

Article

Beyond Homeownership? Examining the Mediating Role of Housing Tenure on Young People's Subjective Well-Being

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Abstract: Young people around the world are facing similar housing challenges, trapped between a costly and unaffordable homeownership sector and an unstable (private) rental sector. China has opted to promote renting as an alternative to homeownership to alleviate the housing difficulties of young people in big cities. However, the influences of promoting rental housing on the subjective well-being of different groups have not been well understood. Therefore, this study examines the mediating role of housing tenure in the relationship between individual attributes and subjective well-being. The study is based on 1,149 questionnaires conducted on the housing situations of residents in Guangzhou, and 618 samples were extracted for analysis based on the purpose of this study. It is found that individual, marital status, (local/nonlocal) *hukou* status, and income level have significant indirect effects on subjective well-being, with housing tenure as the mediator. This study contributes to a deeper understanding of the influencing mechanisms of subjective well-being associated with housing tenure and human heterogeneity and specifies the key points for future research and policymaking.

Keywords: housing tenure; subjective well-being; young people; mediating effect; urban China



Citation: Mo, H.; Yau, Y.; Liu, Y. Beyond Homeownership? Examining the Mediating Role of Housing Tenure on Young People's Subjective Well-Being. *Land* **2023**, *12*, 678. <https://doi.org/10.3390/land12030678>

Academic Editors: Agnieszka Szczepańska and Radosław Cellmer

Received: 1 February 2023

Revised: 8 March 2023

Accepted: 9 March 2023

Published: 14 March 2023



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1. Introduction

Youth housing difficulties and the responding policy interventions are major contemporary global concerns [1]. The youth are facing very similar housing dilemmas internationally [1,2], e.g., declining affordability, insecurity, and poor quality of accommodation. Many young people are constrained to the private rental sector (PRS) or waiting for scarce opportunities for social housing. The 'normalized' pathway into a linear housing career with the promise of homeownership is disrupted and replaced by more chaotic pathways.

Over the past decades, the developed world has been moving towards 'homeowner societies' [3], but the sustainability of this trend is in doubt amidst widespread housing crises [4]. In the wake of the neoliberal turn, the 2007–2008 global financial crisis (GFC) and the COVID-19 pandemic, house prices in many jurisdictions have risen to unaffordable levels, with precarious employment and earnings [3,5]. Younger cohorts are finding it increasingly difficult to afford the down payment and/or mortgage loans. The value of housing as an asset also becomes uncertain, putting mortgaged homeowners at risk of negative equity. The PRS, to which a growing number of young people are being restricted, is characterized by insecure tenure and arbitrary rent increases, making it difficult for the younger generations to save money and accumulate wealth. Under such circumstances, the shift from a collective to an asset-based welfare system appears illusory. Certain countries (notably Britain) are witnessing young people turning into the 'generation rent' [6]. The rental sector, either public or private, is receiving increasing policy and social attention.

In China, young people in big cities are struggling to afford homeownership or being confined to the PRS or staying with their parents. In tackling the housing difficulties of young people, the Chinese government has started with the rental sector, intervening both in the market sector and the social sector. The housing rental market has been actively promoted since 2015, regulating the rental chaos and nurturing rental enterprises. The emerging Long-term Apartment Rental (LAR or *changzu gongyu*) is gradually gaining importance in the PRS. LARs also adopt the slogan in line with young people's aesthetic and consumption habits, e.g., safety, quality, service, shared public space and community interactive atmosphere.

Young people also enjoy greater access to the social housing sector, owing to the (welfare) developmental orientation of the (local) governments [7]. The public rental housing (PRH or *gonggong zulin zhufang*), Government-subsidized Rental Housing (GSRH or *baozhangxing zulin zhufang*), Shared Ownership Housing (SOH or *gongyou chanquan zhufang*) and Talent Housing (TH or *rencai zhufang*) are all targeted at a population that includes (talented) young people, e.g., [8,9].

With China's increasingly people-oriented policy orientation, policy development and relevant research are paying greater attention to the heterogeneity of different populations. As a public policy and urban planning increasingly concern themselves with the development of society as a whole, indicators beyond economic growth have come into focus, e.g., subjective well-being. Subjective well-being is also considered to be an appropriate indicator for assessing housing policies. Recent years have seen unaffordable housing expenditure posing a threat to residents' subjective well-being. Nonetheless, the impact of promoting rental housing as a longer-term alternative to homeownership remains under-researched. Besides, quantitative analysis of housing and well-being targeted at young people in urban China has been relatively scarce except, e.g., [10]. Therefore, this study aims to examine how personal attributes and housing tenure (rent/own) matter for subjective well-being.

This paper uses Guangzhou, a typical large Chinese city, as an empirical case. The mediating role of housing tenure in the relationship between individual attributes and subjective well-being has been examined. The data source is a questionnaire survey of Guangzhou residents conducted by the authors. It is found that individual marital (local/nonlocal) *hukou* (i.e., Household Registration System for particular rights) status and income level have indirect influences on subjective well-being, with housing tenure as the mediator. Educational attainment, surprisingly, has no significant effect on subjective well-being and a significant negative effect on young people's homeownership status. Suggestions for policymaking and further research are derived accordingly.

Based on these findings, we identify three individual attributes (local/nonlocal *hukou* status, marital status, and income level) that deserve attention in promoting renting. It is also recommended that the mechanisms by which housing tenure affects subjective well-being be further explored. This study contributes to a deeper understanding of the mechanisms influencing subjective well-being associated with housing tenure and human heterogeneity and thus specifying the key points for future research and policymaking. The development of housing sectors in China may provide empirical and theoretical knowledge of the increasing deviation of the global housing sector from the 'normalized' homeownership path. It is also suggested that further studies be conducted to examine other mediating effects, moderating effects (e.g., Wang et al., 2023) or incorporate spatial analysis (e.g., Gu et al., 2022).

2. Literature Review

2.1. Subjective Well-Being: The Influences of Individual Attributes and Housing Tenure

Increasing urbanization worldwide has made the provision of a better quality of life for city dwellers an important issue in urban planning [11]. Subjective well-being as a large-scale measure of social progress in public policy evaluation can be traced back to the 1960s [12,13]. In the 1990s, policy evaluation had moved beyond the traditional cost-benefit

analysis and employed a wider range of impact measures, with indicators such as subjective well-being [14]. Clapham [15] also argues that well-being would be an appropriate measure of the success of housing policies.

Since the second decade of the 21st century, China's policymaking has placed emphasis on the 'people-oriented' approach, stressing that the goal of urban policy is to enhance people's well-being [16]. Well-being has become a crucial criterion for evaluating urban planning, management and services [17]. In Chinese cities, homeownership status has been found to have a positive effect on people's subjective well-being [18–20]. Nonetheless, soaring and increasingly unaffordable house prices in Chinese cities have become a potential barrier to the improvement of residents' subjective well-being [20].

