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Literature Review: The Effects of Covid-19 Pandemic-Driven Home Behavior in Housing Preference

ABSTRACT

This literature review is aimed to identify the possible correlation between the Covid-19 pandemic and housing preferences. It is known that the pandemic impacts human activities and has an indirect effect on housing selection. We used a qualitative method by reviewing 52 papers and articles related to the pandemic and residential real estate from March 2020 to May 2021. The review indicates that the Covid-19 pandemic has induced housing preferences from these aspects: fear of meeting people, fear of economic recession, and stay-at-home lifestyle. The pandemic increases people's needs to control their living space, including personal safety space, house expenses, and the use of home space. This review will benefit real estate developers in Indonesia as a lifestyle reference regarding the design of healthy residential buildings, especially in the post-pandemic future.

***Keywords:** Covid-19 pandemic; Housing preferences; Real estate*

INTRODUCTION

The Covid-19 pandemic has been hitting the world since early 2020, and up until mid-2021, it is still not over. There are approximately 183 million confirmed cases globally and 3,97 million deaths as of 28 June 2021, which has not ended yet (World Health Organization, 2021). The research by Wang et al. (2020) argued that the three sequences of the pandemic: confirmed cases, recovered cases, and death cases, have reached their curve peak and will be going downward; an indication that the pandemic will eventually end (Wang et al., 2020), although the research concluded no exact date. Still, the pandemic effect on the global economy is harsh and unprecedented. The economic shock is massive and sudden, while the severity is relative to mortality (Altig et al., 2020).

One of the affected sectors which had experienced a return decrease in 30 days before and after the pandemic began is real estate, according to Indonesian stock exchange market research (Herwany et al., 2020). However, this is not necessarily the same in other Asian countries. While real estate sales activity in Jakarta remains slow from 2020 until 2021, Beijing, Shanghai, Bangkok, and Hong Kong experienced an increase in the first quarter of 2021 (JLL, 2021). In Bangkok, the demand is higher for 2-3 bedroom units, and in Hong Kong, reasonably priced projects are well received by the markets (JLL, 2021). Outside Asia, the demand increases occurred in the US real estate market as well. Demand for houses that previously dropped in

February 2020 recovered in June 2020 (Balemi et al., 2021). The social distancing policy may increase the customers' interest in privately owned landed houses in rural areas instead of apartments in the cities (Balemi et al., 2021). This statement indicates that the pandemic might have created changes in housing preferences despite location.

The available research of the Covid-19 pandemic effects has focused on topics such as career anxiety (Mahmud et al., 2020), economics (Bonaccorsi et al., 2020), and various socio-economic aspects (Nicola et al., 2020). Regarding its impact on real estate, there are studies by Goodman & Magder (2020) on residential rental markets, Del Giudice et al. (2020) on the housing prices, and Zhai & Peng (2021) on profitable location analysis. Various research on housing preferences focused on topics of demographic such as investors (Wright & Yanotti, 2019), consumers and developers (Mulliner & Algrnas, 2018), and young commuters' families (Farraz & Barus, 2019). Most of the pandemic impact-related topics from previous literature focused on health and broad economic context, while the real estate topics mainly explained the transaction. There has not been much research on the correlation between the pandemic and consumer preferences in the real estate market. This study aims to provide a comprehensive review of this topic based on the homeowners' perspective. The scope area of this study is limited to Jakarta, Indonesia, with references from other countries worldwide due to the few sources dealing in local context. The real estate developers' take on this issue is not being discussed as it is more practical and not much theoretically written in literature, other than market sales reports. The review is expected to benefit related stakeholders in addressing the shifted preferences applicable to the post-pandemic residential real estate market. As the perspective used in this study is architecture, the discussion will focus on the "real estate" aspect of building and land plot; instead of "property," which commonly includes the use and ownership rights topic.

METHODS

This study utilized a qualitative research method of literature review—the reviewed topics including the Covid-19 pandemic, real estate economics during the pandemic, and housing preferences. The literature was sourced from scientific papers and articles published from March 2020 to May 2021. Over 130 works of literature with keywords: Covid-19 pandemic impact, housing property or real estate, and housing preference were reviewed at the beginning of the research. The sources then narrowed down to 52 papers that significantly built the discussions in

this paper, alongside additional references. From this process, the study compiled three main focuses used as the topics of discussion: fear of meeting people, fear of economic recession, and stay-at-home lifestyle.

