shoes to work in the construction area instead of wearing safety shoes. Even more extreme, they generally only wear hats, makeshift shirts, and sandals when working on construction projects.

If a work accident occurs, informal workers will be more difficult because they do not have insurance coverage. Health costs are borne by themselves; entirely responsible companies sometimes provide compensation, but compensation is only a gift, so the value depends on the donor's heart. The 2018 Work Safety report shows that construction is one of the most severe work accidents and occupational diseases (Social Protection for Domestic Workers: Key Policy Trends and Statistics, 2016).

The problematic situation experienced by informal workers in the construction sector increases with the COVID-19 pandemic. The reduction in the number of construction projects due to the economic recession and restrictions on social relations in the community reduced their chances of getting a job. Because of the daily wage system, there is no income if they do not work (Amoah and Simpeh, 2020; Gamil and Alhagar, 2020). Meanwhile, the opportunity to get a job is decreasing. Many of them can only work less than ten days a month because not many construction projects running. Even if there are many health protocol requirements in preventing the transmission of COVID-19, not all can follow (Gamil and Alhagar, 2020). As their leader, the foreman will only choose who can fulfil the requirements to maintain his good.

The COVID-19 pandemic has been running for more than two year; of course, they have a strategy to survive and hope that this crisis will soon pass, or there will be a new order that allows them to return to work. This

condition is increasingly pressing their existence economically; the family's needs cannot be stopped while the income source is not there. Indeed, there is assistance from the government for the lower class economic community, including them, but the value is not far away and is not proportional to their family's daily needs (Komin et al., 2021). This is where it is interesting to study more deeply in a situation like this?

Several previous studies related to informal workers showed that there was a change in income decline in several employment sectors, such as in Bangladesh, Latin America, Thailand, and Nigeria (Busso et al., 2020; Etim and Daramola, 2020; Komin et al., 2021; Swarna et al., 2022). However, no one has focused on researching the informal worker in the construction sector. The results of these studies can be concluded into a hypothesis as follows:

H0. The income of informal construction workers decreased

H1. There is no decrease in the income of informal construction workers.

Therefore, based on the problem statements and hypotheses above, the conceptual framework of this study as presented in Figure 1.

3. Research method

This study aims to understand how the crisis caused by the COVID-19 pandemic affects informal workers' behaviour in Indonesia's construction sector. The method was conducted: first, the quantitative survey was conducted by giving questionnaires to respondents; next, the qualitative method with in-depth interviews to investigate the phenomenon. The respondents' characteristics were determined by selecting those who work as informal workers in the construction sector, do not have other jobs, and have been in this job for more than three years, with a purposive sampling method to ensure conformity of respondents with the specified characteristics. This method also determines or selects respondents first before the interview process is carried out in the qualitative section, aiming for those being interviewed to be right on target or following the determined characteristics.

This study involved ten informan, five foremen and five construction field managers, which totally ten informants, in selecting potential respondents to obtain respondents according to the specified characteristics and conducted as informants for a qualitative study. Their information determines who the respondent will be, their contact number and where they can be contacted. Foreman is involved because they are the informal workers' leaders, which will facilitate and contribute to the interview process. Informal workers strongly depend on the foreman to listen to what the foreman asks or orders (Lukiyanto and Wijayaningtyas, 2017). Construction field managers are also involved in verifying the foreman's information in determining respondents; usually, they have records or data on personnel, although the data is also obtained from the foreman. However, this qualitative step including the ethical consent and confirm that consent was obtained from all participants for this step.

The 330 data received from the foreman and manager, 250 respondents were selected according to the determined characteristics. Self-distributed questionnaires collected data in the construction field

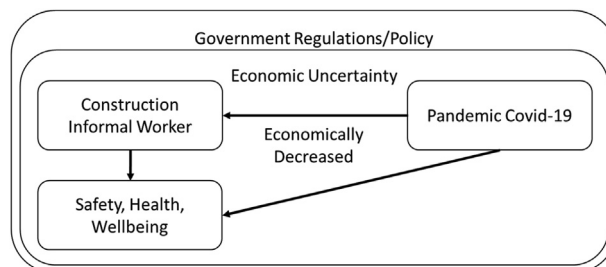


Figure 1. Conceptual framework.

and telephone interviews. The self-distributed only conducted with those possible, such as being close to researchers, not in an area with the massive spread of the COVID-19 virus and willing to be interviewed directly. Meanwhile, telephone interviews were conducted because they were long distances or unwilling to be interviewed. Thus, researchers also helped respondents who could not fill out the questionnaire independently because of their limited ability. From 250 respondents, only 225 survey results were received or completed in total, 90% completed. Some of the question items in the questionnaire include the respondent's profile, the source of income, the amount of income from the primary job, and the amount of income from odd jobs.

