

THE IMPACT OF COVID-19 PANDEMIC ON MALAYSIAN WORKPLACES
A FACILITIES MANAGEMENT PERSPECTIVE

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requirements for the award of the degree of
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DEDICATION

Dedicated to my beloved mother and abah, Pn. Hasni & En. Rosni, my younger sister, Nursakinah, family and friends for their unconditional love as well as their boundless support and encouragement. Also, dedicated to myself who have made it this far.

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My special gratitude goes to my family, especially my parents and younger sister, who are the perpetual source of joy and love of my life. Thank you for showering me with boundless love and providing me with endless supports in the quest of finishing my study also my thesis. Finally, last but not least, big thanks to my fellow course mates for their never-ending assistance in sharing their knowledge and ideas throughout the accomplishment of this thesis. I am eternally grateful for all supports that they gave me.

ABSTRACT

Facilities management (FM) and workplaces have always been two inseparable components for a business organizational entity. The FM and workplaces relation may be described as the conviction of a discipline's ability to enhance systems for managing workplaces in order to motivate people to offer their best, to support their effectiveness, and, ultimately, to contribute to economic development and organizational success. However, the Covid-19 pandemic has triggered the FM discipline's critical leadership in becoming the frontliner in the worst of times to create agile workplaces given the still-valid relevance of sustaining physical workplaces and the uncertainties the pandemic carries. This research's ultimate aim is to gather relevant information on what have been experienced by FM practitioners managing the workplaces in Malaysia during the Covid-19 pandemic by determining the impacts brought by Covid-19 pandemic on facilities management of workplaces in Malaysia and the strategic and/or operational actions taken by facilities management practitioners in Malaysia in response to the impacts. Qualitative in-depth interview approach was conducted with six FM practitioners to gather the required data before inductive analysis of the gathered data was further conducted. The findings showed that all four main elements of FM, people, place, process and technology, are impacted by the covid where in response to those impacts, strategic approaches seem to be more favorable under unprecedented situations. This research presents the recent experience faced by FM of Malaysian workplaces attributable to the pandemic. The act of strategically addressing the impacts by Malaysian FM practitioners has supported the theory of strategic alignment that has become the basis of this research. In the future, Malaysian workplaces will likely continue to evolve given the devastating experience it has encountered during the pandemic. This research has become a practical lens to look at the anticipated changes of FM of workplaces in Malaysia where creating a resilient workplace under unprecedented conditions is very desirable.

ABSTRAK

Pengurusan fasiliti (FM) dan tempat kerja sentiasa menjadi dua komponen yang tidak dapat dipisahkan untuk entiti organisasi perniagaan. Perhubungan FM dan tempat kerja boleh disifatkan sebagai keupayaan satu disiplin untuk menambahbaik sistem pengurusan tempat kerja di samping memotivasikan pekerja untuk memberikan usaha yang terbaik, menyokong produktiviti mereka, yang akhirnya, akan menyumbang kepada pembangunan ekonomi dan kejayaan organisasi. Namun, pandemik Covid-19 telah menggesa kepimpinan kritikal disiplin FM untuk menjadi barisan hadapan dalam keadaan sukar bagi mewujudkan tempat kerja yang fleksibel di mana tempat kerja fizikal masih relevan juga ketidakpastian yang dibawa oleh pandemik tersebut. Matlamat utama penyelidikan ini adalah untuk mengumpul maklumat berkenaan apa yang telah dialami oleh personnel FM yang menguruskan tempat kerja di Malaysia semasa pandemik Covid-19 dengan menentukan kesan yang dibawa oleh pandemik Covid-19 ke atas pengurusan fasiliti tempat kerja di Malaysia dan tindakan strategik dan/ atau tindakan operasi yang diambil sebagai tindak balas kepada impak-impak tersebut. Pendekatan kualitatif melalui temu bual mendalam telah dijalankan dengan enam personnel FM untuk mengumpulkan data yang diperlukan sebelum analisis kandungan secara induktif dijalankan selanjutnya terhadap data yang dikumpul. Penemuan menunjukkan bahawa keempat-empat elemen utama FM, manusia, tempat, proses dan teknologi, telah menerima impak gara-gara Covid-19 di mana sebagai tindak balas kepada kesan tersebut, majoriti personnel FM yang ditemu bual telah mengambil pendekatan strategik untuk mengatasi situasi pandemik yang belum pernah berlaku sebelum ini. Penyelidikan ini menyatakan pengalaman terkini yang dihadapi oleh FM di tempat kerja di Malaysia dalam situasi pandemik. Tindakan menangani impak secara strategik oleh personnel FM di Malaysia telah menyokong teori penajaran strategik yang telah menjadi asas kepada penyelidikan ini. Pada masa hadapan, tempat kerja di Malaysia berkemungkinan akan terus berevolusi hasil daripada pengalaman yang dialaminya semasa Covid-19. Penyelidikan ini telah menjadi lensa praktikal untuk melihat perubahan FM tempat kerja di Malaysia pada masa akan datang di mana mewujudkan tempat kerja yang berdaya tahan dalam apa jua keadaan yang penuh ketidakpastian adalah sangat wajar.