RESULTS AND DISCUSSION

a. Real estate in the context of pandemic

The pandemic encourages people globally to make significant changes in their lives, work, and travel activities, especially in urban areas (Stier, 2020). Avoiding physical contact and reducing interaction between individuals to prevent the virus from spreading or 'physical distancing' is mandatory worldwide (Pawar, 2020), including in Indonesia who established Government Regulation no. 21 of 2020. Indonesia's social distancing policy was applied in March 2020, although it is considered late and not practical because the confirmed cases were increased already (Susanna, 2020). One of the actions supporting physical or social distancing is the social restriction policy. According to the Indonesian government, the social restriction is defined as the limited activities in public places and transportations (President of the Republic of Indonesia, 2020).

The general outlook of real estate in the context of the pandemic might take precedence from the SARS, as the social distancing policy is similar to SARS quarantine (Hung, 2003). The Severe Acute Respiratory Syndrome (SARS) is a viral respiratory disease caused by a SARS-associated coronavirus (World Health Organization, 2021) which was previously occurred in 2003 in China and spread to 29 other countries with 8422 cases (Cherry and Krogstad, 2004). During the SARS pandemic, the urgency of healthy residential buildings and public awareness of the importance of health and the built environment in Hong Kong were increased (Baldwin, 2006). One example was Amoy Garden, a housing complex in Hong Kong, which had its occupants contracted SARS through the building's poor bathroom drainage (Hung, 2003) and a waste system that sends viruses to the units at the lower floors (Wu & Ping, 2020). The Building Health and Hygiene Index of Hong Kong then provided incentives for building owners to improve their design and management. Subsequently, studies have shown that most residents are willing to spend more money on healthy buildings, which drove architects, consultants, and developers to look for more healthy building designs (Baldwin, 2006). The preference towards healthy buildings also urged construction for new buildings and significant rehabilitation of the old buildings (Baldwin, 2006).

The real estate situation in the Covid-19 pandemic is illustrated in a report by an international market research company, Jones Lang LaSalle (JLL). It was stated that retail and shopping centres are fully or partially closed due to the social restriction policy. Although some businesses that operate at shopping malls have adapted by either being temporarily out of service or providing delivery service, mall construction and expansion projects had to be postponed (JLL, 2020). Meanwhile, the demand for temporary condos weakened in the residential real estate sector while landed houses were stable (JLL, 2020). Another research supported this statement that stated an increase in the demand for new settlements in suburban areas (Tanrıvermiş, 2020) while the demand for apartments in the cities decreases (Balemi, 2021).

In Indonesia, housing preferences were determined initially from the accessibility to public transportation modes and the toll road, shopping centres, schools, and hospitals (Kurniawan et al., 2010). Before the pandemic, in 2019, Coldwell Banker Commercial Indonesia (2019) stated that the ongoing MRT and LRT construction influenced the increased apartment occupancy, dominated by the middle-income segment. However, the social restriction policy forces people to work from home and closed offices and commercial places. The residential and office real estate sectors that were once separate now overlap (Mahmud et al., 2020). Thus, the accessibility to public transportation modes may no longer be the primary determinant of people's housing preferences because there is no need to commute to offices and commercial places.

b. Housing preferences

Homeownership is generally based on needs and preferences (Kam et al., 2018), while the preference is divided into house-adapting behaviour and house type (Jansen et al., 2011). The term 'preference' is defined as "the relative attractiveness of an object" (Jansen et al., 2011, p. 2). This preference and need varied according to the homeowner's background, e.g., age, education level, family members, marital status, culture, and adopted values (Kam et al., 2018). However, some preferences were built adjusted to mobility, residential, or family factors (Morris & Winter, 1975). This adjustment is referred to as home adjustment behaviour theory, in which residents evaluate the house they are currently living in. When the house's condition does not adhere to the occupants' satisfaction or norms, housing adjustment is more likely to occur (Morris & Winter, 1975), changing their preference on houses. Therefore, the home adjustment behaviour theory may assist in understanding how housing preferences might have changed because of the pandemic.

