Migrants' perceived social integration in different housing tenures in urban China

Sainan Lin [a], Fulong Wu [b], Yu Wang [c], Zhigang Li [a],[*]

[a] School of Urban Design, Wuhan University, Hubei Habitat Environment Research Center of Engineering and Technology, No.299 Bayi Road, Wuchang District, Wuhan, Hubei 430072, China
[b] Bartlett School of Planning, University College London, Central House, 14 Upper Woburn Place, London WC1H 0NN, UK
[c] College of Architecture, Art, and Planning, Cornell University, 129 Sibley Dome, Ithaca, NY 14853, USA

ABSTRACT

Housing is often identified by the government and scholars as a key dimension of strategy for promoting migrant social integration. Yet, existing studies often pay attention to homeownership without distinguishing various housing tenures. This paper examines the effects of tenures on migrant social integration. Drawing on 2017 China Migrants Dynamic Survey data collected by the National Health Commission of China, this study examines migrants' perceived social integration in 11 housing tenures, which vary from informal to formal, private to public, and rental to ownership. It is found that migrants' social integration increases from those living in informal housing, to the private rental, to the public rental, to informal owned, to privately owned, and to public owned housing. Homeownership plays an important role in affecting migrants' perceived social integration. It is worth pointing out that migrants who live in public housing, whether rented or owned, tend to have a higher level of social integration within each group (renters and owners). Heterogeneity analysis further shows that the positive effects of owned housing and public housing on migrant social integration are significantly strengthened in first-tier cities and cities with advanced industrial structures and higher housing-price-to-income ratios.

1. Introduction

The trend of an increasing number of migrants in urban China remains unabated even with a slowing down pace of urbanization. In 2021, there were more than 385 million migrants, which reached the highest point in history, accounting for more than 27 per cent of the total population (NBSC, 2021). Since the launching of the New-type Urbanization plan in 2014, the Chinese government has declared a transition from 'land-based urbanization' to 'people-oriented urbanization', in which the integration of migrants into the urban society has become one of the greatest challenges (Liu et al., 2016; Liu et al., 2021). Due to *hukou* (household registration) limitations, migrants are excluded from most social welfare and benefits, including most types of state-supplied affordable housings (Wu, 2004). Meanwhile, the skyrocketing housing prices in large Chinese cities make homeownership unachievable for most migrants. Consequently, housing such as informal rentals in urban villages and shared rentals in commodity housing provided the main accommodations for migrants in the city. A growing body of literature has addressed the impact of housing on migrant settlement intention,

such as small property right housing (SPRH) homeownership and settlement intention (Zhang & Yan, 2022), homeownership and settlement intention (Yang & Guo, 2018), formal housing and settlement intention (Liu et al., 2016).

Nevertheless, few studies have directly addressed the relationships between different housing tenures based on China's actual housing conditions and migrant social integration. Inspired by the international migration literature, an enormous focus was given to the role of the homeownership (Wang et al., 2016). Homeownership means greater residential stability in the city, indicating a sense of membership in the neighborhood. Thus, it is often considered the strongest predictor of social integration (Wu & Logan, 2015).

However, China's unique social and institutional context (e.g., urban–rural dichotomy, land and household registration system, social welfare system) has produced diversified housing tenure types, showing certain peculiarities that set it apart from similar phenomena around the world. Homeownership (versus rentership) is only one aspect of migrants' housing experiences (Zhang & Yan, 2022). Existing studies on settlement intention have informed that different homeownership and

aspects of housing conditions (e.g., formal vs. informal) may have other social impacts, deserving more systematic research. For example, informal housing helped accommodate massive migrant inflows and contain labor costs (Niu et al., 2021). However, it does not promote migrant settlement intention compared to the formal housing (Liu et al., 2016). It is also important to notice that the role of informal housing in shaping migrants' settlement intentions may vary between large metropolitans where housing prices are extremely high and other cities (Zhang & Yan, 2022). Therefore, classifications such as formal versus informal, public versus private may also enrich the understanding of migrants' housing experiences in different cities and their impact on migrant social integration.

Moreover, existing studies recognized the multidimensional nature of integration. The potential dimensions vary from economic integration to cultural integration, psychological integration, and objective integration to perceptions of the integration (Harder et al., 2018; Wang & Fan, 2012; Zou & Deng, 2022). Existing studies have assessed migrants' socio-economic integration primarily based on migrants' socio-economic performance and success in the city. It is noticed that objective indicators such as employment, housing, and education are widely suggested as indicative of successful integration. However, it is problematic to see achievement in these areas as a result of the integration (Ager & Strang, 2008). Zou and Deng (2022) found that an endogenous relationship exists between housing tenure choice and socio-economic integration of migrants, while no endogeneity exists between housing tenure choice and socio-cultural integration. There is a reverse causality between housing tenure and migrants' objective integration. To avoid such reverse causality, this paper focuses on migrants' perceived social integration rather than objective integration and explores the impacts of migrants' objective conditions.

More importantly, studies pointed out that migrants may achieve economic integration in the destination but fail to achieve cultural and psychological integration (Lin et al., 2022). For example, Lin et al. (2020) found that although migrants who live in informal housing manage to achieve better economic integration, they are less likely to become socially integrated in terms of emotional bond with the city, and a feeling of inclusion in it, which we defined as perceived social integration in oppose to objective integration. Thus, deciphering the mechanisms underlying perceived social integration contributes to a comprehensive understanding of social integration. Meanwhile, China's "people-centered urbanization" policy emphasizes integrating migrants into urban life not only legally but also socially and attitudinally (Lin et al., 2022). A focus on perceived social integration has important policy implications.

In light of the above research gap, this study takes advantage of national-scale survey data covering migrants from 31 provincial administrative units conducted in 2017. It investigates the roles of housing tenures in determining migrants' perceived social integration in Chinese cities. The main purpose of this study is to expand the investigation of homeownership to a wider range of housing tenure types with a more detailed classification of housing conditions in line with China's actual situation and explore their impacts on migrants' perceived social integration. First examined are eleven housing types[1], including working sites, employer-provided housing, other informal housing, shared rental housing, full rental housing, temporary borrowed housing from relatives and friends, public rental housing, owned self-build housing, owned SPRH, owned public housing, and owned commodity housing. And then, the eleven types are further grouped into different categories, namely homeowner vs. renter, public vs. private, and formal vs.

informal, to provide a nuanced understanding of housing tenure on migrant perceived social integration. Our empirical analysis approves that housing is a potential means to affect migrant social integration. It is necessary and important to use such exhaustive housing classifications when addressing migrant social integration in urban China. The heterogeneity within different types of owners and other types of tenure groups is obvious and deserves further discussion.

2. Literature review

2.1. Prior studies on housing and migrant integration

There is a longstanding interest in migrant integration, particularly in immigrant-receiving countries such as the USA and European countries (Ager & Strang, 2008; Bolt et al., 2010; Harder et al., 2018). However, there is still no consensus about the concept and measurement of the integration (Ager & Strang, 2008; Harder et al., 2018). A few studies used proxy measures such as social interaction and settlement intention (Liu et al., 2016; Wang et al., 2016; Wissink et al., 2014). In general, migrants who often interact with people from mainstream society and have strong settlement intentions are more likely to be integrated. In contrast, most scholars define integration as a multi-stage process and measure it with multi-dimensions. To differences in research focus, scholars have debated the dimensions of integration. One framework is to evaluate migrant integration in two dimensions, namely objective conditions and subjective feelings (Yang, 2010). Objective integration includes migrant economic integration and habitual adaptation, and subjective integration includes migrants' cultural acceptance and identificational integration.

