

## **Determinants of Urban Identity in Urbanizing China: Findings from a Survey Experiment**

Juan Chen, ORCID: 0000-0002-1038-4162, *The Hong Kong Polytechnic University, China*  
Chunying Yue, *Harvard University, USA*  
Liyang Ren, *Chinese Academy of Social Sciences, China*  
Jie Yan, *Peking University, China*

Address correspondence to Juan Chen, Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong SAR, China. Email: [juan.chen@polyu.edu.hk](mailto:juan.chen@polyu.edu.hk).

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**Abstract:** *Based on data collected from an original factorial survey experiment in the 2018 Urbanization and Quality of Life Survey, this study seeks to test the factors that determine the level of urban identity among the residents of 40 township-level administrative units in newly urbanized areas or potential sites of urbanization in China. Our results indicate that, while urban identity continues to be strongly forged by hukou status, home ownership also plays an important part in predicting urban identity. Owning an apartment in the city positively predicts a higher level of urban identity; residing in resettlement housing does not enhance urban identity. Different from hypothesized, the pathway to urban residency—whether it is rural-to-urban migration or in-situ urbanization—does not have differential effect on urban identity, nor do the effects of hukou and home ownership differ between the two pathways. The findings suggest that in order to foster the integration of former rural residents into Chinese cities, the government must radically reform the hukou system and ensure access to stable and permanent housing among the new urbanites while reducing residential segregation.*

**Keywords:** Urbanization; urban identity; identity integration; survey experiment; China

# **Determinants of Urban Identity in Urbanizing China: Findings from a Survey Experiment**

## **Introduction**

Urban growth continues to rise globally, especially in the developing world, where the expansion of cities happens not only in large metropolitan areas but also in and around small cities and towns (Lerner et al., 2013). Half of the world population (approximately 3.5 billion people) live in cities today, and it is projected that 5 billion people will live in cities by 2030. Developed countries have already achieved a high level of urbanization. Ninety-five percent of urban expansion in the coming decades will take place in the developing world (United Nations, 2015). As the city expands, the rural-urban hybrid space (where traditional agricultural activities are juxtaposed with residential, industrial, and commercial development) is of particular interest and importance (Lerner et al., 2013). It is difficult to determine whether all rural-to-urban transitions in the developing world share common characteristics; but one thing is certain: the process of urbanization and the consequent integration of formerly rural residents into urban society create huge challenges across countries and regions, among which China's experience demands particular attention (United Nations, 2015).

Both the speed and scale of China's ongoing urbanization process are unprecedented in human history (Chen et al., 2014). The proportion of the country's population classified as urban soared from 17.9% in 1978 to 59.6% in 2018 (National Bureau of Statistics of China, 2019). Urbanization in China is the result of two distinct and independent transitions (Chen et al., 2015). The first, which has gained a great deal of research and policy attention, is the influx of more than 200 million rural migrants to cities and towns (Chan, 2013). The second, which is less well studied, is 'in-situ' urbanization, whereby villagers become urban residents without moving because their land has been reclassified as urban (Friedmann, 2005; Lin, 2007; Liu et al., 2010). By 2014, the urban built-up area of China was almost seven times that of 1981, and over 200 million rural residents had become urbanites without ever leaving their villages or towns (Ministry of Housing and Urban-Rural Development of China, 2015; Yeh et al., 2011). Many newly created or expanded Chinese cities are experiencing both the influx of rural-to-urban migrants and the resettlement of formerly rural residents. The integration of these groups into urban society can be a difficult process (Liu et al., 2018).

Social integration involves both the subjective perspective on integration and the objective fact of integration. Objective social integration, often measured by indicators such as socio-economic status and health conditions, has been widely researched in the literature on international and internal migrants; the subjective perspective on social integration, however, is still not adequately understood (Liu et al., 2018; Portes and Rumbaut, 2006; Semyonov and Glikman, 2009; Wang and Fan, 2012). There are many aspects of subjective integration, among which the degree to which one identifies as urban influences the process of assimilation (Chen and Zhang, 2015; Lalli, 1992; Liu et al., 2018). Urban identity is expressed not only by one's relationships to the various physical settings that define and structure day-to-day life; it is also shaped by one's migration experience and pathway to urban residency, as well as institutions such as the household registration (*hukou*) system in China (Lalli, 1992; Li and Zhang, 2019; Stryker & Burke, 2000).

Based on data collected through an original factorial survey experiment that was incorporated in the 2018 Urbanization and Quality of Life Survey, this study seeks to test the key factors of policy interest that determine the level of urban identity among residents of 40 township-level administrative units in newly urbanized areas and potential sites of urbanization

in China. While existing studies mostly focus on rural-to-urban migrants in large metropolitan cities, use self-reported data from cross-sectional surveys, and analyze hukou and individual socio-demographic variables, the present study extends the scope of the research to include both rural-to-urban migrants and in-situ urbanized rural residents residing in cities of different population sizes and on different levels of the administrative hierarchy, employs the design of a factorial survey experiment to test causal relations, and confirms the key factors of policy interest determining urban identity in China.

## **Urban Identity Formation and Attributes**

As urban growth continues to rise in the developing world, the integration of formerly rural residents into urban society has become an unprecedented challenge. There are many aspects of integration, including behavior, practice, and achievement (Liu et al., 2018; Wang and Fan, 2012; Zhang & Lei 2009). The degree to which one identifies as an urbanite is a factor that indicates eventual identification assimilation and integration into the urban life (Chen and Zhang, 2015; Wang and Fan, 2012; Zhang and Lei 2009). During this process, if the acquisition of urban identity lags behind the conversion and development of urban material systems, the lack of appropriate psychological transition and elasticity may result in low self-esteem and identity disorder among the new urbanites, and breed significant psychological and even social conflicts (Bao, 2017; Zhang and Tong, 2006).

Urban identity and its formation are particularly complex, dynamic, and fluid (Skelton, 2013). The term ‘urban identity’ encompasses meanings both related to one’s location (‘place identity’) and one’s social attributes (‘social identity’). For those whose status changes from rural to urban—either voluntarily or involuntarily, the process involves not only the reconstruction of identity in a new urban place and the process of ‘being identified with’ it but also access to the conditions that are necessary for the development of urban identity. Such conditions include both physical surroundings and experiences, and social norms and institutions (Lalli, 1992; Stryker & Burke, 2000).