Several inferential statistic analyzes were used to understand the extent of the influence of Covid-19 on informal construction workers. With the T-test to analyze a pandemic's effect, before and after, informal sector workers' income. Then continue the analysis of whether there were variations in income before and after the pandemic and its impact on informal sector workers living in various big cities in Java Islands. The ANOVA analysis was used to analyze differences and informal sector regions.

The qualitative method with in-dept interviews to deepen the phenomenon was conducted with four main questions as a way to validate the survey results are:

- How the economy of working families is affected by the COVID-19 pandemic (financially)?
- How to adjust to the economic crisis caused by COVID-19?
- What are the solutions for an informal construction workers to fulfil the family's finances?
- What is the strategy to survive within the pandemic?

While the qualitative analysis process starts with the interview, which is then transcribed, data reduction was then carried out based on the transcript results, which identified similarities in the answers. The next step is coding, which consists of open, axial, and selective coding. After coding, the next step is determining sub-themes and themes.

4. Results and discussion

4.1. Respondents profile

The informal construction workers profile found that almost 100% (95%) are men, with an average age of 50. Based on status and family size, more than 67% of respondents are married, consisting of four family

Table 1. Informal workers profile.

Gender, Education & Status	Percentage	N
Gender		
Man	95	214
Women	5	11
Total	100	225
Education		
No school	3.8	8
Primary school	20.2	45
Junior high school	30.1	68
High school	38.5	87
Diploma/Bachelor degree	7.4	17
Total	100	225
Status		
Single	26.5	60
Married	67	150
Divorced	4.5	10
Widower widow	2	5
Total	100	225

members and at least two people who work in the family. More than 50% of the respondents have attended secondary school or have taken a diploma/vocational education based on the level of education. Furthermore, only four per cent did not graduate from elementary school [Table 1](#).

4.2. Economic security before the pandemic

There are five informal types in this study's construction sector: foremen, chief craftsmen, builders, construction workers/helpers, and odd jobs. Construction workers constitute the largest group at 41%, and the most minor 5% are foremen. Before the covid-19 outbreak, these informal workers worked elsewhere to increase income.

The income earned by informal construction workers for a month did not survive an economic recession. Before the pandemic, their average regular income was only able to pay for rent and purchase essential goods, whereas, after the pandemic, their income decreased drastically due to the sluggish construction business.

To overcome their shortfall, debt was the only solution. Nearly half of the sample had loans, and almost all of the samples stated that these loans came from money lenders with high-interest rates.

4.3. Pandemic Covid-19 impact on informal construction workers

The COVID-19 pandemic is ravaging informal construction workers. From survey results, approximately 95% of the respondents suggested that. Before the pandemic, informal construction workers registered to make only 3,750,000, or 48%, of their average monthly revenue. This is a statistically significant income decrease ($t(379) = 20.563, p = 0.000$).

With the Large-Scale Social Restrictions (PSBB) presence informal construction workers were unable to depend on their source of income. This income reduction resulted in respondents getting close to extreme poverty levels. This income reduction resulted in respondents getting close to extreme poverty levels. Interview results from construction field managers also validated that their workers had limited jobs (57%), were laid off or worked fewer hours (12%), or worked fewer hours (7%). Most informal workers do not have enough money to purchase a meal and make ends meet (39%) and do not have enough income to provide for their family members (33%) or to pay for car loan payments (19%) or mortgage/rental payments (13%).

