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## **PILOT STUDY FINDINGS ON MULTI-GENERATIONAL HOUSING ENVIRONMENT PREFERENCES FEATURES FOR QUALITY OF LIFE AND ACTIVE AGEING IN MALAYSIA**

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### **Abstract**

The rise in Malaysia's ageing population has increased the need for housing environments that can support both ageing in place and multi-generational living. This study aims to assess the reliability of a newly developed framework that focuses on the features of housing environments which contribute to the quality of life for the active ageing community. A pilot study was conducted to assess the internal consistency of the survey instrument, which was developed based on physical and social housing features identified through an in-depth literature review. A total of 31 respondents from different generational groups in Shah Alam participated in the study. The findings showed strong internal reliability across most sub-features, including Accessibility and Walkability, Communal Areas, Assisted Technology Integration, Community Engagement, and Health and Well-Being. However, the Personal Privacy sub-features revealed a lower reliability score. Overall, the results demonstrate the instrument's potential to guide a better housing design, policy making, and further research in creating inclusive, age-friendly environments that support intergenerational connection and support active ageing.

**Keywords:** Multi-Generational, Housing Preferences, Quality of Life, Active Ageing, Reliability Analysis

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## **INTRODUCTION**

Malaysia is experiencing a significant demographic transition, with the proportion of the elderly aged 60 years and above expected to double by the year 2040 (DOSM, 2020; Aclan et al., 2023). This shift brings important implications for housing and urban development, particularly in ensuring that older adults can age safely, comfortably, and actively within their communities. The World Health Organisation (2020) has emphasised the importance of the active ageing concept that promotes continued participation, health, and security in later life. A key element of active ageing lies in the suitability of the living environment, especially as more families across Malaysia adopt multi-generational housing arrangements due to cultural traditions, rising living costs, and limited urban housing options (Arshard et al., 2023).

Living with multiple generations under one roof offers many benefits, such as emotional support, caregiving convenience, and shared expenses. However, it also introduces challenges, particularly in ensuring that the home environment meets the diverse needs of different age groups, especially for the elderly (Gawlak et al., 2021). For older residents, issues such as safety, accessibility, privacy, and opportunities for social interaction become crucial considerations (Aripin et al., 2024). Although various studies have explored general features of elderly-friendly housing, there remains a lack of specific, evidence-based understanding of which housing characteristics contribute most to quality of life in a multi-generational context. This can be supported by a previous study by Bahuri et al (2022) on a deficiency in awareness regarding active ageing among the population, which may negatively impact various domains of the quality of life, including physical, psychological, social relationships, and environmental factors.

The objective of this study is to validate a framework of housing environment preferences aimed at supporting the quality of life for the active ageing community in Malaysia. By focusing on both physical and social features of the housing environment, the study offers a structured instrument that can guide future research, inform design practices, and shape age-inclusive housing policy.

## **LITERATURE REVIEW**

### ***The Generations***

Generations can be defined as cohorts of persons or separate groups of the population that can be differentiated by the year they were born (Ismail et al., 2020). Each cohort is subject to unique life events that impact their perspective of the world. It is important to understand that each generation's perceptions and attitudes provide valuable insights into societal trends and their consumer

behaviours for fostering intergenerational understanding and collaboration in addressing contemporary challenges (Vuković, 2023). Thus, this study attempts to review Malaysia's generations with four age groups as referenced by Ismail et al., (2020), namely, Baby Boomers (1946-1961), Generation X (1962-1976), Millennials or Generation Y (1977-1991), and Generation Z (1992-2006) due to sharing a common research context, i.e. housing environment. Table 1 shows different terms and names used to represent each cohort group across different authors.

**Table 1:** Generations Classification

| <b>Authors</b>                                                                                   | <b>Generations Name</b>           | <b>Year Born</b>    |
|--------------------------------------------------------------------------------------------------|-----------------------------------|---------------------|
| Reed & Conisbee., (2006).<br>Ismail et al., (2020)                                               | Baby Boomers                      | 1946 – 1961         |
|                                                                                                  | Generation X/Gen-X                | 1962 – 1976         |
|                                                                                                  | Generation Y/Gen-Y                | 1977 – 1991         |
|                                                                                                  | Generation Z/Gen-Z                | 1991 – 2006         |
| Fuchs et al., (2024)                                                                             | Baby Boomers                      | 1946 – 1964         |
|                                                                                                  | Generation X                      | 1965 – 1980         |
|                                                                                                  | Generation Y/Millennials          | 1981 – 1995         |
|                                                                                                  | Generation Z/iGen/Centennials     | 1996 – 2012         |
| National Human Resources<br>Centre, (2022); The Centre<br>for<br>Generational Kinetics<br>(2024) | Silent Generations/Traditionalist | Before 1946         |
|                                                                                                  | Baby Boomers                      | 1946 – 1964         |
|                                                                                                  | Generation X                      | 1965 – 1976         |
|                                                                                                  | Generation Y/Millennials          | 1977 – 1995         |
|                                                                                                  | Generation Z/iGen/Centennials     | 1996 and after/2015 |

