

Physical Features Preferences for Multi-Generational Housing Active Ageing in Malaysia

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Abstract

Malaysia is closer to becoming an ageing nation with a substantial young population that offers complex demands for multi-generational housing. This study employs an exploratory sequential mixed-methods design involving interviews with experts followed by a survey of 398 respondents representing four generations (Baby Boomers, Generation X, Generation Y, and Generation Z). There are four sub-features identified: 1) accessibility and walkability, 2) communal areas, 3) personal privacy, and 4) assisted technology integration. The study indicates a transition towards life course housing that promotes long-term livability. The findings provide an inclusive housing design strategy consistent with Malaysia's old-age national strategy.

Keywords: Multi-Generational Housing; Quality of Life; Active Ageing; Physical features

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1.0 Introduction

Malaysia is moving towards an ageing nation, with demographic projections indicating a steady increase in the proportion of older persons while maintaining a substantial youth population. This dual demographic structure generates complex housing demands that must accommodate diverse generational needs within a shared living environment. Each generation possesses distinct socio-economic characteristics, lifestyles, and spatial expectations, which influence their housing preferences and perceptions of well-being (Ismail et al., 2025). At the same time, older adults are more vulnerable to social isolation and loneliness, particularly when living in environments that do not support mobility, interaction, and independence (Van Gasse & Wyninckx, 2024). Despite the growing emphasis on healthy ageing, many existing frameworks tend to focus primarily on individual well-being and often overlook the intergenerational dimension of living arrangements and mutual support systems (Heinonen et al., 2025).

In response to rising housing costs, caregiving demands, and strong familial values in Asian societies, multi-generational living has re-emerged as a practical and culturally relevant housing model. This living arrangement allows different age groups to co-reside and share resources, emotional support, and daily activities, thereby strengthening family cohesion and improving overall life satisfaction (Yap & Tan, 2021; Adianto et al., 2021). However, the success of multi-generational housing depends greatly on the quality of its physical environment. Well-designed physical features can enhance autonomy, safety, comfort, and opportunities for social interaction for residents across the life course (Kim et al., 2025). Conversely, poorly designed environments may create spatial conflicts, reduce privacy, and limit the ability of older adults to age in place.

From a planning and design perspective, the integration of age-friendly physical features into housing development is essential for achieving inclusive and sustainable communities. In the Malaysian context, awareness of population ageing and its implications for housing design and neighbourhood planning remains relatively limited (Rashid et al., 2022). Understanding how physical housing environments influence quality of life and active ageing across generations is therefore crucial for guiding future policy, design standards, and housing provision (Wil & Ismail, 2025).

Accordingly, this study aims to develop a conceptual framework for multi-generational housing environment preferences focusing on physical features that enhance quality of life and support active ageing. Specifically, the study seeks to identify and validate the importance of these physical features across different generational cohorts. By incorporating multi-generational perspectives, the findings provide empirical evidence for inclusive housing strategies that respond to Malaysia's demographic transition while promoting long-term liveability and intergenerational well-being.

2.0 Literature Review

2.1 The Multi-Generational Preferences

Generational cohort theory provides an important lens for understanding variations in housing expectations, lifestyle patterns, and spatial behaviour. A generation is not merely defined by age but by shared socio-economic experiences, cultural exposure, and technological environments that shape attitudes and decision-making processes (Ismail et al., 2020). In Malaysia, the classification of Baby Boomers, Generation X, Generation Y, and Generation Z reflects distinct life course stages, economic capacities, and family roles, all of which influence housing needs and residential satisfaction.

The growing complexity of multi-generational households requires housing environments that reconcile diverse and sometimes competing spatial expectations. Older adults prioritise safety, accessibility, proximity to services, and opportunities for social participation to support ageing-in-place (Nguyen & Levasseur, 2022). In contrast, Generation X often occupies a “sandwich generation” position, balancing employment demands with caregiving responsibilities for both children and ageing parents, thereby requiring flexible and adaptable living environments (Maříková et al., 2025). Younger cohorts, particularly Millennials and Generation Z, tend to value privacy, affordability, spatial efficiency, and digital connectivity, reflecting their exposure to compact living, mobile work patterns, and technology-oriented lifestyles (Adianto et al., 2021).

