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Disparities in Social Insurance Participation and Urban Identification Among In-situ Urbanized Residents in China

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Abstract

China's in-situ urbanization implies a phenomenon where rural populations become new urbanites as their land was reclassified as urban. While studies have suggested that social insurance may play a role in encouraging urban identification, empirical evidence in this field remains scarce. Highlighting the identity construction experience of in-situ urbanized residents, this study assesses the efficacy of major health and pension insurance in promoting a sense of urban identity in the context of China's rapid urbanization. We analyze data from the 2018 Urbanization and Quality of Life Survey (N=3,229) conducted in 40 localities that undergo in-situ urbanization. Results of multi-level modelling show that those participating in urban insurance schemes such as the Urban Employee Basic Medical Insurance (UEBMI) are more likely to identify as urban. Enrollment in the New Rural Social Pension Scheme (NRSPS), however, is negatively associated with urban identification. There are also variations associated with the interaction of social insurance and hukou status. To promote future urban integration of in-situ urbanized residents, it is vital to build an equitable, efficient, and equal-access social insurance system in urbanizing China.

Keywords Social insurance · Urban identity · In-situ urbanization · Welfare gaps · China

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Introduction

As a result of rapid urbanization in recent decades, China is undergoing a process of transformation, which can be attributed to two independent phenomena (Chen et al., 2015). The first, which has received a great deal of research and policy attention, was the influx of more than 200 million internal migrants from the rural countryside to cities and towns (Chan, 2013). The second, which is less researched, is in-situ urbanization, whereby former villagers become urban residents as a result of the reclassification of their home as urban instead of moving to the city (Friedmann, 2005). Unlike the conventional city-centered urbanization process dominated by internal migration, in-situ urbanization is a phenomenon where rural populations transform themselves into urban or quasi-urban ones without much geographical relocation (Zhu et al., 2009). In March 2014, the Central Committee of the Communist Party and the State Council jointly released the National New-Type Urbanization Plan (2014–2020) (hereinafter "the Plan"), which marked the official start of a new era of urbanization (Wang et al., 2015). While the Plan contains various specific policy targets, the most important one is a guiding principle shift for future urbanization, that is, transferring from a land-centered mode to a people-oriented pattern to meet citizens' actual needs (Chen et al., 2017). As the first national strategy for urbanization, the Plan outlines the blueprint for China's urban development.

Guided by the Plan, a growing number of localities participated in the National New Urbanization Comprehensive Pilot Program and initiated reforms to promote in-situ urbanization both spatially and socially. More policy emphasis has been placed on promoting infrastructure investment, encouraging local initiatives in hukou reforms, and equalizing social benefits for new urbanites (Guan et al., 2018). The increasing demands of social insurance have also driven local governments to make strong commitments to expanding social insurance protection for in-situ urbanized residents (Wang et al., 2015). By the end of 2020, 100 million rural residents were relocated and/or reclassified to urban (Chan, 2021). Further efforts are required to meet the goal of ensuring another 200 million farmers without urban household registration are given equal access to urban social benefits (Chen et al., 2018; Chan, 2021).

Against the backdrop of these policy shifts, urban identity has been researched in a number of studies. The concept is used as an important indicator to evaluate the urban adaption process of individuals (Gui et al., 2012; Yue et al., 2020). For instance, using survey data collected in Wuhan, Wang & Fan (2012) reveal that facing various barriers in adapting to the host city, the majority of migrants still view themselves as rural residents rather than the urban. Similar conclusion has been drawn by other scholars, arguing that migrant workers are trapped in the dilemma caused by their rural identity and live as "outsiders" in cities (Tang, 2015; Du et al., 2018). While existing studies suggest that urban identification is not an easy process, the research has primarily focused on the migrant population. Nonetheless, the establishment of urban identity is a relevant and important issue for in-situ urbanized rural residents as well. This is not only because the rapid social and environmental changes that arise with in-situ urbanization can trigger identity shock (Zhang & Tong, 2006), but also the identity adaptation process lagging behind the conversion of urban material systems could

lead to physical and psychological health problems, or even social conflicts (Berkman & Glass, 2000; Belanche et al., 2017; Zhang et al., 2021).

Empirical studies have investigated both socio-demographic and institutional factors contributing to the formation and development of urban identity. Huang and her colleagues (2020) suggest human capital and social network are important determinants of urban identity because the related resources and opportunities can benefit the process of urban adaptation. Other scholars have also tried to reveal identity heterogeneity among people with different individual attributes and investigated the impact of age, education, occupation, and homeownership on urban identification (Cai & Cao, 2009; Yue et al., 2013; Lin et al., 2021; Xie & Chen, 2021). When it comes to institutional constraints, previous research has concentrated on the household registration (hukou) system: the lack of urban hukou is regarded as the key obstacle to successful urban identification (Zhang & Treiman, 2013; Chen et al., 2020). Scant attention has been paid to other specific institutional factors, such as social insurance. During the process of urban integration, individuals can benefit directly from the social insurance system, yet the relationship between social insurance and urban identity adoption remains unclear.

This study aims to estimate the association between social insurance and urban identity. Drawing data from the 2018 Urbanization and Quality of Life Survey, it seeks to answer the question: how, and to what extent, can urban identity be shaped by social insurance status? We evaluate the efficacy of four types of health and pension insurance. In the context of China's rapid urbanization, this research sheds light on the identity construction experience of in-situ urbanized residents. The findings have implications for policy adjustments, especially in areas undergoing in-situ rural-urban transition.

The Social Insurance System in China

On a global scale, a number of countries have introduced social insurance schemes to protect their populations from financial hardship arising from unavoidable situations (Lagomarsino et al., 2012). The basic plan for social insurance is to collect contributions from various units and pool risks among social members. China has been bearing the main role in providing social insurance protection for its citizens by building a nationwide social insurance system as well. The formation of this system is signified by three turning points in history. The reform practices during the 1990s were swift and dramatic. While the market-oriented reforms led to the collapse of the traditional community- and working unit-based programs, it had also driven the introduction of social insurance programs in China. The success of the systematic reforms launched in 2009 marked another turning point. The policy goal during this reform period was to narrow down the welfare gaps between the rural and urban populations (Gao et al., 2019). Beginning in 2014, a new shift in focus was apparent in the latest round of social insurance reforms, that is, to establish a consolidated health and pension insurance system for all Chinese citizens. The social insurance reform continues to be driven by the demands and challenges arising from Chinese ongoing urbanization today.

