

Third Spaces Design Framework that Helps to Reduce Psychological Stress and Support Community Well-Being in Low-Cost Public Housing

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ABSTRACT

The basic human need for a home that provides more than simply shelter underpins the need to understand the relationships between housing, health, and well-being. There is more emphasis on the quality of the home, with an agreement that the home is the foundation for resilience and well-being. There is a complex relationship between home and mental illness, as the environment in which a person lives can significantly impact their mental health. Some ways in which home can influence mental health include stressful living conditions. Therefore, having a safe and supportive home environment can help to protect people from mental illness. This research applied phenomenology in qualitative research methodology. The data was collected through semi-structured interviews and triangulated with observations. The data were analysed using a thematic analysis method assisted with ATLAS.ti version 8 software. The results show that residents in Malaysia's low-cost public housing have unique needs and preferences, benefit from the supportive and inclusive environment, enjoy activities contributing to social and skill development, are involved in activities for spiritual growth and spiritual healing and creative for innovation and flexibility in the third space design. Future research applies to economic activities in the low-cost public housing.

INTRODUCTION AND LITERATURE

House or a place to live in is a basic shelter needed for an individual, along with food and water, thus crucial for living survival. The basic human need for a home that provides more than simply shelter underpins the need to understand the relationships between housing, health, and well-being in ways that go beyond apparent problems such as dampness and cold (Rolfe et al., 2020). A home that lacks basic needs such as access to clean water, food, and healthcare can significantly impact a person's mental and physical health.

There is likely more emphasis on the quality of the home, with a broad agreement that the home is the foundation for resilience and well-being (Samuel, 2020). There is a complex relationship between home and mental illness, as the environment in which a person lives can significantly impact their mental health. Some ways in which home can influence mental health include stressful living conditions (Francis et al., 2012; Guilding et al., 2014; Moriyama et al., 2019; Perreault et al., 2022). Living in a chaotic, cluttered, or overcrowded home can be stressful and overwhelming, contributing to mental health problems such as anxiety and depression (Gong et al., 2016; Gonyea et al., 2018; Wu et al., 2015).

A lack of social support and connections within the home can lead to feelings of isolation and loneliness (Agarwal et al., 2021), increasing the risk of developing mental health problems. Additionally, the home's physical environment, including exposure to pollutants or toxins, can also contribute to the development of mental health problems.

Therefore, having a safe and supportive home environment can help to protect people from mental illness. On the other hand, a supportive home can provide a sense of security, stability, and comfort, improving mental well-being. It can also offer a sense of belonging and connectedness that can help promote social support and reduce feelings of isolation.

Low-cost housing is a cheaper shelter solution for a particular economic group. The term low-cost refers to the prices of housing development materials and the housing units as the product (Aishah et al., 2023). In Malaysia, the low-cost public housing is an initiative by the government to fulfil the housing needs of lower-income groups. Though the specification is expected to meet the basic housing needs of a specific target group of citizens, there is much literature about limited living conditions in low-cost public housing in Malaysia (Azmi et al., 2019; Gonzalez-Longo & Mohd Sahabuddin, 2019).

Oldenburg defined the term “third places” as something derived from considering the homes to be the “first” places and the workplaces as the “second” places in our lives (Oldenburg, 1997). Hansen et al. (2021) recently mentioned that “Third Space” refers to the intersection of two ideas. It is often a pliable and creative zone where unique ways of knowing, and worldviews have developed that challenge the individual's preconceived notions and biases. Thus, with limited housing condition in the low-cost public housing developments, this research explores the contributions of third spaces that help reduce psychological stress in the context of low-cost public housing residents in Malaysia. The aim is to propose further a design framework of related third spaces for low-cost public housing.

Thus, this paper aims to explore third space experience to propose a design framework that supports community well-being for low-cost public housing in Malaysia through the following research questions (RQ):

RQ1: How does the resident in low-cost public housing in Malaysia experience the third spaces that help reduce his/her psychological stress and support community wellbeing?

RQ2: How to formulate a framework for third spaces design based on the experience of residents that helps to reduce psychological stress and support community well-being in low-cost public housing in Malaysia?

METHODOLOGY

Phenomenology is a qualitative research method that aims to understand and describe the subjective lived experiences of individuals (Arnold & Lane, 2011; Creswell & Poth, 2018; Moustakas, 1994). It is rooted in the phenomenology philosophy, which emphasizes the study of conscious experience and perception. In qualitative research, phenomenology is used to gain insight into the meaning and essence of a particular phenomenon, such as the lived (Arnold & Lane, 2011; Merriam & Tisdell, 2015) of a specific group of people or how individuals understand and make sense of a particular event or situation. This approach typically involves collecting in-depth, personal narratives from 10 participants as described sufficient by Arnold & Lane (2011) or until saturation and using interpretive methods to analyze the data, which best follows Van Manen (2017) for a human science orientation, and Moustakas (1994) for a psychological perspective (Creswell & Poth, 2018).

According to Moustakas (1994), phenomenology is a research method that seeks to understand individuals' subjective experiences and meanings concerning a particular phenomenon. Moustakas (1994), known for his work on phenomenological research methods, emphasizes the importance of in-depth, personal narratives in studying human experience. He argues that phenomenological research aims to gain insight into the essence of a particular phenomenon rather than simply describing its surface features. Moustakas (1994) also emphasizes the importance of using phenomenological language to describe the data and findings, which should be rich in details, metaphors, and imagery to capture the phenomenon's essence. In general, Moustakas (1994)'s approach to phenomenology emphasizes the importance of understanding and describing the subjective experiences of individuals about a particular phenomenon and using interpretive methods to gain insight into the essence of that phenomenon.

Purposeful sampling strategy is the decision as to whom to select as participants for the study, the specific type of sampling strategy, and the size of the sample to be studied. It is essential that all participants have experience of the phenomenon being studied. Criterion sampling works well when all individuals studied represent people who have experienced the phenomenon (Creswell & Poth, 2018). This research adopts semi-structured interviews (Merriam & Tisdell, 2015; Seidman, 2006) to obtain data from informants with direct experience with the phenomenon (Creswell & Poth, 2018; Moustakas, 1994), third space in low-cost public housing in Malaysia.

In conclusion, this research adapts semi-structured interviewing in phenomenological research (Moustakas, 1994; Seidman, 2006) and follows the interview protocol developed by Castillo-Montoya (2016) as the qualitative interview guidance.

RESULTS AND FINDINGS

The data collection was carried out from July 2021 to December 2022 in 5 low-cost public housing initiative by the Malaysian Government. The data collection was done in the Projek Perumahan Rakyat (PPR) Melana Indah, Johor Bahru, PPR Sri Johor, Cheras, Kuala Lumpur, PPR Taman Dagang, Ampang, PPR Hang Tuah, Kuala Lumpur, and PPR Pinggiran Bukit Jalil, Kuala Lumpur, as illustrated in Figure 1.

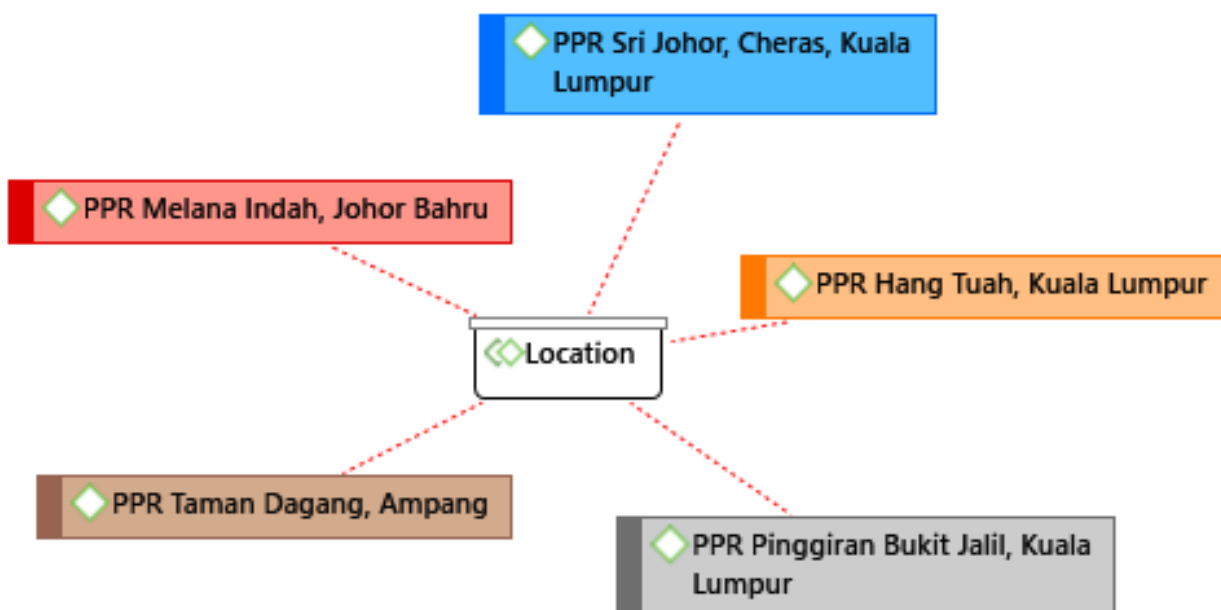


Figure 1: Location for data collection

The interviews were carried out with 7 low-cost housing residents in the data collection location. The interviews were transferred into 7 verbatims. The data was triangulated with 5 observations in the strata type low-cost housing developments which was transferred into 5 observation notes. The interview verbatims and observation notes were uploaded into ATLAS.ti version 8 software and analysed accordingly. The data was inquired using phenomenological interviews and was analysed during the thematic analysis process.

Three deductive codes were imposed for the research questions. The deductive codes are psychological stress, third space experience, and community well-being. The deductive codes act as a guideline for the scientific research process. The thematic analysis involved coding, categorising, and finding the final theme. The initial coding are 200 open codes, later merged and grouped into 78 similar codes. The 78 final codes were then grouped into 6 categories and 5 final themes. The 6 categories are: (i) Common activities; (ii) Shared space; (iii) Religious activities; (iv) Meet the basic needs; (v) Personal space; (vi) Space elements. The 5 final themes are: (i) Social and skill development; (ii) Supportive and inclusive environment; (iii) Innovation and flexibility; (iv) Spiritual growth and healing; (v) User needs and preferences. The coding process and thematic analysis was confirmed using peer debriefing for qualitative research with members from academic fields and architectural industry. The qualitative analysis process using ATLAS.ti version 8 software is as illustrated in Figure 2 below.

Network Manager

Code Manager

Search Code Groups

Code Groups

Common activities (30)

Emerging theme (1)

Gender (2)

Household (7)

Housing Ownership (2)

Housing types (3)

How to formulate a framework for third spaces d

Informants age (7)

Innovation and flexibility (32)

Location (5)

Marital status (2)

Meet the basic needs (3)

Personal space (3)

Religion (2)

Religious activities (13)

Shared space (27)

Search Codes

Name	Grounded	Density	Groups	Created by
Married	<div></div>	6	0 [Marital status]	User
Maulidurrasul	<div></div>	2	0 [Religious activities]	User
Mentally dist...	<div></div>	5	0 [Meet the basic needs]	User
Mini garden	<div></div>	1	0 [Personal space]	User
Mourning ce...	<div></div>	1	0 [Religious activities]	User
Muslim	<div></div>	4	0 [Religion]	User
Mutual aid	<div></div>	1	0 [Common activities]	User
Non-muslim	<div></div>	1	0 [Religion]	User
Nursery	<div></div>	1	0 [Shared space]	User
On the road	<div></div>	2	0 [Shared space]	User
Open space	<div></div>	2	0 [Shared space]	User
Outdoor space	<div></div>	5	0 [Space elements]	User
Painting the...	<div></div>	1	0 [Common activities]	User
Parking	<div></div>	6	0 [Shared space]	User

Figure 2: Analysis using ATLAS.ti version 8 Software

• Finding 1: Third Spaces Experience That Helps to Reduce Psychological Stress and Support Community Well-being for Low-Cost Public Housing in Malaysia

The result in Figure 3 shows that residents in Malaysia's low-cost public housing have unique needs and preferences according to locality. Some people might have a high tolerance to the available physical condition, but others might feel mentally disturbed by the surrounding and the built environment. Nevertheless, the feedback from this research concluded that outdoor spaces are preferred to do individual and community-related activities in the context of third spaces for low-cost public housing in Malaysia. The residents also hope the third space facilities are enough to accommodate the people in the low-cost public housing community.

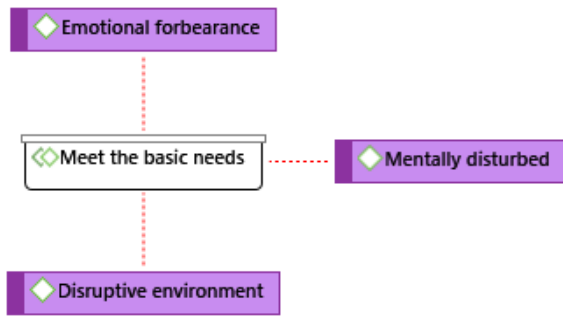


Figure 3: Meet the basic needs network

The research found that low-cost public housing residents and communities highly utilize shared spaces as shown in Figure 4. The availability of community hubs, halls, praying places, fields, playgrounds, gazebos, and benches extensively benefited the low-cost public housing residents and communities. Therefore, architects and designers must consider a supportive and inclusive environment for low-cost public housing residents and communities in the context of third space design. The design must reflect the multi-racial cultures and multi-religion practices of Malaysian communities with different age groups and gender issues considerations. The suitable designs are openly accessible, friendly, and safe for all the residents and the low-cost public housing communities.

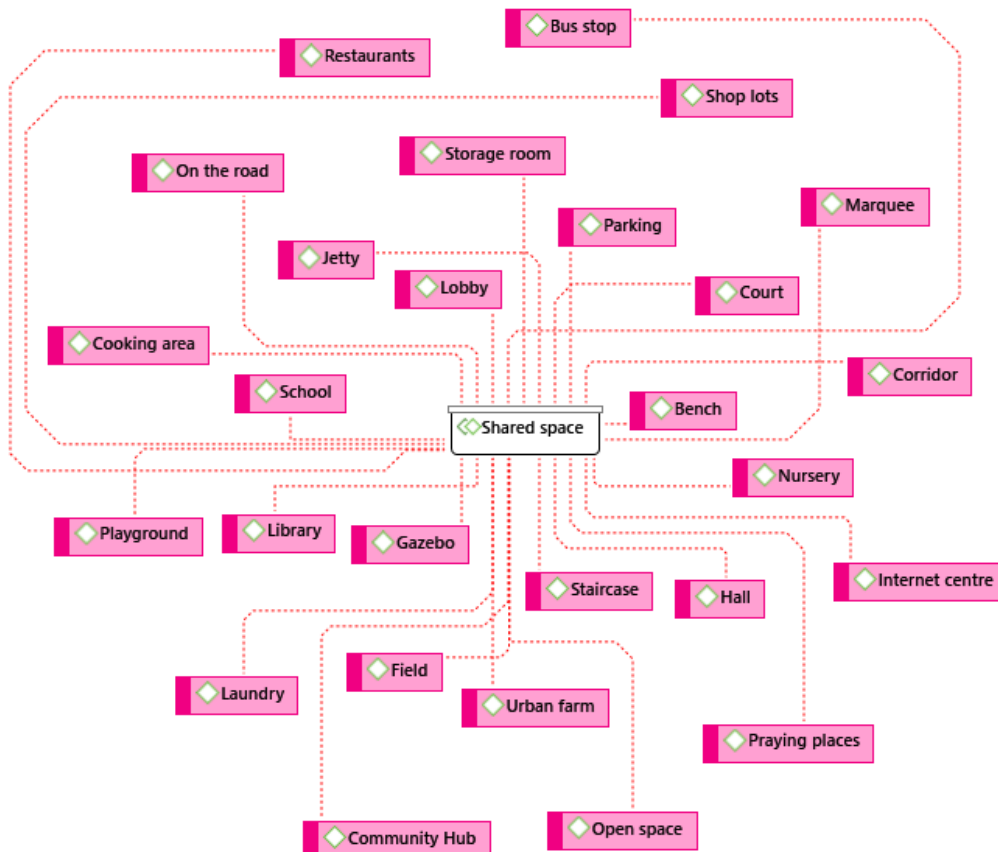


Figure 4: Shared space network

The research also found that low-cost public housing residents enjoyed activities contributing to social and skill development. Apart from socialising and hanging out with families, friends, and neighbours, the low-cost public housing community hosted many events, feasts, ceremonies. Some examples are financial aid

and mutual aid programs, urban farming, voluntary patrol and firefighting schemes. These programs improve networking, provide additional skills and strengthen neighbourhood relationships among the residents.

Additionally, the residents also enjoyed playing swings in the playground, listening to the music and playing games to relax, reduce psychological stress and maintain good mental health. Figure 5 below shows common activities carried out by residents in the low-cost public housing in studied location.

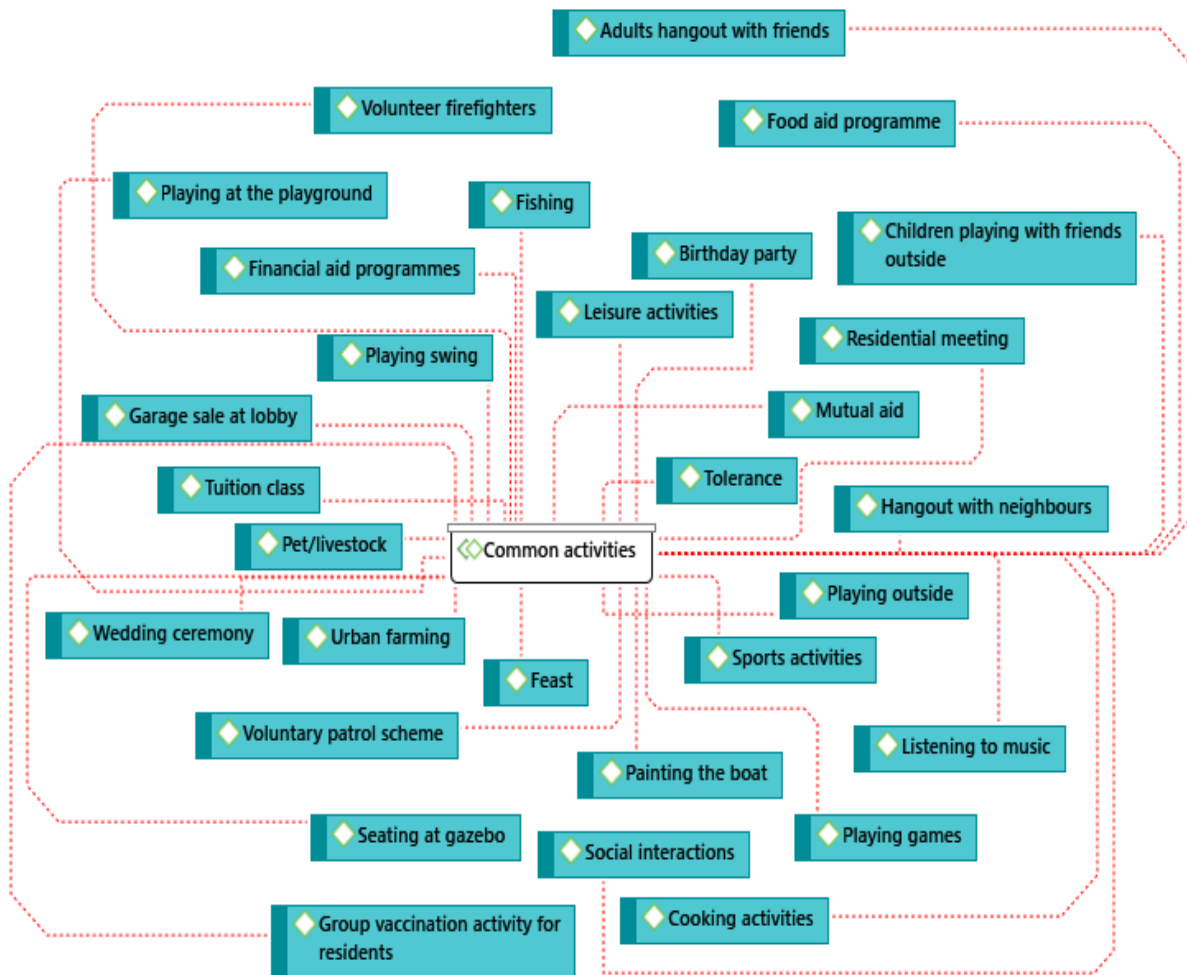


Figure 5: Common activities network

The residents of low-cost public housing in Malaysia are also involved in many religious activities. With Islam as the national religion, Malaysia allowed other faiths to be practiced. Therefore, people can openly conduct religious movements in the third space. In fact, Malaysian, including the low-cost public housing residents, are very respectful to the religion practiced by others and sometimes get invited to festival ceremonies like Hari Raya Aidilfitri celebration, Chinese New Year celebration, and Deepavali celebration in communities. Thus, the third space design should support spiritual growth and spiritual healing, especially regarding psychological stress and mental health of the low-cost public housing communities.

Finally, the architects and designers should allow room for innovation and flexibility in the third space design for low-cost public housing residents and communities. Creative individuals and low-cost housing communities created third spaces that suited local needs and preferences. Examples from this research are a hall converted into praying places, an outdoor kitchen prepared by the low-cost public housing community, and a jetty to park boats and do fishing activities developed by the low-cost public housing residents. This allows the design to blend with user preference and experience meaningfully. The user will be the one who utilises and benefits from the third space.

Finding 2: A Framework for Third Spaces Design Based on the Experience of Residents That Helps to Reduce Psychological Stress and Support Community Well-being in Low-Cost Public Housing in Malaysia

The final framework is a design framework for third spaces that help to reduce stress and support community well-being for low-cost public housing in Malaysia. The framework for designing third spaces is elaborated below:

Identify the needs and preferences of the users: Before designing a third space, it is crucial to understand the needs and preferences of the users. This can be done through user research and observation, which can help to identify the types of activities and interactions that users are interested in. Natural lighting, ample seating, and biophilic design that involve nature in built environments are among the common preferences of third spaces design for the low-cost public housing in Malaysia. It is important to note that different needs and preferences might be indicated in another locality.

Create a supportive and inclusive environment: Based on the needs and preferences of the users, designers should design the space in a way that is accessible, friendly, welcoming, and inclusive. This can involve creating spaces for different activities, such as gathering, socializing, sports, or learning. The space should also accommodate different users as Malaysia is a multi-cultural and multi-religious nation. Architects may emphasize local cultures and religious practices in designing third spaces. People with disabilities, children, and elders should be considered too.

Promote social and skill development: The third space should encourage interaction and networking between users and promote social and skill development. This can involve creating spaces for group activities. Activities such as urban farming improve skills in gardening, and sports activities are suitable for physical and mental health. At the same time, they provide the opportunity for social development and enhancing skills in the related sport, especially for children and the younger generation.

The third space should also be designed to promote a sense of autonomy and competence. This can involve creating spaces where users can engage in activities they enjoy and feel confident in, such as by providing resources and tools for different hobbies or interests. This can pique user interest and promote social and skill development for the user.

Allow for spiritual growth and healing: Praying places allow the user to socialize, network, and enhance religious knowledge. The space should facilitate spiritual growth through observation and learning, such as by providing spaces for people to meet and greet with others, join community programs, and learn through religious classes and speeches. Architects may also design third spaces that support spiritual healing for individuals through serenity, yoga, or any other spiritual healing principles practiced in the local neighbourhood.

Create opportunity for space innovation and flexibility: Finally, it is crucial to continuously iterate and improve the design of the third space based on the needs and preferences of the users. It creates the opportunity for space innovation and flexibility, leaving room for future changes and improvement. User requirements and desires might change, or different groups might create new activities. Therefore, being innovative and flexible is the best policy.

Therefore, to finally complete this paper, the researcher has developed The Low-Cost Public Housing Third Spaces (LUHOTS) Design Framework to contribute to the body of knowledge and reference in the design and architecture field. The LUHOTS design framework is illustrated in the following Figure 6.

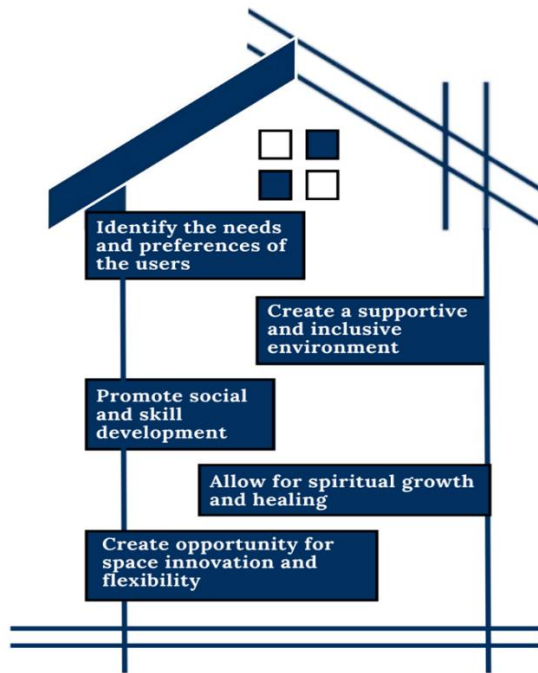


Figure 6: The Low-Cost Public Housing Third Spaces (LUHOTS) Design Framework by Author

DISCUSSIONS AND FUTURE STUDIES

The research was guided by two interlocking fields, the built environment and sociology. The built environment emphasises understanding and empathising with the user's needs and experiences to create functional and aesthetically pleasing designs (Vischer, 2008). The sociology emphasises the importance of social learning, cognition, and personal agency in human behaviour (Bandura, 1999).

An architectural research study that combines these two theories would look at how people are interconnected and influenced by the design of buildings and spaces. There are many ways to investigate this topic. Still, one way is to look at how people behave and interact with the built environment through interviewing. Researchers can benefit from this study as it emphasises the importance of putting oneself in the shoes of study participants and devising creative solutions to address users' unique problems. Collecting information about users' needs and preferences through phenomenological interviews allows designers to create spaces that better meet users' needs. The use of phenomenology in this research is crucial to understand participants' live experiences. The research was designed to get the essence of participants' live experiences and develop the LUHOTS design framework that helps reduce psychological stress and supports community wellbeing.

To conclude, this research achieved its aim for a complete and refined understanding of how people interact with buildings and spaces and how the design of such environments can be improved to better meet the users' experience. The process of integrating social and built environment field in a scientific qualitative architectural research study is beneficial for understanding residents live experience and presented in a proposed design framework.

Furthermore, the findings of this research allow more understanding of the residents in low-cost public housing in Malaysia. This research bridges two important and interconnected fields, the human in sociology and invention in the architecture field, for the benefit of humanity. The development of the LUHOTS design framework undeniably adds a variety of design frameworks in the literature of the architectural field.

Additionally, this research contributes to expanding knowledge in third spaces in general and specifically third spaces in the low-cost public housing. The output of this study may benefit policymakers and industry players in the low-cost housing. However, this research is purely qualitative research with small sample number to correspond to phenomenological research design within Malaysia's low-cost public housing development. Contrasting locations or housing schemes could sharpen insights and provide a stronger evidence base for recommending policy or design frameworks at national or municipal levels.

Finally, this research found an emerging theme which was out of this research context namely economic activities. The economic activities conducted by the low-cost public housing communities involve selling the community gardening products and garage sale conducted by the low-cost public housing communities. These activities may contribute to reducing the cost of living for the residents. The subject matter may be studied and discussed in the economic field for future research.

NOVELTY AND USEFULNESS OF THE FRAMEWORK

The framework anticipated to shorten the gaps in current third space design at the low-cost public housing in Malaysia with the residents third space experience. It is hoped that this framework will benefit the government sectors by serving as a reference for policy-making and implementations by government authorities, government bodies, and related agencies. Additionally, this framework is projected to guide Architects, Landscape Architects, and Town Planners in designing third spaces for low-cost housing. Finally, this research might inspire ideas about third spaces for Non-Governmental Organizations (NGOs) to conduct activities and contribute to the low-cost public housing community.

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