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LIST OF ABBREVIATIONS

BCP	-	Business Continuity Plan
BIFM	-	British Institute of Facilities Management
CMCO	-	Conditional Movement Control Order
CRE	-	Corporate Real Estate
CREM	-	Corporate Real Estate Management
EMCO	-	Enhanced Movement Control Order
FM	-	Facilities Management
IFMA	-	International Facilities Management Association
IT	-	Information Technology
IWFM	-	Institute of Workplace and Facilities Management
MAFM	-	Malaysian Association of Facilities Management
MCO	-	Movement Control Order
MITI	-	Ministry of International Trade and Industry
MOH	-	Ministry of Health
NPI	-	Non-pharmaceutical Intervention
NRP	-	National Recovery Plan
NSC	-	National Security Council
PPE	-	Personal Protection Equipment
RMCO	-	Recovery Movement Control Order
SOP	-	Standard Operation Procedure
WFH	-	Work From Home
WHO	-	World Health Organization

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CHAPTER 1

INTRODUCTION

1.1 Research Background

Facilities Management (FM) has emerged to become one of the most imperative disciplines in the built environment over the years. In fact, in most developed countries such as England and the United States, FM has been excellently developed where professional institutions or associations such as the Institute of Workplace and Facilities Management (IWFM), previously known as the British Institute of Facilities Management (BIFM) and the International Facilities Management Association (IFMA) has been established in acknowledgement of FM discipline to benefit their members with continuous information on the FM futuristic development. When defining FM, which has been known as the umbrella of various multidisciplinary activities, definitions provided by the IWFM and IFMA are mostly referred to. The IWFM describes FM as a multidisciplinary discipline within the built environment and the management of its impact on people and the workplace (Baaki, Baharum, & Ali, 2016). Alternatively, IFMA defines FM as a multidisciplinary profession that ensure the functionality of the built environment by integrating people, place, process and technology (Baaki et al., 2016).

FM and Corporate Real Estate Management (CREM) have been viewed as two sides of the same coin considering both disciplines have the same overlapping perspectives to share. Originally, both disciplines were developed based on different historical backgrounds. FM is a term that came up as a result of the professionalization of IT services, and has long been associated with the enablement of people and business processes in operational buildings while CREM is recurrently related to the whole life cycle of buildings and real-estate portfolios, from the initial idea, briefing, and design phase, through the management of structures in use,

rehabilitation, adaptive reuse, or demolition, and new construction (van der Voordt, 2017). While both disciplines seem to differ with one another, both FM and CREM concentrate on assisting the main business operations by aligning an organization's physical resources with its strategic objectives in order to improve the organization's performance (Jensen & Voordt, 2020; van der Voordt, 2017) and if both disciplines are properly intervened together, along with the core business strategies, added value could be expected by the main organization (Jensen & Voordt, 2020). In fact, some researches have highlighted FM being one of the main outlooks to further understand CREM plus contributed an understanding on how CREM has stewardship role upon FM (Heywood & Arkesteijn, 2017; Jalil Omar & A. Heywood, 2014; Wan Yusoff, Alias, Zainol, Mohd Razali, & Sulaiman, 2021). Understanding FM and CREM as the enabler towards the continuity of a business entity through previous discussion has somehow supports the statement by Krasaeyan (2021) which stated that FM, being a part of CREM, has a robust affiliation with pandemic preparedness where FM shall act as the frontliner in ensuring its served business organization is sustainable even during a pandemic.