Other more often used frameworks include economic integration, culture/social integration and psychological integration. Economic integration is usually measured by educational attainment, occupation and income (Alba & Nee, 1997; Neidert & Farley, 1985). Achieving economic integration indicates an entry into the economic mainstream, which creates social conditions conductive to other forms of integration (Alba & Nee, 1997). However, the usage of these socioeconomic indicators is inconsistent in different studies. Besides considering economic integration as a parallel dimension of integration, many other studies recognize education, occupation and income as important dependent indicators that influence migrants' integration (Ager & Strang, 2008). Thus, the ambiguous understanding of economic achievement as both cause and result may lead to common cause bias.

Social/cultural integration, building on Gordon (1964) and others, refers to the extent migrants adopt customs, social norms, social relations, and practices of the mainstream society (Wang & Fan, 2012). Social ties, interactions with natives in the host country/city and social capital evidenced by participation in organizations with natives, as well as local language proficiency, are often used to capture the migrant social/cultural integration (Harder et al., 2018). According to Gordon (1964), when such structural assimilation has occurred, the other type of integration would naturally follow, including declined prejudice and discrimination, and finally leading to psychological integration. Sense of belonging, attachment and identification with the host society are common measures applied to understand migrants' psychological integration (Lin et al., 2021; Liu et al., 2022).

Although it is recognized that migrants live in many different types of housing in Western contexts, such as rented or purchased housing in migrant enclaves, homeownership in ethnically mixed housing estates, and social housing estates, few studies have directly addressed the impact of housing types on migrants' social integration. Many scholarships on housing studies focus on migrants' housing careers in the destination to understand their integration process (Firang, 2019), yet, without directly engaging with migrants' social integration. Geographers pay attention to the spatial aspect of integration, and explore migrants' residential mobility to reveal the outcome of spatial assimilation/segregation (Andersson et al., 2022; Kadarik, 2020). Other

---

[1] This exhaustive housing classification provided a full picture of housing types for migrants in urban China, pretty much reflecting the actual conditions. However, due to the limitation of survey design, it did not separate rental housing in urban villages, which was included in the shared and full rental housing category.

scholarships on migration analyze social integration through understanding the social relations (Wessendorf & Phillimore, 2018). There seems to be a missing link between housing types and social integration in current scholarships.

The housing situation contributes to migrants' feeling at home in their host society (Ager & Strang, 2008), serving as an indicator of integration (Adam et al., 2021). Migrants who have achieved homeownership and live in neighborhoods where the majority group is concentrated (e.g., white suburban neighborhoods in the US.) are more likely to be integrated (Alba & Logan, 1992). However, many migrants are not able to become homeowners. They are instead struggling for decent, safe, secure and affordable accommodation. Thus, a few studies focused on the effect of different social housing policies on migrants' integration (Sim et al., 2003). For example, scholars have debated whether moving migrants from squatters to formal apartment housing or from ethnic enclaves to more socio-ethnic mixed neighborhoods may improve or impede migrants' integration (Danzer & Yaman, 2013; Phillips, 2006). Moving to formal social housing indicates a better living environment and services and opportunities for interactions with local society, which may promote economic and social integration. Meanwhile, it also means diminishing social support and ties with people of the same origin in the new community, which may be detrimental to their feeling of belongingness, thus hindering migrant integration. From the above review, we can see that housing can be seen as a potential means to affect different dimensions of integration, such as social contacts and emotional feelings toward the host society (Adam et al., 2021). Yet, the influence of different housing types on migrant integration is still controversial and under-researched.

Although homeownership is used as a proxy measure for migrant social integration (Firang, 2019), namely housing as a 'marker' of the integration, simply deeming homeownership as successful integration has been criticized (Ager & Strang, 2008). It is the social and cultural impacts of housing rather than housing itself that brought about social integration. This study focuses on migrants' feeling of integration, i.e. perceived social integration, rather than housing itself. Therefore, we do not include housing in the measurement of social integration.

2.2. Migrants' access to housing and social integration in urban China

China's rapid urbanization is accompanied by an intensive concentration of migrants in cities. A discriminatory social system against migrants creates a great shortage of affordable housing (Huang, 2012; Wu, 2004; Zhang & He, 2020). Due to the unaffordability of commodity housing, early studies noticed that most migrants either live in employer-provided dormitories or informal rental housing in urban villages (Lin & Li, 2017; Tao et al., 2014). Although often free or cheap, employer-provided housing lacks privacy, discourages family migration, and causes practical and psychological problems (Huang & Tao, 2015). Urban villages, often considered informal settlements, are located within the jurisdictional boundaries of the city (Liu et al., 2010). The land of urban villages is collectively owned, which cannot be legally sold to urban residents. Due to their low rental price and convenient location in the city, urban villages have become the major accommodation for migrants. Despite the poor living environment and insufficient facilities, scholars found that migrants' assessment of community satisfaction and community attachment remains on the positive side (Du & Li, 2010), and migrants' integration in urban villages is not low (Li & Wu, 2014). It is largely because the social support provided by relatives and friends from the same place of origin within the village helps them fit into urban life.

As much scholarly attention has been given to the remarkable informal rental market in urban villages, informal homeownership of such property was often neglected. Small property rights housing (SPRH), an official name for such informal homeownership, refers to houses extralegally built on collectively owned rural land and sold to legally unrecognized owners, a peculiar phenomenon caused by China's

urban–rural dichotomous system (Zhang & He, 2020). Due to the inflated property price in the large Chinese metropolitan, buying SPRH has become a choice for migrants who tend to settle down in the city. Zhang and Yan (2022), for instance, found that skilled migrants living in owned SPRH intend to settle in the city. It is because that informal homeownership enables them to offset their structural disadvantages in the formal housing system and serves as a stepping-stone toward formal homeownership in the city.

After decades of migration and marketization, migrants in the city have become more dispersed over different housing types, and with an increasing rate of formal homeownership and formal rentals in the commodity housing (Huang & Ren, 2022). Studies have revealed that homeownership and formal housing can promote migrants' intention to settle (Yang & Guo, 2018) and increase their sense of belonging to the city (Liu et al., 2022). Some scholars argue that the correlation between access to formal housing and stronger settlement intention is more of a sorting process that migrants who are more willing to settle down strive to expand their access to formal housing (Liu et al., 2016).

Moreover, the housing policy in China has become increasingly inclusive of migrants since 2010 (Huang & Ren, 2022). Migrants used to be excluded from any of the social and public housing programs, such as "Economic and Comfortable Housing" (*jing ji shi yong fang*) and "Low Rent Housing" (*lian zu fang*). In 2012, the State Council of China initiated the "Public Rental Housing" policy, which is the first time in history to cover eligible migrants. And in 2014, with the implementation of the "New-type Urbanization Plan", the state called for the inclusion of eligible migrants in the public-owned housing system, including "Shared Ownership Housing"—a type of subsidized private housing with below-market prices, sold to qualified households who share ownership with local governments (Huang & Ren, 2022). Thus, the last decade has witnessed an increasingly inclusive housing policy for migrants MacLachlan & Gong (2022). However, only a small group of migrants are qualified for public housing. Stable and required years of employment, commeasurable income as local residents, high educational attainment, and sometimes demanded skills are extra eligibility criteria for migrants to apply for public housing programs. Zheng et al. (2020) found that migrants who live in public rental housing tend to achieve a higher level of social integration compared to private rental housing, in which a good mixture of migrants and local residents in public rental housing played an important role.

In sum, unlike other developing countries, China's unique social and institutional context (e.g., urban–rural dichotomy, land and household registration system, social welfare system) produced diversified housing tenure types, producing certain peculiarities that set it apart from similar phenomena around the world. Homeownership (versus rentership) is only one aspect of migrants' housing experiences (Zhang & Yan, 2022), classifications such as formal versus informal, public versus private may also enrich the understanding of migrants' housing experiences and possible social impacts. Although numerous studies have revealed the impact of different housing types on migrants' settlement intentions, it is rather fragmented. More importantly, the relationships between different housing tenure types and integration remain a crucial issue. Therefore, the following empirical analysis expands the investigation of homeownership to a broader range of housing types with a more detailed classification of housing conditions in line with China's actual situation and explores their impacts on migrants' perceived social integration.

