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Addressing Social Isolation in High-Rise Residential Buildings in Kuala Lumpur

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Abstract

As the urban population grows, the construction of high-rise buildings has increased, often prioritizing functionality and aesthetics over community interactions. This study explores how architectural design can mitigate social isolation by fostering social connections among residents. The research identifies the lack of communal spaces and the cultural preference for privacy as significant factors contributing to social isolation. It also examines how integrating green and communal spaces can enhance social interactions. The study employs a mixed-method approach, including spatial analysis and surveys, to identify architectural strategies that promote social cohesion. The findings highlight the importance of designing high-rise buildings that not only optimize space but also create environments that encourage meaningful social interactions, ultimately improving residents' well-being and the overall health of the urban community.

Keywords: Social Isolation, High-Rise Residential Buildings, Communal Spaces, Green Architecture, Urban Social Cohesion

Introduction

Today, 55% of the world's population lives in urban areas, a proportion that is expected to increase to 68% by 2050. Projections show that urbanization, the gradual shift in residence of the human population from rural to urban areas, combined with the overall growth of the world's population could add another 2.5 billion people to urban areas by 2050, with close to 90% of this increase taking place in Asia and Africa. (UN DESA, 2018) One of them is the capital city of Malaysia, Kuala Lumpur. Kuala Lumpur is a diverse city representing many different religions and nationalities. (Kozlowski et al., 2020). And with the rapid urbanization in Malaysia led to the construction of high-rise buildings and gated communities, influenced by cultural conceptions of space and ethnicity. (Evers, 2013) While high-rise buildings can preserve arable land, reduce environmental degradation, and lower urban traffic, energy

consumption, and air pollution compared to horizontal urban development (Abdi, 2019), these towering structures pose significant social challenges.

Occupants in high-rises have fewer friendships as they barely meet other residents on other floors, except in elevators and lobbies, compared to on streets. From the get-go, trips back home are optimised for efficient, personalised travel, from the car directly to the lifts and to individual dwellings, with little to no chance for any social relations whatsoever. In Malaysia, building owners in new gated and guarded condominiums prefer privacy to enjoy their privileged spaces away from the outside environment. (Lee & Srirangam, 2023), However, this culture makes it so the design would often prioritize functionality and aesthetic appeal over fostering community interactions. This design focus can inadvertently lead to an environment where residents feel isolated from their neighbours, despite living in close physical proximity.

Social isolation is an epidemic-level public health issue with important implications for individual physical and mental health outcomes. (Hodgson et al., 2020), It is not just a personal issue; it has broader societal implications. Social isolation is the objective lack or paucity of social contact and infrequent interactions with others. (Smith et al., 2023), Loneliness is a related concept defined as the subjective, negative feeling of inadequate meaningful connections resulting from an unmet need or discrepancy between desired and actual social relationships. (Prohaska et al., 2020), Individuals experiencing isolation or quarantine are at increased risk for adverse mental health outcomes, particularly depression, anxiety, stress-related disorders, and anger. (Henssler et al., 2021) Therefore, addressing social isolation in high-rise residential buildings is not only crucial for individual well-being but also for the overall health of the urban community.

Problem Statement

Motivational Problem

With the rapid increase in urban population, cities around the world are resorting to high-rise residential buildings to cater to the increasing demand for shelter. Malaysia is no exception. For the last 20 years or so, more and more Malaysians have been living in high-rise residences, especially where urban land is scarce and expensive. (The Sun, 2018) While high-rise apartments may appear to be a practical solution to the problem of limited urban space, their design and construction can have significant consequences for social interaction and community building. (Kim, 2023).

