ISSN 2809-6339

ROWHOUSE RESIDENTS' ADAPTATION PATTERNS IN THE NEW NORMAL ERA

Syamfitriani Asnur[1*]
Nurlita Pertiwi[2]
Syahril Idris[1]
Syamsuddin Mustafa[1]

[1]Department of Architecture, Bosowa University
[2]Department of Population and Environmental Education, Universitas Negeri Makassar

e-mail: syamfitriani.asnur@universitasbosowa.ac.id

ABSTRACT

The COVID-19 pandemic has forced people to work from home. Behavioral adjustments during the Covid-19 pandemic due to changes in work and study patterns from home have significantly impacted daily activities at home. However, the problem is that not all houses have a special space for work/study, especially for small-type dwellings with limited space. This study aims to reveal the form of adaptation in providing space to work from home and the level of comfort, especially for residents of row houses. The researcher uses a quantitative descriptive method in percentage figures to show the condition of community adaptation to the space to work and comfort level. This research was conducted by distributing questionnaires to 250 residents of row houses in Makassar. The results show that community adaptation in providing space to work from home is by function and modifying space. In space function, people generally use the living room as a workspace. The adaptation pattern is usually made by adding furniture, changing furniture, rearranging furniture. Meanwhile, to get comfort, respondents are generally influenced by two aspects. Aspects of the physical environment are significantly indicated by personal space and privacy. While aspects of the psychic environment were significantly shown in noise, spatial area, and air temperature. Although the space is limited and many distractions occur, most people claim they are pretty comfortable and feel more productive while working from home.

Keywords: Space function, interior arrangement, modification, and comfort

1) INTRODUCTION

To contain the spread of the coronavirus disease 2019 (COVID-19), countries in the world are enacting public health measures, including physical separation regulations to prevent close human contact. These tactics resulted in a variety of directives, including stay-at-home orders, isolation restrictions, and lockdowns that prohibit individuals from engaging in routine everyday activities such as attending school or work, visiting gyms or restaurants, or attending large social events. Apart from the acute health concern posed by COVID-19, individuals typically endure abrupt lifestyle effects as a result of working time, which frequently result in economic difficulties and social isolation (Cancello et al, 2020; Carroll, N, et.al. 2020).

During the COVID-19 pandemic, work from home (WFH) or telework/tele-study activity was an unanticipated and unexpected phenomenon, quickly changing human behavior. According to a national survey, during the period of widespread social restrictions, 80 percent of Indonesians spend a significant amount of time at home (Mardiyah et al., 2020). As a result, behavioral adaptation and environmental adaptation will occur concurrently. Adaptation is the process by which we modify our behavior to meet the needs of the environment, whereas adjustment is the process by which we modify or change the environment to accommodate our behavior (Lin & Fisher, 2020; Bell et al., 2001). Adaptive behavior can be described as effective or rewarding, depending on how each actor perceives it. Perception happens when a collection of experiences is merged via a mediating process inside the structure of the brain's nervous system, enabling us to recognize or regulate patterns derived from a collection of sensations stored in long-term memory (Bell et al., 2001). When determining compatible functions in a particular room, if the physical condition of the home enables the functional arrangement, we are generally content with it (Bell et al. 2001). While modifications to the arrangement have been made, there are occasions when the physical condition of the dwelling does not permit the functional aspects to be met. This will elicit a particular response from residents. Cultures can evolve in response to environmental changes (Moore, K. D., 2019; Rapoport, 2000; Black, et al., 2011). This adage is significant when the environment is designed for a homogeneous group of people who have some control over the changes that occur. This suggestion does not apply, however, when the environment undergoes a shift beyond human control. Sudden changes will affect the comfort of all family members. A positive behavioral reaction that families employ to resolve a problem or alleviate the stress generated by a specific occurrence is referred to as a coping strategy (Jolly, 2020).

The room's ambiance dictates the level of comfort associated with specific activities. Three factors influence one's degree of comfort: physical environment components, psychological component components, and social environment component components (Krasner, 1973). When all of these variables are added together, a result is produced that is referred to as the space atmosphere.

