

Strategic Management for Emotional Health of Field Workforce in Physical Infrastructure Maintenance During the Covid-19 Pandemic

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ABSTRACT

Physical infrastructure maintenance (PIM) is becoming vital at Universiti Kebangsaan Malaysia (Kuala Lumpur Campus) (UKMKL), since most buildings are 48 years old. In addition, it offers healthcare to the public. However, on the widespread coronavirus disease 2019 (COVID-19), all sectors of economy have been impacted by stringent rules and limitation of movements. Complicated procedures and fear about exposure to the virus has led to the negative emotions among FW. Therefore, the aim of the paper to develop a strategic management for emotional health of FW in PIM during the COVID-19 pandemic. A qualitative study was chosen and five-step research methodology was developed. The challenges and factors that impact the emotional health of FW were analyse through literature. Further, strategies in managing the emotional impact among FW in PIM during the COVID-19 were proposed. Mental health and safety of the FW are more difficult than ever before because to the need for everyone to adjust to new ways of working. The results of this study will greatly benefit leaders in understanding the challenges of COVID-19 among FW thus be able to provide safety conditions to protect FW and support them both mentally and physically during the pandemic.

Keywords: Strategic management, maintenance, mental, emotion, COVID-19

1. Introduction

Physical infrastructure maintenance (PIM) is a fundamental element in building the life cycle, and maintenance of buildings is necessary to achieve the maximum performance of a building's lifespan, with a minimum life-cycle cost as well as to ensure the building can operate and function efficiently. For a university, buildings are very important as they provide space for holding education facilities as well as where the users learn, teach and research [1].

PIM has grown increasingly important in Universiti Kebangsaan Malaysia (Kuala Lumpur Campus) (UKMKL), as most buildings have reached 48 years old. In addition, it offers clinical facilities such as the Dentistry Clinic, Optometry Clinic, and Physiotherapy Clinic to the general public as part of an endeavour to create their own incomes.

Unit Prasarana Kuala Lumpur (UPKL) is responsible for the PIM in UKMKL. The PIM is divided into three sections involving civil, electrical, and mechanical engineering works. Contracting companies have been selected from among a panel of civil, electrical, and mechanical engineering works to meet the demand for PIM.

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However, on the widespread coronavirus disease 2019 (COVID-19) starting December 2019, which is caused by the coronavirus 2 that causes severe acute respiratory syndrome (SARS-CoV-2), Malaysia was placed under lockdown, also known as a Movement Control Order (MCO), on Mar 18, 2020. COVID-19 was officially labelled as a pandemic by the World Health Organization (WHO) on Mar 11, 2020 [2].

Increased restrictions on movement have had a profound effect on all sectors of the economy. Social separation has been demonstrated to be one of the primary strategies of preventing the spread of the outbreak; consequently, activities that often involve human contact, such as attending classes, working, and shopping, have shifted to a virtual environment [3], [4]. Some practices that play a vital purpose in our society cannot be carried out online, such as the PIM.

During the COVID-19 outbreak, it is critical that we gain a better understanding of the mental health of field workers (FW) in the PIM. The impacts of coronavirus disease 2019 (COVID-19) on mental health and well-being are expected to be significant and long-lasting, extending beyond individuals immediately afflicted by the virus [5], [6].

Although public health interventions are vital for protecting physical health, a better understanding of the mental health of the FW must also be gained. The information is necessary to guarantee that individuals impacted receive the necessary assistance and to enable us to be better prepared for a potential second wave of the pandemic and for future lockdown or MCO [4], [7]

This study aims to compile an overview of the existing studies on the emotional impact faced by FW in the PIM business during the COVID-19 pandemic in order to achieve the aforementioned objectives. There is a significant amount of literature regarding the impact of COVID-19 on FW in the construction industry, but there are very few studies examining the impact of the pandemic on the mental health of FW in the PIM industry, particularly PIM in ageing buildings and those associated with public universities with clinical facilities. The aim of this study is to identify the challenges and causes that have an emotional impact on the FW in PIM industry pertinently in the public university, namely UKMKL, as well as approaches to manage the emotions strategically.