The literature on urban identity cuts across various disciplines including psychology, sociology, and urban studies. Particularly concerning place identity, the existing literature explores how place determines the formation of self- and group-identity and how the continuity of such place-based identity is maintained through seeking out or recreating places important in the past (Main and Sandoval, 2015). Specifically, the literature focuses on people-place relationships and the role that certain specific elements of place play in the formation, maintenance, and expression of self- and group identity (Lewicka, 2011; Main and Sandoval, 2015). While acknowledging the role of personal agency in the creation of identity, place identity literature emphasizes the influence of place on identity—the emotional significance associated with place and the ways that place can influence motivations and actions (Main and Sandoval, 2015). People develop a relationship with the physical surroundings in which they live their lives (Lalli, 1992). In the meanwhile, theory on social identity holds that each person forms a unique personal identity but develops a social identity based on the group he or she belongs to. During this process, people forge connections in groups defined by various social institutions and norms based on gender, religion, political orientation, nationality, etc. (Tajfel and Turner, 1986). The transition from farmers to urban residents means re-defining and re-finding the social position and the reference group in the new urban environment, both spatially and socially (Bao et al., 2017).

The urban identity formation process is better understood by referencing both the literature of place identity and that of social identity (Bao et al., 2017; Stryker & Burke, 2000). A number of social and spatial factors have been identified that contribute to its formation and

development, including socio-economic status and educational level, type of housing and home ownership, place of origin and length of residence, history of migration or mobility, social network and language, etc. (Lalli, 1992; Li and Zhang, 2019; Tittle and Grasmick 2001). The impact of these factors is likely to be shared by all countries or regions experiencing rapid urbanization. Still, the way these factors function and the social institutions themselves are unique to each country or region. The importance of context in determining social identity deserves sufficient scholarly attention.

## **Determinants of Urban Identity in China**

Urbanization in China involves two distinct and independent groups: rural-to-urban migrants and in-situ urbanized rural residents (Chen et al., 2015). The first group has received a great deal of research and policy attention. Identification assimilation and integration for rural-to-urban migrants in Chinese cities is a process during which they take on the identity of urbanites (Li and Zhang, 2019). Scholars argue that the successful integration of rural-to-urban migrants in Chinese cities can reduce social tension and conflicts, encourage migrants to make long-term plans in their new milieu, and contribute to the social and economic development of the city (Wang and Fan, 2012). Hukou and home ownership (housing) have been identified as the two main factors affecting urban identity.

### ***Hukou***

Since its implementation in the late 1950s, the Chinese government has relied on the household registration (hukou) system to restrict the mobility of its population and rural residents' access to urban jobs, housing, food, and welfare benefits. The hukou system is an economic and social institution that stratifies the Chinese population according to the urban-rural divide (Cheng and Selden 1994; Solinger, 1999; Wang 2005). Since the 1980s, over 200 million members of the rural population have migrated to cities following decades of strictly enforced rural-to-urban migration restrictions. Without urban hukou, rural-to-urban migrants are not eligible for most state-provided employment opportunities and state- or employer-subsidized benefits. Their access to jobs, housing, education, and healthcare is severely constrained. The social adaptation and integration of rural-to-urban migrants in Chinese cities continues to be jeopardized by the hukou system (Liu et al., 2018; Wang and Fan, 2012).

Research has documented that although many rural-to-urban migrants have lived and worked in cities for years, they have not forged a strong urban identity because of their rural origins and lack of urban hukou (Zhang and Wang, 2010). This is true even of the second-generation rural-to-urban migrants who work in urban areas immediately upon finishing school and have little or no farming experience. Despite their long-term physical presence in cities, they often continue to identify themselves as rural residents rather than urbanites, reflecting the persistent impact of hukou and the associated lack of socio-economic and cultural integration (Wang and Fan, 2012). More recently, however, there is evidence to suggest that the role of hukou has gradually declined and that some economically successful and established rural-to-urban migrants have assumed an urban identity despite their lack of urban hukou (Liu and Cheng, 2008).

### ***Home Ownership***

Home ownership (housing) is another positive predictor of social integration and urban identity for rural-to-urban migrants. Studies have shown that homeowners are more attached to their

dwellings than are renters or residents of public housing (Chen et al., 2019). It is argued that the reason lies in the emotional and financial investment associated with buying and decorating the house, along with the processes involved in justifying the invested time, effort, and money. Home ownership strengthens place attachment because of the increased certainty that one has a permanent place to live (Lewicka, 2011). For rural-to-urban migrants, owning a stable and permanent place to live functions as a strong predictor for long-term commitment and attachment to urban life and urban identity (Chen, 2017). In a survey conducted in the city of Wuhan, Wang and Fan (2012) found that rural-to-urban migrants who own an apartment are almost four times more likely to identify themselves as urban residents than those who do not. This surpasses the effect of having a Wuhan urban hukou, which increases a rural-to-urban migrant's likelihood of urban identification by 2.5 times.

### *Pathways to Urban Residency*

Numerous studies have been conducted concerning the integration of rural-to-urban migrants into Chinese cities. More recently, attention has turned to the groups of in-situ urbanized rural residents that have formed during China's rapid urbanization process (Liu et al., 2018; Jiang et al., 2018; Ong, 2014; Zhang et al., 2018; Zhang and Tong, 2006). The uncontrolled expansion of Chinese cities in the past decades has rapidly devoured surrounding rural areas. In large cities, the radical expansion of built-up areas produces 'urban villages'—transitional neighborhoods characterized by tenuous land rights and by residents of both rural and urban origins. The local residents of these areas often rent their property as a second source of income, thus providing additional housing options for migrants (Chen et al., 2012; Chung and Unger, 2013; Liu et al., 2010; Zhou and Cai, 2008). In small and medium-sized cities, urban villages are less common: instead, 'concentrated villages' have been created by local governments that have expropriated former rural residents' homestead land and built resettlement housing in the same location or nearby places. In-situ urbanized rural residents represent a significant percentage of the new urbanites (Chen et al., 2015; Yeh et al., 2011). Ong (2014) estimates that the number of in-situ urbanized rural residents has increased at an annual rate of 250,000 to 300,000 and that no fewer than 52 million people acquired that status between 1987 and 2010. According to Bao and colleagues (2017), the number has amounted to 112 million in 2014.

