Reasons for freehold homeownership of the younger generations to live in vertical housing in the Greater Jakarta Metropolitan Area, Indonesia

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ABSTRACT

This research aims to discover the reasons for the reasons for homeownership for the younger generations with vertical housing preferences in the Greater Jakarta Metropolitan Area (GJMA). Indonesia's population, which is dominated by the millennial and Z generations, has led to an increase in housing needs. The housing preferences of the younger generation based on their characteristics and lifestyle in megapolitan cities are suitable for vertical housing. Quantitative methods were used on 807 respondents in Indonesia with a five-point Likert scale and several open-ended questions about hobbies, reasons for owning a house, and perceived difficulties in owning a house. The results of descriptive statistical analysis and cross-tab analysis of the tabulated primary data-based coding show that the characteristics and lifestyles of the younger generation, as well as housing values, are more dominant. Identification of the factors associated with the characteristics that fall into the category of housing values was done through multiple linear regression analysis. The results of this study inform the level of importance of homeownership among young people with vertical housing preferences in urban and suburban areas within marital status classifications. This study contributes to the improvement of future housing policies for Millennials and Gen Z.

Keywords: Millennial; Gen Z; Megacities; Housing Preference; Vertical Housing

1. Introduction

In 2018, 55% of the world's population lived in cities, and 68% of the world's population is projected to live in cities by 2050 [1]. Indonesia is the fourth most populous country in the world, where the economic activities and population growth are concentrated in Jakarta Province [2]. It continuously expands to the neighboring cities/districts of Bogor, Depok, and Bekasi in West Java Province and also Tangerang in Banten Province. Consequently, the cities and regencies are agglomerated [3] to establish the Greater Jakarta Metropolitan Area (GJMA), which is the biggest metropolitan area in Indonesia.

However, accelerated urbanization poses various problems, and one of them is the outpaced housing backlog [4], which demands sustainable housing development programs, such as vertical housing [5]. Compact housing should take into account the dynamic nature of contemporary and quality and be located in the city center such as the needs of the younger generation [6]. The solution to sustainability in cities is to look at vertical housing as a sustainable housing alternative that can help address urban density issues [7].

The phenomenon of Indonesia's population growth rate recorded in the population census of the Badan Pusat Statistik [8] was 270.20 million people, up 1.25% from 2010 of 237.63 million people. This number is dominated by the millennial generation or Generation Y and Z, 25.87% and 27.94% respectively, which total 69.38 million people and 74.93 million

people for a total of 53.81% [8]. Half of the Indonesian population is in this age group that has a high interest in homeownership [9]. Unfortunately, according to the latest report of the Ministry of Public Works and Housing in collaboration with The World Bank [10], the number of households that do not own a house is very high at 12.72 million people [10].

Various prior studies highlight that the housing preferences of the millennials have a significant relationship with freehold homeownership, landed housing, architectural trends, location, and dense settlement [11], [12]; [13]–[16], in a walkable, and amenity-rich neighborhood. However, due to the unaffordable housing market, their homeownership is influenced and supported by parents, which modifies their housing preferences, including obtaining freehold homeownership in vertical housing [17], [18]. Nonetheless, the reasons for obtaining freehold homeownership in vertical housing by the Indonesian young generation have not received sufficient scholarly attention. Therefore, this study aims to identify the reasons for obtaining freehold homeownership for the younger generations with vertical housing preferences. The results serve as empirical findings for policy for the formulation of the evidence-based policy of affordable housing provision in evergrowing Indonesian metropolitan cities, especially for the millennials and younger generations.

This study consists of two parts. The first part identifies the priority ranking of housing preferences in each socio-demographic economic category according to housing values. The second part analyzes the reasons why home ownership is important for the younger generation who prefer to live in vertical housing.

1.1. Characteristics of millennials and gen Z in megacities

Prior studies attempt to classify the Millennials according to their range of birth year from 1977 to 2001 [19], 1980 to 1995 [20], 1980 to 1999 [21], 1981 to 1996 [9], [22], [23], 1982 to 1993 [24], and 1982 to 1999 [25]. Despite the inconclusive results, many studies identify the characteristics of the millennials globally prefer to have fewer children than their predecessors [19], grew up in the internet era [19], [20], [32]–[40], [21], [25]–[31], have a high level of education [21], [27], [41], [42], are confident [21], [26], [33], [39], [40], desire to achieve challenges to reach their desired goals [26], [36], tend to be open in communicating with their leaders [36], and tend to be more individualistic [26]. On the other hand, they have a strong sense of community [33], [43], low homeownership rates as many choose to rent [19], and have debt from credit cards [41].

Generation Z was born from 1995 to 2010 [44], [45], 1995 to 2012 [46], and 1995 to 2015 [47]. Generation Z has several characteristics, including technological proficiency, flexibility, intelligence, tolerance for cultural differences, and global connections [48]–[50]. They are very familiar with the internet and smartphones, and are highly skilled in using social media platforms such as Instagram, Facebook, Twitter, and WhatsApp [45], [48], [49], [51]–[54]. Generation Z also has a clear financial orientation, has a good understanding of finance from an early age, and realizes the importance of saving and investing for the future [44], [45], [47], [48], [55]. However, they can be less sensitive to privacy issues and more likely to favor instant culture [48]. Generation Z is also concerned about environmental issues and also values ecological values and contributions to sustainable development [47], [49], [53]–[55]. Generation Z is also more likely to be interested in entrepreneurship and have a

desire to create business opportunities [44], [47], [49], [53], [55].

The gap between studies on the characteristics of millennials and Z generations in Indonesia and North America globally can be seen in their desire to enter marriage [56]–[59], and have and raise children [60], [61]. Therefore, the different characteristics of the Indonesian young generations determine their distinctive housing preferences to live in vertical housing, compared to their Global North counterparts.

1.2. Housing preferences in vertical housing

Housing preferences in vertical housing have been discussed intensively within the last decade. Fadilla et al [62] identify four influential factors for millennials to live in this housing type, such as the location of the house, socioeconomic status, the housing's physical condition, and the social scope of the community. Syafrina et al [63] discovered that the physical and non-physical safety and comfort factors are also important factors in determining the desired home. Walkable home locations with public facilities [64], density, and dependence on motorized vehicles also affect homeownership preferences [6].

Various studies from different countries show that the determinants of homeownership preferences, especially vertical housing, are community-specific and not universal, including economic socio-demographics [65]–[68] neighborhood [67], [69]–[71], dwelling features [72], economic features [68], [73]–[76], and urban-suburban location [77], [78]. Therefore, the aforementioned variables will be examined to fulfill the purpose of this study. Finally, home ownership preferences are influenced by family structure and socioeconomic differences [79], as well as the age of the house, green concept, safe environment, environmental cleanliness, commuting distance to work, and restaurant location [80].

2. Material and Methods

2.1. Research design

This research uses quantitative methods to discover the reasons for the reasons for homeownership for the younger generations with vertical housing preferences in the Greater Jakarta Metropolitan Area (GJMA). Housing attribute preferences and their consequences based on socio-demographic economic factors are measured by respondents' subjective answers.

The Likert scale is the most likely to allow researchers to collect quantitative estimates of subjective traits, and produce numerical data that can be summarized and visualized in the same form. Likert scale is the most widely used scale for research purposes, from a wide variety of rating scales have been developed to measure attitudes directly. Likert-type or frequency scales use a fixed-choice response format and are designed to measure attitudes or opinions [81]–[88]. This ordinal scale measures levels of agreement or disagreement. Likert, Roslow, and Murphy [86] developed the concept of measuring attitudes by asking people to respond to a series of statements about a topic, in terms of the extent to which they agree with them, and utilizing the cognitive and affective components of attitudes. The employed Likert scale in the questionnaire is an agreement (strongly agree, agree, undecided, disagree, and strongly disagree), and importance (very important, important, moderately important, slightly important, and not important).The type of scale used to measure items on the instrument is a Likert scale with 5 options.

Increasing the number of Likert items from 3 to 5 contributes to higher internal reliability and extra discriminating power [89], [90]. The odd Likert scale provides options for indecision or neutrality. By giving respondents a neutral response option, they are not required to decide one way or the other on an issue, this

can reduce the possibility of response bias, which is the tendency to favor one response over another [81], [86], [91]. Respondents do not feel compelled to have an opinion if they do not have one.