Similar to many young people worldwide [2], China's younger cohorts are getting confined to the rental sector or living with their parents/relatives. Policy interventions to address youth housing difficulties have predominantly focused on promoting renting, not sharing with roommates nor staying with parents, as an alternative to homeownership. China's private rental sector has long been in an underdeveloped state with little regulation and policy support, making it a temporary and unwilling choice for those who cannot afford homeownership [21]. China's earlier social rented sector also placed a lower priority on the housing needs of young people, leaving them largely excluded.

After 2015, China proposed 'accelerating the development of the rental housing market', 'encouraging both housing rentals and purchases (*zugou bingju*)', 'ensuring all people's access to housing (*zhuyou suoju*)' and 'equal rights for tenants and homeowners (*zugou tongquan*)'. Renting has been highlighted as a practical alternative to homeownership to alleviate the housing difficulties of urban residents, especially the younger cohorts. Enhancing the well-being of people with housing difficulties is one of the key objectives of China's housing policy [22].

Nonetheless, the impact of promoting renting for heterogeneous populations has been under-researched. In the existing literature, while personal attributes and housing tenure are often placed together as independent variables affecting subjective well-being, few studies have examined the more nuanced influencing mechanisms between these three aspects. In other words, it is difficult for established research to provide sufficient information on how housing tenure affects subjective well-being across different groups. For the study to be relevant to recent housing policy, the housing tenure studied in this paper is focused on and restricted to homeownership and renting.

Previous studies have discussed the relationships between personal attributes, housing tenure and subjective well-being. Individual socioeconomic and institutional attributes, e.g., income, age, sex, *hukou* status, educational attainment, and affiliation, have been found to be determinants of subjective well-being. Studies on the impact of affluence on subjective well-being have yielded mixed results [23]. Some studies point to rising affluence but declining happiness [24,25], while many other Western studies show that an increase in personal income leads to greater well-being [23]. Aside from income, subjective well-being is also significantly related to age (higher for the elderly) and sex (higher for women) [26]. Educational attainment was also found to have a positive effect on the happiness of Chinese people post-1980s [27]. The (change in) *hukou* status (obtaining citizenship and settling down in a small city) has been found to significantly improve people's well-being [27,28].

The relationship between the built environment (including housing) and subjective well-being has not been fully understood, despite certain attempts [11]. Agboola et al. [29], for instance, highlight the influence of neighborhood open space on residents' well-being. In terms of housing tenure, its impact on subjective well-being has been disputed. Unsurprisingly, a number of studies have found a significant positive effect of homeownership on subjective well-being [19,30,31]. However, there are some articles suggesting that housing tenure has been found to have no significant impact on the resident's mental aspects, e.g., [32]. Baker et al. [33], for instance, found that although residents' mental health scores differ across tenure, it was difficult to argue for an intrinsic link between tenure and mental health when population differences are taken into consideration. Under the

‘people-oriented’ policy development orientation, it is critical to identify how personal attributes and housing tenure matter for subjective well-being.

Considerable research has found that personal attributes have a significant impact on housing-related factors, e.g., [23,34,35]. The status of homeownership varies greatly among people with different socioeconomic and institutional conditions [35]. Age (the elderly) and education (the more educated) have positive influences on accessing homeownership. The higher the age and education level, the better the chance of homeownership. Institutional factors such as *hukou* status (urban as opposed to rural and local as opposed to nonlocal) contribute to greater access to homeownership (ibid.). In the study on young people, Niu and Zhao [10] found that demographic factors (e.g., older and married), market variables (e.g., household income and schooling years), and institutional elements (local and urban *hukou*) and affiliation (within state-owned enterprises) have significant positive effects on attaining owner-occupied housing.

In short, different personal attributes are found to have varying influences on housing tenure and subjective well-being. Housing tenure, especially when individual differences are considered, has been found to have mixed effects on subjective well-being. In addition, most of these articles focus on a wider age span rather than specifically on young people, a recent target group for China’s housing policy. In the context of encouraging both housing rentals and purchases, substituting rental for the previously prioritized homeownership as a practical and timely way to address housing difficulties of young people may generate varying effects on the well-being of diverse groups. This paper highlights the importance of examining which personal attributes have an impact on subjective well-being and which of these influences have been mediated by the tenure of renting/ownership.

2.2. Youth Housing Arrangements in Urban China

This section provides an overview of the social housing sector and market housing sector in urban China and illustrates the practical significance/relevance of this research.

2.2.1. Social Housing Policies Targeting the Urban Youth

The Chinese housing system is divided into a *baozhang* (commonly translated as ‘security’ in Chinese official documents and media reports) system and a market system, as in the top-end of the housing planning system [7,36]. For the sake of consistency with international terminology, security housing is hereinafter referred to as social housing.

The social housing system mainly comprises GSRH, SOH and PRH. This new classification does not contain the previous cheap rental housing (CRH or *lianzu zhufang*) and economically comfortable housing (ECH or *jingji shiyong zhufang*) for details, please also refer to [37] which shows that they have been gradually discontinued.

PRH has a few variants, including PRH_(H) tailored for low- and middle-income house poor urban households, PRH_(N) for newly employed workers (young people aged between 18 and 35 years old), and PRH_(M) for migrants.

GSRH was introduced in 2021, targeting young people and new migrants. Nonetheless, GSRH distinguishes it from PRH in the supply body. PRH has been predominantly provided and allocated by the state and other public institutions. The target group of PRH has mostly been low- and middle-income residents who have a local urban *hukou* and do not own a house. The provision mode of GSRH has gone beyond the typical characteristic of public housing (i.e., provided by the state). GSRH has been (designed to be) invested in and supplied by more diverse groups, including various (market) subjects, with the government offering incentives. It has a fairly generous barrier to entry, except that in the policy document, it is offered at below-market rents to young people and newcomers with housing difficulties.

SOH is set as a homeownership option for those unable to enter the private ownership sector (underfunded) and the PRH sector (income above access criteria). SOH is also intended to bridge the gap between GSRH and the homeownership market. The governments regard it as a homeownership alternative for young people after staying at

GSRH for a few years [7]. The SOH also aims to break away from the massive rent-seeking practices of the ECH, but the operation mode of the SOH has not yet been settled.

TH, although outside of the national social housing system (consisting only of the PRH, GSRH and SOH), is used by many local authorities to support the housing needs of talents. TH is not only provided for high-level talents but is also allocated by many companies (subletting TH from the local governments) to new employees. This is partly because the quality and location of TH may not meet the needs of executives while satisfying the expectation of many young people.