December 2019 marked the first occurrence of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) or more familiar, the Covid-19 and ever since its emergence, it has been continuously and rapidly spreading all over the globe which has caused the World Health Organization (WHO) to declare it as the Public Health Emergency of International Concern (PHEIC) on 30 January 2020 (WHO, 2020a). Through the declaration of the outbreak as a PHEIC, urgency on organizing the exertions to investigate and comprehend the virus was brought to attention by WHO, aimed to lessen the virus threat to the affected countries and the contain risk of further international thread. Nevertheless, to the dismay of many, the WHO has declared it as a pandemic on 11 March 2020 (Balkhair, 2020) considering its rapid spread where the Covid-19 pandemic is considered the third major zoonotic coronavirus sickness episode, after the SARS and MERS in 2002 and 2012 respectively (Ramteke & Sahu, 2020). Considering easily-transmittable nature of SARS-CoV-2, the agent of Covid-19 also the severe and critical illness (almost 20% of infected cases) categories it caused (Balkhair, 2020) have caught the healthcare system around the globe off-guard. While this disease is new to humanity and the

development of suitable vaccine is yet to be done, the non-pharmaceutical interventions (NPIs) were the only option available to curb the spreading of Covid-19 virus (Ferguson et al., 2020). These NPIs such as proactive containment procedures of lockdown measures, travel constraint, quarantines and mitigation measures of social distancing and restriction of large-scale gatherings (Ferguson et al., 2020) have somehow enlightened the people on how severe this pandemic is and over the time, people have adapted to these NPIs where they eventually considered them as the “new-normal”. Then ultimately, this new normal has become something to be adapted even in the workplace.

The introduced NPIs such as the lockdowns has caused massive effect on the global economy in which after considerable time of lockdown, the pressure of reopening the economic sectors was surging (Jamaludin, Azmir, Mohamad Ayob, & Zainal, 2020). Nevertheless, despite the pressure, reopening of workplaces for economic activities must be carefully done considering the still-lingering Covid-19 virus around the community. Workplace environment, job satisfaction and productivity has become the widespread topic among many researchers. Through several studies, it is evident that the success of an organization in establishing the good workplace does have positive consequences on employees’ job satisfaction thus guarantees productivity and ultimately the performance of that particular organization (Shobe, 2018). Establishing a so-called good workplace environment has always been considered an issue (Dompelage, Kalansooriya, Gunawardhana, Peiris, & Ramanayaka, 2019) by many organizations and now with the mandatory of the new normal in consequence of the Covid-19 pandemic, that challenge may become greater. Unfortunately, the Covid-19 pandemic has brought a very concerning health hazard which causes facilities manager in-charge of the management of the workplaces to reshuffle their workplaces where workplace flexibility (Shaw et al., 2020) and health perspectives (Sarvari et al., 2022) have become the focus points for workplace reopening.

1.1.1 The Theory of Strategic Alignment

According to Appel-Meulenbroek and Danivska (2022), the strategic alignment theory has been continuously studied in strategic management thinking where appropriate fit between various divisions in an organization is desirable for the organization to perform better (Ayoub, Omar, & Abdul Rahman, 2015; Chorn, 1991; Kaplan & Norton, 2006). To reflect the idea of the theory of strategic alignment into CREM, Haynes (2012) proposed for CREM strategic alignment model where finest alignment between organisational strategy and corporate real estate strategy will be attained when the all the 10 Ps components presented the model (Figure 1.1) are all optimally aligned. One notable advantage of this model as claimed by Appel-Meulenbroek and Haynes (2014), is that it promotes situational analysis which enables the forecasting of the future requirements in which those inputs can be used to develop a flexible property portfolio for a particular organization. Having discussed on how the FM and CREM could be interrelated with one another and how the intervention of both disciplines could bring added values to an organization, the theory of strategic alignment shall become the context of this research. Understanding further on the strategic alignment theory, the CREM 10 Ps strategic alignment model by Haynes is referred to where in that particular model, 10 alignment components are presented. As illustrated in Figure 1.1, FM's element of "place", "process" and "people" by IFMA (2013) are also presented in this model which rationalizes the selecting of the theory and the model as the basis of the intended research.

