

Post Covid: Redefine physical work environment in Coworking Space

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Gig economy has been arising due to covid 19 pandemic hit as people starting to work remotely and high demand on flexible working place. Previous studies highlight on the factors of work environment influencing user satisfaction in coworking space. However, there is a limited study on the physical environment in the coworking space due to current pandemic crisis. Therefore, my study will identify new typology of space planning in coworking space that need to be adapt on current endemic situation to cater healthy working environment in the future. In this research, content analysis will be used as the research inquiry on the characteristic on current coworking space and questionnaires survey will be conduct on the identifying the element that can be improve in designing current coworking space due to endemic situation. Hence, this research will explore on the design guideline on current physical environment in coworking space to fulfill users satisfaction in term of wellbeing and health safety. Contribution and benefits of this study are coworking space can be sustain with healthy environment and support on economic growth. Future research can add more variables to the existing study by integrating entertainment space in coworking space.

Keywords: Post Covid, Coworking Space, Physical, Work Environment

1. INTRODUCTION

Background Study

The gig economy is an economic model dependent on freelancers or “giggers”, whose services are based on skills, short-term contracts and freelance or flexible employment, often involving connecting customers through online platforms. Due to the rise of digital platforms and the Internet, especially in recent times since the Covid-19 pandemic hit and many got laid off, working part-time and freelancing have always been a practice and participation in the gig workforce gained popularity among people in Malaysia. Besides, various economic reasons may influence the development of the gig economy. Factors behind this trend in Malaysia are the extremely high cost of living and incompatible full-time wages, as well as the shortage of highly

skilled labour. Gig economy is essentially a wide group of part-timers and freelancers engaged on a contractual or ad-hoc basis. People from different backgrounds participate in the gig economy to either earn additional income or have a career that offers flexibility. The gig economy is also known as on-demand employment on a short-term basis via digital platform technologies (Lobel, 2017).

Problem Statement

According to Malaysian Reserve (2021), Coworking space industry is expected to see exponential growth in the coming years as more Malaysian are shifting towards the new world concept of working which is flexibility in term of workplace, area and time. There is a high demand to accelerate post lockdown as working from home experiment has proven its viability to be a new workplace or permanent feature of working

culture. Hence, Coworking space are becoming ideal place for these people as they will be able to check in to whichever outlet they choose, using the facilities as and when they need to in flexible way. There are several studies are looking into the physical work environment and support services of the coworking space that may affect users satisfaction (Riratanaphong C,2021) and coworking values positively affects social involvement and the diversity of knowledge exchange, and individual creativity (Rese A et al,2021).

GAP

Previous studies had shown the rising of coworking space are high in demand before the pandemic effect. Besides, it also stated on the characteristic of coworking space such a place for collaborative workplace, social interaction place including the satisfaction of the users on the current coworking space. However, there are no research done to determine the usage pattern on the current coworking space before and after the pandemic effect in Malaysia. Coworking space are known to be high demand place for future hybrid workplace as people are shifting toward working remotely from traditional office and it is a need to identify the user's preference and satisfaction to be adapt in pandemic situation.

2. LITERATURE

2.1 Characteristic of Coworking Space

Coworking Space are referring to a place whereby people are searching for a flexible working place through remote working due to the rising of digital economy. The functionality of the place are mainly for people that are looking into networking, socialize, collaboration and also their third place with sharing facilities that surely minimize cost compared to traditional offices. Besides, coworking space serve as a place for better working environment in term of productivity, individual performance and health related aspect to the users.

According to Bouncken (2021), coworking spaces began as a place of open social interaction, collaboration, entrepreneurship, and innovation for freelancers, new ventures, and solo entrepreneurs, while Cho (2020) defined coworking as people working and sharing the

same facilities, resulting in social interaction to form a community. Futhermore, Huss N (2020) also explain that coworking spaces are the appropriate places for entrepreneurs and small business to construct their remote teams and establish flexible work operations in a pleasant environment with the ideal shared workspace. Regardless of physical constraints, everyone gets equal access to the benefits of coworking spaces. The open floor plan of many coworking spaces makes it easy to move around and collaborate.