### ***The Concept of Quality of Life***

The World Health Organisation defines Quality of Life (QoL) as “an individual's view of life concerning his or her objectives, aspirations, standards, and worries, and in the context of the culture and value system in which he or she lives”. As people grow older, their QoL is closely related to their levels of independence, autonomy, and healthy life expectancy (Lak et al., 2020). QoL is also commonly linked with Health-Related Quality of Life (HR-QoL) due to its efforts for achieving optimal health status (Bujang et al., 2023). This concept has recently been used to guide policy for ageing in many Southeast Asian communities, including the Malaysian government, which has actively supported several initiatives for healthy living, especially in the health sector (Loke et al., 2020).

### ***Active Ageing Community***

Successful ageing, productive ageing, and healthy ageing are other terms that are often used with "active ageing" due to their definitions that overlap with each other (Nassir et al., 2015; Paul et al., 2012; Chalise, 2023). In 2002, the World Health Organisation (WHO) defined "active ageing" as "the process of optimising

opportunities for health, participation, and security to enhance the quality of life as people age”. Active ageing is a holistic approach that encourages older individuals to remain physically active, socially engaged, and economically productive. As people age, relocation and housing transition have become significant issues in consideration of Ageing in Place, AIP (Chou & Kröger, 2022). This concept is indirectly beneficial in maintaining physical health, mental well-being, and social connections to ensure a fulfilling life in later years.

### ***Housing Policies for the Elderly***

In Malaysia, the increasing trend of the ageing population has led the government to introduce various policy initiatives to improve the quality of life for the ageing population. The National Policy for Older Persons and the accompanying National Plan of Action highlight the significance of active ageing, where older persons need to have the ability to live independently in society. Within the policy guidelines, the housing environment is considered to play a vital role in supporting the concept of ageing in place. Previous studies have indicated the significance of the housing environment in supporting the quality of life for elderly in the country. For example, housing environment is considered to be an essential factor in supporting the quality of life for older people in the country (Ismail et al., 2020; Arshard et al., 2023). Despite the policy initiatives undertaken by the government to improve the quality of life for the ageing population in the country, limited studies have been conducted to investigate the significance of the housing environment in supporting multi-generational living arrangements for the ageing population.

### ***Multi-Generational Housing Environment Preferences Features for Quality of Life and Active Ageing***

The development of this framework was created using Arksey and O'Malley's (2005) scoping review methodology. This method also allows the inclusion of many different research designs, which suits the aim to give an overview of the Multi-Generational Housing Environment Preferences Features for Quality of Life (QoL) and Active Ageing. The physical features focus on designs that enhance the activities generated within the daily living routine, the ability to afford and facilitate daily life in the community; the ability to conduct day-to-day activities in place, diversity in keeping habitual lifestyle, and connectivity with social network (Ling et al., 2023). While social features focus on fostering community engagement, trust, and mutual support among residents (e.g., interaction with neighbours, social activity participation, support from friends and community), to encourage place attachment, and contribute to life satisfaction (He & Jiang, 2023; Alipour & Meshkimi, 2024). The physical and social environment of the housing units and the surrounding neighbourhoods

would influence older adults' well-being by affecting their functional status (Nayak et al., 2023; Xu et al., 2024; Sharifi et al., 2024).

## RESEARCH METHODOLOGY

This study employs a mixed-method approach, combining both qualitative and quantitative techniques through an exploratory sequential design to develop the framework of Multi-Generational Housing Environment Preferences Features for Quality of Life and Active Ageing in Malaysia. As part of the initial phase of this research, a pilot study was conducted to examine the reliability and validity of the quantitative survey instrument, which is essential in social science research to ensure data accuracy and consistency (Stewart, 2024). For this study, total of 31 respondents participated in the pilot study, which is considered adequate for the purpose of preliminary instrument testing. A pilot study typically uses a smaller sample size, which is often fewer than 30 respondents, for assessing the reliability of a questionnaire to preserve the larger population for the real survey (Bujang et al., 2024). Thus, the sample size is appropriate for measuring the reliability of the research instrument.

Although the study integrates both qualitative and quantitative methods, this paper specifically focuses on reporting the findings from the pilot study phase. The purpose of this pilot study is to refine and validate the questionnaire before the main data collection. Data collection for the pilot study was carried out from 1st to 20th April 2025 using an online survey via Google Form. A total of 31 respondents residing in Shah Alam participated in the study. The sample includes individuals from multiple generational cohorts, enabling a preliminary understanding of the variety of age in housing environment preferences.