3. Theoretical analysis and research hypothesis

Housing has led to socio-spatial segregation and different levels of integration, in which structural power, including *hukou* and housing policies, beyond individuals' socioeconomic status, played a crucial role. The government and scholars often identify housing as a key dimension of strategy for promoting migrant social integration. Therefore, it is critical to delineate migrant social integration conditions of

different housing types and unveil their underlying mechanisms, which could help formulate more targeted and effective housing policies. Homeownership is unquestionably a positive predictor of migrants' settlement intention, place attachment, and sense of belonging (Lewicka, 2011; Liu et al., 2022). Homeownership can be considered as both migrants' emotional and financial investment in the destination. It provides migrants membership to the local community of owners and a feeling of commitment (Wu & Logan, 2015). Therefore, we propose **hypothesis 1**: compared with other migrants, migrants who are homeowners in the city are more likely to have a higher level of perceived social integration.

Secondly, studies reveal that formal housing can facilitate migrants' capacity to settle down by providing more opportunities to interact with local residents, thus leading to a greater sense of attachment to the city (Liu et al., 2016). Meanwhile, studies also reveal that the overall level of attachment for migrants who live in urban villages is not high. The poor living environment, the persistent lack of trust between the migrants and the locals, and the floating status all have negative impacts (Du & Li, 2010). Building on the existing scholarship, we propose **hypothesis 2** that formal housing can promote migrants' perceived social integration.

Thirdly, social/public housing policy has been used worldwide to alleviate the housing shortage and achieve social integration by mixing populations of different ethnic groups (Sim et al., 2003). The State Council of China has initiated several rounds of public housing policy to solve housing affordability issues for low-income households. The policy has recently been extended to cover eligible migrants (Huang & Ren, 2022). The effect of public housing on migrants' social integration still needs to be validated. Public housing not only provides migrants with affordable and livable housing in the city but also creates opportunities for migrants to socialize with local residents (Zheng et al., 2020). Thus, **hypothesis 3** of this study is: migrants who live in public housing are more likely to be integrated by comparing to migrants who live in other types of housing.

Host city characteristics are important in shaping one's migration experience (Tian, Tian, & Sun, 2019). According to China's *hukou* policy, migrants remain largely excluded from formal citizenship (local *hukou*) and permanent settlement in first-tier cities, while they may be welcomed by the other cities. The criteria for migrants to apply for public housing in different cities may also vary. Meanwhile, the difficulty of owning a permanent home is different due to the enlarged gap in housing prices for different cities (Zheng et al., 2021). Thus, we propose **hypothesis 4** that the effect of housing tenure on migrants' perceived social integration exists heterogeneity in cities with different socio-economic conditions.

4. Data and methodology

4.1. Data

The data for this study come from the 2017 China Migrants Dynamic survey collected by the National Health Commission of China in 31 provincial administrative units (including the Xinjiang Production and Construction Corps). By using a stratified three-stage probability proportion to size (PPS) sampling method, this data surveyed migrants who had resided in the host county/district for more than one month at the time of the survey and whose age was 15 years old and above, yielding a total 169,989 valid samples. Questions in the survey included individuals' demographic and socio-economic information, migration experiences, and multiple questions for evaluating migrants' perceived social integration.

4.2. Measuring social integration

There is a lack of a common empirical measure of migrant social integration (Harder et al., 2018). In this study, we agree that integration is a complicated process involving multi-dimensions. However, to avoid

the reverse causality, some objective aspects such as income, homeownership, often used to measure migrant economic integration, or social network used to indicate migrant social integration, were excluded from the index due to their ambiguity of being both indicators and influencing factors (Zou & Deng, 2022). According to the existing literature (Harder et al., 2018; Yue et al., 2013) and available data, 10 preliminary indicators were selected to reflect migrants' perceived social integration (Appendix 1). The index assesses migrants' perceptions of social integration. Respondents' scores for the first two questions were rated on a three-point Likert scale, where 1 = negative, 2 = fair/not clear, and 3 = positive. For the latter eight questions, respondents' scores were rated on a four-point Likert scale, where 1 = extremely disagree, 2 = disagree, 3 = agree, and 4 = extremely agree. In 3 of the 10 questions (Questions 7–9 in Appendix 1), the statements conveyed an opposite direction from the other questions, where higher scores referred to lower levels of integration. Therefore, the statements and answers were adjusted accordingly during the data pre-processing.

And then, we used exploratory factor analyses (EFA) to develop an empirical, survey-based measure of migrant perceived social integration. Primary Component Analysis with Varimax rotation technique was utilized to extract influential factors. The patterned relationships amongst the initial 10 integration indicators were examined by EFA via correlation analysis; indicator 10 was excluded due to high unique variances. The Bartlett's Test of Sphericity confirms the patterned relationships among the remaining 9 indicators ($p < .001$) and the sufficiency of the data for EFA, as the KMO measure was 0.798 and the individual diagonal elements were greater than 0.70. As indicated in Table 1, using an eigenvalue cut-off of 1.0, three significant factors explain a cumulative variance of 61.91 %. The scree plot confirmed the findings of retaining three factors. Table 2 demonstrates the factor loadings after rotation using a significant factor criterion of 0.10. Accordingly, a three-dimensional social integration index can be constructed, which can mirror three different domains of migrants' social integration: willingness to settle permanently, cultural integration, and psychological integration. Finally, based on the variance contribution rates of the three factors, the social integration value for each migrant is calculated.

4.3. Housing tenures, individual and social factors

In the empirical analysis, we explore the influence of three sets of factors on migrants' social integration in the city. We first include housing tenure as the key factor affecting migrants' social integration. Then several socio-economic, migration-related factors and migrant social interaction in the city, which may have effects on migrants' social integration, were taken into account, largely based on existing studies (Lin et al., 2020; Wang & Fan, 2012; Zheng et al., 2020).

4.4. Heterogeneity in perceived social integration among migrants in different cities

Considering potential heterogeneity in perceived social integration among migrants in different cities (Zou & Deng, 2022), we incorporated city tier, industrial structure, and the ratio of housing price to income into modeling (Tian et al., 2019; Zheng et al., 2021). To better understand the different effects of housing types, the 11 types of housing

Table 1
Total variance explained by the extracted factors.

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.11	34.60	34.60	2.77	30.74	30.74
2	1.36	15.05	49.65	1.56	17.31	48.05
3	1.10	12.25	61.91	1.25	13.86	61.91

Table 2
Items and three-factor index for migrant social integration.

	Factor 1	Factor 2	Factor 3
Affection	0.8202	0.0739	0.056
Concern about city change	0.8236	0.0581	0.0447
Willingness to integrate	0.818	0.2063	0.0993
Feeling of acceptance	0.7827	0.0484	0.1677
Willingness to convert *hukou*	0.1425	0.7845	0.0095
Willingness to settle	0.1442	0.7213	0.0527
Feeling of discrimination	0.245	−0.1017	0.7101
Cultural adaptation	−0.0886	0.2172	0.6702
Habitual adaptation	0.158	0.0185	0.7471

tenure were further classified from three perspectives: owned housing or rental housing, public housing or private housing, and formal housing or informal housing, as shown in Table 3.

5. Results

5.1. Descriptive findings on housing tenure and migrants' perceived social integration

The descriptive statistics in Table 4 show that the majority of migrants live in types of housing without ownership (71.13 %), in which private rental housing (56.07 %) and employer-provided housing (9.36 %) are two major sources. Those who have achieved housing ownership mostly live in commodity housing (21.44 %). It is also worth noting that only very few migrants live in rented public housing (1.01 %) and owned public housing (1.26 %). It confirms the existing studies that even with inclusive housing policies in recent years, significant restrictions and barriers remain, and exclusion and discrimination persist for most migrants (Huang & Ren, 2022).