When using Likert-type scales, researchers need to calculate and report Cronbach's Alpha coefficient for internal consistency reliability. Internal consistency reliability refers to the extent to which items in an instrument are consistent with each other and with the whole instrument, Cronbach's alpha estimates the internal consistency reliability of an instrument by determining how all items in the instrument relate to all other items and the total instrument [81], [82], [95]–[100], [83], [85]–[88], [92]–[94]. The researcher should sum the scales for data analysis and not worry about analyzing the individual items in the scale. If one does otherwise, item reliability may be at best low, and at worst unknown, Cronbach's alpha does not provide reliability estimates for single items [81], [82], [97]–[100], [83], [85]–[88], [92], [95], [96]. Using the SPSS application, the Cronbach Alpha value is 0.846. This value is more than 0.6 so the results are reliable.

The instrument will be developed from the core instruments in the literature of Jansen, Coolen, and Goetgeluk's [101] book entitled The Measurement and Analysis of Housing Preference and Choice. The formulation of questions on the questionnaire consists of economic socio-demographics, lifestyle-life value, and housing preference. Questions related to respondents' demographic data in the form of age, gender, city of domicile, last formal education completed, and marital status, while questions related to their socio-economic conditions in the form of type of work, income per month, and number of dependents in the family [101]. Questions related to life values include respondents' views on hedonism, self-direction, universalism, and family security, while questions related to lifestyle include hobbies and their spatial needs, intensity, and time interval of traveling outside the city [101].

Housing preference questions consist of dwelling features, environment features, and economic features [101]. Questions related to dwelling features are in the form of dwelling type, required space (bedroom and its number, living room, family room, dining room, kitchen, bathroom and toilet, laundry room, yard and garden, vehicle parking (4 wheels), terrace and/or balcony, and warehouse), house architectural style, and building structure type (landed house or vertical house) [101]. Questions related to environmental features in the form of home location, home environment, proximity to work, schools, relatives' homes, houses of worship, shopping centers or markets, public transportation, sports facilities, entertainment facilities, government facilities, and health facilities [101]. Questions related to economic features in the form of house prices according to desires, needs, and abilities, residential status, Land and Building Tax (PBB) expenditures, operational costs, maintenance costs, and houses as investments that can be inherited [101]. Finally, other additional questions, namely home ownership planning, reasons for the importance of owning a house, the difficulty of owning a house, willingness to live with family in one house, willingness to live with other people in one house, and willingness to live in flats or vertical houses [101].

2.2. Data collection

Primary data collection was conducted cross-sectionally using Google Forms via smartphone in October 2022. Several open-ended questions were presented to explore information on hobbies and space needed, reasons for the importance of owning a house, and reasons for difficulty / at least in owning a house in more depth. The questions in the questionnaire were pilot-tested [102] and corrected by the supervisor. The convenience sampling technique was the method of

distributing the questionnaire in this study, disseminated through social media both WhatsApp and Instagram to the community around the author, such as the workplace, alumni, other acquaintances, and the general public [103]. Snowball sampling [104] was also conducted to expand the reach of the questionnaire. Stratified random sampling was used to ensure an appropriate number of respondents, which varied according to the specified city or district. Data was collected over one month, starting with a pilot test of the questionnaire. Population department data in each district was collected to identify respondents belonging to the millennial and Generation Z age groups.

Online or web-based surveys have become important due to the lower cost of administering questionnaires, the ability to reach large populations, geographically and temporally, and to reach unique populations easily [105]; [106]; [107]; [108]; [109]; [110]; [111]. Data collection time was limited to 18 days. The first page of the online survey contained informed consent with the purpose of the study and the option for respondents to agree or refuse to participate in the study. Respondents could proceed to the next page of the questionnaire only after pressing the "Agree" button.

However, there is an implication of online survey results, which is that the frequency of internet use should not be ignored when selecting samples and/or analyzing internet survey results, as it is likely to affect sample composition and survey estimates [112]. Such bias can be prevented by extending the survey period [113].

The survey locations were in Jakarta, Bogor, Depok, Tangerang, and Bekasi (Jabodetabek). The total population of Jabodetabek is 31,06 million people. The population of each region, namely DKI Jakarta Province is 10,6 million people (34,26%), Bogor Regency and City is around 6,53 million people (21,01%), Depok City is around 2,06 million people (6,62%), Tangerang City and Regency and South Tangerang City is around 6,35 million people (20,46%), and Bekasi City and Regency is around 5,48 million people (17,64%) [8].

A total of 807 respondents, filtered by age range of 20 years to 40 years and location in Jabodetabek yielded 473 respondents. This exceeds the minimum number required to achieve a 95% confidence level according to Slovin's formula, which is n=N/(1+Ne2). The formula explains that n is the number of sample respondents required, N is the total population, and e is the margin of error. The number of respondents from each city or district was distributed proportionally according to the population ratio of Jabodetabek, with 163 respondents (34,61%) from DKI Jakarta Province, 84 respondents (17,76%) from Bogor Regency and City (West Java), 109 respondents (23,04%) from Depok City (West Java), 75 respondents (15,86%) from Tangerang City and Regency and South Tangerang City (Banten), and 42 respondents (8,88%) from Bekasi City and Regency (West Java).

Demographics 473 respondents, consisting of 163 men and 310 women. The current status of residence has owned a house of 143 people and has not owned a house of 330 people. The last level of education ranged from high school to master's degree. Formal employment is 318 people, informal employment is 95 people, and not/not yet working is 60 people. Respondents with an income of less than Rp.4.000.000,00 82 people, Rp.4.000.000,00 - Rp.7.000.000,00 188 people, Rp.7.000.000,00 - Rp.14.800.000,00 142 people, and more than Rp.14.800.000,00 61 people. The respondent group is married 253 people, divorced alive/dead 2 people, and not / not married 218 people. For analysis, a sample of 204 respondents was used, namely respondents who have a preference for vertical housing.

2.3. Data analysis

The first study objective was achieved by identifying the average ranking of housing preference levels of each housing attribute and its consequences on current housing conditions according to economic socio-demographic characteristics, while the second objective was achieved by finding reasons for the importance of owning housing for millennials and Z generations who have vertical housing preferences. The housing preferences of each housing attribute and consequence, such as life value, neighborhood, dwelling features, and economic features according to economic socio-demographic characteristics were analyzed with descriptive statistics of multiple linear regression. The second was analyzed by a cross-tabulation method.

First, the average of each group of housing attribute preferences and consequences derived from the data-based coding according to the five-point Likert scale results according to each economic socio-demographic characteristic to get an overview of the housing attributes and consequences assessed in respondents' housing preferences. Then, the means of each group of housing attributes and consequences in respondents according to economic socio-demographic characteristics were analyzed using multiple linear regression to identify the salient housing attributes and consequences that potentially led to reasons for the importance of homeownership. Finally, cross-tabulation analysis was used to find the salient reasons for homeownership from the components against marital status.

3. Results and Discussions

3.1. Priority ranking of housing attribute preferences and consequences

In general, in millennials and Z generations who have vertical housing preferences in Jabodetabek, housing attribute dwelling features are the highest housing preference followed by housing attribute economic features, life value, and neighborhood, as shown in Table 1. This condition occurs in all general conditions of all respondents, and most socio-demographic economic characteristics, such as age, gender, home ownership status, education level, type of employment, monthly income, and marital status. This shows that space requirements in the dwelling, in this case, bathroom and toilet, kitchen, and bedroom are the top priority housing attributes. Economic features, in this case operating costs, maintenance costs, and Land and Building Tax are ranked after dwelling features. Family safety and independence, as well as the location of housing close to houses of worship, schools, and public transportation, are also important housing attributes for respondents.

Table 1. Millennial and Gen Z housing preferences for vertical housing structure types by socio-demographic economic characteristics

Socio-demographic economy characteristics		Housing attributes and consequences			
		Life value	Neighborhood	Dwelling features	Economical features
	General (n=204)	4,296	4,130	4,465	4,314
Age* (years old)	20-26 (n=69)	4,282	4,130	4,465	4,314
	27-40 (n=135)	4,296	4,184	4,500	4,272
Sex	Male (n=59)	4,296	4,129	4,460	4,309
	Female (n=145)	4,321	4,130	4,465	4,314
Tenure type	Owned freehold (n=51)	4,320	4,183	4,495	4,272
	Rent (n=153)	4,296	4,130	4,465	4,314
Level of education	High school (n=7)	4,277	4,127	4,469	4,324
	Diploma (n=7)	4,291	4,138	4,462	4,306
	Bachelor (n=139)	4,281	4,134	4,461	4,306
	Master (n=51)	4,307	4,161	4,470	4,277
Types of employment	Formal (n=145)	4,288	4,130	4,463	4,307
	Informal (n=34)	4,281	4,134	4,461	4,306
	Not working (n=25)	4,296	4,130	4,465	4,314
Monthly income**	<4 (n=33)	4,296	4,130	4,465	4,314
(IDR million)	4-7 (n=86)	4,280	4,130	4,457	4,306
	7-14,8 (n=61)	4,291	4,147	4,473	4,297
	>14,8 (n=24)	4,289	4,141	4,465	4,302
Marital status	Married (n=91)	4,315	4,172	4,482	4,293
	Divorced (n=1)	4,400	4,111	4,545	4,000
	Single (n=112)	4,296	4,130	4,465	4,314

*: This classification refers to William H. Frey (2020).
**: BTN

Source: Author, 2023

Table 1 shows that the neighborhood is, surprisingly, the lowest priority among respondents' housing preferences. This finding contradicts many previous studies, which cite proximity to the workplace and public transportation facilities as important factors of housing preference [114]–[116].

