



**6th UNDERGRADUATE
SEMINAR ON BUILT
ENVIRONMENT
AND TECHNOLOGY
(USBET) 2023**

**SUSTAINABLE BUILT
ENVIRONMENT**

25 - 27 SEPTEMBER 2023

E-PROCEEDING



USBET 2023



e-Proceeding

**6th UNDERGRADUATE
SEMINAR ON BUILT
ENVIRONMENT
AND TECHNOLOGY
(USBET) 2023
SUSTAINABLE BUILT
ENVIRONMENT**

Published by,

Department Of Built Environment Studies And Technology
Faculty Of Architecture, Planning & Surveying
Universiti Teknologi MARA Perak Branch, Seri Iskandar Campus
usbet.fspuperak@gmail.com

Copyright @ 2023

Department Of Built Environment Studies And Technology
Faculty Of Architecture, Planning & Surveying
Universiti Teknologi MARA Perak Branch, Seri Iskandar Campus

This work is subject to copyright. All rights are reserved by the Publisher. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording or any information storage and retrieval system without permission in writing from the copyright owners.

eISSN 2821-3076



02 October 2023 | Perak, Malaysia
Universiti Teknologi MARA, Perak Branch, Seri Iskandar Campus

EDITORIAL BOARD

Editors-in-Chief

SR. NORAZURA MIZAL AZZMI (BS)

NADIRA AHZAHAR (BS)

Editors

TS. ZURAIHANA AHMAD ZAWAWI (BS)

SR. NAZHATULZALKIS JAMALUDIN (BS)

SR. SITI ZUBAIDAH HASHIM (BS)

NURHIDAYAH SAMSUL RIZAL (BS)

SR DR. NURUL FADZILA ZAHARI (BS)

NUR FADHILAH BAHARDIN (BS)

SR TS. DR. ALIA ABDULLAH SALLEH (BS)

SR TS. DR. SURIANI NGAH WAHAB (BS)

SR TS. DR. HASNAN HASHIM (BS)

SR NOORAZLINA KAMARUZZAMAN (BS)

SR MARIATY MOHD BAHARI (BS)

SR AIDA AFFINA ABDUL GHANI (BS)

DR. NOR DIANA AZIZ (BS)

SR AMIR FASHA MAT ISA (BS)

SR DR. NOR AMIN MOHD RADZUAN (BS)

PROF. MADYA SR DR. MOHD FADZIL YASSIN (BS)

SR TS. KHAIRUL AMRI RAMLY (BS)

SR. MOHD ASRUL HASIN (BS)

SR TS. MOHD KHAZLI ASWAD KHALID (BS)

SR MOHD DZULKARNAEN SUDIRMAN (BS)

SR DR. IRWAN MOHAMAD ALI (BS)

SR DR. MOHAMMAD HASZIRUL MOHD HASHIM (BS)

DR NURHASYIMAH BT AHMAD ZAMRI (BCT)

DR. PUTERI YULIANA SAMSUDIN (TP)

Editors-in-Chief

6th Undergraduate Seminar on Built Environment and Technology 2023

- E- Proceedings-

Organized by,

College of Built Environment (KAB) UiTM Perak Branch



KEY FACTORS THAT AFFECTING THE WELL-BEING OF CONSTRUCTION LABOUR DURING COVID-19 PANDEMIC

Nurul Amalin Iwana Yuziman¹, Syarifah Nur Nazihah Syed Jamalulil^{1*}

¹Department of Built Environment Studies and Technology, College of Built Environment, Universiti Teknologi MARA, Perak Branch, 32610, Seri Iskandar, Perak, Malaysia

amaliniwana2000@gmail.com , *syari5008@uitm.edu.my

ABSTRACT

COVID-19 is an infectious disease caused by the SARS-CoV-2 virus, transmitted through person-to-person contact and causing various symptoms. The pandemic has brought challenges for construction labour, including financial hardships and mental health issues. The Malaysian government implemented a Movement Control Order (MCO) to curb the virus spread, resulting in travel bans, work disruptions, and financial strain for labourers. The lockdown measures contributed to anxiety, irresponsible behaviour, and panic attacks among foreign labourers. Considering this situation, the research aim to investigate the welfare of construction labour amid the COVID-19 pandemic. Questionnaire surveys are conducted among the construction labour in Kuala Lumpur to achieve the research objective. The type of analysis that has been used is descriptive analysis and SPSS software version 27 will be used to analyse the obtained data. The finding revealed that the economic was a key factor that greatly affected construction labour during pandemic. The study's significance lies in raising contractor awareness about the well-being of construction labour during the pandemic and providing recommendations to mitigate its impact. The findings contribute to industry knowledge and offer insights for addressing the challenges faced by construction labour during these unprecedented times.

Keywords: well-being, construction, construction labour, pandemic, covid-19

© 2023 USBET, JABT, UiTM Perak Branch, All rights reserved

INTRODUCTION

COVID-19 is the most serious worldwide health problem in many years. Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus (WHO, 2020). According to Apurva and Sharareh (2021), the virus may be passed from person to person and causes symptoms such as fever, dry cough, exhaustion, and shortness of breath. In Malaysia, the first COVID-19 case reported was on 4 February 2021. In 1990, our then-Minister Tun Dr. Mahathir published a vision for the year 2020, in which he stated that the building industry contributes between 3% and 5% of the entire economy's Gross Domestic Product (GDP) (Omer and Adeleke, 2020). The construction industry is one of the most vital sectors in Malaysia. Malaysia's building sector is expanding at a faster rate. This industry makes a significant contribution to Malaysia's economy. However, COVID-19 has given a big influence on the building industry. Like many other industries, the building industry suffers from a variety of negative effects (Apurva and Sharareh, 2021). The building site turned into a centre for virus infection and the site become a risky environment (News Straits Time, 2020a).

The Malaysian government has taken a measure called a Movement Control Order (MCO) to prevent the spread of the virus among the people as the virus is spreading rapidly (Hadei et.al 2020). During Malaysia's lockdown, nationwide sudden bans on travel, a lack of work in construction that left labour without the financial means to cover daily food expenses, and quarantine rules all contributed to high levels of anxiety, which led to socially irresponsible behaviour and panic attacks among internal foreigner labour (Ranjana Choudhari, 2020). Labour received many challenges during the COVID-19 pandemic. The building industry has always struggled with a shortage of labour, but the pandemic has made matters worse (Azzez et al. 2019 and Karimi et al. 2018). Due to a disrupted supply chain and labour shortages brought on by quarantines, projects have been put on hold or postponed (ENR 2020, Rouhanizadeh and Kaaermanshachi 2020).