As a result of these decades-long reform efforts, social insurance in China now covers various types of benefits. Health insurance and pension insurance are the two pillars of the social protection system. With respect to health insurance, the Urban Employee Basic Medical Insurance (UEBMI) was introduced in 1998, aiming to cover all workers in the urban formal sector (Bairoliya et al., 2018). For urban residents but not employees, the Urban Resident Basic Medical Insurance (URBMI) was established in 2007 to provide coverage for social groups such as children, older adults, and students. Targeting the rural population, the New Rural Cooperative Medical Scheme (NRCMS) was rolled out nationwide in 2003. More recently, a national unified health insurance program, the Urban and Rural Resident Medical Insurance (URRMI), was established on a pilot basis. The new program aims to provide more equitable and efficient health care for all citizens, merging the existing rural and urban insurance schemes. However, the reform pace of the URRMI program varies across regions (Shan et al., 2018). Each of the four health insurance schemes has an associated pension scheme. The Urban Employee Basic Pension Insurance (UEBPI) was introduced in 1998. The Urban Resident Basic Pension Insurance (URBPI) and the New Rural Social Pension Scheme (NRSPS) were established in 2009 and 2011, respectively. The Urban and Rural Resident Pension Insurance (URRPI) was introduced in 2014. Similar to the URRMI, the implementation of this new integrated pension program is slow (Liu & Sun, 2016).

China's social insurance system is featured by its unique hukou-based rural-urban fragmentation. The structural fragmentation has undermined both the equity and efficiency of the current system (He & Wu, 2017). Within the hukou system, each Chinese citizen is classified as either rural or urban. Such classification provides an administrative basis for the rural and urban insurance systems, which are separately administered and operated (Meng et al., 2015; Gao et al., 2018). The eligibility to participate in the specific social insurance program, therefore, is strictly tied to one's hukou status. Hukou-based fragmentation has also emerged with a negative impact on the efficiency of risk pooling. Both rural and urban insurance systems relied on highly localised fund pools. Taking pension insurance as an example, the median pension benefit in 2013 was around RMB 3000 per month for urban employees and RMB 2300 per month for urban residents, respectively, while that for rural enrollees was just RMB 60 per month because the fund-pooling capacity of rural populations was much lower (Zhu & Österle, 2017). Similarly, health insurance for urban employees provides the most comprehensive health care service, while that of the rural insurance scheme, the New Rural Cooperative Medical Scheme (NRCMS), is the least advantageous (Yang & Wu, 2017).

The welfare disparity underlying the rural-urban fragmented system has wide-ranging effects. Existing research demonstrates that participation in the New Rural Cooperative Medical Scheme (NRCMS) has not significantly improved health status (Lei & Lin, 2009); nor has it resulted in a reduction of out-of-pocket payment (Cheng et al., 2015), catastrophic health expenditure (Liang et al., 2012), or poverty (Wang et al., 2020b). In contrast, the performance assessments of the urban insurance schemes are relatively optimistic (Liu & Zhao, 2014; Qin et al., 2014). These studies, however, mainly centre on the specific social insurance impact on medical service utilization and health outcomes; few consider the role of social insurance in identity formation.

A limited number of empirical studies have devoted attention to the effect of social insurance on urban integration of migrants; however, as these studies aggregate data from different insured fields or insurance schemes into one variable in regression, none of them has differentiated the effects of variations across schemes (Shi & Shi, 2014; Huang et al., 2020; Qin et al., 2021).

The Linkage Between Social Insurance and Urban Identity

An identity is a set of meanings individuals hold for themselves as members of a social group or category (Stets & Burke, 2000). Aspects of identity linked to urban settings can be described as "urban identity". Referring to Lalli's (1988) definition, urban identity is viewed as a substructure of self-identity, with which people view themselves as a member of the city. For in-situ urbanized residents, the adoption of urban identity means they could identify themselves as a member of the city based on recognizable characteristics describing themselves as similar to other urban counterparts and dissimilar to the past themselves with rural living experience. Individuals identified with the city often maintain emotional bonds with the city where they feel they belong (Proshansky, 1978; Lewicka, 2011).

Informed by urban identity theory, the construction of urban identity is largely determined by the interaction between person and urban environment (Lalli, 1988). This theory believes the formation of urban identity is based on the process of subjective reconstruction (Hauge, 2007; Lewicka, 2011). Thus, not only the city provides a necessary environment for individuals to identify with, but also the geographical, cultural, and institutional borders of the city convey the ingroup-outgroup distinctions (Hauge, 2007). This theoretical perspective suggests that individuals' identity can be viewed as a result of boundary formation (Barth, 1998). In the specific Chinese context, the institutional border shaped by the rural-urban disparity in social insurance leads to the contrast between "them" and "us", acting as an "invisible wall" for new urbanites to identify with the city. And the relationship between social insurance and urban identity may vary across schemes.

Thus theoretically, the participation of social insurance plays a vital role in dis/encouraging urban identification during the rural-urban transition. People with rural insurance membership will be less likely to adopt urban identity. This is mainly because the uneven distribution rule adopted by China's social insurance system has shaped the stereotypes of rural and urban identities (Huang & Guo, 2015). The identity change process requires crossing or shifting the existing boundaries; yet the remaining urban welfare exclusion for in-situ urbanized residents can hardly trigger their urban identification. Also, the meagre benefits provided by rural insurance is associated with perceived disadvantaged social status (Wang et al., 2012), with which in-situ urbanized residents will tend to maintain rural identity.