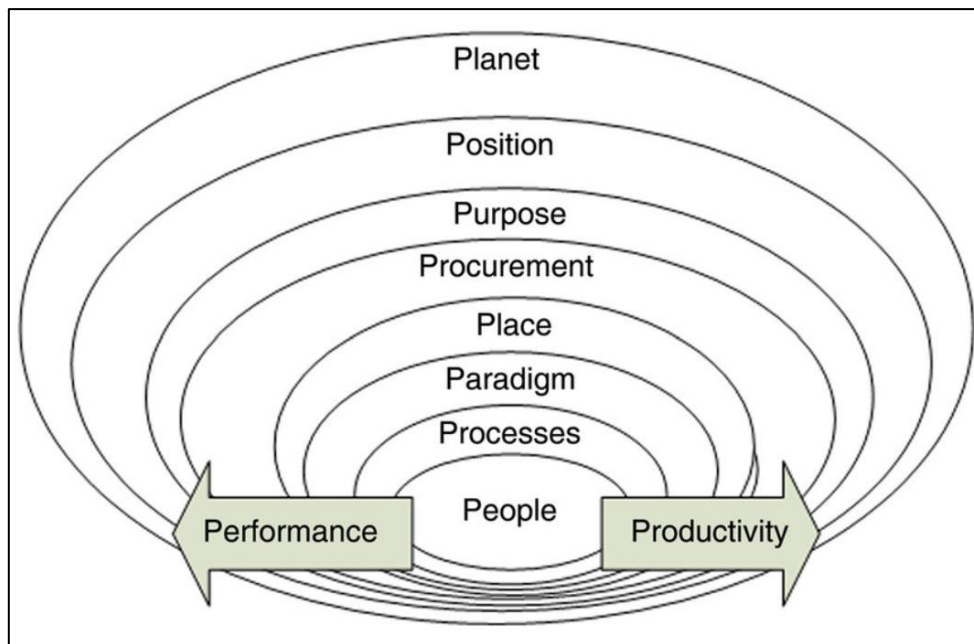


Figure 1.1 Haynes' 10 Ps Strategic Alignment Model

1.2 Problem Statement

A workplace is an important entity for an organization to carry out their economic activities. According to Shobe (2018), ideally, organization's work culture and values should be able to be displayed through their workplace where it ought to be the centralized platform enable to gather work accomplices together for communicating, mentoring, join forces and knowledge sharing, all whereas being able to draw and retain best talent for the organization (Marzban et al., 2022). Over the years, being a platform for engagement is what makes a physical workplace important where a condition of good and gratifying work-related well-being could be established in which as suggested by some, could become the antipode of burnout (Bakker, Schaufeli, Leiter, & Taris, 2008). Referring to Smith (2011), engaged workers would face no problem of gaining job resources such as social support from co-workers and supervisors, performance evaluation, skill diversity, autonomy, and learning chances which have positive relation with their performance and productivity. Unlike during the back in the days where workplaces and productivity formed no connection, workplaces in this contemporary era seek to become agile and focus on change adaptability (Shobe, 2018) which explains the many researches

conducted to promote agile and flexible workplaces while making connection between good workplaces with employees' job satisfaction, productivity and organization's performance (Dompelage et al., 2019; Leblebici, 2012; Shobe, 2018). Through those researches, it is evident that a good workplace shall contribute to the said attributes.

Nevertheless, it is easier to be said than to be done. In reality, even under a pandemic-free circumstances, some organizations are still struggling to establish a good workplace environment (Dompelage et al., 2019) with it being agile and adaptable to change despite wishing to reap the benefits of employees' productivity and escalation of organization performance it offers. Ever since the emergence of the pandemic, the role workplaces play as the engagement hub are challenged since the work-from home shift has been adopted by almost every economic sectors especially the non-essential ones, where getting jobs done at home are possible. Being unable to come to workplaces has brought some notable issues based on several studies such as social isolation (Prihadi, Lim, Chan, Lee, & Ridwan, 2021) work-life balance disruption (Palumbo, 2020) and lack of resources (Pluut & Wonders, 2020). In addition, extrapolating from a global poll by the Global Workplace Analytics, employees opined that mentorship, teamwork, customer service, and being informed about what is going on in the business are far better at the workplace (Colenberg & Keyson, 2021). All of these issues have somehow brought the importance of workplace to light where it is still relevant for people to be having to work in a designated space which is the workplaces. In addition, the emergence of Covid-19 pandemic together with the following associated NPIs implored by governments all over the world has add another burden for facilities managers to create a health-hazard-free workplace. Based on the preliminary survey conducted (refer Appendix 1), involving 13 facilities managers with experience of 5 years and above varying from different organizational background, all of them admit to the fact that Covid-19 has brought challenges in managing their designated facilities especially when it comes to satisfying the Standard Operational Procedures (SOP) imposed by the Malaysian government.