According to Pamidimukkala and Kermanshachi (2021), since the beginning of the pandemic of COVID-19, the opportunity for occupation is reduced due to the work disruptions caused by the restrictions put in place to stop the spread of the virus. This is because COVID-19 is a spreadable virus and people should not be crowded into one place. However, in the construction industry, many workers are required at the site. Not only is the virus hurting people's physical health, but it is also affecting their mental health and well-being. Migrants' mental health is adversely related to their social exclusion (Li and Rose, 2017). Due to socio-environmental challenges such as loss of social status and discrimination, internal migrant workers have a high percentage of anxiety, psychosis, and post-traumatic disorders (Mucci et al., 2019). In addition to the troubles brought on by the pandemic, public health measures like obligatory isolation or quarantine in the government's temporary shelters upon

returning to their original locations and social exclusion increase the feeling of loneliness, which can result in mental illnesses and even lead to suicide (Nelson, 2020).

In addition, numerous more businesses worldwide have been impacted by the virus-caused economic catastrophe. The COVID-19 pandemic has similarly jeopardised engineering and building projects around the globe in a variety of ways, and many of these projects have been abandoned. ILO (2021) stated that migrant workers are usually excluded from national response measures, such as wage subsidies, unemployment benefits or social security and social protection measures. Financial issues during COVID-19 may result from late payments and a decrease in the number of projects. After the business declares that the project's work phase is finished, payment will be paid. However, the MCO caused a delay in the payment to the contractor. The spread of COVID-19 and the implementation of the Movement Control Order (MCO) issued by the government has affected the implementation of development projects. These projects are delayed during the MCO period as no economic activities are allowed in all sectors during this period. If the contractor does not receive payment, then he cannot pay his labour.

Echoing this, research was mooted to investigate the welfare of construction labour amid the COVID-19 pandemic. In line with this aim, one research objective was established to identify the key factors that affect the well-being of construction labour during the COVID-19 pandemic. It is hoped that the establishment of the objective help to achieve the main purpose of this research.

LITERATURE REVIEW

Movement Control Order (MCO)

Movement Control Order (MCO) refers as a restriction movement and gathering including prohibiting most industries from operating during this time (Esa et al., 2020). stated that the MCO was used in Malaysia, where most important industries were not allowed to operate during this period and most workers were encouraged to work from home or stay at home to reduce the spread of communicable diseases. In line with the Control and Prevention of Infectious Diseases Act 1988 and the Police Act 1967 which were used in Malaysia also elaborated that restrictions focus on the movement of people from one place to another, whether locally or internationally, as this could contribute to contagion, unexpected disease or virus. Therefore, Standard Operating Procedure (SOP) due to enforcement of MCO was established and deliberated below.

Standard Operating Procedure (SOP)

Haryati et al., (2022) define a Standard Operating Procedure (SOP) as a document outlining specific instructions for how an operator should carry out the whole operation. SOPs include the operational purpose, the necessary tools and materials, the way in which the step is set up and operated, the way in which the worker performs maintenance and ends operation, a summary of safety issues, a list of replacement parts, illustrations, and checklists. According to Akyar (2021), the SOP is one of several procedural documents required to carry out a certain process in accordance with other documents, such as process flow charts and material requirements. According to Bergerova (2010), SOP should be used as step-by-step work instructions on sites and should be the best technique the organization is aware of.

This Standard Operating Procedure (SOP) carries implications for construction labour by outlining the key measures necessary to safeguard their well-being during the COVID-19 pandemic. To stop the virus from spreading on construction sites, SOP for controlling the COVID-19 virus is important. The COVID-19 SOP was developed by the authority and CIDB. This SOP holds significant implications for construction labour as it directly influences their daily work routines and overall well-being in the context of the COVID-19 pandemic. By adhering to the guidelines outlined in the SOP, construction labour can experience improved health and safety conditions on the job site. These measures, such as wearing proper PPE, practicing social distancing, and maintaining good hygiene, not only protect them from potential infection but also contribute to a sense of security and reassurance. Additionally, the SOP's emphasis on collective responsibility fosters a cooperative atmosphere among labour, promoting a united effort to curb the spread of the virus. Ultimately, the successful implementation of this SOP can help safeguard the health of construction labour, their families, and the broader community while enabling them to continue their vital work with minimized risks.

Construction Labour

Construction labour is one of the most essential aspects of Malaysia's construction sector for project completion (Alaloul et al., 2021). Labour is very important in a project from the beginning to the end of the construction of the project. Alaloul et al., (2021) stated that an effective labour force wisely uses limited natural resources, provides the basic framework of the country, and contributes to its development. In addition, the labour force is also the primary source of economic activity and production, including the most sophisticated technologies and the accumulation of prior effort (Manea et al., 2019). Without construction labour, the project cannot be

finished. Thus, affect the well-being of construction labourer where several factors are need to be highlighted.

CLASSIFICATION OF LABOUR

Skilled Labour

A skilled labour is one who has been acknowledged for a specific skill, is an expert in their industry, and consistently produces high-quality work (Manap et al., 2018). Skilled labour is important to the development of the construction sector. Bricklayers, carpenters, painters, electricians, welders, plumbers, and plant operators, among others, make up a sizable portion of the site labour force in the building industry in Malaysia, and their contributions greatly influence the quality of the finished product. According to Akomah (2020), skilled labour is essential to the success of every construction project, and it has never been more important than it is now, in the age of complexity and technology, when huge construction projects are being carried out. Skilled labour have at least two years of work experience, professional training, and knowledge of construction materials, tools, and safety, and is physically fit (Abdul Hamid, 2013). There are three ways to educate skilled labour which are in schools, vocational training facilities, workshops, and directly on the job. (Sulaiman and Mohd Salleh 2016).

Unskilled Labour

The project is built or carried out with unskilled labour when a project manager or contractor cannot locate the required quality standard of skilled labour (Hussain et al, 2020). 93% of foreign workers registered with CIDB in the construction sector are unskilled labour (Hisyam, 2015). This was also stated by Hamzah et al. (2020) and Mohd Fateh et al., (2020), who stated that the majority of foreign labour is unskilled and originates from nations like Indonesia, Bangladesh, and Myanmar. Many of them are natives of their region and are only familiar with the basic concepts of building. In general, unskilled labour means that the work will be carried out by a person who has minimal or no formal education and no specific skill base. Even though it is physically demanding and requires long hours, the job is frequently simple in the building industry. Moreover, due to a lack of information on proper building practices and procedures, unskilled or inexperienced labours are less knowledgeable about safety risks (Karimi et al., 2016).

