中国农业大学学报 2018,23(7):176-191
Journal of China Agricultural University
http://zgnydxxb.ijournals.cn
DOI:10.11841/j.issn.1007-4333.2018.07.20

身份融合对农民工就业的影响
——基于倾向得分匹配的研究

卢海阳[1] KANDILOV T. Ivan[2]
(1.福建农林大学 公共管理学院,福州 350002;
2.北卡罗莱纳州立大学 农业与资源经济系,美国 罗利 27606)

摘 要 身份融合是理解农民工经济行为的重要概念。基于2013年浙江省的农民工调研数据,本研究探讨了身份融合对农民工就业的影响。为了解决可能存在的自选择问题,采用倾向得分匹配法进行实证分析。结果表明:身份融合对农民工的劳动参与有显著影响,身份融合对农民工自我雇佣和工作强度的影响并不显著;身份融合对农民工就业的影响存在明显的代际差异、性别差异以及户籍地差异。本研究获得的政策启示在于:促进农民工的城市融入有利于稳定他们的就业预期,实现劳动供给的可持续发展,对中国经济的发展具有重要作用。

关键词 就业;身份融合;倾向得分匹配;农民工
中图分类号 F323.6;F241.4 **文章编号** 1007-4333(2018)07-0176-16 **文献标志码** A

The effect of identity integration on the employment of rural-urban migrants: Based on a PSM approach

LU Haiyang[1], KANDILOV T. Ivan[2]
(1. School of Public Administration, Fujian Agriculture and Forestry University, Fuzhou 350002, China;
2. Department of Agricultural and Resource Economics, North Carolina State University, Raleigh 27606, USA)

Abstract The concept of identity integration is essential to understand the economic behavior of rural-urban migrants. This paper examines the effect of identity integration on the employment of rural-urban migrants in China. Data from a survey conducted in Zhejiang Province, China in 2013 is reported in this paper. The propensity score matching method is applied to address the sample selection bias. The results show that identity integration has quantitatively large and statistically significant effect on the workforce participation of rural-urban migrants. However, the effects of identity integration on self-employment and work intensity are not significant. In addition, the impact of identity integration on employment varies among different categories of gender, generation and places of household registration (*hùkǒu*). The results indicate that the integration of rural-urban migrants into cities enables them to develop long-term plans in the city and promotes a stable labor supply, which benefits China's economic development.

Keywords employment; identity integration; PSM; rural-urban migrants

1 Introduction

In the past two decades, personal identity, which is commonly recognized as a social psychological concept defining who someone is and group membership, is widely adopted in the

Received: 2017-10-14
Foundation item: National Natural Science Foundation of China (71603052); Humanity and Social Science Youth Foundation of Ministry of Education (16YJCZH065); Soft Science Project of the Department of Fujian Science and Technology (2017R0010); Project of Outstanding Research Talents of Fujian Agriculture and Forestry University (xjq201631); Scholarships for Studying Abroad of Fujian Province
Corresponding author: LU Haiyang, assistant professor, Ph. D., major in agricultural economics and labor economics, E-mail: hylu@fafu.edu.cn

economic studies. The incorporation of identity into economic model can account for many phenomena around us. People often behave in a similar way to those around them. They watch the films their friends watch, wear clothes appropriate to their identity and choose the same thing as other in-group members to facilitate the communication of desired social identities[1]. At the same time, people also want to be different. They purchase products with distinctive logos to distinguish themselves from masses or wear designer suits when they want to stand out for an important interview. Identity is thus a composite of multiple attributes[2], whether economics includes or excludes it, then, also has its consequences[3]. Identity economics, i. e., how affiliation to a certain group for international migrants and their children affects economic outcomes, has recently attracted considerable research interest among scholars. Constant and Zimmermann[4] found that migrants who have an affiliation to the majority culture usually have better performance in labor market than those who do not. Based on survey data from Statistics Sweden, Nekby and Rödin found[5] that what matter for employment outcomes is an attachment to the majority culture. However, a strong attachment to the ethnic group is not detrimental for employment outcomes.

Compared with studies on international migrants, the relationship between the identity of rural-urban migrants and economic outcomes in China has not yet been broadly investigated. In fact, internal migration (mainly from rural areas to cities within countries) has become a worldwide phenomenon, and is particularly evident in Africa, Asia and Latin America[6]. Chinese internal migration is a unique experience in human history and may well be one of the greatest migration events ever to have taken place. Rural-urban migrants in Chinese cities tend to consider themselves and are considered by urban residents as outsiders[7]. Consequently, these internal migrants face similar issues concerning their identity and employment outcomes as many international migrants. Also, given the ever-increasing size of the rural-urban migrants, estimated to be in the range of 169 million in 2016①, the identity integration of these people and its impact on their employment outcomes largely determine the future of China's economic development.