The personal observation that the architecture of high-rise buildings can contribute to feelings of isolation is a critical motivational factor for this research. For tall buildings, environmental psychology must surely be all the more important as these buildings have distinct psychological factors, which must affect the user experience. Increasingly, tall buildings are regarded as indicators of luxurious accommodation, whether for office, residential or hotels; sculptural icons created by signature architects with extensive facilities in master planned developments. (Buro Happold, 2015), A large structure may appear uninviting, while a small, tight space dissuades lingering and relaxing. (The Goodheart-Willcox Co., 2021), Sharing semi-public spaces with strangers can make residents more suspicious and fearful of crime. Many feel an absence of community, despite living alongside tens or hundreds of other people. (The Conversation, 2017) Common areas, such as lobbies and corridors, are often sterile and uninviting, lacking the warmth and design elements that

encourage socializing. The lack of communal spaces where residents can gather and interact casually creates an environment where people remain strangers, despite living just a few doors apart.

Moreover, the rapid pace of urban life in Kuala Lumpur means that residents are often too busy to seek out social interactions outside their immediate living environment. In fact, 63 percent of Malaysian workers surveyed revealed they have not been spending enough time with their family due to long working hours. (The Malaysian Insider, 2021) Thus, the design of high-rise residential buildings should inherently promote social connectivity. This underscores the importance of exploring architectural solutions that can transform high-rise living from isolated existence to a vibrant, connected community.

Research Problem

According to Scanlon et al., (2021), it has been found that social connection with neighbours and sharing spaces with others—both features of community-led housing--are essential to place attachment and wellbeing, which in turn may help prevent loneliness. The most successful interventions to alleviate loneliness foster meaningful social interaction through sustainable, community and place-based solutions. Symbolic interactionism and architectural design can enhance the sense of community in residential environments by influencing human behaviour and interactions. (Molana & Adams, 2019), And through designing spaces for interaction and comfort in architectural planning can create liveability pleasure for users, with elements like appropriate inter-space arrangements, courtyards, seating, lighting, and ventilation promoting interactive comfort. (Olanusi & Oluwadepo, 2023), For instance, Zhang et al., (2018) found that higher levels of satisfaction with outdoor space quality and community layout are associated with greater place attachment and less community participation, while higher levels of satisfaction with circulation planning lead to greater place attachment and community participation.

In the context of Kuala Lumpur, high-rise residential buildings are often designed with minimal communal spaces, focusing instead on maximizing the number of units and optimizing space usage. One such is the neo-minimalist style in high-rise buildings, it emphasizes minimal applications and efficient design, focusing on minimal communal spaces versus maximizing units and optimizing space usage. (Arab et al., 2017) This design approach can lead to a lack of opportunities for residents to engage with each other, fostering an environment where social isolation can thrive. As high-rise apartment buildings are often criticized for their higher negative social impacts compared to other housing typologies such as low levels of social interaction, social cohesion, and social support (Kearns et al., 2012) and social isolation and anonymity (Gifford, 2007). Nguyen et al., (2020) study social interaction among residents of low-income high-rise apartment buildings and conclude that due to the lack of appropriate communal space, residents have to self-organize activities in circulation areas which has a negative impact on people's feelings of privacy and safety. Even according to McLane & Pable, (2020), resident gathering spaces in supportive housing can prompt and support relationships, decreasing feelings of marginalization.

However, the issue of social isolation in high-rise buildings is compounded by the cultural context of Kuala Lumpur, where traditional community structures are being overtaken by rapid urbanization. As people move from rural areas to the city, the loss of close-knit

community ties can lead to feelings of loneliness and isolation. Therefore, it is imperative to investigate how architectural design can mitigate these effects and promote social cohesion in high-rise residential environments.

The research aims to explore key architectural strategies that can mitigate social isolation in high-rise residential buildings. The primary research question seeks to understand what specific design elements can be implemented to alleviate feelings of isolation within these densely populated urban environments. Another research question addresses how the integration of green spaces and communal areas in high-rise buildings can contribute to enhancing social interactions among residents. These questions reflect a growing interest in understanding the role of architecture in fostering social connectivity in urban settings.