## RESULT AND FINDINGS

### *Respondents' Profile*

A pilot study was conducted involving a total of 31 respondents to test the reliability and clarity of the research instrument. The respondents' profiles are summarised to provide context for the preliminary findings (Table 2).

**Table 2:** Respondents' Profile

| <b>Respondents' Profile</b> |                      |                       |
|-----------------------------|----------------------|-----------------------|
| <b>Genders</b>              | <b>Frequency (f)</b> | <b>Percentage (%)</b> |
| Male                        | 17                   | 54.8                  |
| Female                      | 14                   | 45.2                  |
| <b>Total</b>                | <b>31</b>            | <b>100</b>            |
| <b>Generations</b>          |                      |                       |
| Baby Boomer (1946 – 1961)   | -                    | -                     |

| <b>Respondents' Profile</b>     |           |            |
|---------------------------------|-----------|------------|
| Generation X (1962-1976)        | 4         | 12.9       |
| Generation Y (1977-1991)        | 4         | 12.9       |
| Generation Z (1992-2006)        | 23        | 74.2       |
| <b>Total</b>                    | <b>31</b> | <b>100</b> |
| <b>Marital Status</b>           |           |            |
| Never Married                   | 21        | 67.7       |
| Married                         | 9         | 29.0       |
| Separated                       | -         | -          |
| Divorced                        | 1         | 3.2        |
| Widowed                         | -         | -          |
| <b>Total</b>                    | <b>31</b> | <b>100</b> |
| <b>Employment Status</b>        |           |            |
| Self-employed                   | 2         | 6.5        |
| Government employee             | 9         | 29.0       |
| Private employee                | 13        | 41.9       |
| Unemployed                      | 1         | 3.2        |
| Retired                         | -         | -          |
| Students                        | 6         | 19.4       |
| <b>Total</b>                    | <b>31</b> | <b>100</b> |
| <b>Household Income</b>         |           |            |
| Category 1 (RM5,250 and below)  | 25        | 80.6       |
| Category 2 (RM5,251 – RM11,819) | 5         | 16.1       |
| Category 3 (RM11,820 – above)   | 1         | 3.2        |
| <b>Total</b>                    | <b>31</b> | <b>100</b> |

The sample was 54.8% male (n=17) and 45.2% female (n=14), indicating a reasonably even gender distribution. The generational breakdown shows a dominant representation of Generation Z (1997–2009), comprising 74.2% of the total respondents. The remainder of the sample includes equal representation from Generation Y (1977–1996) and Generation X (1965–1976), each accounting for 12.9%, and the Baby Boomer cohort (born 1946–1964) was not represented at all, emphasising the youthful profile of the study. This youthful profile of respondents is consistent with the demographic trend in Shah Alam, which has a relatively young and growing population, driven by its status as an education hub and residential city for young families and working adults (Department of Statistics Malaysia, 2023).

In terms of marital status, 67.7% reported never having been married, 29.0% were married, and 3.2% indicated that they were divorced, documenting the sample's concentration of individuals in early life phases. Regarding employment, the largest segment was private sector workers, comprising 41.9%, followed by government employees with 29.0%. Students comprised 19.4% of the participants, and 6.5% were self-employed. Only one participant, with 3.2%

indicated unemployment, and none reported retirement, which again aligns with the sample's overall youthful character.

Household income data shows 80.6% identified with Category 1 (RM2,500 and below), pointing to a low-income demographic. A smaller segment, 16.1%, reported earnings within Category 2 (RM2,501–RM11,580), and a single respondent, 3.2% classified in Category 3 (RM11,580 and above). This income pattern reinforces the presence of students and those in the early stages of their careers within the sample.

In summary, the pilot data show a mostly young, single, and low-income respondent base. While the pilot successfully tested the instrument's clarity and reliability, the generational gap suggests a need for thoughtful sampling strategies and approaches in the main study to ensure adequate representation from older adults, particularly those from the Baby Boomer cohort who are central to the investigation on active ageing.

#### ***Internal Consistency Reliability***

To assess the reliability of the instrument, Cronbach's Alpha measurement was used in this pilot study. The instruments refer to the main features and sub-features for the framework of Multi-Generational Housing Environment Preferences Features for Quality of Life and Active Ageing in Malaysia, which was derived from the literature review. According to Mola & Shaw (2024), previous studies suggest a value range for Cronbach's alpha of 0.70, representing the reliability of the instrument. The internal consistency reliability of the items (Table 3) was measured by a Likert Scale between 1 (not relevant at all) and 5 (most relevant). The data collection entry was analysed using SPSS version 29.0 (IBM SPSS Statistics, 2022).