Alexander (1996) described FM as the process of guaranteeing that the buildings, systems, and services support core operations and procedures of an organization while also contributing to the achievement of strategic goals under changing conditions. While FM has a fair share in ensuring engagement at the workplace (Smith, 2011), FM also does have the opportunity to become the frontliner in preparing their managed facilities to be ever-ready in any circumstances including pandemics (Krasaeyan, 2021) to ensure the continuity of the business entity it serves. Emphasizing on workplaces, workplace management measures reacting to Covid-19 may bolster and keep up employees' performance as well as mental wellbeing amid the Covid-19 pandemic (N. Sasaki, R. Kuroda, K. Tsuno, & N. Kawakami, 2020). This is when the problematization of this research took place where the relevance of sustaining physical workplaces are still valid having understood the importance of workplaces as engagement hub also the still-ongoing Covid-19 pandemic and the uncertainty it carries, the lack of study on FM under the Covid-19 pandemic circumstances especially in Malaysia (see Table 1.1: Matrix table) plus for FM practitioners in Malaysia to grab the opportunity of FM being the frontliner in the worst of time to create agile workplaces, this research intended to determine the impact of Covid-19 pandemic on FM of workplaces in Malaysia as well as determining the strategic and/or operational responses taken with regards to the impacts. Additionally, this research intends to become the starting line for future studies to be conducted on pandemic preparedness for FM in Malaysia.

1.3 Research Questions

Based on the previous elaborated research background and problem statement, the research questions are raised as follows:

- i. What are the impacts brought by Covid-19 pandemic on facilities management of workplaces in Malaysia?
- ii. How do facilities management practitioners in Malaysia overcome those impacts?

1.4 Research Objectives

This research's ultimate aim is to gather relevant information on what have been experienced by FM practitioners managing the workplaces in Malaysia during the Covid-19 pandemic with expectation of providing a room for improvement towards agile FM in the future. Therefore, the research objectives are designed as follows:

- i. To determine the impacts brought by Covid-19 pandemic on facilities management of workplaces in Malaysia.
- ii. To determine the strategic and/or operational actions taken by facilities management practitioners in Malaysia in response to the impacts.

Table 1.1 Matrix Table

CODE	RESEARCH TITLE	AUTHOR/ YEAR	RESEARCH ON	METHODOLOGY (M)/SAMPLE SIZE (S)/LOCATION (L)			RESEARCH LIMITATION/ SUGGESTION FOR FUTURE RESEARCH
				M	S	L	
R001	Assessing The Impact of the COVID-19 Lockdown on The Energy Consumption of University Buildings	(Gaspar et al., 2022)	Analysing the impact of the COVID-19 lockdown on the energy consumption of university buildings taking into account climate adjustments to baseline period conditions.	Case study	1 university, 83 academic buildings	Spain	Further research is needed to assess the energy consumed as a consequence of increased digitalisation. Extending research to other tertiary-sector buildings such as offices and hotels.
R002	COVID-19 outbreak in Malaysia: Actions taken by the Malaysian government	(Shah et al., 2020)	Chronology of Covid-19 in Malaysia and Malaysian's government action with regard to it.	Literature review	N/A	Malaysia	N/A
R003	COVID-19 Pandemic: The New Normal in Business Continuity Plan for Real Estate Firms in Malaysia	(Lehan, Razak, & Kamarudin, 2020)	Providing some thoughts on how the supply chain in Business Impact Analysis (BIA) which is one of the key factors of BCP could help real estate firms in managing daily tasks during circumstances of crisis.	Literature review	N/A	Malaysia	N/A
R004	Effects of the COVID-19 pandemic on the construction sector: a systemized review	(Ayat & Kang, 2021)	Exploring and providing insights into the impact and changes that have occurred in the construction sector due to COVID-19 and to present a mitigation framework to minimize the effects.	Systematic review	Peer-reviewed articles (Scopus /Web of Sc)	N/A	To compare the level of the impact of COVID-19 in the construction sector in different countries and regions to better understand the impact from regional perspectives.