However, the effect of identity integration on employment outcomes in China is rarely discussed. Not to mention the group differences in the employment outcomes of identity integration. Thus, this paper attempts to examine the impact of identity integration on the employment outcomes of rural-urban migrants by using data from a survey conducted in Zhejiang Province, China in 2013. Although identity integration for international migrants is examined in several empirical studies, sample selection bias is rarely considered by these papers. More specifically, migrants with better performance in labor market are more inclined to realize identity integration. Consequently, observed better outcomes may be driven by other reasons, rather than the identity itself. In this study, we use propensity score matching (PSM) approach to address the sample selection bias, and apply the Bootstrap method to control for the small sample bias. In addition to estimating the average treatment effects of identity integration on employment outcomes, we also study the effects of identity integration relative to multiple categories, from gender, generation to place of household registration (*hùkǒu*). We found that the average treatment effects of the identity integration of rural-urban migrants on workforce participation are quantitatively large and statistically significant. However, the treatment effects are quite heterogeneous across different

① See http://www.stats.gov.cn/tjsj/zxfb/201704/t20170428_1489334.html.

categories. The effects of identity integration are mainly driven by male or by second generation migrants. We also found that those with local *hùkǒu* are more likely to be affected. The remainder of this paper is organized as follows. Theory and literature are reviewed in the next section. Section 3 presents the methodology and data. Section 4 describes variable measurement. Section 5 discusses the results, followed by the conclusions in Section 6.

2 Theory and literature

2.1 Identity and economics

The concepts of identity integration, social identity, and social category are as basic to sociology as supply and demand to economics[8]. Identity integration is often defined as an aspect of acculturation, which refers to the process of cultural and psychological change that results following the meeting between cultures[9]. When entering into an acculturation situation, individuals and groups are often faced with the questions, "Who am I?" and "Which group do I belong to?"[10]. The two questions form the basis of the influential positions of social identity theory. According to this theory, social identity is about how individuals identity with and behave as part of social groups[11].

In the context of acculturation theory, the dimensionality of identity is debated in literature. In the classical acculturation framework, identity integration is defined as the development of a sense of personhood based exclusively on the host society[12]. In this view, a strengthening of one identity requires a weakening of the other. In the multicultural framework, however, there are two independent dimensions underlying the identity formation of individuals: links to their original identity and to a new one in their society of settlement[13]. These links can be manifested in many ways, including preferences for involvement in the two cultures and in the behaviors they exhibit.

Identity is often the source of positive and desirable outcomes. Considerable international research has devoted to the importance of identity integration to greater subjective well-being[14], better health[15], higher self-esteem[16] and more positive emotions[17]. These findings converge to support the proposition that identity integration is the key to successful adaptation. Meanwhile, identity has also received interest among economists, and several papers have studied ethnic identity and its consequences for labor market and educational outcomes. Akerlof et al.[3] formalize the concept of identity in a model including identity in the utility function, allowing for interdependence between individual identity and economic behavior. They imply that an individual's utility increases when they achieve their "ideal self" and are comfortable with their identity, otherwise, their utility decreases. In this framework, it is then possible that even rational individuals chose non-optimal jobs because of identity consideration.

In empirical studies, Blackaby et al.[18] found that ethnic groups may have developed "different taste for isolation", which may limit their economic opportunities and raise their unemployment rates. Similarly, Berthoud[19] proposed the argument that identity-related factors are very important in reinforcing the exclusion of certain groups from employment. Bisin et al.[20] argued that a penalty, which seems to vary from one country to another depending on the kind of integration policy implemented, occurs in terms of employment for the immigrants who have a strong identity but it is lower for the second generation immigrants. An argument has also been made that the direction of causality between identity and labor market outcomes is unclear[5]. According to Akerlof et al.[8], the "category" in which the individual falls can be changed or chosen by the individual. This makes the empirical analysis of associating identity measures with economic outcomes difficult, in the absence of randomization of individuals into clearly defined categories of "identity", the relationship to economic outcomes is

not identifiable in a causal manner.

2.2 The identity integration of rural-urban migrants in China

The dualistic rural-urban socioeconomic structure and two classes of citizenship are prominent features of China, the foundation of which is the Chinese *hùkǒu* system formed in the late 1950s to facilitate heavy industry. The *hùkǒu* system is often considered to be unique to China[21]. For more than half a century, the *hùkǒu* system in China has segregated the rural and urban populations, initially in geographical terms, but more fundamentally in social, economic and political terms[22].

In the context of the *hùkǒu* system, rural-urban migration has a specific meaning: it refers to industrial and service workers whose household registration is in rural area. The *hùkǒu* system functions very much as international borders do, identifying aliens and excluding them from many civic entitlements[23]. Though these rural migrants have urban jobs, and dwell in towns and cities, they are not considered legally to be urban workers. They are not eligible for regular urban welfare benefits, their children have no access to local schools, and they are excluded from public housing and other rights that are available to those with urban *hùkǒu*. As a result, even after working in cities for decades, rural-urban migrants rarely consider themselves as urban citizens. They tend to treat the urban job merely as a means of increasing household income rather than a permanent source of livelihood, and most plan to eventually return to the countryside where they have the social basis and farmland for long-term security.