The research objectives are aligned with these questions. The first objective is to identify effective architectural design strategies that can reduce social isolation in high-rise residential buildings. This involves examining various design approaches that encourage social interaction and community building within shared spaces. The second objective focuses on the incorporation of green spaces and communal areas in high-rise buildings to enhance opportunities for social engagement. By achieving these objectives, the research aims to offer valuable insights into creating residential environments that not only address the needs of modern urban living but also promote social well-being.

Literature Review

The literature review explores various perspectives on the design and functionality of high-rise residential buildings and their implications for social sustainability, environmental well-being, and psychological health. These studies address the gaps in current architectural practices and highlight the need for innovative design solutions that foster community interaction, incorporate green spaces, and promote social cohesion. The following table summarizes key studies that examine the sustainability of residential high-rise buildings, the integration of common and green spaces, and their impact on reducing social isolation and improving overall well-being. By identifying the architectural strategies and environmental principles that enhance social interactions and support sustainable development, this literature review provides valuable insights into the potential for transforming high-rise living environments to better meet the evolving needs of urban populations.

Table 1
Summary of Key Literature on Sustainable Design and Social Interaction in High-Rise Residential Buildings

Document	Background study	Problem statement	GAP	P.O.D	Method	Conclusion	Remarks
Maleki, B., Casanovas-Rubio, M. del M., & Fuente Antequera, A. de la. (2022). Sustainab	led to the constructio n of high-rise buildings, reducing horizontal urban developmen t, and	an overview of the various sustainability factors applied to RHB design.	It is possible to integrate some potential aspects of a cohesive and healthy social environmen	provide an overview of various sustainabi lity factors, such as environm ental,	methodic al literature search, consideri ng and assessing journal and conferenc	that effective design and constructi on of RHB buildings can provide great	*Calls for the need for a more integrate d and systemati c approach to*

ility assessment in residential high-rise building design: state of the art.	making construction of residential high-rise buildings (RHB) a necessity in major cities around the world.		t, as in traditional housing and neighbourhoods, into a contemporary and sustainable RHB design.	economic and social aspects, in relation to RHB buildings.	e articles dealing with the residential high-rise buildings and performance.	benefits in terms of environmental, social and economic sustainability	*sustainability in high-rise residential building design, calling for collaboration between architects, engineers, and urban planners to achieve better environmental and social outcomes.*
Abed, A., & Al-Jokhadar, A. (2022). Common space as a tool for social sustainability. Journal of Housing and the Built Environment, 37(1), 399–421.	high attention was given to private spaces (apartment dwell) in terms of design, size, and number of units per building while ignoring the public zone.	develops design guidelines that are aimed at fostering social sustainability based on feedback from stakeholders (residents, architects, and developers)	the configuration of common space within different typologies of apartment buildings and its impact on social sustainability.	Social sustainability can be described as asocial pillar that focuses on social inclusion, social coherence, social cohesion, and social justice	A mixed-method approach was adopted in this research that entailed spatial analysis of layouts of 65 apartments' building, an on-line survey of 197 residents of apartments' buildings, and face-to-face interviews with 30 architects and developers.	it is necessary to examine the possibility of expansion of common spaces from a qualitative point of view to have an interactive space.	*Highlights the need for architects and urban planners to prioritize the design and integration of common spaces in residential projects to foster social sustainability and improve overall community well-being.*

