

Generations, permanent income and housing tenure choice: A multinomial logit model approachThuy Tien Huynh^{a*} and Dang Thuy Truong^b^a*Faculty of International Economic Relations, University of Economics and Law, Ho Chi Minh City, Vietnam, and Vietnam National University, Ho Chi Minh City, Vietnam*^b*University of Economics Ho Chi Minh City, Vietnam***CHRONICLE***Article history:*

Received: July 15, 2023

Received in revised format:

August 28, 2023

Accepted: October 20, 2023

Available online:

October 21, 2023

*Keywords:**Generation**Housing tenure choice**Permanent income***ABSTRACT**

This paper examines how generational cohorts influence households' choices regarding housing tenure and considers the diverse preferences and socio-economic factors that shape decisions—using survey data on 425 families in Ho Chi Minh City, Vietnam. The data is analyzed using a multinomial logit model. The results indicate that generation significantly positively affects housing tenure choice, such that, unlike older cohorts, younger generations are more inclined to rent houses as their preferred housing option. Furthermore, permanent income plays a significant role in shaping housing tenure choices. On the other hand, social-economic variables, namely education, gender of references, family structures, and area of residence, were significant in influencing housing tenure decisions. This finding highlights the importance of housing policies prioritizing affordable and accessible rental options in large cities.

© 2024 by the authors; licensee Growing Science, Canada.

1. Introduction

Understanding housing tenure choices is crucial for policymakers and stakeholders in the housing market (Raya & Garcia, 2012). Housing tenure choice is a complex concept affected by demographic, economic, and social changes, especially within nuclear families (Hulse & Mcpherson, 2014). The critical aspect of housing tenure is that each household has a single status for their current housing, defined by a combination of legal and financial relationships between the household and the dwelling. Household capital cost and income are significant factors, representing the resources households are willing to invest in purchasing a house for rental purposes (Dougherty & Van Order, 1982). Besides, substantial disparities among generations in accessing home ownership have been observed in various countries (Eaqub, 2015; Hirayama & Ronald, 2008; McKee & Hoolachan, 2015; Mulder & Wagner, 1998; Mulder, 2006; Carliner, 1974). Numerous studies (Artle & Varaiya, 1978; Ghany & Sharpe, 1997; Ha & Kendig, 1984; Fuster et al., 2019; Skaburskis, 2002; Ademiluyi, 2010) explored the impact of generation on housing tenure choice, recognizing its increasing relevance in understanding housing decisions. Examining the generation's role in housing tenure choice provides valuable insights for researchers and policymakers (Fontes & Fan, 2006).

The study investigates the role of generation and permanent income in housing tenure choice. The study's findings provide empirical evidence and theoretical contributions to understanding the relationship between housing tenure choice and generation with consideration for demographics. Moreover, these findings highlight the limited application, research, and implementation of studies on the choice of housing ownership forms through systematic research projects and initiatives in Vietnam.

* Corresponding author.

E-mail address: tienht@uel.edu.vn (T. T. Huynh)

© 2024 by the authors; licensee Growing Science, Canada.

doi: 10.5267/dsl.2023.10.003

2. Literature review and hypothesis development

2.1 Theoretical foundations

In housing research, housing tenure is commonly used to classify households' housing circumstances, specifically whether they own or rent their current residence and the associated terms and conditions of occupancy (Clark & Dieleman, 1996; Kendig, 1984). Two distinct approaches to tenure choice have emerged in market economies: Firstly, the economic viewpoint assumes that households are economically rational and select a tenure type to maximize their utilities within a given budget constraint (Arnott, 1987). From this perspective, purchasing a home is a consumption decision and an investment in competitive housing markets. Income, assets, and relative prices are believed to be the most significant determinants of housing tenure choice (Henderson & Ioannides, 1983, 1987, 1989). The economic perspective primarily focuses on income and price, minimizing non-economic factors like preference and discrimination in housing choices. Secondly, demographers, geographers, and sociologists argue that tenure choice is a complex event intertwined with household characteristics and housing market changes (Clark & Dieleman, 1996). While income's significance is acknowledged, they contend that demographic factors such as age, family size, composition, and life-course trigger events (e.g., the birth of children and marriage) play crucial roles in tenure choice (Clark et al., 1994; Deurloo et al., 1987, 1994; Morrow-Jones, 1988).

