

DEVELOPMENT OF PREVENTIVE COUNTERMEASURES TO COMBAT COVID-19 PANDEMIC IN SMALL AND MEDIUM-SIZED ENTERPRISES IN MALAYSIA

Ikmal Haqim Hirman, Mimi H. Hassim*, Nor Eman Ismail, Hafizah Mahmud

UTM-MPRC Institute for Oil and Gas (IFOG),
Universiti Teknologi Malaysia, 81310 UTM Johor Bahru, Johor, Malaysia

*Corresponding author: mimi@cheme.utm.my

Article History

Received:
April 9, 2023

Received in revised form:
June 20, 2023

Accepted:
July 2, 2023

Published Online:
July 3, 2023

Abstract

The World Health Organization announced the COVID-19 pandemic in 2020, and it has since infected over 286 million people worldwide in 2021, killing over 5.4 million. In Malaysia, the disease infected approximately 2,758,086 people, resulting in 31,487 deaths. Malaysian government has enacted a Movement Control Order (MCO) under the National Recovery Plan (NRP) to contain the infection. The multiple MCO phases resulted in the closure of numerous small and medium-sized enterprises (SMEs), resulting in revenue loss and employment losses. The objectives of this research include developing an efficient COVID-19 preventive countermeasure or enhance existing MITI Safe@Work guidelines for Malaysian SMEs and to suggest improvements to the National Recovery Plan roadmap and the MySejahtera system. An open-ended questionnaire survey is sent to Malaysian workers with safety or health background to obtain their professional information. By using Excel and NVivo software, 15 respondents' answers are chosen for the qualitative analysis. The results include analysing experts' valuation and insights on the existing countermeasures, NRP roadmap, MySejahtera system, development of preventive protocols for SMEs workplace, suggestion of improvements to the NRP roadmap and MySejahtera system application. In conclusion, these indicate that there are still improvements that can be made to the guidelines implemented by the government in the future with proper studies.

Keywords: COVID-19; Movement Control Order (MCO); National Recovery Plan (NRP); Small & Medium-sized Enterprises (SME); Safe@Work.

© 2023 Penerbit UTM Press. All rights reserved

1.0 INTRODUCTION

World Health Organization (WHO) officially declared the untreatable novel coronavirus a worldwide pandemic as of 2020 [1]. In Malaysia, the total cases reached more than 2, 758, 086 with more than 31,487 deaths [2]. To tackle the outbreak of COVID-19 in Malaysia, the Malaysian government launched its own lockdown strategy known as the Movement Control Order (MCO) on March 18, 2020 [3]. The bans include the closure of all businesses and government offices except those providing essential national services including transportation, communications, healthcare, and grocery stores [4]. Several businesses have begun implementing a Work-from-Home (WFH) policy for a portion of their workforce. This category encompasses virtually all economic sectors mainly small and medium-sized businesses (SMEs) [4]. The Malaysian government had formed the National Recovery Plan (NRP) in June 2021 which includes the national immunisation program in its roadmap which aims to provide the necessary control to curb the pandemic in the country while simultaneously reopens the society and the economy to adapt to the new normalcy. The NRP consists of 4 different phases which indicates different state level of recovery in Malaysia where each phase has its own SOPs and public guidelines [5].

Direct impacts of the virus can be evident in a wide variety of industries, particularly SMEs, where many people have been laid off or placed on unpaid leave [6]. This is because not every organization can implement a work-from-home policy due to its nature. The pandemic continues to influence the economy because the bulk of businesses in

Malaysia, whether in service, manufacturing, or agriculture, are small and medium-sized enterprises (SMEs). SMEs are critical for economic growth through bonding backward and forward links between industries, growing entrepreneurial bases, and developing human capital [7]. National Security Council (NSC) issued workplace guidelines to assist in reducing infections in the workplace, but these guidelines have proven ineffective, as many infected clusters in 2021 originated in the workplace [8]. The National Immunisation Programme has successfully given full two dose of vaccine to more than 79% of the Malaysian population according to Our World in Data (2021) [9], however, the existing vaccines, according to the Centers for Disease Control and Prevention (CDC), are not 100 percent effective against new and highly contagious variants, such as the Delta variant, which has arisen and is more deadly in high-risk scenarios [10].