This researcher applied a quantitative descriptive approach, in which questions were sent to the general population via a distributed questionnaire. The user's comfort level with the adaption pattern is a factor in determining the feasibility of a work-from-home location. The greater the level of comfort, the more habitable a room is.

Individuals will demonstrate a sense of comfort in their environment if they believe their basic needs have been addressed. (Mohit, MA, and M. Azim (2012). Numerous prior research has demonstrated a significant correlation between the level of comfort and the quality of the workspace. Other researchers have discovered that the most important element affecting workplace comfort is the physical environment. Similar studies (Torresin et al. 2018; Bluyssen, PM 2010) demonstrate that noise levels, air temperature, lighting, color, scent, cleanliness, security, and ambient layout all have a significant impact on worker comfort. Meanwhile, [Vanesa, et al.. 2019)] asserts that the most significant aspects affecting job comfort are the work environment, favorable treatment, a sense of security, and positive relationships. Several of these studies demonstrate that a variety of factors influence one's degree of comfort at work, most notably the physical state of the workspace, independent of social and economic considerations.

2) METHODS

This study investigated the pattern of community adaptation in terms of giving space for working from home and how this comfort is achieved through the use of a quantitative descriptive technique. The research variables have been predetermined based on the available literature (Krasner, 1973), and the majority of data processing is done statistically. The purpose of this study is to determine the effect of housing conditions on inhabitants' degrees of comfort using the variables listed in Table 1.

Table 1. Variable and Indicators

Variable	Indicators	Variable	Indicators
Components of the physical environment	Air temperature Lighting Noise level Environmental object Spatial area	Components of Psychics	Privacy Personal space Eye contact Closeness and openness of space Furniture arrangement Space usage density

This investigation was conducted in Makassar, Indonesia, across a series of housing units with a maximum land size of 90 m2 and a maximum building area of 150 m2. The study sampled up to 250 families using a simple random sampling technique called the Slovin method. Working residents aged 19–60 years can be sampled because the COVID-19 pandemic policy requires them to work from home. Primary data collection was conducted by questionnaire to ascertain the respondents' characteristics, their mode of community adaptation, and their level of comfort. The questionnaire employed a Likert scale of 1–5 to assess occupant comfort (1 = extremely unpleasant, 2 = uncomfortable, 3 = moderately comfortable, 4 = comfortable, 5 = extremely comfortable) to assess occupants' impressions of the variables, resulting in ordinal data collection (stratified data).

The average value of each indicator is used to determine the level of comfort. The data were classified into five categories: extremely low (1.00-1.79), low (1.80-2.59), medium/moderate (2.60-3.39), high (3.40-4.19), and extremely high (4.20-5). Descriptive analysis is used by researchers to describe the findings of data collection.

3) RESULTS

Characteristics of Respondent

The questionnaire responses indicated that the majority of residents of Makassar's row houses own their homes and earn an average of Rp. 4,000,000–Rp. 8,000,000 per month. 35% of all responders earn over IDR 8,000,000 per month. Additionally, respondents work as employees of both public and private institutions that are responsible for WFH as long as the policy is adhered to. As many as 21% of respondents are instructors, even though most schools, from elementary to tertiary, continue to implement online teaching and learning procedures. This, of course, involves the establishment of its facilities to continue teaching efficiently. According to the study findings, an average of five people reside in row houses within a single housing unit. 25% of respondents, on the other hand, live in households with more than seven family members. This demonstrates a somewhat high level of density within a single dwelling, particularly when the type of dwelling and its area is considered. In terms of house shape, the majority of respondents live in single-story homes, while just 29% of the population owns a home with two or more stories and a floor size greater than 90 m2. Table 2 contains a description of the row house's tenants' features.