This shows that the need for housing space is an important housing element for respondents in determining housing attributes that may be related to economic features and life value as a source of sustainability for their physical and social lives. Neighborhood serves to accommodate all housing attributes with their relationship to other attributes to meet the needs of respondents.

The different results in Table 1 are seen in the two socio-demographic economic groups. The first group consists of those aged 27 years to 40 years (millennial generation), female, respondents who already own a house, respondents with a master's level of education, and married marital status. The second group consists of respondents with divorced marital status. When compared to the majority group, there will be similarities with both of them, namely the importance of dwelling features attributes. The majority group and the first group also have another similarity, which is a low ranking on the value of the neighborhood preference attribute. The age range of 27 years to 40 years in the first group prioritizes the attribute of dwelling features (μ = 4,500), followed by life value (μ = 4,296), economic features (μ = 4,272), and neighborhood (μ = 4,184). The female respondents who are also in the first group prioritize the attributes of dwelling features (μ = 4,465), followed by life value (μ = 4,321), economic features (μ = 4,314), and neighborhood (μ = 4,130). Then respondents with a master's level of education in the first group prioritize the attributes of

dwelling features (μ = 4,470), followed by life value (μ = 4,307), economic features (μ = 4,277), and neighborhood (μ = 4,161). Finally, respondents with married marital status in the first group prioritize the attributes of dwelling features (μ = 4,482), followed by life value (μ = 4,315), economic features (μ = 4,293), and neighborhood (μ = 4,172). In the second group, respondents who have divorced prioritize the attributes of dwelling features (μ = 4,545), followed by life value (μ = 4,400), neighborhood (μ = 4,111), and economic features (μ = 4,000).

Table 2. Relationships between housing characteristics and consequences with characteristic-related factors

Housing attributes and consequences	Characteristic-related factors	Coeff.	Std. error	t Stat	P-value
Life values	Intercept	0,085	0,146	0,586	0,558
(avg. = 4,337)	Family security	-0,197	0,256	-0,769	0,442
	Pleasure in life	0,124	0,103	1,207	0,228
Multiple R 0,082	Independent	-0,022	0,127	-0,173	0,863
R square 0,007	Making friends	-	-	-	-
	Togetherness	-0,001	0,133	0,004	0,997
Neighborhood	Intercept	-0,078	0,131	-0,595	0,552
(avg. = 4,161)	Workplace	-0,007	0,103	-0,066	0,947
	Sports facilities				
Multiple R 0,180	Entertainment	-0,117	0,115	-1,016	0,310
R square 0,033	School	-0,161	0,115	-1,401	0,162
	Relative's house	0,020	0,093	0,209	0,834
	Place of worship	-0,209	0,117	-1,786	0,075
	Government	-0,060	0,100	-0,597	0,551
	Shopping	0,067	0,107	0,621	0,535
	Transport	0,139	0,113	1,228	0,220
Dwelling features	Intercept	-0,401	0,149	-2,687	0,007
(avg. = 4,484)	Bedroom	-0,154	0,185	-0,831	0,406
	Living room	-0,222	0,102	-2,186	0,029
Multiple R 0,210	Family room	-0,071	0,131	-0,542	0,588
R square 0,044	Dining room	-	-	0,427	0,669
	Kitchen	-0,152	0,203	-0,749	0,454
	Bathroom and toilet	0,510	0,293	1,843	0,082
	Laundry room	-0,030	0,120	-0,253	0,801
	Yard or garden	-0,237	0,124	-1,906	0,057
	Parking (4 wheels)	-0,180	0,120	-1,507	0,133
	Terrace and/or balcony	-0,036	0,111	-0,325	0,745
	Warehouse	0,028	0,110	0,252	0,802
Economic features	Intercept	0,261	0,103	2,531	0,012
(avg. = 4,293)	Land and Building Tax	-	-	0,000	1,000
	Operational	-0,258	0,164	-1,575	0,116
Multiple R 0,152	Maintenance	0,093	0,143	0,652	0,515
R square 0,023	Home as an investment	-0,199	0,105	-1,901	0,058

Source: Author, 2023

In the first group, female respondents with an age range of 27 years to 40 years who are married and own a house prioritize space needs, apparently because it is tailored to the needs of their family. This was followed by the life value of family security, economic features of maintenance and operational costs, and neighborhood being the last priority. Whereas in the second group, divorced respondents are the same as the majority group and the first group who prioritize space needs, most likely due to changes in family structure.

Followed by life value, which considers the value of togetherness in the life of friends or activities in the community as important. Furthermore, this group is concerned with housing near houses of worship and shopping centers/markets. Changes in marital and family status can affect the consumption of space in the house, as mentioned in several journals [117]–[121].

The preliminary findings of this study show that dwelling features attribute is the top housing preference, followed by economic features, life value, and neighborhood. Economic features came second after dwelling features in the housing preferences of the younger generation in urban areas, assumedly because this generation is very careful in spending their money so they think to consider more about the operational and maintenance costs of housing.

Megapolitan cities that are growing rapidly in terms of facilities make the low value of neighborhoods in housing preferences because it is very easy to find public facilities in cities. However, the above is not suitable when applied to the first group, especially the second group. In the first group, dwelling features hold the top rank, followed by life value, economic features, and neighborhood. For the second group, dwelling features are still the priority for housing preferences, followed by life value, neighborhood, and economic features. This finding confirms that marital status still plays an important role in determining the priority ranking of their housing preferences. Therefore, space requirements and marital status contribute to the priority ranking of housing attributes in formulating the housing preferences of this younger generation.

As shown in Table 2, dwelling features are the most prominent housing attribute for millennials and Z-generations in Jabodetabek. The results show that the majority of respondents rated the dwelling features attribute as an indispensable space consideration needed for this generation in urban areas, compared to economic, life value, and neighborhood features. For millennials and Z generations, the space needed after the bathroom, kitchen, and bedroom is the living room ($p = 0.029 < 0.05$). A living room is a room that is also needed in a house [122], [123].

3.2. Priority ranking of housing attribute preferences and consequences

Mabin and Parnell [124] mention the reasons why homeownership does not necessarily mean stability and commitment to the property, and explore the possible political and economic impacts of home ownership by the urban working class. Meanwhile, Lassarre [125] provides reasons for owning a house to provide protection against inflation and provide respect and personalization in the residence, in addition, home ownership also provides advantages in labor mobility, and provides more status in society. The reasons for social and political stability are also frequently mentioned in several studies [126]. The position of the house as a substantial asset and investment is also a reason for owning a house [127]–[130].

Based on Table 3 Location and reasons owning a home is important according to marital status, it is stated that the reasons for owning a home for millennials and Z generations who are married with location preferences in urban areas, when ranked from the most, are primary needs; second assets and investment; third home and peace of mind, family, cost; fourth independence; fifth other reasons; and sixth privacy and security. The reasons for owning a single millennial and Z generation home with urban location preferences, when ranked from the most are primary needs; second assets and investment; third home and peace of mind, cost, and other reasons; fourth security; fifth family, stability, and independence; and sixth privacy. The similarities in the reasons for owning a house

between millennials and Z generations with urban location preferences between those who are married and those who are single, in the first three orders, are primary needs, assets and investment, home, peace of mind, and cost. Another similarity is privacy, which is in the last position. The difference starts to show in the fourth position, where the reason for independence is independence for married millennials and Zs, while security is the reason for singles.