Hence, it is critical for SMEs to continue operating during the pandemic. The purpose of this research is to identify an effective workplace preventive countermeasure that can be applied in Malaysian SMEs while adhering to WHO COVID-19 recommendations. By developing a preventive guideline, it should establish safe standards and processes for employees working in small and midsize enterprises. Prior to that, an extensive survey in Google Form was distributed to health and safety professionals from any Malaysian safety, health, or medical department to elicit their evaluations and perspectives on government-imposed guidelines and the MySejahtera system while offering their alternatives or suggestions by taking their responses into account in a qualitative assessment using Nvivo.

2.0 METHODOLOGY

2.1 Overall Structure

In this research, the overall methodology consists of multiple parts. First, after the analysis of previous studies by literature review, an expert survey was developed to be sent to professionals with safety or medical backgrounds. This survey consisted of three different sections with open-ended questions which will be further explained. Then, collection of data was carried out from the respondents to be analyzed using a qualitative analysis software, NVivo.

2.2 Section A: Demographic Analysis

The first section of the survey was the demographic profile of the respondents. Here the respondents were asked of their personal information such as name, age, profession, company, and years of experience. This section aimed to support the validity and the reliability of the collected data to be used in the analysis.

2.3 Section B: Personal Evaluations on Existing Countermeasures

In this section, the Preparedness and Emergency Response Team (PERT) procedures and the Work Bubble Mechanism were shown to the respondents to ask their opinion. One of the questions highlighted on the suggested alternative for Work Bubble Mechanism and why having a PERT team is important to prevent COVID-19 infections in workplace. The respondents were given a chance to answer based on their area of expertise and any answers are valid due to open-ended nature of the survey. Figure 1 shows part of the protocol given in MITI-appointed Safe@Work program, which highlight the requirement of company for having PERT and its role in the company.

Action	Brief Description
1. Preparedness and Emergency Response Team – PERT	<ul style="list-style-type: none"> • Companies need to establish a Preparedness and Emergency Response Team (PERT) or use existing PERT for the preparation and implementation of emergency case management procedures (if there is an infection or investigation of COVID-19 infection). The PERT members can be selected from the Safety and Health Committee and the team is responsible: <ul style="list-style-type: none"> ✓ to ensure compliance with the SOPs set by the National Security Council (MKN); ✓ to coordinate COVID-19 pandemic prevention measures in the workplace; and ✓ to fully implement Safe@Work. • Company should appoint a contact person/team leader in managing the PERT. • Companies must ensure full health screening if deemed necessary and all costs of the COVID-19 tests are to be borne by the employers; and • This implementation must be in accordance with the Regulations under Act 342 of the Ministry of Health.

Figure 1. Procedure in Safe@Work Program which highlight the requirement of having PERT and its role in the company.

Section C: Additional Insights, New Technologies, and Suggested Improvements to MySejahtera System. The entirety of this section was optional. The respondents may leave this section of the survey. Fig 2 shown the National Recovery Plan Roadmap given by government as a guidance for the levelled reopening of the economy by providing headline indicators in which different phase and SOPs are applied [5]. The respondents were asked if the roadmap can be used in the future.

Then, they were shown the do-it-yourself (DIY) portable air filter and asked if they would personally recommend the usage of the item in SMEs. Finally, the respondents were asked of their experience with the MySejahtera system and how it can be improved by the government to aid in the pandemic.



Figure 2. National Recovery Plan Roadmap taken from The National Recovery Plan [5]

2.4 Data Collection & Analysis using NVivo

The respondent data was collected and arranged in Excel and was then analyzed using the NVivo software. Common, or repeated themes can be recognized and organized by numerous types of data analysis such as content analysis or narrative analysis. With a piece of content, patterns can be identified using content analysis. Different sources may provide many elements such as words, phrases, or images [21]. Coding is the process of separating a massive amount of fresh information or data into manageable chunks and then allocating them to specific groups or themes. NVivo is a software used to segregate the responses to different themes and interpret the meanings and it allows grouping of responses into ‘nodes’ that can interconnect common answers and trends. Since this data was obtained through answered survey, NVivo can be useful to interpret hidden data and formulate patterns to help find insights in the research.