Once their land is expropriated, in-situ urbanized rural residents should be entitled to the same access to social services and welfare benefits enjoyed by their urban counterparts. In reality, due to the rapid pace of urbanization and the slow progress of bureaucracy, changes in hukou status often lag far behind conversions of farmland. Many urbanized rural residents still await the change in their household registration status from rural to urban and are consequently unable to receive the health and social benefits associated with urban hukou. In Hefei, Ong (2014) reports, only 25.2% of in-situ urbanized rural residents have had their rural hukou converted to urban household registration. With the exception of a few areas in coastal provinces, the failure of in-situ urbanized rural residents to gain access to urban social welfare has been the norm. And even those who have converted to urban hukou have not automatically gained access to state-provided social welfare (Chen, 2013; Ong, 2014).

The effect on residents of the displacement that occurs as a result of restructuring their original neighborhood and changing their surrounding environment depends on the speed of change and the degree to which they feel involved in the process (Jiang et al, 2018; Kleinhans and Kearns, 2013; Zhang et al., 2018). Though they are residing in the same location or a nearby place, in-situ urbanized rural residents find themselves in completely different surroundings that include new commercial developments and up-market residential communities. The resettlement housing provided by government or real estate developers makes them feel like second-class citizens (Jiang et al., 2018). For in-situ urbanized rural

residents, the transition from peasant to urbanite is fraught with occupational, social, and cultural difficulties (Zhang et al., 2018). Scholars worry that, due to the delays in granting urban hukou status and associated access to urban social benefits, in-situ urbanized rural residents will not register the fundamental shift in their social status and identity (Bao et al., 2017; Zhang and Tong, 2006; Zhang et al., 2018).

## **Research Hypotheses**

Existing research tackling Chinese urban identity has primarily focused on the group of rural-to-urban migrants, used self-reported data from cross-sectional surveys, and analyzed its associations with hukou and individual socio-demographic variables. Given the two distinct processes of urbanization happening in China, this article deals with both rural-to-urban migrants and in-situ urbanized rural residents. Analyses based on measures of self-reported urban identity cannot tease out the factors that influence the respondents' views. This study employs an original factorial survey experiment design in order to test the causal relationships of urban identity with three key variables that the current policies are particularly focusing on: hukou, home ownership, and pathway to urban residency. Based on the literature reviewed above, we developed three research hypotheses as follows:

***Hypothesis 1:*** Hukou remains a strong predictor for urban identity – conversion to urban hukou will increase the level of urban identity.

***Hypothesis 2:*** Home ownership is another predictor of urban identity – the purchase of an apartment in the city will enhance urban identity.

***Hypothesis 3:*** Different pathways to urban residency will lead to different levels of commitment to urban identity – rural-to-urban migrants will have a greater sense of urban identity than in-situ urbanized rural residents.

## **Design and Methods**

### ***The Factorial Survey Experiment***

To determine the factors influencing urban identity in China, we conducted a survey with residents of places currently undergoing urbanization or slated for urbanization. Following the factorial survey method (Jasso, 2006; Rossi and Nock, 1982; Wallander, 2009), we focused on the three key variables of policy interest as identified in our hypotheses to determine urban identity: the pathway to urban residency (rural-to-urban migrants vs. in-situ urbanized rural residents), hukou status (those who have had acquired urban hukou vs. those who have not), and home ownership (those who have purchased housing in the city vs. those that do not own housing in the city (for rural-to-urban migrants) or those that reside in resettlement housing provided by the government or real estate developers (for in-situ urbanized rural residents)). Other potential influential variables such as personal background, social network, and language are set as constant. The factorial survey method “enables a more precise determination of the judgment principles that underline evaluations” and therefore confirms the determining factors and their causal relationship with the outcome (Auspurg and Hinz, 2015, p. 1), based on which targeted policy or practice interventions could be developed and implemented more effectively (Ren, 2018).

With the factorial survey experiment design, respondents are asked to form judgments about ‘vignettes’, that is, descriptions of hypothetical situations, objects, or persons with various attributes. These vignettes cover a range of responses to the values they represent so that the impact of these values (attributes) on respondents’ judgments can be estimated (Auspurg and Hinz, 2015; Ren, 2018). Considering all possible combinations of the three treatment variables, we came up with a total of 12 (2 x 2 x 3) vignettes as shown in Table 1. We kept the first eight vignettes but removed the last four listed in Table 1 because they were logically impossible. Each respondent was randomly assigned two vignettes: one from the first four vignettes (#1 to #4) that deal with rural-to-urban migrants and one from the next four vignettes (#5 to #8) that deal with in-situ urbanized rural residents. The order of the appearance of two vignettes was set at random to prevent order effects. We asked the respondents, ‘To what extent would you consider the person described as an urbanite (*cheng li ren* in Chinese)?’ and rated their answer on a seven-point scale, with ‘7’ indicating ‘very much’ and ‘1’ indicating ‘not at all’.

[TABLE 1 ABOUT HERE]

### ***Sampling and Data Collection***

Our factorial survey experiment was conducted as part of the Urbanization and Quality of Life Survey 2018—a policy-driven quasi-experimental household survey that we developed and implemented taking advantage of the implementation of the National New Urbanization Comprehensive Pilot Program (National Development and Reform Commission [2014] No. 1229). The survey targets residents of 40 primary sampling units (PSUs) including 32 township-level administrative units (street districts (*jiedao* in Chinese) and towns (*zhen* in Chinese)) in newly urbanized areas and eight township-level administrative units (towns and townships (*xiang* in Chinese)) that were considered potential sites of urbanization. The 40 PSUs spread over cities of different population sizes and on different levels of the administrative hierarchy in China. Half of the PSUs (we referred to them as the ‘treatment group’) were drawn from the list of township-level administrative units in the 2014 National New Urbanization Comprehensive Pilot Program. The control group consisted of 20 locales that were drawn from non-pilot areas using the Coarsened Exact Matching (CEM) technique (Iacus et. al., 2011).

Once these two sets of cases were carefully constructed, we organized a detailed geographical information system (GIS) within each PSU that aggregates information at the arc-minute level and creates spatial sample frames of physical areas. We then randomly selected four secondary sampling units (SSUs) within each PSU, which are half square minutes (HSMs) of latitude and longitude—approximately 0.8 square kilometers. All households residing within these small ‘spatial blocks’ were enumerated. Within each household, one respondent who had resided in the township for more than six months was selected using the Kish grid—a pre-assigned table of random numbers commonly used in survey research to determine which person in a household to interview (Landry and Shen, 2005).