Considering the official specifications on the age of young people (Middle- and Long-term Youth Development Plan (2016–2025) defining young people as those aged between 14–35), this paper limits the young people studied to those aged 18–35. Only the adult group will be considered as matching the minimum qualifying age for applying for social housing.

2.2.2. New Development in Private Markets: The Rising Rental Sector

Since around 2015, overproduction in the real estate sector has become a prominent issue from time to time [38]. The instability of employment brought about by the GFC and the COVID-19 pandemic has deterred young people from carrying a mortgage loan to purchase a house. Urbanization and population growth have been decelerated, especially in provinces and cities with a net outflow of population. Renting has been seen as a market of potential as growth momentum in the property market wanes [39].

Since 2015, the private rental market has been promoted by the central governments to provide decent and affordable rental housing to young people. The emerging LAR has been advocated to supplement the formerly ‘small-scale petty landlordism’ that housing units are possessed and managed by individual landlords [40] (p.661), towards institutionalization and platformization with sizeable real estate enterprises, Internet companies, institutional investors as the dominant market players. The government has proposed a two-pronged strategy to increase the supply of rental housing: (1) special designation (*danlie jihua*) of land transfer for newly-built rental housing, (2) renovate or convert existing property stock into rental units. The rental units produced could also be sources for social rental housing, particularly the GSRH (and TH) and private rental housing.

2.3. Limitations of Extant Research

To reiterate, this paper seeks to discover which personal attributes have influences on subjective well-being via housing tenure (rent/own). Much research has analyzed individual attributes and housing tenure as independent variables influencing subjective well-being, either separately or jointly, with individual attributes frequently as control variables. While this allows for an examination of the effect of housing tenure and/or personal attributes on subjective well-being, few studies have been able to provide a rather integrated analysis. In other words, past analyses could hardly answer the question of which groups are likely to be affected in terms of subjective well-being when rentals are promoted as a longer-term alternative to homeownership.

3. Materials and Methods

3.1. Study Area

Chinese youth is confronted with housing difficulties similar to that of the youth in many other districts, e.g., North America, Europe, and East Asia. Youth housing challenges are highlighted in large cities with a continuous influx of people. According to the 2020 China Census by County Data, Guangzhou is one of the seven megacities with an urban population of more than 10 million (the other six are Beijing, Shanghai, Shenzhen, Chongqing, Tianjin and Chengdu) [41]. Besides, Guangzhou differs from the capital and municipalities that may have special policies and authority, and its status as a provincial capital may provide more reference for other big cities. Guangzhou’s housing policy is also largely in line with the national housing policy developments. Specifically, Guangzhou has served as a pilot city for a number of housing policies, e.g., national youth

development pilot city, one of the first batches of pilot cities for central financial support for the development of the rental market, and a pilot city for the use of collective land for construction of rental housing. During the 14th Five-Year Plan period, Guangzhou plans to raise 660,000 units of social housing (including 600,000 GSRH, 30,000 SOH and 30,000 PRH) and supply 650,000 units of private homeownership housing. The supply structure of social housing and market housing is close to 1:1, which makes it a possible place to analyze the housing tenure of rent and own. For the sake of representativeness and generalisability, Guangzhou (Figure 1) was chosen for the case study.

The survey samples cover young residents (aged between 18 and 35 years old) in 11 districts of Guangzhou. There is a wide range of housing types for young people, covering both owned and rented housing in the public and private sectors. In Guangzhou, the private sector includes private ownership and private rental. The PRS includes petty private rental (or with real estate brokers) and the emerging LAR. The social housing sector includes PRH (comprising $PRH_{(H)}$, $PRH_{(N)}$ and $PRH_{(M)}$), SOH, and also TH, which is not in the social system but supplied by the public institutions. These housing sectors are basically consistent with the national housing arrangements.

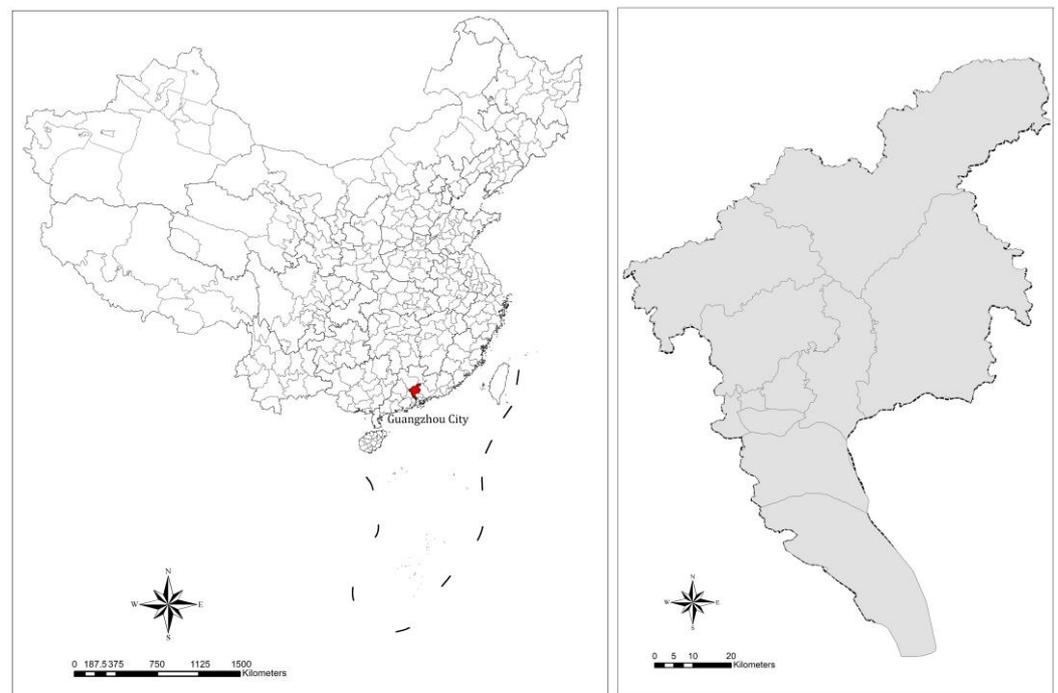


Figure 1. Study Area: geographical location of Guangzhou City in People's Republic of China (**left**) and district delineation of Guangzhou City (**right**) (drawn by the first author).

3.2. Data and Methods

The data were obtained from the questionnaires on the housing situations of Guangzhou residents with 1149 questionnaires distributed and a total of 1065 valid samples collected, with an effective rate of 92.7%.

Conducting a face-to-face investigation on a large scale has become a challenge due to the strict community regulation under the COVID-19 pandemic in mainland China. The questionnaire was first conducted online based on the random sampling method. The questionnaire was designed to target only residents in Guangzhou. The possible bias of the online questionnaire towards a younger sample also fits in with the unit of analysis of this research (i.e., young individuals). A stratified random sampling technique has been employed, designed to cover all districts and housing types (in different types of neighborhoods) in the city, and face-to-face questionnaires were administered to supplement the online questionnaires. Nonetheless, the number/proportion of each housing type for young

people in each district is difficult to obtain from open sources. The stratified sampling of the survey allows for type coverage and does not fully guarantee that the sample size of each housing type matches the proportional relationship of the overall sample.