3.0 RESULTS AND DISCUSSION

3.1 Descriptive Analysis

The survey was answered by different 15 respondents from different backgrounds mainly from safety industries and industrial hygiene. Though there are few respondents with medical backgrounds who had provided unique and different insights for the study. Their professional backgrounds are disclosed to measure the similar patterns of answer which correlate to their different expertise.

According to Fig. 3a, approximately 53% of respondents are males and 47% are females. According to Fig. 3b, the majority of respondents (40%) and 41–50 (40%), indicate a considerably higher proportion of respondents in their thirties and forties. The age group 21–30 has the lowest representation (13%), while those 51–60 have the lowest share (7%). According to Fig. 3c, 40% of the total respondents have an occupational safety background, followed by 33.3%, and 13% have an industrial hygiene background and are involved in other fields such as engineering, research, and environmental-based management. The majority of respondents (47%) have more than 10 years of working experience, as indicated in Fig. 3d, followed by those with 1–5 years of work experience (40%). A smaller proportion (13%) has 6 to 10 years of experience.

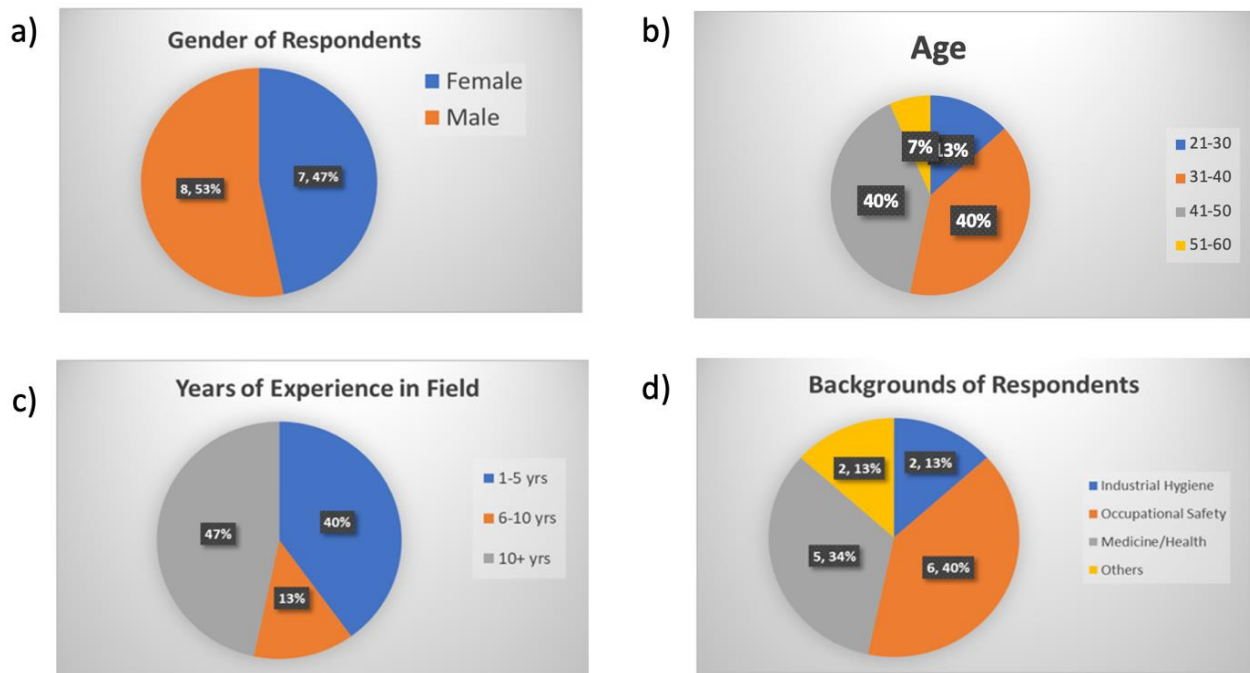


Figure 3. Demographic Profile of Respondents. a) Gender of Respondents; b) Age; c) Years of Experience in Field; d) Backgrounds of Respondents