The target population was adults between 18 and 75 years old, regardless of their hukou status, who were residing in the 40 PSUs. The survey fieldwork was completed during the period from April to June 2018, by means of face-to-face interviews using the computer-assisted personal interviewing (CAPI) system. After data checking and cleaning, the final valid sample size was 3,229 with a response rate of 65.2%. Approval for the ethical review of research projects involving human subjects was granted by the authors’ home institute. Post-stratification weights were generated to adjust the individuals in the study sample to the 2010



China Township Population Census Data (National Bureau of Statistics of China, 2012) on such key variables as gender and migration status.

### ***Data Balance and Analysis***

To ensure the balance of our survey treatments, we first checked the characteristics of the respondents according to the three treatment variables: pathway to urban residency, hukou, and home ownership. As shown in Table 2, the data are well balanced. There is no significant difference in the respondents' demographic characteristics, their socio-economic status, and their migration, hukou, and home ownership attributes across the categories of the three treatment variables. The average household wealth of the respondents receiving the "have not converted to urban hukou" treatment on the hukou variable is only slightly higher (0.116 on a scale of 0-7) than those receiving the "have converted to urban hukou" treatment, although the difference is statistically significant at  $p < 0.05$  level.

[TABLE 2 ABOUT HERE]

After checking the data, we calculated the mean perceived level of urban identity across different vignettes and illustrated the results in Figure 1. To determine the degree to which each variable influences urban identity, we estimated ordered logistics regressions of perceived level of urban identity on the different characteristics of pathway to urban residency, hukou, and home ownership. As each respondent was assigned two vignettes, there were a total of 6,458 observations in the long format data. Five cases with missing data were excluded, leaving a sample of 6,453 for the analysis. We first estimated the model with all observations. We then separated the models for cases on in-situ urbanized rural residents versus rural-to-urban migrants, respectively. We used STATA/SE 14.2 for the analysis. Post-stratification weights were applied throughout the analysis. Robust standard errors that account for heteroskedasticity across clusters at the level of SSUs were reported in Table 3.

## **Results**

### ***Results from the Factorial Survey Experiment***

Figure 1 presents the mean perceived level of urban identity for each of the eight vignettes in the survey experiment. As illustrated by the series of bars indicating the mean perceived level of urban identity, no prominent difference can be discerned between rural-to-urban migrants and in-situ urbanized rural residents. There is a huge jump in the mean of perceived urban identity from those who have not converted to urban hukou to those who have converted to urban hukou in the case of both rural-to-urban migrants (from 2.379-2.739 to 4.140-4.452) and in-situ urbanized rural residents (from 2.828-2.981 to 4.376-4.702). When we compare the level of mean perceived urban identity among those who do not own their residence in the city with those who have purchased their residence, there are some minor differences within the rural-to-urban migrant group no matter whether their hukou has been converted to urban or not (2.379 vs. 2.739 and 4.140 vs. 4.452). A similar pattern of minor differences can be observed in the in-situ urbanized rural residents according to whether they have bought their residence in the city or they reside in resettlement housing provided by the government or real estate developers (2.828 vs. 2.981 and 4.376 vs. 4.702).

[FIGURE 1 ABOUT HERE]

Table 3 reports the results from the ordered logistic regressions we estimated on perceived level of urban identity. We estimated three models. Model 1 includes the three treatment variables—pathway to urban residency, hukou, and home ownership on all observations. No significant differences can be observed between rural-to-urban migrants and in-situ urbanized rural residents. Hukou is a very strong and significant predictor for perceived urban identity. Having converted to urban hukou results in an approximate 1.313 unit increase in the ordered log-odds of urban identity on a scale of 1 to 7. Homeownership is yet another significant predictor, though not as strong as hukou. Owning a residence in the city increases the ordered log-odds of urban identity by approximately 0.253 compared to not owning housing in the city and 0.186 than residing in resettlement housing.

[TABLE 3 ABOUT HERE]

Model 2 and Model 3 in Table 3 report the ordered logistic regression results for cases on in-situ urbanized rural residents and rural-to-urban migrants, respectively. The coefficients on having converted to urban hukou remain strong and significant for both in-situ urbanized rural residents and rural-to-urban migrants. The effect of owning a residence in the city on urban identity as shown in Model 3 for rural-to-urban migrants is similar to that in Model 1. The coefficient on owning a residence in the city in Model 2 for in-situ urbanized rural residents, however, is weaker and only marginally significant ( $p < 0.10$ ) in comparison to residing in resettlement housing. Such results indicate that hukou is a strong and significant predictor for perceived urban identity of both rural-to-urban migrants and in-situ urbanized rural residents; the effect of home ownership in the city on urban identity is more prominent for rural-to-urban migrants when compared with not owning housing in the city; yet the difference between purchasing housing in the city versus residing in resettlement housing for enhancing urban identity is not as prominent for in-situ urbanized rural residents. For both groups of new urbanites, having a stable and permanent place to live is an important factor to ensure their identity integration in the city. The difference between residing in self-purchased housing versus resettlement housing shall be addressed through more integrated urban planning and housing provision.

### ***Robustness Checks***

We checked the stability and robustness of the survey experiment treatments. First, because each respondent was assigned two vignettes, we tried adjusting the clustering effects within respondents in Model 1 in Table 3. The robust standard errors were all slightly reduced, while the coefficients and confidence levels remained the same. In the robustness checks, we also used the hierarchical linear modeling (HLM) as an alternative estimation strategy and obtained similar results (Ren, 2018). To be consistent with the other two models, we keep Model 1 as reported in Table 3 based on the estimation with clustering effects adjusted at the level of SSUs. Results from the additional estimated models are available upon request.

Second, we added respondent characteristics and place fixed effects into the models reported in Table 3. As shown in the appendix Table 3a, in Model 1, we controlled individual demographic characteristics; socio-economic status; and migration, hukou, and home ownership attributes; in Model 2, we added the township fixed effects. The coefficients on the three treatment variables appear to be very stable across these two models and in comparison to Model 1 in Table 3. The majority of the control variables do not show any significant effects on the perceived level of urban identity. Respondents' own urban hukou status is significantly associated with a higher level of urban identity in both models in Table 3a. Having purchased

housing is associated with higher urban identity in Model 1 when the township fixed effects are not controlled. The inclusion of these control variables at the individual level, however, does not alter the effects of the three treatment variables, nor does the inclusion of the township fixed effects.