Fig. 1 illustrates the differences in social integration among migrants living in different housing tenures. In general, it shows a housing

Table 3
Variables for heterogeneity analysis.

		Description
Housing tenures	Ownership	1 = Owned housing, including owned commodity housing, owned public housing, owned housing with small property right, and owned self-built housing; 0 = Rental housing, including the rest seven types.
	Publicity	1 = Owned public housing and rented public housing; 0 = private housing, including the rest nine types.
	Formality	1 = Formal housing, including the rest seven types, 0 = Informal housing, including owned housing with small property right, temporary borrowed housing, working sites, and other informal housings.
Destination attributes	City tier[1]	1 = First-tier cities, including Shanghai, Beijing, Shenzhen, and Guangzhou; 2 = Second-tier cities, including Chengdu, Hangzhou, Nanjing, Xi'an and other thirteen cities, 0 = Non-first- and second-tier cities.
	Industrial structure	The ratio of tertiary sector value added to secondary sector value added in each city in 2015.
	Housing price to income ratio	The ratio of the nominal house price to the nominal disposable income per head in each city in 2015.

Note:
1. City tier captures the economic importance of cities. There is no consistent or official standard for urban hierarchy in China. In this study, we referred to the urban hierarchy reports issued by Jones Lang LaSalle Incorporated and Chinese Business Network in 2015, which has been widely used among scholars and policy makers.

Table 4
Descriptive statistics of key variables.

Variable names		Frequency/ Mean	Percentage/ Standard Deviation
Sources of current housing	Working sites	4,392	2.58
	Employer-provided housing	15,915	9.36
	Public rental housing	1,710	1.01
	Temporary borrowed housing	2,733	1.61
	Other informal housings	847	0.50
	Shared rental housing	17,520	10.31
	Full rental housing	77,792	45.76
	Owned self-build housing	6,162	3.62
	Owned housing with small property right	4,335	2.55
	Owned public housing	2,135	1.26
	Owned commodity housing	36,448	21.44
Gender	Male	87,871	51.69
	Female	82,118	38.31
Education	Primary school and lower	28,972	17.04
	Middle school	74,214	43.66
	High school	37,224	21.9
	Associate college	17,779	10.46
	College and above	11,800	6.94
Hukou type	Rural	132,555	77.98
	Non-rural	37,434	22.02
Marital status	Single	27,120	15.95
	Married	138,083	81.23
	Divorced or widower	4,786	2.82
Employment	Government and state-owned companies	46,248	27.21
	Others	123,741	72.79
Type of migration	Intra-province	86,199	50.71
	Inter-province	83,790	49.29
Administrative level of their place of origin	Rural area	131,071	77.11
	Towns and counties	30,240	17.79
	Prefecture-level city	6,218	3.66
	Provincial capitals	1,803	1.06
	Municipalities	657	0.39
Social interaction	Interact with locals	61,844	36.38
	Interact with migrants of same origin	50,841	29.91
	Interact with other migrants	18,411	10.83
	Rarely interact with people	38,893	22.88
Age		36.66	11.07
Years of migration		6.35	6.08
Household income		7,135.68	5759.13
Migration times		1.97	1.90

"ladder" according to migrants' level of perceived social integration. That is, migrants' social integration increases from those living in informal housing, to the private rental, to the public rental, and to homeowners. Working sites, employer-provided housing, and other informal housing may provide temporary, cheap, or even free sources of housing for migrants. However, living in this housing did not indicate social integration. Moreover, it is obvious that the group of migrants with homeownership tends to have a higher level of social integration compared to those without homeownership, which corresponds with previous studies demonstrating the important role of housing tenure for successful integration (Wang et al., 2016). By scrutinizing these two groups, it is worth pointing out that migrants who live in public housing, whether rented or owned, tend to have a higher level of social integration within each group.
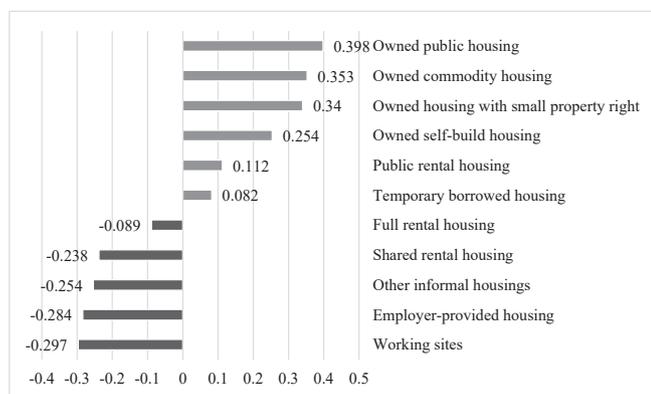
Fig. 1. Social integration of different housing tenures by the mean value.

To further understand housing tenures and migrant social integration, we divided migrant social integration into three levels by three quantiles (Table 5). Of all respondents, migrants' social integration is quite evenly distributed among three levels, with slightly more of them belonging to the group of low integration. Compare levels of social integration of different housing tenures confirms the housing ladder based on migrants' level of social integration; that is, migrants who live in working sites, employer-provided housing, other informal housing, shared rental housing, full rental housing are more likely to fall into the low social integration group. In contrast, migrants who live in temporary borrowed housing, public rental housing, owned housing are more likely to fall into the high integration group.

Table 6 shows migrants' socioeconomic, migration-related statuses and social interaction in different housing types. First, migrants who live in various types of owned housing differ quite obviously in individual socioeconomic and migration-related factors. Not surprisingly, migrants living in owned self-build housing tend to have the least education and income level, although they have been living in the city for the longest years. They are mainly rural villagers whose housing was encircled by the urban land due to outward-expanding urbanization. Echoes China's marketization effect, migrants living in owned commodity housing are the most likely to be married, have the best education, and have the highest income, indicating their well-off socioeconomic status. Migrants who own public housing are the most likely to be employed by the government and state-owned companies compared to migrants who live in other owned housing types. To some extent, it reflects that structural barriers still exist for migrants to acquire public housing. According to Huang and Ren (2022)'s summary of China's subsidized housing policy, it varies substantially in migrants' eligibility for public housing in different cities. Except few cities treat migrants the same as local residents, most cities set up eligibility criteria for migrants, including stable

employment (with a labor contract), a Residence Card, and several years of payment history for social security insurance or income tax. Besides, educated and professional migrants may have privileges in applying for public housing in some cities.

Secondly, the result shows an unstable status of migrants who live in working sites and employer-provided housing, who have experienced more times of migration and lived in the current city for relatively shorter times. It is also salient that migrants who live in working sites tend to have the lowest social status according to their education, employment and hukou, yet, their income is not necessarily low compared to other migrants. Due to the unfriendliness of employer-provided housing to family migrants, migrants who live in employer-provided housing are the least likely to be married (Tao et al., 2015). Migrants who live in employer-provided and informal housing are the most likely to be inter-province migrants. Inter-provincial migrants, due to moving with greater geographical scope, show a noticeable decline in the scale and density of their social network in their destinations (Yin et al., 2022). Thus, they are more likely to rely on employers and informal information sources to find housing in the city.

Thirdly, the "boundary" between migrants who are homeowners and of other housing tenures is not that clear, except in several aspects. Specifically, migrants who are homeowners often stay in the city longer, have fewer times of migration experiences, and are more likely to interact with locals. However, their socioeconomic status is not that distinctive from each other. The above analyses may indicate a sorting process that migrants were channeled into different housing tenures according to their individual and social characteristics, together with the social and cultural impact of the housing, leading to different levels of social integration. However, it cannot be simplified by comparing homeowners and those not. By expanding the investigation of different housing types, this study provides a nuanced understanding of the actual housing conditions of migrants in urban China that are embedded in the complicated social, economic and institutional context.