These intergenerational differences indicate that conventional housing models are increasingly inadequate. Multi-generational housing must therefore move beyond a one-size-fits-all approach and instead adopt inclusive spatial strategies that support autonomy, interdependence, and long-term adaptability across the life course. Such an approach aligns with the concept of responsible ageing, which emphasises the integration of individual and intergenerational well-being within shared living environments (Heinonen et al., 2025).

2.2 Quality of Life (QoL)

Quality of life (QoL) is a multidimensional construct shaped by the interaction between individuals and their physical, social, and psychological environments. The housing environment plays a central role because it directly influences daily functioning, health, safety, and social relationships (World Health Organization, 2002). In the context of ageing societies, QoL is increasingly associated with the ability to remain independent, maintain social connections, and continue meaningful activities within a familiar environment.

Empirical studies demonstrate that well-designed residential environments contribute to higher levels of life satisfaction, better mental health, and stronger social engagement (Loke et al., 2020). Physical attributes such as barrier-free circulation, adequate lighting, adaptable layouts, and accessible communal spaces enable residents to perform daily activities more efficiently while reducing environmental stress. Moreover, QoL is not only an individual outcome but also a spatially mediated condition that depends on the extent to which housing environments support diverse life-course needs (Rashid et al., 2025). QoL is further influenced by the balance between shared interaction and personal autonomy. Environments that successfully integrate communal and private domains are more likely to enhance family cohesion while preventing spatial conflicts and emotional strain.

2.3 Active Ageing

Active ageing emphasises the optimisation of opportunities for health, participation, and security in order to enhance quality of life as people age (World Health Organization, 2002). The built environment is a critical enabler of this process because it determines the extent to which individuals can remain mobile, socially engaged, and independent.

Walkable and accessible environments encourage physical activity, reduce the risk of falls, and improve cognitive and emotional well-being among older adults (Yue et al., 2025; Zhang et al., 2023). Housing design also influences relocation decisions and the feasibility of ageing-in-place, which has become a central goal of ageing policy worldwide (Chou & Kröger, 2020). The ecological perspective of active ageing highlights that supportive environments must operate at multiple scales, from the dwelling unit to the neighbourhood and community (Lak et al., 2020). Active ageing is not only an individual process but also a relational one. The presence of younger household members can enhance informal care, emotional support, and daily interaction, provided that the physical environment enables both co-presence and independence.

2.4 Multi-Generational Housing Environment Preferences' Physical Features for Quality of Life and Active Ageing Community

The physical design of multi-generational housing must respond to functional, social, and psychological needs simultaneously. The framework developed in this study is grounded in a scoping review approach (Arksey & O'Malley, 2005) and focuses on spatial attributes that support everyday activities, intergenerational interaction, and long-term liveability.

Universal accessibility is consistently identified as the most critical element of age-friendly housing because it enhances mobility, reduces accident risks, and allows residents to remain in their homes as their physical abilities change (Dash & Thilagam, 2022; Kwon & Oh, 2023). Communal spaces, on the other hand, function as social infrastructure that strengthens intergenerational relationships, reduces loneliness, and promotes collective well-being (Nayak et al., 2023; Van Gasse & Wyninckx, 2024).

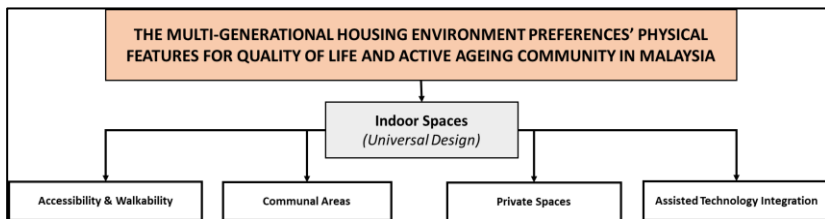


Figure 1: The Physical Features Preferences for Multi-Generational Housing Active Ageing in Malaysia

Equally important is the provision of personal privacy, which supports psychological well-being, identity formation, and place attachment, particularly in high-density shared living environments (Ismail et al., 2023; Al-Homoud, 2025). The increasing integration of

assisted and smart technologies further expands the capacity of housing environments to support independent living, enhance safety, and reduce caregiving burdens (Pani-Harreman et al., 2020; Shi et al., 2025).