Migrant Labour

According to the International Labour Organization (ILO), migrant labour are those who move from one country to another with the intention of finding employment. Meanwhile, the term "migrant workers" is typically used to refer to migrants who are unskilled and receive minimum wage in Malaysia (Pappusamy, 2014). In Malaysia,

only migrant labour with legal permits may work. No one may work in Malaysia without a legal permit. Migrant labour for the construction industry typically come from Indonesia, Nepal, Bangladesh, India, and Myanmar. Rural to urban migrant labour typically participate in temporary, unskilled labour with low wages, employment insecurity, and financial vulnerability peculiar characteristics of informal work environments (Zeitlyn et al., 2014). According to Andika Wahab (2020), in Malaysia, only foreign labour between the ages of 18 and 45 will be allowed a work permit to work in six specific economic areas such as manufacturing, construction, services, plantation, agriculture, and domestic work.

Factors That Affecting The Well-Being Of Construction Labour During the COVID-19 Pandemic

The factors that affect the well-being of construction labour can be categorized into three which are: psychological factors, economic factors and individual factors.

Table 1: Factors That Affecting The Well-Being Of Construction Labour During the COVID-19 Pandemic

Category	Factor	Source
Psychological Factor	Social Isolation	(Li and Rose, 2017; Mucci et al., 2019; Nelson, 2020)
	Absence of Family Support During Crisis	(Zhou et al., 2020; Choudhari, 2020)
	Exposure to the Virus at Work	(Rowlin, 2020; Choudhari, 2020; ILO, 2021)
Economic Factor	Loss of Work	(ILO, 2020; Zamani et al., 2021)
	Cash Flow Delays	(Pamidimukkala and Kermanshachi., 2021; Alsharif et al., 2021)
	Supply Chain Disruptions	(Choudhari, 2020)
Individual Factor	Starving Due to A Lack of Food Supplies	(Andika, 2020; ILO, 2020)
	Lack of Social Distancing and Unhygienic Living Conditions	(SUHAKAM 2020; ILO, 2020; Andika, 2020)

Psychological Factors

Social Exclusion

Due to socio-environmental challenges such as loss of social status and discrimination, internal migrant workers have a high percentage of anxiety, psychosis, and post-traumatic disorders (Mucci et al., 2019). According to Pamidimukkala and Kermanshachi, (2021), contractors are keeping an eye on their workers' mental health issues since anxiety is one of their top issues during COVID-19. The labour is afraid that they lose their job. Migrants' mental health is adversely related to their social exclusion (Li and Rose, 2017). In addition to the troubles brought on by the pandemic, public health measures like obligatory isolation or quarantine in the government's temporary shelters upon returning to their original locations and social exclusion increase the feeling of loneliness, which can result in mental illnesses and even lead to suicide (Nelson, 2020). One of the project managers noted that the requirement for social distance was also leading to fewer interactions among labour, which might also be a factor in mental health issues.

Absence Of Family Support During Crisis

Malaysia was one of the nations that implemented the Movement Control Order (MCO) on March 18, 2020, as an early preventative step (Wahab, 2020). All economic activity was to cease during MCO, except for the necessary. The labour movement within the province is restricted by the MCO. Since most male workers do not live with their families, their loneliness puts them at risk for mental illnesses like depression (Zhou et al., 2020). Stress may be made worse because of losing loved ones to the pandemic, feeling powerless to care for the family member's medical requirements, and staying away in isolated areas (Choudhari, 2020). Stress may be made worse by losing loved ones to the pandemic, feeling useless to care for the family member's medical requirements, and staying away in rural areas.

Stress About The Possibility Of Exposure To The Virus At Work

According to Pamidimukkala and Kermanshachi, (2021), contractors are keeping an eye on their workers' mental health issues since anxiety is one of their top issues during COVID-19. Due to the increased risk of spreading the virus, office and labour who must perform their duties in the familiar environment of their workplace are likely to feel more fear and anxiety (Apurva and Sharareh, 2021). When they go to the construction site, they are concerned about the possibility of spreading the virus. They could also feel more stressed out and anxious if they think that the suppliers or other labour are not using safety precautions like wearing a mask and social distancing. They may also be concerned or guilty about the possibility of spreading the infection to their loved ones. There may be additional pressure on labour due to the large crowds at the worksites (Rowlin 2020). Many migrant construction workers were

hospitalized, quarantined, or secluded in their dorms during the COVID-19 pandemic in 2020, and some chose to return to their home countries (Ling et al., 2022). Many workers, including those who work in the field and require frequent interactions with people, are at a higher risk of exposure to unhealthy and asymptomatic people suffering from COVID-19 (Choudhari, 2020). ILO (2021) stated that the risk of contracting the virus while travelling and spreading it to construction sites may be higher for executives and authorities in the construction industry who visit international or offshore operations. Similarly, those who must travel to and from construction sites may be impacted by quarantines and travel restrictions. Due to overcrowding on transit and a lack of risk control measures, workers at remote construction sites may encounter health risks while traveling.

Economic Factors

Loss Of Work

According to ILO (2020), migrant workers are facing significant uncertainty and economic hardship because of the pandemic. Additionally, migrants are typically not included in national response measures such as wage subsidies, unemployment insurance, or social security and protection measures (ILO, 2020). When migrants lose their jobs, they may be forced to return to nations that already have high rates of unemployment and poverty, while those who remain in their destination countries face the risk of being exploited and subjected to human rights abuses. Additionally, the aggregate number of remittances sent home by migrant workers has significantly decreased due to income loss (ILO, 2020). Esa et al. (2020) found that the COVID-19 SOP limits the number of labours on construction sites through the practice of social distancing, which has a significant impact on both the project's progress and labour productivity. The government released the Standard Operating Procedure (SOPs) for the Ministry of Public Works construction sector when the industry was approved to work on 4 May 2020 (Zamani et al., 2021). Both contractors and labour are obligated to comply with a lot of Standard Operating Procedures (SOPs). The government is limiting the number of employees at building sites to 60%, according to Senior Works Minister Datuk Seri Fadillah Yusof. It shows a 40% decrease in the total number of labours, which results in job losses for labour. In addition, the companies also are struggling with a lack of skilled labourers due to the COVID-19 pandemic. Most of them are foreign workers who must return to their own countries (Zamani et al., 2021).