**Table 3: Questionnaire Design of Likert Scale**

| <b>Main features and Sub-features – The Framework of Multi-Generational Housing Environment Preferences Features of Quality of Life for Active Ageing Community in Malaysia</b> |                 |                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------|
| <b>Physical Features</b>                                                                                                                                                        |                 |                                                                                                     |
| <b>Sub-features</b>                                                                                                                                                             | <b>Question</b> | <b>Items</b>                                                                                        |
| <b>Accessible &amp; Walkability</b>                                                                                                                                             | Q1              | Entrance: Step-free entrances with ramp provision facilitate smooth and safe entry                  |
|                                                                                                                                                                                 | Q2              | Entrance: Wide hallways to allow ease of movement for multiple users                                |
|                                                                                                                                                                                 | Q3              | Entrance: Wide doorways are designed to provide seamless access                                     |
|                                                                                                                                                                                 | Q4              | Bathroom: Equipped with sturdy handrails                                                            |
|                                                                                                                                                                                 | Q5              | Bathroom: The shower area is designed without curbs (curb-less area), reducing the risk of tripping |
|                                                                                                                                                                                 | Q6              | Bathroom: Non-slip flooring to minimise the chances of slipping                                     |

| Main features and Sub-features – The Framework of Multi-Generational Housing Environment Preferences Features of Quality of Life for Active Ageing Community in Malaysia |          |                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------|
| Physical Features                                                                                                                                                        |          |                                                                                                                                   |
| Sub-features                                                                                                                                                             | Question | Items                                                                                                                             |
|                                                                                                                                                                          | Q7       | Bathroom: Ample circulation space for wheelchair movement                                                                         |
|                                                                                                                                                                          | Q8       | Bathroom: Toilets are elevated to an appropriate height to make sitting and standing easier, catering to the needs of the elderly |
|                                                                                                                                                                          | Q9       | Bathroom: Ramps are installed to ensure accessibility for those with mobility challenges                                          |
|                                                                                                                                                                          | Q10      | Kitchen: Countertops, cabinets, and appliances are designed for easy access, ensuring comfort and safety while working.           |
|                                                                                                                                                                          | Q11      | Kitchen: Non-slip flooring to minimise the chances of slipping                                                                    |
|                                                                                                                                                                          | Q12      | Kitchen: Ample circulation space for wheelchair movement                                                                          |
|                                                                                                                                                                          | Q13      | Staircase: Non-slip flooring materials and contrast design to prevent accidents and ensure stability                              |
|                                                                                                                                                                          | Q14      | Staircase: Handrails provided along the steps to reduce the risk of falls and make it more accessible                             |
|                                                                                                                                                                          | Q15      | Staircase: Wider stair treads (steps) offer more space for feet, reducing the risk of missteps                                    |
|                                                                                                                                                                          | Q16      | Lighting: Adequate lighting to improve accessibility, ensure safety and comfort                                                   |
| Communal Areas                                                                                                                                                           | Q17      | A spacious kitchen to encourage socialising and shared activities                                                                 |
|                                                                                                                                                                          | Q18      | A spacious living room to encourage socialising and shared activities                                                             |
|                                                                                                                                                                          | Q19      | A spacious dining space to encourage socialising and shared activities                                                            |
|                                                                                                                                                                          | Q20      | Additional spaces (i.e., garden, patio, lounges, etc) to encourage socialising and shared activities                              |
| Personal Privacy                                                                                                                                                         | Q21      | Extra space for a small pantry (kitchenette) for privacy and independence                                                         |
|                                                                                                                                                                          | Q22      | Additional private areas for relaxation or hobbies areas                                                                          |
| Assisted Technology Integration                                                                                                                                          | Q23      | High-speed internet for ensuring seamless communication, access to online services, and smart home functionality                  |
|                                                                                                                                                                          | Q24      | Home alarm security systems ensure the safety of residents                                                                        |
|                                                                                                                                                                          | Q25      | Emergency button to easily call for assistance during critical situations                                                         |

| Main features and Sub-features – The Framework of Multi-Generational Housing Environment Preferences Features of Quality of Life for Active Ageing Community in Malaysia |          |                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Social Features                                                                                                                                                          |          |                                                                                                                                                                                                         |
| Sub-features                                                                                                                                                             | Question | Items                                                                                                                                                                                                   |
| Community Engagement                                                                                                                                                     | Q1       | A social venue (i.e., community centre, multipurpose hall, etc) offering a comfortable and inclusive shaded space for intergenerational activities (i.e., gatherings, celebrations, or casual meetups). |