Identity integration consists of not only behavior, practice, and achievement, but also a sense of self in relation to others. In China, the identity integration of rural-urban migrants entails a process by which they take on the identity of urban residents and it is an important indicator of whether or not these people integrate into cities[24]. While a large body of literature has acknowledged the truncated urban identity of rural-urban migrants in Chinese cities, little attention has been paid to generational difference in the identity integration of these migrants. In Chinese internal migration literature, the first generation migrants are those who ventured to go to cities in the 1980s, and those who did so in the 1990s are known as the second or new generation migrants. Due to the distinctive features regarding personal value, education level, migration experience and family economic condition of the second generation migrants compared with the first generation, the second generation usually has stronger desire to stay in the city. Specifically, the first generation has stayed and worked in cities for decades by straddling city and countryside, they can earn urban wages as long as they have jobs, support the rest of the family at a rural and return to their home village or rural town if migrant jobs dwindle[25]. The normal objective of the first generation is to earn more and save as much as possible before returning home, so that they can provide their children with a good education environment and improve the economic condition of their family. Most of them do not have an intention to permanently settle in cities and define themselves as rural residents. However, the second generation is quite different. Some of them are born or brought up in cities, and their memories about rural life, which gained through an early short stay in countryside, fade with the passage of time living the city. Also, most of the second generation migrants have little or no experience in farming, they usually engage in migrant work immediately after finishing their schooling. Compared with the older generation, the living habits of the second generation are closer to urban residents and more of them desire to be entitled as legal urban residents.

2.3 Identity integration and employment outcomes in China

Our review of existing studies indicates that almost all studies on the employment outcomes of

identity integration are based in the USA or European countries. Few studies have analyzed the associations between identity and the employment consequences of rural-urban migrants in China. Relevant studies only focus on the relative labor market performance of rural migrants compared with their urban counterparts. According to these studies, rural-urban migrants usually occupy disadvantaged positions in Chinese cities that are characterized by high work intensity, poor working conditions, low and unstable payment and no job benefits, that is, conditions that are unattractive to urban residents[26].

Analyzing the role that identity integration has in the labor market in China is of great importance for both economic theory and policy making. Under the current *hùkǒu* system, most rural-urban migrants do not legitimately have urban *hùkǒu* and lack access to public services. They still expect to return home in rural area, periodically during the Chinese New Year, and permanently after they are not needed by the urban labor market. Their supply of labor is temporary. In that light, extending *hùkǒu* reform and integrating rural-urban migrants to urban society can provide incentives for migrants to exercise higher levels of effort in labor market. Given that questions of how the identity integration of rural-urban migrants affects the employment remain unaddressed in the literature, we try to fill this gap and address following two questions. Do those who identify themselves as urban citizens have better employment consequences than those who identify themselves as rural residents, and does the relationship between identity integration and employment outcomes differ between generations, genders and places of *hùkǒu*?

3 Methodology and data

To empirically test the effects of the identity integration of rural-urban migrants on employment outcomes, we apply the PSM method to compare a group of 'treated' migrants (those who identify themselves as urban residents) with a group of 'untreated' migrants (those with similar characteristics who identify themselves as rural residents). When implemented with quality data, PSM approach usually produced estimates that are comparable to those from a designed experimental approach[27].

According to Rosenbaum et al.[28], by using a nonparametric approach that does not rely on functional form assumptions, and by statistically selecting a subset of untreated individuals for whom the distribution of covariates is similar to the distribution in the treated group, PSM can address some of the limitations associated with standard regression models (e. g., ordinary least squares or logistic regression).

To execute PSM, first we needed to estimate each migrant's propensity for being classified as an identity integrated migrant on the basis of a set of variables. In the second stage, we calculated propensity scores (PS) to measure the extent of matching of the treated and untreated migrants in multi-dimensions. This produced a new, balanced untreated group that did not differ systematically from the treated group in terms of the selected variables. Finally, we estimated the average treatment effect on the treated (ATT) by the differences of potential outcomes of the treated and untreated migrants. One problem of the data was that the number of respondents who identify themselves as urban residents is relatively small. To reduce the small sample size bias, we used the bootstrap approach to estimate the standard errors by following Lin et al.[29].

Data for this study was collected via a questionnaire survey of rural-urban migrants in Zhejiang Province and by China Academy for Rural Development in 2013. Zhejiang is situated on southeastern coast of China, at the southern part of the Yangtze River delta. It is one of the most commercial and richest provinces in China. Its economic importance, as well as its geographical location, makes it a popular destination for rural

migrant workers.

We chose 1 200 rural-urban migrants aged above 16 and with agricultural *hùkǒu* by random sampling in the seven cities in Zhejiang Province including Hangzhou, Huzhou, Jiaxing, Ningbo, Shaoxing, Taizhou, and Zhoushan (see Fig. 1). Sixty college students were recruited and trained to conduct interviews. In order to ensure the quality of the survey, each student was assigned no-more-than 20 questionnaires and was paid 30 *yuan* for each qualified questionnaire as an incentive. Total of 1 127 questionnaires were collected. One hundred and seventy-four questionnaires were dropped because of errors or inconsistencies in the answers. Ultimately, we had a database consisting of 953 rural-urban migrants which represented an overall effective rate of 84.6%.

Fig. 1　Districts surveyed in Zhejiang Province, China

4　Measurement

4.1　Employment outcomes

We used three variables borrowed from Balsa and French[30] to measure employment outcomes. Table 1 lists the employment outcome variables used in empirical analysis:

1) Workforce participation, defined as a dummy variable with the value of one when the individual reported having a job or having looked for a job in the past 30 days and zero otherwise.

2) Self-employment, taking the value of one for those who were working as an employer or self-employed, and zero otherwise.

3) Work intensity, measured by the logarithm of total working hours in the past 12 months.