Among the valid questionnaires, 744 questionnaires were collected from respondents aged 18–35. For the purpose of the study (focusing on housing tenure of renting and homeownership), further exclusion was made of residence in the parental home, workplace and public space, as well as questionnaires that could not identify urban/rural *hukou* status (one of the independent variables), generating a sample of 618 for final analysis.

This article aims to examine the role of housing tenure in the relationships between personal attributes and subjective well-being. In fact, a variety of statistical approaches could have been adopted to test the interrelationship between housing tenure, individual attributes and subjective well-being. For instance, the moderating effect of housing tenure could be tested to see if it shapes the relationship between individual attributes and subjective well-being. Multilevel regression modeling may also be applied (e.g., [42]). This paper, however, attempts to examine the mediating role of housing tenure. Specifically, the analysis is about how individual attributes affect subjective well-being by influencing housing tenure. An examination of the mediation models may provide information on which populations require more policy attention and academic scrutiny. Subsequent studies may go further to analyze other mediating effects and moderating effects or incorporate spatial analysis (e.g., [43]) to deepen understanding.

Independent variables of the empirical study include individual socioeconomic and institutional attributes. The mediator is housing tenure. For the dependent variable, subjective well-being, we use a standard well-being question: ‘How happy do you feel now?’ on a five-point scale [10]. Table 1 illustrates the measurement and descriptive statistics of the variables.

It was expected that all the independent factors (except sex, which would have a significant negative effect) would have significant positive effects on the dependent variable; all the independent factors would have significant positive effects on the mediator, and the mediator would have a significant positive impact on the dependent variable.

Since the independent variables involved dichotomous variables (e.g., *hukou* and marital status, sex, and age), a stepwise method is used for mediation analysis [44,45]. The corresponding steps are (i) testing the coefficient c of Equation (1) ($H_0 : c = 0$); (ii) testing the coefficient a of Equation (2) ($H_0 : a = 0$), and the coefficient b of Equation (3) ($H_0 : b = 0$). If coefficient c is found significant, and coefficients a and b are both significant, then the indirect effect is significant. The test of full mediation needs to add one step, i.e., (iii) testing if the coefficient c' is insignificant [44]. These steps are also known as the ‘test of joint significance’ [46]. IBM SPSS Statistics 25 was used for model estimation.

Since the mediating variable is dichotomous, Equation (2) uses logistic regression instead of linear regression [44,47,48]. The scale unity of the effect is the key challenge for binary mediating variables/dependent variables in mediating effect analysis. As indicated by Iacobucci [49], in linear regression, a t -test is used to test the significance of regression coefficient a . The statistic for the test is $t = a/SE(a)$. When the sample size increases to more than 30 degrees of freedom, the t -test can be viewed as a Z -test, written as $Z_a = a/SE(a)$. In the logistic regression, the significance of the regression coefficient b is tested by Wald’s χ^2 test. The statistic for the test is $\chi^2 = (b/SE(b))^2$. The square root of the test statistic is $b/SE(b)$, which is a t -test statistic. When the sample size increases to more than 30 degrees of freedom, it can be written as $Z_b = b/SE(b)$. Therefore, after converting the regression coefficients a and b into Z_a and Z_b , Z_a and Z_b are of the same scale, and the significance test of the indirect effect is to testify the significance of $Z_a \times Z_b$ [50].

We follow the method proposed by MacKinnon and Kox [51] to test the significance of $Z_a \times Z_b$ based on the distribution of the product. Asymmetric confidence intervals were obtained using the RMediation Package [52] in R software (R 4.2.2), and the indirect effect is significant if the confidence interval does not include zero [50]. Feinberg [53] also suggests the use of bootstrapping or Bayesian approaches to test for the significance of $Z_a \times Z_b$.

However, the commonly used statistical software does not allow for direct confidence intervals for the bootstrapping or Bayesian methods [50].

Table 1. Measurement and Descriptive Statistics for Variables.

	Number	Percentage (%)	Homeownership		Subjective Well-Being	
			Number	Percentage (%)	Mean	SD
<i>Independent Variables</i>						
Age						
1: 30–35 years old	202	32.686	109	53.96	3.728	0.972
0: 18–29 years old	416	67.314	76	18.269	3.435	0.9
Sex						
1: Male	277	44.822	83	29.964	3.534	0.919
0: Female	341	55.178	102	29.912	3.527	0.954
Education						
1: Secondary education and below	30	4.854	7	23.333	3.433	1.165
2: Undergraduate (short-cycle courses)	81	13.107	28	34.568	3.346	1.185
3: Undergraduate (Normal Courses)	297	48.058	100	33.67	3.606	0.876
4: Postgraduate (Master)	184	29.773	43	23.37	3.533	0.836
5: Postgraduate (Doctoral)	26	4.207	7	26.923	3.346	1.018
Annual disposable personal income						
1: 40,000 yuan and below	105	16.99	25	23.81	3.162	1.057
2: 40,001–150,000 yuan	320	51.78	80	25	3.506	0.867
3: 150,001–250,000 yuan	133	21.521	44	33.083	3.639	0.882
4: 250,001–500,000 yuan	46	7.443	27	58.696	3.935	0.904
5: Over 500,000 yuan	14	2.265	9	64.286	4.5	0.65
Marital status						
1: Married	203	32.848	111	54.68	3.872	0.886
0: Otherwise	415	67.152	74	17.831	3.364	0.912
Affiliation						
1: Governments or state-owned enterprises	295	47.734	96	32.542	3.569	0.897
0: Otherwise	323	52.265	89	27.554	3.495	0.966
Hukou_a status						
1: Local	421	68.123	158	37.53	3.695	0.914
0: Nonlocal	197	31.878	27	13.706	3.315	0.917
Hukou_b status						
1: Urban	421	68.123	149	35.392	3.572	0.919
0: Rural	197	31.877	36	18.274	3.442	0.96
<i>Mediator</i>						
Housing Tenure						
1: Homeownership	433	70.065			3.881	0.858
0: Renting	185	29.935			3.381	0.926
<i>Dependent Variable</i>						
Subjective Well-being						
1: Extremely unhappy	20	3.236				
2: Unhappy	42	6.796				
3: Average	236	38.188				
4: Happy	230	37.217				
5: Extremely happy	90	14.563				

Further, to measure the magnitude of the indirect effect, the standard deviation of the regression coefficient of Equation (2) was calculated using Equation (5), where S_k is the standard deviation of the k th independent variable; S is the standard deviation of the distribution function of the logistic random variable ($\frac{\pi}{\sqrt{3}} = 1.8138$).