| <b>Main features and Sub-features – The Framework of Multi-Generational Housing Environment Preferences Features of Quality of Life for Active Ageing Community in Malaysia</b> |     |                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                 | Q2  | An outdoor environment (i.e., courtyard, garden, etc) designed to be accessible and engaging for all ages provides an enhancement of community connections.                                |
|                                                                                                                                                                                 | Q3  | Shaded seating area to provide comfort and protection from the sun, allowing individuals to relax and socialise                                                                            |
| <b>Health &amp; Well-being</b>                                                                                                                                                  | Q4  | Inclusive Playground: Sensory garden elements to create a therapeutic environment.                                                                                                         |
|                                                                                                                                                                                 | Q5  | Inclusive Playground: Sensory playground (i.e., playground and exercise equipment) for all ages and needs.                                                                                 |
|                                                                                                                                                                                 | Q6  | Proximity to healthcare services to obtain medical care, monitor health conditions and provide treatment as needed.                                                                        |
|                                                                                                                                                                                 | Q7  | Mutual Support: Provide volunteer assistance and emotional support during challenging times.                                                                                               |
|                                                                                                                                                                                 | Q8  | Mutual Support: Provide transportation when needed (i.e., appointments or social activities).                                                                                              |
| <b>Accessibility &amp; Walkability</b>                                                                                                                                          | Q9  | Pathways: Wide pathway to ensure access and comfort for wheelchairs, strollers, and walkers.                                                                                               |
|                                                                                                                                                                                 | Q10 | Pathways: Non-slip and flexible surfaces to provide stable and safe walking areas (i.e., Synthetic Flexi-Step Surfaces, Rubberised Mats).                                                  |
|                                                                                                                                                                                 | Q11 | Pathways: Ramps with the provision of handrails for easy access.                                                                                                                           |
|                                                                                                                                                                                 | Q12 | Separate mobility lanes for scooters, wheelchairs, and bicycles reduce conflicts with pedestrians, ensuring safer movement for older adults and children.                                  |
| <b>Safety &amp; Security</b>                                                                                                                                                    | Q13 | A well-monitored CCTV surveillance system to prevent crime, ensuring resident safety, of communal and outdoor spaces.                                                                      |
|                                                                                                                                                                                 | Q14 | Adequate lighting in outdoor areas is essential to improve visibility at night and create a secure living environment for all age groups.                                                  |
|                                                                                                                                                                                 | Q15 | Well-organised waste disposal system with designated recycling bins and scheduled garbage collection prevents hygiene-related issues, pests, and pollution.                                |
|                                                                                                                                                                                 | Q16 | Strategic landscaping, noise barriers, and sound-absorbing materials help minimise external noise disturbances, creating a peaceful and comfortable outdoor environment for all residents. |

The findings of this pilot study revealed that the overall instrument demonstrates excellent internal consistency, as evidenced by a Cronbach's Alpha value of 0.990 across 41 items (Table 4). The reliability analysis for Physical features (25 items) (Table 5) also shows a high value ( $\alpha = 0.978$ ). Within this feature, the sub-features for Accessibility and Walkability (16 items) show strong reliability ( $\alpha = 0.975$ ), while Communal Areas (4 items) also achieve acceptable reliability ( $\alpha = 0.839$ ). On the other hand, Personal Privacy (2 items) records a low reliability score ( $\alpha = 0.350$ ), indicating inconsistency among the items. It

reveals that the items may not adequately capture the construct due to the design structure of the items, which included mixed response formats such as both dichotomous (Yes/No) and ordinal (Likert scale), leading to distorted or misleading alpha values. This highlights a need for item refinement or expansion to enhance the measurement quality and statistical validity of the personal privacy sub-features. Lastly, Assisted Technology Integration (3 items) presents excellent internal consistency with  $\alpha = 0.942$ .

**Table 4:** Reliability Analysis for Overall

| Reliability Analysis for Features - Overall |          |    |     |                  |            |
|---------------------------------------------|----------|----|-----|------------------|------------|
| Case Processing Summary                     |          |    |     | Cronbach's Alpha | N of items |
| Respondent                                  |          | %  |     |                  |            |
| Cases                                       | Valid    | 31 | 100 | .990             | 41         |
|                                             | Excluded | 0  | 0   |                  |            |
|                                             | Total    | 31 | 100 |                  |            |

**Table 5:** Reliability Analysis for Physical Features

| Reliability Analysis - Physical Features |                  |            |
|------------------------------------------|------------------|------------|
| Sub-Features                             | Cronbach's Alpha | N of items |
| Accessibility and Walkability            | .975             | 16         |
| Communal Areas                           | .839             | 4          |
| Personal Privacy                         | .350             | 2          |
| Assisted Technology Integration          | .942             | 3          |
| <b>Physical Features</b>                 | <b>.978</b>      | <b>25</b>  |