While some researchers treat housing tenure as an independent choice, others see it as part of a broader set of decisions involving consumption and investment for consumers. As a result, the decision to own a home is often studied in conjunction with mobility decisions, home attributes, and household characteristics or as a factor in consumer investment choices. Researchers approach the decision of housing tenure choice as an independent determination. They assert that factors such as income, rental prices, household demographics, housing support networks, income uncertainty, health, education, or remittances are the key influencers in selecting housing tenure options (Huang, 2003; Hui et al., 2014; Kim, 1992; Tao et al., 2015; Zhou, 2011). Besides, some authors believe that the decision of housing tenure choice should be examined alongside property attributes such as size, location, and type of dwelling (Cho, 1997; Frenkel & Kaplan, 2015).

In this study, the authors advocate that the decision regarding housing tenure choice should be analyzed as an independent determination. We base our argument on the notion that if the decision-making process is divided into two stages: the first stage is analyzing and selecting housing tenure, and the second is choosing the type of dwelling and its characteristics, then they should be analyzed as separate and distinct decisions, independent from the selection of dwelling type or residential area. Additionally, a comprehensive review of various studies reveals that whether analyzed as individual decisions or a combined selection, economic factors (household income) and socio-demographic (household characteristics) are the primary influencers in the household decision-making process (Bui et al., 2014).

2.2 Generation and housing tenure

The issue of how generations drive the demand for housing has been intensely debated and analyzed by numerous researchers (Skaburskis, 2002). Jayantha and Oladinrin (2020) revealed that home ownership transcended various age groups and demographic statuses. Boehm (1982), Cho (1997) and Kim (1992) posited a positive relationship between generation and housing tenure choice, suggesting that as the household head's age increased, the likelihood of owning a house rather than renting also increased. Conversely, Zhou (2011) contradicted this notion by asserting that age did not influence housing tenure choice. On the other hand, Boehm and Schlottmann (2014) argued that these two variables had a negative effect. Huang (2013), Opaluwa & Aribigbola (2015), and Fu et al. (2015) presented varying perspectives, stating that age had either a negative impact or no impact at all, depending on the type of tenure being considered.

2.3 Permanent income and housing tenure

When permanent income increased, people tended to own houses more than rent (Boehm, 1982; Boehm & Schlottmann, 2004; Carter, 2011; Zhou, 2011). Households with higher socio-economic status are likelier to be homeowners, while families with lower socio-economic status are likelier to rent or share housing (Clark & Dieleman, 1996). The observed pattern can be attributed to comparatively elevated average household earnings, the accessibility of mortgage finance, and governmental incentives promoting home ownership (Blanco et al., 2016). The significance of permanent household income surpasses current income when it comes to influencing the probability of home ownership (Goodman, 1988). The aversion to risk within a household is potentially a more influential factor in the decision-making process of purchasing.

3. Methodology

3.1 Research design and data

We adhere to the positivistic paradigm that influenced the research procedure, data collecting, and analysis. We employ deductive and quantitative methods to enhance objectivity and generalizability (Bagozzi, 2011). Research data was collected using actual survey data through interviews with housing-related issues from about 425 couples-nuclear families (households with couples and dependent persons such as children and retired parents) in Ho Chi Minh City, Vietnam, in 2021. The interviewer will contact them based on the list of chosen families to obtain interview permission. If the household refuses or does not respond after two contact attempts, the interviewers will interview the nearest neighbor instead. If the address is not found, the family will be replaced with another randomly selected household. All respondents were asked to sign a consent form before the interview. The study required that the interviewee be an income-earning household member and fully understand the information related to the questionnaire. Housekeepers and employees were not subject to interviews.

3.2 Measurements

Housing tenure

According to OECD (Social Policy Division - Directorate of Employment, Labour and Social Affairs), housing tenure refers to the arrangements under which the household occupies all or part of a housing unit. Different types of housing tenure can be distinguished, and the categorization is mainly determined by whether the dwelling is owned by the household who occupies it or not: i) Own outright: The household owns the dwelling and has no outstanding mortgage related to the dwelling; ii) Owner with a mortgage: The household owns the dwelling but is currently paying off the mortgage; iii) Rent (private): The household rents the dwelling at market prices on the private rental market; iv) Rent (subsidised): The household rents the dwelling at reduced market prices, e.g., employer subsidised housing and accommodations where rent is fixed by law; and v) Other: Includes for European countries accommodation provided for free.

Based on the division of property according to an individual perspective, including only interviewers or their spouses, different forms of home-ownership in Vietnam can be divided into three types: i) living in a house owned by the references (the house belonging to the reference and their partner if that they have already got married, or the house owning by the references if they are single), ii) living in a rental house, and iii) living in a house owned by another member of the nuclear families (parent's house or son/daughter's house, and accommodation provided for free or non-descript types of housing).