Table 2 Description of participant characteristics

Occupants		Percentage
Gender	Male	49
	Female	51
Age	20-30 yr	16
	31-40 yr	35
	41-50 yr	43

	over 50 yr	6
	Employee	28
Employment	Civil	35
	Teachers	21
	Entrepreneur	4
	Freelance	6
	Students	2
	others	4
	< Rp.4.000.000	7
Income for month	Rp.4.000.000-Rp.8.000.000	58
	> Rp.8.000.000	35
Occupancy	Owner	92
	Rent	8
Residential	≤ 60 m2	14
Area	61-90 m2	48
	91-150 m2	38
Lots of families	≤ 4	9
Members	5≥7	66
	≥8	25
House storey	1 storey	71
	≥ 2 storey	29

Fulfillment of Workspace in Home

Due to limitation area of row houses and the policy of working from home in response to the COVID-19 epidemic, satisfying the need for room to work from home has been a serious challenge. According to Figure 1, the majority of respondents lack a dedicated workstation at home, necessitating the preparation of these facilities, and only 14.5 percent of respondents had a dedicated workspace before the COVID-19 pandemic case. This demonstrates that meeting the space requirements of row home tenants has not been a key priority. Following the epidemic, people utilized a variety of areas that were already available in their homes to meet these needs.

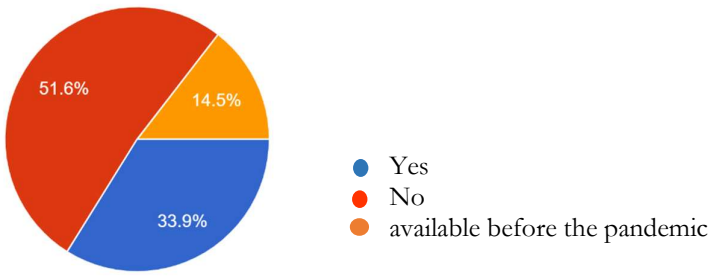

Figure 1. Frequency provides space to work from home

According to Figure 2, the majority of respondents (25.2 percent) and bedrooms (18.4 percent) use the living room and bedroom to work from home, while the remainder utilizes other areas such as the terrace, kitchen, family room, and other rooms. What's interesting is that 6% of

respondents utilize the terrace as a work location to obtain fresh air and a change of scenery so that they would not get bored staying at home all day. Additionally, 12.8 percent of respondents report that their workspace is not set and changes according to their heart's desire or current circumstances. Despite the policy of working from home to reduce contagion, as many as 6.4 percent of respondents chose to work outside the home because they are bored at home or their homes do not have an internet network.

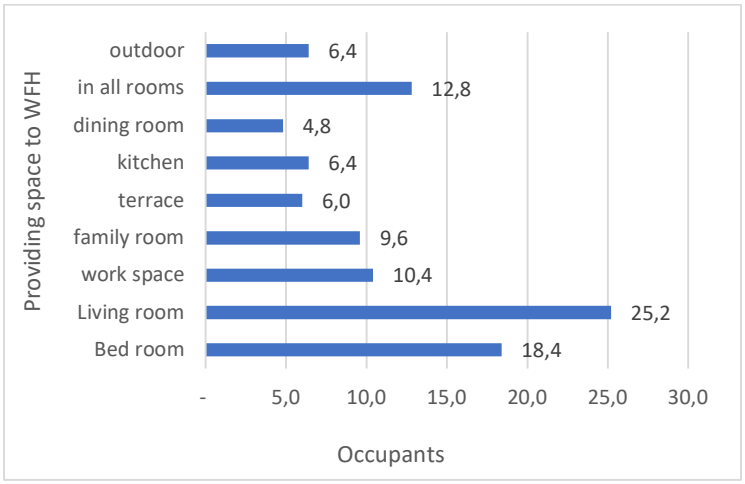

Figure 2. Percentage of providing space to Work From Home

Resident Adaptation Patterns

The provision of workspace amenities at home through the use of existing space necessitates adaptations to the space required for work, including the work area, to allow for uninterrupted work. While people typically work in a single area at the workplace, this is not the case at home due to the surroundings and ambiance, which are markedly different from those in the office. Additionally, tenants must share space with other family members, such as a husband or wife who works from home, children who study from home, or who are playing, sleeping, or otherwise occupying space, as illustrated in Figure 3. Additionally, the research indicates that the majority of respondents can multitask while working from home, which means they can focus on other tasks such as assisting children with homework, performing household chores, and so on.