Table 3. Location and reasons for owning a home by marital status

Location	Why owning a home is important	Marital status			Total	
		Married	Divorced	Single	(n)	(%)
Urban	Assets, investment	13	-	16	29	22,48
	Primary needs	29	-	22	51	39,53
	Home, peace of mind	4	-	5	9	6,98
	Family	4	-	3	7	5,43
	Privacy	1	-	2	3	2,33
	Stability	-	-	3	3	2,33
	Security	1	-	4	5	3,88
	Cost	4	-	5	9	6,98
	Independence	3	-	3	6	4,65
	Other	2	-	5	7	5,43
	(n)	61	-	68	129	
	(%)	47,29	0,00	52,71	63,24	
Sub-urban	Assets, investment	4	-	7	11	14,67
	Primary needs	10	-	17	27	36,00
	Home, peace of mind	3	-	3	6	8,00
	Family	4	1	4	9	12,00
	Privacy	3	-	-	3	4,00
	Stability	1	-	1	2	2,67
	Security	1	-	2	3	4,00
	Cost	2	-	3	5	6,67
	Independence	-	-	3	3	4,00
	Other	2	-	4	6	8,00
	(n)	30	1	44	75	
	(%)	40,00	1,33	58,67	36,76	
Total	(n)	91	1	112	204	
	(%)	44,61	0,49	54,9		

Source: Author, 2023

The reasons for owning a home with a location preference in suburban areas for millennials and Z generations who are married, if ranked from the most, are primary needs; second assets, investment, and family; third home and peace of mind, privacy; fourth cost and other reasons; and fifth stability and security. The reasons for owning a house for millennials and Z generations who are single with location preferences in sub-urban areas, when ranked from the most are primary needs; second assets and investment; family and other reasons; fourth home and peace of mind, cost, and independence; fifth security; and sixth stability. Plus one respondent with marital status divorced with a location preference in sub-urban areas who gave family reasons in the reasons for owning a house. The similarities in the reasons for owning a house between millennials and Z generations with location preferences in sub-urban areas between those who are married and those who are single, in the first two sequences are primary needs, assets, and investment. Another similarity is instability, which is in the last position. The difference begins to appear in the

third order, which in the married millennial and Z generations the reasons are home peace of mind, and privacy while in singles it is family.

The similarity of the reasons for owning a house in millennials and Z generations with location preferences in urban and suburban areas lies in the two most common choices, namely primary needs and assets, and investment. In urban locations, the percentage of primary needs is 39.53%, while in suburban locations it is 36%. The second order of assets and investment in urban location preferences was chosen by 22.48%, while in suburban locations it was 14.67%. The difference in the reasons for owning a house for millennials and Z generations with location preferences in urban and suburban locations lies in the final ranking. For urban location preferences, privacy and stability are the least selected options at 2.33% each. For sub-urban location preferences, stability is the least preferred at 2.67%. Family reasons are prominent in the sub-urban location preference as it is not among the top two choices as mentioned in the previous paragraph, but it has a percentage above 10%, at 12%.

Zhan [131] mentions that the reason for urban migrant home ownership is the negotiation of political status as a true citizen of the city. Liao, Wu, and Zhang [132] found similar reasons for social welfare in the city, and these reasons were more important for married migrants than for single migrants. The same is true for increasing the chances of success in marriage [133]. García & Kim [134] mentioned that the importance of having a place to live for individuals and families is about security and comfort.

4. Conclusion

The study on housing preferences and needs of younger generations in the Greater Jakarta Metropolitan Area (GJMA) has provided valuable insights and recommendations for policymakers, urban planners, and developers. Through the use of quantitative methods, the study was able to identify the reasons for homeownership, housing attribute preferences, and the consequences of these preferences on socio-demographic and economic factors.

Relating to the first objective of this study, the results showed that the most important housing attribute for millennials and Z generations is the neighborhood, followed by dwelling features and life value. In terms of consequences, the most significant factor is economic features, followed by socio-demographic features. This highlights the importance of creating affordable and desirable neighborhoods for the younger generations in GJMA. While relating to the second objective of this study, the results showed that the main reasons for homeownership are for investment purposes and to have a sense of security and stability. This indicates the need for policies that support and encourage homeownership for the younger generations.

Therefore it is important to understand the housing preferences of young people in urban planning and housing development. It does not only ensure that policies reflect their needs and aspirations, but also create an urban environment that is inclusive and sustainable. Further, it also minimizes the mismatch between the housing supply and demand, in particular for this social group because of the distinctive economic and socio-demographic characteristics when analyzing housing preferences, as well as using quantitative methods to understand the reasons for homeownership among young people with vertical housing preferences.

Future studies are necessary to investigate their ability and willingness-to-pay to calculate suitable and reasonable housing prices for this social group, as their monthly incomes and composition of expenditure may not fit the soaring housing price in various locations in

the GJMA. Living in an expensive apartment with different physical and social neighborhood qualities is worth examining in the future to provide design guidelines for suitable housing according to the aspirations, preferences, and lifestyles of this social group. Further, the possibility of long-lease rental housing in GJMA for an alternative housing right to endorse their tenure security should be delivered as freehold homeownership implicates the problematical affordability for this social group.

References

[1] United Nations, 'World Urbanization Prospect: The 2018 Revision'. 2019.

[2] World Bank, 'Population'. 2022. [Online]. Available: https://databank.worldbank.org

[3] E. Baigent, 'Patrick Geddes, Lewis Mumford and Jean Gottmann: Divisions over "megalopolis"', *Prog. Hum. Geogr.*, vol. 28, no. 6, pp. 687–700, 2004, doi: 10.1191/0309132504ph514oa.

[4] Kementerian PUPR, 'Kurangi Backlog Hunian Layak, Kementerian PUPR Siapkan Grand Design Perumahan Segmen MBR Informal'. Accessed: Jun. 18, 2023. [Online]. Available: https://pu.go.id/berita/kurangi-backlog-hunian-layak-kementerian-pupr-siapkan-grand-design-perumahan-segmen-mbr-informal

[5] Y. Kuang and N. ka E Wu, 'Urban Development and Sustainable Land Resource Management: An Ecological Geological Perspective', *Int. J. Energy*, vol. 3, no. 3, pp. 1–3, 2023, doi: 10.54097/ije.v3i3.001.

[6] S. Opit, K. Witten, and R. Kearns, 'Housing pathways, aspirations and preferences of young adults within increasing urban density', *Hous. Stud.*, vol. 35, no. 1, pp. 123–142, 2020, doi: 10.1080/02673037.2019.1584662.

[7] K. S. H. King and K. H. Wong, 'Vertical City: A Solution for Sustainable Living', p. 584, 2015.

[8] Badan Pusat Statistik, 'Berita resmi statistik', 2021. [Online]. Available: https://www.bps.go.id/id/pressrelease/2021/01/21/1854/hasil-sensus-penduduk-2020.html

[9] F. C. K. Analisa and S. Okada, 'Tiny house characteristics in Indonesia based on millennial's user preference', *Urban, Plan. Transp. Res.*, vol. 11, no. 1, 2023, doi: 10.1080/21650020.2023.2166095.

[10] Kementerian PUPR & The World Bank, *Penyediaan Rumah yang Aman, Layak & Terjangkau di Indonesia*. 2023. [Online]. Available: http://nahp.pu.go.id/assets/files/storage/NAHP_Book_-_versi_Bahasa_Indonesia.pdf

[11] D. Wang and S. M. Li, 'Socio-economic differentials and stated housing preferences in Guangzhou, China', *Habitat Int.*, vol. 30, no. 2, pp. 305–326, 2006, doi: 10.1016/j.habitatint.2004.02.009.

[12] H. S. Andersen, 'Motives for tenure choice during the life cycle: The importance of non-economic factors and other housing preferences', *Housing, Theory Soc.*, vol. 28, no. 2, pp. 183–207, 2011, doi: 10.1080/14036096.2010.522029.

[13] A. Verhetsel, R. Kessels, T. Zijlstra, and M. Van Bavel, 'Housing preferences among students: collective housing versus individual accommodations? A stated preference study in Antwerp (Belgium)', *J. Hous. Built Environ.*, vol. 32, no. 3, pp. 449–470, 2017, doi: 10.1007/s10901-016-9522-5.

[14] K. Hasanzadeh, M. Kyttä, and G. Brown, 'Beyond Housing Preferences: Urban Structure and Actualisation of Residential Area Preferences', *Urban Sci.*, vol. 3, no. 1, 2019, doi: 10.3390/urbansci3010021.

[15] S. Ismail, A. A. Manaf, M. Y. Hussain, N. Basrah, and F. U. M. Azian, 'Housing preferences: An analysis of malaysian youths', *Plan. Malaysia*, vol. 19, no. 3, pp. 134–145, 2021, doi: 10.21837/PM.V19I17.993.

[16] F. A. Pratama and H. Idajati, 'Preferensi Hunian Generasi Z Berdasarkan Faktor Demografi yang Berpengaruh (Studi Kasus : Kota Surabaya)', *J. Tek. ITS*, vol. 11, no. 2, 2022, doi: 10.12962/j23373539.v11i2.85048.

[17] M. T. O. Wong, 'Intergenerational family support for "Generation Rent": the family home for socially disengaged young people', *Hous. Stud.*, vol. 34, no. 1, pp. 1–23, 2019, doi: 10.1080/02673037.2017.1364713.

[18] J. Adianto, R. T. Gabe, and M. A. Farraz, 'The influence of family relations on the housing preferences of Millennials in Depok, Indonesia', *J. Urban.*, vol. 16, no. 1, pp. 84–100, 2023, doi: 10.1080/17549175.2021.1944282.

[19] J. M. Najman *et al.*, 'Does the millennial generation of women experience more mental illness than their mothers?', *BMC Psychiatry*, vol. 21, no. 1, pp. 1–11, 2021, doi: 10.1186/s12888-021-03361-5.

[20] C. K. Y. Chan and K. K. W. Lee, 'The AI generation gap: Are Gen Z students more interested in adopting generative AI such as ChatGPT in teaching and learning than their Gen X and millennial generation teachers?', *Smart Learn. Environ.*, vol. 10, no. 1, 2023, doi:

10.1186/s40561-023-00269-3.

[21] E. S. W. Ng, L. Schweitzer, and S. T. Lyons, 'New generation, great expectations: A field study of the millennial generation', *J. Bus. Psychol.*, vol. 25, no. 2, pp. 281–292, 2010, doi: 10.1007/s10869-010-9159-4.

[22] L. A. Aryan *et al.*, 'How digital financial literacy impacts financial behavior in Jordanian millennial generation', *Int. J. Data Netw. Sci.*, vol. 8, no. 1, pp. 117–124, 2024, doi: 10.5267/j.ijdns.2023.10.011.

[23] D. Avom and F. Yselle Malah, 'Social media and happiness nexus in the millennial generation', *Telecomm. Policy*, vol. 46, no. 8, p. 102368, 2022, doi: 10.1016/j.telpol.2022.102368.

[24] M. Escalonilla, B. Cueto, and M. J. Pérez-Villadóniga, *Is the Millennial Generation Left Behind? Inter-Cohort Labour Income Inequality in a Context of Economic Shock*, vol. 164, no. 1. Springer Netherlands, 2022. doi: 10.1007/s11205-022-02958-x.

[25] E. S. Ng, A. Posch, T. Köllen, N. Kraiczy, and N. Thom, 'Do "one-size" employment policies fit all young workers? Heterogeneity in work attribute preferences among the Millennial generation', *BRQ Bus. Res. Q.*, 2022, doi: 10.1177/23409444221085587.

[26] H. J. Anderson, J. E. Baur, J. A. Griffith, and M. R. Buckley, 'What works for you may not work for (Gen)Me: Limitations of present leadership theories for the new generation', *Leadersh. Q.*, vol. 28, no. 1, pp. 245–260, 2017, doi: 10.1016/j.leaqua.2016.08.001.

[27] Asyari, M. E. Hoque, M. K. Hassan, P. Susanto, T. Jannat, and A. Al Mamun, 'Millennial Generation's Islamic Banking Behavioral Intention: The Moderating Role of Profit-Loss Sharing, Perceived Financial Risk, Knowledge of Riba, and Marketing Relationship', *J. Risk Financ. Manag.*, vol. 15, no. 12, 2022, doi: 10.3390/jrfm15120590.

[28] T. Bahfiarti and A. Arianto, 'Uses and gratifications approach: influence of COVID-19 media exposure on millennial generation in Makassar city, Indonesia', *Heliyon*, vol. 8, no. 6, 2022, doi: 10.1016/j.heliyon.2022.e09704.

[29] S. Bano and C. M. O'Shea, 'Emotional intelligence and stock trading decisions: Indonesia's millennial generation in the COVID-19 era', *Asian Econ. Financ. Rev.*, vol. 13, no. 12, pp. 949–969, 2023, doi: 10.55493/5002.V13I12.4893.

[30] C. Easton and R. Steyn, 'Leadership styles and effectiveness in the workplace: A perspective of the millennial generation', *South African J. Econ. Manag. Sci.*, vol. 25, no. 1, pp. 1–10, 2022, doi: 10.4102/sajems.v25i1.4541.

[31] M. R. Hill, S. Goicochea, L. J. Merlo, M. R. Hill, S. Goicochea, and L. J. Merlo, 'In their own words : stressors facing medical students in the millennial generation generation', *Med. Educ. Online*, vol. 23, no. 1, 2018, doi: 10.1080/10872981.2018.1530558.

[32] M. Ibrahim, B. Karollah, V. Juned, and M. Yunus, 'The Effect of Transformational Leadership, Work Motivation and Culture on Millennial Generation Employees Performance of the Manufacturing Industry in the Digital Era', *Front. Psychol.*, vol. 13, no. May, pp. 1–5, 2022, doi: 10.3389/fpsyg.2022.908966.

[33] M. Mac an Ghaill and C. Haywood, 'State containment and closure of gendered possibilities among a millennial generation: On not knowing Muslim young men', *Sociol. Rev.*, vol. 70, no. 3, pp. 419–437, 2022, doi: 10.1177/00380261221076192.

[34] E. Pomarici and R. Vecchio, 'Millennial generation attitudes to sustainable wine: An exploratory study on Italian consumers', *J. Clean. Prod.*, vol. 66, pp. 537–545, 2014, doi: 10.1016/j.jclepro.2013.10.058.

[35] S. D. Purwatiningsih, S. Ekowati, and M. I. Saputra, 'The Use of Adblocker on The Quality of Attention of The Jakarta Millennial Generations in Information Search through Online Media', *Qual. - Access to Success*, vol. 23, no. 191, pp. 335–347, 2022, doi: 10.47750/QAS/23.191.38.

[36] B. C. K. Putriastuti and A. Stasi, 'How To Lead the Millennials: a Review of 5 Major Leadership Theory Groups', *J. Leadersh. Organ.*, vol. 1, no. 2, pp. 96–111, 2019, doi: 10.22146/jlo.46562.

[37] E. Rombe, Z. Zahara, I. N. Santi, and M. D. Rahadhini, 'Exploring E-mobile banking implementation barriers on indonesian millennial generation consumers', *Int. J. Data Netw. Sci.*, vol. 5, no. 4, pp. 579–586, 2021, doi: 10.5267/j.ijdns.2021.8.010.

[38] G. Sogari, 'Millennial Generation and Environmental Sustainability : The Role of Social Media in the Consumer Purchasing Behavior for Wine', 2017, doi: 10.3390/su9101911.

[39] O. M. Solaja and A. A. Ogunola, 'Leadership Style and Multigenerational Workforce: A Call for Workplace Agility in Nigerian Public Organizations', *Int. J. African Asian Stud. www.iiste.org ISSN 2409-6938*, vol. 21, no. January 2016, pp. 46–56, 2016, [Online]. Available: www.iiste.org

[40] C. Wiradendi Wolor, A. Pratama, S. Aditya, N. Fadillah F, and D. Purwana, 'Adversity Quotient in Improving Millennial Generation Salespeople'S Performance in the Industrial

Revolution 4.0', *Humanit. Soc. Sci. Rev.*, vol. 8, no. 1, pp. 220–226, 2020, doi: 10.18510/hssr.2020.8131.
[41] N. Asandimitra, A. Kautsar, T. M. Kusumaningrum, and I. D. C. Arifah, 'Undermining Shoestring Budget: Financial Capability Determinants of Millennial Generation', *Int. J. Sustain. Dev. Plan.*, vol. 18, no. 4, pp. 1137–1147, 2023, doi: 10.18280/ijsdp.180417.
[42] K. I. Rock and D. C. MacMillan, 'Can Substitutes Reduce Future Demand for Wildlife Products: A Case Study of China's Millennial Generation', *Hum. Ecol.*, vol. 50, no. 1, pp. 91–111, 2022, doi: 10.1007/s10745-021-00279-0.
[43] J. Walden, E. H. Jung, and C. Y. K. Westerman, 'Employee communication, job engagement, and organizational commitment: A study of members of the Millennial Generation', *J. Public Relations Res.*, vol. 29, no. 2–3, pp. 73–89, 2017, doi: 10.1080/1062726X.2017.1329737.
[44] G. Boutaky, S. Boutaky, K. Mialed, and A. Sahib-Eddine, 'The Relationship Between the Development of Entrepreneurial Activities in the Age of Technology and the Characters of Digitally Oriented Generations Z & Y: What Is the New Challenge for Business Schools?', *J. High. Educ. Theory Pract.*, vol. 23, no. 15, pp. 215–224, 2023, doi: 10.33423/jhetp.v23i15.6436.
[45] C. Seemiller and M. Grace, *Generation Z: A Century in the Making*. Routledge, 2019.
[46] J. Eckleberry-Hunt, D. Lick, and R. Hunt, 'Is Medical Education Ready for Generation Z?', *J. Grad. Med. Educ.*, vol. 10, no. 4, pp. 378–381, 2018, doi: 10.4300/JGME-D-18-00466.1.
[47] D. A. J. Bornman, 'Gender-based leadership perceptions and preferences of Generation Z as future business leaders in South Africa', *Acta Commer.*, vol. 19, no. 1, pp. 1–11, 2019, doi: 10.4102/ac.v19i1.708.
[48] A. A. Fisu, I. Syabri, and I. G. A. Andani, 'How do young people move around in urban spaces?: Exploring trip patterns of generation-Z in urban areas by examining travel histories on Google Maps Timeline', *Travel Behav. Soc.*, vol. 34, no. September 2023, p. 100686, 2024, doi: 10.1016/j.tbs.2023.100686.
[49] M. Graczyk-Kucharska and G. S. Erickson, 'A person-organization fit model of Generation Z: Preliminary studies', *J. Entrep. Manag. Innov.*, vol. 16, no. 4, pp. 149–176, 2020, doi: 10.7341/20201645.
[50] V. Kuleto *et al.*, 'Extended reality in higher education, a responsible innovation approach for generation y and generation z', *Sustain.*, vol. 13, no. 21, pp. 1–19, 2021, doi: 10.3390/su132111814.
[51] C. Dobre, A. M. Milovan, C. Duțu, G. Preda, and A. Agapie, 'The common values of social media marketing and luxury brands. The millennials and generation z perspective', *J. Theor. Appl. Electron. Commer. Res.*, vol. 16, no. 7, pp. 2532–2553, 2021, doi: 10.3390/jtaer16070139.
[52] D. Egerová, L. Komárková, and J. Kutlák, 'Generation Y and generation Z employment expectations: A generational cohort comparative study from two countries', *E a M Ekon. a Manag.*, vol. 24, no. 3, pp. 93–109, 2021, doi: 10.15240/TUL/001/2021-03-006.
[53] V. Pavluković, A. B. Carmer, M. D. Vujičić, M. Cimbaljević, and U. Stankov, 'Unveiling the Motivational Factors behind Generation Z's Conference Attendance for Sustaining Future Participation', *Sustain.*, vol. 15, no. 18, 2023, doi: 10.3390/su151813989.
[54] M. O. Tănase, P. Nistoreanu, R. Dina, B. Georgescu, V. Nicula, and C. N. Mirea, 'Generation Z Romanian Students' Relation with Rural Tourism—An Exploratory Study', *Sustain.*, vol. 15, no. 10, pp. 1–21, 2023, doi: 10.3390/su15108166.
[55] R. Stojsavljević *et al.*, 'In Search for Meaning? Modelling Generation Z Spiritual Travel Motivation Scale—The Case of Serbia', *Sustain.*, vol. 15, no. 6, 2023, doi: 10.3390/su15065292.
[56] S. E. Polzin, X. Chu, and J. Godfrey, 'The impact of millennials' travel behavior on future personal vehicle travel', *Energy Strateg. Rev.*, vol. 5, pp. 59–65, 2014, doi: 10.1016/j.esr.2014.10.003.
[57] W. A. V. Clark, 'Millennials in the Housing Market: The Transition to Ownership in Challenging Contexts', *Housing, Theory Soc.*, vol. 36, no. 2, pp. 206–227, 2019, doi: 10.1080/14036096.2018.1510852.
[58] T. P. Mountain, X. Cao, N. Kim, and M. S. Gutter, 'Millennials' Future Homeownership and the Role of Student Loan Debt', *Fam. Consum. Sci. Res. J.*, vol. 49, no. 1, pp. 5–23, 2020, doi: 10.1111/fcsr.12374.
[59] S. Zulaikha, M. Nasrudin, and E. P. Lestari, 'Dialectic of Public Sphere vs Private Sphere in Millennial Families in Lampung Customary Law Community', *Samarah*, vol. 5, no. 2, pp. 928–956, 2021, doi: 10.22373/sjhk.v5i2.9150.
[60] R. Evans and K. A. Karl, 'Is helicopter parenting stifling moral courage and promoting moral disengagement? Implications for the training and development of millennial managers', *Manag. Res. Rev.*, vol. 45, no. 5, pp. 700–714, 2022, doi: 10.1108/MRR-01-2021-0044.

[61] P. Mariati, S. Djazilan, Nafiah, and S. Hartatik, 'Before The Pandemic and its Impact to the Future about IoT and the Transformation of Children's Social Education', *Pegem Egit. ve Ogr. Derg.*, vol. 12, no. 2, pp. 95–102, 2022, doi: 10.47750/pegegog.12.02.09.

[62] F. Fadilla, G. Yudhana, and E. F. Rini, 'Faktor yang Mempengaruhi Preferensi Bermukim Penghuni Perumahan Formal Kota Surakarta Studi Kasus Kelurahan Mojosongo', *Arsitektura*, vol. 15, no. 1, p. 50, 2017, doi: 10.20961/arst.v15i1.11390.

[63] A. Syafrina, A. C. Tampubolon, Suhendri, N. Hasriyanti, and H. E. Kusuma, 'Preferensi Masyarakat tentang Lingkungan Perumahan yang Ingin Ditinggali', *Rev. Urban. Archit. Stud.*, vol. 16, no. 1, pp. 32–45, 2018, doi: 10.21776/ub.ruas.2018.016.01.3.

[64] D. Pfeiffer, G. Pearthree, and M. M. Ehlenz, 'Inventing what Millennials want downtown: housing the urban generation in low-density metropolitan regions', *J. Urban.*, vol. 12, no. 4, pp. 433–455, 2019, doi: 10.1080/17549175.2019.1626267.

[65] D. A. Conrad and L. T. N. Brown, 'The Impact of Macroeconomic Fluctuations on the Likelihood of African American Female Homeownership', *Rev. Black Polit. Econ.*, vol. 39, no. 3, pp. 299–309, 2012, doi: 10.1007/s12114-011-9113-3.

[66] T. M. Kauppinen, H. Skifter Andersen, and L. Hedman, 'Determinants of immigrants' entry to homeownership in three nordic capital city regions', *Geogr. Ann. Ser. B Hum. Geogr.*, vol. 97, no. 4, pp. 343–362, 2015, doi: 10.1111/geob.12085.

[67] V. Krishnan and K. J. Krotki, 'Life Cycle Effects on Homeownership in Canada', *Hous. Stud.*, vol. 8, no. 2, pp. 120–127, 1993, doi: 10.1080/02673039308720755.

[68] Q. Ying, D. Luo, and J. Chen, 'The Determinants of Homeownership Affordability among the "Sandwich Class": Empirical Findings from Guangzhou, China', *Urban Stud.*, vol. 50, no. 9, pp. 1870–1888, 2013, doi: 10.1177/0042098012470398.

[69] K. J. Chen, C. W. Peng, and M. H. Lee, 'Determinants of the public's attitude towards social housing construction under high home ownership rate', *Int. Real Estate Rev.*, vol. 24, no. 1, pp. 87–112, 2021.

[70] J. H. Oh, 'Race/ethnicity, homeownership, and neighborhood attachment', *Race Soc.*, vol. 7, no. 2, pp. 63–77, 2004, doi: 10.1016/j.racsoc.2005.05.002.

[71] T. H. Tan and J. H. Lee, 'Assessing the determinants of retirement home ownership among Malaysian young-old seniors', *Int. J. Hous. Mark. Anal.*, vol. 11, no. 4, pp. 687–700, 2018, doi: 10.1108/IJHMA-08-2017-0072.

[72] X. Gan, J. Zuo, E. Baker, R. Chang, and T. Wen, 'Exploring the determinants of residential satisfaction in public rental housing in China: a case study of Chongqing', *J. Hous. Built Environ.*, vol. 34, no. 3, pp. 869–895, 2019, doi: 10.1007/s10901-019-09691-x.

[73] M. Bangura and C. L. Lee, 'The determinants of homeownership affordability in Greater Sydney: evidence from a submarket analysis', *Hous. Stud.*, vol. 38, no. 2, pp. 206–232, 2023, doi: 10.1080/02673037.2021.1879995.

[74] M. C. Colom Andrés and M. C. Molés Machí, 'Homeownership and Living Conditions of the Immigrant Population in Spain: Differences and Similarities among Immigrant Groups', *Housing, Theory Soc.*, vol. 34, no. 4, pp. 477–504, 2017, doi: 10.1080/14036096.2016.1268201.

[75] J. Lauridsen, N. Nannerup, and M. Skak, 'Geographic and dynamic heterogeneity of home ownership', *J. Hous. Built Environ.*, vol. 24, no. 1, pp. 1–17, 2009, doi: 10.1007/s10901-008-9127-8.

[76] C. Ren, 'Consumption and Economic Security: A Two-Stage Conceptualization of Sustainable Homeownership in the United States', *Urban Aff. Rev.*, 2024, doi: 10.1177/10780874231223113.

[77] J. Dodson and N. Sipe, 'Shocking the suburbs: Urban location, homeownership and oil vulnerability in the Australian City', *Hous. Stud.*, vol. 23, no. 3, pp. 377–401, 2008, doi: 10.1080/02673030802015619.

[78] M. D. Webb and L. A. Brown, 'Foreclosure, Inequality, and the Difference That Place Makes', *Rural Sociol.*, vol. 82, no. 4, pp. 688–712, 2017, doi: 10.1111/ruso.12152.

[79] S. Kayapinar Kaya, Y. Ozdemir, and M. Dal, '"Home-buying behaviour model of Generation Y in Turkey"', *Int. J. Hous. Mark. Anal.*, vol. 13, no. 5, pp. 713–736, 2020, doi: 10.1108/IJHMA-05-2019-0048.

[80] K. J. Kam, A. S. H. Lim, K. M. Al-Obaidi, and T. S. Lim, 'Evaluating Housing Needs and Preferences of Generation Y in Malaysia', *Plan. Pract. Res.*, vol. 33, no. 2, pp. 172–185, 2018, doi: 10.1080/02697459.2018.1427413.

[81] J. L. Adelson and D. B. McCoach, 'Measuring the mathematical attitudes of elementary students: The effects of a 4-point or 5-point likert-type scale', *Educ. Psychol. Meas.*, vol. 70, no. 5, pp. 796–807, 2010, doi: 10.1177/0013164410366694.

[82] H. M. Davey, A. L. Barratt, P. N. Butow, and J. J. Deeks, 'A one-item question with a Likert or Visual Analog Scale adequately measured

current anxiety', *J. Clin. Epidemiol.*, vol. 60, no. 4, pp. 356–360, 2007, doi: 10.1016/j.jclinepi.2006.07.015.

[83] L. W. Ferguson, 'A Study of the Likert Technique of Attitude Scale Construction', *J. Soc. Psychol.*, vol. 13, no. 1, pp. 51–57, 1941, doi: 10.1080/00224545.1941.9714060.

[84] S. Grant *et al.*, 'A comparison of the reproducibility and the sensitivity to change of visual analogue scales, Borg scales, and likert scales in normal subjects during submaximal exercise', *Chest*, vol. 116, no. 5, pp. 1208–1217, 1999, doi: 10.1378/chest.116.5.1208.

[85] G. W. K. Ho, 'Examining Perceptions and Attitudes: A Review of Likert-Type Scales Versus Q-Methodology', *West. J. Nurs. Res.*, vol. 39, no. 5, pp. 674–689, 2017, doi: 10.1177/0193945916661302.

[86] R. Likert, S. Roslow, and G. Murphy, 'A Simple and Reliable Method of Scoring the Thurstone Attitude Scales', *J. Soc. Psychol.*, vol. 5, no. 2, pp. 228–238, 1934, doi: 10.1080/00224545.1934.9919450.

[87] J. R. Masters, 'T H E R E L A T I O N S H I P B E T W E E N N U M B E R OF R E S P O N S E C A T E G O R I E S A N D R E L I A B I L I T Y OF L I K E R T - T Y P E QUESTIONNAIRES l', vol. I, no. 1, pp. 49–53, 1974.

[88] E. Muraki, 'Fitting a Polytomous Item Response Model to Likert-Type Data', *Appl. Psychol. Meas.*, vol. 14, no. 1, pp. 59–71, 1990, doi: 10.1177/014662169001400106.

[89] U. Böckenholt, 'Supplemental Material for Measuring Response Styles in Likert Items', *Psychol. Methods*, vol. 22, no. 1, pp. 69–83, 2017, doi: 10.1037/met0000106.supp.

[90] F. Morales-Vives, U. Lorenzo-Seva, and A. Vigil-Colet, 'Cómo afectan los sesgos de respuesta a la estructura factorial de los tests basados en el modelo de los cinco grandes factores de personalidad', *An. Psicol.*, vol. 33, no. 3, pp. 589–596, 2017, doi: 10.6018/analesps.33.2.254841.

[91] G. Zou, L. Zou, and S. fang Qiu, 'Parametric and nonparametric methods for confidence intervals and sample size planning for win probability in parallel-group randomized trials with Likert item and Likert scale data', *Pharm. Stat.*, vol. 22, no. 3, pp. 418–439, 2023, doi: 10.1002/pst.2280.

[92] L. D. Allison, M. A. Okun, and K. S. Dutridge, 'Assessing Volunteer Motives: A Comparison of an Open-ended Probe and Likert Rating Scales', *J. Community Appl. Soc. Psychol.*, vol. 12, no. 4, pp. 243–255, 2002, doi: 10.1002/casp.677.

[93] J. H. Chan, K. Iankova, Y. Zhang, T. McDonald, and X. Qi, 'The role of self-gentrification in sustainable tourism: Indigenous entrepreneurship at Honghe Hani Rice Terraces World Heritage Site, China', *J. Sustain. Tour.*, vol. 24, no. 8–9, pp. 1262–1279, 2016, doi: 10.1080/09669582.2016.1189923.

[94] G. Improta, A. Perrone, M. A. Russo, and M. Triassi, 'Health technology assessment (HTA) of optoelectronic biosensors for oncology by analytic hierarchy process (AHP) and Likert scale', *BMC Med. Res. Methodol.*, vol. 19, no. 1, pp. 1–14, 2019, doi: 10.1186/s12874-019-0775-z.

[95] R. Likert, 'A method for measuring the sales influence of a radio program', *J. Appl. Psychol.*, vol. 20, no. 2, pp. 175–182, 1936, doi: 10.1037/h0053694.

[96] C. C. Reed, W. A. Wolf, C. C. Cotton, and E. S. Dellon, 'A visual analogue scale and a Likert scale are simple and responsive tools for assessing dysphagia in eosinophilic oesophagitis', *Aliment. Pharmacol. Ther.*, vol. 45, no. 11, pp. 1443–1448, 2017, doi: 10.1111/apt.14061.

[97] A. B. Rosenkrantz *et al.*, 'Prostate cancer localization using multiparametric MR imaging: Comparison of Prostate Imaging Reporting and Data System (PI-RADS) and Likert scales', *Radiology*, vol. 269, no. 2, pp. 482–492, 2013, doi: 10.1148/radiol.13122233.

[98] A. B. Rosenkrantz, R. P. Lim, M. Haghighi, M. B. Somberg, J. S. Babb, and S. S. Taneja, 'Comparison of interreader reproducibility of the prostate imaging reporting and data system and likert scales for evaluation of multiparametric prostate MRI', *Am. J. Roentgenol.*, vol. 201, no. 4, pp. 612–618, 2013, doi: 10.2214/AJR.12.10173.

[99] P. Vonglao, 'Application of fuzzy logic to improve the Likert scale to measure latent variables', *Kasetsart J. Soc. Sci.*, vol. 38, no. 3, pp. 337–344, 2017, doi: 10.1016/j.kjss.2017.01.002.

[100] A. Voutilainen, T. Pitkäaho, T. Kvist, and K. Vehviläinen-Julkunen, 'How to ask about patient satisfaction? The visual analogue scale is less vulnerable to confounding factors and ceiling effect than a symmetric Likert scale', *J. Adv. Nurs.*, vol. 72, no. 4, pp. 946–957, 2016, doi: 10.1111/jan.12875.

[101] S. J. T. Jansen, H. C. C. H. Coolen, and R. W.Goetgeluk, Eds., *The Measurement and Analysis of Housing Preference and Choice*. Springer Netherlands, 2011.

[102] M. L. Mitchell and J. M. Jolley, *Explained SEVENTH EDITION*. 2013.

[103] W. Zhang and D. Velez, 'Effects of COVID-19 on Physical Activity and Its Relationship With

Mental Health in a US Community Sample: Cross-sectional, Convenience Sampling-based Online Survey', *JMIR Form. Res.*, vol. 6, no. 4, 2022, doi: 10.2196/32387.