Table 1　Descriptive statistics of labor market outcome variables

Variable	Description	Mean	SD	Min	Max
Workforce participation	Having a job or looking for a job=1, otherwise=0	0.973	0.163	0	1
Self-employment	Employer or self-employed=1, otherwise=0	0.141	0.348	0	1
Work intensity	Log of total working hours in last year	7.700	0.515	4.787	8.813

4.2　Identity integration

Due to the official classification as rural by the *hùkǒu* system, rural-urban migrants who have stayed in the city for an extended period of time may still feel as though they do not belong to the city. Following previous studies[31], we used migrants' self-reported identity, defined as dummy variable taking the value of one when the migrants identify themselves as urban residents and zero otherwise, as a measure of their identity integration into urban society.

Table 2 presents the mean value of the self-reported identity by gender, generation and *hùkǒu* possession. It shows that 16.0% of the sample reports identity integrated. No significant differences between males and females were observed in the rates of self-reported identity. Second generation migrants were more likely to identify themselves as urban residents (17.8%) than the first generation (12.8%). In addition,

there was no significant difference in the rate of identity integration between migrants with local and non-local *hùkǒu*.

Table 2 Summary statistics of identity integration

Variable	Self-reported identity		
	Mean	SD	$P>\|t\|$
Male	0.160	0.367	0.971
Female	0.161	0.368	
First generation	0.128	0.338	0.042
Second generation	0.178	0.383	
Local *hocal*	0.167	0.374	0.548
Non-local *hon-l*	0.153	0.360	
Total	0.160	0.367	

4.3 Matching variables

An important step of performing PSM analysis is to obtain PS, which measure the extent of matching of treated and untreated groups. In this study, the PS value was estimated using a logit model. The dependent variable was the identity integration (either urban identity or rural identity) dummy, and the independent variables were specified according to the factors mentioned in previous studies. We considered four sets of matching variables (Table 3).

1) Demographics. As is mentioned in early studies, demographic variables include age, gender and marital status. In this study, we also include age-squared to reveal possible non-linearity in the effect of age on identity integration.

Table 3 Descriptive statistics of matching variables

Variable	Description	Mean	SD	Min	Max
Demographics					
Age	Year	31.613	9.802	15	63
Gender	Male=1, female=0	0.669	0.471	0	1
Marital status	Married=1, otherwise=0	0.640	0.480	0	1
Human capital factors					
Education	Year	10.524	2.821	0	16
Occupational training	Yes=1, no=0	0.796	0.403	0	1
Work experience	Year	8.821	7.194	0	40
Understanding of dialect	Totally or partially understand=1, otherwise=0	0.381	0.486	0	1
Self-reported health status	Healthy=1, otherwise=0	4.023	0.738	1	5
Social capital factors					
Social status	Party member=1, otherwise=0	0.234	0.424	0	1
The position of friends	Have friends working as cadres=1, otherwise=0	0.531	0.499	0	1
Social relation	Have a good relationship with urban residents=1, otherwise=0	0.782	0.413	0	1
Social interaction	Have urban friends=1, otherwise=0	0.773	0.419	0	1
Self-reported discrimination	Experienced discrimination from urban residents=1, otherwise=0	0.425	0.495	0	1
Trust of people	Yes=1, no=0	0.763	0.426	0	1
Other control variables					
Urban social insurance	Yes=1, no=0	0.752	0.432	0	1
Place of *hùkǒu*	Local *hùkǒu*=1, non-local *hùkǒu*=0	0.477	0.500	0	1
Migration pattern	Household migration = 1, individual migration=0	0.464	0.499	0	1
Average wage	Log of average monthly wage	10.158	1.247	1.099	13.122

2) Human capital factors. Wang and Fan[24] found that human capital variables such as education, job duration and language are useful for predicting migrant identity integration. Given that human capital includes not only knowledge, skills and experience, but also health and life. We use rural migrant education, occupational training, work experience, understanding of dialect and self-reported health status to measure the human capital of rural migrants.

3) Social capital factors. Given the absence of institutional support, the role of social capital has in integration of Chinese rural-urban migrants into cities becomes particularly important. We applied the framework of Tsai et al.[32] to measure social capital, which contains three dimensions of indicators, i. e., structural dimension, relational dimension and cognitive dimension. Due to being localized to rural-urban migrants in China, the indicators we used were quite different. We used social status (being party member) and the position of friends (having cadres friends) to measure the structural dimension of social capital. According to Bisin et al.[20], peer effects and social interactions are important in ethnic identity formation. The social relation (migrant relationships with urban residents) and social interaction (having local urban friends) were therefore adopted as two indicators of the relational dimension of social capital. Berry et al.[16] argued that the most important contributor to migrant integration and adaption is the experience of discrimination. Therefore, we used self-reported discrimination of urban residents towards rural migrants and migrant trust of people around them to measure the cognitive dimension of social capital.

4) Other control variables. Urban social insurance, place of *hùkǒu* (local or non-local), migration pattern (household or individual) and average wage (natural logarithm of average monthly wage of rural migrants) were also applied as matching variables.