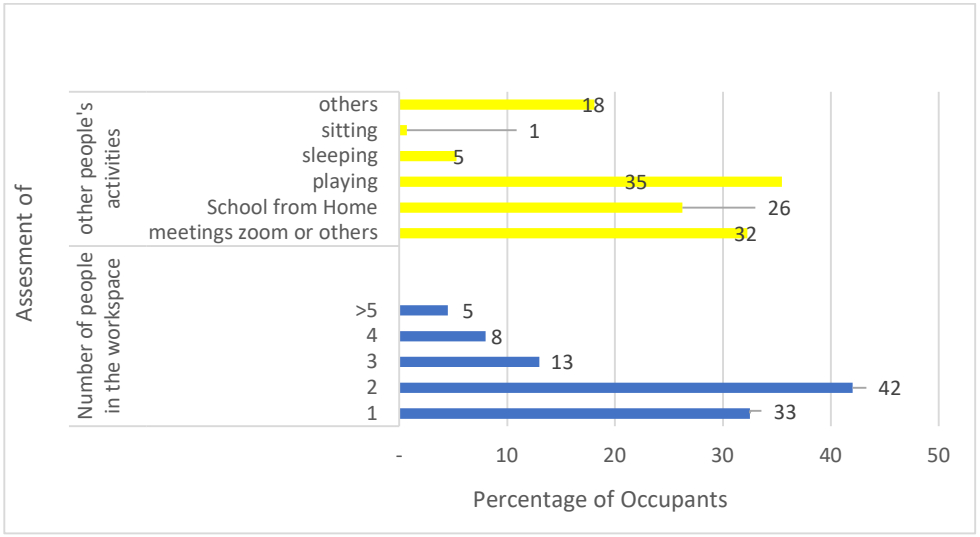

Figure 3. Number of other family members and their activities in the workspace

According to the data, the average area of space available to other family members for work and other activities is 12m2, and 42.6 percent of space is less than 9m2 (see figure 4). The limited area of space has become a basic issue in row houses, to the point where occupants are forced to create settings that accommodate their activities.

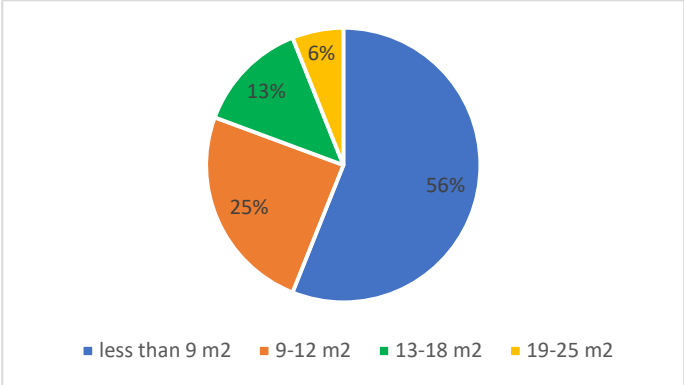

Figure 4. Area of space used to work from home

Figure 5 illustrates how occupants adjust to the condition of the area utilized to provide a workspace to attain a sense of comfort. According to 63% of respondents, the most typical type of modification is changing the internal arrangement of the room to make roomier and provide adequate space for a desk. Additionally, residents arrange for artificial ventilation and illumination. Artificial ventilation elements are added to the home environment by controlling the room temperature with a fan and/or air conditioner (AC), adjusting the humidity level and cleanliness of the air in the room with an air purifier or humidifier, in addition to natural ventilation with plants. As for the layout of artificial lighting elements, more lights (ring lamps) can be added to the work area to provide additional illumination.