Meanwhile, for social features, the instrument also demonstrated excellent internal consistency, with an overall Cronbach's Alpha value of 0.988 across 16 items (Table 6). This indicates that the items used to measure the social features of the multi-generational housing environment are highly reliable. The sub-features for Community Engagement (3 items) showed a strong reliability score of  $\alpha = 0.980$ , reflecting the consistency of responses in measuring interactions and participation within the community setting. Health and Well-Being (5 items) also performed well with a Cronbach's Alpha of  $\alpha = 0.952$ , suggesting that the items successfully capture respondents' perceptions of health-related support, services, and psychological well-being within the housing environment. Similarly, Accessibility and Walkability (4 items) attained a reliability coefficient of  $\alpha = 0.964$ , indicating that social connectivity and ease of movement within the neighbourhood are being measured reliably.

Lastly, Safety and Security (4 items) demonstrated excellent internal consistency of  $\alpha = 0.954$ , supporting the consistency of items related to perceptions of physical safety, protection from crime, and feelings of security in the housing context. These findings suggest that most of the instruments are reliable for measuring the constructs intended in this study.

**Table 6:** Reliability Analysis for Social Features

| <b>Reliability Analysis - Social Features</b> |                         |                   |
|-----------------------------------------------|-------------------------|-------------------|
| <b>Sub-Features</b>                           | <b>Cronbach's Alpha</b> | <b>N of items</b> |
| Community Engagement                          | .980                    | 3                 |
| Health and Well-Being                         | .952                    | 5                 |
| Accessibility and Walkability                 | .964                    | 4                 |
| Safety and Security                           | .954                    | 4                 |
| <b>Social Features</b>                        | <b>.988</b>             | <b>16</b>         |

## ANALYSIS AND DISCUSSION

The pilot study participants were found to be predominantly younger in age, especially those belonging to Generation Z, as they formed 74.2% of the participants, while there were no participants from the Baby Boomer cohort in this paper. Such a demographic distribution may not allow the pilot study to fully reflect the housing environment preferences of older adults in Malaysia who are currently undergoing the ageing in place experience. Nevertheless, the main aim of a pilot study is not to obtain a representative demographic distribution of participants this study aims to explore housing environment preferences in relation to support active ageing in the future. Thus, the perspectives of younger generations are also considered relevant in this study. Individuals from Generation Z represent the future of ageing population, and their perspectives are considered to provide early insights into their future housing environment preferences in a multi-generational housing living arrangement. However, in this main study, a more targeted approach in obtaining participants will be undertaken to ensure a more balanced demographic distribution of participants, especially those from the Baby Boomer generation, in order to more closely reflect the perspectives of the active ageing community in Malaysia.

The pilot study findings provide essential insights into both the reliability of the instrument and the demographic context that may influence how respondents interpret the survey items. The overall reliability of the instrument was found to be excellent, with a Cronbach's Alpha score of .990 across 41 items, indicating a high level of internal consistency. This is further supported by strong reliability scores for both the physical features ( $\alpha = .978$ ) and social features ( $\alpha =$

.988) constructs. These results suggest that the items were clearly understood and consistently rated by respondents. However, Personal Privacy sub-features reported a lower Cronbach's Alpha of .350, indicating weak internal consistency. One potential explanation lies in the inconsistency of response formats, as the items included both dichotomous (Yes/No) and ordinal (Likert scale) response types. A mixed response structure likely contributed to distorted or misleading reliability values as seen in this case. To address this, the items should be revised to use a similar response format, ideally the Likert scale, to enhance the clarity, consistency, and reliability of the sub-construct in the main study.

## **CONCLUSION**

This pilot study successfully analysed the framework of Multi-Generational Housing Environment Preferences Features to enhance the Quality of Life for the Active Ageing in Malaysia. By employing an exploratory sequential mixed-method approach, the research validated the proposed instrument through a pilot test involving 31 respondents from various generational groups in Shah Alam. The findings revealed excellent internal consistency across most of the housing environment features, particularly within the Physical (i.e., Accessibility and Walkability, Communal Areas, Personal Privacy, and Assisted Technology Integration) and Social features (i.e., Community Engagement, Health and Well-Being, Accessibility and Walkability, and Safety and Security). Sub-features such as Accessibility and Walkability, Communal Areas, Assisted Technology Integration, Community Engagement, and Health and Well-Being were found to be reliable, demonstrating their relevance in supporting inclusive, age-friendly, and multi-generational living environments. These findings emphasise the value of integrating both physical and social features into housing design to promote active ageing and improve the quality of life for diverse generational groups.