CODE	RESEARCH TITLE	AUTHOR/ YEAR	RESEARCH ON	METHODOLOGY (M)/SAMPLE SIZE (S)/LOCATION (L)			RESEARCH LIMITATION/ SUGGESTION FOR FUTURE RESEARCH
				M	S	L	
R005	“Covid-working”: what to keep and what to leave? Evidence from an Italian company	(Tagliaro & Migliore, 2021)	Exploring the extent to which Covid-19 has challenged work habits and outcomes. Providing a first interpretation of “Covid-working” phenomenon and elaborate on future real estate strategies and workplace policies based on this experience	Questionnaire survey	90 workers of a publishing company	Italy	Applying more robust methods are desirable to improve generalizability
R006	A study on office workplace modification during the COVID-19 pandemic in The Netherlands	(Hou, Remøy, Jylhä, & Putte, 2021)	Shedding light on the office workplace environment and aims to investigate how organisations respond to COVID-19 impact and how they modify their office workplace management strategically and operationally to suit the stakeholders’ needs and future development in the post COVID-19 period. (Focussing on offices in general)	Interview	5 CRE managers & 3 workplace consultant	Netherlands	It is foreseen that office workplace management will encounter other challenges due to the uncertainties that occur in the post COVID-19 pandemic. Thus, extending the interviews to other countries is desired to allow better generalization.

CODE	RESEARCH TITLE	AUTHOR/ YEAR	RESEARCH ON	METHODOLOGY (M)/SAMPLE SIZE (S)/LOCATION (L)			RESEARCH LIMITATION/ SUGGESTION FOR FUTURE RESEARCH
				M	S	L	
R007	Current situation, challenges and future development directions of facilities management in Kosovo	(Hoxha, Hoxha, & Hoxha, 2021)	Discussing the current situation of FM in Kosovo, identify challenges and recommend new future development directions of the sector with regard to capabilities of facility managers, integration of technology in FM and FM standardization.	Semi-structured interview	20 FM professional with 15&above experience	Kosovo	In order to flesh out any subjective colour that this study may provide, future research directions can focus on observation of the current situation in the industry
R008	Enhancing the role of facilities management in the fight against the COVID-19 (SARS-CoV-2) pandemic in developing countries' public hospitals	(Amos, Au-Yong, & Musa, 2020)	Reviewing of the current COVID-19 pandemic with particular emphasis on developing countries in Africa & demonstrating how facilities management (FM) services delivery in public hospitals can be improved for the fight against the COVID-19 pandemic	Literature review	Current literature	African countries	Conducting future empirical studies on FM and the COVID-19 pandemic.
R009	Facilities management: towards flexible work arrangement (FWA) implementation during Covid-19	(Chua, Myeda, & Teo, 2022)	Examining the key components to facilitate flexible work arrangement (FWA) and the issues and challenges arisen in preparing the workplace for FWA during Covid-19, and recommending better approach of FWA implementation in workplace	Case study & interview	3 offices & 3 interviewees	Klang valley, Malaysia	N/A

CODE	RESEARCH TITLE	AUTHOR/ YEAR	RESEARCH ON	METHODOLOGY (M)/SAMPLE SIZE (S)/LOCATION (L)			RESEARCH LIMITATION/ SUGGESTION FOR FUTURE RESEARCH
				M	S	L	
R010	To work at home or in the office? Well-being, information flow and relationships between office workers before and during the COVID-19 pandemic	(Aidla, Kindsiko, Poltimäe, & Hääl, 2022)	Comparing employee well-being, information flow and relationships with co-workers and supervisors for people working at home and working in different office types before and during the COVID-19 pandemic.	Questionnaire survey	10,085 (2019) & 11,112 (2020) respondents	Estonia	In future research, more detailed information about work facilities at home should be collected and analysed. Main limitations: questionnaires method (do not know how things actually are), country the research was made (generalization)
R011	COVID-19, smart work, and collaborative space: A crisis opportunity perspective	(Hu, 2020)	Approaching the practice of smart work and the making of collaborative space in responding and adapting to COVID-19.	Self-experience & comparison	N/A	Australia	N/A
R012	Possible impacts of COVID-19 outbreak on real estate sector and possible changes to adopt: A situation analysis and general assessment on Turkish perspective	(Tanrıvermiş, 2020)	Examining possible effects and impacts of the COVID-19 outbreak on real estate development and management processes	Content review	main stream news and media, advertisement, comments	Turkey	N/A
R013	Return to normal operations: COVID-19 mitigation strategies for workplaces	(Parker, Boles, Egnot, Sundermann, & Fleeger, 2020)	Describing reopening frameworks, considerations, and strategies that can be used as a starting point for businesses to further optimize and tailor to their unique operations	Literature review	N/A	America	N/A