[TABLE 3a ABOUT HERE]

In addition, we estimated ordered logistic regressions with the respondents' reported urban self-identity as the dependent variable. The respondent urban self-identity was measured with a question in the same format, 'To what extent would you consider yourself as an urbanite (*cheng li ren* in Chinese)?' and on the same seven-point scale with '7' indicating 'very much' and '1' indicating 'not at all'. The regressions are reported as Model 1 and Model 2 in Table 3b. The results show that respondents' own urban hukou status is significantly associated with a higher level of urban self-identity in both models. Having purchased housing and residing in resettlement housing are both associated with higher urban self-identity in Model 1 when the township fixed effects are not controlled. We further added the three treatment variables in Model 3 and Model 4 in Table 3b with respondents' urban self-identity as the dependent variable. None of these treatment variables appear to be strong or significant. The coefficients on respondent characteristics and place fixed effects remain the same as those in Model 1 and Model 2 in Table 3b.

[TABLE 3b ABOUT HERE]

Finally, we included the respondents' reported urban self-identity into the ordered logistics regressions with their perceived level of urban identity on the vignettes as the dependent variable. The results are added as Model 3 and Model 4 into Table 3a. A higher level of urban self-identity further predicts a higher level of perceived urban identity on the vignette cases; yet the coefficient on the three treatment variables remain the same as those reported in Model 1 and Model 2 in Table 3a. All these results from the robustness checks indicate that the significant impacts of hukou and home ownership on urban identity that we measured through the survey experiment treatments are stable and robust.

## Conclusion and Discussion

Based on data collected through an original survey experiment in the Urbanization and Quality of Life Survey 2018, this study seeks to test the factors that determine the level of urban identity among residents of 40 township-level administrative units in newly urbanized areas or potential sites of urbanization located in cities of different population sizes and on different levels of the administrative hierarchy in China. In particular, the analysis focuses on how hukou, housing, and pathway to urban residency affect respondents' perception of urban identity. We used a factorial survey experiment design, which included eight vignettes representing the possible variations on the three treatment variables: hukou (converted to urban hukou vs. not converted to urban hukou), home ownership (have purchased housing in the city, vs. do not own housing in the city or reside in resettlement housing provided by government or real estate developers), and pathway to urban residency (rural-to-urban migration vs. in-situ urbanization).

Both the descriptive and regression results confirm that urban identity is strongly and significantly influenced by hukou status: conversion to urban hukou increases the ordered log-odds of urban identity by 1.313 on a scale of 1 to 7. Hypothesis 1 is thus confirmed. Home ownership is another significant predictor of urban identity though much weaker: owning a

residence in the city predicts a higher level of urban identity; residing in a resettlement apartment provided by the government or real estate developers does not enhance urban identity. Hypothesis 2 is confirmed as well. Our results, however, do not provide any support for Hypothesis 3. The pathway to urban residency, be it rural-to-urban migration or in-situ urbanization, does not have significantly differential effect on the level of urban identity. In addition, the effects of hukou status and home ownership on the level of urban identity do not differ significantly between the two pathways to urban residency.

According to the theoretical deliberations in existing literature, urban identity encompasses both place and social identity and is shaped by physical environments as well as social institutions (Lalli, 1992; Stryker & Burke, 2000). Consistent with research debates and findings concerning the Chinese context, our empirical results also demonstrate that social institutions signified by the hukou system plays a dominant role in forming urban identity for both rural-to-urban migrants and in-situ urbanized rural residents. Different from studies conducted in large metropolitan cities such as Wuhan (Wang and Fan, 2012), our research shows that housing which represents the physical settings that define and structure day-to-day life appears to be an important factor but not as strong as hukou in our study sample which spread in more diverse places undergoing urbanization across the country. The factorial survey experiment design ensures the causal relations and confirms the key factors determining urban identity in China.

The integration of both rural-to-urban migrants and in-situ urbanized rural residents into Chinese urban society is a challenging process not only for the two groups of new urbanites but also for government and policy-makers. Our findings suggest that hukou is still a persistent institutional factor in the determination of urban identity. In order to foster the integration of formerly rural residents into Chinese cities, the government must radically reform the hukou system. The hukou system should eliminate its divisions and restrictions, and become simply a means of tracking residency (Chen et al., 2017). Reforms should focus on breaking the links between hukou status and urban welfare services. The only way to lessen the differences in urban identity associated with hukou is to sever the connection between benefits and hukou status, giving both long-term urban residents and new urbanites equal access to the local services (Chen et al., 2017; Liu et al., 2018).

In keeping with the current literature, our findings confirm that housing is also a predictor for urban identity. We further differentiated the effect of self-purchased apartments versus resettlement housing: owning a residence in the city enhances urban identity of rural-to-urban migrants, whereas the effect of owning a residence in the city differs from that of residing in a resettlement apartment with marginal significance among urbanized rural residents. If the government and policy-makers intend to promote the urban integration of formerly rural residents into Chinese cities, housing disparities and residential segregation must be reduced or, better yet, abolished. Unfortunately, resettlement housing for displaced villagers is often built at a distance from upmarket residential communities. When it is close by, it is often separated from privately owned residences by walls or iron fences. Prejudice against former rural residents is still strong and persistent, even in places where the process of urbanization is causing dramatic changes in urban neighborhood composition and urbanites are living next door to the former villagers (Jiang, et al., 2018). To promote the identity integration among the new urbanites, it is important to ensure their access to stable and permanent housing. In addition, the difference between residing in self-purchased housing versus resettlement housing can be addressed through reducing residential discrimination and segregation and designing more integrated urban plan and housing provision.

Different from what we hypothesized, different pathways to urban residency do not lead to differences in urban identity, nor do the effects of hukou and home ownership differ across pathways. The result may well suggest that, although the two groups of new urbanites

follow different routes to urban residency, they face the same obstacles to achieving urban identity and integrating into urban life due to their shared rural origin. In order to foster the integration of former rural residents into Chinese cities, the government must radically reform the hukou system and ensure access to stable and permanent housing targeting both rural-to-urban migrants and in-situ urbanized rural residents while reducing residential segregation.