Cash Flow Delays

Finance related to changes in cash flow is the main income in construction projects. Construction activity delays raise the probability of cash flow issues, which have a negative impact on productivity as contractors struggle to make payments to their suppliers, subcontractors, and workers (Pamidimukkala et al., 2021). The contractor's income is calculated based on payment claims. The contractor cannot pay labour if the project is delayed. The labour market is being significantly affected by the COVID-19 pandemic, in which, its impact indicates the effect on the income of millions of construction labour worldwide. Because of the rising cost of materials and the difficulties clients had in making timely payments to the contractors, cash flow problems became a significant issue. A delay in cash flow is a problem that many businesses are experiencing, forcing employers to fire workers (Alsharif et al., 2021).

Supply Chain Disruptions

Cash flow issues became a significant problem because of material costs and owners' challenges paying contractors on time during the pandemic, which negatively impacted material deliveries, slowed productivity, delayed projects' advancement, and occasionally even resulted in projects being suspended (Choudhari, 2020). Due to this worldwide issue, the supply chain has been seriously interrupted (Skyline Construction, 2020f). Some essential building supplies as well as some of the supplies needed to comply with hygiene and safety regulations were difficult to come by in the early weeks of the pandemic. All industries needed a limited supply, and logistics were disturbed, resulting in delays and higher pricing (The Builders' Association and AIA Kansas City, 2020). The availability of resources, such as labour and materials, has an impact on the supply chain (Skyline Construction, 2020e). Due to social isolation and quarantining requirements that reduced the labour force within supply chain groups, disruptions in material supply were also experienced.

Individual Factors

Starving Due To A Lack Of Food Supplies

Migrant labour had more issues than non-migrants did before the pandemic (Firdaus, 2017 and Virupaksha et al., 2014), but the pandemic challenges have made them even more at risk of these issues. According to Andika (2020), migrant workers face a real risk of being hungry due to limited access to food. Andika (2020) states that three situations involving migrant labour may highlight the inadequacy of food supplies which is, the first issue is that many migrant workers who reside outside of urban centres or in distant locations have limited access to food due to long commutes and decreased business hours in many markets and grocery stores. The labour will live in a temporary house that has been provided by the employer and usually, the house is in a construction area, and it is far from the residential area. SUHAKAM (2020) states that there is evidence that entrepreneurs and local

businesses are charging migrant labour ridiculous prices when they want to buy food supplies close to their work location and places.

Secondly, Andika (2020) states that many migrant workers are hesitant to leave their hiding spots to obtain food supplies, especially those without valid identification or employment authorization. They are afraid of being discovered by the authorities, so they are hesitant to leave the house. While there have been humanitarian assistance programs such as delivering basic food and other necessities for daily living to illegal migrant workers, these have simply been insufficient (ILO, 2020).

Thirdly, food assistance could not be provided to migrant workers who were isolated to locations under the control of an Enhanced Movement Control Order (EMCO) (Andika, 2020). As per government regulations, they are in quarantine and are not allowed to leave the house. It is quite difficult for workers to obtain food supplies in the EMCO area.

Lack Of Social Distancing And Unhygienic Living Conditions

According to the ILO (2020), the migrant workers living conditions, in which social distancing may not be feasible, have given cause for concern about the spread of the virus. In Malaysia, migrant labour already lives in substandard accommodations, such as container longhouses, with insufficient electricity and water, and overcrowded conditions (MalaysiaKini, 2020). According to SUHAKAM (2020), most migrant workers, particularly those in the construction industry, also live in “rumah kongsi” with about 80 residents. Migrant workers are more exposed to COVID-19 infection due to their overcrowded situations (Andika, 2020).

RESEARCH METHODOLOGY

According to Awang (2014), the researcher would carry out data analysis when the data collection phase is over. This procedure is necessary for addressing the research questions, as well as for achieving the study objectives. Descriptive analysis will be used in this study to explain the general characteristics of the data collection. The demographic characteristics of the population in this study will be represented by the respondents from the data collection process in this section. The method that has been used for this research is primary data and secondary data. Primary data and secondary data collection will be utilized to gather enough information to support the research objective and research aims. A quantitative method will be used by distributing a set of questionnaires to gain more understanding of the topics by the construction labour. The questionnaire was prepared to obtain the data related to the research objective which are the key factors that affect the well-being of construction

labour during a pandemic. The questionnaire consists of a set of questions designed to get information from respondents and distribute it to the labour through WhatApps.

In this research, the construction labour in Kuala Lumpur was focused on respondents to get the data. There are 81000 construction labour in Kuala Lumpur. The list of construction labour was obtained from *Jabatan Perangkaan Malaysia Kuala Lumpur, 2019*. The sample size is 384 based on the sample size calculated by Krejcie and Morgan (1970). Medway and Fulton (2012) discovered that web-based and mail-based surveys have response rates ranging from 10% to 20%. Furthermore, Nulty (2008) stated that the online response rate from institutions received the lowest response rates at 20% and 23%. Hence, the response rate for this paper which is 23% is considered reliable. Table 2 shows the target responses that respondents are expected to provide.



Figure 1: Employment Statistics for the WPKL, 2019

Table 2: Target Responses

Sample Size	Percentage Use	Responses Feedback
384	23%	88

Through the obtained data, SPSS version 27 will be used to run a frequency and descriptive analysis to form the findings of the results and finally the research discussions. The research used the Statistical Package for the Special Sciences (SPSS) to analyze the collected data from the respondents. The data acquired for this study can be analyzed and presented using the statistical package for the social sciences (SPSS). It is commonly applied for researching social and behavioural sciences. The program will be used to analyze and evaluate the data collected from the distributed surveys. The results from the analyzed data will also be accurately presented using a number of bar charts or pie charts that will be created.

ANALYSIS OF FINDINGS

This section explains the analysis and findings from the analysed data. Generally, the section is divided into two parts: (a) the respondents' profile and (b) the key factors that affect the well-being of construction labour during the COVID-19 pandemic.

Analysis of the Respondent's Profile

Table 1 explained the respondent's profile that answered the questionnaire survey. The demographic characteristics of the population in this study will be represented by the respondents from the data collection process in this section.