According to Co-worker Mag (2020), coworking spaces range from multi-use spaces with flexible layouts, visual art studios in repurposed industrial buildings, purposefully designed coworking spaces with ergonomic wonders to keep you comfortable while you work to private offices for those who prefer their own space but still want to feel connected to the wider ecosystem or small start-up teams who wish to play in the same space.

2.2 Work life balance

As people are shifting towards working remotely not only focus to the SME, freelancers and corporates, coworking space have to be evolve in different ways that can cater for all users including people that are searching for temporary workplace. Besides, accessibility and locations of the coworking space will give impact on the users as people are start working from home and suburban area which near to their homes. These trends, according to Yu (2019), would undoubtedly result in significant changes such as flexible working hours, modified workplace business operations, various urban facility requirements, and new workplace location alternatives. Coworking spaces in public libraries, business districts, and other urban venues, according to Zhao (2020), will bring in significant changes in the way people work in cities while future developments for the coworking business model and its geographic dynamics, according to Ceinar (2021), are put forward together with legislative implications. As per a survey conducted by Jerry (2021), getting delayed in long traffic jams at 6 p.m. or the dreaded long trips by LRT or bus are the worst. According to the TomTom traffic index, Malaysians spend 25 minutes in traffic for a 30 minutes' drive in pre-pandemic days. Booking a coworking space close to home or in the middle of the office not only reduces commuting time but also relieves the

stress that comes with a long trip due to heavy traffic.

Furthermore, according to San José, C. A. de. (2021), the reports stated suburban coworking spaces will benefit the most in a post-pandemic future. Many people are opting to leave big cities in favour of more suburban and affordable places as remote work becomes more popular. Hence, study by Gardiner A. (2021) stated that while some workers gain from more flexibility, more time with family, less weariness, and increased productivity, others may suffer negative mental health consequences as a result of longer hours, increasingly blurred lines between work and home life, and inadequate employer support.

2.3 Work environment hygiene and safety

Robelski (2019) stated that it is advised that aspects of work environment and ergonomics be further emphasised in order to establish a health-promoting and enjoyable workplace. The disease are exist and it is important to make sure that workplace environment are always in good hygiene condition and to meet the users preference and satisfactions during their working hours. Comfort and atmosphere, as well as cleanliness and safety, are particularly crucial for the process, according to Gruenwald (2020). The physical evidence stated location in terms of access and the facility itself allows the coworking space to function with a mix of management, staff, and users.

According to Suharjanto (2017), the concept of biophilic design, according to him, is a design strategy that strives to create coworking spaces that can relieve stress and enable mental and physical therapy to users. Supported by Bayuadi (2020) these findings and study, according to him, form the foundation for further and in-depth research on contextual and cultural fit of outdoor coworking spaces.

2.4 Pandemic effect on Co-working space

Pandemic Covid 19 are here to stay in our daily life. It has affect on the way we live and how

we work in the future. Health and safety are becoming important measure for the users to sustain working with hygiene, safety and comfortable place by taking consideration on minimize the spreading of the virus. Others have indicated that the widespread use of remote working will boost the coworking market as more individuals become accustomed to working away from the office, according to Jones (2020). San José, C. A. de. (2021) also stated that companies embracing hybrid work models are implementing flexible workspace solutions into their real estate strategy to respond to the needs of remote workers across cities and nations.

Konya K. (2022) then highlight that while the coworking space will remain open for the time being, there are several steps that operators can take to ensure the members' safety. Co-worker Mag (2022) further emphasized that companies should expect a social distancing strategy to be in place within coworking spaces as they resume operating the business. With the use of a changed office layout and more separated workstations, this would entail keeping a minimal physical distance between co-workers at all times. He also predicted that office areas will be littered with sanitizers and tissue boxes (no pun intended). The restrooms will be cleaner than they have ever been. Coworking policies relating to sanitation will need to be amended, and new signs will be prepared to encourage co-workers to wash their hands on a regular basis.

Furthermore, Mayerhoffer (2021) also mentions that coworking spaces are experimenting with business adaptations, including a major transition to the digital world. and supported by Akhavan (2021) emphasized the importance of providing a complete assessment of studies on coworking spaces and maker spaces as alternative work spaces in the context of the digital age and the emergence of the sharing economy.

Table 1. Summary of Literature Review

Articles	Background study	Problem statement	GAP	P.O.D	Methodology	Results	Conclusions	Remarks
Bouncken (2021) - Coworking spaces: Understanding, entrepreneurship, and innovation for sociomateriality	Coworking spaces started with the idea of a melting pot of open social interaction, collaboration, entrepreneurship, and innovation for entrepreneurs, new ventures, or solo entrepreneurs.	Companies may use coworking spaces to invigorate targets and further motivate and inspire their employees.		Our sociomateriality perspective helps to analyze conditions in coworking spaces and guides suggestions on how companies revitalize by using coworking spaces.	Fundamental to achieving space's interior design and architecture that incorporates emotional and social values that may benefit companies	The purposeful design of the different social and work areas in coworking spaces can improve communication, collaboration, and innovation in companies.		However, this research did not talk about the space planning in coworking space that need to be improve in the future workspace.
Cho (2020) - Analyzing Spaces for Social Interaction in Coworking Space: A case study on Common Ground Damansara Heights	Coworking is defined as people work and share the same facilities; creating social interaction to form a community, focusing on market value and revenue.	Through literature publication in Asia, most of the studies are focusing on market value and revenue.	lack study on social interaction topic.	This study aims to analyse spaces for user social interaction in coworking space in Common Ground Damansara Heights.	it identifies types of social interaction in coworking space. Site observation and data are analysed to determine the availability of spaces for social interaction.	This conclusion informs suggestion to designers and academics on consideration in coworking spaces for user to socialise.	This conclusion informs academics to designers and academics on consideration in coworking spaces for user to socialise.	However, the study only focusing on user's social interaction but still lacking on understanding the space planning in coworking space for future generations.
Third Place - Work: A Multidisciplinary Review of the Literature on Coworking Spaces and Maker Spaces	Given the growing importance and worldwide diffusion of new workplaces, this chapter presents an interdisciplinary overview on the core topic of this book through an up-to-date literature review of the phenomenon of emerging workplaces, more specifically coworking spaces and maker's spaces	to provide a comprehensive review of research on coworking spaces and maker spaces as 'third places' for work, which are becoming alternative solutions within the context of the digital revolution and the rise of sharing economy.	workplaces are considered as crossroads with different disciplines of business/management, economics, geography, sociology, planning, and other sciences	focused on several aspects of coworking spaces and maker spaces, which can be grouped in the following categories: (i) spatial characteristics (typologies and location factors); (ii) coworkers and socio-economics patterns (proximity features; social interaction and community making; economic performance; well-being); (iii) effects on the urban context in cities of different sizes	studies conducted by scholars in varied fields, which are published in journals or presented in conferences, as well as unpublished thesis and working papers within the period 2001–2019	building a theoretical foundation, while highlighting the gap in the literature and proposing future research lines	building a theoretical foundation, while highlighting the gap in the literature and proposing future research lines	However, the study only focus on spatial characteristics, coworkers and socio-economic patterns, and effects on the urban context in a city but it is still lacking on understanding in designing space planning that meet criteria for future workspace.
Jones (2020) - OpenWork Agency The Future of Coworking?	Over the past several months of the Covid-19 crisis much has been written about the potential demise of the coworking industry.	Likewise, others have suggested that the mass adoption of remote working will actually benefit the coworking industry as more people become accustomed to working away from the office. It is too early to know with any certainty what the future of the industry will look like, but there are economic and behavioral factors that we can look at to guide our understanding of what might happen.		In this white paper we look at the challenges that the coworking industry faces in light of the current crisis, and provide three scenarios that explore what might unfold in the coming years	Each of the three scenarios will require adaptation and innovation among coworking operators, some more than others.	The analysis and guidance presented here is not presumed to be definitive or final, but rather the perspective of our firm at this point in time.	The analysis and guidance presented here is not presumed to be definitive or final, but rather the perspective of our firm at this point in time.	However, the study only focus on the coworking industry to be sustain in the future with current crisis but there is lacking on the space planning that can be adapted for future coworking space regarding the crisis.
Gruenwald (2020) - Coworking in Germany during the Covid-19 Crisis Utilized for Homeoffice and Homeschooling	The virus that was first identified in December 2019 in Wuhan, China spread worldwide. In mid-January 2020, the first case of SARS-CoV-2 in the U.S. was reported in Snohomish County Washington State. In Germany the first SARS-CoV-2 case was reported January 27, 2020 in Landkreis Starnberg close to Munich, Bavaria.	These lockdowns resulted in many times parents and children had to share a computer and an internet or Wi-Fi connection. So no wonder that as soon as coworking spaces (CWS) opened again many people shifted from home to CWS.	This is a grounded theory study in nature which explores the users' perceptions of coworking spaces	To capture the perception of coworking spaces (CWS) users during the covid-19 crisis for homeoffice and homeschooling purposes in terms of process, physical evidence and people components of the service marketing mix.	We included 200 respondents (age range 18-88 years) who used the different services of various types of coworking spaces for entertainment, business and education purposes as employees, entrepreneurs, retirees or students.	Very important for the process are comfort and atmosphere together with cleanliness and safety (Mean 3.48, SD 1.31, r = 0.529). The physical evidence mentioned location in terms of access and the facility itself (Mean 3.54, SD 1.11, r = 0.650). People (Mean 3.31, SD 1.27, r = 0.619) make the difference between staff and customer mix.	Coworking spaces received a big boost during the covid-19 crisis after initial lockdown and will continue to grow in the New Normal with homeoffice and on-line learning becoming the norm while CWS focus on process, physical evidence and people mix.	However, this study only focus on user's perception towards coworking space but this research did not talk about the intervention on the space planning in coworking space with Covid 19 crisis.

Table 1. Summary of Literature Review (con't)

Bayuadi (2020) - Pengambilan Taman Kota dengan Outdoor Coworking Space Pasca Pandemi Covid-19	In the state of the covid 19 scourge currently sweeping the world, adaptation is a concern for any element especially in public activity space and room	The existence of Covid 19 in parallel with digital economic growth has urged the importance of health and the change of working environment from the society from static to flexible whether in their home or public space as the health protocol need to be follow.	to obtain research results regarding an urgency of need for public space with its elements and facilities that support productive culture of students & workers in the industrial world 4.0, especially in Indonesia.	This study uses descriptive qualitative methods with analysis of field observations, questionnaires, descriptive, and literature studies. The statistical method used is using ordinal variable measurement.	These results and research are the basis that it is necessary and urgent of outdoor coworking space to carry out further and in-depth research on contextual and cultural appropriateness	It is appropriate to be applied and become a support in Indonesian preparation to compete with the global world in the 4.0 Industrial Revolution Era and post-covid adaptation of social interaction in Nganjuk City Park.	However, the study is still lacking on the design guideline for space planning in coworking space in this pandemic situation.
Centar (2021) - The Effects of Covid-19 on Coworking Spaces: Patterns and Future Trends	The Covid-19 pandemic has altered the way of working, the habits and lifestyle of every citizen worldwide	most of the service workers had to move from traditional work in the office to work at home through remote or tele-working	to explore the effects of the Covid-19 pandemic on coworking spaces	the results of an international survey addressed to coworking managers	future trends for the coworking business model and its location dynamics are put forward together with policy implications	future trends for the coworking business model and its location dynamics are put forward together with policy implications	However, the study only focus on future coworking business model and its location but did not talk about the future space planning in coworking space.
Mayerhoffer (2021) - The impact of Covid-19 on coworking spaces: evidence from Germany	German coworking industry has grown rapidly as one of the fastest-growing coworking markets globally	The pandemic, however, has brought the industry to an abrupt halt	to explore the impact the pandemic has had so far on German coworking spaces	Using an online questionnaire, quantitative data from 38 coworking space owners, operators and employees of a total of 77 spaces in Germany has been collected regarding their situation before, during and after the peak of the first wave of the pandemic from Spring until Summer 2020.	The reported income losses significantly outweigh a decrease in costs of the member base seems rather unaffected, and coworking spaces are exploring adaptations to their businesses with a strong shift to the digital environment	This paper provides a first necessary overview for the industry as well as the academic field to allow for action to be taken in designing space planning in coworking space with covid 19 effects.	However, the study is still lacking on the exploration in designing space planning in coworking space with covid 19 effects.
Robelski (2019) - Coworking Spaces: The Better Home Office? A Psychosocial and Health-Related Perspective on an Emerging Work Environment	With the ongoing flexibilization of work, new trends concerning work outside the company's premises such as coworking spaces are on the rise. Coworking spaces are designed to offer collaboration and community in furnished and equipped workspaces on a rental base	can the coworking space be seen as a better alternative to the home office in terms of work- and performance-related, social, environmental and health-related aspects	The present study adds to the latter by examining psychosocial demands experienced by coworkers in Germany	There is a growing body of scientific literature on coworking spaces with empirical results of qualitative and quantitative research.	Results showed moderate to low psychosocial demands regarding quantitative workloads. Compared to the home office, the coworking space proved to be the preferred work arrangement. Coworking spaces can be seen as an alternative to the home office that was highly valued in the present sample	It is recommended to further emphasize aspects of work environment and ergonomics in order to create health-promoting and satisfying workplaces.	However, the study is still lacking on understanding to creating health-promoting and satisfying workplace by design guideline on space planning in coworking space.
Yu (2019) - Exploring Impact of Future flexible working model evolution on urban environment, economy and planning	Working models are changing, evolving over several decades towards flexibility and mobility. Major cities are witnessing emerging alternative workplace models, such as coworking spaces, digital working hubs, on-demand spaces, and office clubs.	These trends inevitably bring significant changes of flexible working hours, modified workplace business operations, different urban facilities requirements, and new workplace location options.	to explore the impact of future flexible working model (FWM) evolution on the urban environment, economy and planning.	the current paper adopts a systematic literature review method, discusses the historical evolution and various types of FWM, and explores the impact of such FWMs on urban environment, economy and planning	This research leads to enhanced understanding, planning and management for the future challenges of next-generation working models in major cities, and brings potential direct benefits to urban development and the economy	This research leads to enhanced understanding, planning and management for the future challenges of next-generation working models in major cities, and brings potential direct benefits to urban development and the economy	However, the study only focus on the impact of flexible working model on urban environment, economy and planning but did not talk about the design guideline on space planning in coworking space.

3 CONCEPTUAL FRAMEWORK

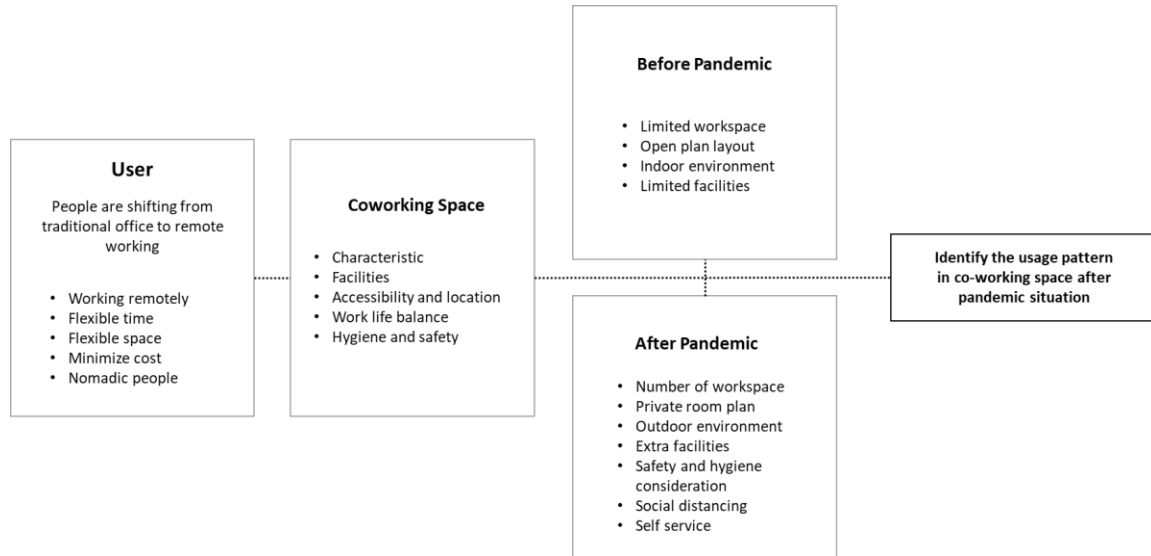


Figure 1. Model of Conceptual Framework

4 CONCLUSION

In conclusion, coworking space are not only a space for social and collaboration to the users. Beside functionality of the space, we need to take care of the user's satisfaction while using the space. Furthermore, in this recent time as covid 19 pandemic hit, the workspace need to be explore on new physical work environment due to the covid 19 effect in order to stop the disease spread among the users and society. As malaysian government also are looking foward to stregthen the gig economy, providing a workplace with safe and healthy working environment can create a sustainable gig community in the future.