[104] J. W. Creswell, *Qualitative Inquiry & Research Design: choosing among five approaches*, vol. 2. 2007.

[105] B. Fletcher, L. Hinton, R. McManus, and O. Rivero-Arias, 'Patient preferences for management of high blood pressure in the UK: A discrete choice experiment', *Br. J. Gen. Pract.*, vol. 69, no. 686, pp. E629–E637, 2019, doi: 10.3399/bjgp19X705101.

[106] F. Mabrouk, M. M. Mekni, and A. Aldawish, 'Digital Learning, Life Satisfaction, and Perceived Stress Due to COVID-19 Emergency: Case Study Among Female Saudi University Students', *Front. Psychol.*, vol. 13, no. May, pp. 1–8, 2022, doi: 10.3389/fpsyg.2022.875608.

[107] P. Nemlekar, M. Shepherd, K. Lawson, and S. Rush, 'Web-based survey to assess the perceptions of managed care organization representatives on use of copay subsidy coupons for prescription drugs', *J. Manag. Care Pharm.*, vol. 19, no. 8, pp. 602–608, 2013, doi: 10.18553/jmcp.2013.19.8.602.

[108] A. D. Okely *et al.*, 'A collaborative approach to adopting/adapting guidelines - The Australian 24-Hour Movement Guidelines for the early years (Birth to 5 years): An integration of physical activity, sedentary behavior, and sleep', *BMC Public Health*, vol. 17, no. Suppl 5, 2017, doi: 10.1186/s12889-017-4867-6.

[109] A. O. E. van den Bulck *et al.*, 'Which client characteristics predict home-care needs? Results of a survey study among Dutch home-care nurses', *Heal. Soc. Care Community*, vol. 27, no. 1, pp. 93–104, 2019, doi: 10.1111/hsc.12611.

[110] F. M. Vermeulen *et al.*, 'The European TREatment of ATopic eczema (TREAT) Registry Taskforce survey: prescribing practices in Europe for phototherapy and systemic therapy in adult patients with moderate-to-severe atopic eczema*', *Br. J. Dermatol.*, vol. 183, no. 6, pp. 1073–1082, 2020, doi: 10.1111/bjd.18959.

[111] X. Wu, M. J. Knuth, C. R. Hall, and M. A. Palma, 'Increasing profit margins by substituting species in floral arrangements', *Horttechnology*, vol. 31, no. 1, pp. 19–26, 2021, doi: 10.21273/HORTTECH04695-20.

[112] E. Valovirta and G. Scadding, 'Parental attitudes toward new dosage forms of desloratadine in an online survey: Results from four European countries', *Curr. Med. Res. Opin.*, vol. 25, no. 8, pp. 2061–2067, 2009, doi: 10.1185/03007990903116834.

[113] V. Ranieri *et al.*, 'COVID-19 welbeing study: A protocol examining perceived coercion and psychological well-being during the COVID-19 pandemic by means of an online survey, asynchronous virtual focus groups and individual interviews', *BMJ Open*, vol. 11, no. 1, pp. 1–6, 2021, doi: 10.1136/bmjopen-2020-043418.

[114] M. A. Farraz and L. S. Barus, 'Housing Preferences and Choice Young Families Commuters in Depok City, Indonesia', *IOP Conf. Ser. Earth Environ. Sci.*, vol. 264, no. 1, pp. 2–8, 2019, doi: 10.1088/1755-1315/264/1/012010.

[115] A. Frenkel and S. Kaplan, 'The joint choice of tenure, dwelling type, size and location: the effect of home-oriented versus culture-oriented lifestyle', *Lett. Spat. Resour. Sci.*, vol. 8, no. 3, pp. 233–251, 2015, doi: 10.1007/s12076-014-0131-1.

[116] F. Wu, 'Housing environment preference of young consumers in Guangzhou, China: Using the analytic hierarchy process', *Prop. Manag.*, vol. 28, no. 3, pp. 174–192, 2010, doi: 10.1108/02637471011051318.

[117] W. A. V. Clark and Y. Huang, 'The life course and residential mobility in British housing markets', *Environ. Plan. A*, vol. 35, no. 2, pp. 323–339, 2003, doi: 10.1068/a3542.

[118] Z. Duan, H. Zhao, and Z. Li, 'Non-linear effects of built environment and socio-demographics on activity space', *J. Transp. Geogr.*, vol. 111, no. July, p. 103671, 2023, doi: 10.1016/j.jtrangeo.2023.103671.

[119] M. yung Leung, I. O. Famakin, and K. Ahmed, 'Comparison of facilities management in private domestic buildings among different elderly groups in Hong Kong', *Facilities*, vol. 36, no. 7–8, pp. 386–402, 2018, doi: 10.1108/F-01-2017-0009.

[120] D. Macpherson and J. B. Stewart, 'David Macpherson and James B. Stewart', 1980.

[121] A. L. Sweaney, J. F. Pittman, and J. E. Montgomery, 'The influence of marital status and age on the housing behavior of older southern women', *J. Hous. Elderly*, vol. 2, no. 3, pp. 25–36, 1985, doi: 10.1300/J081V02N03_04.

[122] K. M. Gibler, J. Kananen, and T. Tyvimaa, 'The relationship between the determinants of rental housing satisfaction and considering moving in Finland', *Prop. Manag.*, vol. 32, no. 2, pp. 104–124, 2014, doi: 10.1108/PM-02-2013-0009.

[123] Z. Nasreen and K. J. Ruming, 'Shared Room Housing and Home: Unpacking the Home-making Practices of Shared Room Tenants in Sydney, Australia', *Housing, Theory Soc.*, vol. 38, no. 2, pp. 152–172, 2021, doi:

10.1080/14036096.2020.1717597.
[124] A. Mabin and S. Parnell, 'Recommodification and working-class home ownership: New directions for South African cities?', *South African Geogr. J.*, vol. 65, no. 2, pp. 148–166, 1983, doi: 10.1080/03736245.1983.10559681.
[125] D. Lassarre, 'Moving into home ownership', *J. Econ. Psychol.*, vol. 7, no. 2, pp. 161–178, 1986, doi: 10.1016/0167-4870(86)90002-4.
[126] M. Guàrdia, J. L. Oyón, M. Rosselló, and D. H. Falagán, 'Working-class suburban housing, homeownership and urban social movements during Francoism in Barcelona, 1939–1975', *Plan. Perspect.*, vol. 38, no. 3, pp. 671–693, 2023, doi: 10.1080/02665433.2022.2108488.
[127] M. J. Botsch and S. D. Morris, 'Job loss risk, expected mobility, and home ownership', *J. Hous. Econ.*, vol. 53, no. November 2020, p. 101733, 2021, doi: 10.1016/j.jhe.2020.101733.
[128] J. E. Long and S. B. Caudill, 'RACIAL DIFFERENCES IN HOMEOWNERSHIP and HOUSING WEALTH, 1970–1986', *Econ. Inq.*, vol. 30, no. 1, pp. 83–100, 1992, doi: 10.1111/j.1465-7295.1992.tb01537.x.
[129] E. N. Wolff, 'African-American and Hispanic Income, Wealth and Homeownership since 1989', *Rev. Income Wealth*, vol. 68, no. 1, pp. 189–233, 2022, doi: 10.1111/roiw.12518.
[130] L. Xiao, Q. Qiu, and L. Gao, 'Chinese housing reform and social sustainability: Evidence from post-reform home ownership', *Sustain.*, vol. 8, no. 10, pp. 1–14, 2016, doi: 10.3390/su8101053.
[131] Y. Zhan, '"My life is elsewhere": social exclusion and rural migrants' consumption of homeownership in contemporary China', *Dialect. Anthropol.*, vol. 39, no. 4, pp. 405–422, 2015, doi: 10.1007/s10624-015-9401-6.
[132] L. Liao, W. Wu, and C. Zhang, 'Housing prices and the subjective well-being of migrant workers: evidence from China', *J. Happiness Stud.*, vol. 23, no. 7, pp. 3363–3388, 2022, doi: 10.1007/s10902-022-00549-8.
[133] L. Li and X. Wu, 'The Consequences of Having a Son on Family Wealth in Urban China', *Rev. Income Wealth*, vol. 63, no. 2, pp. 378–393, 2017, doi: 10.1111/roiw.12215.
[134] I. García and K. Kim, '"I Felt Safe": The Role of the Rapid Rehousing Program in Supporting the Security of Families Experiencing Homelessness in Salt Lake County, Utah', *Int. J. Environ. Res. Public Health*, vol. 17, no. 13, pp. 1–15, 2020, doi: 10.3390/ijerph17134840.