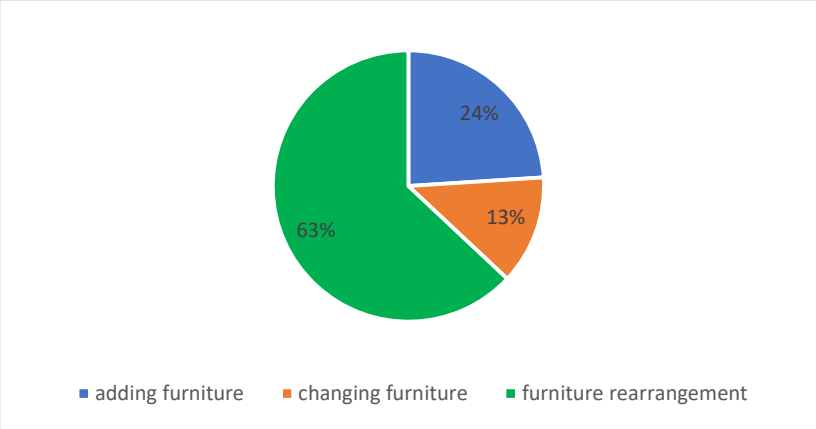

Figure 5. Residents adaptation patterns

Another effort made by residents in adapting is by adding furniture, for example adding tables and chairs to work. Furthermore, they also made adaptation efforts by replacing existing furniture (for example, replacing a small table with a large one so that they can be used together and are free to work). Sometimes these three adaptation efforts are carried out simultaneously to achieve the level of comfort desired by the occupants.

Comfortable Level

Physical Environment

The real physical environment condition of the space before the pandemic cannot be determined because it has altered significantly over time as a result of tenants' work-from-home activities. In general, occupants provide a comfort grade of 2.65 to the room's condition, which is rated as pretty comfortable. As illustrated in Figure 6, the occupants' judgment of air temperature and spatiality gets the lowest score when compared to the other factors.

The frequency analysis revealed that 39% of respondents (97) thought that the room's air temperature was uncomfortably warm. Sufficient air exchange will maintain physical freshness, while enough ventilation will benefit occupants' health. While natural ventilation is accessible, the majority of people rely on artificial ventilation, such as fans and/or air conditioners (AC), to maintain a comfortable temperature. Additionally, 50% of respondents report substantial discomfort due to the restricted space available for activities, in addition to having to share space with other family members. The requirement to share this space results in extremely high levels of discomfort caused by noise generated by other family members' activities, as seen by the majority of tenants (as many as 48 percent) complaining of noise distortion. However, the presence of furniture (environmental objects) in the room (such as a television, mattresses, and sofas) provides residents with comfort because they can utilize them while working. The lighting in the office is pretty comfortable for the occupants. However, some homeowners supplement their work area lighting to obtain the appropriate level of comfort.