Despite growing recognition of these elements, awareness of population ageing in relation to housing design and physical planning remains limited in Malaysia (Rashid et al., 2022). This highlights the need for an empirically grounded framework that integrates multi-generational perspectives into housing development strategies.

3.0 Methodology

This study adopted a mixed-methods approach using an exploratory sequential research design, which is particularly suitable for developing and empirically validating a conceptual framework within a complex socio-spatial context. The design allows qualitative insights to inform instrument development, followed by quantitative testing to establish generalisability and construct validity (Creswell & Creswell, 2021; Dawadi et al., 2021). This methodological integration is essential for multi-generational housing research, where spatial preferences are shaped by both measurable attributes and lived experiences.

The first phase involved semi-structured expert interviews with representatives from the public sector, private housing industry, and academia. This phase aimed to identify relevant physical housing environment features that support quality of life and active ageing in multi-generational settings. The use of expert sampling ensured that the attributes incorporated into the survey instrument were grounded in professional practice and policy awareness, thereby enhancing content validity.

Findings from the qualitative phase were translated into a structured questionnaire. A pilot study was conducted to test the reliability and clarity of the measurement items. Internal consistency was assessed using Cronbach's alpha, ensuring that the constructs met acceptable reliability thresholds for social science research.

The quantitative phase aimed to identify the importance of physical housing features across generational cohorts. Data were collected between 1 June and 30 October 2025 using both online (Google Forms) and self-administered printed questionnaires. A total of 398 valid responses were obtained. The sample included four (4) generations, which are Baby Boomers, Generation X, Generation Y and Generation Z. Quantitative data were analysed using SPSS Version 30, employing descriptive statistics, mean score and ranking analysis to determine generational differences in current quality of life satisfaction and importance of physical housing features in sustainable multi-generational housing environments.

4.0 Results

The sample composition reflects Malaysia's current demographic trend, with a strong representation of younger cohorts. The findings (Figure 2) by generations (age cohorts), the sample was composed of younger generations, particularly Generation Z (43.5%) and

Generation Y (37.2%), followed by Generation X (13.6%) and a smaller proportion of Baby Boomers (5.8%). While this distribution indicates a youth-dominant population structure, it also signals the future ageing of these cohorts, reinforcing the importance of designing housing that remains adaptable across the life course.

The analysis of quality of life (QoL), as shown in Figure 3, revealed age-related variations in perceived well-being. Baby Boomers recorded the highest overall QoL mean score ($M = 3.83$, $SD = 0.80$), indicating greater residential satisfaction and emotional stability. This may be attributed to a higher level of housing tenure security, established social networks, and stronger place attachment, which are known contributors to ageing-in-place satisfaction (Ismail et al., 2023).

In contrast, Generation Z reported the lowest QoL levels ($M = 3.60$, $SD = 0.87$). This may reflect the transitional life stages, financial constraints, and housing affordability challenges, which often reduce residential satisfaction among younger adults. Interestingly, Generation Y demonstrated relatively high QoL despite being in economically active and caregiving phases.

This suggests that housing environments supporting functional efficiency and family interaction contribute positively to mid-life well-being. Across all cohorts, psychological well-being recorded the highest mean values, indicating that the home environment plays a crucial role as an emotional and revitalising space.