5.2. The effect of housing tenure on migrants' perceived social integration

To test the influence of housing tenures on migrant social integration, both OLS and multi-nominal logit regression were applied to corroborate each other (Table 7). First of all, the models show the statistical differences among various housing tenures in the levels of social integration after controlling migrant individual and social characteristics. In general, migrants with owned housing tend to have a higher level of social integration, which confirms hypothesis 1, showing the important and positive effect of homeownership on migrants' social integration (Lin et al., 2020; Wang et al., 2016). Within those without ownership, the social integration of migrants who live in employer-provided housing and other informal housing shows no significant differences with migrants who live in working sites. Hypothesis 2 is

Table 5
Levels of social integration in different housing tenures by three quantiles.

Housing tenure	Low integration		Medium integration		High integration		Total
	No.	%	No.	%	No.	%	No.
Working sites	2,017	45.92	1,345	30.62	1,030	23.45	4,392
Employer-provided housing	7,233	45.45	4,999	31.41	3,683	23.14	15,915
Other informal housing	379	44.75	287	33.88	181	21.37	847
Shared rental housing	7,632	43.56	5,683	32.44	4,205	24.00	17,520
Full rental housing	29,240	37.59	25,758	33.11	22,794	29.30	77,792
Temporary borrowed housing	909	33.26	765	27.99	1,059	38.75	2,733
Public rental housing	515	30.12	545	31.87	650	38.01	1,710
Owned self-build housing	1,603	26.01	1,827	29.65	2,732	44.34	6,162
Owned housing with small property right	928	21.41	1,365	31.49	2,042	47.10	4,335
Owned commodity housing	7,794	21.38	11,436	31.38	17,218	47.24	36,448
Owned public housing	449	21.03	624	29.23	1,062	49.74	2,135
Total	58,699	34.53	54,634	32.14	56,656	33.33	169,989

Pearson Chi2 = 8018.63; Prob = 0.0000.

Table 6

Migrants' demographic and social characteristics across different housing tenures.

Housing types	Age (mean)	Male (%)	Married (%)	College and above (%)	Household income (mean)	Employed by government and state-owned companies (%)	Non-rural Hukou (%)	Years of migration (mean)	Migration times (mean)	Inter-province migration (%)	Social interaction with locals (%)
Working sites	37.69	57.22	83.40	1.73	6,824.90	8.65	12.55	5.30	2.54	53.89	28.26
Employer-provided housing	33.72	58.67	59.99	7.11	5,915.57	20.48	19.95	4.09	2.31	61.42	22.81
Other informal housing	40.35	56.43	85.01	3.07	5,887.43	22.31	12.40	7.02	2.34	62.69	24.79
Shared rental housing	34.37	52.27	69.06	5.01	5,992.99	21.18	15.14	4.99	2.08	56.75	24.57
Full rental housing	36.24	51.81	82.89	4.68	7,023.22	22.34	17.38	5.89	2.01	52.76	30.88
Temporary borrowed housing	40.69	47.79	73.55	8.12	5,986.70	45.81	29.09	6.97	1.76	44.20	44.31
Public rental housing	37.19	47.37	76.32	9.94	5,311.90	38.71	26.26	5.24	2.13	31.99	41.64
Owned self-build housing	39.22	47.81	86.56	2.50	4,850.00	39.87	13.55	10.30	1.62	32.04	51.91
Owned SPRH	39.36	49.41	88.77	4.98	6,273.60	39.63	27.64	9.42	1.66	29.87	53.19
Owned commodity housing	38.45	49.09	91.00	13.96	9,211.28	39.24	37.03	7.91	1.75	38.96	54.06
Owned public housing	40.07	46.14	89.46	9.27	6,686.85	43.79	30.59	9.23	1.69	42.72	60.84
All samples	36.66	51.69	81.23	6.94	7,135.68	27.21	22.02	6.54	1.97	49.29	36.38

rejected. Although descriptive findings show all these three housing types lie at the bottom of the housing ladder based on migrant social integration, living in informal housing did not directly influence migrants' perceived social integration. It is probably due to their temporary working status and low socio-economic status, which are detrimental to migrants' feeling of integration (Tao et al., 2015). Although borrowed housing from relatives or friends is also for temporary living, kinships and friends in the city offer a sense of security, promoting early adaptation and integration into the host city (Yue et al., 2013).

There is a clear gradient in the effect sizes of different sources of rental housing on the level of social integration. Migrants who live in public rental housing appear to be more likely than others to become highly integrated. It shows a similar pattern within the group of migrants who are homeowners. It is approved by the results of multi-nominal logit models; that is, migrants with private ownership (of commodity housing) are the least likely to become medium and highly integrated if compared to other sources of homeowners. And migrants who owned public housing appear to be the most likely to become medium and highly integrated. It approves hypothesis 3. According to previous descriptive findings, migrants who live in public rental and owned social housing (SPRH and public housing) do not have a high income compared to their counterparts. However, they are more likely to be socially outstanding according to their educational and employment experiences.

On the one hand, it indicates that migrants who can live in public housing have already gained footholds in the city, although without full property rights, they are still integrated. On the other hand, it approves our hypothesis that housing affects the outcome of social integration. Those not economically well-off migrants have become integrated by living in public housing, which offset the strong and positive effect of income on migrants' social integration. It is possibly because of the frequency of interaction with locals in the same public housing neighborhood (Zheng et al., 2020).

The effects of control variables, including migrant socioeconomic status and migration-related factors, are more or less similar to the existing studies (Lin et al., 2020; Xiao et al., 2020). One of the most

influential factors is migrants' education attainment. Particularly those with educational attainment that is college and above are more likely to be (highly) integrated. Migration-related factors also matter to migrant social integration. In general, stable status in a city with fewer migration experiences and longer years of residence contributes to a higher level of social integration. The administrative level of migrants' place of origin shows a reverse U-shaped influence on migrant social integration; that is, by comparison to migrants who are from rural areas, migrants who come from towns and countries and prefecture-level cities are more likely to be integrated. In contrast, those who come from municipalities are less likely to be integrated. Where migrants come from decides the cultural/habitual differences between migrants' place of origin and destinations cities; therefore, migrants from places with the administrative levels in the two extremes, either rural areas or municipalities, are less likely to adapt to the local society.

Moreover, consistent with existing studies, intra-provincial migrants are more likely to be integrated than inter-provincial migrants (Chen & Wang, 2015). Inter-provincial migrants may experience larger discrepancies in dialects, social norms, and customs with their place of origin, thus hindering their social integration. For the social factor, migrants who interact more with local residents are more likely to be integrated. At the same time, interacting with migrants or rarely interacting with people are both negatively associated with migrant social integration. This finding approves the importance of migrant-resident ties to migrant acculturation and psychological integration as discovered by Yue et al. (2013), who believe kin-based and ethnicity-based ties played a more important role in the initial settlement stage and economic integration. It also echoes the exiting discussion on the role of bridging social capital which is approved to be more important than bonding social capital in promoting migrants' social integration (Wessendorf & Phillimore, 2018).

5.3. Heterogeneity results

To avoid spurious interaction effects, we firstly tested the influence of main effects. Consistent with baseline models in Table 8, whether housing tenure is formal or informal has no statistically significant

Table 7

OLS and multinomial regression models of migrant social integration.