5 Empirical results

5.1 Estimating the propensity scores

The first step in propensity matching analysis is to estimate PS. In line with previous literature, we applied a logit model using the matching variables mentioned above to determine PS. We used matching to help us identify untreated migrants (identity integrated migrants) that were as similar as possible to the treated migrants (identity unintegrated migrants). Various specifications were used in the estimation. We also added industry dummies in all models to control for industry effects. The results are presented in Table 4. Specification 1 was the most parsimonious, only including migrant demographics. Specification 2 adds human capital factors to the controls in Specification 1. In Specification 3, we also added social capital factors. Specification 4 included all matching variables and Specification 5 only includes variables that were significant using stepwise regression.

As the results in Table 4 indicate, the effect of age on identity integration was nonlinear. Identity integration improved with increasing age but the increase declined as the migrants grow older. This result implies that in the context of Chinese culture, the majority of people in China, especially those from rural areas, wish to go back to where they originally came from when they become older, just as Chinese proverb says, "fallen leaves return to the roots" (*luo ye gui gen*). The probability of identity integration was not significantly related to gender and marital status of rural-urban migrants.

Beyond our expectation and findings reported in the literature, education and work experience were not significant in predicting the identity integration of rural-urban migrants. Occupational training, self-reported health status, understanding of dialect were significantly and positively related to the identity integration of rural-urban migrants. Among social capital factors, social status and social relation were significantly positively related

Table 4 Estimations of the logit models

Variable	Specification				
	1	2	3	4	5
Age	0.144*	0.159*	0.175	0.112	
	(−1.66)	(−1.71)	(−1.63)	(−1.02)	
Age squared	−0.002*	−0.002*	−0.003*	−0.002	
	(−1.85)	(−1.82)	(−1.74)	(−1.12)	
Gender	0.02	−0.037	0.052	−0.076	
	(−0.10)	(−0.17)	(−0.22)	(−0.31)	
Marital status	−0.238	−0.284	−0.093	−0.41	
	(−0.94)	(−1.09)	(−0.33)	(−1.23)	
Education		0.007	−0.036	−0.033	
		(−0.20)	(−0.94)	(−0.85)	
Occupational training		0.636**	0.508*	0.523*	0.595*
		(−2.28)	(−1.70)	(−1.65)	(−1.94)
Self-reported health status		0.290**	0.317**	0.278*	0.331**
		(−2.13)	(−2.08)	(−1.77)	(−2.22)
Work experience		0.000	−0.012	−0.022	
		(0.00)	(−0.53)	(−0.91)	
Understanding of dialect		0.341*	0.255	0.320*	
		(−1.78)	(−1.20)	(−1.36)	
Social status			0.472*	0.417*	0.590***
			(−1.96)	(−1.69)	(−2.67)
The position of friends			0.028	−0.053	
			(−0.14)	(−0.25)	
Social relation			0.547	0.462	0.578*
			(−1.62)	(−1.33)	(−1.72)
Social interaction			0.610*	0.418	
			(−1.76)	(−1.16)	
Self-reported discrimination			−0.536**	−0.590**	−0.603***
			(−2.36)	(−2.52)	(−2.66)
Trust of people			0.179	0.13	
			(−0.69)	(−0.49)	
Urban social insurance				0.774***	0.743**
				(−2.62)	(−2.57)
Place of *hùkǒu*				−0.109	
				(−0.48)	
Migration pattern				0.325	
				(−1.17)	
Average wage				0.291**	0.307**
				(−2.16)	(−2.47)
Industry dummies	Yes	Yes	Yes	Yes	Yes
Constant	−3.772***	−5.936***	−6.799***	−8.636***	−7.727***
	(−2.76)	(−3.62)	(−3.65)	(−3.99)	(−5.32)
Pseudo-R^2	0.017	0.035	0.076	0.103	0.082

Note: ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively, with *t*-values in parentheses.

to identity integration, indicating that rural-urban migrants who have party memberships or have urban friends may have more social resources, which helps them integrate into urban society. Self-reported discrimination had a significantly negative influence on the identity integration of rural-urban migrants, this result is consistent with the finding of Berry et al.[16] that discrimination has a strong negative impact on both psychological and sociocultural adaptation of migrants. The estimated coefficients on urban social insurance and average wage were also found positive and significant.

Our final goal was to estimate the PS, which we used match the treated migrants with untreated pairs. Given that no straightforward criterion is available to properly specify the logit model in the literature, we therefore used Specification 5, which was the model containing only significant predictors, as our basic specification to calculate PS. We then compared the employment outcomes between treated and untreated migrants. Figs 2 and 3 illustrate the kernel density functions of the treated and untreated migrants based on the nearest neighbor matching approach. Obviously, the kernel density functions of the two groups are significantly different before matching. Previous studies used all migrants in the untreated group to compare with treated migrants, and thus their results are biased. In contrast, we chose migrants from the untreated group to match those in the treated group based on PS. As is shown in Fig. 3, the kernel density functions of the two groups are a lot closer after matching, indicating that the characteristics of the variables are similar in the two groups after matching. Radius matching and kernel matching were also used to match the two groups. The results were similar, so are not presented here.