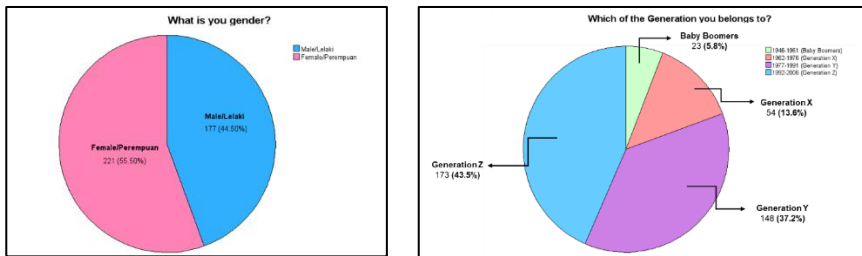


Figure 2: Respondents' Demographic Background

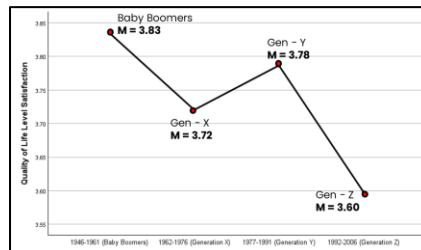


Figure 3: Quality of Life (QoL) Level Satisfaction of Respondents

Table 1: The Physical Features Preferences for Multi-Generational Housing Active Ageing in Malaysia

The Physical Features Preferences for Multi-Generational Housing Active Ageing in Malaysia												
Physical Features	Baby Boomers			Generation X			Generation Y			Generation Z		
	Mean	Std. Deviation	Rank	Mean	Std. Deviation	Rank	Mean	Std. Deviation	Rank	Mean	Std. Deviation	Rank
	3.89	0.884	2	3.58	0.902	1	3.84	0.873	1	3.60	0.838	2
	3.67	0.870	3	3.32	1.012	4	3.75	0.840	3	3.60	0.850	3
	3.42	1.045	4	3.48	0.942	3	3.68	0.909	4	3.50	0.950	4
	4.05	0.902	1	3.54	1.034	2	3.76	1.096	2	3.61	1.060	1

Baby Boomers demonstrated a strong preference for Assisted Technology Integration, which ranked as their highest priority (Mean = 4.06, Rank = 1), indicating a growing demand for technologies that enhance safety, health monitoring, and independent living. Accessibility and walkability were ranked second (Mean = 3.89, Rank = 2), reflecting the cohort's need for mobility support and age-friendly design to facilitate safe movement within the home environment. Communal Areas received moderate importance (Mean = 3.67, Rank = 3), suggesting that shared spaces continue to support family bonding and social interaction. In contrast, Personal Privacy was ranked lowest (Mean = 3.42, Rank = 4), indicating that older adults prioritise functional support and interaction over individual spatial separation in future housing environments.

For Generation X, Accessibility and Walkability emerged as the most important physical feature (Mean = 3.58, Rank = 1), highlighting the relevance of safe and accessible circulation to support both ageing parents and young children within multi-generational households. Assisted Technology Integration ranked second (Mean = 3.54, Rank = 2), reflecting the cohort's digital adaptability and reliance on smart systems for household efficiency and caregiving support. Personal Privacy was ranked third (Mean = 3.48, Rank = 3), illustrating the need to balance caregiving responsibilities with personal autonomy. Communal Areas were ranked lowest (Mean = 3.32, Rank = 4), suggesting that while shared spaces are valued, they are considered less urgent compared to functional and technological needs.

Among Generation Y, Accessibility and walkability were again ranked as the top priority (Mean = 3.84, Rank = 1), demonstrating increased awareness of safety, movement efficiency, and health-conscious living within the residential environment. Assisted Technology Integration followed as the second-highest priority (Mean = 3.76, Rank = 2), indicating strong acceptance of digital features as standard components of contemporary housing. Communal Areas were ranked third (Mean = 3.75, Rank = 3), reflecting appreciation for shared spaces that facilitate social interaction. Personal Privacy, although ranked lowest (Mean = 3.69, Rank = 4), still recorded relatively high mean values,

highlighting preferences for private, personalised, and quiet zones within multi-generational living settings.

Similarly, Generation Z prioritised Accessibility and Walkability and Assisted Technology Integration as their joint highest-ranked features (Mean = 3.61, Rank = 1 for both), suggesting strong expectations for universally accessible layouts and embedded smart technologies in future housing designs. Communal Areas ranked second (Mean = 3.60, Rank = 2), reflecting the importance of social connectivity and shared environments among the youngest cohort. Personal Privacy was ranked third (Mean = 3.51, Rank = 3), indicating that while social engagement is valued, access to individual space remains essential within shared living arrangements.