CODE	RESEARCH TITLE	AUTHOR/ YEAR	RESEARCH ON	METHODOLOGY (M)/SAMPLE SIZE (S)/LOCATION (L)			RESEARCH LIMITATION/ SUGGESTION FOR FUTURE RESEARCH
				M	S	L	
R014	Impact Of COVID 19 On FM Services and Strategies to Overcome This Situation in GCC Countries	(Al Rashdi, Ramaswamy , & Karim, 2020)	Studying on the impact of COVID 19 on FM sector in GCC countries and strategies to overcome the crisis are listed along with the means and recommendation to implement the strategy. (Focussing on the labour side)	Literature review	N/A	GCC countries	N/A
R015	Redesigning the workplace for optimum efficiency: a necessity for post pandemic	(ALAGAH, 2022)	Previewing important literatures on workplace changes, and their economic and social implications. It also shed some light on the impact of the pandemic on businesses and what businesses can do to adapt to the changes in order to remain resilient.	Literature review	N/A	N/A	N/A
R016	Impacts of Covid-19 Outbreak on Civil Engineering Activities in The Malaysian Construction Industry: A Review	(Zakaria & Singh, 2021)	Determining the impact of Covid-19 in civil engineering activities and the construction industry as a whole (focussing on civil engineering & construction)	Literature review	N/A	Malaysia	N/A
R017	The impact of coronavirus (Covid-19) outbreak towards contractors' performance in Malaysia	(Kamarazaly et al., 2020)	Studying the impact of the COVID-19 outbreak to contractors in Malaysia mainly on their work performance.	Interview & questionnaire	306 G7 Contractor	Klang Valley, Malaysia	Future research to focus on other grades of contractor, to include consultant and also developer.

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				M	S	L	
R018	COVID-19 and the Workplace: Implications, Issues, and Insights for Future Research and Action	(Kniffin et al., 2021)	Presenting a broad review of prior research rooted in work and organizational psychology, and related fields, for making sense of the implications for employees, teams, and work organizations with regard to Covid 19.	Literature review, virtual team research	N/A	N/A	To delve deeper on how pandemics are handled in the past.
R019	Pandemic Preparedness in Facilities Management	(Krasaeyan, 2021)	Providing pandemic response strategies and a business continuity plan template to equip facility managers with start-up materials for further preparedness plan development.	Case studies	3 sectors, min 2 case study each	N/A	N/A
R020	Perception of COVID-19 impacts on the construction industry over time	(Rokooei, Alvanchi, & Rahimi, 2022)	Highlighting the evolution of professionals' opinions over time and indicates the importance of construction's agile models to manage unforeseen events such as pandemics.	3 round Questionnaire survey	97 Construction professionals for each round	America & Iran	To conduct the research on other countries to warranty generalization
R021	Revisiting the built environment: 10 potential developments changes and paradigm shift due to COVID-19	(Cheshmeh zangi, 2021)	Exploring the potential development and paradigm shifts in two main sectors of construction and the built environment due to COVID-19.	Expert-led assessment exercise	25 experts for each sector (const. & built env.)	China	To further debate on the paradigm shift by considering different context/sectors

CODE	RESEARCH TITLE	AUTHOR/ YEAR	RESEARCH ON	METHODOLOGY (M)/SAMPLE SIZE (S)/LOCATION (L)			RESEARCH LIMITATION/ SUGGESTION FOR FUTURE RESEARCH
				M	S	L	
R022	A Global Survey of Infection Control and Mitigation Measures for Combating the Transmission of COVID-19 Pandemic in Buildings Under Facilities Management Services	(Sarvari et al., 2022)	Developing effective infection control and mitigation measures to prevent the transmission of COVID-19 pandemic in the built environment.	Online questionnaire	384 respondents	International	N/A

1.5 Scope of Research

This research will revolve around exploring the impact of Covid-19 pandemic towards the facilities management, focusing on workplaces, also the strategic and/or operational responses taken with regards to the identified impacts with the theory of strategic alignment and the CREM strategic alignment model as the basis of the research. This research also intends to look at the perspective of strategic and/or operational responses taken by FM practitioners in Malaysia with regard to the impacts brought by Covid-19. Additionally, as spelled out in the suggested research title, Malaysia shall become the geographical background of this research.