A recent policy of the Central Government of China is intended to establish and improve systems, mechanisms, and policy frameworks for the integrated development of urban and rural areas (China Central Government, April 15, 2019). In order to achieve such policy goals, fundamental reforms must be implemented, and research based on innovative and rigorous methodologies is urgently needed to determine mechanisms that will effectively foster urban-rural integration. While our study focuses on just a few treatment variables that are considered key to the formation of urban identity in China, further research should be conducted to determine the impact of different versions of hukou and related policy reforms on urban-rural integration. Our study sample includes respondents who are residing in newly urbanized areas and potential sites of urbanization spreading over cities of different population sizes and on different levels of the administrative hierarchy in China. Future research could further take into consideration variations across locations and government administrative levels, and how such variations interact with household and personal attributes in promoting urban-rural integration.

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## About the Authors

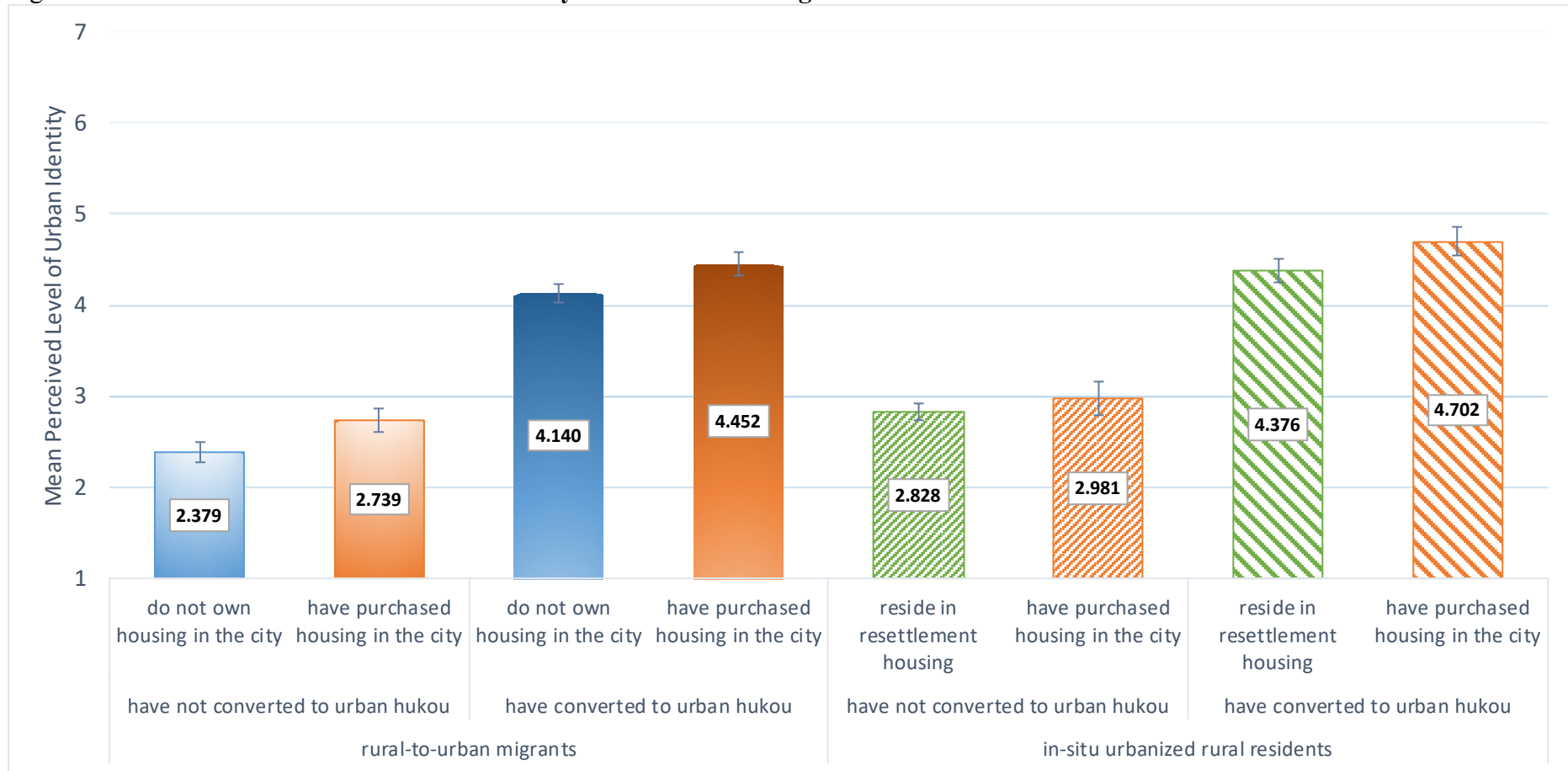
Juan Chen ([juan.chen@polyu.edu.hk](mailto:juan.chen@polyu.edu.hk)) is an associate professor in the Department of Applied Social Sciences at The Hong Kong Polytechnic University. Her research centers around migration and urbanization, health and mental health, and help seeking and service use. Her work has appeared in *Social Science & Medicine*, *China Quarterly*, *Habitat International*, *Cities*, *Administration and Policy in Mental Health* and *Mental Health Services Research*, *Transcultural Psychiatry*, among others.

Chunying Yue ([chunyingyue@hks.harvard.edu](mailto:chunyingyue@hks.harvard.edu)) obtained her Ph.D. in Political Science from Peking University. She worked as a post-doctorate fellow in the Department of Applied Social Sciences at The Hong Kong Polytechnic University 2018-2019. She is currently a research associate at the Research Center for Contemporary China at Peking University and an Asia Fellow at the Ash Center in Harvard Kennedy School. Her research interests include comparative politics and empirical methods of political science, particularly social media and political participation in different polities.

Liying Ren ([renly@cass.org.cn](mailto:renly@cass.org.cn)) is currently an associate research professor in the Institute of Sociology at the Chinese Academy of Social Sciences. Her research focuses on survey methodology, societal development, and social quality.