The independent variables that are consistently significant in the test of joint significance are, respectively, used as the independent variables in the indirect effect analysis,

and the remaining (original) independent variables are used as the control variables, as demonstrated in Figure 2.

$$Y' = i_1 + cX_j + \varepsilon_1 \tag{1}$$

$$M = i_2 + aX_j + \varepsilon_2 \tag{2}$$

$$Y'' = i_3 + c'X_j + bM + \varepsilon_3 \tag{3}$$

$$M = \text{Logit}P(M = 1|X) = \ln \frac{P(M = 1|X)}{P(M = 0|X)} \tag{4}$$

$$\beta'_k = \beta_k \left(\frac{S_k}{S} \right) = \beta_k S_k / \left(\frac{\pi}{\sqrt{3}} \right) \tag{5}$$

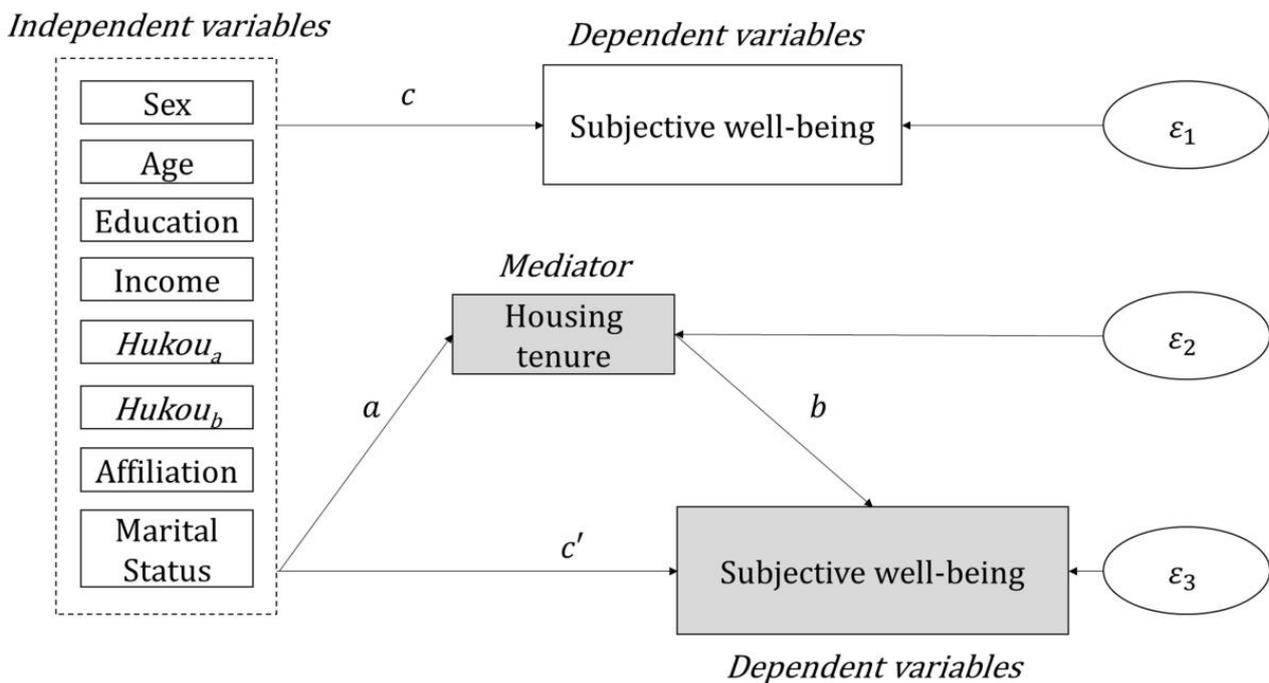


Figure 2. Theoretical Framework for Empirical Testing. Note. The $a, b, c, c', \varepsilon_1, \varepsilon_2, \varepsilon_3$ are consistent with the connotations of the corresponding terms in Equations (1)–(3).

4. The Mediating Role of Housing Tenure in the Relationships between Individual Attributes and Subjective Well-Being

4.1. Test of Joint Significance

The test of joint significance is used to extract the independent variables involving indirect effects. It can be seen from Table 2 that annual disposable personal income, *hukou_a* and marital status are found significant in the tests of joint significance. Therefore, this paper takes these three variables as independent variables respectively to detect the indirect effects involving the influences of housing tenure. The remaining independent variables are used as control variables for theoretical enrichment.

Table 2. Test of Joint Significance.

	Subjective Well-Being		Housing Tenure		Subjective Well-Being	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
<i>Independent Variables</i>						
Age (0: 18–29 years old; 1: 30–35 years old)	−0.106	0.091	0.732 ***	0.240	−0.138	0.092
Sex (0: Female; 1: Male)	−0.096	0.073	−0.144	0.216	−0.091	0.072
Education	−0.014	0.045	−0.280 ***	0.136	−0.005	0.045
Marital status (0: otherwise; 1: married)	0.439 ***	0.089	1.249 ***	0.243	0.388 ***	0.091
Annual disposable personal income	0.226 ***	0.043	0.320 ***	0.122	0.215 ***	0.043
Affiliation (0: otherwise; 1: governments/SOEs)	−0.072	0.077	−0.121	0.223	−0.068	0.077
<i>Hukou_a</i> (0: otherwise; 1: local)	0.337 ***	0.083	1.900 ***	0.273	0.274 ***	0.086
<i>Hukou_b</i> (0: Rural; 1: Urban)	−0.085	0.088	0.172	0.281	−0.088	0.088
<i>Mediator</i>						
Housing tenure (0: rental; 1: ownership)					0.223 **	0.090
Constant	2.897 ***	0.153	−2.772 ***	0.476	2.888 ***	0.152
N		618		618		618
(Pseudo) R ²		0.136		0.268		0.144
−2 Loglikelihood				561.58		

Note. *** $p < 0.01$, ** $p < 0.05$.

4.2. Examining the Mediating Role of Housing Tenure: Identifying Key Individual Attributes

This part analyses the indirect effect of housing tenure in three models (Model 1, 2, and 3), with annual disposable personal income, marital status, and *hukou_a* as the independent variable, respectively, and subjective well-being as the dependent variable.

4.2.1. The Mediating Role of Housing Tenure: Income as the Independent Variable

In Model 1, annual disposable personal income is expected to have significant positive effects on homeownership and subjective well-being, and homeownership is expected to significantly and positively affect subjective well-being. As expected, the annual disposable personal income has significant positive effects on both housing tenure and subjective well-being (Figure 3). Based on the distribution of the product, the asymmetric confidence interval (95%) is between 0.007 and 0.165, without crossing zero, indicating that the indirect effect of housing tenure is significant. The standardized indirect effect size in the path of ‘Income→Housing Tenure→Subjective Well-being’ is $0.159 \times 0.109 = 0.017$, with the indirect effect accounting for 7.56% of the total effect ($0.017 + 0.208 = 0.225$).