By concentrating on second jobs outside of construction work, informal workers reacted to the dramatic wage reduction. Eighty-four per cent of the respondents sell important assets to pawnshops to sustain themselves; another 33% retire from savings. Over 25% (for example, family and friends) pursue personal loans, and 11% get money from money lenders. Financial institutions like banks are inconsequential for informal sector workers: only 5% receive loans from formal financial institutions. So that repayment would not be too burdensome, 16% of respondents called for loan relief. About 27% of informal sector employees rely on charitable organizations for their food needs and everyday necessities.

However, the Indonesian government also does not remain silent, and the government has budgeted Rp. 408.8 trillion of the 2021 State Budget for social protection programs or social assistance to reduce the impact of the Covid-19 pandemic (Ekonomi.bisnis.com). Some of the Government programs including:

1. Family Hope Program (PKH) – PKH membership will be expanded from 9.2 million KPM to 10 million KPM. The PKH budget in 2021 is set at IDR 30.4 trillion.
2. Staple Food Program/BPNT - KPM membership is set at 18.5 million KPM. The Staple Food Program/BPNT index is increased from IDR 150 thousand/KPM/month to IDR 200 thousand/KPM/month. The Basic Food/BPNT Program budget for 2021 is set at Rp.44.7 trillion.

3. Cash Social Assistance - for 10 million KPM with an IDR 200 thousand/KPM index in 2021. From January to June 2021, the Ministry of Social Affairs prepares a budget of IDR 12 trillion.
4. PBI-JKN or National Health Insurance Contribution Beneficiaries for 96.8 million people.
5. The pre-employment card is a training fee assistance for Indonesians who wish to acquire or upgrade their skills.

These government programs are a stimulus for all communities, primarily informal workers affected by the Covid-19 pandemic, so that they help financially, and nearly 90% of informal sector workers register for assistance from the government. Nevertheless, around 44% of respondents have passed the selection successfully, while about 20% are waiting for the applications' processing (approximately 45 days after the government program started). Almost 25% of the respondents claimed that their request had been denied. Due to a lack of documentation, many informal sector personnel are not reported in the government database. In other cases, the informal sector staff did not complete the online registration, while others had problems understanding the application due to limited education.

4.4. Differences among informal sector workers

This research has several informal workers in the construction sector. Before the pandemic, foremen and chief craftsmen had the highest income; while, chief craftsmen had the highest income; odd jobs and chief craftsmen artisans had the highest income, while odd jobshad the lowest income (as seen in Table 2). Workers in odd jobs faced the most dramatic drop in monthly income (53%) after the Large-Scale Social Restrictions (PSBB) and regional lockdowns, mainly because the amount of stopped or building projects doubled odd jobs so as not to waste much money. The decline in occupational income is statistically significant (F (8.371), p = 0.000), as seen in Table 3). On average, informal sector workers gained less than after COVID-19.

These ANOVA results are the same as the opinion of one of the workers, namely a mason, as a research informant, through interviews with the following information:

“I have no skills other than being a mason, during this pandemic I switched to odd jobs, because I couldn't find work on construction projects. Before the pandemic, I worked on a building project in Jakarta, because there were massive social restrictions during the pandemic so the project was closed, so I returned to my village and worked odd jobs. My income fell a lot, which is important enough to eat.”

4.5. Divergences in areas

COVID-19's economic impact varies by sector of the informal sector and area. The image of genuine differences between regions is present. Informal construction workers in Jakarta had the highest monthly wages

Table 2. Occupation average income.

The main job	N	Pre-COVID (Rp)/person*	Post-COVID (Rp)/person*	Change (%)
Foreman	11	3,750,000	1,950,000	48%
Craftsman	29	3,000,000	1,440,000	52%
Repairman	75	2,850,000	1,852,500	35%
Construction Worker/Helper	92	2,400,000	1,728,000	28%
Odd jobs	18	2,250,000	1,057,500	53%
Total	225			

* Income is earned in 1 month.

Table 3. ANOVA result test (Income).

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	3108134400000	1	1554067200000	8.371	.000
	0.000		0.000		
Within Groups	8144784000000	5	113122000000		
	.000		.000		
Total	3922612800000	5			
	0.000				

of Rp. 4,200,000,- before COVID-19, whereas informal sector employees were the lowest at Rp 3,600,000,- in the Semarang region. Income shifts can be seen in each region before and after the existence of Large-Scale Social Restrictions (PSBB) (see Table 4). After the pandemic struck Indonesia, the income of each region dropped. The informal sector staff, on average, suffer a 30–40 per cent drop in monthly wages.