	OLS	Multi-Nominal Logit	
		Base = Low integration	
Housing tenure **(Reference = Working Sites)**			
Employer-provided housing	0.005	−0.011	−0.018
	(0.017)	(0.040)	(0.044)
Other informal housings	0.047	0.147	−0.065
	(0.034)	(0.086)	(0.099)
Shared rental housing	0.053**	0.083*	0.072
	(0.016)	(0.040)	(0.044)
Full rental housing	0.154***	0.209***	0.311***
	(0.015)	(0.037)	(0.040)
Temporary borrowed housing	0.247***	0.097	0.540***
	(0.024)	(0.061)	(0.061)
Public rental housing	0.286***	0.304***	0.649***
	(0.029)	(0.071)	(0.072)
Owned commodity housing	0.385***	0.462***	0.892***
	(0.016)	(0.039)	(0.042)
Owned self-built housing	0.430***	0.436***	0.966***
	(0.020)	(0.050)	(0.051)
Owned SPRH	0.442***	0.582***	1.058***
	(0.021)	(0.056)	(0.057)
Owned public housing	0.469***	0.498***	1.064***
	(0.026)	(0.073)	(0.071)
Log (Age)	0.051***	−0.046	0.129***
	(0.011)	(0.027)	(0.028)
Female (Reference = Male)	0.015**	0.035**	0.043***
	(0.005)	(0.013)	(0.013)
Education **(Reference = Primary school and lower)**			
Middle school	0.133***	0.209***	0.266***
	(0.007)	(0.018)	(0.018)
High school	0.255***	0.399***	0.548***
	(0.008)	(0.021)	(0.022)
Associate college	0.366***	0.609***	0.856***
	(0.010)	(0.028)	(0.028)
College and above	0.424***	0.771***	1.056***
	(0.012)	(0.035)	(0.034)
Non-rural hukou (Reference = Rural hukou)	0.133***	0.180***	0.352***
	(0.007)	(0.020)	(0.020)
Marital status (Reference = Single)			
Married	0.048***	0.063**	0.126***
	(0.008)	(0.020)	(0.021)
Divorced or widower	0.108***	0.112**	0.269***
	(0.017)	(0.043)	(0.043)
Household Income	0.079***	0.138***	0.215***
	(0.004)	(0.014)	(0.013)
Government and state-owned companies **(Reference = Others)**	0.035***	0.060***	0.098***
	(0.006)	(0.015)	(0.015)
Administrative level of place of origin **(Reference = Rural area)**			
Towns and counties	0.021**	0.059**	0.046*
	(0.007)	(0.019)	(0.019)
Prefecture-level city	0.064***	0.156***	0.184***
	(0.014)	(0.041)	(0.040)
Provincial capitals	−0.006	−0.068	−0.061
	(0.023)	(0.070)	(0.067)
Municipalities	−0.083*	−0.096	−0.237*
	(0.038)	(0.107)	(0.104)
Intra-provincial migration **(Reference = Inter-provincial migration)**	0.100***	0.152***	0.228***
	(0.005)	(0.013)	(0.013)
Times of migration	−0.007***	0.000	−0.007*
	(0.001)	(0.003)	(0.003)
Years of residence	0.012***	0.015***	0.031***
	(0.000)	(0.001)	(0.001)
Social interaction (Reference = Interact with locals)			
Interact with migrants of same origin	−0.200***	−0.218***	−0.459***
	(0.006)	(0.016)	(0.016)
Interact with other migrants	−0.214***	−0.139***	−0.524***
	(0.008)	(0.021)	(0.022)
Rarely interact with people	−0.237***	−0.279***	−0.514***
	(0.006)	(0.017)	(0.017)

Table 7 (*continued*)

	OLS	Multi-Nominal Logit	
		Base = Low integration	
Constant	−0.653***	−0.584***	−1.595***
	(0.041)	(0.105)	(0.109)
Observations	169,982	169,982	169,982
Adjusted R-squared	0.104		
Pseudo R-squared		0.0426	
Log pseudolikelihood		−178724.68	

Robust standard errors in parentheses; *** p < 0.001, ** p < 0.01, * p < 0.05.

Table 8

The heterogeneity results.

	(1) City tier	(2) Industrial structure	(3) Housing price to income ratio
Owned housing	0.299***	0.194***	0.366***
	(0.007)	(0.006)	(0.017)
Public housing	0.023	0.071***	0.359***
	(0.020)	(0.017)	(0.059)
First-tier city	0.189***		
	(0.009)		
Second-tier city	0.042***		
	(0.006)		
Owned housing * First-tier city	0.066***		
	(0.019)		
Owned housing * Second-tier city	−0.067***		
	(0.011)		
Public housing * First-tier city	0.287***		
	(0.073)		
Public housing * Second-tier city	0.232***		
	(0.033)		
Tertiary/Secondary		−0.984***	
		(0.255)	
Owned housing * Tertiary/Secondary		0.057***	
		(0.010)	
Public housing * Tertiary/Secondary		0.084**	
		(0.032)	
Housing price/income ratio			0.837***
			(0.243)
Owned housing * Housing price/income ratio			0.116***
			(0.011)
Public housing * Housing price/income ratio			0.190***
			(0.038)
Personal characteristics	YES	YES	YES
City dummies	NO	YES	YES
Constant	−0.562***	−0.778***	0.659
	(0.037)	(0.099)	(0.347)
Observations	169,982	165,663	165,663
Adjusted R-squared	0.105	0.169	0.168

Standard errors in parentheses.

*** p < 0.001, ** p < 0.01, * p < 0.05.

association with migrants perceived social integration. Hence, the formality variable was excluded from later modeling, where a set of interaction terms composed of the cross products of each housing tenure category and each destination-specific attribute was entered as Table 8. The heterogeneity results testify hypothesis 4.

The results in Model 1 indicate that the positive effects of homeownership are the most powerful in first-tier cities but the least in second-tier cities. It is possibly due to the skyrocketing housing price in first-tier cities that make it extremely hard for migrants to become homeowners. Owned housing in the first-tier city indicates their well-established social status and sense of belonging. And for those who live in other smaller cities, which are most likely their hometowns, they also feel more integrated than those living in second-tier cities.

Moreover, the positive effects of public housing are significantly strengthened in both first-tier and second tier cities. It confirms the importance of public housing policy in large Chinese cities, which greatly promotes migrants' perceived social integration. Model 2 and model 3 show that the positive effects of homeownership on migrants' social integration increase in destinations with advanced tertiary sector and increasing housing price to income ratio. Furthermore, models 2 and 3 show a significant and positive connection between being beneficiaries of public housing and migrants' perceived social integration. The effect of public housing is strengthened when the industrial structure improves and the housing price to income ratio increases.

6. Discussion and Conclusion

Although researchers tend to attach great importance to housing for migrant social integration into the host society, few empirical studies have addressed the relationships between different housing tenures based on China's actual condition and migration social integration. Most attention was given to the impact of homeownership. Using national scale survey data, this paper is one of the few that empirically investigates the relationship between a wider range of housing tenures and migrant social integration. With deepening marketization and changing housing policies, migrants in urban China have become more dispersed in different housing tenures, varying from formal to informal, rental to ownership, and private to public. Our findings shed light on the effects of housing tenures on migrant integration, particularly embedded in China's unique social and institutional contexts. China's migrants live in different residential worlds and reach different levels of social integration (Wu, 2022).

Moreover, there is no consensus about the measurement of social integration. The common measure of integration often involves both objective and subjective feelings of social integration. Because objective indicators of integration such as employment, housing, and education could also be predictors for social integration, this paper mainly evaluates migrants' perceived social integration to avoid the endogeneity (Zou & Deng, 2022). The main purpose of this paper is to provide a nuanced understanding of the influence of the actual housing types on migrants' perceived social integration. In the empirical analysis, exploratory factor analyses and primary component analysis were used to develop an empirical, survey-based measure of migrants' perceived social integration.

First, we find that migrants' social integration increases from those living in informal housing, to the private rental, to the public rental, to informal owned, to privately owned, and to public owned housing, manifesting the housing ladder based on social integration. Regression models further approve that housing tenure is an influencing factor that directly affects migrant social integration. The empirical analysis shows that the influence of housing tenures on migrant social integration is not attenuated when group differences are controlled. Housing has led to socio-spatial segregation and different levels of integration. Extending from the studies that mainly examined ownership, this study presents that whether living in formal or informal housing is not statistically important, while owned housing and public housing do have positive and significant impacts on migrants' perceived social integration.