Generation cohorts

This paper identifies generation cohorts by information on individuals' birth years using predetermined generational categories based on commonly recognized definitions. Based on this information, individuals can be categorized into their respective generational cohorts using established generational boundaries such as the youngster (24-34 years old), the middle age (35-45 years old; over the middle age (45-55 years old) and the older (over 55 years old). This classification is based on other research (Reed & Conisbee, 2006) and the basic level of income stability and accumulative savings of employees. As the saving and income stability of younger people is lower than that of other groups, especially the elders preparing to enter retirement age, we argue that there are differences in housing tenure among the above age groups.

Permanent income

Friedman (1957) introduced the concept of permanent income, representing the expected income over an individual or family's lifetime. Measuring long-term earnings as the weighted average of past earnings proved challenging, leading many researchers to use total expenditure as a proxy for permanent income. However, Reid (1962) highlighted that certain forms of expenditure, especially on consumer goods, can correlate with transient income factors, reducing the income elasticity of housing demand. These deviations from permanent income and housing expenditure must be mitigated. Researchers employ instrumental variables correlated with permanent but not temporary income to estimate permanent income (Fontes & Fan, 2006). Total expenditure is commonly used as a proxy, regressed against variables such as age, number of income earners, education level, family type, reference occupation, and area of residence. The resulting predicted values provide estimates of the average permanent income for households with specific characteristics. The article employs ordinary least squares (OLS) regression, with income and expenditure as dependent and explanatory variables, including age, education level, and household size. These predicted results serve as a proxy for the average permanent income of the household. The equation for estimating permanent income in atomic households takes the following form:

$$Y_i = \alpha_1 Y_i + \alpha_2 D_i + \alpha_4 F_i + u_i \quad (1)$$

where Y_i is the expenditure of household i , D_i is the characteristics of the primary decision-making member in the household (gender, education, marriage), and F_i is the characteristics of the household. The expenditure forecast from this regression model is used as a proxy for permanent income since the expenditure is less volatile than income and, therefore, is the better representative of income. In addition, the forecast expenditure from the regression has eliminated the unusual random fluctuations u_i .

Variables included in the model are summarised and presented in Table 1.

Table 1

Variables definition included in the model

Variable	Description
Dependent variable	
Y	Discrete variable, 1 = Owning a house; 2 = living in a house owned by another member of the nuclear families (parent's house or son/daughter's house, and accommodation provided for free or non-descript types of housing); 3 = Living in a rented house
Independent variable	
Cohorts	The age group of the reference member in the household: 0 = youngster (24-34) (reference) 1 = middle age (35-45) 2 = over the middle age (45-55) 3 = the older (over 55)
Permanent income	Average long-term income/month of a household (Predict value from the Eq. (1))
Education	Education of references member: will receive value from 0 to 2, corresponding to: 0 = Secondary and lower (reference) 1 = High school 2 = College and higher
Career	The career of a primary income member: will receive a value from 0 to 2, corresponding to: 0 = Unskilled labor (reference) 1 = Skill labor 2 = Jobless
Household size	Number of members in a family (person)
Rate of children	Rate of children (under 6 years old) (%)
Rate of elderly persons	Rate of members over 60 years old (%)
Residential area	The residential area of the household in the suburban area (1 = Yes, 0 = No)

3.3 Empirical model

In this study, the dependent variable y represents the types of housing tenure, including a) owning (houses owned by the respondents or/and spouses, $y = 1$), b) living in a house owned by another member of the nuclear families (parent's house or son/daughter's house, and accommodation provided for free or non-descript types of housing), $y = 2$, and c) renting ($y = 3$). Choose to live in an owned house ($y=1$) as the base outcome; the model will have two equations:

$$\ln \frac{p_2}{p_1} = \beta_1 X$$

$$\ln \frac{p_3}{p_1} = \beta_2 X$$

where p_2 is the probability for $y = 2$ and p_3 the probability for $y = 3$. For example, the ratio between the probabilities, $\frac{p_2}{p_3}$, is called the odd ratio, and the $\ln \frac{p_2}{p_3}$ is the log-odd. The multinomial model assumes that the log odds are a linear function of the independent variables X . The multinomial logit model will estimate β_1 , and β_2 from the explanatory variables X and the dependent variable.

The probability of outcomes is:

$$Pr(y = 1) = \frac{1}{1 + e^{\beta_1 X} + e^{\beta_2 X}}$$

$$Pr(y = 2) = \frac{e^{\beta_1 X}}{1 + e^{\beta_1 X} + e^{\beta_2 X}}$$

$$Pr(y = 3) = \frac{e^{\beta_2 X}}{1 + e^{\beta_1 X} + e^{\beta_2 X}}$$

Thereby, it is possible to evaluate the impact of X factors on the probability of choosing different forms of housing tenure.

3.4 Control variables

Housing tenure is often considered when making significant decisions, such as work status and household composition (Arnott, 1987). It is widely believed that education also plays a significant role in housing decisions (Boehm & Schlottmann, 2014; Cho, 1997; Lin et al., 2022; Tao et al., 2015; Zhou, 2011), suggesting that higher-education individuals tend to prefer

living in private houses. Furthermore, research has shown that household size can influence housing tenure choices (Tao et al., 2015; Zhou, 2011). For households migrating to urban areas, larger household size was found to be irrelevant or even decrease the probability of purchasing a house, suggesting that the ownership rate is also influenced by the presence of children and older individuals (Cho, 1997; Zhou, 2011). Researchers have also focused on the residential area and their impact on housing patterns (Zhou, 2011).

4. Results

4.1 Descriptive analysis

The highest proportion belongs to private ownership (64%), followed by others (17%) and renting accommodations (19%). Table 2 presents the interviewees' demographic characteristics and the residence area. Among the households interviewed, the average value of their permanent income and expenses is about 511 USD/month. The average rate of older parents is 9.2%, and the rate of children under six years old is 7.8%. The household size is 4.6 members/household.

Table 2
Demographic characteristics of the interviewer and area of residence

VARIABLE	OBS	MEAN	SD	MIN	MAX
Income (US\$/month)	425	777.586	754.227	0.000	7781.765
Permanent income (US\$/month)	425	511.305	331.657	96.165	3695.819
Household Expense (US\$/month)	424	511.698	484.686	43.232	7781.765
Rate of children (%)	425	7.842	13.398	0.000	60.000
Rate of elder members (%)	425	9.207	15.054	0.000	100.000
Household size (embers)	425	4.635	2.292	1.000	25.000

In Table 3, the data reveals the distribution of references according to age groups. It indicates that 27% of the references belong to the younger category, while 25% fall into the middle-age. In addition, 24% of the respondents represent middle-aged individuals, and 23% pertain to the older population. When considering the respondents' educational attainment, the most prevalent level is high school completion, comprising 60% of the sample. Following this, college and higher education account for 24% of the references. Conversely, the smallest group includes secondary and lower education individuals, making up 16% of the sample. Regarding residential areas, the data showcases that 103 respondents (24%) reside in suburban regions, while a more significant proportion of 332 respondents (76%) live in urban areas.

Table 3
Frequencies of categorical variables

Criteria	Freq.	Percentage	Cum.
Age group			
24-34 (Younger)	118	27.76	27.76
35-45 (Middle)	106	24.94	52.71
45-55 (Over the middle age)	102	24.00	76.71
Over 55 (Older)	99	23.29	100
Education of the primary income earner			
Secondary and lower	70	16.47	16.47
High school	254	59.76	76.24
College and higher	101	23.76	100.00
Career of the primary income earner			
Unskilled labor	103	24.24	24.24
Skill labor	129	30.35	54.59
Jobless	193	45.41	100.00
Residential area			
Suburban	322	75.76	75.76
Urban	103	24.24	100

The statistical results of housing tenure choice based on the average income of nuclear families are displayed in Table 4. It shows that households residing in a house owned by other family members have an average monthly income of 991 USD. On the other hand, households living in their private house and those renting have average incomes of 756 USD/month and 733 USD/month, respectively.

Table 4
Estimation of housing tenure by household income

Housing tenure	N	Mean	SD	Min	Max
Owning a house	272	756.206	628.603	0	3890.882
Living in the house owned by another member of the nuclear family	71	911.282	1167.430	108.080	7781.765
Living in a rented house	81	733.076	681.456	108.080	3782.802
Total	424	777.755	755.110	0	7781.765

Table 5 displays the statistical results of housing tenure based on age groups. The data indicate that most older individuals (over 55 years old) own houses, accounting for 80%. Conversely, only 49% of the younger age group choose to own homes. Notably, the data highlights an interesting trend among the younger age group, as 28% of them opt for renting accommodations. This percentage is notably higher compared to the older age group, where only 11% choose to rent their homes. This suggests a greater propensity among younger individuals to prefer renting over home-ownership.

Table 5
Estimation of housing tenure by age

Housing tenure	24-34	34-45	45-55	>55	Total
Owning a house	57 48.72	61 57.55	75 73.75	79 79.8	272 64.5
Living in the house owned by another member of the nuclear family	28 23.93	23 21.70	11 10.78	9 9.09	71 16.75
Living in a rented house	32 27.35	22 20.75	16 15.69	11 11.11	81 19.10
Total	117 100	106 100	102 100	99 100	424 100

4.2 Results from the multinomial logit regression analysis

Regression results are shown in Table 6. These results prove a relationship between the dependent variable and the set of explanatory variables.

Table 6
Regression results of the MNL model with Permanent Income Variable

Criteria	Living in the house of other family members		Rent		Living in a private house (base)
	Coefficient	Marginal Effect	Coefficient	Coefficient Effect	Marginal Effect
Permanent income	0.0008** (0)	-0.000013 (0.00008)	-0.0005 (0.001)	0.000102** (0.00004)	-0.00009 (0.00007)
Age of household's primary income earner (Reference: over 55)					
24-35	1.972*** (0.502)	-0.384*** (0.080)	1.482*** (0.460)	0.231*** (0.085)	0.153* (0.078)
35-45	1.538*** (0.497)	-0.278*** (0.083)	0.950** (0.448)	0.189** (0.083)	0.089 (0.072)
45-55	0.363 (0.53)	-0.075 (0.081)	0.345 (0.459)	0.035 (0.067)	0.040 (0.068)
The career of primary income earner (Reference: Unsklabour)					
Skill-labor	0.035 (0.414)	0.032 (0.065)	-0.320 (0.407)	0.010 (0.047)	-0.042 (0.049)
Jobless	-0.297 (0.448)	0.012 (0.067)	0.131 (0.396)	-0.036 (0.049)	0.024 (0.053)
Education of household's main labour (Reference: primary)					
High school	-0.263 (0.411)	0.077 (0.066)	-0.453 (0.380)	-0.020 (0.046)	-0.057 (0.052)
Graduated and over	-1.279** (0.516)	0.191*** (0.059)	-0.901* (0.468)	-0.104*** (0.038)	-0.087* (0.047)
Gender of primary income labour (Reference: Female)					
	-0.732* (0.393)	0.058 (0.055)	0.008 (0.348)	-0.073** (0.033)	0.014 (0.048)
Household's characteristics					
Household size	0.251*** (0.069)	-0.001 (0.014)	-0.197* (0.101)	0.033*** (0.008)	-0.032** (0.013)
Rate of children (under six years old)	-0.0123 (0.013)	0.000449 (0.00189)	0.0061 (0.011)	-0.002 (0.001)	0.001 (0.001)
Rate of older (over 60 years old)	0.0253** (0.01)	0.001489 (0.00188)	-0.0337** (0.014)	0.004*** (0.001)	-0.005*** (0.002)
Live in a suburban area (1 = Yes)	-1.1308*** (0.417)	0.214893*** (0.04383)	-1.288*** (0.373)	-0.089*** (0.032)	-0.126*** (0.033)
Run small business in the living space (1 = Yes)	-0.4177 (0.39)	0.015499 (0.05814)	0.185 (0.346)	-0.049 (0.040)	0.034 (0.047)
_cons	-3.227*** (0.688)		-0.004 (0.62)		
N	424				
Prob > chi ²	0.000				
Log-likelihood	-324.10909				
Pseudo R ²	0.1509				

Note: The number in brackets is standard error; ***, **, *, statistically significant at the 1%, 5%, and 10% levels.

The data indicate that, when other factors remain constant, the younger age group (24-35 years old) shows a reduced preference for living in a house owned by another member of the nuclear families (parent's house or son/daughter's house, and accommodation provided for free or non-descript types of housing) or rented house compared to the older age group (over 55 years old). Specifically, younger individuals are less likely to choose to live in another member's house by 38% points, but 23% points more likely to opt for a rented house. Similarly, the middle-aged group exhibits a similar trend in their choices. Middle-aged (35-45 years old) individuals have a 28% lower probability of living in another member's house than the reference group but a 19% higher chance of living in rental accommodations. Notably, the likelihood of these tenure types is significantly higher for the younger compared to the middle group, indicating a more substantial trend of household separation among the younger generation. Moreover, when the more youthful generation seeks household separation, they rent a house.

The analysis uncovers a positive correlation between permanent income and housing tenure, suggesting that as income increases by \$100, there is a corresponding decrease of 0.13% in the likelihood of living in the other member's house. Simultaneously, there is a 1 % point increase in the probability of renting rather than owning a house.