3.2 Deployment of PERT

The first section of the survey highlighted on the deployment of PERT in SMEs. From the responses collected, NVivo was used to assigned different ‘nodes’ which represented repeated terms in the responses which indicated the focus or themes that the respondents addressed in their response. In short, the ‘nodes’ were used to analyze the suggestion of improvements to the use of PERT in the industries. As depicted in Table 1, the results show that there were 4 commonly mentioned terms in the PERT-related questions.

Table 1. PERT Team Nodes

Node/Case	Codes/Themes
Deployment of PERT Team	1) Importance of Teamwork
	2) Education and Awareness
	3) Risk Reduction and COVID Test
	4) Working Space and ventilation

In the survey response, the question regarding the deployment of PERT team is most often responded regarding the importance of teamwork. For example, Respondent 1, 12, and 13 mentioned about the importance of responsibility as a team rather than as a person. As such, respondent 1 states that “safety is not a one-man responsibility. It is everyone’s responsibility” and respondent 12 supports the statement by saying “safety is the responsibility of all parties and not just to the officers alone”. Apart from that, respondent 8 mentions about having a PERT team is “a better comprehensive approach” with respondent 9 stating “...comprehensive implementations can be done as they are more focused/trained in it”. To add, respondent 10 agrees on the efficiency of the PERT team by stating “...would be a faster response person in-charge and prepared for Emergency situation for Covid-19 in view of no Medical doctors. Thus, the further management and consequences of complication can be reduced.” However, respondent 14 explicitly states that “...for SME is difficult to had PERT due to number of employees and culture of work. Most of the time will had acting PERT, and majority work still remain will be done by 1 person.” Thus, it is important for an organization, despite its size, to employ a team to handle the prevention and management of the pandemic at workplace by enforcing the Safe@Work approach.

Next, the respondents frequently mention about the education and awareness of guidelines in workplace. For instance, Respondent 1, 2, 6, 10, 11, 14 and 15 express on reminding and educating of SOPs to all workers and employers. Respondent 2 states that “the best way is to remind all the workers daily to adhere to the SOPs and take care of themself while working” and respondent 6 states “regular surveillance on SOP compliance...” Interestingly, respondent 15 mentions about “the PERT should not be seen as the enforcer but more as an enabler. There needs to be buy-in from top management as sometimes they don’t see pandemic or outbreak as so critical to ops such as other elements of HSE such as process safety or environment” which highlights about the importance of PERT team to showcase good attitude by

adhering and encouraging SOP compliance at workplace so that others can follow. Respondent 14 states that “pre-design SOP, Action Plan, Control Plan and Video Training will be easier accepted by SMEs.” Meanwhile, respondent 9 offers a solution which states, “by doing regular check-ups on site and giving penalty to workers if they are not compliant.” This can be effective in spreading awareness of SOPs amongst workers in any organization.

In the second question of this section, the respondents were asked on what other methods can be applied to the existing PERT team to prevent serious COVID-19 outbreak at workplace. The respondents commonly mention about reducing the risk of infection in workplace with multiple methods. For example, respondent 3 states that “...frequent & continuous promotion to remind all workers to strictly comply to SOPs and establish clear case management process flow & conduct drill to check its effectiveness.” Apart from that, respondent 5 mentions about “...reduce time at work through various HR mechanism (alternate work shift, reduce working hours, change of work pattern)”. This shows that administrative control such as alternating work hours can be applied to reduce the number of interactions between workers. Respondent 4,5,6 and 11 suggest of frequent COVID-19 screenings with respondent 4 saying “frequent screening using RTK-Antigen test kit, some of the COVID-19 patients did not have any symptoms at all” and respondent 6 mentioning on “regular random check on rapid test in asymptomatic (create more awareness to staff).” Respondent 11 also shares a similar opinion with “having regular screenings rather than having it done only when it is suspected”. Therefore, regular screenings and COVID tests can be increased in SMEs to prevent outbreaks amongst workers.