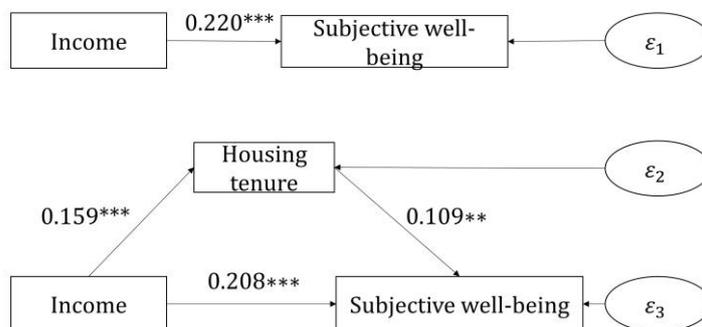


Figure 3. The standardized regression coefficient of Model 1 (annual disposable personal income as the independent variable). Note. *** $p < 0.01$, ** $p < 0.05$.

4.2.2. The Mediating Role of Housing Tenure: *Hukou_a* as the Independent Variable

In Model 2, young people with local *hukou* are expected to have significant positive effects on homeownership and subjective well-being, and homeownership is expected to significantly and positively affect subjective well-being. In Figure 4, *Hukou_a* (i.e., with/without

local *hukou*) harbors significant positive effects on both housing tenure and subjective well-being. Based on the distribution of the product, the asymmetric confidence interval (95%) is between 0.086 and 0.805, without crossing zero, indicating that the indirect effect of housing tenure is significant. The standardized indirect effect size in the path of ‘*Hukou_a*→Housing Tenure→Subjective Well-being’ is $0.520 \times 0.109 = 0.057$, with the indirect effect accounting for 27.92% of the total effect ($0.057 + 0.146 = 0.203$).

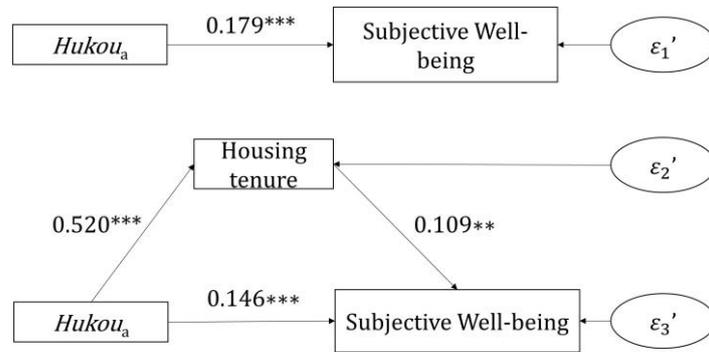


Figure 4. The standardized regression coefficient of Model 2 (*hukou_a* as the independent variable). Note. *** $p < 0.01$, ** $p < 0.05$.

4.2.3. The Mediating Role of Housing Tenure: Marital Status as the Independent Variable

In Model 3, married cohorts are expected to have significant positive effects on homeownership and subjective well-being, and homeownership is expected to significantly and positively affect subjective well-being. As Figure 5 indicates, marital status significantly and positively influences both housing tenure and subjective well-being. Based on the distribution of the product, the asymmetric confidence interval (95%) is between 0.054 and 0.551, without crossing zero, indicating that the indirect effect of housing tenure is significant. The standardized indirect effect size in the path of ‘Marital Status→Housing Tenure→Subjective Well-being’ is $0.323 \times 0.109 = 0.035$, with the indirect effect accounting for 15.22% of the total effect ($0.035 + 0.195 = 0.230$).

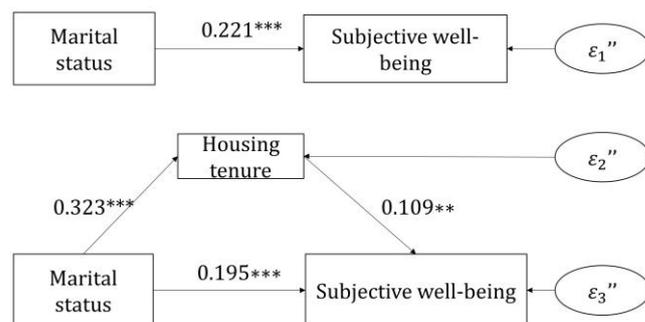


Figure 5. The standardized regression coefficient of Model 3 (marital status as the independent variable). Note. *** $p < 0.01$, ** $p < 0.05$.

4.3. Further Analysis of How Subjective Well-Being Differs across Groups and Housing Tenure

This section is intended to provide a more nuanced analysis by presenting the differences in subjective well-being between different categories of the independent variables (i.e., annual disposable personal income, marital status, and (non)local *hukou* status) under renting and homeownership (Figure 6). There are significant differences in subjective well-being between owning and renting for people at different income levels. The lower the income group, the higher the subjective well-being of buying a house than that of renting. This may be due to purchasing a house allowing for a more secure life for the lower-income group. In terms of the higher income group, otherwise, homeownership may not be such an improvement in their quality of life. Therefore, promoting renting should examine the

possible influencing mechanisms of the subjective well-being of different income groups, especially the lower income segments.

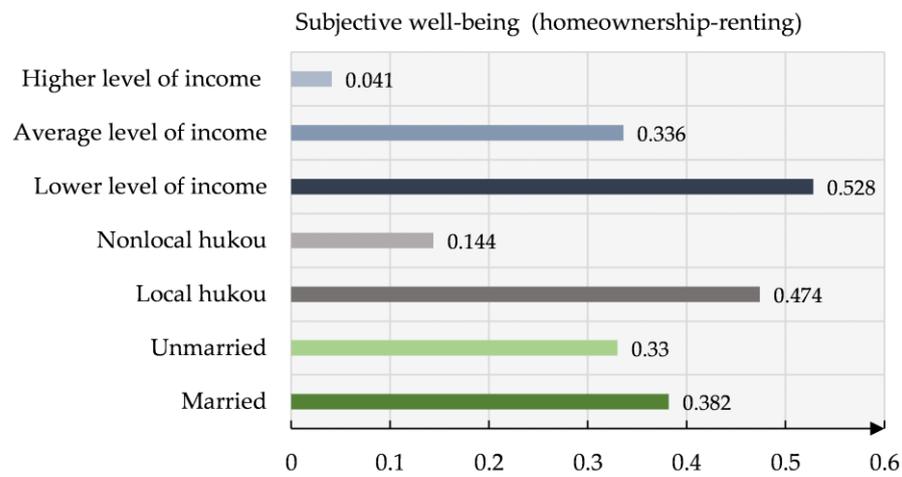


Figure 6. Differences in subjective well-being between homeownership and renting for different groups.