1.6 Significance of Research

The significances of this research are identified as follows:

- i. To address the currently ongoing global issue

Ever since the occurrence of Covid-19 pandemic, the inter-reliant between health and built environment has been apparent (Sarvari et al., 2022). With the ongoing global health issue, the Covid-19 pandemic, and with FM being a part of the built environment, this research is considered an opportunity to further support the moving to health paradigm shift by Drewnowski et al. (2019) plus addressing the current global issue.

- ii. To provide innovative insights

The intended research is trying to form the intervention of FM and CREM by using the CREM strategic alignment model into exploring the impact of external push-factor (Covid-19) towards the FM of workplaces. The intended research may be a platform for further research to be conducted on validating the intervention of FM and CREM.

- iii. To address the geographical gap

Most studies and researches found are conducted overseas. Very limited literatures are found on this topic with Malaysia as its research geographical background.

1.7 Methodology

Due to the exploratory nature of this research, qualitative method is chosen to achieve the previously stated research objectives and to answer the research questions as qualitative research is inductively oriented and is favourable to attain an exploratory goals, to describe complex processes (Guest, Namey, & Mitchell, 2013) and to explain social phenomena including how an organization is functioning (Teherani, Martimianakis, Stenfors-Hayes, Wadhwa, & Varpio, 2015; Williams, 2007). In-depth semi-structure interview method with the facilities managers or the person in charge of the management of the workplaces will be conducted to collect the required data attributable to its ability to provide deeper understanding of social phenomena (Gill, Stewart, Treasure, & Chadwick, 2008). In addition, in-depth interview's open-ended nature that allows researchers to probe during the session as necessary also allows the gaining of more comprehensive descriptions and explanations of experiences, behaviours, and opinions from the participants (Guest et al., 2013). Guest et al. (2013) also suggested that qualitative in-depth interview offers a narrative that is rich in information unlike offered by quantitative approach with a set of survey questions in which response categories are predetermined. It also enables researchers to obtain information that is not anticipated due to its open-ended nature (Guest et al., 2013).

To analyse the gathered data, content analysis will be conducted. Content analysis aims to provide information and understanding of the phenomenon under the study as it focuses on the characteristics of language as communication while paying attention to the text's content or its relative meaning (Hsieh & Shannon, 2005). This analysis approach is chosen as it can be used to analyse all types of written texts despite the materials' origin (Bengtsson, 2016) either in verbal, print, or electronic form or ones obtained from narrative responses, open-ended survey questions, focus groups, observations and, particularly related to this research, interviews. (Kondracki, Wellman, & Amundson, 2002). Furthermore, content analysis will reduce the risk of confusion in matters regarding philosophical concepts as it requires lesser rules to abide and is not linked to any particular science (Bengtsson, 2016). These strengths are believed to elevate the chosen methodology towards achieving the research objective.

1.8 Dissertation Structure

There will be five main chapters of this research and the dissertation structure are as the following:

Chapter 1: Introduction

This chapter provides an overview of the research by describing the research background together with the problem statement of this research. Also, the research objectives are stated following the research questions. A general explanation on the methodology to be applied for this research is also included.

Chapter 2: Literature review

In chapter 2, a literature review related to the research topic will be presented. The literature review will be structured based on the research objectives to provide general ideas plus to enhance the understanding on the research topic and the current situation related to the research topic. It is also meant to give the readers a vague idea on the framework of this research.

Chapter 3: Research methodology

Chapter 3 will practically describe, in depth, the methodology employed to gain the data required for this intended research. A journey-like structure will be portrayed to give better understanding on how the data collection will be conducted and how the data will be analyzed.

Chapter 4: Data analysis and results

Following the conduct of research methodology, this chapter will accommodate the presentation of the results of the data analyzation.

Chapter 5: Discussion

Chapter 5 will accommodate the discussion on the results obtained from the data analysis. Interpretive elaboration will be included regarding the topic to answer the research questions.

Chapter 6: Conclusion

Chapter 6 acts as a closure for the intended research dissertation whereby a conclusion is derived from the research and few recommendations are made to improve researches with similar research area in the future.

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