2. Methodology

Due to the new and unproven nature of the research topic, the limited amount of time available, and the impending changes for FW in PIM as a result of contract renewal, a qualitative study was chosen. Although it is founded on thoughts and feelings gleaned from the literature review in general, it also incorporates the fundamental elements of the individual experience of daily life. In order to accomplish the goals of the study, a five-stage research methodology was designed, and a schematic outline of this technique is shown in Figure 1.

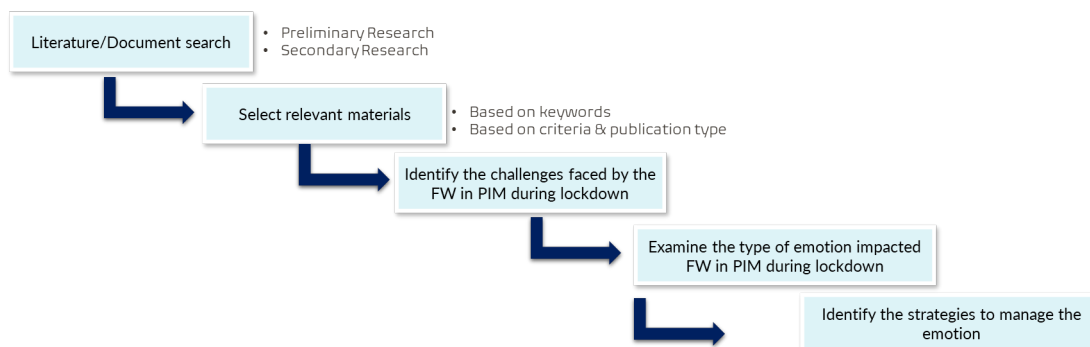


Fig. 1. Research Process

An extensive literature review was conducted first, including both an initial and a secondary search. Google Scholar, Science Direct, and other scholarly websites, as well as those of the Construction Industry Development Board (CIDB), the World Health Organization (WHO), and other government organisations, were reviewed during the preliminary search for conference papers and other relevant documents.

The study is conducted at Universiti Kebangsaan Malaysia, Kuala Lumpur Campus which cover three different locations viz. Jalan Raja Muda, Kuala Lumpur, Jalan Temerloh, Kuala Lumpur and UKM Tanjung Karang, Selangor. Additionally, the study will concentrate on the PIM on the UKMKL, particularly during the lockdown period, and the possible strategic management of the emotional health will be based on the new laws and policies made by the government and university

The study conducted an exhaustive literature review in order to identify challenges and possible solutions. Managers, contractors, and subcontractors may benefit from learning about COVID-19's effects in the FW and how it affects FW emotional well-being during pandemic. The methodology used in this study relied on several frameworks, including challenges and factors that impact the emotional state of the FW in the PIM industry during the Covid-19 pandemic, the type of emotion impacted among the FW in the PIM industry during COVID-19 pandemic, and the management strategies for the emotion of FW in PIM industry during the pandemic.

3. Literature Review

The following subsections investigate the relevant literature in the study field with a particular emphasis on challenges and factors that impact the emotion of FW in the PIM during the pandemic, the type of emotional impact among the FW, and the management strategies for the emotion of field workforce in building maintenance industry during the COVID-19 pandemic

3.1 Challenges in PIM during the Covid-19 Pandemic

As previously stated, the PIM on the UKMKL campus is separated into three major components. This part will be separated into several subsections to facilitate the monitoring and reporting of each PIM. The contractor's workers must be reduced to almost 20% of the total workers; hence the frequency of their routine must be reduced according to the capacity of their workers. Additionally, worker rotation is limited to a maximum working period of 4 hours only [8], [9].

Maintaining physical infrastructure requires a regular routine involving a significant number of people and supervision. This paper [10], [11] emphasizes the significance of routine maintenance (RM) to ensure the proper operation of all equipment and building systems, whether critical and non-critical. Regular cleaning services are essential throughout this pandemic in order to maintain the appearance and health of a facility and provide occupants with a clean, safe environment.[10].

Contractors have to submit their new schedule in accordance with the number of workers to ensure that PIM will be conducted with minimising numbers of workers. Due to the reduced staff presence on campus, the majority of offices, lecture halls, and seminar rooms have been closed. As a result, the area designated for PIM will be limited to the common/open area.