Meanwhile, people covered by urban insurance programs will be more likely to adopt urban identity. On the one hand, the substantial benefits provided by urban insurance can facilitate the process of urban adaption. Previous research has confirmed the role of health insurance in protecting individuals from the risk of unforeseen medical expenditure (Bairoliya et al., 2018). Besides, the pay-as-you-go pension

system can protect participants from the uncertainties of the labour market as well as the economic ramifications of poor health. These benefits are ensured by a well-developed urban welfare system, with which new urbanites will be more capable of dealing with difficulties and adapting to urban life. Consequently, they will be more likely to adopt an urban identity. On the other hand, an inclusive insurance program is a part of the city system. The involvement of urban insurance can provide a platform for individuals to identify with the city and build a sense of belonging as beneficiaries. Based on these speculations, we propose Hypotheses 1 and 2:

Hypothesis 1 Enrolment in the rural health and pension insurance programs will be associated with a lower level of urban identity.

Hypothesis 1 is supported by most empirical studies demonstrating the limited effects of NRCMS on reducing medical expenditures and improving health (Lei & Lin, 2009; Liang et al., 2012; Cheng et al., 2015). According to Wang et al., (2014), benefit packages offered by rural insurance schemes were too low to alleviate farmers' medical burden. The design deficiencies of rural insurance cause its unsatisfactory performance, thus it may also lead to a negative impact on urban identification.

Hypothesis 2 Enrolment in the urban health and pension insurance schemes will be associated with a higher level of urban identity.

In line with the theoretical arguments, the adoption of urban identity for urban insurance participants hinges on two factors. On the objective side, in-situ urbanized residents can benefit from generous welfare entitlement (Qin et al., 2014). On the subjective side, urban insurance membership will reinforce the advantaged social status and boost a sense of belonging to the urban system (Huang & Guo, 2017).

Hypothesis 3 Enrolment in the national unified health and pension insurance schemes will be associated with a higher level of urban identity.

Hypothesis 3 is proposed to testify the potential positive relationship between the newly established program and urban identification. As a national unified scheme, the new health and pension insurance is characterized by universal benefit packages for all enrolees (Wang et al., 2020a). The integration reform of social insurance has been regarded as an attempt to eliminate the existing institutional barrier for truly rural-urban integration (Meng et al., 2015); therefore, it is reasonable to hypothesize that participation in this program will promote urban identity establishment.

Hypothesis 4 Hukou status will moderate the relationship between social insurance and urban identity: the positive impact of urban insurance and the newly integrated insurance on urban identity will be stronger for rural hukou holders, whereas the negative impact of rural insurance on urban identity will be stronger for urban or jumin hukou holders.

Potential effect variance across social insurance may exist because of the moderation effect of hukou status. Previous studies claim that people with rural or urban hukou have different expectations for the benefits, which will further shape their attitudes or perceptions (Whyte & Im, 2014; Huang & Gao, 2018). In the case of in-situ urbanized residents, we speculate that rural hukou holders would be more sensitive to the positive effect of urban insurance because the welfare provisions exceed their meagre expectations. In contrast, the positive impact of urban insurance on non-rural hukou holders will be less significant because the fulfilment of basic needs might not be enough to trigger their identity change. Nevertheless, urban or jumin hukou holders will be more subject to the negative effect of rural insurance as the provisions fall short of their high welfare expectations.

Data and Methods

Data

We used data from the 2018 Urbanization and Quality of Life Survey, a GIS (geographical information system) assisted household survey conducted in China from April to June of 2018. This survey adopted a carefully constructed multi-stage sampling design for data collection. In general, the survey covers 40 township-level administrative units as primary sampling units (PSUs), including 32 jiedaos (street districts) and zhens (towns) in newly urbanized areas and eight zhens (towns) and xiangs (rural townships) in potential sites of urbanization. Twenty of the survey sites are township units participating in the 2014 National New Urbanization Comprehensive Pilot Program; the other 20 were selected from non-pilot areas using the Coarsened Exact Matching (CEM) technique (Iacus et al., 2011).

The target population was adults aged from 18 to 75 who have resided in the selected townships for more than six months, regardless of their official hukou status. After data checking and cleaning, the final completed sample size was 3,229, with a response rate of 65.2 per cent. Post-stratification weights were calculated according to data from the China 2010 Township Population Census Data and applied throughout the analysis.

Measures

The dependent variable is self-rated urban identity, measured by participants' responses to the question, "To what extent do you consider yourself as an urbanite?" on a Likert scale ranging from 1 to 7 ("strongly disagree" to "strongly agree").

The core independent variable is social insurance status. Respondents were asked, "Have you participated in the following social insurance programs?" We included four types of health insurance in the analysis: the Urban Employee Basic Medical Insurance (UEBMI), the Urban Resident Basic Medical Insurance (URBMI), the New Rural Cooperative Medical Scheme (NRCMS), the Urban and Rural Resident Medical Insurance (URRMI), and four pension insurance of the corresponding schemes. Because the benefits of these programmes are often non-transferable across

cities or from rural to urban areas, a number of respondents were enrolled in multiple schemes. According to the policy guidance, individuals are not allowed to receive duplicate benefits from various schemes in the same insured field. The double covered should be considered the enrolees of the program with higher benefit packages when claiming reimbursement. We recoded the data accordingly, and participants in the four social insurance schemes are mutually exclusive after recoding. Each variable of medical and pension insurance is dichotomously coded, with 1 referring to "participating in the scheme" and 0 "not participating in the scheme".

Drawing on the literature, we include a number of covariates in the model estimation. At the individual level, demographic characteristics include age (years), gender (1 = female; 0 = male), and marital status (1 = married; 0 = others). Educational attainment was treated as a categorical variable with four levels (1 = primary school or below; 2 = middle school; 3 = high school; 4 = college and above). Occupational status was coded as a binary variable with 1 indicating a professional/managerial occupation. We use household wealth as the control variable for family economic status. A seven-item list used in previous studies was employed based on the household ownership of a number of consumer items, such as an LCD television and a piano (Córdova, 2009). Other covariates include hukou and migration status. By adding the newly integrated jumin hukou, the hukou variable falls into three categories: 0 = rural hukou, 1 = urban hukou, and 2 = jumin hukou. Cross-town migrants were coded as 1.