The informal construction workers outside Jakarta can return to their hometown or village more quickly because there is still a loosening of policies in the area. In Jakarta, informal construction workers cannot go in and out arbitrarily due to stringent regulations and protocols. The social service to pick up the ball helps informal sector workers get assistance from the government. Most of them return to their hometowns to start new businesses or farms. The transition from urban to rural areas makes it possible to minimize costs for returning informal sector employees and use local resources and social capital for assistance, a phenomenon previously experienced with natural disasters and economic change (Komin et al., 2021; Odediran and Babalola, 2015; Sunday Julius Odediran et al., 2013; Wijayaningtyas et al., 2017). However, the quantitative results showed similarities with the informants' opinions through qualitative methods. The hypothesis is to accept H0, that informal workers have decreased income during the Covid-19 pandemic. It means that there is indeed a difference in informal income which tends to decrease.

5. Conclusion, implications, and limitation

The COVID-19 pandemic and economic downturn worsen Indonesian informal construction workers' margins and social isolation. They need to fight to survive and make their ends come together with lower wages and savings to pay for food, home rent and other regular expenses; much higher debt.

The government's role by implementing a social protection program is intended to reduce the people's economic burden and purchasing power, which has decreased due to the number of layoffs and unemployment. For example, Direct Cash Assistance (BLT) is issued through BPJS Ketenagakerjaan (The Health Social Security Administering Body), which does not cover informal construction workers because the assistance only goes to formal workers in a company. Pre-employment card programs and other emergency financial assistance programs only helped less than half of the study's informal sector workers, and even if they were eligible, they had to wait a long time for assistance. If the government had a more up-to-date informal construction workers database, more of them would have been helped.

Table 4. The percentage income in each area.

Area	N	Pre-COVID (Rp)/person	Post-COVID (Rp)/person	Change (%)
Jakarta	82	4,200,000	2,856,000	32%
Bandung	27	4,050,000	2,227,500	45%
Semarang	33	3,600,000	2,088,000	42%
Surabaya	85	3,750,000	2,512,500	33%

The informal sector is not uniform. The revenues of the occupations that make up the construction industry and the regions are substantially different. Although informal construction workers suffered financially from the pandemic, some worked better than others, depending on their job and place. Social workers have a significant role to play in the transition from exclusion to inclusion. Social workers may build services in government databases that involve informal construction workers. These registrations may also be used to match informal sector staff to other assistance programs.

Social change typically comes from below. Community organizing traditions and social work growth are well adapted to facilitate social change. The informal construction workers must be better organized and activated, and social change attempts to force the government to protect society better. Social organizations may create coalitions to encourage policy change with the informal sector, NGOs and media workers. Social security can include an increase in joblessness and an old-age pension scheme for informal sector employees, which treat informal sector workers as informal workers in the sector.

This research reveals that informal construction workers struggle to survive during a pandemic crisis but have little access to capital sources (for example, banks) and vice versa to get their capital depending on pawnshops and loan sharks. The result can be used by the private sector and the government to overcome the problem of reducing the income of informal workers. For companies that use the services of informal workers, this is the right time to choose informal workers. Government can help the bank work with informal construction workers to obtain loans with low interest that can be used as capital. Loan applications can be accelerated by having information on existing government databases. The government and social office should inform the informal construction worker by advancing web marketing and internet technology to give them new opportunities. Thus, interested parties can make programs or policies generally applicable to informal workers. However, this study has limitations in that the scope of the research still uses informal construction project workers. Therefore, for further research, it is necessary to examine the same phenomenon related to the influence of the Covid-19 pandemic on informal workers in other fields to get a general theory on informal workers. Thus, interested parties can make programs or policies generally applicable to informal workers.

Declarations

Author contribution statement

Maranatha Wijayaningtyas: Conceived and designed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Kukuh Lukiyanto: Conceived and designed the experiments; Performed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Ellysa Nursanti: Performed the experiments.

Dimas Indra Laksmana: Analyzed and interpreted the data.

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Data availability statement

Data included in article/supplementary material/referenced in article.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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