Aside from that, due to the limitations of contractors' workers, only minor PIM can be done during the MCO. For instance, cleanliness is restricted to common areas, with disinfection added to the cleaning process. The number of workers is limited to 30 in the UKMKL campus, which covers 26 buildings in total. Daily routine maintenance is also concerned with hygiene, safety, and health, to reduce the infection of COVID-19— in this case, aimed primarily at common areas of buildings.

The Ministry of International Trade and Industry (MITI) authorises all industries that require operation during MCO [12]. A strict set of standard operating procedures (SOP) was required for the essential businesses to continue to operate. As a result of the government-imposed law, all contractors must submit a Permit to Work approved by the MITI to the UPKL prior to continuing their PIM on the UKMKL. Workers are permitted to continue working only if they are listed in the companies' applications that MITI has approved. Employers must provide supporting documentation to their employees, including a list of the employees involved and MITI's approval letter. This makes it easier for workers to get to and from work and their homes [13].

As a result, communication between UPKL and contractors requires increased paperwork and procedure, resulting in more time needed for the process. Communication with other departments is required to ensure contractors are permitted to enter the campus.

All other maintenance issues raised by the user cannot be resolved in a timely manner due to the user's 'work-from-home' status. Indeed, UPKL received a significant increase in complaints regarding pipeline leakage and roof leakage during the COVID-19 pandemic based (S. Ismail, personal communications, 17 May, 2021).

Aforementioned above, only one UPKL staff is allowed to be on duty which is limited to 4 hours per day. Hence, any on-site physical infrastructure maintenance that requires supervision by the UPKL cannot be done accordingly. UPKL have to rely 100% on the contractors to do the physical infrastructure maintenance during the MCO period.

On November 15, 2020, due to the significant increase of positive cases among construction workers, the Construction Industry Development Board (CIDB), in their press release statement under Majlis Keselamatan Negara (MKN), urges all contractors, including the owner, to ensure all construction workers undergo COVID-19 swab testing three days before entering their construction sites [14]. All contractors must submit their COVID-19 swab results to the UPKL before entering the campus. The results must be submitted every two weeks (Anuar, A.W, personal communications, November 25, 2020). As a result of the implementation, contractors require additional time and cost to ensure all their workers undergo COVID-19 swab testing. Based on the record submitted, only 20% of the total contractor submit their workers result on the swab test (Anuar, A.W, personal communications, December 17, 2020).

Due to the high cost of the swab test, only a few contractors submitted their COVID-19 results. According to a survey, the cost of a swab test is estimated to be between RM350 and RM650 per person, imposing a significant financial burden on contractors [15]. The virus outbreak and its severity were utterly unexpected. The financial burden placed on contractors is insurmountable, especially given that contractors are already suffering from the pandemic's financial consequences [16], [17].

In addition to that, hardware and suppliers were forced to close during the MCO due to being deemed non-essential. Due to a lack of components/parts, physical infrastructure maintenance requiring the replacement of a component or motor was not possible. This affects the efficiency of the equipment; [18] claimed that well maintained equipment will offset any possible hazard induced by neglected maintenance. However, contractors are obligated to either resolve the issue or mitigate its impact. For instance, an elevator was closed due to inability of contractor to fix the component, and water supply are shut down for few days due to inability to obtain a backhoe/machine to replace the burst pipe.

Fieldworker satisfaction with organizational preparedness approximately 52% of the study participants stated that the information presented to them on COVID-19 by their employers was not specifically related to the construction industry and their specific tasks and, therefore, felt somehow irrelevant to their situation [19]. This susceptibility and struggle are mainly due to limited financial

resources, fewer employees to engage in activities such as safety committees, and poor attitude toward safety compared with productivity

Complying with the construction site social distance safety measures was very difficult, as stated by some respondents. This is because most of the construction activities require the proximity of workers for the effective execution of the task. For example, erecting scaffolding on-site, carrying materials, loading and off-loading materials cannot be executed without probably coming close to one another. This has made it difficult for construction site managers to execute some task [20]

IN addition to that, some site workers were found to have supplied half-truth information during the screening process as they may not be paid if they are denied access to the site as a result of coming into contact with a COVID-19 patient or having experienced some symptoms [20].