In the pandemic context, the home adjustment behaviour that might occur because the pandemic, according to UNCTAD (2020) and Wang & Tang (2020) in Tanrıvermiş (2020), is in the process of becoming a permanent part of people's lives and activities. People's perspectives and attitudes towards various things, ranging from lifestyle, work, and interactions with other people, have changed (Stier, 2020 in Sethi & Mittal, 2020). People now have reduced participation in communal activities outside their homes. They also began rearranging expenses to cope with the uncertainty of the future while still making use of space available for the multi-activities that the whole family member, or occupants living in that house, might require. These adjustments are translated into three aspects: fear of meeting people, fear of economic recession, and the stay-at-home lifestyle. The categorization of literature reviewed in this study based on type and topics of discussions is presented in Table 1. From 46 sources, we narrowed it down to only 16 papers and articles that support the specific parameters.

Theoretical	Empirical	Policy	Real Estate Market Reports
Fear of meeting people			
Virus transmission in public places - Kang (2020); Wu & Ping (2020)	[non-residential area] Anxiety UK (2020)	Sethi & Mittal (2020)	-
High-risk locations - Stier et al. (2020)	Cheung et al. (2021)	-	-
Fear of economic recession			
House expense reduction – [no result]	[interview] Arcaya et al. (2020)	Goodman & Magder (2020)	JLL (2020)
The need of house with resilient price – [no result]	[interview] Arcaya et al. (2020)	Tanrıvermiş (2020)	JLL (2020)
Houses in location with lower price – [no result]	[interview] Arcaya et al. (2020)	Sethi & Mittal (2020)	-
Stay-at-home Lifestyle			
The need of larger home size - Amerio et al. (2020)	-	Sethi & Mittal (2020)	-
The need of outdoor space - Amerio et al. (2020)	Zarrabi et al. (2021)	Freeman & Eykelbosh (2020)	-

The need of green view - Amerio et al. (2020)	Spano et al. (2020)	D'Alessandro et al. (2020)	-
The need of good indoor quality - Amerio et al. (2020)	López (2021)	López (2021)	-

Table 1. Literature Review Table*b.1. Fear of meeting people*

Fear is related to humans and space. In general, fear creates anxiety which causes people to change their lifestyle, such as the place to live, work, or build their house with a particular design (Abodunrin, 1981 in Agbola, 2013). In an architectural context, the defined fear in this study is fear caused by the surrounding external factor, not the social anxiety disorder. The external factors that are causing fear include catching the virus directly (57%), using public transportation (49.3%), going to public places (47.5%), going shopping (45.9%), returning to workplaces or schools (45.8%) and attending social gatherings (45.6%) (Anxiety UK, 2020). The fear of directly catching the virus means people are afraid of meeting other people aside from those living with them at the same house. Even when they are wearing a mask, people are constantly walking at apparent distances between others. Presumably, this fear would be reduced as homeowners control who enters their houses when they are at home. However, residential types with common service areas, such as apartments or condominiums, are deprived of this control.

Bumping into someone is common and unavoidable in apartment or condominium buildings (Foth & Sanders, 2005). The elevators, swimming pools, car parks, and parks are places where interactions between strangers are frequent. Therefore, the level of fear experienced by people living in this residential must not have lessened even though they are practically at home before they genuinely have entered their respective units. They are afraid of contracting the virus from these service areas, for example, at the elevator when someone who was not wearing a mask just took off of the elevator seconds before the other is using it (Kang, 2020). This statement is consistent with the arguments that high-density residential apartment buildings are more prone to virus infections (Sivam & Davis, 2012; Stier et al., 2020; Zhai & Peng, 2021) than others. High-density residences should accommodate the minimum housing density standard to provide a healthy living environment. According to the Indonesian regulation, the minimum density standard is 9 m² per person (Minister of Housing and Regional Infrastructure of the Republic of

Indonesia, 2002). It is also suggested that the circulation and common areas be supervised to ensure no crowding inside closed spaces. Cheung et al. (2021) also revealed a phenomenon where people's preference of avoiding high-density regions leads to a change in house sales locations.