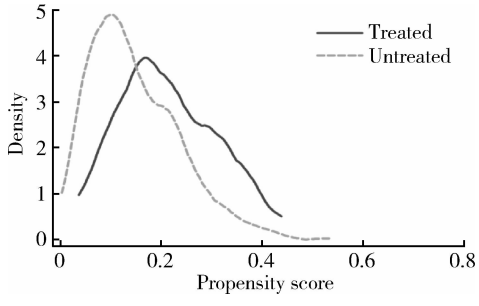

Fig. 2　Kernel density of the treated and untreated groups before matching

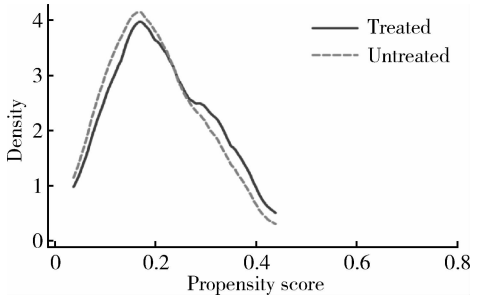

Fig. 3　Kernel density of the treated and untreated groups after matching

5.2　Matching results

The matching results are presented in Table 5. We used three approaches to estimate ATTs both pre- and post-matching. The first column of the table shows the results from the nearest neighbor matching approach. The next three columns report the results from radius matching, with radius ranging from 0.01 to 0.04. Kernel matching results are shown in the last column. The results are robust and the average estimated ATTs across different matching approaches are large in magnitude. In the analysis of either pre- or post-matching, we found that, on average, identity integration had a quantitatively large and statistically significant effect on the workforce participation of rural-urban migrants. Identity integrated migrants showed rates of workforce participation of 1.6% above identity unintegrated migrants after matching. The estimated ATTs on self-employment and work intensity were not statistically significant.

An important question is why identity integration has positive effect on rural-urban migrant workforce participation. One reason, as pointed out by Akerlof et al.[3], may be that identity affects behavior in a way that is

detrimental to labor market consequences in the host country. For instance, in our context, the feeling of not being an urban resident may lead the rural-urban migrant not to participate in social activities of urban residents, which is beneficial in developing network structures supportive of economic success. This explanation was confirmed by our survey. To the question, "Have you ever been invited to urban resident's home?", the percentage of migrants answering "Yes" was higher for those who identify themselves as urban residents (32.6%) than those who identify themselves as rural residents (21.8%). We got a similar result with the question, "Did you ever join activities organized by urban residents?" The percentage of migrants answering "Yes" was also higher among identity integrated migrants (52.7%) than identity unintegrated migrants (39.7%). Also, identity may change preferences, as mentioned by Akerlof et al.[8]. In our context, not identifying as urban residents may, for instance, restrict the choices of individuals, as particular jobs or occupations may become unacceptable.

Table 5 Comparison of ATTs

Item	Sample	Matching method				
		Nearest neighbor matching	Radius matching			Kernel matching
			$r=0.04$	$r=0.02$	$r=0.01$	
Workforce participation	Pre-matching	0.022**	0.022**	0.021**	0.021**	0.022**
		(0.015)	(0.016)	(0.015)	(0.015)	(0.015)
	Post-matching	0.015*	0.016**	0.017**	0.016**	0.016**
		(0.015)	(0.012)	(0.012)	(0.012)	(0.011)
Self-employment	Pre-matching	−0.003	−0.003	−0.003	−0.003	−0.003
		(0.038)	(0.034)	(0.033)	(0.033)	(0.034)
	Post-matching	−0.002	0.002	−0.002	−0.007	0.000
		(0.040)	(0.035)	(0.035)	(0.036)	(0.035)
Work intensity	Pre-matching	0.002	0.003	0.003	0.002	0.002
		(0.048)	(0.049)	(0.049)	(0.048)	(0.049)
	Post-matching	0.009	0.004	0.002	−0.003	0.002
		(0.059)	(0.054)	(0.054)	(0.056)	(0.054)

Note: ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively. Bootstrapped standard errors are reported in parentheses, based on 500 replications of the data.

Previous studies have established that there are significant gender differences in labor market outcomes[33]. The results of ATTs of genders, as shown in Panel A and B of Table 6, indicate that gender classification can produce different results in the effects of identity integration of rural-urban migrants on employment outcomes. Based on the nearest neighbor matching method, we found that a significant difference exists between males and females. Workforce participation was significantly different for males, whereas it was not for females. We thus argue that the difference of employment outcomes in Table 6 between the treated and untreated groups were driven mainly by men.

We further used radius matching and kernel matching to reexamine the effect of identity

integration as a robustness test. Focusing on the gender subgroups in Panel A and B, we got similar results from these two approaches. For males, the estimated ATTs on workforce participation was quantitatively large and statistically significant. For females, however, almost all the estimated ATTs were quantitatively small and insignificant. The only exception was the estimated ATT of identity integration on self-employment of women using radius matching, indicating that female migrants who identify themselves as urban residents were less likely to be self-employed. Overall, the robustness test further confirms that gender differences in the effects of identity integration on employment outcomes do exist for rural-urban migrants in China.

Table 6　Gender difference in the effect of identity integration

Variable	A. Male			B. Female		
	ATT	se	*t*-value	ATT	se	*t*-value
Nearest neighbor matching						
Workforce participation	0.023	0.015	1.56*	0.017	0.037	0.45
Self-employment	0.061	0.049	1.24	−0.058	0.065	−0.90
Work intensity	−0.039	0.074	−0.53	0.065	0.106	0.62
Radius matching						
Workforce participation	0.022	0.009	2.43**	0.045	0.049	0.93
Self-employment	0.029	0.042	0.70	−0.100	0.058	−1.72*
Work intensity	0.007	0.060	0.12	−0.023	0.098	−0.23
Kernel matching						
Workforce participation	0.021	0.009	2.26**	−0.002	0.030	−0.07
Self-employment	0.021	0.045	0.47	−0.061	0.054	−1.12
Work intensity	−0.018	0.069	−0.27	−0.019	0.086	−0.23

Note: ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively.