While the overall instrument showed high reliability, the Personal Privacy sub-feature recorded low internal consistency, highlighting the need for further refinement in questionnaire design to better reflect the needs of privacy in shared, multi-generational living environments. This feedback will guide minor revisions to enhance the consistency and relevance of the questionnaire before proceeding to the main study. The pilot study sample was mostly composed of younger respondents. This youth-dominant composition aligns with the demographic profile of Shah Alam, a city known for its large population of young working-age people, driven by its role as a commercial, administrative and educational hub. While this reflects the local context, it also reveals limitations in capturing the perspectives of older adults, particularly those approaching or experiencing ageing in place. Therefore, more attention will be given to including a wider range of age groups, especially older adults from the Baby Boomer generation, to ensure the framework truly reflects the real-life experiences and

housing preferences of Malaysia's ageing population in multi-generational living environments.

In the subsequent stage, a full-scale quantitative survey will be conducted using the revised instrument and a larger, more diverse sample. This will allow for further validation of the framework and strengthen its applicability across various socio-demographic contexts. Overall, the study aims to contribute meaningful insights that can guide future research, policy formulation, and housing design practices that respond to the challenges and opportunities of multi-generational living in an ageing Malaysian society.

### **ETHICAL CONSIDERATION**

This study was conducted with established ethical standards for research involving human participants. Ethical approval was granted by the UiTM Research Ethics Committee under reference number REC/04/2025 (PG/MR/202). All respondents were fully briefed on the purpose and scope of the research, and informed consent was taken. Participation was entirely voluntary, with the option to withdraw at any time. Confidentiality protocols were maintained to ensure the privacy and anonymity of all respondents throughout the study.

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### **REFERENCES**

- Aclan, R., George, S., Block, H., Lane, R., & Laver, K. (2023). Middle aged and older adult's perspectives of their own home environment: A review of qualitative studies and meta-synthesis. *BMC Geriatrics*, 23(1). <https://doi.org/10.1186/s12877-023-04279-1>
- Alipour, S., & Meshkini, A. (2024). Dream housing: Exploring effective factors on housing livability in the neighbourhood from the perspective of residents. *Environmental Development*, 101067. <https://doi.org/10.1016/j.envdev.2024.101067>
- Aripin, D., Osman, M. M., Rabe, N. S., Shuhaimi, A. a. A., & Suaree, N. a. S. M. (2024). Residents' perception on management bodies' service deliverables: The case of

- affordable strata housing in Klang Valley, Malaysia. *Planning Malaysia*, 22. <https://doi.org/10.21837/pm.v22i34.1597>
- Arshard, W. N. R. M., Samsudin, P. Y., Khamaruzaman, A. R., & Yusof, A. F. (2023, December 1). Satisfaction with elderly facilities in multigenerational family living in Kuala Lumpur. <https://myjms.mohe.gov.my/index.php/ajress/article/view/24453>
- Bahuri, N. H. A., Rizal, H., Said, M. A., Myint, P. K., & Su, T. T. (2022). Active ageing awareness and quality of life among pre-elder Malaysian public employees. *International Journal of Environmental Research and Public Health*, 19(15), 9034. <https://doi.org/10.3390/ijerph19159034>
- Bujang, M. A., Lai, W. H., Hon, Y. K., Yap, E. P. P., Tiong, X. T., Ratnasingam, S., Kim, A. R. J., Husin, M., Jee, Y. Y. H., Ahmad, N. F. D., & Haniff, J. (2023). Measuring population health and quality of life: Developing and testing of the significant quality of life measure (SigQOLM). *Heliyon*, 9(12), e22668. <https://doi.org/10.1016/j.heliyon.2023.e22668>
- Bujang, M. A., Omar, E. D., Foo, D. H. P., & Hon, Y. K. (2024). Sample size determination for conducting a pilot study to assess reliability of a questionnaire. *Restorative Dentistry & Endodontics*, 49(1). <https://doi.org/10.5395/rde.2024.49.e3>
- Chalise, H. N. (2023). Healthy ageing: A basic concept. *Asian Journal of Population Sciences*, 2(1), 124–128. <https://doi.org/10.3126/ajps.v2i1.51096>
- Chou, Y. C., & Kröger, T. (2022). Ageing in place together: Older parents and ageing offspring with intellectual disability. *Ageing & Society*, 42(2), 480–494. <https://doi.org/10.1017/S0144686X20001038>
- Department of Statistics Malaysia. (2020). *Population projections, Malaysia, 2010–2040*.
- Fuchs, O., Lorenz, E., & Fuchs, L. (2024). Generational differences in attitudes towards work and career: A systematic literature review on the preferences of generations X, Y and Z. *11*, 54–71.
- Gawlak, A., Matuszewska, M., & Skórka, A. (2021). Housing expectations of future seniors based on an example of the inhabitants of Poland. *Buildings*, 11(7), 305. <https://doi.org/10.3390/buildings11070305>
- He, Z., & Jiang, C. (2023). Aging in place or institutionalization? A multiscale analysis of independent-living older adults from four large cities in China's Yangtze River Delta. *Innovation in Aging*, 7(3). <https://doi.org/10.1093/geroni/igad014>
- Ismail, H., Muhamad Halil, F., Zainan Abidin, A. W., & Hasim, M. S. (2020). The elderly (senior) housing preferences among generations in Malaysia. *Environment-Behaviour Proceedings Journal*, 5(13), 145–154. <https://doi.org/10.21834/e-bpj.v5i13.2102>
- Lak, A., Rashidghalam, P., Myint, P. K., & Baradaran, H. R. (2020). Erratum: Correction to: Comprehensive 5P framework for active aging using the ecological approach: An iterative systematic review. *BMC Public Health*, 20, 101.
- Ling, T., Lu, H., Kao, Y., Chien, S., Chen, H., & Lin, L. (2023). Understanding the meaningful places for aging-in-place: A human-centric approach toward inter-domain design criteria consideration in Taiwan. *International Journal of Environmental Research and Public Health*, 20(2), 1373. <https://doi.org/10.3390/ijerph20021373>