About the demographics role, the analysis demonstrates that if the primary income earner has achieved a university degree or higher, the probability of living in a rented house increases by 19% points, while the likelihood of relying on the other member's house decreases by 10% points, in comparison to individuals who have only completed primary school. Gender differences also play a role, with a lower proportion of males residing in the other member's house or renting than females. Specifically, men have a 6% points higher likelihood of living in another member's house, whereas the probability of choosing a rented house is lower by 7% points compared to women. Moreover, the study findings indicate that as the number of individuals in a household increases, the likelihood of living in another family member's house decreases by 0.1%—conversely, the probability of renting increases by 3.3% points with each additional person in the household. Lastly, households situated in suburban areas exhibit a higher probability of residing in the other member's house (21%) compared to living in their own house. The likelihood of renting is also higher for suburban households (9%).

5. Discussion and conclusion

5.1 Theoretical contributions

Influenced by globalization, economic uncertainty, neoliberal ideologies, and shifting demographics, many countries have prioritized home-ownership in their housing policies (Doling, 1997, 1999; Filandri & Bertolini, 2016). The decision to purchase a home is a significant investment choice for households, representing social and economic symbols that shape individuals' perceptions of their environment. Both home ownership and renting have positive and negative aspects, making the decision complex and multidimensional (Cirman, 2004; Jim & Chen, 2007; Opoku & Abdul-Muhmin, 2010).

In terms of generation, our study finds that younger individuals prefer living in the other member's house or renting, especially favoring renting among those aged 24-35. These results support the increasing popularity of renting in this age group, although they contradict some previous studies (Fu et al., 2015; Huang, 2013; Opaluwa & Aribigbola, 2015). The presence of elderly individuals positively impacts home ownership and staying with other family members. This can be attributed to their specific needs, including health care and customization of living spaces. Accumulated assets also increase the likelihood of elderly individuals owning real estate. Additionally, physical limitations may lead them to rely on their son and daughter for support and care.

Permanent income shows a positive relationship with housing tenure choices, as higher-income individuals are likelier to choose home ownership (Zhou, 2011). Numerous studies have indicated that household income influences tenure (Carter, 2011). The rental sector is a viable option for households with limited income, insufficient formal income to qualify for a mortgage, inadequate savings to meet down-payment requirements for home ownership, or a personal preference against owning a home (Peppercorn & Taffin, 2013).

Among social-economic variables: other influential factors in housing tenure choices include income uncertainty, demographics, housing support network, and education (Chen et al., 2022; Hui et al., 2014; Huang, 2003; Kim, 1992; Tao et al., 2015; Zhou, 2011). Education level influences home-ownership, with those having a college or higher education more likely to own a house. This can be attributed to financial security and social status associated with home-ownership. Household size also plays a role, as larger households often choose home-ownership to meet their space needs and for financial security. Suburban areas have higher home-ownership probability than inner cities due to lower real estate prices and more spacious living spaces. Suburban areas may have less developed infrastructure and transportation connections but offer a more favorable environment for families. The career of the primary income earner and the rate of children in the household do not significantly impact the housing tenure model. This may be due to cultural factors in Asian countries, where settling down and finding stable employment are common. Additionally, households with young children prioritize renting or staying with the other members to save money for future needs. It is essential to consider that housing tenure decisions are influenced by cultural and societal factors, and the findings presented here reflect the context of Asian

countries. Other regions and countries may have different patterns and influences on housing tenure choices based on cultural contexts.

5.2 Practical implications

The study offers valuable insights for policymakers and real estate investors, providing reference values for housing management and development. Firstly, policies should focus on increasing permanent incomes through job support and creation initiatives, promoting skill development and educational opportunities for better job positions and higher incomes. Secondly, addressing housing needs and affordability for younger and middle-aged individuals requires increasing the proportion of rental housing and offering diverse payment options like lease and hire purchase arrangements. In suburban areas, policies should promote affordable and social housing by investing in infrastructure, creating land reserves, and facilitating favorable conditions for affordable housing projects. Additionally, housing policies should consider household demographics and tailoring strategies to meet the specific needs of different population segments. Implementing these recommendations will foster a more inclusive and sustainable housing environment that meets the population's diverse needs.

5.3 Conclusion

This study uses survey data to examine the influence of generation and permanent income on housing tenure choices. These insights can inform policymakers in addressing housing needs and optimizing urban development.

The study's limitations include restricted generalizability due to a minor observation, a focus solely on urban residents, and the absence of an extended housing tenure model. Future research with a larger sample size and an extended model can enhance the generalisation and interpretation of the findings.

Disclosure statement

The authors reported no potential conflict of interest.

Funding

The authors received no direct funding for this research.

References

- Abdel-Ghany, M., & Sharpe, D. L. (1997). Consumption patterns among the young-old and old-old. *Journal of Consumer Affairs*, 31(1), 90–112.
- Ademiluyi, A. I. (2010). Public housing delivery strategies in Nigeria: A historical perspective of policies and programs. *Journal of Sustainable Development in Africa*, 12(6), 153-161.
- Arnott, R. (1987). *Handbook of Regional and Urban Economics*. Elsevier Science Publishers
- Artle, R., & Varaiya, P. (1978). Life cycle consumption and home-ownership". *Journal of Economic Theory*, 18 (1), 38-58.
- Bagozzi, R. P. (2011). Measurement and meaning in information systems and organizational research: Methodological and philosophical foundations. *MIS quarterly*, 261-292.
- Boehm, T. P. (1982). A hierarchical model of housing choice. *Urban Studies*, 19(1), 17–31.
- Boehm, T. P., & Schlottmann, A. M. (2004). The dynamics of race, income, and home-ownership". *Journal of Urban Economics*, 55(1), 113–130.
- Boehm, T. P., & Schlottmann, A. M. (2014). The dynamics of housing tenure choice: Lessons from Germany and the United States. *Journal of Housing Economics*, 25, 1-19.
- Blanco, A., Gilbert, A., & Kim, J. (2016). Housing tenure in Latin American cities: The role of household income. *Habitat International*, 51, 1-10.
- Bui, A. T., Dungey, M., Nguyen, C. V., & Pham, T. P. (2014). The impact of natural disasters on household income, expenditure, poverty and inequality: evidence from Vietnam. *Applied Economics*, 46(15), 1751-1766.
- Carliner, G. (1974). Determinants of Home Ownership. *Land Economics*, 50(2), 109-119.
- Carter, S. (2011). Housing tenure choice and the dual-income household. *Journal of Housing Economics*. 20(3), 159–170.
- Chen, L., Du, H., Hui, E. C. M., Tan, J., & Zhou, Y. (2022). Why do skilled migrants' housing tenure outcomes and aspirations vary among family lifecycle stages?. *Habitat International*, 123, 102553.
- Cho, C. J. (1997). Joint choice of tenure and dwelling type: a multinomial logit analysis for the city of Chongju. *Urban Studies*, 34 (9), 1459–1473.
- Cirman, A. (2004). Housing tenure preferences in societies with marginal rental sectors: The case of Slovenia. *Adequate and Affordable Housing for All*, 2.
- Clark, W. A. V., & Dieleman, F. M. (1996). *Households and Housing: Choice and Outcomes in the Housing Market*. CUPR Press. Rutgers University.

- Clark, W. A. V., Deurloo, M. C., & Dieleman, F. M. (1994). Tenure changes in the context of micro-level family and macro-level economic shifts". *Urban Studies*, 31, 137–154.
- Deurloo, M. C., Dieleman, F. M., & Clark, W. A. V. (1987). Tenure Choice in the Dutch Housing Market, *Environment and Planning A*, 19 (6), 763–781.
- Doling, J. (1997). *Comparative housing policy: government and housing in advanced industrialized countries*. Bloomsbury Publishing
- Doling, J. (1999). Housing policies and the little tigers: How do they compare with other industrialised countries?. *Housing Studies*, 14 (2), 229–250.
- Dougherty & Van Order (1982). Inflation, Housing Costs, and the Consumer Price Index. *The American Economic Review*, 72(1), 154-164
- Eaqub, S. (2015) *Generation Rent: Rethinking New Zealand's Priorities*, Wellington: BWB Texts
- Filandri, M., & Bertolini, S. (2016). Young people and home ownership in Europe. *International Journal of Housing Policy*, 16(2), 144-164.
- Fontes, A., & Fan, J. X. (2006). The effects of ethnic identity on household budget allocation to status conveying goods. *Journal of Family and Economic Issues*, 27(4), 643-663.
- Frenkel, A., & Kaplan, S. (2015). The joint choice of tenure, dwelling type, size, and location: the effect of home-oriented versus culture-oriented lifestyle. *Letters in Spatial and Resource Sciences*, 8(3), 233-251.
- Friedman, M. (1957). The permanent income hypothesis. In *A theory of the consumption function* (pp. 20-37). Princeton University Press.
- Fu, Q., Zhu, Y., & Ren, Q. (2015). The downside of marketisation: A multilevel analysis of housing tenure and types in reform-era urban China. *Social Science Research*, 49, 126–140.
- Fuster, N., Arundel, R., & Susino, J. (2019). From a culture of homeownership to generation rent: Housing discourses of young adults in Spain. *Journal of Youth Studies*, 22(5), 585-603.
- Goodman, A. (1988). An econometric model of housing price, permanent income, tenure choice, and housing demand. *Journal of Urban Economics*, 23, 327–353.
- Ha, L. K., & Kendig, H. L. (1984). Housing Tenure and Generational Equity. *Ageing & Society*, 4(3), 249–272.
- Henderson, J. V., & Ioannides, Y. M. (1983). A Model of Housing Tenure Choice. *The American Economic Review*, 73(1), 98–113.
- Henderson, J. V., & Ioannides, Y. M. (1987). Owner occupancy: Investment vs consumption demand", *Journal of Urban Economics*. 21(2), 228–241.
- Henderson, J. V., & Ioannides, Y. M. (1989). Dynamic aspects of consumer decisions in housing markets. *Journal of Urban Economics*, 26 (2), 212–230.
- Hirayama, Y., & R. Ronald. (2008). Baby-boomers, Baby-busters and the Lost Generation: Generational Fractures in Japan's Homeowner Society. *Urban Policy and Research*, 26 (3), 325–342.
- Huang, Y. (2003). Renters' housing behavior in transitional urban China". *Housing Studies*, 18 (1), 103–126.
- Hui, E. C. M., Leung, B. Y. P., & Yu, K. H. (2014). The impact of different land-supplying channels on the supply of housing. *Land Use Policy*, 39, 244-253.
- Hulse, K., & Mcpherson, A. (2014). Exploring dual housing tenure status as a household response to demographic, social and economic change. *Housing Studies*, 29(8), 1028-1044.
- Jayantha, W.M. & Oladinrin, O.T. (2019). An analysis of factors affecting home-ownership: a survey of Hong Kong households. *Journal of Housing and the Build Environment*, 35, 939–956.
- Jim, C. Y., & Chen, W. Y. (2007). Consumption preferences and environmental externalities: A hedonic analysis of the housing market in Guangzhou. *Geoforum*, 38(2), 414-431.
- Kendig, H. L. (1984). Housing Careers, Life Cycle and Residential Mobility: Implications for the Housing Market. *Urban Studies*, 21(3), 271–283.
- Kim, S. J. (1992). A model of rental housing choices in the Korean market". *Urban Studies*, 29(8), 1247–1263.
- McKee, K., & Hoolachan, J.E., (2015). Housing Generation Rent: What are the Key Challenges for Housing Policy in Scotland?
- Morrow Jones H A. (1988). The housing life-cycle and the transition from renting to owning a home in the United States: a multistate analysis. *Environment and Planning A*, 20, 1165-1184
- Mulder, C. H., & Wagner, M. (1998). First-time home-ownership in the family life course: A West German-Dutch comparison. *Urban Studies*, 35(4), 687-713.
- Mulder, H. C. (2006). Population and housing: A two-sided relationship, *Journal of Demographic Research*, 15, 404–412.
- Opaluwa, A. I., & Aribigbola, A. (2015). Factors affecting the choice of residential housing in Lokoja, Kogi State, Nigeria. *International Journal of Innovative Science, Engineering & Technology*, 2(10), 850–859.
- Opoku, R. A., & Abdul-Muhmin, A. G. (2010). Housing preferences and attribute importance among low-income consumers in Saudi Arabia. *Habitat International*, 34(2), 219-227.
- Peppercorn, I. G., & Taffin, C. (2013). *Rental housing: Lessons from international experience and policies for emerging markets*. World Bank Publications.
- Raya, J., & Garcia, J. (2012). Which are the real determinants of tenure? A comparative analysis of different models of the tenure choice of a house. *Urban Studies*, 49 (16), 3645-3662.
- Reed, R.G. & Conisbee, N. (2006). Identifying linkages between generations and community development – the effect on

- residential and retail property. *The Australian and New Zealand Property Journal*, 39, 32-39.
- Reid, M. G. (1962). Housing and income. University of Chicago Press Research, 26(3), 325-342
- Sharpe, D. L., & Abdel-Ghany, M. (1997). Consumption patterns of Asian-Canadians and Canadian-Born. *Consumer Interests Annual*, 43, 64-69
- Skaburskis, A. (2002). Generational differences and future housing markets. *Canadian Journal of Regional Science*, 25 (3), 377-404.
- Tao, L., Hui, E. C., Wong, F. K., & Chen, T. (2015). Housing choices of migrant workers in China: Beyond the Hukou perspective. *Habitat International*, 49, 474-483.
- Zhou, J. (2011). Uncertainty and housing tenure choice by household types: Evidence from China. *China Economic Review*, 22(3), 408-427.



© 2024 by the authors; licensee Growing Science, Canada. This is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license (<http://creativecommons.org/licenses/by/4.0/>).