Compared with residents with local *hukou*, the gap in subjective well-being between buying and renting (happier with homeownership) is smaller for nonlocal residents. This may be attributed to the fact that non-residents are faced with more institutional barriers than local residents. We further examine the difference in subjective well-being between local/nonlocal household residents in buying and renting a home at different income levels (Figure 7). Findings are rather unexpected in terms of the nonlocal residents. For the higher-income nonlocal residents, the renters are found to be happier than the homeowners. This points to the need to further examine the influencing mechanisms of subjective well-being of nonlocal young people.

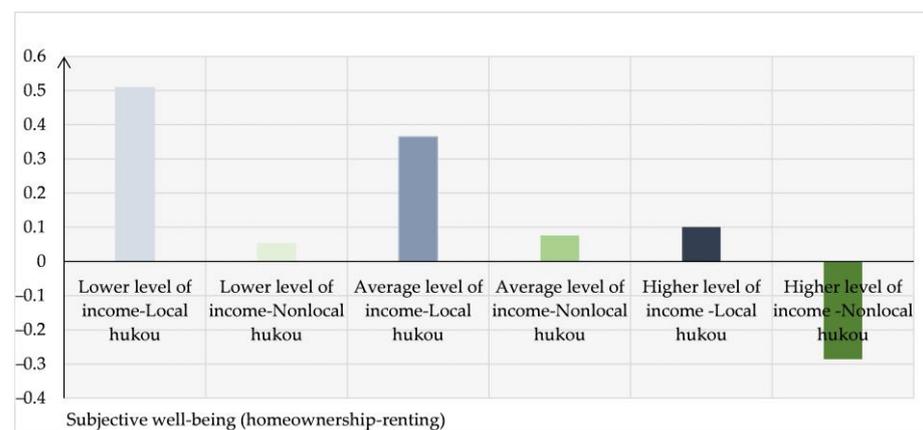


Figure 7. Differences in subjective well-being between homeownership and renting for (non)local groups at different income levels.

For both the married and unmarried groups, homeownership scores higher than renting in terms of subjective well-being. However, homeownership still matters more for the married than the unmarried ones. It may be that the (potentially) improved educational opportunities that homeownership brings to the children of the homeowners contribute to their less burdensome and more enjoyable life.

In the previous section, we identify three key variables, marital status, local/nonlocal *hukou* status and income level, and found that housing tenure plays a role in their relationships with subjective well-being. In this section, we further compare the differences in

subjective well-being between different categories of these variables for renting and home purchasing. We found that the gap in subjective well-being between buying and renting is greater for the lower-income, local and married groups than for the higher-income, nonlocal and unmarried groups. The mechanisms of how housing tenure (rent/own) in these groups further affects subjective well-being are particularly worthy of further exploration.

4.4. Summary of Findings

Among the young residents, marital status (0.221, standardization coefficient), annual disposable personal income (0.220, standardization coefficient), and local *hukou* in Guangzhou (0.179, standardization coefficient) are found to have significant positive effects on subjective well-being.

At odds with the hypotheses, the effect of age on subjective well-being has been found to be insignificant. This may be due to the samples being divided only into two groups (18–29 and 30–35 years old). Relatively close age ranges may also not demonstrate significant differences in subjective well-being. The effect of sex on subjective well-being is also found to be insignificant. In previous studies, women have been found to have higher levels of subjective well-being [26]. However, young Chinese women have been increasingly under pressure from employment, marriage and fertility, which may have a negative impact on their subjective well-being [54].

The effect of *hukou_b* (urban/rural) on subjective well-being has been found to be insignificant, possibly due to the increase in living standards and well-being brought about by the rising economic value of rural *hukou* status (especially in the central areas in big cities) in recent years. The type of occupation (governments/state-owned enterprises or otherwise) poses no significant effect as well. Also, educational attainment does not have a significant effect on subjective well-being, which may be related to the increase in the number of people with higher educational attainment but facing considerable employment pressure in recent years. It has been widely reported that young people are struggling to enter graduate school or find a decent and stable jobs (especially in the civil service sector) [55–57]. Moreover, due to the high house prices and rents in big cities, even well-educated young people have found it difficult to enjoy an affordable but good quality of life, which may affect their subjective well-being.

As for the influences of individual attributes on the housing tenure, those with local *hukou* (0.520, standardization coefficient), higher annual disposable personal income (0.159, standardization coefficient) and a married status (0.470, standardization coefficient) would have a significantly higher probability of buying a house. Young people with local *hukou* status may have easier access to hardly affordable homeownership. The access and cost of education for children may be linked to homeownership. As a result, those getting married may also consider buying a house if they can afford it financially. Personal income has an impact on the purchase of housing, but not as much. After all, the income generated by a regular salaried job is relatively limited compared to the high down payment and mortgage. The wages of a double-income family may provide important financial support for mortgage repayments.

Apart from these three variables, age and educational level also have significant effects on housing tenure. Not surprisingly, 30–35-year-olds are more likely to own a house than younger ones (18–29), with possibly greater wealth accumulation. However, surprisingly, educational attainment has a significant negative effect on homeownership, unlike the previous findings of the positive impact of human capital under housing market mechanisms [35]. This may be related to the restriction of the study to the youth population. The prolonged education of young people allows them to enter the labor market at a later stage. Employment has also become more precarious, and young people need to devote much time and energy to struggling with their careers. At the same time, returns can be erratic and meager. It also points to the current plight of young people, who may not be able to match their expectations of (economic) reward with higher levels of education also see [58].

As for the indirect effect of local/nonlocal *hukou* on subjective well-being, almost 30% (27.92%) of the influence could have been explained by the influence of housing tenure. When income levels were further considered, it was found that among nonlocal residents with higher incomes, tenants are happier than homeowners. This is indicative of the complexity of nonlocal residents and that further mechanisms require inspection.

The indirect effect of housing tenure on the relationship between marital status and subjective well-being accounts for 15.22% of the total effect. The subjective well-being of both married and unmarried groups is higher in the state of homeownership than in renting. However, this gap is higher for the married group than for the unmarried cohort.

The indirect effect of housing tenure on the relationship between income and subjective well-being is modest (7.56%). This indicates that an increase in income may increase subjective well-being in many ways other than buying a house. Nevertheless, there are significant differences in the subjective well-being of different income groups between renting and homeownership. The lower the income, the higher the subjective well-being in the state of homeownership than in renting.