3.2 Type of negative emotion impacted on Field Workforce in the PIM during Covid-19 Pandemic

A negative emotional reaction is one that is unpleasant, typically disruptive, and intended to show a negative impact. Negative emotions are not favorable to achieving one's objectives. These include anger, envy, melancholy, and fear.[21]. As the COVID-19 disease spreads globally, it is producing widespread anxiety, tension, and worry that affects nearly everyone. It influences not just people's physical health, but also their mental health and sense of well-being [4], [17], [22].

An increased or decreased workload might cause employees to feel overwhelmed or nervous. Workers at the UKMKL have been overworked because of the MCO and the limited number of hours they can work each day. Design and planning efforts have been slowed down by social distancing measures and personnel shortages due to workers being impacted by the virus and self-isolation, resulting in increased stress for employees. As a result of the increased danger of exposure to the virus, field workers are more likely to suffer heightened dread and anxiety. It might cause further worry and anxiety for them if they perceive that others aren't taking the necessary precautions, such as social distance. The number of workers on the jobsite may also put them under additional stress [20], [23]. A study by [6] has stressed that lockdown is proving to be difficult to manage the routine as workers are working from home.

Aside from this, FW may sense a loss of purpose that causes them to worry about their employment position and financial condition, contributing to their bad mental health. Some employees may be particularly concerned about the furloughing procedure, which increases their stress and makes them unable to concentrate on their assigned jobs, so decreasing their productivity [23], [24]

Workers who are required to attend to a physical workplace encounter concerns about the safety and wellbeing of their family, as well as difficulties in providing care for elderly or young dependents. They might even be nervous or feel bad about possibly transmitting the virus to their family [23]. Many workers, such as those who need to work on fields and require regular interaction with the people, are at higher risk of exposure to unhealthy and symptomless persons suffering from COVID-19. Field workers who usually work alone during COVID can be more vulnerable to a "loneliness epidemic" due to the lack of frequent person-to-person contact [3], [19], [23], [25].

Life for those working in construction has changed significantly during this pandemic. Demand, control, support, relationships between employees, roles, and changes are the factors that affect the mental health and wellbeing of FW. Change is one of the six main occupational hazards that cause or lead to anxiety among workers. The lack of control is another hazard, as much of the control that an employee has traditionally had over how they perform their job has been withheld by COVID-19 restrictions [3], [6].

As the COVID-19 pandemic spreads across the globe, it has become a major source of worry, stress, and anxiety for people everywhere. According to a poll by Construction Dive, 70% of respondents cited "staff anxiety" as their biggest challenge because to concerns about supply shortages and government shutdowns. Mental health issues in the workplace have been a problem for a long time, but the recent coronavirus outbreak has made the situation much worse. Despite the many threats to health and happiness, many workers are stressed out by worries about job security, having to work remotely, or especially the requirement to perform field work despite increased challenges on well-being [3].

In a nutshell, the mental health issues and psychological distress caused by an outbreak are analogous to those brought on by traumatic events. The employees may experience a rise in negative emotions such as agitation, irritability, and a general sense of being overwhelmed or depressed. They may also feel lethargic, sleepless, unable to focus, and exhausted. Problem drinking, smoking, and drug use are all behaviours that can result from failing to properly address such stresses. [4], [17], [23].

3.3 Strategies planning to manage the emotion Field Workforce in the Building Maintenance Industry During Covid-19 Pandemic

The Occupational Health and Safety Act must be complied with by all measures made by businesses to ensure the health and safety of workers during COVID-19. Eighty percent of construction sites have modified their health and safety protocols, according to a poll [23], [26].

The effects of coronavirus disease 2019 (COVID-19) on mental health and well-being are likely to be profound and long-lasting and will extend beyond those who have been directly affected by the virus [4]. Project managers are obligated to provide a safe working environment for employees by redefining all of the safety rules, as many construction tasks are performed in the field. The following are the some of the safety measures to be followed by both employers and employees [23].

Project managers are obligated to provide a safe working environment for employees by redefining all of the safety rules, as many construction tasks are performed in the field [23]. As part of the work scheduling, management must create work teams and shifts that would improve the operational efficiency of staff. It must, however, be cautioned that absenteeism and illness are likely to cause disruption and present a potential impediment to PIM in these hard times. It is strongly recommended that flexible work schedules should become part of the new working protocols alongside staff welfare packages and incentives [27].

MindSpot and other digital mental health services including in social media, are in a rare position to have been able to keep running even when traditional face-to-face services have been interrupted. It is clear that digital services will play an important part in the future of mental health systems since they can more easily change assessments, manage volume, and report outcomes, and FW feel secure when sharing their problems, than traditional face-to-face treatments. [28].

Effective communication between employers and their workers is crucial to successfully navigating the pandemic. Some of the FW feel the difficulties when trying to use the mobile application, or fill the online form provided by the university and government owing to the age and complexity of the application. Hence, leader must demonstrate empathy and readiness to aid the FW to ease the process. According to [29], elderly is least likely using the internet. They only utilise interface for practical purpose like travel, money, education and shopping and this is because senior usually feels uncomfortable using the mobile technology.

Instant messaging apps like Whatsapp and Telegram, which fall under the category of user-friendly mobile applications, have been shown to be excellent means of communication among

workers. You can hold instantaneous conversations and send files with this software [29], [30]. As a result of its widespread availability, WhatsApp has quickly become an indispensable tool for modern businesses. As of January 2020, 41% of 1,261 British workers were using WhatsApp for official business, according to research conducted by Guild, a company that develops instant messaging apps. And remember, this was all before the global coronavirus epidemic [30].

Capturing real-time information for prompt response would be an advantage for prompt response to problem. Health-care delivery processes should be aligned with PIM information to identify interactions and overlaps that may have critical implications for the smooth operation of health-care delivery as well as patient safety [27]. The key to surviving the epidemic is open lines of communication between management and staff. Employers owe it to their staff to keep them abreast of developments and to applaud their efforts to adjust to new circumstances. It's also important to keep in touch with furloughed workers to keep them informed about the furlough's duration, their post-furlough roles, etc. [19], [23]

[20] expressed employees' well-being depends on the manager's expertise with health and safety rules that apply to their employment. Unreliable information on the health and conditions of employees presents a problem for health and safety officers, who must ensure the well-being of the entire FW. A leader needs to maintain a confident demeanour, set a good example with their own actions, and, perhaps most significantly, exhibit resilience.

4. Results & Discussion

As shown in Figure 2, FW tend to become unproductive because of FW need to take care of the family members' need, managing different workloads, isolation, lack of equipment, too many procedures, technology is not user friendly, while the shortage of manpower because of Isolation, FW's concern of being exposed to virus, individual factor, financial constraint, organizational preparedness to counter the disease.

Therefore, by implementing the viable strategies which include improve the job site safety, i.e., practicing social distancing measures, restricting the number of people on job sites, floor/field markings, modify policies and practices, educate FW, help in coping with the technology, leader being vulnerable, user-friendly technology through Whatsapp (social apps), FW are more confident to come to the campus and being productive throughout the process during the PIM. Whilst, effective communication, positive thinking and social support, online therapy, survey, leader opens the door for FW to feel comfortable talking about mental health challenges of their own, modelling healthy behaviours, cultivating a culture of connectedness through check-ins can help FW performing their PIM more efficiently and reducing the effects of negative emotions.