b.2. Fear of economic recession

The Covid-19 pandemic was dubbed the new cause of poverty, especially in developing countries which unable to implement a similarly restrictive policy like first-world countries did (Buheji et al., 2020). Globally, thousands of workers experience changes in work activities that affected their income. Some people experienced salary reduction, others were not affected, and the rest had to be laid off. This change in employment has affected their ability to pay, for example, bills, rental fees, and the mortgage. The uncertainty of the economy has triggered several reactions, such as in Massachusetts, where residents were pressured to move out during the pandemic (Arcaya et al., 2020). The government of the United Kingdom (BBC News, 2020) and the U.S. (Goodman & Magder, 2020) addressed this situation by providing cash assistance as collateral for housing rent. The government gave this assistance to those experiencing financial difficulties during the pandemic and recommend postponing negotiations between real estate buyers and sellers mainly because of fears of an unpredictable economic crisis (Lawford, 2020). The people are also faced with the need to move out of the city's centre to avoid contracting the disease from living in crowded areas. Those who can afford to do so can proceed, yet those who cannot or have to stay for work are now required to look for more affordable living spaces. The economic recession, however, should not affect the affordability of having a healthy and well-designed home. Therefore, governments play an essential role in ensuring healthy building standards for residential buildings.

b.3. 'Stay at Home' Lifestyle

The government policy to close public facilities, business establishments, offices, and schools and prohibit people from doing general activities have tremendously changed people's daily lives. Activities such as work, school, and leisure, now have to be done at home. The lack of physical activities because of the prohibition for going outdoor encouraged a sedentary lifestyle (Zheng et al., 2020) while at the same time creating psychological issues such as fear of viruses and recession, frustration, boredom (Amerio et al., 2020), and depression (Mahmud et al., 2020). This

situation was worsened by the limited access to local parks, especially for people who don't own private green spaces (Freeman & Eykelbosh, 2020).

A person's quality of life then became much more dependant on the condition of their homes than before the pandemic. The size of the house, the existence of outdoor living space and greeneries (Zarrabi et al., 2021), the green scenery (Spano et al., 2021), and the quality of indoor living space are significant in determining the occupant's health (Amerio et al., 2020). Likewise, low-quality homes increase the symptoms of depression during quarantine (Amerio et al., 2020). Lopez (2020) in López (2021) explained how low air quality in a room with poor ventilation also increases the risk of transmission. However, air quality monitoring has only been applied in some countries, such as Germany, Canada, and the UK (López, 2021). Living in a less than 60 m² apartment unit with poor indoor quality increases the chance of the occupants suffering from depression due to discomfort in living. If possible, the recommended home design aspects are a larger house with a more lively space facing green areas (Amerio et al., 2020; D'Alessandro et al., 2020). It is also recommended that each needs at least 9 m² of green space (World Health Organization, 2012 in Russo and Cirella, 2018). Therefore, people who live in apartments and have no option to relocate are suggested to create more green and open spaces, such as vertical gardens and natural ventilation through windows.

Another example of the change of lifestyle is remote working that replaces work from the office. Allan & Miglani (2020) surveyed workers in the Asia-Pacific region, citing a possibility of a new workplace hybrid that came from the work from home policy. Although home offices offer flexibility and control of work and personal lives, they cannot replace interactions between colleagues and the typical office environment (Allan & Miglani, 2021). Therefore, the offices, co-working spaces, and home offices will co-exist in the future, and people will need a dedicated non-distracting space at home for remote working activities.

c. Homeowner's need for control

The three home adjustments indicate that people now require better controls upon their living environment. From the architectural point of view, the need to avoid public activities and spaces is defined as having physical boundaries. At the same time, the fear of economic recessions means more demands toward an affordable and energy-efficient building design. In addition, the stay-at-home lifestyle requires adequate indoor and outdoor spaces to ensure a comfortable place that

could equally well accommodate various activities. The elements of house price and operational costs are influenced by many factors aside from an architectural perspective. However, the aspects of control towards boundaries and the comfort of homes are attainable from the correct use of architectural design. Generally, an apartment-type residential building, or the similar, has lower control than a landed house, mainly because of the shared facilities and common areas. Meanwhile, the control on the living space is also limited; for example, adding floor areas or renovating the plan to cope with the pandemic-related requirement. The green areas of apartment buildings are also available as shared facilities and usually are on the ground floor. The closest apartment units have of personal green open space is the little balcony, if any. This lack of personal green open space might increase the risk of depression instead. The feature to control the indoor and outdoor area seems to be available more at a landed house type of residential than an apartment. However, it is still possible for apartments to have this control using proper architectural design and building management. The common areas should have good air circulation, for one example. The circulation and activities of the residents can also be managed, for example, by limiting the occupancy of every common area to avoid crowding and virus transmission.