Table 3: The Respondent's Profile

	Description	Frequencies	Percentage (%)
A.	Experience		
	Less than 5 years	41	46.6
	5-10 years	31	35.2
	11-15 years	9	10.2
	More than 15 years	7	8.0
B.	Family Dependents		
	1-2 person	39	44.3
	3-4 person	33	37.5
	5 person and above	16	18.2
C.	Did the pandemic COVID-19 affect construction labour?		
	Yes	88	100.0
	No	0	0
D.	If yes, state the factors affecting your well-being during COVID-19.		
	Psychological Factor	13	14.8
	Economic Factor	59	67.0
	Individual Factor	16	18.2

Table 1 shows the summary statistics for each respondent's profile in the survey of the pandemic towards construction labour. The respondents' experience that is less than 5 years is (46.6%). Followed by respondents that have 5 to 10 years of experience (35.2%). Then, respondents that have experience with 11 to 15 years are (10.2%). The experience of working among the respondents is more than 15 years and above only (8 .0%).

Next, the data analyses of the family dependents of respondents. As shown in Table 4.2, stated that (44.3%) have 1 to 2 family dependents. 3 to 4 number of family dependents with 37.5% and followed by 5 to above family dependents with (18.2%).

Based on the table, the respondents stated that they (100%) were affected by the pandemic COVID-19. Proceed with the factors affecting well-being during COVID-19 showing that there is (67%) for economic factors, followed by individual factors and psychological factors at (18.2%) and (14.8%).

Analysis On The Key Factors That Affecting The Well Being Of Construction Labour During The COVID-19 Pandemic

Three main factors are highlighted and the respondents were asked to rate their degree of agreement using a Likert Scale from Strongly Disagree to Strongly Agree.

Table 4: Psychological Factors That Affecting The Well Being Of Construction Labour During The COVID-19 Pandemic

	Description	Mean	Rank
A.	COVID-19 affects the mental health of construction labour.	4.26	2
B.	Movement Control Order (MCO) increase the feeling of loneliness.	4.25	3
C.	Construction labour are concerned about the possibility of spreading the virus.	4.33	1
D.	Construction labour feel more stressed out and anxious if the suppliers or other labour are not using safety precautions like wearing a mask and social distancing.	4.24	4
E.	Construction labour is higher risk of exposure to unhealthy and asymptomatic people suffering from COVID-19.	4.24	5

The table above shows the psychological factors that affect the well-being of construction labour during a pandemic. “Construction labour is concerned about the possibility of spreading the virus” (mean=4.33) has been found as the main psychological factor for construction labour. It is followed by “COVID-19 affects the mental health of construction labour” (mean=4.26) and “Movement Control Order (MCO) increase the feeling of loneliness” (mean=4.25). Next, “construction labour feels more stressed out and anxious if the suppliers or other labour are not using

safety precautions like wearing a mask and social distancing and “construction labour is a higher risk of exposure to unhealthy and asymptomatic people suffering from COVID-19” shared the same mean score at 4.24.

Table 5: Economic Factors That Affecting The Well Being Of Construction Labour During The COVID-19 Pandemic

	Description	Mean	Rank
A.	Construction labour lost their source of income.	4.45	2
B.	Standard Operating Procedures (SOPs) limit the number of labourers on a construction site.	4.52	1
C.	The contractors struggle to make payments to their suppliers, subcontractors, and labour.	4.40	5
D.	Financial issues during COVID-19 may result from late payments and a decrease in the number of projects.	4.41	3
E.	Project delays due to supply chain disruption.	4.41	4
F.	If the contractor does not receive payment from the client, then he cannot pay his construction labour.	4.40	6

Table 5 presents the economic factor that affects the well-being of construction labour during a pandemic. The most highly rated was “Standard Operating Procedures (SOPs) limit the number of labours on a construction site” (mean=4.52). The second-ranked factor fell under “Construction labour lost their source of income” (mean=4.45). ‘Financial issues during COVID-19 may result from late payments and a decrease in the number of projects” and “project delays due to supply chain disruption” shared the same mean score at 4.41. In addition,” the contractors struggle to make payments to their suppliers, subcontractors, and labour” and “if the contractor does not receive payment from the client, then he cannot pay his construction labour” also shares the same mean score at 4.40.

Table 6: Individual Factors That Affecting The Well Being Of Construction Labour During The COVID-19 Pandemic

	Description	Mean	Rank
A.	The spread of this virus is caused by the lack of social distancing between construction labour.	4.51	1
B.	Construction labour lives in houses with crowded conditions that make it difficult to maintain hygiene.	4.32	6

C.	Construction labour faces a real risk of being hungry due to limited access to food.	4.35	5
D.	Construction labour who resides outside of urban centers or in distant locations have limited access to food due to long commutes and decreased business hours in many markets and grocery stores.	4.31	7
E.	Construction labour is hesitant to leave their hiding spots to obtain food supplies, especially those without valid identification or employment authorization.	4.38	2
F.	It is quite difficult for construction labour to obtain food supplies in the EMCO area.	4.36	3
G.	The lack of awareness among top management teams has made it impossible for construction labour to work in a safe environment.	4.36	4

Table 6 describes the individual factor that affected the well-being of construction labour during the COVID-19 pandemic. The most highly rated was “the spread of this virus is caused by the lack of social distancing between construction labour” (mean=4.51). The second-ranked was “construction labour are hesitant to leave their hiding spots to obtain food supplies, especially those without valid identification or employment authorization” at a mean score of 4.38. “It is quite difficult for construction labour to obtain food supplies in the EMCO area” and “the lack of awareness among top management teams has made it impossible for construction labour to work in a safe environment” shared the same mean score at 4.36. Next, “construction labour faces a real risk of being hungry due to limited access to food” had a slightly positive response than “construction labour lives in houses with crowded conditions that make it difficult to maintain hygiene” at mean scores 4.35 and 4.32 respectively. Furthermore, the least factor apparent under this category was “construction labour who resides outside of urban centres or in distant locations have limited access to food due to long commutes and decreased business hours in many markets and grocery stores” at a 4.31 mean score.

Table 7: Key Factors That Affecting The Well Being Of Construction Labour During The COVID-19 Pandemic

	Description	Mean	Rank
A.	Psychological Factor	4.26	3
B.	Economic Factor	4.41	1
C.	Individual Factor	4.37	2

Based on the analysis of factors affecting the well-being of construction labour during a pandemic, the results of the mean score for each category were discovered. According to Table 7, the first category that was highly affected by the pandemic was the “economic factor” (mean=4.41) which took the first rank. Next, the second-ranked factor fell under “individual factor” (mean=4.37) followed by the third rank “psychological factor” (mean=4.26).