Jie Yan ([yanjie\\_pku@pku.edu.cn](mailto:yanjie_pku@pku.edu.cn)) is an associate professor in the School of Government at Peking University. She is also the Deputy Director of the Research Center for Contemporary China and the Assistant Director of the Institute of Social Science Survey at Peking University. Her main areas of research are comparative politics and research methodology, particularly quantitative methods and survey research.

Figure 1. Mean Perceived Level of Urban Identity across Different Vignettes



Notes: Data are weighted. Means and robust standard errors are presented.

**Table 1. Possible Vignettes according to Pathways to Urban Residency, Hukou, and Home Ownership**

<b>Vignette</b>	<b>Pathways to urban residency</b>	<b>Hukou</b>	<b>Home ownership</b>
#1	rural-to-urban migrants	have not converted to urban hukou	do not own housing in the city
#2	rural-to-urban migrants	have not converted to urban hukou	have purchased housing in the city
#3	rural-to-urban migrants	have converted to urban hukou	do not own housing in the city
#4	rural-to-urban migrants	have converted to urban hukou	have purchased housing in the city
#5	in-situ urbanized rural residents	have not converted to urban hukou	reside in resettlement housing provided by government or real estate developers
#6	in-situ urbanized rural residents	have not converted to urban hukou	have purchased housing in the city
#7	in-situ urbanized rural residents	have converted to urban hukou	reside in resettlement housing provided by government or real estate developers
#8	in-situ urbanized rural residents	have converted to urban hukou	have purchased housing in the city
#9	rural-to-urban migrants	have not converted to urban hukou	reside in resettlement housing provided by the government or real estate developers
#10	rural-to-urban migrants	have converted to urban hukou	reside in resettlement housing provided by the government or real estate developers
#11	in-situ urbanized rural residents	have not converted to urban hukou	do not own housing in the city
#12	in-situ urbanized rural residents	have converted to urban hukou	do not own housing in the city

**Table 2. Descriptive Statistics of Respondent Characteristics according to Treatment Variables**

	Pathways to urban residency		Hukou		Home ownership		
	in-situ urbanized rural residents	rural-to-urban migrants	have not converted to urban hukou	have converted to urban hukou	do not own housing in the city	reside in resettlement housing	have purchased housing in the city
Age (years, mean)	51.120 (0.651)	51.131 (0.650)	51.205 (0.652)	51.047 (0.712)	51.390 (0.670)	50.880 (0.672)	51.116 (0.867)
Gender (female, %)	49.257 (1.147)	49.239 (1.147)	48.373 (1.498)	50.116 (1.371)	48.542 (1.567)	51.120 (1.433)	48.681 (1.624)
Ethnicity (ethnic minority, %)	4.808 (0.958)	4.810 (0.958)	4.806 (0.956)	4.812 (1.011)	5.259 (1.134)	4.926 (1.135)	4.533 (0.909)
Marital status (married, %)	79.148 (1.470)	79.137 (1.471)	80.024 (1.558)	78.267 (1.591)	81.123 (1.386)	78.975 (1.349)	78.256 (2.212)
Education (%)							
primary school or below	45.825 (1.888)	45.839 (1.886)	45.385 (2.111)	46.275 (2.009)	45.456 (2.131)	46.367 (2.029)	45.755 (2.229)
middle school	32.558 (1.508)	32.566 (1.508)	33.247 (1.878)	31.882 (1.630)	32.784 (1.799)	31.743 (1.591)	32.852 (2.090)
high school	15.154 (1.064)	15.129 (1.063)	15.461 (1.400)	14.824 (1.039)	15.399 (1.210)	14.791 (1.091)	15.186 (1.340)
college or above	6.463 (0.813)	6.467 (0.815)	5.907 (0.890)	7.019 (0.905)	6.361 (0.936)	7.099 (0.981)	6.207 (0.902)
Occupation (professional/managerial, %)	8.728 (0.925)	8.722 (0.923)	9.175 (1.229)	8.279 (1.005)	9.225 (1.095)	7.405 (0.999)	9.124 (1.221)
Household wealth (0-7, mean)	2.360 (0.086)	2.359 (0.086)	2.418 (0.095)	2.302 (0.085)	2.377 (0.090)	2.311 (0.083)	2.375 (0.104)
Migrants (%)	16.631 (2.284)	16.640 (2.286)	16.927 (2.623)	16.347 (2.237)	15.131 (2.444)	14.825 (2.201)	18.252 (2.875)
Urban hukou (%)	15.363 (1.729)	15.372 (1.731)	16.180 (1.964)	14.560 (1.663)	14.956 (1.935)	15.645 (1.895)	15.433 (1.782)
Home ownership (%)							
do not own housing in the city	90.593 (1.761)	90.588 (1.762)	90.247 (1.854)	90.932 (1.768)	90.047 (1.852)	90.837 (1.717)	90.736 (1.865)
reside in resettlement housing	3.205 (0.998)	3.207 (0.998)	3.345 (1.083)	3.068 (0.936)	3.555 (1.082)	3.035 (0.893)	3.119 (1.080)
have purchased housing in the city	6.202 (1.486)	6.205 (1.487)	6.409 (1.534)	6.000 (1.519)	6.398 (1.515)	6.128 (1.482)	6.145 (1.560)
Observations	3,228	3,225	3,220	3,233	1,614	1,599	3,240

*Notes:* Data are weighted. Means or percentages are reported. Robust standard errors are in parentheses.

**Table 3. Ordered Logistic Regressions of Perceived Level of Urban Identity on Vignettes**

	Model 1	Model 2	Model 3
<b>Treatment variables</b>			
Pathways to urban residency			
in-situ urbanized rural residents	reference		
rural-to-urban migrants	-0.206 (0.120)		
Hukou			
have not converted to urban hukou	reference	reference	reference
have converted to urban hukou	1.313*** (0.092)	1.257*** (0.120)	1.371*** (0.106)
Home ownership			
do not own housing in the city	reference		reference
reside in resettlement housing	0.067 (0.152)	reference	
have purchased housing in the city	0.253** (0.090)	0.185 (0.103)	0.258** (0.092)
<b>Constants</b>			
Constant cut1	0.110 (0.143)	0.023 (0.092)	0.339** (0.104)
Constant cut2	0.380** (0.138)	0.280** (0.089)	0.621*** (0.099)
Constant cut3	0.554*** (0.138)	0.461*** (0.092)	0.790*** (0.099)
Constant cut4	1.369*** (0.143)	1.288*** (0.093)	1.593*** (0.101)
Constant cut5	1.697*** (0.141)	1.594*** (0.093)	1.944*** (0.091)
Constant cut6	2.049*** (0.147)	1.926*** (0.107)	2.318*** (0.095)
<b>Observations</b>			
	6,453	3,228	3,225

*Notes:* Data are weighted. Coefficients are reported. Robust standard errors are in parentheses. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . Model 1 includes all observations. Model 2 includes cases on in-situ urbanized rural residents. Model 3 includes cases on rural-to-urban migrants.