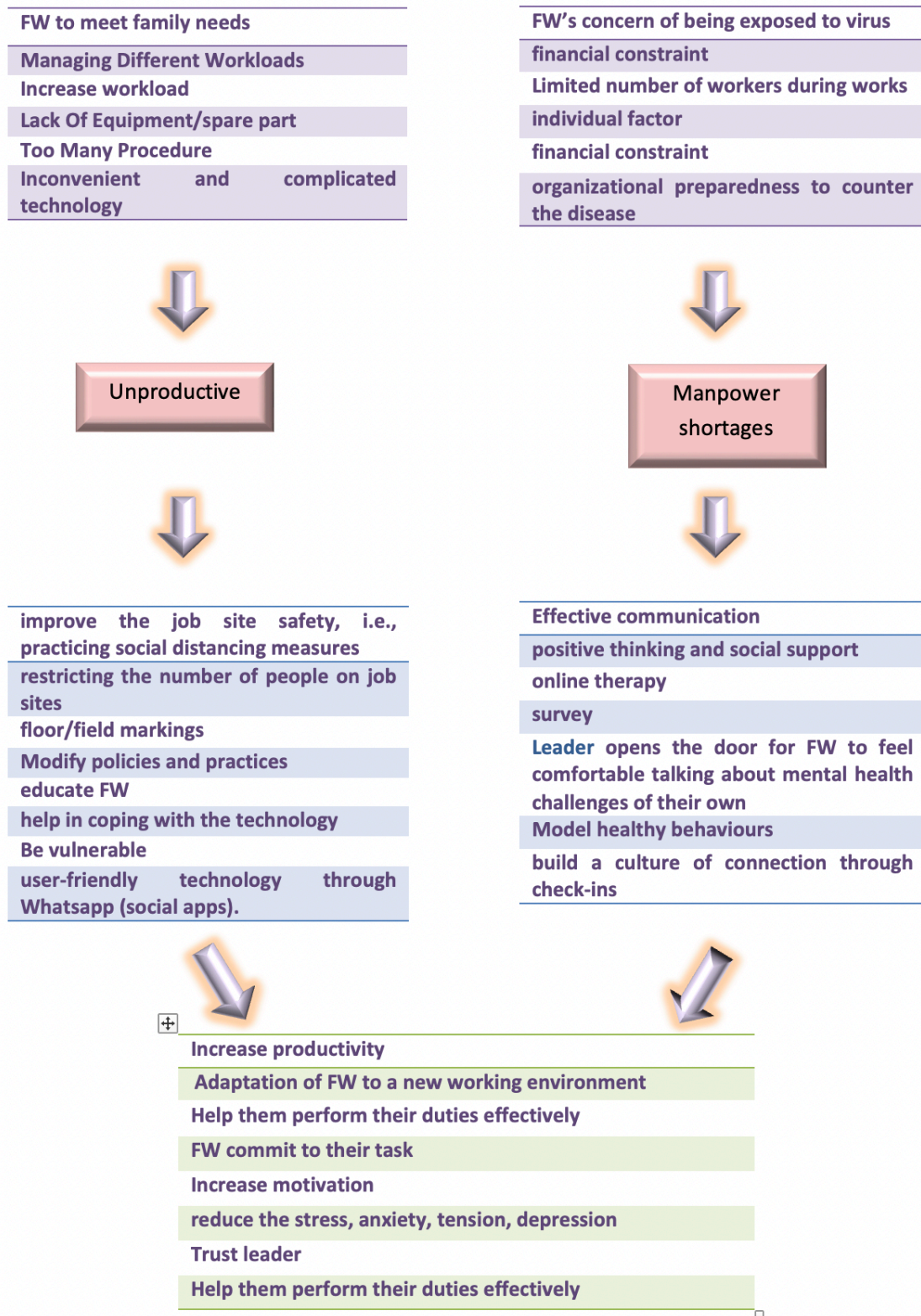


Fig. 1. Relationship between challenges, emotional and strategies

5. Conclusions

The COVID-19 pandemic has made it very evident how vital it is to protect the physical and mental health of FW in PIM during the COVID-19 pandemic. Mental health and safety of the FW are more difficult than ever before because to the need for everyone to adjust to new ways of working. The results of this study will greatly benefit leaders by helping them understand more fully the challenges of COVID-19 among FW so that they can provide safety conditions to protect their workers and support them both mentally and physically.

The information is necessary to guarantee that individuals impacted receive the necessary assistance and to enable us to be better prepared for a potential second wave of the pandemic and for future lockdown. Consequently, the purpose of this work was to identify the challenges given by COVID-19 on the negative emotion of the FW, as well as the management solutions to alleviate these challenges. Future research is required to better comprehend the influence of COVID-19 on the emotional health of office workforce during a COVID-19 pandemic.

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