DISCUSSION OF FINDINGS

The objective of this research has been achieved by the rank of the mean for each factor category listed. Thus, this can be concluded that the key factors affecting the well-being of construction labour during the COVID-19 pandemic are psychological factors, economic factors, and individual factors. Economic factors take the first rank among the factors listed. The COVID-19 pandemic has had an impact on many respondents, particularly in terms of the economy. During the pandemic, the number of labours in site construction is minimized due to the government releasing the Standard Operating Procedures (SOPs). It was supported by The Star (2021) that the government is limiting the number of employees at building sites to (60%). This statement is also supported by Esa et al. (2020) that the COVID-19 SOP limits the number of labours on construction sites through the practice of social distancing, which has a significant impact on both the project's progress and labour productivity.

Next, the second place fell under the individual factor. In this factor, “The spread of this virus is caused by the lack of social distancing between construction labour” was the highest mean score at 4.51. In Malaysia, migrant labour already lives at the house with insufficient electricity and water, and overcrowded conditions. This was supported by Andika (2021) that migrant workers are more exposed to COVID-19 infection due to their overcrowded situations. In addition, construction labour is hesitant to leave their hiding spots to obtain food supplies, especially those without valid identification or employment authorization. They are afraid of being discovered by the authorities, so they are hesitant to leave the house. According to ILO (2020), while there have been humanitarian assistance programs such as delivering basic food and other necessities for daily living to illegal migrant workers, these have simply been insufficient.

Lastly, the psychological factor was found to be the weakest key factor that affected the well-being of construction labour during a pandemic. Construction labour is concerned about the possibility of spreading the virus. This statement was supported by Apurva and Sharareh (2021) that due to the increased risk of spreading the virus, office and labour who must perform their duties in the familiar environment of their

workplace are likely to feel more fear and anxiety. There may be additional pressure on labour due to the large crowds at the worksites (Rowlin 2020).

Generally, the overall results of the key factor affecting the well-being of construction labour during the COVID-19 pandemic that has been identified in this research received positive feedback from the respondents. The previous literature review also supported the problems discovered in this research. As a result, the objective of this research was achieved.

CONCLUSION

In conclusion, this study has shed light on the key factor affecting the well-being of construction labour during the COVID-19 pandemic, highlighting the need for awareness and proactive measures within the industry. The findings emphasize the following significant points for the construction industry, firstly, it is crucial to ensure that contractors are fully aware of the factors that affect the well-being of construction labour during the pandemic season. By understanding these factors, contractors can implement appropriate measures to protect the health and safety of their workforce. The contractor must adapt safety requirements to ensure a healthy workplace for labour. This involves measures such as maintaining 1.5 meters of distance between labour, using masks for virus prevention, conducting regular health checks including temperature screenings, disinfecting equipment and surfaces, and employing signage to promote physical distancing. Secondly, social protection measures need to be established to safeguard the interests and welfare of construction labour. This includes providing financial support, healthcare benefits, and other forms of assistance to mitigate the economic hardships and health risks faced by construction workers during the pandemic. Lastly, there is a need to develop general guidelines and protocols for construction labour to safely return to the construction sites. This involves implementing comprehensive safety measures, adopting best practices, and maintaining strict adherence to health guidelines to minimize the risk of virus transmission and ensure a safe working environment.

By addressing these key factors, the construction industry can better navigate the challenges posed by the pandemic, protect the well-being of construction labour, and facilitate the resumption of construction activities in a safe and sustainable manner. The insights from this study provide a valuable foundation for industry stakeholders to devise effective strategies and policies that support the long-term resilience and recovery of the construction sector.

ACKNOWLEDGEMENT

The authors wish to acknowledge the support of university in performing the study funded by Tabung Amanah Pembangunan Akademik (TAPA), Universiti Teknologi MARA, Perak Branch, Malaysia. Lastly, we are also thankful to all respectful respondents who are willing to participate in this research.

REFERENCES

- Akomah, B. B., Ahinaquah, L. K., and Mustapha, Z. (2020). Skilled Labour Shortage in The Building Construction Industry Within the Central Region, *Baltic Journal of Real Estate Economics and Construction Management*, 8, 83-92.
- Akyar, I. (2012). Standard Operating Procedures (What Are They Good For?). Turkey: IntechOpen.
- Alaloul, W. S., Musarat, M. A., Liew, M. S., Qureshi, A. H., & Maqsoom, A. (2021). Investigating the impact of inflation on labour wages in the Construction Industry of Malaysia. *Ain Shams Engineering Journal*, 12(2), 1575– 1582.
- Alsharif, A., Banerjee, S., Uddin, S. M. J., Albert, A., & Jaselskis, E. (2021). Early impacts of the COVID-19 pandemic on the United States construction industry. *International Journal of Environmental Research and Public Health*, 18(4), 1– 21. <https://doi.org/10.3390/ijerph18041559>.
- Amoah, C., & Simpeh, F. (2021). *Implementation challenges of COVID-19 safety measures at construction sites in South Africa*. *Journal of Facilities Management*, 19(1), 111-128.
- Bacon-Shone, J. H. (2013). Introduction to quantitative research methods. *Graduate School, The University of Hong Kong*.
- Bailey, S. C., Serper, M., & Opsasnick, L. et al. (2020). Changes in COVID-19 Knowledge, Beliefs, Behaviors, and Preparedness Among High-Risk Adults from the Onset to the Acceleration Phase of the US Outbreak. *J Gen Intern Med*, 35, 3285-3292.
- Bergerova, K. (2010). Standard Operating Procedures at Skanska. *The Royal Institute of Technology: Master Thesis*.
- Biswas, A., Ghosh, A., Kar, A., Mondal, T., Ghosh, B., & Bardhan, P. K. (2021). *The impact of COVID-19 in the construction sector and its remedial measures*. *Journal of Physics: Conference Series*, 1797(1).