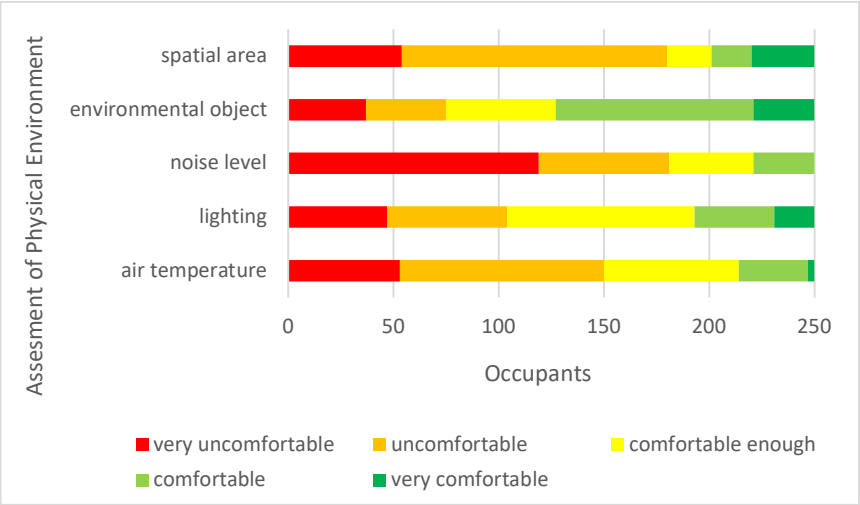

Figure 6. Community Assessment of the Physical Environment of the room

According to Figure 7, the level of community comfort in the workspace of Makassar's highest residence is placed on the environmental object, which has a score of 3.9, indicating a high level of comfort. Environmental objects are deemed to provide a high level of comfort when viewed through the eyes of inhabitants who can use them to relax or prevent boredom at work. While noise has the lowest level of comfort with a grade of 1.58, which is considered extremely uncomfortable. This is because the average row house has a high occupant density, which forces space to be shared, resulting in a loss of comfort while working and inability to concentrate due to noise created by other family members' activities.

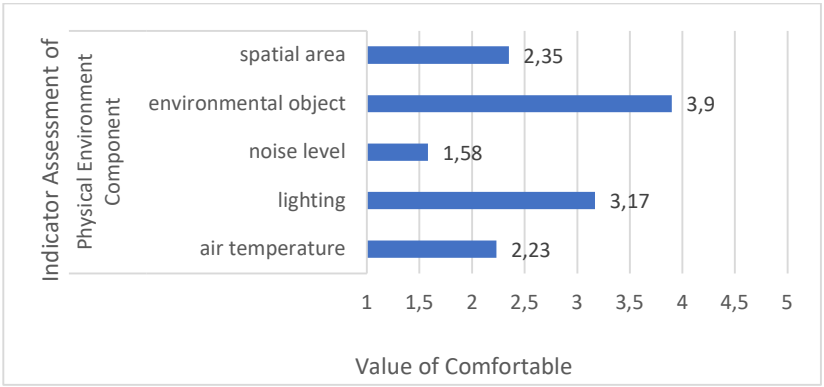

Figure 7. Level of occupant comfortable with the Physical Environment

Psychic Environment

Occupant comfort is an occupant's assessment of the working environment he or she encounters while working from home, given as a comfort level score. Figure 8 demonstrates that respondents were least satisfied with the privacy and personal space components; the findings of the frequency analysis for privacy were 46% and 59 percent, respectively. This demonstrates that residents lack the freedom and privacy to carry out their daily activities. Personal space is defined as the distance between a person's body and objects or other individuals close that might affect it geographically and psychologically, as it lacks a free magnitude. In areas with limited arrangements, privacy in

terms of spatial boundaries becomes critical, as the quantity of space (territory) available to individuals becomes tiny and lacks flexibility. This is also related to the density of shared space use by other family members, as evidenced by the analysis's results of a low frequency of 36% or discomfort for 91 respondents. However, a sizable proportion of respondents expressed satisfaction and comfort being in the same room as other family members, particularly parents supervising their children while they study or play.

The presence of eye contact with family members also provides responders with a sense of security; they can converse freely without fear of criticism from their superiors, just as they would if they were working as usual at their job.