5.0 Discussion

The findings demonstrate that accessibility and walkability constitute the core spatial foundation for multi-generational housing, indicating a collective shift towards long-term liveability and universal design awareness across all age groups. This priority reflects not only the functional needs of older adults but also the anticipatory housing behaviour of younger generations, who increasingly recognise the importance of adaptable environments that can accommodate future life-course transitions. Such forward-looking preferences suggest that accessibility is no longer perceived as a specialised feature for the elderly but as a mainstream housing requirement that supports resilience and sustainability in residential design (Kim et al., 2023).

The importance of communal spaces highlights the continuing relevance of housing as a social institution rather than merely a physical shelter. In multi-generational households, shared spaces function as the primary setting for intergenerational interaction, emotional exchange, and informal caregiving. Their high ranking indicates that residents value spatial configurations that facilitate co-presence while maintaining flexibility for diverse activities. This supports the argument that social participation and family cohesion are spatially mediated and dependent on the availability of meaningful common areas (Ling et al., 2023; Nayak et al., 2023)

At the same time, the strong emphasis on personal privacy reveals the need for a spatial balance between collectivism and individual autonomy. Multi-generational living does not imply constant interaction; rather, it requires environments that allow selective engagement and withdrawal. The provision of private domains enables residents to maintain personal identity, emotional regulation, and control over daily routines, which are essential for psychological well-being and ageing-in-place (Al-Homoud, 2025; Ismail et al., 2023).

The increasing acceptance of assisted technology integration reflects the digital transformation of domestic environments and its role in supporting independent living. Smart home systems, monitoring devices, and emergency response technologies enhance safety while reducing reliance on formal care services. The generational convergence in recognising the importance of these technologies indicates that digitally enabled housing

is becoming a normative expectation rather than a specialised solution for elderly care (Shi et al., 2025).

Collectively, these findings illustrate that multi-generational housing preferences are evolving towards a hybrid spatial model that integrates accessibility, sociability, autonomy, and technological support. This model aligns with the ecological framework of active ageing, which emphasises the interaction between individuals and their environments across multiple domains (Lak et al., 2020).

6.0 Conclusion

This study provides empirical evidence that the physical environment of multi-generational housing plays a decisive role in shaping quality of life and enabling active ageing in Malaysia. The prioritisation of accessibility and walkability demonstrates a widespread recognition of universal design as a long-term strategy for supporting mobility, independence, and safety across the life course. The importance of communal spaces confirms that housing environments must function as platforms for social interaction and intergenerational cohesion, while the emphasis on personal privacy underscores the need for spatial configurations that support autonomy and psychological well-being. The growing relevance of assisted technology integration further indicates a transition towards digitally enabled and care-supportive domestic environments.

These findings also highlight the necessity of incorporating multi-generational and age-friendly design principles into national housing standards, planning guidelines, and development frameworks. Housing provision should move beyond short-term market-driven models and instead adopt a life-course approach that anticipates demographic ageing and changing family structures. Design strategies should promote adaptable layouts, barrier-free circulation, flexible communal spaces, and smart-home readiness as core housing components rather than optional features.

Thus, this study contributes to the integration of quality of life, active ageing, and multi-generational housing within a single conceptual framework, demonstrating that these domains are spatially interconnected. Practically, the framework provides evidence-based guidance for architects, planners, and housing developers in creating inclusive and resilient living environments. Future research should examine outdoor and neighbourhood environments, social infrastructure, and biophilic design integration to develop a more comprehensive multi-generational housing. The adoption of smart technologies in Malaysian housing is also required to understand affordability, usability, and cultural acceptance across different income and generational groups.

Ethical Consideration

This study was conducted with ethical standards that have been approved by the UiTM Research Ethics Committee under reference number REC/04/2025 (PG/MR/202). All respondents were fully briefed, and informed consent was taken. Participation was entirely

voluntary. Confidentiality protocols were maintained to ensure the privacy and anonymity of all respondents throughout the study.

Article Contribution to Related Field of Study

This paper offers a comprehensive overview of the multi-generational housing preferences features among the generations to enhance their quality of life and active ageing in Malaysia.

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