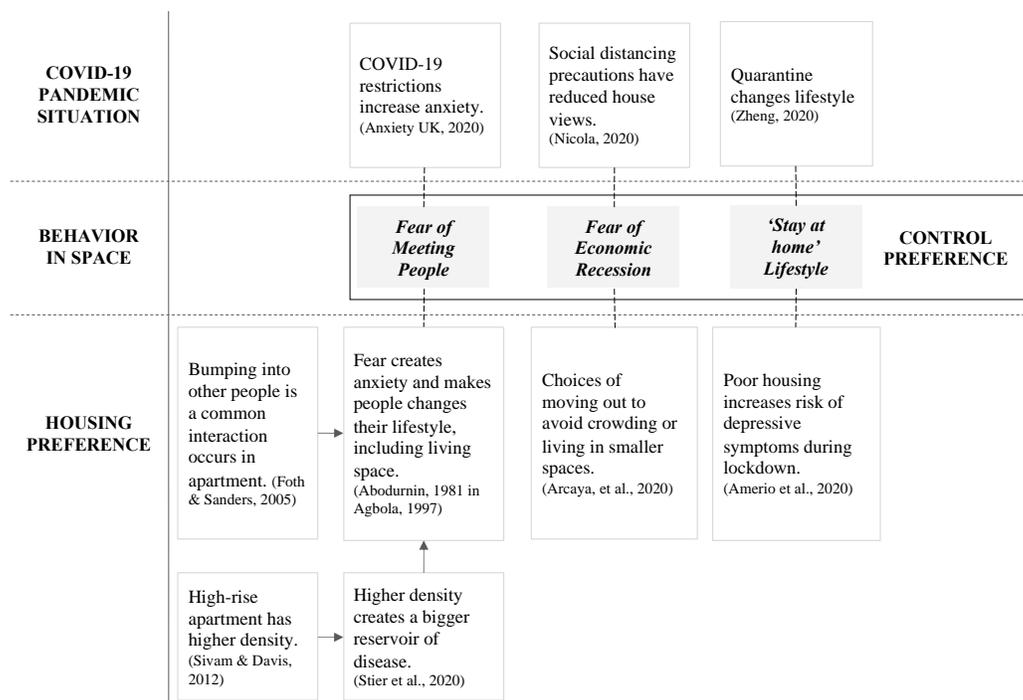


Figure 1. A synthesis of the literature review

The synthesis of the literature review is presented in Figure 1. The correlation between the pandemic and housing preference is shown in the figure, as the three aspects highlight the control preference.

CONCLUSION

From the discussion, it is concluded that pandemics do influence people's housing preferences. The preferences have shifted to be more inclined towards control because of the fear and anxiety caused by the pandemic. The pandemic possibly creates fear of meeting people, fear of economic recession, or a stay-at-home lifestyle. The fear of meeting people leads to the need for personal safety space. The fear of economic recession creates the need to reduce expense, while applying designs that can accommodate a stay-at-home lifestyle. The changing preference is consistent with the home behaviour adjustment theory (Morris & Winter, 1975) because the pandemic situation creates a new standard of a healthy residential building. Not only it has to be beneficial in terms of proper plumbing and waste management as what happened during SARS, but it should also be able to provide anxiety-reducing elements: boundaries and green open space. Therefore, real estate developers are suggested to consider the health aspect in building residential housing, while architects might focus more on health and safety in the design process. Public policies regarding healthy building standards are also needed to ensure a healthier living environment is accessible to all.

The shifting preference might not directly illustrate the movement of the real estate market. However, this may indicate that landed houses will be more in demand than apartments because of their inherent features in the future, mainly because the end of the pandemic is undeterminable. Future research is suggested to make a further empirical study about this topic or others related to pandemics and real estate.

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