On the other hand, respondents 7 and 13 accentuate on the importance of proper workspace and air ventilation. Respondent 7 suggests that “proper allocation of space in workspace. It is common for staffs to be cramped in a small space to save expenditure. Poor ventilation and poor maintenance of ventilation system is also one of the causes.” Respondent 13 mentions about “engineering improvement in air ventilation”. These responses show that proper working area and air ventilation are just as important as other methods in reducing the risk of infection in workplace. Every SMEs should implement better working space and ventilation based on the IAQ given by MOH.

3.3 Work Bubble Mechanism

In the next question of the section, the respondents were shown of a Work Bubble mechanism applied in industries which segregates workers with history of close contact from other workers. The respondents were then asked of an alternative method in a case where the employer is unable to accommodate and apply Work Bubble mechanism at workplace. The node assigned to this part of question is shown in Table 2 below.

Table 2. Work Bubble Mechanism Nodes

Node/Case	Codes/Themes
Work Bubble Mechanism	1) Administrative Enhancement
	2) Use of Technology
	3) Proper Case Management and Frequent Testing

The method most suggested by the respondents in this question is administrative enhancement. Respondents 2, 3, 4, 9, 10, 11, 12, 14 and 15 suggest multiple methods that can be classified under administrative control. For example, respondent 3 suggests “frequent & periodic self-test & seamless & quick case management activation to ensure 'safe work bubble' remains intact, avoid overcrowding of workers' accommodation and staggered mealtime to ensure physical distancing can be performed.” Respondents 4 and 9 share the similar suggestion in which respondent 9 stating “by alternating working schedule in which same cohort of people will work on the same day/ time, practice strict SOP”. Respondent 11 also suggests to “divide work shifts into smaller portions to reduce densities of movement at rush hour. etc (8am-5pm, 9am-6pm, 10am-7pm, 11am-8pm).” Respondent 14, on the other hand, suggest to “alternate work from home by groups”. Respondent 15 mentions an alternative where “...the Green Net where the controls are less stringent i.e., the accommodation, catering and health services may not be fully enclosed but there is the ability to clamp down at short notice if needed.” Thus, a different alternative approach such as alternating working hours or shifts can be implemented if the Work Bubble mechanism cannot be used by the organization.

On the other hand, few respondents suggest another method which is the use of technology. For instance, respondent 1 states that “I think the bubble concept is a good concept to be implemented. However not all industry manages to apply this. Hence, introduction of gadget can be introduced to improve this area.” This shows that not every company is able to apply the Work Bubble mechanism. Respondent 5 suggests to “minimise number of workers required to perform the job at one time through work process optimization / automation (e.g., by introducing digital solution...”. This means that a company should facilitate the use of gadget/software that can effectively allow workers to work without close contact with each other. Respondent 13 also mentions about “effective contact tracing” which can be implemented in any gadget. Hence, use of technology can be encouraged by employers to effectively separate workers with close contacts to continue working.

Some respondents also mention about the importance of proper case management. For example, respondent 3 states that “frequent & periodic self-test & seamless & quick case management activation to ensure 'safe work bubble' remains intact, avoid overcrowding of workers' accommodation and staggered mealtime to ensure physical distancing can be performed.” Respondent 6 also states that “If a person categorised as “close contact” - should have isolated the person and finish quarantine as per protocol. Other than “close contact” should be working as usual.”. This statement

shows that it is important for a person who has covid or was in close contact with positive person should be excused from work to prevent unforeseen infection in workplace. Respondent 8 encourages “routine RTK test weekly.” Employers should accommodate and pay for regular COVID-19 test for workers to ensure everyone is fully safe before working.

Thus, with content analysis carried out from the response, the countermeasures were developed to be suggested in SMEs to prevent or reduce COVID-19 infections. The suggested protocols are shown in Table 3 below.