Two township-level factors were coded to control the sampling design effects: whether the townships were in a pilot site of the 2014 National New Urbanization Comprehensive Pilot Program (1 = pilot site; 0 = non-pilot site) and whether the places were undergoing urbanization (1 = undergoing urbanization; 0 = potential site of urbanization).

Analysis

Because the dependent variable is an ordinary variable coded on a seven-point Likert scale and the survey data has a hierarchical structure, we performed multi-level ordinal logistic regression analysis to determine whether social insurance participation can affect the likelihood of urban identification among those experiencing in-situ urbanization (Hedeker & Gibbons, 1994; Snijders & Bosker, 1999).

We first estimated the baseline Model 1, which is an empty model without any predictors except the intercept. This model measures only the variations in urban identity between individuals within townships and those between townships. It serves as a benchmark for the size of township-level differences in all subsequent models. Following Snijders & Bosker (1999), we computed the intra-class correlation coefficient (ICC) to be 0.278 which indicates that 27.8 per cent of the total variance in individuals' adoption of urban identity is caused by variations among townships, suggesting that a multi-level approach is appropriate.

We then included socio-demographic covariates at the individual level and the two township level controls in Model 2, based on which a set of dichotomous variables of medical insurance and pension insurance were added to Model 3 and Model 4, respectively. These two models allow us to test Hypothesis 1 to Hypothesis 3. To testify Hypothesis 4, we estimated separate models on rural, urban, and jumin hukou

Table 1 Descriptive statistics of individual characteristics for the whole sample and by hukou status

Variables	Whole sample	Rural hukou	Urban hukou	Jumin hukou
Urban identity (1–7, mean)	2.230	1.811	4.023	4.782
	(0.098)	(0.063)	(0.279)	(0.254)
Age (years, mean)	51.118	51.432	49.031	49.766
	(0.651)	(0.701)	(1.540)	(1.758)
Gender (female, %)	49.243	50.946	49.269	50.107
	(0.011)	(0.013)	(0.047)	(0.037)
Marital status (married, %)	79.154	79.586	80.017	74.526
	(0.146)	(0.016)	(0.042)	(0.033)
Education (%)				
Primary school or below	45.840	50.071	24.690	22.328
	(0.189)	(0.019)	(0.037)	(0.040)
Middle school	32.549	32.712	30.835	32.310
	(0.150)	(0.017)	(0.036)	(0.031)
High school	15.150	13.296	26.360	24.026
	(0.011)	(0.112)	(0.031)	(0.028)
College or above	6.461	3.922	18.115	21.336
	(0.008)	(0.005)	(0.037)	(0.035)
Occupation (professional/managerial, %)	8.726	7.107	12.670	20.774
	(0.009)	(0.009)	(0.024)	(0.034)
Household wealth (0–7, mean)	2.360	2.208	3.060	3.252
	(0.086)	(0.092)	(0.165)	(0.135)
Cross-town migrants (%)	16.626	15.968	26.001	15.807
	(0.023)	(0.025)	(0.058)	(0.029)
Number of respondents	3,229	2,674	229	326

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

subsamples, while the covariates remain the same. The models were estimated in Stata 15.1.

Results

Descriptive Statistics

Table 1 presents the descriptive statistics of the whole sample and by hukou subgroups. The mean level of urban identification for the whole sample is 2.230—relatively low, suggesting that most respondents do not view themselves as urbanites. Among the three hukou subgroups, jumin hukou holders reported the highest score of urban identity (4.782), followed by urban hukou holders (4.023). People with rural hukou were the least likely to consider themselves as urbanites (1.811).

Table 2 shows the coverage rates of major social insurance schemes for the whole sample and by hukou subgroups. The results illustrate that almost all (more than 90 per cent) of the participants are covered with health insurance; by comparison, the coverage rate of pension schemes is much lower (only 53 per cent). The majority of respondents are still covered by rural insurance programs, which indicates that the

Table 2 Participation in health and pension insurance schemes

	Whole sample	Rural hukou	Urban hukou	Jumin hukou
Medical insurance (%)				
New Rural Cooperative Medical Scheme (NRCMS)	67.762 (0.025)	77.250 (0.017)	21.260 (0.046)	14.317 (0.032)
Urban Employee Basic Medical Insurance (UEBMI)	10.886 (0.011)	6.011 (0.007)	41.290 (0.050)	33.522 (0.256)
Urban Resident Basic Medical Insurance (URBMI)	6.070 (0.010)	1.750 (0.003)	22.889 (0.046)	33.600 (0.039)
Urban and Rural Resident Medical Insurance (URRMI)	6.253 (0.010)	6.394 (0.010)	6.711 (0.024)	4.604 (0.015)
Total	90.971 (0.021)	91.405 (0.006)	92.150 (0.012)	86.043 (0.173)
Pension insurance (%)				
New Rural Social Pension Scheme (NRSPS)	31.453 (0.026)	35.920 (0.028)	7.709 (0.019)	7.729 (0.022)
Urban Employee Basic Pension Insurance (UEBPI)	10.971 (0.012)	6.205 (0.017)	41.768 (0.050)	32.312 (0.042)
Urban Resident Basic Pension Insurance (URBPI)	4.814 (0.007)	1.890 (0.004)	15.866 (0.034)	23.719 (0.031)
Urban and Rural Resident Pension Insurance (URRPI)	5.580 (0.009)	6.323 (0.012)	2.381 (0.014)	1.073 (0.005)
Total	52.818 (0.027)	50.338 (0.096)	67.724 (0.011)	64.833 (0.040)
Number of respondents	3,229	2,674	229	326

Notes: Data were weighted. Percentages are reported. Robust standard errors are in parentheses.

social insurance transition lags behind the pace of in-situ urbanization as only a small fraction of local residents has been included into urban insurance system. For both rural and urban insurance programs, there exists heterogeneity of hukou status of the participants. It is also noteworthy that the coverage rate gaps among hukou subgroups are sharply narrowed in the new schemes. More rural or urban hukou holders have participated in the Urban and Rural Resident Medical Insurance (URRMI) or the Urban and Rural Resident Pension Insurance (URRPI), though the participation rates are quite low. This result implies that access to the newly unified program is out of hukou restriction, but its integration is still at a preliminary level.