4.1 Recommendations for further research

This study only limit to the identifying the usage pattern in coworking space in term of physical work environment to be adapt after pandemic situation. However, future research can conduct on the design guideline for coworking space to be adapt on the pandemic crisis.

5 REFERENCES

- Akhavan, M. (2021). *Third Places for Work: A Multidisciplinary Review of the Literature on Coworking Spaces and Maker Spaces* (pp. 13–32). https://doi.org/10.1007/978-3-030-63443-8_2
- Aslam, M. M., Bouncken, R., & Görmär, L. (2021). The role of sociomaterial assemblage on entrepreneurship in coworking-spaces. *International Journal of Entrepreneurial Behavior & Research*, 27(8), 2028–2049. <https://doi.org/10.1108/IJEBR-07-2021-0564>
- Bayuadi, M. W. (2020). Pengembangan Taman Kota dengan Outdoor Coworking Space Pasca Pandemi Covid-19. *ARSITEKTURA*, 18(2), undefined-undefined. <https://doi.org/10.20961/ARST.V18I2.44479>
- Bouncken, R. B., Aslam, M. M., & Qiu, Y. (2021). Coworking spaces: Understanding, using, and managing sociomateriality. *Business Horizons*, 64(1), 119–130. <https://doi.org/10.1016/J.BUSHOR.2020.09.010>
- Ceinar, I. M., & Mariotti, I. (2021). *The Effects of Covid-19 on Coworking Spaces: Patterns and Future Trends* (pp. 277–297). https://doi.org/10.1007/978-3-030-63443-8_15
- Cho, K. Y., Ibrahim, F. I., & Zubir, Z. (2020). Analyzing Spaces for Social Interaction in Coworking Space: A case study on Common Ground Damansara Heights. *Environment-Behaviour Proceedings Journal*, 5(13), 379–386. <https://doi.org/10.21834/e-bpj.v5i13.2068>
- Gruenwald, H. (2020). Coworking Spaces in Germany during the Covid-19 Crisis Utilized for Homeoffice and Homeschooling. *South Asian Journal of Social Studies and Economics*, 57–67. <https://doi.org/10.9734/SAJSSE/2020/V8I430219>
- Jones, D., & Partner, F. (2020). *OpenWork Agency The Future of Coworking?* <https://openwork.agency>
- Mayerhoffer, M. (2021). The impact of Covid-19 on coworking spaces: evidence from Germany. *Journal of Corporate Real Estate*, 23(3), 170–185. <https://doi.org/10.1108/JCRE-10-2020-0044>
- Robelski, S., Keller, H., Harth, V., & Mache, S. (2019). Coworking Spaces: The Better Home Office? A Psychosocial and Health-Related Perspective on an Emerging Work Environment. *International Journal of Environmental Research and Public Health*, 16(13), 2379. <https://doi.org/10.3390/ijerph16132379>
- Suharjanto, G., Taufik, C., Mariana, Y., & Suryawinata, B. (2020). The implementation of biophilic design in co-working space design as a concept of healthy sustainable architecture. *IOP Conference Series: Earth and Environmental Science*, 426(1), 012090. <https://doi.org/10.1088/1755-1315/426/1/012090>
- Yu, R., Burke, M., & Raad, N. (2019). Exploring impact of future flexible working model evolution on urban environment, economy and planning. *Journal of Urban Management*, 8(3), 447–457. <https://doi.org/10.1016/j.jum.2019.05.002>
- Zhao, F., Prentice, C., Wallis, J., Patel, A., & Waxin, M.-F. (2020). An integrative study of the implications of the rise of coworking spaces in smart cities. *Entrepreneurship and Sustainability Issues*, 8(2), 467–486. [https://doi.org/10.9770/jesi.2020.8.2\(28\)](https://doi.org/10.9770/jesi.2020.8.2(28))