5. Discussion and Conclusions

With the housing policy promoting renting as an alternative to homeownership, it is necessary to examine how this may affect different groups of people. Based on the increasing importance of subjective well-being in public policy and urban planning, this paper uses it as an indicator to assess the (potential) policy impact. The research question has been framed as to which individual attributes have indirect effects on subjective well-being that are mediated by housing tenure (rent/own). In the existing literature, while individual attributes and housing tenure are often placed together as independent variables affecting subjective well-being, few studies have examined the more nuanced influencing mechanisms between these three variables. This study, therefore, possesses theoretical and practical implications, contributing to an in-depth understanding of the mechanisms influencing subjective well-being associated with housing and human heterogeneity, as well as directions for housing policymaking and further studies.

We found that annual disposable personal income, marital status, and local/nonlocal *hukou* status possess significant indirect effects on subjective well-being mediated by housing tenure (rent/own). Other individual variables have been found to have no significant direct/indirect effects on subjective well-being, although age and educational level have been found to be significantly influencing housing tenure. The more detailed model results and the accompanying policy recommendations and research directions are discussed below.

Firstly, in terms of the influence of income level on subjective well-being, only a modest part of the effect has been found to be explained by housing tenure. This suggests that income can enhance subjective well-being through many other mechanisms other than purchasing a house. However, housing expenses exert considerable pressure on young people. Housing mortgage is the main component of household debt in China, with 75.9% of households using debt to purchase housing [59]. People emptying six wallets (young couples' and their parents') for a down payment and being left with a mortgage loan for decades is commonplace. If young residents spend a disproportionate amount of their income on housing, it actually reduces their ability to obtain an increase in subjective well-being through other possible mechanisms. Further analysis found that the lower-income group, as compared to the higher-income groups, has a higher increase in subjective well-being in the homeowner segment than the renters. This suggests the necessity of examining the influencing mechanisms of housing tenure on subjective well-being when promoting renting as a longer-term alternative to homeownership, especially for lower-income groups.

Secondly, housing tenure contributes to the indirect impact of marriage on subjective well-being to some extent. The reasons may refer to previous findings that renting groups are stuck in a state of prolonged drift, leading to depression [60]. For the married group, homeownership may contribute to their subjective well-being by bringing stability and positive emotions to their lives. Thus, when promoting renting, especially to young

married couples, it is important to examine the mechanisms through which homeownership enhances their subjective well-being. The influencing mechanism may be in multiple dimensions, such as economic, psychological or institutional. Improvements in these aspects may make the promotion of renting to a wider group more compelling.

Thirdly, housing tenure plays a considerable role in the indirect effect of local/nonlocal *hukou* on subjective well-being. For those with local *hukou*, the gap in subjective well-being between homeownership and renting is greater than for those with nonlocal *hukou*. This also suggests that for local *hukou* residents, promoting renting may have a greater negative impact on their subjective well-being improvement. The mechanisms by which the housing tenure of local *hukou* residents affects their subjective well-being need further examination. The subjective well-being of nonlocal residents reveals more complexity. For instance, the subjective well-being of the higher-income group is higher among those who rent than those who own. The current emphasis in China's rental housing policy is particularly on targeting new citizens (i.e., those without local *hukou* or who obtained local *hukou* for less than three years). The intricacies within the nonlocal population and the mechanisms by which renting/owning affects their subjective well-being deserve further inspection.

These findings reflect the influences of specific socioeconomic and institutional contexts in China. However, the recent changes in China and the situation facing young people are also relevant elsewhere in the world. Since China's economic reforms and accession to the World Trade Organisation, the plight of young people has increasingly resonated with global trends. Young people are subjected to the woes of a fading traditional welfare system and rampant leveraging and speculation in the housing market. Depreciating diplomas, prolonged education and highly competitive labor markets are restricting young people's purchasing power and making it difficult for them to earn an affordable and decent living. Relevant findings of China's large cities may therefore be of relevance to other parts of the world.

For the three personal attributes identified in this paper as having significant indirect effects on subjective well-being (housing tenure as the mediator), the effects of income and marriage are potentially more generalizable, as these are variables that youth around the world are concerned with. As for the *hukou_a* status, the findings may also be relevant if it is understood as local/nonlocal status rather than the 'hukou' as a uniquely Chinese institution. Previous studies have suggested that the institutional influence of the post-reform era has been attenuated [34]. This paper also finds that the effect of *hukou_b* (urban/rural) is insignificant. In this case, the local/nonlocal 'hukou' difference may be interpreted as a local/nonlocal distinction. However, the generalisability of the findings needs to be limited, as the institutional barriers accompanying the *hukou* system still substantially exist, despite their gradual erosion.

This paper analyses the mediating role of housing tenure using the frequently used test of joint significance, which is applied to models where the independent variables are dichotomous variables [44,50]. As the mediating variable is a categorical variable, testing the significance of the indirect effect requires scale unification. In this paper, the distribution of the product test is taken, and the results can be run with R software. Although tests for indirect effects can be performed using Bootstrap or Bayesian methods [53], they are difficult to calculate directly with commonly used statistical software, and their effects are not yet well examined [50]. In addition, as cross-sectional rather than (hard-to-get) longitudinal data were used, this study remains a preliminary analysis (also see [42]). Follow-up studies could deepen the exploration of causal relationships. In addition, the impact of a more detailed classification of housing tenure and housing quality on the subjective well-being of different groups could be further analyzed. The moderating role of housing tenure may also be examined. Analyses conducted, or with indicators, at different spatial scales (e.g., provinces, cities, districts, and communities) could be developed in subsequent studies (e.g., [42,43]). Given the focus and space constraint of this paper, the subsequent research may require another space.

Findings from China may provide experience for countries with similar youth housing challenges. It is recommended that more comparative analyses be carried out on a global basis. Limited by the data obtained, further studies can explore more potential influencing mechanisms of subjective well-being, e.g., sense of belonging, welfare system, cultural elements, and influences of parents (and/or partners), with more nuanced population classifications. Moreover, indirect effects can be explored with more housing tenure types. After all, buying a house with or without a mortgage loan may have different effects on subjective well-being. Social rental and market rental may also generate different influences. Given the limited data available and the still nascent development of GSRH and SOH, the study of subdivision of housing tenure may be further developed when new housing types become more available to the residents for a more nuanced and holistic analysis.

Author Contributions: Conceptualisation, H.M. and Y.Y.; Methodology, software, formal analysis, validation, visualization, writing—original draft preparation, visualization, H.M.; supervision, project administration, Y.Y. and Y.L.; Investigation and data curation, H.M. and Y.L.; writing—review and editing, Y.Y., Y.L. and H.M.; funding acquisition, Y.L. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Guangdong Planning Office of Philosophy and Social Science, grant number GD22XGL06.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to ethical restrictions.

Acknowledgments: Credit goes to researcher Tianyuan TAN in the field of applied psychology for his support in model design.

Conflicts of Interest: The authors declare no conflict of interest.

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