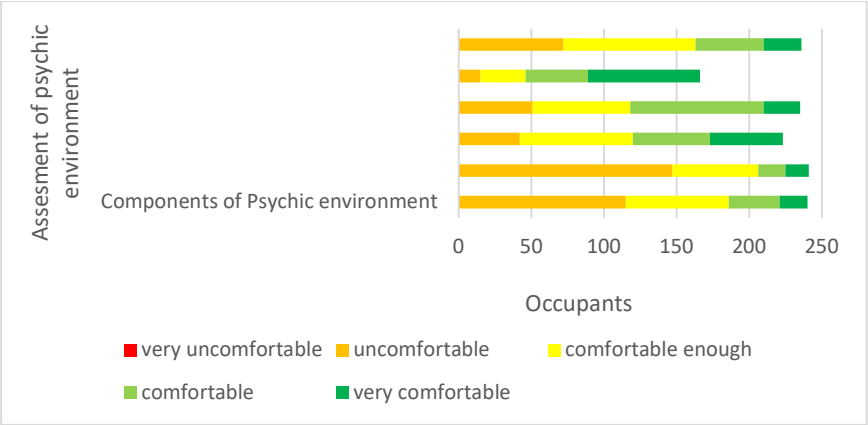

Figure 8. Community Assessment of the Psychic Environment of the room

As displayed in Figure 9, adaption efforts involving interior layouts receive the highest assessment from the community, receiving a score of 4.3 or being classified as extremely comfortable. These findings demonstrate that the interior arrangement has a substantial impact on the occupants' desired level of comfort. While the community's lowest rating is for the privacy indication, which is valued at 1.62, and the personal indicator, which is worth 1.7. This value reinforces the assumption that the impact of limited space in row houses is a reduction in individuals' privacy and personal space.

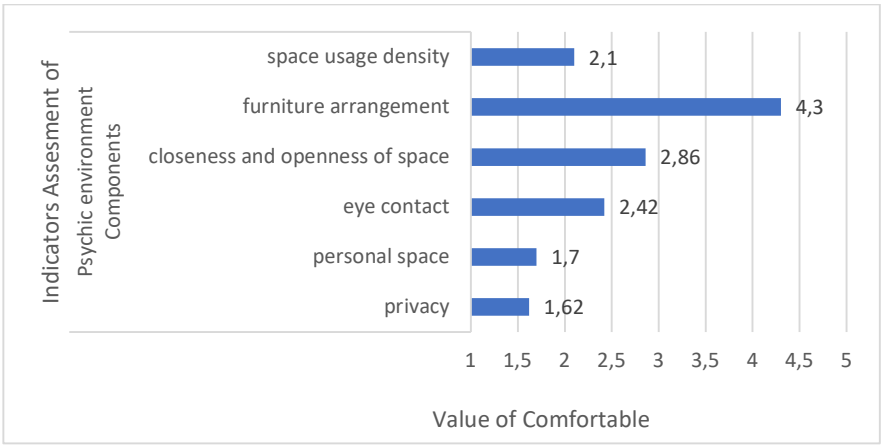

Figure 9. Level of occupant comfortable with the Psychic Environment

The level of comfort in the physical surroundings is rated using an average of 2.65; this indicates that the level of comfort is quite high. While the assessment score for the average level of comfort in the psychological environment is 2.50, this indicates that it is below average. As a result of these findings, it can be inferred that residents of row houses continue to feel uneasy about their home office space, despite their different adaptation efforts.

4) DISCUSSION

The findings of our study provide insight into how telework areas, such as bedrooms, living rooms, dining rooms, and terraces, are seen. Additionally, family members share individual workplaces. To alleviate boredom from being cooped up in the house, some people engage in telework outside the home. Our findings corroborate those of Jaimes et al. (2021), who found that Mexicans are generally OK with the size of their homes but desire a more structured room or a better view of the outdoors.

When an individual interacts with the interior space as a temporal environment, he is not only influenced by the space's atmosphere; he also affects the space's atmosphere reciprocally. The level of comfort for working from home in a row house demonstrates that the physical environment is comfortable, but the psychological environment is uncomfortable, despite different efforts to adjust the occupants to the room's surroundings. Indeed, people report feeling more productive at work, particularly female employees who work full time and claim to do more household chores than they did before the outbreak. As a result, our research contributes to the field's understanding of how novel elements, such as the Covid-19 epidemic in general and work-from-home settings in particular, alter job comfort and affect work outcomes. The findings of this study corroborate those of another study (Jaimes et al. 2021), which found that more than half of respondents reported not being in thermal comfort and a third reported noise insulation issues. Another result demonstrates how working from home has benefited and hurt both people and enterprises, contributing to the drop in employee productivity (Mustajab, et al. 2020). Working from home allows some employees to maintain a work-life balance, even if they are occasionally disrupted by required home chores (multitasking) (Feng, Z. and Savani, K. 2020).

Housing becomes a protective feature against the pandemic due to activity limits. The implications will be felt internationally, necessitating a rethinking of the new architectural design paradigm. Taken together, these discoveries have significant theoretical and practical consequences, as well as pointing the way forward for future research.