The study aims to examine the relationship between social insurance and urban identity. As shown in Table 3, on average the urban identity of rural insurance participants is lower than that of urban insurance enrolees. The urban identity of people covered by the New Rural Cooperative Medical Scheme (NRCMS) and the New Rural Social Pension Scheme (NRSPS) are 1.715 and 1.646, which are lower than that of the uninsured residents. The gap is more substantial by taking into account the hukou type difference. Generally, people with non-rural hukou tend to report a higher level of urban identity.

Regression Results for the Whole Sample

Table 4 reports multi-level modelling results on urban identification among the whole sample. Model 1 is the baseline model. Model 2 includes both individual- and town-

Table 3 Urban identity of social insurance participants and the uninsured

	Whole sample	Rural hukou	Urban hukou	Jumin hukou
Medical insurance				
New Rural Cooperative Medical Scheme (NRCMS)	1.715 (0.069)	1.669 (0.068)	2.539 (0.382)	3.076 (0.468)
Urban Employee Basic Medical Insurance (UEBMI)	3.759 (0.206)	2.651 (0.184)	4.560 (0.310)	4.868 (0.374)
Urban Resident Basic Medical Insurance (URBMI)	4.364 (0.305)	2.735 (0.356)	4.238 (0.588)	5.212 (0.349)
Urban and Rural Resident Medical Insurance (URRMI)	2.679 (0.188)	2.233 (0.155)	4.917 (0.579)	5.992 (0.538)
Uninsured by any type of medical insurance	2.509 (0.211)	1.993 (0.168)	3.833 (0.596)	4.891 (0.414)
Pension insurance				
New Rural Social Pension Scheme (NRSPS)	1.646 (0.062)	1.598 (0.061)	3.164 (0.554)	2.592 (0.510)
Urban Employee Basic Pension Insurance (UEBPI)	3.632 (0.227)	2.443 (0.193)	4.436 (0.315)	4.974 (0.377)
Urban Resident Basic Pension Insurance (URBPI)	4.001 (0.337)	2.266 (0.318)	3.952 (0.617)	5.300 (0.408)
Urban and Rural Resident Pension Insurance (URRPI)	2.260 (0.216)	2.128 (0.207)	4.000 (0.000)	3.308 (0.720)
Uninsured by any type of pension insurance	2.109 (0.118)	1.828 (0.100)	3.584 (0.483)	4.783 (0.304)

Notes: Data were weighted. Means are reported. Robust standard errors are in parentheses.

ship-level covariates. As shown in Model 2, marital status is negatively associated with urban identity. Both urban and jumin hukou are positively associated with urban identity, indicating that the non-rural hukou is still a consistent and significant predictor for urban identity (Cai & Cao, 2009; Chen et al., 2020). In accordance with previous research, the findings further reveal that the likelihood of jumin hukou holders viewing themselves as urbanites is 5.590 ($e^{1.721}$) times higher than that of rural hukou holders. Our results indicate that other individual-level characteristics are not significantly linked with urban identity of in-situ urbanized residents. Because one's hukou status is closely associated with their social and economic status, part of their potential effects may be captured by hukou influence.

Model 3 displays the regression results on urban identity after the four health insurance schemes were added. As shown in Table 4, the relationship between rural health insurance (NRCMS) and urban identity is negative but not statistically significant. By comparison, two urban health insurance schemes and the newly integrated program are positive indicators of urban identity establishment. The sequence of the coefficients demonstrates that among the three schemes, participants in the Urban Employee Basic Medical Insurance scheme (UEBMI) are more likely to identify as urban, followed by participants in the Urban Resident Basic Medical Insurance scheme (URBMI) and then those in the Urban and Rural Resident Medical Insurance (URRMI). In particular, the membership of the Urban Employee Basic Medical Insurance (UEBMI) is associated with a 95 per cent ($e^{0.670}$) increased likelihood of urban identification than those uninsured. The comparison of the coefficients on

Table 4 Multi-level mixed effects models on urban identity and social insurance

	Model 1	Model 2	Model 3	Model 4
Individual-level variables				
Age (years)		-0.005	-0.006	-0.004
		(0.349)	(0.260)	(0.465)
Gender (ref. male)		-0.073	-0.062	-0.073
		(0.514)	(0.590)	(0.510)
Marital status (ref. unmarried)		-0.268*	-0.289**	-0.276**
		(0.062)	(0.043)	(0.040)
Education (ref. primary school or below)				
Middle school		0.171	0.141	0.153
		(0.186)	(0.280)	(0.227)
High school		-0.011	-0.091	-0.057
		(0.954)	(0.612)	(0.745)
College and above		0.334	0.175	0.210
		(0.275)	(0.545)	(0.470)
Occupation (ref. not professional)		0.269	0.236	0.266
		(0.114)	(0.177)	(0.111)
Household wealth		0.052	0.056	0.062
		(0.367)	(0.314)	(0.279)
Hukou (ref. rural hukou)				
Urban hukou		1.399***	1.089***	1.197***
		(0.000)	(0.000)	(0.000)
Jumin hukou		1.721***	1.437***	1.523***
		(0.000)	(0.000)	(0.000)
Cross-town migrants		0.006	0.024	-0.019
		(0.980)	(0.926)	(0.936)
Health insurance (ref. the uninsured)				
New Rural Cooperative Medical Scheme (NRCMS)			-0.079	
			(0.716)	
Urban Employee Basic Medical Insurance (UEBMI)			0.670***	
			(0.006)	
Urban Resident Basic Medical Insurance (URBMI)			0.559**	
			(0.017)	
Urban and Rural Resident Medical Insurance (URRMI)			0.448**	
			(0.050)	
Pension insurance (ref. the uninsured)				
New Rural Social Pension Scheme (NRSPS)				-0.585***
				(0.001)
Urban Employee Basic Pension Insurance (UEBPI)				0.341*
				(0.072)
Urban Resident Basic Pension Insurance (URBPI)				0.153
				(0.521)
Urban and Rural Resident Pension Insurance (URRPI)				0.067
				(0.754)
Township-level variables				
Urbanizing townships		0.687**	0.575*	0.694**
		(0.021)	(0.052)	(0.019)
In Pilot site		0.005	-0.007	-0.013