Over the last two decades, most rural residents leaving the countryside for the first time have been young adults, much younger than their predecessors. These young migrants are called second generation migrants in the literature, being born between 1980 and 1995[34]. The second generation migrants are quite different from the first generation migrants in the aspects of migration motivation, psychological orientation, self-identity and career choice. Compared with the first generation migrants, the second generation migrants are more eager to integrate into urban society. To examine the generation difference in the effects of identity integration on employment outcome we classified the sample migrants into two subgroups (1) the migrants born before 1980 classified as first generation, and (2) migrants born in the 1980s and 1990s classified as second generation. The ATTs were then calculated in each subgroup. The results are shown in Panel A and B of Table 7. The estimates suggest no systematic significant relationship between identity integration and workforce participation for first generation migrants. However, for second generation migrants, those identity integrated migrants seem to have a significantly higher workforce participation probability. We concluded that the effects of identity integration on employment outcomes are much larger for the second generation migrants.

Table 7 Generation difference in the effect of identity integration

Variable	A. First generation			B. Second generation		
	ATT	se	*t*-value	ATT	se	*t*-value
Nearest neighbor matching						
Workforce participation	0.031	0.032	0.97	0.024	0.021	1.33*
Self-employment	−0.021	0.092	−0.22	−0.018	0.066	−0.27
Work intensity	−0.088	0.100	−0.88	0.025	0.075	0.34
Radius matching						
Workforce participation	0.016	0.022	0.76	0.034	0.013	2.60**
Self-employment	−0.020	0.088	−0.22	−0.015	0.058	−0.26
Work intensity	−0.040	0.108	−0.37	0.021	0.070	0.30
Kernel matching						
Workforce participation	0.018	0.021	0.85	0.033	0.013	2.47**
Self-employment	−0.003	0.085	−0.04	−0.015	0.058	−0.26
Work intensity	−0.022	0.104	−0.22	0.024	0.069	0.35

Note: ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively.

In addition to the *hùkǒu* type or nature which is differentiated into the agricultural and non-agricultural, rural-urban migrants are also distinguished by whether they have a local or non-local *hùkǒu* with respect to an administrative unit. The local regular *hùkǒu* registration defined an individual's rights to pursue many activities and eligibility for services in a specific locality - a not inconsequential status given that levels and availability of services, even today, can still vary from place to place. We further test the ATTs of the alternative place of *hùkǒu* registration as (1) local *hùkǒu*, and (2) non-local *hùkǒu*. The results (Panel A and B of Table 8) show that the place of *hùkǒu* registration can produce different results in the effects of identity integration. Whether we calculated ATTs using nearest neighbor matching, radius matching or kernel matching method, the ATTs of workforce participation was significant in local *hùkǒu* subgroup. However, in non-local *hùkǒu* subgroup, all ATTs were not significant. The reason could be that migrants with local *hùkǒu* have stronger intention to settle down in destination cities than those with non-local *hùkǒu*, they find it easier and are more inclined to draw on locality-based networks, which enhance their labor market opportunities.

6 Conclusions

Since the systematic introduction of identity into economic analysis, identity has increasingly been emphasized as an important factor to explain economic outcomes of international migrants in many countries. However, the relationship between identity integration and employment outcomes of internal migrants in China remains unexplored. For a long period, rural-urban migration in China has provided a seemingly endless supply of cheap labor for the world and China has earned the label, "the world's factory." While hundreds of millions of rural-urban migrants have lived in cities for years, the city governments make no overt attempts to integrate or settle them in their jurisdictions. Though working in urban areas, rural-urban migrants bear a rather vague urban identity and most of them rarely identify themselves as permanent urban residents. They usually have low settlement intention and chose to circulate between urban work and home village, thereby leading to instability in the labor supply.

Table 8　*Hùkǒu* difference in the effects of identity integration

Variable	A. Local *hùkǒu*			B. Non-local *hùkǒu*		
	ATT	se	*t-value*	ATT	se	*t*-value
Nearest neighbor matching						
Workforce participation	0.020	0.016	1.25*	−0.008	0.019	−0.39
Self-employment	0.005	0.057	0.09	−0.062	0.064	−0.98
Work intensity	0.008	0.078	0.01	−0.048	0.092	−0.53
Radius matching						
Workforce participation	0.028	0.014	1.94*	0.004	0.019	0.20
Self-employment	−0.024	0.053	−0.46	0.012	0.052	0.24
Work intensity	0.055	0.073	0.75	−0.032	0.085	−0.37
Kernel matching						
Workforce participation	0.038	0.013	2.88***	−0.001	0.019	−0.05
Self-employment	−0.008	0.051	−0.16	0.007	0.049	0.15
Work intensity	0.042	0.071	0.59	−0.043	0.081	−0.53

Note: ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively.