Zhdanova, I. V., Kayasova, D. S., & Kuznetsova, A. A. (2022). Principles of the Inclusion Green Spaces in the Public Area of a Residential Building.	City centres are densely built, and recreational and green spaces are becoming less and less. All this negatively affects on the environment and the condition of a person living in a large city.	explore modern solutions for the introduction of green spaces in the structure of residential buildings.	at the moment there are no requirements for the design of residential buildings with landscaping, there are no recommendations for areas and functional saturation.	o summarize the practical experience of designing and constructing residential buildings with the organization of green spaces in them	to identify the main methods of implementing green spaces for residential buildings; to formulate the basic principles of designing landscaping for public spaces of residential buildings or apartments	the design and construction of residential buildings with the inclusiono f green spaces, taking into account the principles, is a promising direction.	*Thoughtful inclusion of green spaces in residential buildings is essential for promoting social cohesion and improving the overall living environment in urban areas.*
Wigfield, A., Turner, R., Alden, S., Green, M., & Karania, V. K. (2022). Developing a New Conceptual Framework of Meaningful Interaction for Understanding Social Isolation and Loneliness.	Academic debate about social isolation and loneliness, and their adverse health and well-being implications, has resulted in many policy and programme interventions directed towards reducing both, especially among older people.	redresses this and draws on theoretical constructs adapted from symbolic interactionism, together with the Good Relations Measurement Framework,	the way that both concepts have been discussed is complex, and at times unclear, with academics, policy makers, and practitioners alike often conflating the terms	argues for a need to understand experiences of social relationships, particularly those which facilitate meaningful interaction.	The evidence drawn on for this paper is based on a 'literature review', as outlined in the typology of reviews by Grant and Booth (2009) of published and 'grey' literature	It emphasises the need to have activities, but also to create the appropriate places and spaces which can foster meaningful interaction.	*The proposed framework can guide future research and interventions aimed at improving social connections and reducing loneliness, highlighting the importance of meaningful interactions in*

							addressing these issues.
Gifford, R., Steg, L., & Reser, J. P. (2012). Environmental Psychology. IAAP Handbook of Applied Psychology, 440–470.	individuals change their environments, and their behavior and experiences are changed by their environments. It includes theory, research, and practice aimed at making the built environment more humane and improving human relations with the natural environment.	Many environmental psycholo-gists nevertheless prefer to apply knowledge. Instead of working in a research setting, many enter into consultancy or public service to make good use of research findings for developing policy or solving local problems.	Despite extensive research, there is a need for more comprehensive studies on how specific environmental designs affect psychological outcomes, particularly in the context of modern urban settings.	The purpose is to provide a comprehensive overview of the theories, research, and practical applications of environmental psychology to make the built environment more humane and supportive of human needs.	Seven major theoretical approaches guide environmental psychologists, although many focused theories deal with specific issues.	rethinking of people-environment transac-tions, both directly in immediate 'real' environments, and indirectly mtl1 respect to virtual information environments.	*Effective environmental design requires integrating psychological principles with practical considerations to address both individual and societal needs, emphasizing the importance of creating spaces that promote positive human-environment interactions.*

Theoretical Framework for Social Interaction and Well-Being in High-Rise Residential Buildings

Loneliness and social isolation, while related, are distinct concepts with different definitions and implications. Loneliness is typically described as the subjective feeling that arises when there is a mismatch between the quality of relationships a person desires and what they actually experience (Ong et al., 2016). In contrast, social isolation is an objective measure, referring to the quantity of social interactions and contacts a person has, as well as the frequency of these interactions (Cudjoe et al., 2020). Although these constructs may overlap, they require distinct assessment, evaluation, and intervention approaches. Therefore, while they should be considered in relation to one another, they must also be treated as separate entities in research and practice (NASEM, 2020). The theoretical framework for this study integrates established theories from environmental psychology, urban sociology, and architectural design to explore the interaction between the built environment and social behavior, particularly within high-rise residential buildings.

Environmental psychology focuses on the interactions between individuals and their physical environments. In these interactions, individuals both shape and are shaped by their surroundings. The field includes theoretical, research, and practical efforts to make the built environment more humane, addressing how environmental features can improve human relationships with nature and each other. Given the substantial societal investment in physical environments (buildings, parks, streets) and the high costs of environmental degradation, environmental psychology plays a critical role in promoting both human and environmental well-being (Gifford et al., 2012). Gifford et al. (2011), further examined person–environment interactions in urban settings, finding that personal factors, as well as the physical characteristics of cities and neighborhoods, significantly affect how residents perceive and interact with their environment—whether they feel satisfied, fearful, attached, or mentally healthy (Wigfield et al., 2022).