REFERENCES

Cancello, R., Soranna, D., Zambra, G., Zambon, A., & Invitti, C. (2020). Determinants of the lifestyle changes during the COVID-19 pandemic in the residents of Northern Italy. *International journal of environmental research and public health*, *17*(17), 6287.

Mardiyah[1], R. A., & Nurwati, R. N. (2020). Dampak pandemi Covid-19 terhadap peningkatan angka pengangguran di Indonesia.

Bell, P. A., Green, T., Fisher, J. D., & Baum, A. (2001). *Environmental psychology*. New Jersey.

Lin, T. T., & Fisher, G. (2020). Applying the Model of Human Occupation During the Pandemic Stay-at-Home Order. *The Open Journal of Occupational Therapy*, *8*(4), 1-7.

Black, R., Adger, W. N., Arnell, N. W., Dercon, S., Geddes, A., & Thomas, D. (2011). The effect of environmental change on human migration. *Global environmental change*, *21*, S3-S11.

Moore, K. D. (Ed.). (2019). *Culture-meaning-architecture: Critical reflections on the work of Amos Rapoport*. Routledge.

Rapoport, A. (2000). Theory, culture, and housing. *Housing, theory and society*, *17*(4), 145-165.

Jolly Sahni, 2020. "Impact of COVID-19 on Employee Behavior: Stress and Coping Mechanism During WFH (Work From Home) Among Service Industry Employees," International

Journal of Operations Management, Inovatus Services Ltd., vol. 1(1), pages 35-48, October.

Mohit, M. A., & Azim, M. (2012). Assessment of residential satisfaction with public housing in Hulhumale', Maldives. *Procedia-Social and Behavioral Sciences*, *50*, 756-770.

Torresin, S., Pernigotto, G., Cappelletti, F., & Gasparella, A. (2018). Combined effects of environmental factors on human perception and objective performance: A review of experimental laboratory works. *Indoor air*, *28*(4), 525-538.

Bluyssen, P. M. (2010). Towards new methods and ways to create healthy and comfortable buildings. *Building and environment*, *45*(4), 808-818.

Vanesa, Y. Y., Matondang, R., Sadalia, I., & Daulay, M. T. (2019). The Influence Of Organizational Culture, Work Environment And Work Motivation On Employee Discipline In PT Jasa Marga (Persero) TBK, Medan Branch, North Sumatra, Indonesia. *American International Journal of Business Management (AIJBM)*, 37-45.

Carroll, N., Sadowski, A., Laila, A., Hruska, V., Nixon, M., Ma, D. W., & Haines, J. (2020). The impact of COVID-19 on health behavior, stress, financial and food security among middle to high income Canadian families with young children. *Nutrients*, *12*(8), 2352.

Krasner, L & Ullmann P (1973), Behavior Influence and Personality, Holt-Rinehart & Winston, New York

Feng, Z. and Savani, K. (2020), "Covid-19 created a gender gap in perceived work productivity and job satisfaction: implications for dual-career parents working from home", *Gender in Management*, Vol. 35 No. 7/8, pp. 719-736. https://doi.org/10.1108/GM-07-2020-0202

Hidjaz, Taufan. (2011), Interaksi Psiko-Sosial di Ruang Interior, Institut Teknologi Nasional dan Himpunan Desainer Interior Indonesia (HDII), Bandung

Altman, Irwin(1998), The Environment and Social Behavior, Irving Publisher Inc., New York

Mustajab, D., Bauw, A., Rasyid, A., Irawan, A., Akbar, M. A., & Hamid, M. A. (2020). Working from home phenomenon as an effort to prevent COVID-19 attacks and its impacts on work productivity. *TIJAB (The International Journal of Applied Business)*, *4*(1), 13-21.

Jaimes Torres, M., Aguilera Portillo, M., Cuerdo-Vilches, T., Oteiza, I., & Navas-Martín, M. Á. (2021). Habitability, resilience, and satisfaction in Mexican homes to COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, *18*(13), 6993.