- Loke, Y. J., Lim, E. S., & Senadjki, A. (2020). Health promotion and active aging among seniors in Malaysia. *Journal of Health Research*, 35(5), 444–456. <https://doi.org/10.1108/jhr-07-2019-0148>
- Mola, D. W., & Shaw, D. (2024). Assessing the reliability of the talent development environmental questionnaire: A pilot study. *International Journal of Research - GRANTHAALAYAH*, 12(3). <https://doi.org/10.29121/granthaalayah.v12.i3.2024.5584>
- Nassir, S., Leong, T. W., & Robertson, T. (2015). Positive ageing: Elements and factors for design. In *Proceedings of the Annual Meeting of the Australian Special Interest Group for Computer Human Interaction* (pp. 264–268). <https://doi.org/10.1145/2838739.2838796>
- National Human Resource Centre. (2022, June 29). *A guide to multigenerational workforce*. <https://nhrc.com.my/resource-centre/a-guide-to-multigenerational-workforce/>
- Nayak, S. R., Dash, S. P., Amin, P. S., & Priyashantha, K. G. (2023). A review on intergenerational cohousing: A possible living option for elderly and youth. *New Design Ideas*, 7(3), 535-556.
- Paúl, C., Ribeiro, O., & Teixeira, L. (2012). Active ageing: An empirical approach to the WHO model. *Current Gerontology and Geriatrics Research*, 2012, 382972. <https://doi.org/10.1155/2012/382972>
- Reed, R. G., & Conisbee, N. (2005). Identifying linkages between generations and community development - the effect on residential and retail property. ResearchGate. [https://www.researchgate.net/publication/242673472\\_Identifying\\_linkages\\_between\\_generations\\_and\\_community\\_development\\_the\\_effect\\_on\\_residential\\_and\\_retail\\_property](https://www.researchgate.net/publication/242673472_Identifying_linkages_between_generations_and_community_development_the_effect_on_residential_and_retail_property)
- Sharifi, S., Mosafer, H., Rahmati, M., Khorzoughi, K. B., & Parandeh, A. (2024). Dwelling characteristics and mental well-being in older adults: A systematic review. *Heliyon*, e37676. <https://doi.org/10.1016/j.heliyon.2024.e376>
- Stewart, L. (2024, December 6). Purposive sampling in qualitative research. ATLAS.ti. <https://atlasti.com/research-hub/purposive-sampling>
- Sundram, S., & Romli, N. (2023). A pilot study to test the reliability and validity of the research instrument. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 8(3), e002149. <https://doi.org/10.47405/mjssh.v8i3.2149>
- Vuković, M. (2023). Generational differences in behavioral factors affecting real estate purchase intention. *Property Management*, 42(1), 86–104. <https://doi.org/10.1108/pm-11-2022-0088>
- World Health Organization. (2020). *Decade of healthy ageing: 2020–2030*. <https://www.who.int/initiatives/decade-of-healthy-ageing>
- Xu, S., Zhang, T., Fukuda, H., He, J., & Bao, X. (2024). Comprehensive study of residential environment preferences and characteristics among older adults: Empirical evidence from China. *Buildings*, 14(7), 2175. <https://doi.org/10.3390/buildings14072175>

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