- Building (24 June 2020b) Coronavirus update for construction 24 June. Available at: <https://www.building.co.uk/focus/coronavirus-update-for-construction-24-june/5106642> (Accessed: 25 June 2020).
- Centre for Higher Education Quality. (2008). Guide to interpreting unit evaluation and MonQueST reports.
- Coronavirus. (2020, January 10). <https://www.who.int/health-topics/coronavirus>.
- Choudhari, R. (2020). COVID-19 pandemic: Mental health challenges of internal migrant workers of India. *Asian Journal of Psychiatry*, 54, 102254. <https://doi.org/10.1016/j.ajp.2020.102254>.
- Choi, S. D., & Staley, J. (2021). Safety and Health Implications of COVID-19 on the United States Construction Industry. *Industrial and Systems Engineering Review*, 9(1), 56–67. <https://doi.org/10.37266/iser.2021v9i1.pp56-67>.
- Department of Statistics Malaysia. (2019). https://dosm.gov.my/v1/index.php?r=column/cone&menu_id=bmJMRytxd3l2ZnJBUVIGQINnWUE1UT09.
- Ekpanyaskul, C., Padungtod, C., 2021. Occupational Health Problems and Lifestyle Changes Among Novice Working-From-Home Workers amid the COVID-19 Pandemic, Safety and Health at Work. <https://doi.org/10.1016/j.shaw.2021.01.010>.
- Fateh, M., Ashraf, M., Affendy Arshad, R., and Hamzah, F. H. (2020). "THE UNFAIR WELFARE PRACTICES TOWARDS FOREIGN WORKERS IN. IUKL Res. J. 8 (1), 23–46. Available at: https://iukl.edu.my/rmc/wp-content/uploads/2021/06/B5_IUKLRJ2020_final.pdf.
- Firdaus, G., 2017. Mental well-being of migrants in urban center of India: analyzing the role of social environment. *Indian J. Psychiatry* 59 (2), 164–169.
- Hadei, M., Hopke, P.K., Jonidi, A. and Shahsavani, A. (2020). A letter about the airborne transmission of SARS-CoV-2 based on the current evidence. *Aerosol Air Qual. Res.* 20: 991– 914.
- Hamid, A., and Rahim, A. (2013). The Construction Labour Shortage in Johor Bahru, Malaysia. *Int. J. Res. Eng. Tech.* 02 (October), 508–512. [doi:10.15623/ijret.2013.0210078](https://doi.org/10.15623/ijret.2013.0210078)
- Hamzah, I. S., Ridhwan Sarifin, M., Shamsinor Abdul Aziz, M., and Fakhrol Azri Abdullah, M. (2020). Malaysia as Attraction of International Foreign Workers. *J. Crit. Rev.* 7 (8), 797–804. [doi:10.31838/jcr.07.08.171](https://doi.org/10.31838/jcr.07.08.171).
- Harris, S. S. (2000). *A Dictionary of Epidemiology*, Fourth Edition.pdf.

- Hisyam, K. (2015). A Nation Built by Foreigners, Brick by Brick. Malaysian Trades Union Congress 2015. Available at: <http://www.mtuc.org.my/a-nation-built-by-foreigners-brick-by-brick/>.
- Honigsbaum, M. (2009). Historical keyword Pandemic. *The Lancet*, 373.
- Human Rights Commission of Malaysia (SUHAKAM). (2020). Dialogue with vulnerable communities: An assessment of needs and next steps amid COVID-19 pandemic. <https://www.suhakam.org.my/dialogue-with-vulnerable-communities-an-assessment-of-needs-and-next-steps-amid-COVID-19-pandemic/>.
- Hussain, S., Xuetong, W., & Hussain, T. (2020). Impact of skilled and unskilled labor on project performance using structural equation modeling approach. *SAGE Open*, 10(1), 215824402091459. <https://doi.org/10.1177/2158244020914590>.
- ILO (2020). "ILO warns of COVID-19 migrant 'crisis within a crisis'" 24 June 2020.
- ILO (2020). Ensuring fair recruitment during the COVID-19 Pandemic 23 June 2020.
- IMF (2020). Policy Responses to COVID-19 11 September 2020.
- International Labour Organization (ILO). (2017). ILO global estimates on international migrant workers: Results and methodology. https://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-publ/documents/publication/wcms_652001.pdf.
- International Labour Organization (ILO). (2020). COVID-19: Impact on migrant workers and country response in Malaysia. https://www.ilo.org/wcmsp5/groups/public/-as/ia/-ro-bangkok/documents/briefingnote/wcms_741512.pdf.
- Karimi, H., Taylor, T. R. B., Goodrum, P. M., & Srinivasan, C. (2016). Quantitative analysis of the impact of craft worker availability on construction project safety performance. *Construction Innovation*, 16(3), 307–322.
- Katherine Vines, P.W., Beech, Nicholas, 2020. The impact of COVID-19 on the safety of workers in the WA construction industry: navigating risk. KWM. <https://www.kwm.com/en/au/knowledge/insights/the-impact-of-covid-19-on-the-safety-of-workers-in-the-wa-construction-industry-navigating-risk-20200428>.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30(3), 607– 610.
- Li, J., & Rose, N. (2017). Urban social exclusion and mental health of China's rural-urban migrants – A review and call for research. *Health & Place*, 48, 20–30. <https://doi.org/10.1016/j.healthplace.2017.08.009>.

- Liang, H.; Liu, T.; Yang, W.; Xia, F. Impact of COVID-19 Pandemic Perception on Job Stress of Construction Workers. *Int. J. Environ. Res. Public Health* 2022, 19, 10169. <https://doi.org/10.3390/ijerph191610169>.
- MalaysiaKini. (2018). Plantation migrant workers deserve better. September 28th, 2020 <https://www.malaysiakini.com/news/445007>.
- MalaysiaKini. (2020a). TenagaNita condemns raids on undocumented migrants, refugees in Kuala Lumpur. May 1st, 2020 <https://www.malaymail.com/news/malaysia/2020/05/01/tenaganita-condemns-raids-on-undocumented-migrants-refugees-in-kuala-lumpur/1862190>.
- MalaysiaKini. (2020b). Arrested undocumented migrants were tested for COVID-19, no mistreatment. May 2nd, 2020 <https://www.malaysiakini.com/news/523677>.
- MalaysiaKini. (2020c). MEF insists gov't must bear costs for foreign workers' COVID-19 tests. May 5th, 2020 <https://www.malaysiakini.com/news/524157>.
- Manap, N., Mohd Noh, N. H., & Syahrom, N. (2018). Recruitment criteria and attraction strategies for local trained labour in Malaysia's construction industry. *IOP Conference Series: Earth and Environmental Science*, 109(1).
- Manea, L. D., Virlanuta, F. O., & Muntean, M.-C. (2019). Investigating the Causes of the Current Labor Shortage in Romania. *International Conference "Risk in Contemporary Economy,"* 44–52.
- Medway, R. L., & Fulton, J. (2012). When more gets you less: A meta-analysis of the effect of concurrent web options on mail survey response rates. *Public Opinion Quarterly*, 76(4), 733–746.
- Mohamed Elnaggar, S., & Elhegazy, H. (2022). Study the impact of the COVID-19 pandemic on the construction industry in Egypt. *Structures*, 35, 1270–1277. <https://doi.org/10.1016/j.istruc.2021.09.028>.
- Mucci, N., Traversini, V., Giorgi, G., Tommasi, E., De Sio, S., & Arcangeli, G. (2019). Migrant Workers and Psychological Health: A Systematic Review. *Sustainability*, 12(1), 120. <https://doi.org/10.3390/su12010120>.
- Nelson, V.M., 2020. Suicide Prevention India Foundation. <http://www.rfi.fr/en/international/20200514-mental-illness-suicides-on-the-rise-in-india-during-covid19-lockdown>.
- New Straits Times (May 9, 2020a) COVID-19: new cluster found at construction site in Setia Alam. <https://www.nst.com.my/news/nation/2020/05/591210/COVID-19-new-cluster-found-construction-site-setia-alam>. [Accessed on 09 December 2020].
- Naoum, D. S. G. (2007). Dissertation Research and Writing for Construction.

Students (Second Edi). Elsevier Ltd.

Nulty, D. D. (2008). The adequacy of response rates to online and paper surveys: What can be done? *Assessment and Evaluation in Higher Education*, 33(3), 301–314.

Omer, M. S., & Adeleke, A. Q. (2020). Journal of Humanities and Social Sciences Studies (JHSSS) ISSN : 2663-7197 *Systematic Critical Review of Risk Management in Malaysian Construction Companies, 2020*, 60–70.

Pamidimukkala, A., & Kermanshachi, S. (2021). Impact of COVID-19 on field and office workforce in construction industry. *Project Leadership and Society*, 2, 100018. <https://doi.org/10.1016/j.plas.2021.100018>.

Pappusamy, P. I. (2014). Migrant workers contribution towards the Malaysian economic transformation. In Paper presented at the asian conference on globalization and labour administration: Cross-border labour mobility, social security and regional integration. November 21, 2014, https://islssl.org/wp-content/uploads/2014/12/Pappusamy_2014_Asian_Conf.pdf.

Rowlin, Letitia. (2020). "Mental health and wellbeing during the COVID-19 pandemic." (October 9th, 2020).

Sierra, F. COVID-19: Main challenges during construction stage. *Eng. Constr. Archit. Manag.* 2021, 29, 1817–1834.

Siti .H.Y. (2021) ,150 Tapak Pembinaan Di Seluruh Negara Ditutup Sejak 1 Jun, BH Online (Nasional) Available at : <https://www.bharian.com.my/berita/nasional/2021/06/830548/150-tapak-pembinaan-di-seluruh-negara-ditutup-sejak-1-jun> (Accessed : 11 November 2021).

Shafii, H., Mohd Radzi, N. A., Md Yassin, A., & Masram, H. (2022). *IMPLEMENTING COVID-19 STANDARD OPERATION PROCEDURE (SOP) IN MALAYSIA CONSTRUCTION INDUSTRY: CHALLENGES AND STRATEGIES*. International Journal of Property Sciences, 12(1), 37–53. <https://doi.org/10.22452/ijps.vol12no1.3>

Shereen Mohamed Elnaggar, Hosam Elhegazy, Structures, <https://doi.org/10.1016/j.istruc.2021.09.028>.

Skyline Construction (4 May 2020b) COVID-19 Construction Jobsite Impacts (Video) Available at: https://www.youtube.com/watch?v=jjLh9gQ7I_s (Accessed: 5 May 2020).

Stiles, S., Golightly, D., Wilson, J.R., 2012. Behavioural Safety Amongst Construction Industry Supply Chain Contractors, Contemporary Ergonomics and Human Factors 2012: Proceedings of the International Conference on Ergonomics and

Surat kami : 700-KPK (PRP.UP.1/20/1)

Tarikh : 20 Januari 2023

Prof. Madya Dr. Nur Hisham Ibrahim
Rektor
Universiti Teknologi MARA
Cawangan Perak



Tuan,

**PERMOHONAN KELULUSAN MEMUAT NAIK PENERBITAN UiTM CAWANGAN PERAK
MELALUI REPOSITORI INSTITUSI UiTM (IR)**

Perkara di atas adalah dirujuk.

2. Adalah dimaklumkan bahawa pihak kami ingin memohon kelulusan tuan untuk mengimbas (*digitize*) dan memuat naik semua jenis penerbitan di bawah UiTM Cawangan Perak melalui Repositori Institusi UiTM, PTAR.

3. Tujuan permohonan ini adalah bagi membolehkan akses yang lebih meluas oleh pengguna perpustakaan terhadap semua maklumat yang terkandung di dalam penerbitan melalui laman Web PTAR UiTM Cawangan Perak.

Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

“BERKHIDMAT UNTUK NEGARA”

Saya yang menjalankan amanah,

SITI BASRIYAH SHAIK BAHARUDIN
Timbalan Ketua Pustakawan

nar

Setuju.

27.1.2023

PROF. MADYA DR. NUR HISHAM IBRAHIM
REKTOR
UNIVERSITI TEKNOLOGI MARA
CAWANGAN PERAK
KAMPUS SERI ISKANDAR

- Human Factors 2012, 16–19. CRC Press, Blackpool, UK, p. 303.
<https://doi.org/10.1201/b11933-72>. April 2012.
- Virupaksha, H.G., Kumar, A., Nirmala, B.P., 2014. Migration and mental health: an R. Choudhari *Asian Journal of Psychiatry* 54 (2020) 102254 3 interface. *J. Nat. Sci. Biol. Med.* 5 (2), 233–239.
- Wahab, A. (2020). *The outbreak of COVID-19 in Malaysia: Pushing migrant workers at the margin*. *Social Sciences & Humanities Open*, 2(1), 100073.
<https://doi.org/10.1016/j.ssaho.2020.100073>.
- Warmbrod, J. R. (2014). *Reporting and Interpreting Scores Derived from Likerttype Scales*. *Journal of Agricultural Education*, 55.
- World Health Organization (WHO). 2020a. Coronavirus disease (COVID-19) [Online]. Available: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-COVID-19> [Accessed Feb 24, 2021].
- World Health Organization (WHO). (2020b). WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020 [Online]. Available: <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-COVID-19---11-march-2020> [Accessed Mar 5 2021].
- Zamani, S. H., Rahman, R. A., Fauzi, M. A., & Yusof, L. M. (2021). Effect of COVID-19 on building construction projects: Impact and response mechanisms. *IOP Conference Series: Earth and Environmental Science*, 682(1), 1–10.