Secondly, it is important to notice that migrants who live in public housing, whether rented or owned, tend to have a higher level of social integration within each group. Migrants who live in public housing may not necessarily have a high income but often have privileged occupations in government and state-owned companies. They are more likely to interact with local residents. It indicates public housing programs generate a much better effect in facilitating migrants' social integration. On the one hand, it might be because migrants who can live in public housing have already gained footholds in the city. On the other hand, living in public housing provides migrants with more opportunities to interact with local residents (Zheng et al., 2020). Thus, to some extent, it manifests that the social mix (of local residents and migrants) does help

migrants achieve social integration in China. This finding is further validated by the result of the role of migrants' social interaction. Comparing migrants who often interact with locals, migrants who often interact with other migrants and those who do not often interact with others are less likely to be integrated. Such bridging social capital promotes migrants' social integration in the destination (Wessendorf & Phillimore, 2018).

Thirdly, heterogeneity analysis shows that the positive effects of owned housing, public housing on migrant social integration are significantly strengthened in the first-tier cities and cities with advanced industrial structures and higher housing-price-to-income ratios. It implies that housing plays a more important role in integrating migrants in large Chinese metropolises than the other cities (Zheng et al., 2021).

Our findings on the role of housing types on migrant social integration have clear policy implications. Homeownership is an important determinant of migrant social integration, no matter whether the property right of such homeownership is informal or partial. The local government should utilize more innovative ways to increase the rate of migrant homeownership in the city, such as grasping the opportunities to upgrade urban villages. In addition to supporting access to the private housing stock, the provision of affordable public housing is essential in the long run, whether for rent or sale. Public housing not only provides migrants with affordable housing but also promotes intergroup interaction between migrants and local residents, leading to a higher level of social integration. However, the institutional constraints persist that only very few migrants can live in public housing. The additional, strict eligibility criteria set barriers for migrants to enjoy the right of access to public housing. Therefore, a more inclusive housing policy to cover a larger number of migrants is urgent. It is particularly important for large Chinese metropolises where housing prices are high.

Since the data used in this paper are only cross-sectional data, we cannot know the full dynamics of migrants' housing experiences and impacts on the process of integration. Although perceived social integration was used to avoid reverse causality, we cannot fully explain how people that are already integrated try to expand their access to housing tenure by becoming homeowners. These limitations need to be solved through detailed ethnographic research or longitudinal data in the future.

7. Author statement

Sainan Lin is responsible for the data analysis and the writing of the original draft of the paper.

Fulong Wu is responsible for the theoretical analysis and the design of the research framework of this paper.

Yu Wang is responsible for the database and the data analysis of the paper.

Zhigang Li (Corresponding Author) is responsible for the research design and the policy implications of the research.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

Acknowledgements

ChinaUrban).

Appendix

Appendix 1. . 10 questions from the survey for assessing migrant perceived social integration

No.	Indicator	The original questions
1	Willingness to convert hukou	If you are eligible for local settlement, are you willing to transfer your hukou to the host city?
2	Willingness to settle	Do you plan to stay in the city in the future?
3	Affection	Do you agree with the statement that "I like the city I'm living now"?
4	Concern about city change	Do you agree with the statement that "I am concerned about the changes of city where I reside now"?
5	Willingness to integrate	Do you agree with the statement that "I'm willing to integrate into the city, and become the member of local person"?
6	Feeling of acceptance	Do you agree with the statement that "I think the local people are willing to accept me to become one of them."?
7	Feeling of discrimination	Do you agree with the statement that "I feel that the locals look down on migrants"?
8	Cultural adaptation	Do you agree with the statement that "I think hometown custom and culture are more important to me"?
9	Habitual adaptation	Do you agree with the statement that "My hygienic habits have large difference with local people"?
10	Identity perception	Do you agree with the statement that "I feel like I'm already a local person"?

References

Adam, F., Föbker, S., Imani, D., Pfaffenbach, C., Weiss, G., Wiegandt, C., 2021. "Lost in transition"? Integration of refugees into the local housing market in Germany. J. Urban Aff. 43 (6), 831–850. https://doi.org/10.1080/07352166.2018.1562302.

Ager, A., Strang, A., 2008. Understanding integration: A conceptual framework. J. Refug. Stud. 21 (2), 166–191. https://doi.org/10.1093/jrs/fen016.

Alba, R., Logan, J., 1992. Assimilation and Stratification in the Homeownership Patterns of Racial and Ethnic Groups. Int. Migr. Rev. 26 (4), 1314–1341. https://doi.org/10.1177/019791839202600411.

Alba, R., & Nee, V. (1997). Rethinking assimilation theory for a new era of immigration. International Migration Review, 31(4), 826-874. doi:Doi 10.2307/2547416.

Andersson, E.K., Wimark, T., Malmberg, B., 2022. Tenure type mixing and segregation. Hous. Stud. 37 (1), 26–49. https://doi.org/10.1080/02673037.2020.1803803.

Bolt, G., Özüekren, A.S., Phillips, D., 2010. Linking Integration and Residential Segregation. J. Ethn. Migr. Stud. 36 (2), 169–186. https://doi.org/10.1080/13691830903387238.

Chen, Y., Wang, J., 2015. Social integration of new-generation migrants in Shanghai China. Habitat Int. 49, 419–425.

Danzer, A., Yaman, F., 2013. Do Ethnic Enclaves Impede Immigrants' Integration? Evidence from a Quasi-experimental Social-interaction Approach. Rev. Int. Econ. 21 (2), 311–325. https://doi.org/10.1111/roie.12038.

Du, H., Li, S., 2010. Migrants, urban villages, and community sentiments: A case of Guangzhou, China. Asian Geographer 27 (1–2), 93–108. https://doi.org/10.1080/10225706.2010.9684155.

Firang, D., 2019. Exploring housing careers among Ghanaians in Toronto, Canada. Housing Studies 34 (5), 868–891. https://doi.org/10.1080/02673037.2018.1489527.

Gordon, M., 1964. Assimilation in American Life. Oxford University Press, New York.

Harder, N., Figueroa, L., Gillum, R., Hangartner, D., Laitin, D., Hainmueller, J., 2018. Multidimensional measure of immigrant integration. Proceedings of the National Academy of Sciences of the United States of America 115 (45), 11483–11488. https://doi.org/10.1073/pnas.1808793115.

Huang, Y., 2012. Low-income Housing in Chinese Cities: Policies and Practices. China Q. 212, 941–964. https://doi.org/10.1017/S0305741012001270.

Huang, Y., Ren, J., 2022. Moving Toward an Inclusive Housing Policy?: Migrants' Access to Subsidized Housing in Urban China. Hous. Policy Debate 1–28. https://doi.org/10.1080/10511482.2021.1996430.

Huang, Y., Tao, R., 2015. Housing migrants in Chinese cities: current status and policy design. Eviron. Plann. C. Gov. Policy 33 (3), 640–660. https://doi.org/10.1068/c12120.

Kadarik, K., 2020. Immigrants' mobility towards native-dominated neighbourhoods: the role of individual resources, country of origin, and settlement context. Geografiska Annaler: Series B, Human Geography 102 (2), 191–213. https://doi.org/10.1080/04353684.2019.1697939.

Lewicka, M., 2011. Place attachment: How far have we come in the last 40 years? J. Environ. Psychol. 31 (3), 207–230. https://doi.org/10.1016/j.jenvp.2010.10.001.

Li, Z., Wu, F., 2014. Migrant integration in China's urban villages: A case study of Beijing, Shanghai and Guangzhou. In: Wu, F., Zhang, F., Webster, C. (Eds.), Rural Migrants in Urban China: Enclaves and Transient Urbanism. Routledge, London and New York, pp. 121–144.

Lin, S., Li, Z., 2017. Residential satisfaction of migrants in Wenzhou, an 'ordinary city' of China. Habitat Int. 66, 76–85. https://doi.org/10.1016/j.habitatint.2017.05.004.

Lin, S., Wu, F., Li, Z., 2020. Social integration of migrants across Chinese neighbourhoods. Geoforum 112, 118–128. https://doi.org/10.1016/j.geoforum.2020.04.008.

Lin, S., Wu, F., Li, Z., 2021. Beyond neighbouring: Migrants' place attachment to their host cities in China. Popul. Space Place 27 (1), e2374. https://doi.org/10.1002/psp.2374.

Lin, S., Wu, F., Liang, Q., Li, Z., Guo, Y., 2022. From hometown to the host city? Migrants' identity transition in urban China. Cities 122, 103567. https://doi.org/10.1016/j.cities.2022.103567.

Liu, S., Zhang, F., & Wu, F. (2022). Contrasting migrants' sense of belonging to the city in selected peri-urban neighbourhoods in Beijing. Cities, 120. doi:ARTN 10349910.1016/j.cities.2021.103499.

Liu, Y., Liu, Y., Lin, Y., 2021. Upward or downward comparison? Migrants' socioeconomic status and subjective wellbeing in Chinese cities. Urban Stud. 58 (12), 2490–2513. https://doi.org/10.1177/0042098020954780.

Liu, Y., He, S., Wu, F., Webster, C., 2010. Urban villages under China's rapid urbanization: Unregulated assets and transitional neighbourhoods. Habitat Int. 34 (2), 135–144. https://doi.org/10.1016/j.habitatint.2009.08.003.

Liu, Z., Wang, Y., Chen, S., 2016. Does formal housing encourage settlement intention of rural migrants in Chinese cities? A structural equation model analysis. Urban Stud. 54 (8), 1834–1850. https://doi.org/10.1177/0042098016634979.

MacLachlan, I., Gong, Y., 2022. China's new age floating population: Talent workers and drifting elders. Cities 131, 103960. https://doi.org/10.1016/j.cities.2022.103960.

National Bureau of Statistics of China (NBSC), 2021. Statistical Bulletin on National Economic and Social Development in 2021. National, Beijing. Bureau of Statistics of China Retrieved from http://www.stats.gov.cn/tjsj/zxfb/202202/t20220227_1827960.html.

Neidert, L., Farley, R., 1985. Assimilation in the United States: An Analysis of Ethnic and Generation Differences in Status and Achievement. Am. Sociol. Rev. 50 (6), 840–850. https://doi.org/10.2307/2095507.

Niu, D., Sun, W., Zheng, S., 2021. The role of informal housing in lowering China's urbanization costs. Reg. Sci. Urban Econ. 91, 103638 https://doi.org/10.1016/j.regsciurbeco.2020.103638.

Phillips, D., 2006. Moving Towards Integration: The Housing of Asylum Seekers and Refugees in Britain. Hous. Stud. 21 (4), 539–553. https://doi.org/10.1080/02673030600709074.

Sim, L., Yu, S., Han, S., 2003. Public housing and ethnic integration in Singapore. Habitat Int. 27 (2), 293–307. https://doi.org/10.1016/S0197-3975(02)00050-4.

Tao, L., Hui, E.C.M., Wong, F.K.W., Chen, T., 2015. Housing choices of migrant workers in China: Beyond the Hukou perspective. Habitat Int 49, 474–483. https://doi.org/10.1016/j.habitatint.2015.06.018.

Tao, L., Wong, F.K.W., Hui, E.C.M., 2014. Residential satisfaction of migrant workers in China: A case study of Shenzhen. Habitat Int. 42, 193–202. https://doi.org/10.1016/j.habitatint.2013.12.006.

Tian, M., Tian, Z., Sun, W., 2019. The impacts of city-specific factors on social integration of Chinese migrant workers: A study using multilevel modeling. J. Urban Aff. 41 (3), 324–337. https://doi.org/10.1080/07352166.2017.1406786.

Wang, W., Fan, C., 2012. Migrant Workers' Integration in Urban China: Experiences in Employment, Social Adaptation, and Self-Identity. Eurasian Geogr. Econ. 53 (6), 731–749. https://doi.org/10.2747/1539-7216.53.6.731.

Wang, Z., Zhang, F., Wu, F., 2016. Intergroup neighbouring in urban China: Implications for the social integration of migrants. Urban Stud. 53 (4), 651–668.

Wessendorf, S., Phillimore, J., 2018. New Migrants' Social Integration, Embedding and Emplacement in Superdiverse Contexts. Sociology 53 (1), 123–138. https://doi.org/10.1177/0038038518771843.

Wissink, B., Hazelzet, A., Breitung, W., 2014. Migrant integration in China: Evidence from Guangzhou. In: Wu, F., Zhang, F., Webster, C. (Eds.), Rural Migrants in Urban China: Enclaves and Transient Urbanism. Routledge, London and New York, pp. 99–120.

Wu, F., 2022. Creating Chinese Urbanism: Urban Revolution and Governance Change. UCL Press, London.

Wu, F., Logan, J., 2015. Do rural migrants 'float' in urban China? Neighbouring and neighbourhood sentiment in Beijing. Urban Stud. 53 (14), 2973–2990. https://doi.org/10.1177/0042098015598745.

Wu, W., 2004. Sources of Migrant Housing Disadvantage in Urban China. Environ. Plann. A 36, 1285–1304.

Xiao, B., Zhu, Y., Li, L., 2020. Migrants' subjective social integration and its determinants as a result of the two-way process of assimilation and segregation: A case study of Fuzhou-Xiamen-Quanzhou Urban Cluster. Geogr. Res. 39 (12), 2796–2807.

Yang, J., 2010. Index of assimilation for rural-to-urban migrants: A further analysis of the conceptual framework of assimilation theory. Population Econ. 2 (179), 64–70.

Yang, S., Guo, F., 2018. Breaking the barriers: How urban housing ownership has changed migrants' settlement intentions in China. Urban Stud. 55 (16), 3689–3707. https://doi.org/10.1177/0042098018757873.

Yin, J., Zhang, Q., Lin, S., Huang, X., Qi, Q., 2022. Effects of capital endowment and urban context on opportunity entrepreneurship of migrants in urban China. Prog. Geogr. 41 (10), 1833–1845. https://doi.org/10.18306/dlkxjz.2022.10.005.

Yue, Z., Li, S., Jin, X., Feldman, M., 2013. The Role of Social Networks in the Integration of Chinese Rural-Urban Migrants: A Migrant-Resident Tie Perspective. Urban Stud. 50 (9), 1704–1723. https://doi.org/10.1177/0042098012470394.

Zhang, M., He, S., 2020. Who feels secure in customary tenure and why? A triangular framework of perceived tenure security in China's small property right housing. Cities 107, 102900. https://doi.org/10.1016/j.cities.2020.102900.

Zhang, M., Yan, X., 2022. Does informal homeownership reshape skilled migrants' settlement intention? Evidence from Beijing and Shenzhen. Habitat Int. 119, 102495 https://doi.org/10.1016/j.habitatint.2021.102495.

Zheng, R., Mei, L., Guo, Y., Zhen, S., Fu, Z., 2021. How do city-specific factors affect migrant integration in China? A study based on a hierarchical linear model of migrants and cities. PLoS One 16 (1), e0244665.

Zheng, S., Song, Z., Sun, W., 2020. Do affordable housing programs facilitate migrants' social integration in Chinese cities? Cities 96, 102449. https://doi.org/10.1016/j.cities.2019.102449.

Zou, J., Deng, X., 2022. Housing tenure choice and socio-economic integration of migrants in rising cities of China. China Econ. Rev. 74, 101830 https://doi.org/10.1016/j.chieco.2022.101830.