Table 4 (continued)

	Model 1	Model 2	Model 3	Model 4
Individual-level variables				
		(0.986)	(0.979)	(0.959)
Constants				
Constant cut1	0.903***	1.433***	1.296***	1.337***
	(0.000)	(0.002)	(0.005)	(0.002)
Constant cut2	1.228***	1.781***	1.648***	1.690***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant cut3	1.338***	1.899***	1.768***	1.810***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant cut4	2.187***	2.821***	2.701***	2.743***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant cut5	2.374***	3.024***	2.906***	2.948***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant cut6	2.556***	3.221***	3.104***	3.147***
	(0.000)	(0.000)	(0.000)	(0.000)
Random-effects Parameter				
Var (county/township)	1.268***	0.581***	0.519***	0.538***
	(0.000)	(0.002)	(0.002)	(0.002)
ICC	0.278	0.150	0.136	0.141
Observations				
Number of respondents	3,229	3,229	3,229	3,229
Number of county/townships	40	40	40	40
Prob > Chi^2	0.000	0.000	0.000	0.000
Log pseudolikelihood	-3199.181	-3080.222	-3062.112	-3059.462

Notes: Data were weighted. Coefficients are reported. Standard errors in parentheses. * $p<0.1$, ** $p<0.05$, *** $p<0.01$.

urban identity is further illustrated in Fig. 1. These findings confirm Hypothesis 2 and Hypothesis 3 regarding health insurance.

Model 4 includes pension insurance schemes in the multi-level regressions. Based on the results, rural pension insurance is significantly and negatively associated with urban identity. Among the four types of pension insurance, the enrollers of New Rural Social Pension Scheme (NRSPS) are 1.795 ($e^{-0.585}$) times less likely to build urban identity. The result reveals a lagging behind effect of rural insurance enrolment, which supports Hypothesis 1 regarding pension insurance. With respect to urban pension schemes, the Urban Employee Basic Pension Insurance (UEBPI) is positively associated with a 41 per cent ($e^{0.341}$) increased likelihood of urban identification than the uninsured. This finding reconfirms the positive contribution of a generous pension program on urban identity adoption. The parameter of another urban scheme, the Urban Resident Basic Pension Insurance (URBPI), is also positive but not statistically significant. In addition, the relationship between the Urban and Rural Resident Pension Insurance (URRPI) and identity outcome is positive, although the coefficient is not statistically significant. This is probably due to the slow implementation process of this new scheme. Owing to the unstable welfare packages and changeable institutional adjustments, its contribution to urban identification is still limited (Liu & Sun, 2016). The above findings partially confirm Hypothesis 2, showing that urban

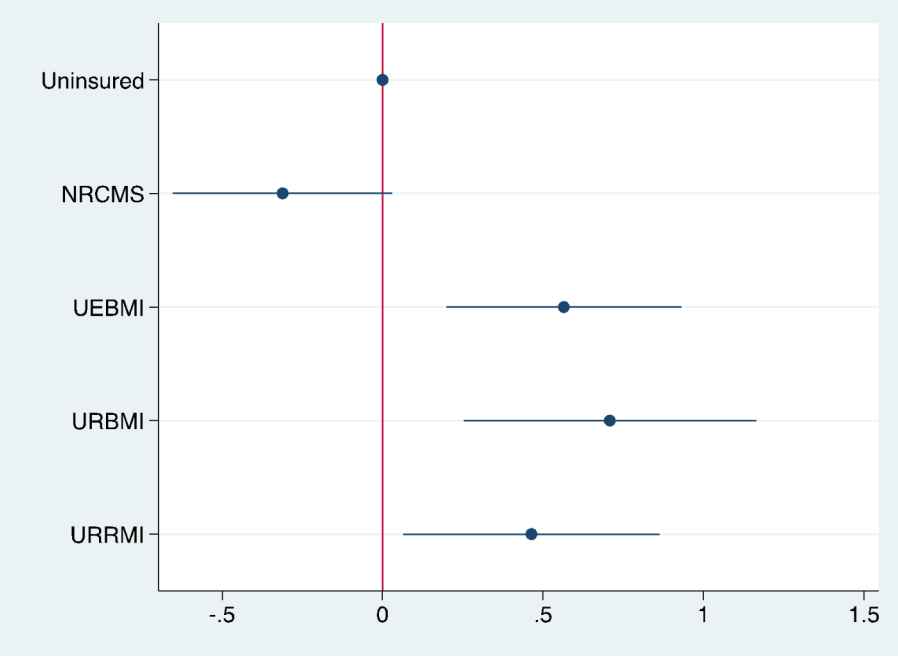

Fig. 1 Comparison of coefficients of health insurance on urban identity
Note: Uninsured=Uninsured by any type of medical insurance; NRCMS=New Rural Cooperative Medical Scheme; UEBMI=Urban Employee Basic Medical Insurance; URBMI=Urban Resident Basic Medical Insurance; URRMI=Urban and Rural Resident Medical Insurance.

pension inclusion will encourage urban identification. Fig. 2 shows the comparison of the coefficients of pension insurance on urban identification.

Subsample Analysis by Hukou Categories

Multi-level regressions by subgroups were further conducted to testify Hypothesis 4. The results reveal an effect variation of health insurance across the three hukou subgroups. As presented in Table 5, the positive relationship between the Urban Employee Basic Medical Insurance (UEBMI) only remains in the rural hukou group, indicating that rural hukou holders can benefit more from the positive effect of this scheme. On the other hand, the negative effect of the New Rural Cooperative Medical Scheme (NRCMS) is evident among the urban subsamples. The result exhibits that for urban hukou holders, they are still under the negative influence of rural insurance enrolment. These findings partially confirm Hypothesis 4 regarding health insurance.

The effect variation of pension insurance across the rural, urban, and jumin hukou subsamples are provided in Table 6. Other things being equal, two pension schemes appear to be significantly associated with urban identity. First, the New Rural Social Pension Scheme (NRSPS) is negatively associated with urban identity among rural and jumin group members. It is worth noting that the absolute value of the coefficient shown in jumin group ($\beta = -1.253$, $p < 0.1$) is two times larger than that of urban group

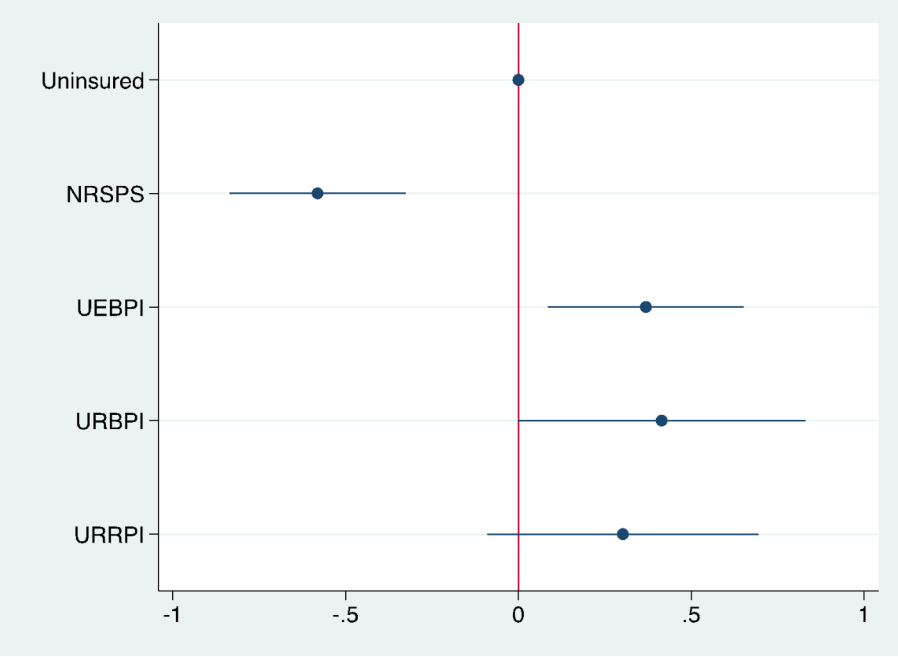

Fig. 2 Comparison of coefficients of pension insurance on urban identity
Note: Uninsured=Uninsured by any type of pension insurance; NRSPS=New Rural Social Pension Scheme; UEBPI=Urban Employee Basic Pension Insurance; URBPI=Urban Resident Basic Pension Insurance; URRPI=Urban and Rural Resident Pension Insurance.

Table 5 Multi-level mixed effects models on urban identity and health insurance by hukou subsamples

	Rural hukou	Urban hukou	Jumin hukou
New Rural Cooperative Medical Scheme (NRCMS)	-0.058	-0.679*	-1.065
	(0.266)	(0.386)	(0.648)
Urban Employee Basic Medical Insurance (UEBMI)	0.648**	0.571	-0.025
	(0.323)	(0.385)	(0.500)
Urban Resident Basic Medical Insurance (URBMI)	0.686	0.227	-0.123
	(0.431)	(0.666)	(0.325)
Urban and Rural Resident Medical Insurance (URRMI)	0.340	1.002	0.556
	(0.289)	(0.651)	(0.620)
Random-effects Parameter Var (county/township)	***	0.673	1.661
	(0.001)	(0.276)	(0.191)
Prob>Chi^2	0.000	0.000	0.004
ICC	0.164	0.170	0.335

Notes: Data were weighted. Individual and township level covariates were controlled in the model estimation. Coefficients are reported. Robust standard errors are in parentheses. * p<0.1, ** p<0.05, *** p<0.01.

(β = -0.569, p<0.001), which suggests jumin hukou holders can be more affected by the adverse impact of rural insurance. This is understandable by considering the gaps between low welfare provision of rural insurance and high expectations held by jumin hukou holders. The finding supports Hypothesis 4 regarding the stronger negative identity influence on non-rural hukou holders.

Table 6 Multi-level mixed effects models on urban identity and pension insurance by hukou subsamples

	Rural hukou	Urban hukou	Jumin hukou
New Rural Social Pension Scheme (NRSPS)	-0.569*** (0.187)	0.314 (1.142)	-1.253* (0.760)
Urban Employee Basic Pension Insurance (UEBPI)	0.246 (0.209)	0.482 (0.496)	0.300 (0.413)
Urban Resident Basic Pension Insurance (URBPI)	-0.027 (0.411)	-0.057 (0.650)	0.104 (0.284)
Urban and Rural Resident Pension Insurance (URRPI)	0.075 (0.220)	0.832** (0.423)	-1.257** (0.600)
Random-effects Parameter Var (county/township)	0.662*** (0.001)	0.959 (0.214)	1.598 (0.131)
Prob > Chi^2	0.000	0.000	0.000
ICC	0.168	0.226	0.327

Notes: Data were weighted. Individual and township level covariates were controlled in the model estimation. Coefficients are reported. Robust standard errors are in parentheses. * $p<0.1$, ** $p<0.05$, *** $p<0.01$.

Second, the effect of Urban and Rural Resident Pension Insurance (URRPI) is also shown among two subgroups and presents a divergent impact: there is a positive relationship with urban identity among urban hukou members, but a negative linkage for jumin hukou holders. The inconsistency can be understood from the following aspects. The consolidation of pension schemes is still in progress, and the provided annuity is temporarily low (Liu & Sun, 2016). Thus, similar to the previous rural program that fails to provide stable and adequate benefits, participating in the newly integrated pension scheme will lead to a negative impact on urban identity. This relationship is particularly manifested among the jumin hukou members who have higher welfare expectations (Cai, 2011; Kongshøj, 2017). Nonetheless, the positive effect shown in urban subgroup can still indicate the potential of the newly integrated program in promoting urban identification. Overall, these results confirm the moderation effect of pension insurance and hukou status on urban identity and partially confirm Hypothesis 4.

Robustness Checks

The findings survive several robustness checks. First, we compared the model fit of ordered logistic regression and multi-level ordinal logistic regression. The results show that multi-level regression achieved better model fit with lower values of AIC and BIC. Second, alternative measures of township-level variables were controlled, taking into account the fixed effects of urbanization paths in different regions. Third, respondents who are double covered were excluded from the model estimations. The number of respondents was reduced from 3,229 to 3,043, but the statistical results remained largely unchanged. Lastly, respondents who are cross-town migrants were excluded from the model estimations and the results remained stable. The full results of robustness checks can be available upon request.

Conclusion and Discussion

Although previous studies have speculated about the connection between social insurance and urban identity, they provide little empirical evidence of such a link. Drawing data from the 2018 Urbanization and Quality of Life Survey, this study answers how social insurance is associated with one's sense of identity. The regression results show that enrolling in urban health insurance programs, such as the Urban Employee Basic Medical Insurance (UEBMI), is positively associated with urban identity, whereas participating in the New Rural Social Pension Scheme (NRSPS) scheme is negatively associated with urban identity. Hypothesis 1 regarding pension insurance and Hypothesis 2 regarding health insurance are confirmed, respectively. The Urban and Rural Resident Medical Insurance (URRMI) is also linked with significantly higher urban identity, which partially supports Hypothesis 3.

The subsample analysis further reveals that the positive relationship between the Urban Employee Basic Medical Insurance (UEBMI) and urban identity is the strongest for rural hukou holders, whereas the negative relationship between the New Rural Cooperative Medical Scheme (NRCMS) and urban identity is the strongest for urban hukou holders. For the newly integrated health insurance, no significant difference is observed across the three hukou groups; however, the newly integrated program of pension insurance shows a strong and positive association with urban identity for urban hukou holders and a strong and negative association with urban identity for jumin hukou holders. These results may well indicate that although the integration of the pension insurance schemes has been implemented, the actual pension funds have not been adjusted to the urban levels (Liu & Sun, 2016). Therefore, it still shows a negative impact particularly among the jumin hukou holders, whose welfare expectations are higher. We also find evidence regarding the negative effect of New Rural Social Pension Scheme (NRSPS) among two subgroups. In particular, the greater impact among jumin hukou subgroup confirms that non-rural hukou holders are more subject to the lagging behind impact of rural insurance. Hypothesis 4 is also partially supported.

This research is embedded in a broad literature that concerns the institutional factors of urban identification. The research contribution to the literature is threefold. First, the concept of urban identity is central to understanding the urban adaption experience of in-situ urbanized residents (Yue et al., 2020). Focusing on this specific group, the present study is among the first to comprehensively evaluate the efficacy of the current health and pension insurance schemes in shaping urban identity in China. Second, supported by urban identity theory, the observed negative relationship between rural insurance and urban identity indicates that institutional border shaped by the rural-urban gaps in social insurance has been an "invisible wall" for urban identification. As recent studies point out that the restrictions surrounding the hukou system have been loosening (Cheng et al., 2014), this article further explores the specific role of social insurance on urban identity establishment. Last but not the least, the moderation effect illustrates how the relationship between social insurance and urban identity can be affected by the welfare expectations held by different hukou holders, which should not be neglected when interpreting individuals' urban identity in future studies.

From the policy perspective, this study demonstrates an urgent need for social insurance unification in urbanizing China. Previous research has documented the emotional and social consequences of identity integration, among which it has been found that the adoption of urban identity is associated with positive feelings of coherence, life satisfaction, and bonds with residence place (Hidalgo & Hernandez, 2001; Lewicka, 2011). For in-situ urbanized residents, urban identity adoption not only meets the goal of people-oriented urbanization but also reflects a high quality of urban life. Our descriptive results show that the current insurance reform falls behind the pace of in-situ urbanization. The remaining urban insurance exclusion will not only cause the disadvantaged welfare status of in-situ urbanized residents but act as an institutional barrier when they build an identity bond with the city. As China is planning to further promote urbanization, more policy attention should be paid to extending urban insurance coverage, increasing the level of actual benefits for the participants, and eventually improving their quality of life as real urbanites (Chen, 2017). Our results suggest that hukou conversion can hardly become a guarantee of urban identification; instead, non-rural hukou holders can be more subject to the negative impact of rural insurance membership. Informed by these findings, China's ongoing hukou reform should be processed with timely welfare improvement. As a long-term plan to eventually ameliorate institutional disparities in welfare arrangements in newly urbanized cities, future reform also requires more effective integration of existing social insurance schemes, especially considering the national unified program has much room for improvement. Additionally, the varied conditions and expectations of different hukou holders should not be neglected by local governments in policy design.

As we conclude, a few shortcomings of the present study should be noted and addressed in future research. First, the ability to draw causal inferences is limited because of the use of cross-sectional data. Longitudinal research with a richer set of theoretically relevant measures is needed to better understand the identity outcome of social insurance. Second, given the small subsample size of URRPI participants, the relationship regarding this program should be interpreted with caution. Third, existing studies on urban identity also suggest that transformation from rural to urban identity is not straightforward; rather, it is an ongoing and complicated process (Bernardo & Palma-Oliveira, 2016). Thus, based on the findings of this study, future research employing longitudinal data could further explore how social insurance plays a role during the dynamic process.

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Declarations

Conflict of interest The authors declare no conflicts of interest.

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