Table 3. Suggested Protocols for SMEs

Protocols	Description
Preparedness and Emergency Response Team (PERT)	<ul style="list-style-type: none"> • Company prepares or use existing team • Establish a team of at least 2 people (Site, Safety, Supervisor (SSS) or SHO) • Emergency case management for COVID-19 case at workplace • Members from Safety and Health • Ensure SOPs compliance, Safe@Work practice & preventive measures • Conduct health screenings every few hours, if possible(Act 342) • Practice 3W and avoid 3C
Compulsory Briefings	<ul style="list-style-type: none"> • Daily briefings to remind workers of SOPs and guidelines by MOH • Remind Consequences of non-compliance • Briefings are simplified but compact to ensure 100% comprehension
Alternate Working Hours	<ul style="list-style-type: none"> • Separate workers with close contact to infected person from workers with no contact • Provide different working space OR alternate working hours to implement Work Bubble
Health Screenings and Test	<ul style="list-style-type: none"> • Conduct temperature checks every few hours to all workers • Provide handheld scanners in multiple areas in the working premise for workers to check • RTK-Antigen or PCR test every few days or every week for workers that interact with others
Implement Technology	<ul style="list-style-type: none"> • Employers should establish system that can help differentiates workers that have close contact with other infected workers (i.e., An integrated system for worker’s ID that display health condition) • Use trackers to track workers movement and contact tracing

4.0 CONCLUSION

In conclusion, the objectives of this research are achieved. From the data collected from the experts’ survey, needed information are extracted from the analysis to form new countermeasures or enhance existing ones that can help prevent COVID-19 infections in small and medium-sized enterprises. The results from the analysis revealed that experts have many professional suggestions to improve quality of life in workplace and in general daily life. SMEs employers can implement such strategies to allow their employees to work in safe condition despite the pandemic to contribute to the national economy. The experts also offered improvements to government system such as MySejahtera app, the NRP roadmap and to support the use of affordable portable air filters in any buildings. This indicates that there are many more improvements can be made by Ministry of Health and Ministry of International Trade and Industry to the Safe@Work and the general SOPs to help reduce the number of infections and achieve zero case in the future.

Acknowledgements

This research is fully supported by American Industrial Hygiene Association (AIHA), USA. (Grant no: R.J130000.7351.4B671).

References

- [1] Aziz, N. A., Othman, J., Lugova, H., and Suleiman, A. 2020. Malaysia’s approach in handling COVID-19 onslaught: Report on the Movement Control Order (MCO) and targeted screening to reduce community infection rate and impact on public health and economy. *Journal of Infection and Public Health*. 13(12): 1823–1829. <https://doi.org/10.1016/j.jiph.2020.08.007>
- [2] Malaysian Ministry of Health (MOH). (2021, June 14). COVID-19 Malaysia Updates by MOH. COVID-19 Malaysia. <http://covid-19.moh.gov.my/faqsop/sop-perintah-kawalan-pergerakan-pkp>.
- [3] Fabeil, N. F., Pazim, K. H., and Langgat, J. 2020. The Impact of Covid-19 Pandemic Crisis on Micro-Enterprises: Entrepreneurs’ Perspective on Business Continuity and Recovery Strategy. *Journal of Economics and Business*. 3(2). <https://doi.org/10.31014/aior.1992.03.02.241>
- [4] Malaysian National Security Council (NSC). (2021, May 31). SOP PKP. Laman Web MKN. <https://www.mkn.gov.my/web/ms/sop-pkp/>
- [5] National Recovery Plan (NRP). (2021, June). National Recovery Plan (NRP) Official Portal / Portal Rasmi Pelan Pemulihan Negara (PPN) FAQ. National Recovery Plan (NRP) Official Portal / Portal Rasmi Pelan Pemulihan Negara (PPN) FAQ. <https://pelanpemulihannegara.gov.my/faq-en.html>
- [6] Shah, A. U. M., Safri, S. N. A., Thevadas, R., Noordin, N. K., Rahman, A. A., Sekawi, Z., Ideris, A., and Sultan, M. T. H. 2020. COVID-19 outbreak in Malaysia: Actions taken by the Malaysian government. *International Journal of Infectious Diseases*. 97: 108–116. <https://doi.org/10.1016/j.ijid.2020.05.093>
- [7] Hoq, M. Z., Ha, N. C., & Said, S. M. 2012. SMEs in the Malaysian Economy. *SSRN Electronic Journal*. 3–17. <https://doi.org/10.2139/ssrn.1851426>

- [8] BERNAMA. (2021 September 10). THE NATIONAL RECOVERY PLAN. <https://www.bernama.com/en/infographics/index.php?v=7942>
- [9] Our World in Data. (2021). Coronavirus (COVID-19) Vaccinations in Malaysia. Retrieved December 8, 2021, from <https://ourworldindata.org/covid-vaccinations?country=MYS>
- [10] Prevention.com. (2021, September 10). Here's Why You'll Need to Wear a Mask After the COVID-19 Vaccine, According to Doctors. Retrieved December 29, 2021, from <https://www.prevention.com/health/a34904463/wearing-face-mask-after-covid-19-vaccine/>
- [11] Centers for Disease Control and Prevention. (2020b, February 11). Coronavirus Disease 2019 (COVID-19). Retrieved October 9, 2021, from <https://www.cdc.gov/coronavirus/2019-ncov/variants/variant.html>
- [12] Bowen, G. A. 2009. Document Analysis as a Qualitative Research Method. *Qualitative Research Journal*. 9(2): 27–40. <https://doi.org/10.3316/qrj0902027>
- [13] Che Omar, A. R., Ishak, S., and Jusoh, M. A. 2020. The impact of Covid-19 Movement Control Order on SMEs' businesses and survival strategies. *Malaysian Journal of Society and Space*. 16(2); 139–150. <https://doi.org/10.17576/geo-2020-1602-11>.
- [14] Dai, R., Feng, H., Hu, J., Jin, Q., Li, H., Wang, R., Wang, R., Xu, L., and Zhang, X. 2020. The Impact of COVID-19 on Small and Medium-sized Enterprises: Evidence from Two-wave Phone Surveys in China [El impacto del COVID-19 pequeñas y medianas empresas: evidencia de encuestas telefónicas en China]. Center for Global Development, September 2020, 1–23
- [15] Health (DOSH). (2021, July 8). Guidance Note on Ventilation and Indoor Air Quality (IAQ) for Public Area COVID-19 Pandemic. Retrieved December 30, 2021, from <https://www.dosh.gov.my/index.php/guidance-note-on-indoor-air-quality-iaq-for-public-area-during-covid-19-pandemic/3939-guidance-note-on-ventilation-and-indoor-air-quality-iaq-for-public-area-during-covid-19-pandemic/file>
- [16] Kantis, C. S. K. (2021, June 16). UPDATED: Timeline of the Coronavirus | Think Global Health. Council on Foreign Relations. <https://www.thinkglobalhealth.org/article/updated-timeline-coronavirus>
- [17] Ministry of International Trade and Industry. (2021, June 13). Public-Private Partnership Covid-19 Industry Immunisation Programme (PIKAS). Ministry of International Trade and Industry (2021). Retrieved January 3, 2022, from https://pikas.miti.gov.my/public/pdf/FAQ_PIKAS_A.pdf
- [18] Ministry of International Trade and Industry (MITI). (2021, March 19). SOP for Safe@Work for Manufacturing and its Related Services Sector. <https://www.miti.gov.my/miti/resources/Safe@Work>
- [19] National Recovery Plan (NRP). (2021, June). National Recovery Plan (NRP) Official Portal / Portal Rasmi Pelan Pemulihan Negara (PPN) FAQ. National Recovery Plan (NRP) Official Portal / Portal Rasmi Pelan Pemulihan Negara (PPN) FAQ. <https://pelanpemulihannegara.gov.my/faq-en.html>
- [20] Whitelaw, S., Mamas, M. A., Topol, E., and van Spall, H. G. C. 2020. Applications of digital technology in COVID-19 pandemic planning and response. *The Lancet Digital Health*. 2(8): e435–e440. [https://doi.org/10.1016/s2589-7500\(20\)30142-4](https://doi.org/10.1016/s2589-7500(20)30142-4)