**Table 3a. Ordered Logistic Regressions of Perceived Level of Urban Identity on Vignettes with Control Variables**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Treatment variables</b>				
Pathways to urban residency				
in-situ urbanized rural residents	reference	reference	reference	reference
rural-to-urban migrants	-0.210 (0.120)	-0.199 (0.119)	-0.210 (0.122)	-0.198 (0.120)
Hukou				
have not converted to urban hukou	reference	reference	reference	reference
have converted to urban hukou	1.335*** (0.092)	1.386*** (0.088)	1.336*** (0.092)	1.385*** (0.088)
Home ownership				
do not own housing in the city	reference	reference	reference	reference
reside in resettlement housing	0.062 (0.152)	0.107 (0.149)	0.057 (0.154)	0.105 (0.150)
have purchased housing in the city	0.257** (0.090)	0.330*** (0.096)	0.251** (0.091)	0.324*** (0.097)
<b>Respondent urban self-identity</b>			0.101*** (0.019)	0.073*** (0.018)
<b>Control variables</b>				
Age (years)	-0.002 (0.003)	-0.003 (0.002)	-0.001 (0.003)	-0.003 (0.002)
Gender (female)	-0.057 (0.062)	-0.081 (0.056)	-0.056 (0.062)	-0.078 (0.056)
Ethnicity (ethnic minority)	0.171 (0.141)	0.034 (0.146)	0.158 (0.132)	0.058 (0.138)
Marital status (married)	-0.053 (0.086)	0.037 (0.087)	-0.023 (0.086)	0.048 (0.087)
Education				
primary school or below	reference	reference	reference	reference
middle school	-0.048 (0.079)	-0.071 (0.074)	-0.068 (0.079)	-0.079 (0.073)
high school	-0.103 (0.095)	-0.126 (0.089)	-0.125 (0.094)	-0.128 (0.089)
college or above	0.230 (0.132)	0.173 (0.134)	0.177 (0.130)	0.154 (0.131)
Occupation (professional/managerial)	-0.044 (0.143)	-0.035 (0.109)	-0.079 (0.141)	-0.053 (0.109)
Household wealth (0-7)	0.035 (0.027)	-0.011 (0.030)	0.032 (0.027)	-0.012 (0.029)
Migrants	-0.030 (0.140)	-0.021 (0.151)	-0.062 (0.140)	-0.011 (0.149)
Urban hukou	0.433*** (0.094)	0.384*** (0.107)	0.240** (0.087)	0.285** (0.103)
Home ownership				
do not own housing in the city	reference	reference	reference	reference
reside in resettlement housing	0.200 (0.163)	-0.223 (0.178)	0.099 (0.165)	-0.283 (0.180)
have purchased housing in the city	0.584*** (0.147)	-0.058 (0.169)	0.440** (0.141)	-0.107 (0.163)
Township fixed effects		not reported		not reported
Constant cuts	not reported	not reported	not reported	not reported
<b>Observations</b>	6,453	6,453	6,453	6,453

Notes: Data are weighted. Coefficients are reported. Robust standard errors are in parentheses. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

**Table 3b. Ordered Logistic Regressions on Respondent Urban Self-identity**

	Model 1	Model 2	Model 3	Model 4
<b>Treatment variables</b>				
Pathways to urban residency				
in-situ urbanized rural residents			reference	reference
rural-to-urban migrants			0.039 (0.072)	0.037 (0.069)
Hukou				
have not converted to urban hukou			reference	reference
have converted to urban hukou			0.067 (0.068)	0.067 (0.066)
Home ownership				
do not own housing in the city			reference	reference
reside in resettlement housing			0.079 (0.145)	0.074 (0.138)
have purchased housing in the city			0.053 (0.103)	0.095 (0.094)
<b>Control variables</b>				
Age (years)	-0.008* (0.004)	-0.005 (0.004)	-0.008* (0.004)	-0.005 (0.004)
Gender (female)	-0.029 (0.093)	-0.083 (0.097)	-0.031 (0.092)	-0.085 (0.097)
Ethnicity (ethnic minority)	0.204 (0.292)	-0.414 (0.418)	0.206 (0.291)	-0.410 (0.415)
Marital status (married)	-0.398** (0.130)	-0.246* (0.112)	-0.394** (0.128)	-0.240* (0.111)
Education				
primary school or below	reference	reference	reference	reference
middle school	0.254 (0.130)	0.149 (0.128)	0.254 (0.130)	0.148 (0.128)
high school	0.185 (0.176)	-0.047 (0.172)	0.186 (0.176)	-0.048 (0.171)
college or above	0.469 (0.247)	0.268 (0.256)	0.463 (0.247)	0.261 (0.256)
Occupation (professional/managerial)	0.341* (0.173)	0.277 (0.179)	0.345* (0.174)	0.282 (0.179)
Household wealth (0-7)	0.036 (0.047)	0.030 (0.048)	0.037 (0.047)	0.030 (0.048)
Migrants	0.444* (0.177)	-0.079 (0.200)	0.445* (0.174)	-0.081 (0.200)
Urban hukou	1.857*** (0.174)	1.380*** (0.177)	1.860*** (0.174)	1.385*** (0.177)
Home ownership				
do not own housing in the city	reference	reference	reference	reference
reside in resettlement housing	0.930*** (0.243)	0.803* (0.371)	0.932*** (0.243)	0.802* (0.369)
have purchased housing in the city	1.323*** (0.208)	0.532 (0.286)	1.322*** (0.208)	0.529 (0.284)
Township fixed effects		not reported		not reported
Constant cuts	not reported	not reported	not reported	not reported
<b>Observations</b>	6,453	6,453	6,453	6,453

Notes: Data are weighted. Coefficients are reported. Robust standard errors are in parentheses. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .