



# Urban integration of land-deprived households in China: Quality of living and social welfare

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## ABSTRACT

This study finds that the land-deprived households who have migrated from rural to urban areas (the land-deprived urban households) in all regions of China are not well integrated into urban society, which is reflected by their lower quality of living and inferior social welfare compared to normal urban households. However, we find an anomaly that land-deprived urban households, compared to the normal urban households, have lower quality of living and lower participation rate in urban social security, but have similar level of self-evaluated happiness. This anomaly can be explained by the fact that the land-deprived urban households self-select into inferior communities with neighbors of similar living and social conditions, and their happiness and social utility depend more on their status relative to their neighbors than on their status relative to the whole urban society. In addition, this study finds that land acquisition raises the quality of living and social welfare of the land-deprived households, migrating into urban areas does not improve their quality of living or social welfare, but better education and younger age facilitate their integration into urban society.

## 1. Introduction

Social integration has always been a heat topic. It is a process that new resident groups are assimilated and incorporated into another society/community (Alba and Nee, 1997). Social integration/segregation can happen in various forms with different social and institutional backgrounds, such as racial integration/segregation and urban integration/segregation (Dustmann, 1996; Sethi and Somanathan, 2004; Semyonov and Glikman, 2009; Ye, 2014; Angelini et al., 2015; Bezin and Moizeau, 2017). Social integration in the urban area, which we call urban integration, is of great importance for urban development. Henning and Lieber (1996) shows that integration between different social groups can improve individuals' socioeconomic opportunities and thus help develop sense of security and belonging of all the individuals. Ghiglini and Nocco (2017) shows that the level of social integration within the suburban areas of a city and the level of the city's economic

integration with other cities are crucial in determining the size of the city. Besides the potential negative impacts of segregation on overall social welfare, an urban minority group segregated in poor communities may create their own "culture of poverty" which diverts themselves from the mainstream social cultural behavior and makes them remain in poverty (Bezin and Moizeau, 2017; Corrigan et al., 2018). This is exactly happening to the land-deprived households in China.

The land-deprived households are a specific group of migrants. To support rapid urbanization and industrialization, China has transferred a large amount of rural lands into urban uses, forcing land-deprived households<sup>1</sup> to migrate to urban areas. But the Chinese government did not give them urban HuKou or sufficient social security coverage. The accumulated number of land-deprived rural residents between 2003 and 2017 in Zhejiang Province of China is around 4,255.2 thousand and the number accounts for 11.06 % of the province's total urban population in 2017<sup>2</sup>. The land property right of rural residents is not well

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<sup>1</sup> We define the land-deprived households as those households who originally stay(ed) in the rural areas and whose rural lands have been acquired by the governments.

<sup>2</sup> The number of land-deprived rural residents in Zhejiang Province is estimated by the authors:  $\text{number of land-deprived rural residents in a certain year} = \text{Decrease in Cultivated Lands (proxy for lands transferred to urban use)} / \text{Total cultivated lands at the beginning of the year} * \text{Total rural population}$ . The data are from "China Land and Resources Statistical Yearbook" and "Statistical Yearbook of China".

protected (Wu et al., 2018) and compensation to rural residents for land acquisition is often inadequate, which makes the land acquisition process a subsidy from the rural to the urban (Zhao et al., 2019). Moreover, the land-deprived households from the rural to the urban have inferior social security, cultural life, psychological acceptance, self-identity compared to the urban residents, which contributes mainly to their urban social isolation (Chen, 2019).

Because of limited availability of nation-wide microdata, the urban integration of the land-deprived households in China is insufficiently studied (Xie, 2012; Yang, 2015), most studies on urban integration of land-deprived households overlook investigating the counterfactual outcomes of a land-deprived household if it does not migrate to the urban area or if its land is not acquired (Lee and Yu, 2011; Xie, 2012; Yang, 2015). Also, China has great number of rural households with land-deprived experience, there were little study to evaluate the degree of integration of those households from micro perspective, we still have limited knowledge about the life quality improvement of those households after migrant to urban areas. Besides, many studies have demonstrated the new migrants tend to self-select into inferior communities due to stratified housing prices and urban local residents' voting by feet (Massey, 1979; Zhang and Yang, 2017; Leccis, 2019; Cheshire et al., 2019). It has not been investigated whether new migrants have stronger psychological attachment to the inferior communities given there are strong theoretical and indirect empirical evidences supporting this argument (Duflo and Saez, 2002; Bursztyn, 2014).

In order to fully understand the process of urbanization and social integration of land-deprived households, this paper tries to answer the following research questions: Firstly, for these land-deprived households who have migrated to urban areas, whether have they well integrated into the urban society, is there any regional heterogeneity and how to improve their integration? Secondly, does it improve the quality of living and social welfare of the land-deprived households if they migrate from the rural to urban areas? Thirdly, does land acquisition raises the quality of living and social welfare of the land-deprived households? Last but not least, does staying in inferior areas raise the happiness of the land-deprived households?

In this paper, we employ nation-wide household survey to study these questions, we use household consumption, household income and proportion of food consumption in total household consumption to measure a household's quality of living. We use participation in urban pension, participation in urban medical insurance, household health and self-evaluated happiness to measure a household's social welfare level. Then, we use the difference between quality of living and social welfare of land-deprived households from that of normal urban households to reflect the urban integration of the land-deprived households. We have reached the following findings. Firstly, the land-deprived households who have migrated to urban areas have not well integrated into the urban society. They have lower quality of living and lower social welfare in terms of participation in social securities comparing to the normal urban households. But they have similar level of health conditions and happiness to the normal urban households. Better education can generally improve their quality of living and social welfare and thus urban integration. Secondly, younger and better educated land-deprived households can better integrate into the urban life and society, but there is no regional heterogeneity in terms of their urban integration. Thirdly, the land-deprived households who have migrated to urban areas stay in inferior urban communities, and their quality of living and social welfare are similar to their neighboring households but substantially lower compared to other urban communities. Fourthly, land acquisition raises the quality of living and social welfare of the land-deprived households. However, migrating into urban areas does not improve their quality of living or social welfare.

The rest of the paper is structured as follows. Section 2 provides literature review; Section 3 details data sources and variable selection; Section 4 elaborates our empirical design; Section 5 presents the empirical results; Section 6 concludes the paper.

## 2. Literature review

This study is related to the literature on social integration (Dustmann, 1996; Sethi and Somanathan, 2004; Semyonov and Glikman, 2009; Ye, 2014; Angelini et al., 2015; Bezin and Moizeau, 2017; Ghiglini and Nocco, 2017; Leccis, 2019). Differently, it studies the urban integration of the land-deprived households in the China context and we investigate their urban integration from the perspectives of quality of living and social welfare.

### 2.1. Land-deprived households' urban integration in China

Many aspects of factors influence quality of living and social welfares of rural households after land acquisition in China. They include household's individual characters like education and family structure (Su, 2017), government's methods of land acquisition implementation such as low information transparency and insufficient democracy (Lee and Yu, 2011; Shi et al., 2011) and the improper compensation policy like lack of employment assistance for the land-deprived households (Lee and Yu, 2011). In addition, compensation for land acquisition is insufficient in China. It makes the land-deprived households unable to invest sufficiently in health, which reduces their health level, quality of living and happiness (Qin et al., 2011).

Most of the studies on urban integration of land-deprived households (Lee and Yu, 2011; Xie, 2012; Yang, 2015) overlook the counterfactual outcomes of a land-deprived household if it does not migrate to the urban area or if its land is not acquired. Without getting these issues clear, it will be difficult to understand why the land-deprived households migrate to the urban areas if they have low urban integration, and it will be difficult to find proper methods to promote the land-deprived households' urban integration or overall welfare.

### 2.2. Factors influencing urban integration

Due to rapid urbanization, urban villages (which is composed of declined communities in the central areas of a city) in China have gradually become populated areas dominated by migrants (Wu et al., 2011), which forms urban segregation.

The urban integration/segregation issues in China share many similar mechanisms as that studied in other economies. In addition to the household and demographic characteristics like income, education, employment and access to social security (Dustmann, 1996; Meng and Deng, 2011; Qin et al., 2011; Xie, 2012; Ye, 2014; Angelini et al., 2015), there are a lot of discussion on the effects of social interaction in communities (Semyonov et al., 2009). In China, it is the major driver of urban integration of the rural migrants by interaction with their urban neighbors, and the rural migrants and their urban neighbors interact more in communities where there are more community welfare facilities and proper physical facilities like provisional shelters provide opportunities for more interaction (Teck-Hong, 2012; Wang et al., 2016; Liu et al., 2019).

While it is true that beneficial community environment can enhance the urban integration of a migrant household, it is more likely that the migrant household starts their urban life in inferior communities (Massey, 1979). Causes of such a dilemma include two aspects. Firstly, the stratified housing prices make the new migrants who are mostly the low-income to self-select into the inferior communities (Zhang and Yang, 2017; Leccis, 2019). Secondly, the normal urban households will leave the community where low-income migrants gather. Cheshire et al. (2019) believes that, in China, people's lives are affected by their neighbors. In the advent of socio-structural processes of urban policy and change, such as gentrification and densification, the taken-for-granted conventions that once regulated neighbor interactions are being eroded, potentially leading to greater levels of neighboring problems and complaints. On the basis of the externality of the community, it is explained that when there are too many rural HuKou households,

normal urban households will increase their exclusion from the community and choose to move out of the community. This process of change also encourages rural HuKou households to gather in inferior communities and form community isolation.

### 2.3. New migrants self-select into inferior communities

We argue that the new migrants may also have stronger psychological attachment to the inferior communities where residents have closer income and culture backgrounds to the new migrants. The discussion in Section 2.2 helps justify the government's efforts to implement gentrification and revitalization to boost the inferior communities, by demonstrating that the new migrants tend to stay in inferior communities which hinders their urban integration (Zhang and Yang, 2017; Cheshire et al., 2019). These studies argue that the new migrants are forced into the inferior communities mainly due to their low income and wealth. However, evidences show that the new migrants may have emotional incentives to stay in inferior communities. For example, Wang et al. (2016) finds that the declined and outdated communities with facilities including courtyard housing and provisional shelters can better boost the interaction and the migrants with locals and thus facilitate their integration into the community. Yan et al. (2016) finds that migrant workers living in the communities with more neighbors of similar social status tend to have higher happiness.

Our argument can be explained by the peer effect and reference dependence utility theory. Bursztyn (2014) establishes two channels to explain peer effect. It finds that the second investors will be more likely to follow the decision of the first investor if the second investor is less financially sophisticated and the first investor is more financially sophisticated, that is, the learning effect. A peer's possession of the asset affects others' utility of owning the same asset, that is the social utility. For example, the stock-market participation is influenced by social interaction. In their model, any given "social" investor finds the market more attractive when more of his peers participate (Hong and Gu, 2005). Duflo and Saez (2002) shows that peer effect is an important determination of savings decisions. They use individual data from employees of a large university to study whether individual decisions to enroll in a Tax Deferred Account plan sponsored by the university, and the choice of the mutual fund vendor for people who choose to enroll, are affected by the decisions of other employees in the same department. Their results suggest that peer effects may be an important determinant of savings decisions. In addition, Zhu et al. (2019) shows that the land-deprived households have higher satisfaction with the land compensation if their compensation is similar to or even better than that of their relatives and neighbors.

While existing studies have not directly demonstrated whether new migrants have stronger psychological attachment to the inferior communities, it is important to get this point clear before the government can take proper policies to facilitate their urban integration. Existing evidences show that the migrant worker's urban integration is still insufficient. For example, Tian (2017) finds that the economic and social status of migrant workers in the last ten years decline, which indicates that urban social integration of migrant workers cannot be realized by the market but needs government intervention.

### 2.4. A short summary of gaps

The integration of the land-deprived households in China is a specific topic in the Chinese background. This study will contribute to the understandings on general urban and social integration literature and contribute to the two aspects which have not been sufficiently studied. Firstly, most of the studies on urban integration of land-deprived households overlook investigating the counterfactual outcomes of a land-deprived household if it does not migrate to the urban area or if its land is not acquired. Secondly, while existing studies have not directly demonstrated our argument whether new migrants have stronger

psychological attachment to the inferior communities given there are strong theoretical and indirect empirical evidences supporting this argument.

## 3. Data and variable selection

### 3.1. Data

Our research adopts data from Chinese Household Finance Survey 2015 (CHFS). The data are collected by the Chinese Household Finance Research Center of Southwestern University of Finance and Economics. The dataset is representative of Chinese households due to its stratified random sampling design. The sampling has three steps: 1) for the sample year 2015 we use, it randomly chooses 350 counties; 2) it randomly chooses four communities within each county; 3) households from communities are randomly selected, 25–50 households are selected in each urban community, and 20 households are selected in each rural community. The survey in 2015 covers 29 provinces, around 200 cities, 350 counties, 1390 communities, 37,000 households and 140,000 individuals. This survey is representative and can fulfill the purpose of this study. It has acquired information about household demographics, income, consumption and social security. It also has detailed information about household assets such as housing and deposits. Moreover, it also collects information on history of land acquisition of each household.

Using the CHFS dataset, we construct five samples. The first sample is called the land-deprived sample, and it includes all households that have experienced land acquisition<sup>3</sup>. Some of the land-deprived households remaining in the rural counties, which are called as land-deprived rural households (LDUS = 0). The others have migrated to urban areas, which are taken as land-deprived urban households (LDUS = 1). The two sub samples will be compared to estimate the impacts of choice to stay in rural or urban areas on qualities of living and social welfare.

HuKou is a residential and social status for a Chinese resident. A Chinese must register his HuKou in a certain county or district either as Rural HuKou or Urban HuKou. A Chinese with Rural HuKou means he is only able to live legally in a certain rural area where he could enjoy rural social securities and public services. The rural social securities and public services are much inferior than those in the urban areas. However, a rural HuKou resident usually is assigned by government the right to use some farming and residential lands in the rural area, and these lands are not allowed to be transacted in the market. Land acquisition in China happens commonly during urbanization process. During the process, a local government acquires lands from the rural residents forcibly and provides certain amount of compensation. Most land-deprived rural residents are still registered as Rural Hukou but have to leave their lands and work in other industries either in the rural areas or in urban areas.

The second sample is called the urban sample, we include all households that are staying in the urban areas. It includes two sub samples. One is the land-deprived households who have migrated to the urban areas, the land-deprived urban households (LDUS1 = 1); the other is the normal Urban households (LDUS1 = 0) who have urban HuKou and have not experienced rural land acquisition. This sample is constructed for evaluating the quality of living and happiness of land-deprived urban households compared to other normal urban households.

In the third sample, the land-deprived urban community sample, we include all households of communities where there is at least one land-

<sup>3</sup> All these households which have experienced land acquisition are Rural HuKou households in our samples. We take a household as a Rural HuKou household if the household head is registered with Rural HuKou, otherwise the household is regarded as an Urban HuKou household.

deprived household. It includes two sub samples. One is the land-deprived households who have migrated to the urban areas, the land-deprived urban households (LDUS2 = 1); the other is the normal urban households staying in the same communities as those land-deprived urban households (LDUS2 = 0). This sample is constructed for evaluating the quality of living and happiness of land-deprived urban households compared to other normal urban households in the same communities.

In the fourth sample, the urban community sample, we include all households that are staying in the urban areas. It includes two sub samples. One is the households in the communities where there are at least one land-deprived households, the land-deprived urban community households (LDUC= 1); the other is the households in communities without land-deprived households, called upper urban community households (LDUC= 0). This sample is constructed for evaluating the quality of living and happiness of communities where land-deprived urban households are staying compared to other urban communities.

In the fifth sample, the rural sample, we include all households that are staying in the rural areas. It includes two sub samples. One is the land-deprived households who remain in the rural areas, the land-deprived rural households (LDRS= 1); the other is the rural households in the rural areas that have not experienced land acquisition, called non land-deprived rural households (LDRS= 0). This sample is constructed for evaluating the quality of living and happiness of land-deprived households who remain in rural areas compared to other rural households.<sup>4</sup>

### 3.2. Variable selection

The variables are selected following the existing studies. [Betti et al. \(2016\)](#) measures quality of living using a multidimensional framework preferably inclusive of objective and subjective indicators. Objective indicators are expressed as monetary aspects of living quality, such as household income and expenditure, and the ratio of food, clothing, housing and transportation costs in total household consumption. Subjective indicators such as community environment and neighborhood interaction are regarded as non-monetary aspects of living quality.

[Wen and Wallace \(2019\)](#) explores the factors that influence migrant workers' social welfare. These factors include home ownership, urban social insurance (urban pensions, local health insurance, unemployment insurance, work injury compensation, maternity insurance, housing provident fund), household characteristics (age of household head, household size, education of adults, mean household income), employment, urban or rural ties and settlement. They find that, to improve social welfare of China's rural migrant households in urban areas, it is of great importance to provide them with urban social insurance and urban pension. [Chen et al. \(2015\)](#) examine the effects of having a labour contract on a series of employee outcomes such as wages, working hours, social insurance coverage, and subjective well-being. They find that having labour contract has larger effects for urban workers than for migrant workers on receipt of better social benefits, subjective well-being and wages, but not for hour-based workers.

In this paper, we measure the land-deprived households' urban integration by comparing the quality of living and social welfare of land-deprived households in urban areas to that of normal urban households. [Chen \(2019\)](#) measures social integration using economic factors (such as "absolute income", "relative income", "social security"), behavioral factors (whether participate in any cultural activities), psychological

<sup>4</sup> We have also compared the difference in quality of life and social welfare between normal urban households with urban hukou and those urban households (non-land deprived rural households who have migrated to urban areas) with rural hukou. In order to make the discussion focused, we didn't report the regression results.

interaction (between local urban residents and migrants). [Visser et al. \(2017\)](#) sets up the dimensions of social inclusion, from the aspects of health care system, opportunities for citizenship, interactions with the crime justice system, interactions with financial institutions, inclusion into civil society/community, interactions with community settings, interactions with community settings, interactions with community members and actors, interactions with civil society organizations, associational ties and organizational activities, intragroup ties and organizational activities, associational ties and organizational activities, intra-group interactions with other day laborers.

Other variables are defined as follows. *Total consumption* is the total amount of consumption of a household for the year of 2015, and it includes consumption of food, clothing, living expenditure, housing maintenance and transportation. *Food ratio* is the proportion of food consumption in a household's total consumption expenditure. *Land compensation* is the amount of compensation for land acquisition, in 10,000 CNY. *Acquisition year* represents the number of years since land acquisition until 2015. *Head age* is the age of household head<sup>5</sup>. *Schooling* is number of years of schooling of the household head, which is used to proxy the education level of the household. *Sickness* is a dummy variable to indicate health condition of a household head which indirectly measures the health condition of the whole household. It takes the value of 1 if the household head is in bad health condition, otherwise it equals 0. *Household Size* is measured by the number of household members;  $\text{Log}(\text{Total income})$  is the total amount of household income in logarithm form, which contains household salary income, business income, equity income, transfer income and other income. *Party membership* is a dummy variable used to indicate the social connection of a household, it equals 1 if the household head has Communist Party membership, otherwise it equals 0. *Urban pension* is a dummy variable which equals 1 if the household head has urban pension, otherwise it equals 0. *Urban insurance* is a dummy variable which equals 1 if the household head has urban medical insurance, otherwise it equals 0. *Happiness* is a dummy variable which equals 1 if the household head feels happy about his life, otherwise it equals 0. It is used to indicate the happiness of the household.

[Table 1](#) presents the summary statistics of important variables for the 5 different samples. In the land-deprived sample (Panel A), the quality of living of the land-deprived urban households (LDUS = 1) is generally higher than that of the land-deprived rural households (LDUS = 0), with higher average total consumption, income and lower proportion of food consumption in total consumption. In terms of social welfare the land-deprived urban households have higher participation rates in urban pension and urban medical insurance, better health but lower self-evaluated happiness. Panel A shows that the land-deprived urban households have higher quality of living and social welfare except that they have lower happiness compared to the land-deprived rural households.

In the urban sample (Panel B), the quality of living of the land-deprived urban households (LDUS1 = 1) is generally lower than that of normal urban households (LDUS1 = 0), with lower average total consumption, income and food consumption ratio. In terms of social welfare, land-deprived urban households have substantially lower participation rates in urban pension and urban medical insurance, lower self-evaluated happiness but similar level of health compared to normal urban households. Panel B shows that the land-deprived urban households have lower quality of living and social welfare compared to normal urban households.

In the land-deprived urban community sample (Panel C), it shows that the land-deprived urban households (LDUS2 = 1) generally have

<sup>5</sup> Household head is defined as household member who is in charge of the household and makes the final decisions regarding household affairs. In the survey, we have a question asks household members to name the household head.

**Table 1**  
Summary statistics of key variables.

		Panel A: Land-deprived sample						Panel B: Urban sample					
		LDUS = 1			LDUS = 0			LDUS1 = 1			LDUS1 = 0		
		Obs	Mean	Std.Dev	Obs	Mean	Std.Dev	Obs	Mean	Std.Dev	Obs	Mean	Std.Dev
Quality of Living	Log(Total consumption)	1531	10.688	0.854	1046	10.241	0.917	1531	10.688	0.854	15,543	10.845	0.751
	Food ratio	1526	0.415	0.193	1043	0.454	0.215	1526	0.415	0.193	15,508	0.45	0.194
	Log(Total income)	1454	10.427	1.549	973	10.018	1.592	1454	10.427	1.549	14,957	10.997	1.173
Social Welfares	Urban pension	1531	0.167	0.373	1046	0.072	0.258	1531	0.167	0.373	15,544	0.807	0.395
	Urban insurance	1531	0.131	0.337	1046	0.036	0.185	1531	0.131	0.337	15,544	0.761	0.427
	Sickness	1531	0.351	0.477	1046	0.445	0.497	1531	0.351	0.477	15,544	0.392	0.488
Other Explanatory Variables	Happiness	1531	0.566	0.496	1046	0.588	0.492	1531	0.566	0.496	15,544	0.65	0.477
	Schooling	1531	8.41	3.559	1046	7.193	3.488	1531	8.41	3.559	15,544	11.492	3.88
	Head age	1531	50.062	14.374	1046	55.021	12.524	1531	50.062	14.374	15,544	52.802	15.249
	Own house	1531	0.88	0.325	1046	0.948	0.222	1531	0.88	0.325	15,544	0.899	0.301
	Debt	1531	0.338	0.473	1046	0.312	0.464	1531	0.338	0.473	15,544	0.275	0.446
	Household size	1530	3.716	1.634	1046	3.805	1.902	1530	3.716	1.634	15,543	3.01	1.3
	Party membership	1531	0.416	0.493	1046	0.392	0.488	1531	0.416	0.493	15,544	0.434	0.496
	Land compensation	230	3.995	8.675	177	5.189	10.76	230	3.995	8.675	-	-	-
	Acquisition year	1192	5.836	4.549	863	4.939	4.124	1192	5.836	4.549	-	-	-

  

		Panel C: Land-deprived urban community sample						Panel D: Urban community sample					
		LDUS2 = 1			LDUS2 = 0			LDUC = 1			LDUC = 0		
		Obs	Mean	Std.Dev	Obs	Mean	Std.Dev	Obs	Mean	Std.Dev	Obs	Mean	Std.Dev
Quality of Living	Log(Total consumption)	1531	10.688	0.854	5887	10.858	0.775	7418	10.833	0.79	9656	10.835	0.733
	Food ratio	1526	0.415	0.193	5871	0.437	0.192	7397	0.434	0.192	9637	0.459	0.194
	Log(Total income)	1454	10.427	1.549	5639	10.989	1.221	7093	10.905	1.29	9318	11.003	1.138
Social Welfares	Urban pension	1531	0.167	0.373	5887	0.785	0.411	7418	0.693	0.461	9657	0.822	0.383
	Urban insurance	1531	0.131	0.337	5887	0.75	0.433	7418	0.657	0.475	9657	0.769	0.422
	Sickness	1531	0.351	0.477	5887	0.363	0.481	7418	0.361	0.48	9657	0.412	0.492
Other Explanatory Variables	Happiness	1531	0.566	0.496	5887	0.646	0.478	7418	0.634	0.482	9657	0.652	0.476
	Head age	1531	50.062	14.374	5887	51.658	15.184	7418	51.42	15.076	9657	53.603	15.244
	Schooling	1531	8.41	3.559	5887	11.466	3.883	7418	11.01	3.988	9657	11.509	3.878
	Own house	1531	0.88	0.325	5887	0.908	0.289	7418	0.904	0.295	9657	0.892	0.31
	Debt	1531	0.338	0.473	5887	0.301	0.459	7418	0.307	0.461	9657	0.257	0.437
	Household size	1530	3.716	1.634	5887	3.089	1.351	7417	3.182	1.414	9656	2.955	1.261
	Party membership	1531	0.416	0.493	5887	0.435	0.496	7418	0.432	0.495	9657	0.433	0.495
	Land compensation	230	3.995	8.675	-	-	-	316	3.841	9.634	-	-	-
	Acquisition year	1192	5.836	4.549	-	-	-	1192	5.836	4.549	-	-	-

  

		Panel E: Rural sample					
		LDRS = 1			LDRS = 0		
		Obs	Mean	Std.Dev	Obs	Mean	Std.Dev
Quality of Living	Log(Total consumption)	1046	10.241	0.917	10,025	10.034	0.911
	Food ratio	1043	0.454	0.215	9974	0.449	0.213
	Log(Total income)	973	10.018	1.592	9183	9.558	1.629
Social Welfares	Urban pension	1046	0.072	0.258	10,025	0.029	0.167
	Urban insurance	1046	0.036	0.185	10,025	0.017	0.128
	Sickness	1046	0.445	0.497	10,025	0.45	0.498
Other Explanatory Variables	Happiness	1046	0.588	0.492	10,025	0.564	0.496
	Head age	1046	55.021	12.524	10,025	56.076	12.475
	Schooling	1046	7.193	3.488	10,025	6.79	3.388
	Own house	1046	0.948	0.222	10,025	0.958	0.201
	Debt	1046	0.312	0.464	10,025	0.339	0.473
	Household size	1046	3.805	1.902	10,025	3.898	1.948
	Party membership	1046	0.392	0.488	10,025	0.347	0.476
	Land compensation	177	5.189	10.76	-	-	-
	Acquisition year	863	4.939	4.124	-	-	-

lower quality of living and lower social welfare compared to normal urban households staying in the same communities as those land-deprived urban households (LDUS2 = 0). In the urban community sample (Panel D), it shows that the land-deprived urban community households (LDUC = 1) generally have lower quality of living and lower social welfare compared to upper urban community households (LDUC = 0). In the rural sample (Panel E), it shows that the land-deprived rural households (LDRS = 1) generally have higher quality of living and higher social welfare compared to non land-deprived rural households

(LDRS = 0).

Table 1 shows that land acquisition generally raises rural households' quality of living and social welfare. The land-deprived urban households have higher quality of living and social welfare except that they have lower happiness compared to land-deprived rural households. In addition, compared to normal urban households, the land-deprived urban households generally have lower quality of living, lower social welfare and are staying in inferior communities.

#### 4. Empirical design

In Section 4, we provide empirical designs for investigating the quality of living and social welfare of different households. For testing different households' quality of living, we construct Model 1 which is estimated using Ordinal Least Square.

$$y_i = \beta_0 + \beta_1 Var_i + \beta_2 Var_i \times schooling_i + \beta X + \Sigma city + u_i \quad (1)$$

In Model 1,  $y_i$  is the dependent variable and represents a series of outcome variables which measure the quality of living of household  $i$ . We use total household consumption ( $Log(Total\ consumption)$ ), the proportion of food consumption in a household's total consumption ( $Food\ ratio$ ) and total household income ( $Log(Total\ income)$ ) to proxy for a household's quality of living. We will estimate Model 1 using each of the above dependent variables separately.

$Var_i$  is our key explanatory variable and is set to be different for different data samples. For the land-deprived sample (as described in Panel A of Table 1), the  $Var_i$  is set to be  $LDUS_i$ . Its coefficient  $\beta_1$  measures the difference in quality of living of a land-deprived urban household compared to a land-deprived rural household. In order to discuss the heterogeneity of land-deprived households and to investigate whether education can influence the gaps in quality of living of the two household groups, we also include the interaction term  $Var_i \times schooling_i$ . The variable  $schooling$  measures a household head's numbers of years of schooling, which is used to proxy for education level of the household.  $\beta_2$  is the coefficient of the interaction term and it measures the difference in quality of living between the two groups of households associated with their level of education.

Similarly, for the urban sample (as described in Panel B of Table 1), the  $Var_i$  is set to be  $LDUS1_i$ . Its coefficient  $\beta_1$  measures the gap in quality of living of land-deprived urban households compared to normal urban households. For the land-deprived urban community sample (as described in Panel C of Table 1), the  $Var_i$  is set to be  $LDUS2_i$ . Its coefficient  $\beta_1$  measures the difference in quality of living of land-deprived urban compared to normal urban households staying in the same communities as those land-deprived urban households. For the urban community sample (as described in Panel D of Table 1), the  $Var_i$  is set to be  $LDUC_i$ . Its coefficient  $\beta_1$  measures the difference in quality of living of the land-deprived urban community households compared to upper urban community households. For the rural sample (as described in Panel E of Table 1), the  $Var_i$  is set to be  $LDRS_i$ . Its coefficient  $\beta_1$  measures the difference in quality of living of land-deprived rural households compared to non land-deprived rural households. In addition,  $\beta_2$  is the coefficient for the interaction term  $Var_i \times schooling_i$ , and it measures the influence of education on the gap in quality of living between the two groups of households in each sample.

$X$  is a vector of control variables that includes household's demographics information including *Schooling*, *Head age*, *Sickness*, *Own house*, *Debt*, *Household size*, *Party membership*, *Work status* and *Log(Total income)*. *Log(Total income)* will not be included when dependent variable is household income. We also include city dummies to rule out city-level specific fixed effects.

For testing different households' social welfare, we construct a linear probability model as follows.

$$L_i = \beta_0 + \beta_1 Var_i + \beta_2 Var_i \times schooling_i + \beta X + \Sigma city + u_i \quad (2)$$

In Model 2,  $L_i$  is the dependent variable and represents a series of outcome variables which measure the social welfare of household  $i$ . We use household head's urban pension participation (*Urban pension*), household head's urban medical insurance participation (*Urban insurance*), household head's self-evaluated sickness (*Sickness*) and household head's self-evaluated happiness (*Happiness*) to proxy for household social welfare. We will estimate Model 2 using each of the above dependent variables separately.

$Var_i$  is our key explanatory variable and is set for the different data samples same as the setting for Model 1. But its coefficient  $\beta_1$  measures

the difference in social welfare of the two compared groups of households in each sample.  $\beta_2$  is the coefficient of the interaction term and it measures the difference in social welfare between the two groups of households in each sample adjusted by their level of education. All the other control variables have the same definitions and setting as those in Model 1.

#### 5. Empirical results

##### 5.1. Urban integration of land-deprived urban households

This part of analysis aims to evaluate urban integration of the land-deprived urban households who have migrated from rural areas to urban areas. Tables 2 and 3 report the results using the "urban sample". Table 2 presents the different quality of living of land-deprived urban households compared to the normal urban households. The additional interaction term  $LDUS1 * schooling$  does not change the sign and significance of coefficients of the key explanatory variable ( $LDUS1$ ) in Column (4) to (6) compared to those in Column (1) to (3), and the R Squares in Column (4) to (6) range between 0.184 and 0.376, which indicates that the empirical results are robust. Therefore, we only discuss the results in Column (4), (5) and (6).

Column (4) of Table 2 shows that, compared to the normal urban households, the total household consumption expenditure of land-deprived urban households is around 6.7 % lower, and the difference increases with education level. For both groups of households, their consumption expenditure is not related to factors including households' health conditions and communist party membership of household head, is positively related to education level, home ownership, household debt, household size and total income, and is negatively related to age of household head.

Column (5) shows that, the food consumption ratio of land-deprived urban households is around 4.2 % lower, and the difference increases with a household's education level. For both groups of households, their food consumption ratio is negatively related to factors including education level, their debt, household sizes and total income, is positively related to household head's age, home ownership and households' health condition, but is not related with household head's party membership.

Column (6) shows that, the household income of land-deprived urban households is around 40 % lower than that of the normal urban households, and the difference decreases with education level. For both groups of households, the household income is positively related to their education level, health conditions, home ownership and household sizes, but is not related with household head's age or party membership.

The results in Table 2 indicate that the land-deprived urban households consume less, have substantially lower income level, and lower food consumption ratio, and thus lower quality of living, compared to the normal urban households. However, better education can help them to reduce the gap from the normal urban households, enhancing their urban integration in terms of quality of living.

Table 3 presents the different social welfare of land-deprived urban households compared to the normal urban households. The additional interaction term  $LDUS1 * schooling$  does not change the sign and significance of coefficients of the key explanatory variable ( $LDUS1$ ) in Column (5) to (8) compared to those in Column (1) to (4), and the R Squares in Column (5) to (8) range between 0.0616 and 0.325, which indicates that the empirical results are robust. Therefore, we only discuss the results in Column (5), (6), (7) and (8).

Column (5) shows that, compared to the normal urban households, the urban pension participation rate of land-deprived urban households is around 47 % lower, and the difference decreases with education level. For both groups of households, their urban pension participation rate is not related to household health level and party membership, is positively related to education level, household head's age, home

**Table 2**  
Different quality of living of land-deprived households in urban areas compared to normal urban households (urban sample).

	(1) Log(Total consumption)	(2) Food consumption ratio	(3) Log(Total income)	(4) Log(Total consumption)	(5) Food consumption ratio	(6) Log(Total income)
LDUS1	-0.0587* (0.0305)	-0.0450*** (0.0084)	-0.4159*** (0.0691)	-0.0666** (0.0304)	-0.0420*** (0.0084)	-0.3962*** (0.0687)
LDUS1*Schooling				-0.0139* (0.0071)	0.0052*** (0.0020)	0.0340** (0.0154)
Schooling	0.0238*** (0.0024)	-0.0042*** (0.0007)	0.0770*** (0.0038)	0.0246*** (0.0024)	-0.0045*** (0.0007)	0.0750*** (0.0039)
Head age	-0.0101*** (0.0034)	0.0048*** (0.0009)	0.0008 (0.0058)	-0.0104*** (0.0034)	0.0049*** (0.0009)	0.0015 (0.0058)
Head age square	0.0000 (0.0000)	-0.0000*** (0.0000)	0.0001 (0.0001)	0.0000 (0.0000)	-0.0000*** (0.0000)	0.0001 (0.0001)
Sickness	0.0065 (0.0148)	-0.0133*** (0.0043)	-0.0572** (0.0257)	0.0065 (0.0148)	-0.0133*** (0.0043)	-0.0573** (0.0256)
Own house	0.0726*** (0.0197)	0.0195*** (0.0061)	0.4393*** (0.0461)	0.0721*** (0.0197)	0.0197*** (0.0061)	0.4400*** (0.0459)
Debt	0.1118*** (0.0184)	-0.0531*** (0.0047)	0.2311*** (0.0288)	0.1110*** (0.0184)	-0.0528*** (0.0047)	0.2330*** (0.0288)
Household size	0.1071*** (0.0056)	-0.0060*** (0.0016)	0.1830*** (0.0095)	0.1068*** (0.0056)	-0.0058*** (0.0016)	0.1836*** (0.0094)
Log(Total income)	0.1824*** (0.0088)	-0.0172*** (0.0019)		0.1828*** (0.0088)	-0.0173*** (0.0019)	
Party membership	-0.0080 (0.0137)	0.0038 (0.0039)	-0.0066 (0.0233)	-0.0083 (0.0137)	0.0039 (0.0039)	-0.0059 (0.0232)
Constant	8.7043*** (0.1268)	0.5213*** (0.0308)	8.7751*** (0.1810)	8.7022*** (0.1271)	0.5221*** (0.0308)	8.7732*** (0.1810)
Observations	16,352	16,312	16,353	16,352	16,312	16,353
R-sq	0.375	0.184	0.241	0.376	0.184	0.241

Note: We have also controlled working status of household head, such as working industry and position. Robust standard errors are in parenthesis; \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

ownership and total household income, but is negatively related to household debt and size. The results for urban insurance participation (shown in Column (6)) are generally consistent with that for urban pension participation rate.

Column (7) shows that, the two groups of households have no

difference in health conditions. For both groups of households, their health level is not related to party membership, their health condition is worse if household head age is larger and they have debt; their health condition is better if they have better education, larger household, higher total income, and own their own homes.

**Table 3**  
Different social welfare of land-deprived households in urban areas compared to normal urban households (urban sample).

	(1) Urban pension participation	(2) Urban insurance participation	(3) Sickness	(4) Happiness	(5) Urban pension participation	(6) Urban insurance participation	(7) Sickness	(8) Happiness
LDUS1	-0.4799*** (0.0196)	-0.5281*** (0.0199)	-0.0244 (0.0198)	-0.0317 (0.0239)	-0.4695*** (0.0202)	-0.5180*** (0.0204)	-0.0238 (0.0192)	-0.0303 (0.0243)
LDUS1*Schooling					0.0182*** (0.0036)	0.0176*** (0.0040)	0.0010 (0.0057)	0.0024 (0.0060)
Schooling	0.0168*** (0.0014)	0.0092*** (0.0016)	-0.0072*** (0.0015)	0.0029* (0.0017)	0.0158*** (0.0014)	0.0081*** (0.0016)	-0.0073*** (0.0016)	0.0028 (0.0017)
Head age	0.0206*** (0.0020)	0.0072*** (0.0022)	0.0155*** (0.0018)	-0.0109*** (0.0023)	0.0210*** (0.0020)	0.0075*** (0.0021)	0.0155*** (0.0018)	-0.0109*** (0.0023)
Head age square	-0.0001*** (0.0000)	-0.0000 (0.0000)	-0.0000* (0.0000)	0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0000 (0.0000)	-0.0000* (0.0000)	0.0001*** (0.0000)
Sickness	0.0114 (0.0089)	0.0199** (0.0099)		-0.0597*** (0.0119)	0.0114 (0.0089)	0.0198** (0.0099)		-0.0598*** (0.0119)
Own house	0.0519*** (0.0153)	0.0293* (0.0160)	-0.0251* (0.0147)	0.0551*** (0.0173)	0.0524*** (0.0153)	0.0299* (0.0160)	-0.0250* (0.0147)	0.0551*** (0.0173)
Debt	-0.0287*** (0.0107)	-0.0288** (0.0113)	0.0461*** (0.0111)	-0.0486*** (0.0131)	-0.0276*** (0.0107)	-0.0278** (0.0113)	0.0461*** (0.0111)	-0.0485*** (0.0131)
Household size	-0.0164*** (0.0034)	-0.0027 (0.0038)	-0.0127*** (0.0039)	0.0003 (0.0045)	-0.0160*** (0.0034)	-0.0024 (0.0038)	-0.0127*** (0.0039)	0.0004 (0.0045)
Log(Total income)	0.0525*** (0.0042)	0.0161*** (0.0045)	-0.0094** (0.0042)	0.0390*** (0.0047)	0.0521*** (0.0042)	0.0157*** (0.0045)	-0.0094** (0.0042)	0.0390*** (0.0047)
Party membership	0.0076 (0.0081)	-0.0054 (0.0090)	-0.0016 (0.0095)	0.0260** (0.0106)	0.0080 (0.0081)	-0.0050 (0.0090)	-0.0015 (0.0095)	0.0260** (0.0106)
Constant	-0.7192*** (0.0720)	0.1178 (0.0766)	-0.0733 (0.0641)	0.3604*** (0.0811)	-0.7165*** (0.0720)	0.1204 (0.0765)	-0.0731 (0.0640)	0.3607*** (0.0811)
Observations	16,353	16,353	16,353	16,353	16,353	16,353	16,353	16,353
R-sq	0.323	0.205	0.236	0.0616	0.325	0.206	0.236	0.0616

Note: We have also controlled working status of household head, such as working industry and position. Robust standard errors are in parenthesis; \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Column (8) shows that, the two groups of households have no difference in self-evaluated happiness. For both groups of households, their happiness level is not related to education level and household size, is positively related to home ownership, total income, health condition and party membership, and is negatively related to household head's age and debt.

The results in Table 3 indicate that the land-deprived urban households have substantially lower participation rates in social securities (urban pension and medical insurance) than that of the normal urban households, and higher education level narrows down this difference. Both groups have no difference in health conditions and self-evaluated happiness. Thus, the land-deprived urban households have lower social welfares in terms of participation in social securities but not in terms of health conditions or self-evaluated happiness.

By comparing the results in Tables 2 and 3, we can see that compared to the normal urban households, the land-deprived urban households have not well integrated into the urban society. They have lower quality of living, and lower social welfare in terms of participation in social securities, but they have equal health conditions and self-evaluated happiness. Better education can generally improve their quality of living and social welfare and thus urban integration. We also observe an anomaly that the land-deprived urban households have lower quality of living, lower participation rates in urban social security, but have similar level of self-evaluated happiness to the normal urban households. We argue that this anomaly can be explained by the fact that the land-deprived urban households tend to stay in inferior communities with neighbors of similar living and social conditions, and their happiness and social utility depend more on their status relative to their neighbors, which can be explained by the peer effect and social utility theories (Duflo and Saez, 2002; Hong and Gu, 2005; Bursztyn, 2014).

### 5.2. Land-deprived urban households staying in inferior communities

This part of analysis aims to show whether the land-deprived urban households are staying in communities with urban neighbors of similar quality of living and social welfare conditions, and these communities are inferior compared to the urban average level. Tables 4 and 5 report the results using the "land-deprived urban community sample". Table 4 presents the different quality of living of land-deprived urban households compared to their urban neighbors (the normal urban households staying in the same communities as those land-deprived urban households). The additional interaction term  $LDUS2 * schooling$  does not change the sign and significance of coefficients of the key explanatory variable ( $LDUS2$ ) in Column (4) to (6) compared to those in Column (1) to (3), and the R Squares in Column (4) to (6) range between 0.183 and 0.375, which indicates that the empirical results are robust. Therefore, we only discuss the results in Column (4), (5) and (6).

Column (4) of Table 4 shows that, the two groups of households have no difference in total household consumption expenditure, and the indifference will not be influenced by education level. Column (5) and (6) show that, compared to their neighbors, the land-deprived urban households are around 2.19 % lower in food consumption ratio and around 23 % lower in total household income, and gaps in the two indicators narrow down with higher education level.

The results in Table 4 indicate that the land-deprived urban households have substantially lower income level and lower food consumption ratio, and thus slightly lower quality of living, compared to their urban neighbors (normal urban households staying in the same communities as those land-deprived urban households). But this gap is much narrower than the gap between land-deprived urban households and all the other normal urban households (as shown in Table 2).

Table 5 presents the different social welfare levels of land-deprived urban households compared to their urban neighbors (normal urban households staying in the same communities as those land-deprived urban households). The additional interaction term  $LDUS2 * schooling$

does not change the sign and significance of coefficients of the key explanatory variable ( $LDUS2$ ) in Column (5) to (8) compared to those in Column (1) to (4), and the R Squares in Column (5) to (8) range between 0.062 and 0.270, which indicates that the empirical results are robust. Therefore, we only discuss the results in Column (5), (6), (7) and (8).

Column (5) and (6) of Table 5 show that, compared to their urban neighbors, the urban pension participation rate and urban medical insurance participation rate of land-deprived urban households is around 11 % and 12 % lower, respectively. The gaps in the two indicators decreases with higher education level. Column (7) shows that land-deprived urban households have better health condition. Column (8) shows that, the two groups of households have no difference in self-evaluated happiness, but the land-deprived urban households will have higher self-evaluated happiness compared to their urban neighbors if their education level increases.

The results in Table 5 indicate that the land-deprived urban households have slightly lower participation rates in social securities (urban pension and medical insurance) than their urban neighbors, and higher education level narrows down this difference. Compared to their urban neighbors, the land-deprived urban households are in better health conditions, and their self-evaluated happiness can be higher when education level increases. In overall, the social welfare of the land-deprived urban households in urban areas is similar to their neighboring urban households and the social welfare gap between the two groups of households is much narrower than the gap between the land-deprived urban households and all the other normal urban households (including those normal urban households in the other communities).

Tables 6 and 7 report the results using the "urban community sample". Table 6 presents the different quality of living of the land-deprived urban community households compared to the upper urban community households. The additional interaction term  $LDUC * schooling$  does not change the sign and significance of coefficients of the key explanatory variable ( $LDUC$ ) in Column (4) to (6) compared to those in Column (1) to (3), and the R Squares in Column (4) to (6) range between 0.195 and 0.395, which indicates that the empirical results are robust. Therefore, we only discuss the results in Column (4), (5) and (6).

Column (4) of Table 6 shows that, compared to the upper urban community households, total household consumption of the land-deprived urban community households is around 9% lower. The difference is generally not influenced by education level. Column (5) and (6) show that, compared to the upper urban community households, the land-deprived urban community households have food consumption ratio of 3.19 % lower and their household income is around 37 % lower, and the gaps in the two indicators narrow down with higher education level.

Table 7 presents the different social welfare of the land-deprived urban community households compared to the upper urban community households. The additional interaction term  $LDUC * schooling$  does not change the sign and significance of coefficients of the key explanatory variable ( $LDUC$ ) in Column (5) to (8) compared to those in Column (1) to (4), and the R Squares in Column (5) to (8) range between 0.0817 and 0.390, which indicates that the empirical results are robust. Therefore, we only discuss the results in Column (5), (6), (7) and (8).

Column (5) and (6) of Table 7 show that, compared to the upper urban community households, the urban pension participation rate and urban medical insurance participation rate of the land-deprived urban community households are around 45 % and 51 % lower, respectively. The gaps in the two indicators decrease with higher education level. Column (7) and (8) show that households in the two groups of communities have no difference in health conditions and self-evaluated happiness.

The results in Tables 6 and 7 indicate that the land-deprived urban households stay in inferior urban communities with lower quality of



**Table 4**  
Different quality of living of land-deprived households in urban areas compared to other normal urban households in the same communities (land-deprived urban community sample).

	(1) Log(Total consumption)	(2) Food consumption ratio	(3) Log(Total income)	(4) Log(Total consumption)	(5) Food consumption ratio	(6) Log(Total income)
LDUS2	-0.0121 (0.0159)	-0.0174*** (0.0044)	-0.1779*** (0.0276)	-0.0093 (0.0173)	-0.0219*** (0.0051)	-0.2262*** (0.0307)
LDUS2 *Schooling				-0.0013 (0.0035)	0.0020** (0.0010)	0.0218*** (0.0063)
Schooling	0.0243*** (0.0023)	-0.0039*** (0.0007)	0.0802*** (0.0039)	0.0249*** (0.0028)	-0.0048*** (0.0008)	0.0705*** (0.0047)
Head age	-0.0100*** (0.0034)	0.0049*** (0.0009)	0.0020 (0.0059)	-0.0100*** (0.0034)	0.0050*** (0.0009)	0.0029 (0.0059)
Head age square	0.0000 (0.0000)	-0.0000*** (0.0000)	0.0001 (0.0001)	0.0000 (0.0000)	-0.0000*** (0.0000)	0.0001 (0.0001)
Sickness	0.0066 (0.0148)	-0.0133*** (0.0043)	-0.0582** (0.0257)	0.0066 (0.0148)	-0.0134*** (0.0043)	-0.0584** (0.0257)
Own house	0.0731*** (0.0196)	0.0201*** (0.0062)	0.4462*** (0.0466)	0.0730*** (0.0196)	0.0202*** (0.0062)	0.4464*** (0.0466)
Debt	0.1113*** (0.0184)	-0.0532*** (0.0048)	0.2318*** (0.0290)	0.1112*** (0.0184)	-0.0530*** (0.0048)	0.2333*** (0.0289)
Household size	0.1065*** (0.0056)	-0.0063*** (0.0016)	0.1806*** (0.0095)	0.1064*** (0.0056)	-0.0063*** (0.0016)	0.1809*** (0.0094)
Log(Total income)	0.1832*** (0.0089)	-0.0168*** (0.0019)		0.1833*** (0.0089)	-0.0170*** (0.0019)	
Party membership	-0.0082 (0.0137)	0.0038 (0.0039)	-0.0068 (0.0235)	-0.0082 (0.0137)	0.0038 (0.0039)	-0.0064 (0.0234)
Constant	8.6868*** (0.1274)	0.5143*** (0.0306)	8.7507*** (0.1871)	8.6811*** (0.1280)	0.5234*** (0.0309)	8.8353*** (0.1879)
Observations	16,352	16,312	16,353	16,352	16,312	16,353
R-sq	0.375	0.182	0.238	0.375	0.183	0.239

Note: We have also controlled working status of household head, such as working industry and position. Robust standard errors are in parenthesis; \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

living and social welfare compared to the other communities.

The results in Tables 4–7 show that, the land-deprived urban households stay in inferior urban communities, their quality of living

and social welfare are similar to their neighboring households but substantially lower compared to normal urban households in the other urban communities.

**Table 5**  
Different social welfares of land-deprived households in urban areas compared to other normal urban households in the same communities (land-deprived urban community sample).

	(1) Urban pension participation	(2) Urban insurance participation	(3) Sickness	(4) Happiness	(5) Urban pension participation	(6) Urban insurance participation	(7) Sickness	(8) Happiness
LDUS2	-0.0787*** (0.0094)	-0.0867*** (0.0107)	-0.0239** (0.0105)	0.0005 (0.0119)	-0.1141*** (0.0109)	-0.1192*** (0.0120)	-0.0257** (0.0123)	-0.0137 (0.0131)
LDUS2 *Schooling					0.0159*** (0.0022)	0.0146*** (0.0024)	0.0008 (0.0024)	0.0064** (0.0027)
Schooling	0.0214*** (0.0014)	0.0142*** (0.0016)	-0.0072*** (0.0015)	0.0033** (0.0017)	0.0144*** (0.0017)	0.0078*** (0.0020)	-0.0076*** (0.0018)	0.0005 (0.0021)
Head age	0.0218*** (0.0020)	0.0085*** (0.0022)	0.0156*** (0.0018)	-0.0108*** (0.0023)	0.0225*** (0.0020)	0.0091*** (0.0022)	0.0156*** (0.0018)	-0.0106*** (0.0023)
Head age square	-0.0001*** (0.0000)	-0.0000 (0.0000)	-0.0000* (0.0000)	0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0000* (0.0000)	-0.0000* (0.0000)	0.0001*** (0.0000)
Sickness	0.0130 (0.0094)	0.0216** (0.0103)		-0.0595*** (0.0119)	0.0127 (0.0094)	0.0214** (0.0103)		-0.0596*** (0.0119)
Own house	0.0557*** (0.0146)	0.0336** (0.0155)	-0.0245* (0.0147)	0.0552*** (0.0173)	0.0564*** (0.0146)	0.0341** (0.0155)	-0.0244* (0.0147)	0.0555*** (0.0173)
Debt	-0.0332*** (0.0110)	-0.0338*** (0.0118)	0.0465*** (0.0112)	-0.0491*** (0.0131)	-0.0318*** (0.0110)	-0.0325*** (0.0117)	0.0466*** (0.0112)	-0.0485*** (0.0131)
Household size	-0.0222*** (0.0036)	-0.0091** (0.0041)	-0.0126*** (0.0039)	-0.0002 (0.0044)	-0.0218*** (0.0036)	-0.0087** (0.0040)	-0.0126*** (0.0039)	0.0000 (0.0044)
Log(Total income)	0.0593*** (0.0042)	0.0236*** (0.0046)	-0.0095** (0.0042)	0.0396*** (0.0047)	0.0582*** (0.0042)	0.0226*** (0.0046)	-0.0095** (0.0042)	0.0392*** (0.0047)
Party membership	0.0057 (0.0083)	-0.0074 (0.0092)	-0.0014 (0.0095)	0.0258** (0.0106)	0.0060 (0.0082)	-0.0071 (0.0092)	-0.0014 (0.0095)	0.0259** (0.0106)
Constant	-0.8779*** (0.0708)	-0.0569 (0.0789)	-0.0659 (0.0640)	0.3454*** (0.0816)	-0.8066*** (0.0719)	0.0086 (0.0788)	-0.0622 (0.0648)	0.3742*** (0.0827)
Observations	16,353	16,353	16,353	16,353	16,353	16,353	16,353	16,353
R-sq	0.265	0.144	0.236	0.0614	0.270	0.147	0.236	0.0620

Note: We have also controlled working status of household head, such as working industry and position. Robust standard errors are in parenthesis; \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 6**  
Different quality of living of communities with land-deprived households compared to other communities (urban community sample).

	(1) Log(Total consumption)	(2) Food consumption ratio	(3) Log(Total income)	(4) Log(Total consumption)	(5) Food consumption ratio	(6) Log(Total income)
LDUC	-0.0890** (0.0354)	-0.0330*** (0.0096)	-0.3785*** (0.0764)	-0.0923*** (0.0351)	-0.0319*** (0.0095)	-0.3697*** (0.0756)
LDUC *Schooling				-0.0131* (0.0076)	0.0042** (0.0021)	0.0332** (0.0159)
Schooling	0.0204*** (0.0035)	-0.0044*** (0.0010)	0.0797*** (0.0059)	0.0223*** (0.0037)	-0.0050*** (0.0010)	0.0750*** (0.0063)
Head age	-0.0133*** (0.0051)	0.0038*** (0.0013)	-0.0006 (0.0100)	-0.0137*** (0.0051)	0.0039*** (0.0013)	0.0004 (0.0100)
Head age square	0.0000 (0.0000)	-0.0000 (0.0000)	0.0001 (0.0001)	0.0000 (0.0000)	-0.0000 (0.0000)	0.0001 (0.0001)
Sickness	0.0178 (0.0228)	-0.0039 (0.0067)	-0.0656 (0.0421)	0.0180 (0.0227)	-0.0040 (0.0067)	-0.0660 (0.0418)
Own house	0.0823** (0.0336)	0.0349*** (0.0103)	0.5627*** (0.0898)	0.0818** (0.0336)	0.0350*** (0.0103)	0.5631*** (0.0892)
Debt Dummy	0.1264*** (0.0273)	-0.0621*** (0.0066)	0.3217*** (0.0444)	0.1250*** (0.0273)	-0.0616*** (0.0066)	0.3250*** (0.0445)
Household size	0.1072*** (0.0076)	-0.0054** (0.0022)	0.1730*** (0.0148)	0.1066*** (0.0076)	-0.0052** (0.0022)	0.1741*** (0.0147)
Log(Total income)	0.1682*** (0.0120)	-0.0152*** (0.0026)		0.1688*** (0.0120)	-0.0154*** (0.0026)	
Party membership	-0.0183 (0.0209)	0.0008 (0.0059)	0.0352 (0.0378)	-0.0189 (0.0209)	0.0010 (0.0059)	0.0368 (0.0375)
Constant	8.9981*** (0.1813)	0.5139*** (0.0446)	8.5964*** (0.3101)	8.9871*** (0.1818)	0.5174*** (0.0447)	8.6127*** (0.3111)
Observations	7057	7036	7057	7057	7036	7057
R-sq	0.395	0.194	0.267	0.395	0.195	0.268

Note: We have also controlled working status of household head, such as working industry and position. Robust standard errors are in parenthesis; \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

5.3. Land-deprived urban households versus land-deprived rural households

In Tables 8 and 9, we compare the quality of living and social welfare levels of land-deprived urban households that of the land-deprived rural households. The coefficients of LDUS under Column (4) to

(6) in Table 8 show that the land-deprived urban households have around 27 % higher household consumption expenditure, around 4.2 % lower in food consumption ratio but only around 16 % higher household income. The coefficients of LDUS under Column (5) to (8) in Table 9 show that the land-deprived urban households have slightly

**Table 7**  
Different social welfares of communities with land-deprived households compared to other communities (urban community sample).

	(1) Urban pension participation	(2) Urban insurance participation	(3) Sickness	(4) Happiness	(5) Urban pension participation	(6) Urban insurance participation	(7) Sickness	(8) Happiness
LDUC	-0.4557*** (0.0223)	-0.5113*** (0.0225)	-0.0249 (0.0225)	-0.0331 (0.0266)	-0.4518*** (0.0225)	-0.5071*** (0.0226)	-0.0244 (0.0222)	-0.0333 (0.0268)
LDUC *Schooling					0.0156*** (0.0041)	0.0168*** (0.0044)	0.0017 (0.0059)	-0.0007 (0.0063)
Schooling	0.0182*** (0.0021)	0.0096*** (0.0022)	-0.0082*** (0.0024)	0.0061** (0.0025)	0.0161*** (0.0023)	0.0073*** (0.0024)	-0.0085*** (0.0025)	0.0062** (0.0027)
Head age	0.0161*** (0.0032)	0.0050* (0.0030)	0.0112*** (0.0027)	-0.0126*** (0.0033)	0.0166*** (0.0032)	0.0055* (0.0030)	0.0112*** (0.0028)	-0.0126*** (0.0033)
Head age square	-0.0001*** (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	0.0001*** (0.0000)
Sickness	0.0076 (0.0142)	0.0197 (0.0155)		-0.0686*** (0.0184)	0.0074 (0.0142)	0.0195 (0.0155)		-0.0686*** (0.0184)
Own house	0.0504* (0.0269)	0.0043 (0.0273)	-0.0088 (0.0252)	0.0702** (0.0284)	0.0510* (0.0270)	0.0049 (0.0273)	-0.0087 (0.0252)	0.0702** (0.0284)
Debt Dummy	-0.0385** (0.0152)	-0.0361** (0.0157)	0.0352** (0.0159)	-0.0394** (0.0186)	-0.0367** (0.0152)	-0.0342** (0.0157)	0.0353** (0.0159)	-0.0394** (0.0186)
Household size	-0.0095* (0.0050)	0.0017 (0.0052)	-0.0059 (0.0056)	0.0059 (0.0061)	-0.0088* (0.0050)	0.0024 (0.0052)	-0.0059 (0.0056)	0.0059 (0.0061)
Log(Total income)	0.0555*** (0.0058)	0.0211*** (0.0064)	-0.0093 (0.0060)	0.0342*** (0.0069)	0.0549*** (0.0058)	0.0205*** (0.0064)	-0.0094 (0.0060)	0.0342*** (0.0068)
Party membership	0.0114 (0.0130)	-0.0018 (0.0137)	0.0175 (0.0146)	0.0232 (0.0162)	0.0122 (0.0130)	-0.0010 (0.0137)	0.0176 (0.0146)	0.0231 (0.0162)
Constant	-0.6903*** (0.1078)	0.1178 (0.1040)	-0.0170 (0.0934)	0.3569*** (0.1134)	-0.6772*** (0.1076)	0.1320 (0.1046)	-0.0156 (0.0925)	0.3563*** (0.1136)
Observations	7057	7057	7057	7057	7057	7057	7057	7057
R-sq	0.388	0.308	0.251	0.0817	0.390	0.310	0.251	0.0817

Note: We have also controlled working status of household head, such as working industry and position. Robust standard errors are in parenthesis; \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

**Table 8**  
Different quality of living of land-deprived households in urban areas compared to land-deprived households living in the rural areas (land-deprived sample).

	(1) Log(Total consumption)	(2) Food consumption ratio	(3) Log(Total income)	(4) Log(Total consumption)	(5) Food consumption ratio	(6) Log(Total income)
LDUS	0.2818*** (0.0465)	-0.0319** (0.0140)	0.1699* (0.0867)	0.2709*** (0.0506)	-0.0415*** (0.0154)	0.1581* (0.0929)
LDUS*Schooling				-0.0071 (0.0119)	-0.0063* (0.0036)	-0.0077 (0.0230)
Schooling	0.0069 (0.0069)	-0.0009 (0.0021)	0.0802*** (0.0127)	0.0102 (0.0095)	0.0021 (0.0032)	0.0837*** (0.0179)
Head age	0.0029 (0.0102)	0.0056** (0.0028)	0.0342 (0.0216)	0.0018 (0.0103)	0.0046 (0.0028)	0.0329 (0.0219)
Head age square	-0.0001 (0.0001)	-0.0000* (0.0000)	-0.0004** (0.0002)	-0.0001 (0.0001)	-0.0000 (0.0000)	-0.0004* (0.0002)
Sickness	0.0004 (0.0460)	0.0246* (0.0145)	-0.2323*** (0.0897)	0.0004 (0.0459)	0.0247* (0.0146)	-0.2322*** (0.0898)
Own house	-0.0964 (0.0753)	0.0163 (0.0276)	0.6927*** (0.1741)	-0.0960 (0.0753)	0.0166 (0.0274)	0.6930*** (0.1743)
Debt	0.2194*** (0.0474)	-0.0513*** (0.0128)	0.2398*** (0.0917)	0.2192*** (0.0474)	-0.0515*** (0.0128)	0.2395*** (0.0918)
Household size	0.1133*** (0.0136)	-0.0085** (0.0038)	0.2317*** (0.0240)	0.1125*** (0.0137)	-0.0092** (0.0038)	0.2308*** (0.0241)
Log(Total income)	0.1534*** (0.0198)	-0.0091** (0.0043)		0.1533*** (0.0198)	-0.0092** (0.0043)	
Party membership	-0.0630 (0.0514)	-0.0088 (0.0144)	-0.0295 (0.0906)	-0.0632 (0.0514)	-0.0090 (0.0143)	-0.0297 (0.0906)
Constant	8.5390*** (0.3287)	0.4077*** (0.0880)	7.3373*** (0.5671)	8.5512*** (0.3279)	0.4188*** (0.0868)	7.3498*** (0.5683)
Observations	2406	2399	2406	2406	2399	2406
R-sq	0.454	0.174	0.379	0.454	0.176	0.379

Note: We have also controlled working status of household head, such as working industry and position. Robust standard errors are in parenthesis; \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

higher participation rate in urban pension and medical insurance, lower self-evaluated happiness compared to the land-deprived rural households, and the two groups do not show difference in health conditions.

Although we expect that the land-deprived urban households should may have higher abilities and skills, we find that living in urban areas

generate higher income which cannot cover the higher cost of living. Their participation rate in urban social security is only slightly higher than those land-deprived rural households who remain in the rural areas, and they have lower self-evaluated happiness. The above findings evidence that the land-deprived urban households have poor

**Table 9**  
Different social welfares of land-deprived households in urban areas compared to land-deprived households living in the rural areas (land-deprived sample).

	(1) Urban pension participation	(2) Urban insurance participation	(3) Sickness	(4) Happiness	(5) Urban pension participation	(6) Urban insurance participation	(7) Sickness	(8) Happiness
LDUS	0.0529** (0.0231)	0.0396** (0.0188)	-0.0287 (0.0296)	-0.0721** (0.0317)	0.0738*** (0.0263)	0.0539** (0.0213)	-0.0275 (0.0310)	-0.0832** (0.0341)
LDUS*Schooling					0.0136*** (0.0042)	0.0093*** (0.0034)	0.0008 (0.0085)	-0.0073 (0.0087)
Schooling	0.0078*** (0.0025)	0.0043** (0.0020)	-0.0049 (0.0047)	0.0132*** (0.0050)	0.0015 (0.0031)	-0.0001 (0.0021)	-0.0053 (0.0063)	0.0166** (0.0068)
Head age	0.0038 (0.0046)	-0.0033 (0.0047)	0.0153*** (0.0055)	0.0024 (0.0070)	0.0060 (0.0047)	-0.0018 (0.0046)	0.0154*** (0.0058)	0.0013 (0.0070)
Head age square	-0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0001)	0.0000 (0.0001)	-0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0001)	0.0000 (0.0001)
Sickness	-0.0522*** (0.0188)	-0.0082 (0.0151)		-0.0772** (0.0340)	-0.0523*** (0.0188)	-0.0083 (0.0151)		-0.0771** (0.0339)
Own house	0.0019 (0.0482)	-0.0771 (0.0482)	0.0121 (0.0498)	0.0425 (0.0576)	0.0012 (0.0479)	-0.0776 (0.0480)	0.0120 (0.0497)	0.0429 (0.0573)
Debt	-0.0143 (0.0214)	-0.0026 (0.0164)	0.0399 (0.0281)	-0.1086*** (0.0329)	-0.0139 (0.0213)	-0.0024 (0.0163)	0.0399 (0.0281)	-0.1088*** (0.0329)
Household size	-0.0077 (0.0049)	-0.0017 (0.0044)	0.0036 (0.0082)	0.0080 (0.0090)	-0.0063 (0.0050)	-0.0007 (0.0044)	0.0037 (0.0081)	0.0072 (0.0089)
Log(Total income)	0.0197*** (0.0061)	0.0083 (0.0060)	-0.0250*** (0.0097)	0.0265** (0.0112)	0.0199*** (0.0061)	0.0084 (0.0060)	-0.0250*** (0.0097)	0.0264** (0.0112)
Party membership	0.0258 (0.0240)	0.0071 (0.0175)	-0.0438 (0.0301)	-0.0051 (0.0332)	0.0262 (0.0240)	0.0074 (0.0175)	-0.0438 (0.0300)	-0.0053 (0.0332)
Constant	-0.2682** (0.1235)	0.0987 (0.1179)	0.0210 (0.1643)	0.0395 (0.2074)	-0.2916** (0.1235)	0.0827 (0.1166)	0.0196 (0.1673)	0.0520 (0.2067)
Observations	2406	2406	2406	2406	2406	2406	2406	2406
R-sq	0.247	0.254	0.302	0.155	0.251	0.257	0.302	0.156

Note: We have also controlled working status of household head, such as working industry and position. Robust standard errors are in parenthesis; \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

**Table 10**  
Different quality of living of land-deprived households in rural areas compared to non land-deprived rural households (rural sample).

	(1) Log(Total consumption)	(2) Food consumption ratio	(3) Log(Total income)	(4) Log(Total consumption)	(5) Food consumption ratio	(6) Log(Total income)
LDRS	0.0691** (0.0343)	0.0092 (0.0098)	0.2626*** (0.0631)	0.0352 (0.0387)	0.0167 (0.0115)	0.3444*** (0.0717)
LDRS *Schooling				-0.0157* (0.0092)	0.0035 (0.0029)	0.0380** (0.0172)
Schooling	0.0228*** (0.0035)	-0.0026*** (0.0009)	0.0495*** (0.0068)	0.0243*** (0.0037)	-0.0030*** (0.0010)	0.0458*** (0.0072)
Head age	0.0005 (0.0060)	0.0041** (0.0017)	0.0653*** (0.0117)	0.0006 (0.0060)	0.0041** (0.0017)	0.0650*** (0.0117)
Head age square	-0.0001* (0.0001)	-0.0000* (0.0000)	-0.0006*** (0.0001)	-0.0001* (0.0001)	-0.0000* (0.0000)	-0.0006*** (0.0001)
Sickness	-0.0173 (0.0217)	-0.0260*** (0.0059)	-0.1045** (0.0431)	-0.0178 (0.0216)	-0.0258*** (0.0059)	-0.1032** (0.0431)
Own house	0.0805 (0.0510)	-0.0154 (0.0148)	0.2222** (0.0950)	0.0802 (0.0509)	-0.0153 (0.0147)	0.2229** (0.0950)
Debt	0.2164*** (0.0224)	-0.0540*** (0.0060)	0.0792* (0.0424)	0.2169*** (0.0224)	-0.0541*** (0.0060)	0.0779* (0.0424)
Household size	0.1090*** (0.0061)	-0.0066*** (0.0017)	0.2599*** (0.0111)	0.1091*** (0.0061)	-0.0066*** (0.0017)	0.2596*** (0.0110)
Log(Total income)	0.1196*** (0.0081)	-0.0040** (0.0020)		0.1199*** (0.0081)	-0.0041** (0.0020)	
Party membership	-0.0056 (0.0243)	0.0045 (0.0064)	-0.0007 (0.0442)	-0.0055 (0.0243)	0.0044 (0.0064)	-0.0009 (0.0441)
Constant	8.5042*** (0.1811)	0.4259*** (0.0491)	6.3184*** (0.3500)	8.4884*** (0.1813)	0.4295*** (0.0493)	6.3518*** (0.3510)
Observations	10,073	10,027	10,073	10,073	10,027	10,073
R-sq	0.335	0.113	0.278	0.335	0.113	0.279

Note: We have also controlled working status of household head, such as working industry and position. Robust standard errors are in parenthesis; \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

integration into the urban society.

In Tables 10 and 11, we compare the quality of living and social welfare levels of land-deprived rural households that of the non land-deprived rural households. The coefficients of LDRS under Column (4) to (6) in Table 10 show that the two groups of households have no difference in total consumption and food consumption ratio, but the total household income of the land-deprived rural households is 34 % higher. The coefficients of LDRS under Column (5) to (8) in Table 11 show that the land-deprived rural households have slightly higher participation rate in urban pension and higher self-evaluated happiness, but the two groups of households do not show difference in urban medical insurance participation or health conditions. The above results evidence that the land-deprived rural households staying in rural areas have better quality of living and social welfare than the non land-deprived rural households.

The results in Tables 8–11 show that land acquisition raises the quality of living and social welfare of the land-deprived households but migrating into urban areas does not improve their quality of living or social welfare.

#### 5.4. Heterogeneity effects across regions, ages and education levels

This part of analysis aims to evaluate the heterogeneity effects of urban integration of the land-deprived urban households. All the Tables 12–17 present the results using the “urban sample”.

Tables 12 and 13 report the results for urban integration of land-deprived urban households across three regions of China, the East region, Middle region and West region<sup>6</sup>. We do not observe substantial difference in coefficients of LDUS1 across regions. Tables 14 and 15

<sup>6</sup> East regions include Beijing, Tianjing, Hebei, Niaoing, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, Hainan. Middle regions include Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei, Hunan. West regions include Neimenggu, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Xizang, Shannxi, Gansu, Qinghai, Ningxia, Xinjiang.

report the results for urban integration of land-deprived urban households across different ages of household heads. Coefficients of LDUS1 in the two tables suggest that the younger the household heads are, the better they can integrate into urban society in terms of their quality of living and social welfare. Tables 16 and 17 report the results for urban integration of land-deprived urban households across different education levels. Coefficients of LDUS1 in the two tables suggest that the higher the household heads’ education level is, the better they can integrate into urban society in terms of their quality of living and social welfare.

## 6. Conclusions and implications

This paper provides a comprehensive analysis on the quality of living, social welfare, as well as urban integration of the land-deprived urban households, i.e., the rural households who have experienced land acquisition and migrated from rural areas to urban areas. It generates three aspects of conclusions. Firstly, the land-deprived urban households have not well integrated into the urban society. Compared to the normal urban households, they have lower quality of living, and lower social welfare in terms of participation in social securities. However, they have equal health conditions and self-evaluated happiness. Better education can generally improve their quality of living and social welfare and thus urban integration. It is an anomaly that the land-deprived households have lower quality of living, lower participation rates in urban social security, but have similar level of self-evaluated happiness to the normal urban households. This anomaly can be explained by peer effect and social utility theories (Duflo and Saez, 2002; Hong and Gu, 2005; Bursztyn, 2014). Specifically, the land-deprived urban households tend to stay in inferior communities with neighbors of similar living and social conditions, and their happiness and social utility depend more on their status relative to their neighbors than the status relative to outside of the communities.

The first aspect of findings imply that the external efforts, especially government interventions, are needed to conduct gentrification or regeneration for a community. This is because the households within the

**Table 11**  
Different social welfares of land-deprived households in rural areas compared to non land-deprived rural households (rural sample).

	(1) Urban pension participation	(2) Urban insurance participation	(3) Sickness	(4) Happiness	(5) Urban pension participation	(6) Urban insurance participation	(7) Sickness	(8) Happiness
LDRS	0.0208* (0.0114)	0.0039 (0.0076)	0.0278 (0.0204)	0.0256 (0.0217)	0.0292** (0.0148)	0.0069 (0.0100)	0.0138 (0.0234)	0.0446* (0.0250)
LDRS *Schooling					0.0039 (0.0026)	0.0014 (0.0016)	-0.0065 (0.0057)	0.0088 (0.0061)
Schooling	0.0038*** (0.0007)	0.0021*** (0.0006)	-0.0019 (0.0022)	0.0068*** (0.0022)	0.0035*** (0.0007)	0.0020*** (0.0006)	-0.0013 (0.0023)	0.0059*** (0.0023)
Head age	-0.0028* (0.0015)	-0.0026** (0.0011)	0.0199*** (0.0035)	0.0009 (0.0037)	-0.0028* (0.0015)	-0.0026** (0.0011)	0.0200*** (0.0035)	0.0009 (0.0037)
Head age square	0.0000* (0.0000)	0.0000** (0.0000)	-0.0001*** (0.0000)	0.0000 (0.0000)	0.0000* (0.0000)	0.0000** (0.0000)	-0.0001*** (0.0000)	0.0000 (0.0000)
Sickness	0.0047 (0.0055)	0.0025 (0.0036)		-0.0932*** (0.0139)	0.0049 (0.0055)	0.0025 (0.0036)		-0.0929*** (0.0139)
Own house	-0.0013 (0.0154)	0.0031 (0.0076)	-0.0545* (0.0309)	0.0872*** (0.0329)	-0.0012 (0.0154)	0.0031 (0.0076)	-0.0546* (0.0309)	0.0874*** (0.0328)
Debt	-0.0036 (0.0049)	-0.0026 (0.0034)	0.0821*** (0.0137)	-0.0938*** (0.0142)	-0.0037 (0.0049)	-0.0026 (0.0034)	0.0823*** (0.0137)	-0.0941*** (0.0142)
Household size	-0.0027** (0.0012)	-0.0004 (0.0009)	-0.0099*** (0.0037)	-0.0106*** (0.0038)	-0.0027** (0.0012)	-0.0004 (0.0009)	-0.0099*** (0.0037)	-0.0106*** (0.0038)
Log(Total income)	0.0081*** (0.0016)	0.0035*** (0.0010)	-0.0114** (0.0047)	0.0329*** (0.0046)	0.0080*** (0.0016)	0.0034*** (0.0010)	-0.0112** (0.0047)	0.0327*** (0.0046)
Party membership	0.0173*** (0.0067)	0.0022 (0.0043)	0.0130 (0.0150)	-0.0226 (0.0152)	0.0173*** (0.0067)	0.0022 (0.0043)	0.0130 (0.0150)	-0.0227 (0.0152)
Constant	-0.0065 (0.0455)	0.0421 (0.0362)	-0.1889* (0.1046)	0.0662 (0.1116)	-0.0026 (0.0451)	0.0435 (0.0360)	-0.1954* (0.1049)	0.0751 (0.1117)
Observations	10,073	10,073	10,073	10,073	10,073	10,073	10,073	10,073
R-sq	0.132	0.138	0.157	0.0935	0.133	0.138	0.157	0.0938

Note: We have also controlled working status of household head, such as working industry and position. Robust standard errors are in parenthesis; \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

**Table 12**  
Different quality of living of land-deprived households in urban areas compared to normal urban households (urban sample across regions).

	(1) Log(Total consumption)	(2) Food consumption ratio	(3) Log(Total income)	(4) Log(Total consumption)	(5) Food consumption ratio	(6) Log(Total income)
Panel A: Household quality of living (East region)						
LDUS1	-0.0661 (0.0404)	-0.0478*** (0.0112)	-0.4332*** (0.0958)	-0.0729* (0.0404)	-0.0462*** (0.0111)	-0.4174*** (0.0961)
Schooling	0.0211*** (0.0036)	-0.0045*** (0.0009)	0.0841*** (0.0055)	0.0221*** (0.0037)	-0.0048*** (0.0009)	0.0820*** (0.0058)
LDUS1 *Schooling				-0.0124 (0.0088)	0.0032 (0.0025)	0.0285* (0.0170)
Observations	9226	9200	9226	9226	9200	9226
R-sq	0.369	0.214	0.213	0.369	0.214	0.214
Panel B: Household quality of living (Middle region)						
LDUS1	-0.0143 (0.0623)	-0.0284* (0.0169)	-0.4138*** (0.1321)	-0.0143 (0.0618)	-0.0232 (0.0161)	-0.4146*** (0.1310)
Schooling	0.0217*** (0.0038)	-0.0016 (0.0012)	0.0807*** (0.0064)	0.0217*** (0.0038)	-0.0020 (0.0013)	0.0807*** (0.0065)
LDUS1 *Schooling				-0.0000 (0.0170)	0.0089** (0.0038)	-0.0013 (0.0306)
Observations	3885	3874	3886	3885	3874	3886
R-sq	0.354	0.138	0.247	0.354	0.139	0.247
Panel C: Household quality of living (West region)						
LDUS1	-0.1086 (0.0674)	-0.0538*** (0.0188)	-0.3519*** (0.1341)	-0.1275* (0.0678)	-0.0477** (0.0192)	-0.3067** (0.1293)
Schooling	0.0313*** (0.0052)	-0.0066*** (0.0015)	0.0555*** (0.0089)	0.0327*** (0.0053)	-0.0071*** (0.0015)	0.0520*** (0.0090)
LDUS1 *Schooling				-0.0317* (0.0173)	0.0103** (0.0044)	0.0741* (0.0432)
Observations	3241	3238	3241	3241	3238	3241
R-sq	0.368	0.196	0.263	0.369	0.198	0.266

Note: Other control variables are not specified in the table. Robust standard errors are in parenthesis; \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

inferior communities are generally satisfied with their communities and may not be psychologically motivated to make additional efforts to improve their own communities. It is important to work harder to attain higher urban integration in terms of quality of living (Chen, 2019). In addition, it is an effective way to provide land-deprived urban

households with education and training to improve their integration into the urban society.

Secondly, we find that land acquisition raises the quality of living and social welfare of the land-deprived rural households but migrating into urban areas does not improve their quality of living or social

**Table 13**  
Different social welfare of land-deprived households in urban areas compared to normal urban households (urban sample across regions).

	(1) Urban pension participation	(2) Urban insurance participation	(3) Sickness	(4) Happiness	(5) Urban pension participation	(6) Urban insurance participation	(7) Sickness	(8) Happiness
Panel A: household social welfare (East region)								
LDUS1	-0.4688*** (0.0271)	-0.4899*** (0.0278)	-0.0280 (0.0232)	-0.0491 (0.0308)	-0.4570*** (0.0279)	-0.4798*** (0.0285)	-0.0342 (0.0224)	-0.0479 (0.0313)
Schooling	0.0172*** (0.0018)	0.0107*** (0.0021)	-0.0067*** (0.0020)	0.0019 (0.0021)	0.0156*** (0.0019)	0.0093*** (0.0021)	-0.0058*** (0.0021)	0.0017 (0.0022)
LDUS1					0.0215*** (0.0048)	0.0186*** (0.0054)	-0.0114** (0.0053)	0.0023 (0.0074)
*Schooling								
Observations	9226	9226	9226	9226	9226	9226	9226	9226
R-sq	0.320	0.211	0.241	0.0479	0.323	0.213	0.241	0.0479
Panel B: Household social welfare (Middle region)								
LDUS1	-0.5569*** (0.0325)	-0.6504*** (0.0269)	-0.0197 (0.0505)	0.0549 (0.0518)	-0.5468*** (0.0344)	-0.6461*** (0.0281)	-0.0102 (0.0496)	0.0666 (0.0525)
Schooling	0.0151*** (0.0026)	0.0093*** (0.0029)	-0.0073** (0.0031)	0.0049 (0.0032)	0.0144*** (0.0027)	0.0090*** (0.0030)	-0.0081*** (0.0031)	0.0040 (0.0033)
LDUS1					0.0172** (0.0072)	0.0074 (0.0059)	0.0161 (0.0159)	0.0200* (0.0121)
*Schooling								
Observations	3886	3886	3886	3886	3886	3886	3886	3886
R-sq	0.323	0.201	0.232	0.0797	0.324	0.201	0.232	0.0805
Panel C: Household social welfare (West region)								
LDUS1	-0.4606*** (0.0393)	-0.5199*** (0.0385)	-0.0122 (0.0475)	-0.0776 (0.0537)	-0.4564*** (0.0405)	-0.5069*** (0.0387)	0.0008 (0.0454)	-0.0875 (0.0541)
Schooling	0.0168*** (0.0032)	0.0061* (0.0037)	-0.0081** (0.0034)	0.0035 (0.0039)	0.0165*** (0.0033)	0.0051 (0.0038)	-0.0091*** (0.0034)	0.0042 (0.0040)
LDUS1					0.0071 (0.0083)	0.0218** (0.0089)	0.0219 (0.0140)	-0.0167 (0.0147)
*Schooling								
Observations	3241	3241	3241	3241	3241	3241	3241	3241
R-sq	0.361	0.223	0.237	0.0749	0.361	0.224	0.239	0.0757

Note: Other control variables are not specified in the table. Robust standard errors are in parenthesis; \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

**Table 14**  
Different quality of living of land-deprived households in urban areas compared to normal urban households (urban sample across ages).

	(1) Log(Total consumption)	(2) Food consumption ratio	(3) Log(Total income)	(4) Log(Total consumption)	(5) Food consumption ratio	(6) Log(Total income)
Panel A: Household quality of living (Household head age below 30)						
LDUS1	-0.0655 (0.1024)	-0.0105 (0.0226)	-0.2365 (0.2186)	-0.0937 (0.1687)	0.0157 (0.0346)	-0.3834 (0.3377)
Schooling	0.0212 (0.0139)	-0.0053* (0.0032)	0.0828*** (0.0236)	0.0203 (0.0154)	-0.0045 (0.0034)	0.0781*** (0.0258)
LDUS1				0.0075 (0.0309)	-0.0069 (0.0068)	0.0389 (0.0554)
*Schooling						
Observations	1033	1031	1033	1033	1031	1033
R-sq	0.469	0.246	0.390	0.469	0.247	0.391
Panel B: Household quality of living (Household head age between 31 – 60)						
LDUS1	-0.0721* (0.0380)	-0.0376*** (0.0105)	-0.2383*** (0.0870)	-0.0728* (0.0379)	-0.0370*** (0.0105)	-0.2361*** (0.0857)
Schooling	0.0306*** (0.0035)	-0.0068*** (0.0010)	0.0837*** (0.0060)	0.0309*** (0.0036)	-0.0071*** (0.0010)	0.0826*** (0.0061)
LDUS1				-0.0063 (0.0124)	0.0053 (0.0033)	0.0194 (0.0258)
*Schooling						
Observations	9862	9844	9862	9862	9844	9862
R-sq	0.367	0.185	0.232	0.367	0.186	0.232
Panel C: Household quality of living (Household head age above 60)						
LDUS1	-0.0408 (0.0536)	-0.0742*** (0.0170)	-0.8757*** (0.1076)	-0.1457** (0.0714)	-0.0761*** (0.0203)	-0.9199*** (0.1360)
Schooling	0.0206*** (0.0035)	-0.0025** (0.0010)	0.0662*** (0.0052)	0.0220*** (0.0036)	-0.0025** (0.0010)	0.0668*** (0.0054)
LDUS1				-0.0307** (0.0134)	-0.0006 (0.0039)	-0.0129 (0.0244)
*Schooling						
Observations	5457	5437	5458	5457	5437	5458
R-sq	0.356	0.113	0.322	0.357	0.113	0.322

Note: Other control variables are not specified in the table. Robust standard errors are in parenthesis; \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

welfare. This finding implies the necessity for the governments to provide better resettlement packages to the land-deprived rural households with sounder employment and social security supports.

Thirdly, we find that the urban integration issue of the land-deprived urban households is of similar severity across different regions of

China. Better-educated and younger households can integrate into the urban society better. This third aspect of finding suggests that the government should provide more supports to the less-educated and older households during land acquisition.

Our study makes the following contributions. Firstly, it contributes

**Table 15**  
Different social welfares of land-deprived households in urban areas compared to normal urban households (urban sample across ages).

	(1) Urban pension participation	(2) Urban insurance participation	(3) Sickness	(4) Happiness	(5) Urban pension participation	(6) Urban insurance participation	(7) Sickness	(8) Happiness
Panel A: Household social welfare (Household head age below 30)								
LDUS1	-0.1525*** (0.0554)	-0.2588*** (0.0611)	-0.0511** (0.0244)	-0.1297 (0.0807)	-0.0379 (0.0769)	-0.2604*** (0.0906)	-0.0400 (0.0420)	-0.0891 (0.1111)
Schooling	0.0406*** (0.0080)	0.0267*** (0.0082)	-0.0024 (0.0036)	-0.0045 (0.0095)	0.0441*** (0.0086)	0.0266*** (0.0087)	-0.0020 (0.0039)	-0.0033 (0.0102)
LDUS1 *Schooling					-0.0303* (0.0171)	0.0004 (0.0223)	-0.0029 (0.0088)	-0.0107 (0.0243)
Observations	1033	1033	1033	1033	1033	1033	1033	1033
R-sq	0.510	0.351	0.212	0.237	0.512	0.351	0.212	0.237
Panel B: Household social welfare (Household head age between 31 – 60)								
LDUS1	-0.4365*** (0.0270)	-0.4854*** (0.0279)	-0.0133 (0.0249)	0.0015 (0.0305)	-0.4355*** (0.0271)	-0.4852*** (0.0279)	-0.0145 (0.0249)	0.0026 (0.0305)
Schooling	0.0229*** (0.0023)	0.0117*** (0.0025)	-0.0121*** (0.0023)	0.0031 (0.0027)	0.0224*** (0.0024)	0.0116*** (0.0026)	-0.0115*** (0.0024)	0.0026 (0.0027)
LDUS1 *Schooling					0.0085 (0.0060)	0.0016 (0.0066)	-0.0106 (0.0087)	0.0096 (0.0096)
Observations	9862	9862	9862	9862	9862	9862	9862	9862
R-sq	0.300	0.210	0.151	0.0730	0.300	0.210	0.151	0.0732
Panel C: Household social welfare (Household head age above 60)								
LDUS1	-0.6098*** (0.0281)	-0.6550*** (0.0265)	-0.0300 (0.0437)	-0.0607 (0.0428)	-0.5880*** (0.0386)	-0.6319*** (0.0340)	-0.0174 (0.0544)	-0.0673 (0.0568)
Schooling	0.0063*** (0.0015)	0.0043** (0.0018)	-0.0035 (0.0022)	0.0016 (0.0021)	0.0061*** (0.0016)	0.0040** (0.0018)	-0.0036 (0.0023)	0.0017 (0.0021)
LDUS1 *Schooling					0.0064 (0.0057)	0.0067 (0.0049)	0.0037 (0.0115)	-0.0019 (0.0105)
Observations	5458	5458	5458	5458	5458	5458	5458	5458
R-sq	0.464	0.269	0.0866	0.0891	0.464	0.269	0.0866	0.0891

Note: Other control variables are not specified in the table. Robust standard errors are in parenthesis; \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

**Table 16**  
Different quality of living of land-deprived households in urban areas compared to normal urban households (urban sample across education levels).

	(1) Log(Total `consumption)	(2) Food consumption ratio	(3) Log(Total income)	(4) Log(Total consumption)	(5) Food consumption ratio	(6) Log(Total income)
Panel A: Household quality of living (Household head schooling below 9 years)						
LDUS1	-0.0552 (0.0376)	-0.0521*** (0.0111)	-0.4999*** (0.0810)	-0.0616 (0.0451)	-0.0579*** (0.0133)	-0.4169*** (0.0972)
Schooling	0.0066 (0.0043)	0.0020 (0.0013)	0.0780*** (0.0078)	0.0070 (0.0046)	0.0024* (0.0014)	0.0723*** (0.0084)
LDUS1 *Schooling				-0.0029 (0.0112)	-0.0026 (0.0032)	0.0372 (0.0241)
Observations	7044	7022	7045	7044	7022	7045
R-sq	0.346	0.161	0.239	0.346	0.161	0.240
Panel B: Household quality of living (Household head schooling between 10 – 12 years)						
LDUS1	-0.1081 (0.0658)	-0.0242 (0.0167)	-0.0998 (0.1526)	0.3579 (0.3203)	-0.0160 (0.0851)	-1.3950 (1.4782)
Schooling	-0.0038 (0.0265)	0.0027 (0.0078)	-0.0894* (0.0459)	0.0020 (0.0267)	0.0028 (0.0080)	-0.1053** (0.0462)
LDUS1 *Schooling				-0.1803 (0.1277)	-0.0032 (0.0332)	0.5012 (0.5470)
Observations	4416	4405	4416	4416	4405	4416
R-sq	0.343	0.186	0.183	0.344	0.186	0.184
Panel C: Household quality of living (Household head schooling above 13 years)						
LDUS1	-0.0980 (0.0930)	-0.0198 (0.0256)	-0.3612** (0.1758)	0.4027 (0.4035)	-0.0268 (0.1166)	0.6326 (0.7477)
Schooling	0.0593*** (0.0171)	-0.0193*** (0.0039)	0.0966*** (0.0293)	0.0611*** (0.0175)	-0.0193*** (0.0039)	0.1001*** (0.0299)
LDUS1 *schooling				-0.0778 (0.0527)	0.0011 (0.0159)	-0.1544 (0.1038)
Observations	4833	4826	4833	4833	4826	4833
R-sq	0.343	0.200	0.182	0.343	0.200	0.182

Note: Other control variables are not specified in the table. Robust standard errors are in parenthesis; \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

to the literature on social integration (Dustmann, 1996; Yang, 2015; Leccis, 2019) by providing a comprehensive picture on the quality of living and social welfare of the land-deprived households in China as well as their degree of integration into the urban society. In addition, most studies only study the land-deprived urban households who have

migrated to urban areas (Xie, 2012; Yang, 2015). We not only study the land-deprived households in both urban and rural areas, but also study their urban communities and compare them with households of other communities. Most studies focus only on a single region (Bao and Peng, 2016; Tan et al., 2019). We use the sample from around 200 cities in 29

**Table 17**  
Different social welfares of land-deprived households in urban areas compared to normal urban households (urban sample across education levels).

	(1) Urban pension participation	(2) Urban insurance participation	(3) Sickness	(4) Happiness	(5) Urban pension participation	(6) Urban insurance participation	(7) Sickness	(8) Happiness
Panel A: Household social welfare (Household head schooling below 9 years)								
LDUS1	-0.4548*** (0.0253)	-0.5301*** (0.0259)	-0.0173 (0.0252)	-0.0229 (0.0286)	-0.4116*** (0.0332)	-0.4918*** (0.0331)	-0.0208 (0.0298)	-0.0037 (0.0349)
Schooling	0.0222*** (0.0027)	0.0129*** (0.0030)	-0.0038 (0.0034)	0.0035 (0.0033)	0.0192*** (0.0030)	0.0103*** (0.0034)	-0.0036 (0.0036)	0.0022 (0.0036)
LDUS1 *Schooling					0.0195*** (0.0061)	0.0173*** (0.0058)	-0.0016 (0.0099)	0.0086 (0.0086)
Observations	7045	7045	7045	7045	7045	7045	7045	7045
R-sq	0.401	0.292	0.194	0.0993	0.402	0.293	0.194	0.0995
Panel B: Household social welfare (Household head schooling between 10 – 12 years)								
LDUS1	-0.4424*** (0.0416)	-0.4978*** (0.0410)	-0.0419 (0.0435)	-0.0231 (0.0525)	0.3701* (0.2224)	0.0774 (0.2455)	0.0229 (0.1840)	-0.2479 (0.3254)
Schooling	-0.0611*** (0.0159)	-0.0156 (0.0183)	0.0089 (0.0206)	0.0103 (0.0215)	-0.0511*** (0.0161)	-0.0085 (0.0185)	0.0097 (0.0211)	0.0076 (0.0218)
LDUS1 *Schooling					-0.3144*** (0.0856)	-0.2226** (0.0932)	-0.0251 (0.0752)	0.0870 (0.1246)
Observations	4416	4416	4416	4416	4416	4416	4416	4416
R-sq	0.350	0.228	0.220	0.0810	0.354	0.230	0.220	0.0812
Panel C: Household social welfare (Household head schooling above 13 years)								
LDUS1	-0.3022*** (0.0651)	-0.3119*** (0.0803)	-0.0410 (0.0307)	-0.0528 (0.0813)	-0.3119 (0.3650)	-0.8147 (0.5520)	0.0693 (0.2006)	0.2724 (0.3695)
Schooling	0.0093 (0.0065)	-0.0171* (0.0091)	-0.0000 (0.0076)	-0.0353*** (0.0110)	0.0092 (0.0066)	-0.0189** (0.0090)	0.0004 (0.0077)	-0.0342*** (0.0111)
LDUS1 *Schooling					0.0015 (0.0566)	0.0781 (0.0878)	-0.0171 (0.0319)	-0.0505 (0.0573)
Observations	4833	4833	4833	4833	4833	4833	4833	4833
R-sq	0.196	0.127	0.260	0.106	0.196	0.127	0.260	0.106

Note: Other control variables are not specified in the table. Robust standard errors are in parenthesis; \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

provinces in China, which aids us to conduct regional heterogeneity analysis.

Secondly, this study is related to the urban regeneration and gentrification literature (Liu et al., 2018; Bosch and Ouwehand, 2019; Chesire et al., 2019; Leccis, 2019). While government’s decision to using the tax payers’ money to conduct gentrification and regeneration is often justified by economic externalities of the gentrification and regeneration, we provide one more justification that the inferior communities do not have the psychological incentive to improve themselves. Because the land-deprived households tend to gather in inferior communities, and people staying in inferior communities with neighbors of the same status have the same self-evaluated happiness as those normal urban households staying in better communities with better status. In other words, the lower status households may not be willing to spend additional efforts to raise their own status.

Our study has several shortcomings. First of all, limited by our data, we are only able to conduct cross-sectional analysis, we are unable to employ fixed effect model to eliminate un-observable variables that may bias our estimation. However, following the literature, what we can do is including as many controls in our model as possible, such as household demographics as well as city-level dummy variables, so we believe our results have provided robust results and policy implications for raising urban integration of the land-deprived urban households.

Another drawback of our study is that we are unable to identify the degree of integration of the land-deprived urban households in a dynamic way, thus we may not be able to tell the trend of integration and unable to evaluate the effectiveness of government policy that aims to improve the quality of life/ welfare for those households. Even though, as we have identified in our results, we believe education is one of the policies that are able to improve urban integration of land-deprived urban households, and we believe that government can provide further support for the less-educated people as well as the older people to facilitate their integration into urban society.

**CRedit authorship contribution statement**

**Zhang Yanjiang:** Conceptualization, Methodology, Investigation, Writing - original draft. **Dai Xinjun:** Writing - review & editing, Validation. **Yu Xiaofen:** Project administration, Funding acquisition, Validation, Supervision. **Gao Nan:** Conceptualization, Methodology, Software, Data curation, Resources.

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**Appendix A. Supplementary data**

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.landusepol.2020.104671>.

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