Oscar Newman's (1972) "defensible space" theory, further explored by Kitteringham (2010) and Timm (2021), proposes that exclusive living environments such as cul-de-sac layouts create territoriality and foster a sense of community. This collective sense of ownership encourages informal social interactions and enhances security through collective action against crime. This theory is particularly applicable to high-rise buildings, where the design of shared spaces can either encourage or inhibit social engagement among residents.

Urban sociology contributes another dimension by exploring the social dynamics of urban life, particularly how population density and spatial organization influence social relationships. Social capital, a concept within this field, links physical health outcomes to group cohesion and individual perceptions of social connectedness (Rodgers et al., 2019). Social capital impacts social affiliation, which in turn affects subjective well-being (Hommerich & Tiefenbach, 2018).

Well-designed communal spaces in high-rise buildings are crucial for fostering social connections and promoting well-being (Ewen et al., 2023). Communal spaces facilitate neighborhood participation by encouraging place-based social interactions and nurturing a sense of place attachment (Zhu & Fu, 2017). Such spaces provide opportunities for residents to build relationships, thus contributing to the development of social capital and enhancing the overall quality of life in high-rise residential buildings.

Conceptual Framework

The conceptual framework for this research studies the relationships between architectural design elements, the integration of green and communal spaces, and social interactions among residents in high-rise residential buildings. This framework investigates how specific design strategies can alleviate social isolation and enhance community engagement.

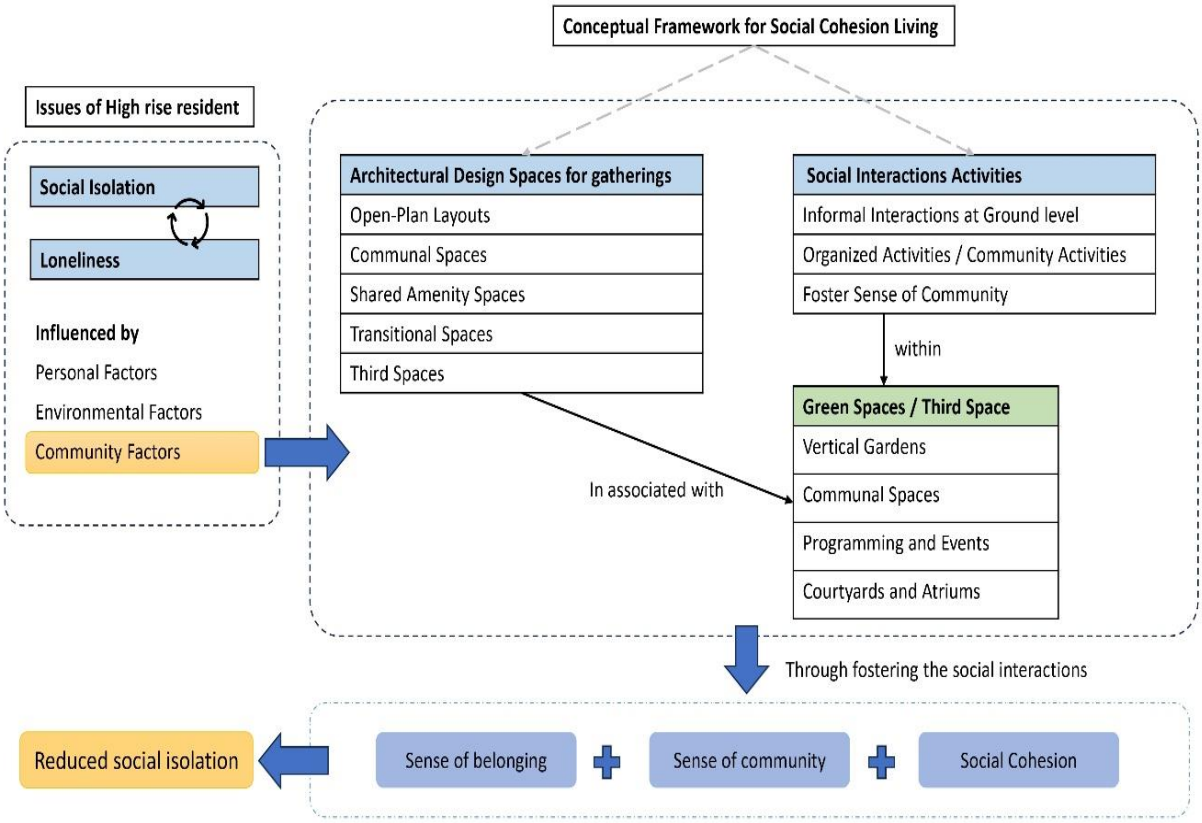

Figure 1: Conceptual Framework for Social Cohesion Living

From an architectural standpoint, the architectural design strategies refer to the specific elements and principles used in designing high-rise residential buildings. These include spatial layout, access to communal areas, visibility of shared spaces, and the inclusion of amenities that encourage social interactions. Spatial attributes, such as access to communal areas, visibility of shared spaces, and inclusion of amenities, condition sharing activities and behaviours in urban sharing, sharing a living space, and shared social spaces. (Chan & Zhang, 2021) Even sociospatial design factors like visibility, ease of access, adjacencies, access to daylight and views, furniture types, and aesthetics can influence the success of resident gathering spaces in supportive housing. (McLane & Pable, 2020)

Other than that, the integration of green spaces through green roofs, green facades, and green walls, can increase ecological and aesthetic components while enhancing social interaction and comfort of living (Zhdanova et al., 2022). Maleki et al., (2022) mentioned that incorporating green spaces and combining living, working, and leisure activities can improve the natural environment in residential high-rise buildings.
Through the spaces provided, social interactions can occur through various forms of engagement and communication among residents. As such, design guidelines for multi-family housing should consider social sustainability to improve indoor common spaces. (Abed & Al-Jokhadar, 2022)

In conclusion, this study aims to investigate by integrating theories from environmental psychology, urban sociology, and by examining practical design strategies and green spaces,

the study seeks to offer actionable insights and guidelines for creating more socially connected and vibrant urban living environments.

Conclusion

Addressing social isolation in high-rise residential buildings in Kuala Lumpur is a multifaceted challenge that requires combining architectural design, urban planning, and social interventions. The rapid urbanization in Malaysia, particularly in Kuala Lumpur, has led to the proliferation of high-rise buildings, which, while efficient in terms of space utilization, often exacerbate social isolation among residents. This phenomenon is not unique to Kuala Lumpur but is prevalent in many urban centres worldwide, making it a critical issue to address for the well-being of urban populations.

The study identifies several architectural design strategies that can alleviate social isolation. These include creating more communal spaces, such as rooftop gardens, shared courtyards, and multipurpose rooms that encourage residents to gather and interact. It can serve as natural gathering points for residents, promoting a sense of community. Communal spaces like shared kitchens, lounges, and recreational areas encourage residents to engage with one another, fostering stronger social bonds. For future research and consideration, it should explore on the long-term impacts of implemented design strategies on social isolation and community well-being. Comparative studies across different cultural contexts can provide deeper insights into the universal and unique factors influencing social interactions in high-rise living environments.

And so, while high-rise residential buildings are an inevitable part of urban development, their design must evolve to address the social challenges they present. Through integrating communal spaces and considering the cultural and psychological needs of residents, it is possible to transform high-rise living from a potentially isolating experience into one that fosters community and social well-being.

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