This paper is one of the few studies to examine the effects of the identity integration of rural-urban migrants on employment outcomes, and the first to focus specifically on rural-urban migrants in China. Prior studies in the literature do not control for sample selection bias. In this study, we analyzed data from a survey of rural-urban migrants conducted in Zhejiang Province in 2013. By using the PSM approach, we effectively controlled sample selection bias. We also used the bootstrap method to calculate the standard errors to control the small sample bias.

The empirical results show that in the context of China's internal migration, the average treatment effects of identity integration on workforce participation is quantitatively large and statistically significant, indicating that identity integration can positively affect the labor supply of rural-urban migrants in China. Our findings also reveal that the effects of identity integration on employment outcomes are quite heterogeneous within different categories. The association between the identity integration of rural-urban migrants and favorable employment outcomes was significant for males but not for females, for the second generation but not for the first generation, and for those with local *hùkǒu* but not for those with non-local *hùkǒu*, respectively.

Results on the role of identity integration in labor market have important implications for China's economic development. China is entering a new era of labor shortage[35], although, there is still potential to exploit the existing demographic dividend in the short term. Our findings demonstrate that integrating rural-urban migrants (especially second generation migrants and those with local *hùkǒu*) into urban society through extending the *hùkǒu* reform and equalizing public services to all citizens will be beneficial in promoting a stable labor supply in China.

In conclusion, this paper introduces PSM to identity economic studies. Analyzing the relationship between identity integration and employment outcomes is a challenging work. Given characteristics such as individual preferences may underlie the associations between identity

integration and labor market consequences, and lead to spurious correlations when using standard regression estimation, as is the case for most studies in literature[36]. In addition, some of these relationships do not necessarily follow a single causal direction. Consequently, PSM is perhaps a viable additional method for related studies since it does not assume linear relationships among variables and can help reduce, though not eliminate entirely, the sample selection bias between identity integration and employment outcomes. However, given that there might be unobserved time-variant factors that correlate with identity integration and employment outcomes, PSM estimations may not fully solve the possible reverse causality problem when we use cross-sectional dataset, which is a caveat of this research. In addition, this study only examines the effects of identity integration on employment outcomes, without exploring the underlying mechanisms through which identity integration affects the employment of rural-urban migrants. We leave these aspects for future research.

参考文献 References

[1] Berger J, Heath C. Where consumers diverge from others: Identity signaling and product domains [J]. *Journal of Consumer Research*, 2007, 34(2): 121-134

[2] Sen A. Violence, identity and poverty[J]. *Journal of Peace Research*, 2008, 45(1): 5-15

[3] Akerlof G A, Kranton R E. Economics and identity[J]. *The Quarterly Journal of Economics*, 2000, 115(3): 715-753

[4] Constant A F, Zimmermann K F. Measuring ethnic identity and its impact on economic behavior[J]. *Journal of the European Economic Association*, 2008, 6(2-3): 424-433

[5] Nekby L, Rödin M. Acculturation identity and employment among second and middle generation immigrants[J]. *Journal of Economic Psychology*, 2010, 31(1): 35-50

[6] Gui Y, Berry J W, Zheng Y. Migrant worker acculturation in China[J]. *International Journal of Intercultural Relations*, 2012, 36(4): 598-610

[7] Fan C C. The elite, the natives, and the outsiders: Migration and labor market segmentation in urban China[J]. *Annals of the Association of American Geographers*, 2002, 92(1): 103-124

[8] Akerlof G A, Kranton R E. Identity and schooling: Some lessons for the economics of education [J]. *Journal of Economic Literature*, 2002, 40(4): 1167-1201

[9] Sam D L, Berry J W. Acculturation when individuals and groups of different cultural backgrounds meet[J]. *Perspectives on Psychological Science*, 2010, 5(4): 472-481

[10] Berry J W, Sam D L. Acculturation and adaptation [J]. *Handbook of cross-cultural psychology*, 1997(3): 291-326

[11] Tajfel H, Turner J C. An integrative theory of intergroup conflict[J]. *The Social Psychology of Intergroup Relations*, 1979(33): 47

[12] Gordon M M. *Assimilation in American Life: The Role of Race, Religion, and National Origins*[M]. New York: Oxford University Press, 1964

[13] Berry J W. Psychological aspects of cultural Pluralism: Unity and identity reconsidered[J]. *Topics in Culture Learning*, 1974 (2): 17-22

[14] Scottham K M, Dias R H. Acculturative strategies and the psychological adaptation of Brazilian migrants to Japan[J]. *Identity: An International Journal of Theory and Research*, 2010, 10(4): 284-303

[15] Gamst G, Dana R H, Der-Karabetian A, Aragón M, Arellano L M, Kramer T. Effects of Latino acculturation and ethnic identity on mental health outcomes[J]. *Hispanic Journal of Behavioral Sciences*, 2002, 24(4): 479-504

[16] Berry J W, Sabatier C. Acculturation, discrimination, and adaptation among second generation immigrant youth in Montreal and Paris[J]. *International Journal of Intercultural Relations*, 2010, 34(3): 191-207

[17] Kosic A, Mannetti L, Sam D L. Self-monitoring: A moderating role between acculturation strategies and adaptation of immigrants[J]. *International Journal of Intercultural Relations*, 2006, 30(2): 141-157

[18] Blackaby D, Leslie D, Murphy P, O Leary N. Unemployment among Britain's ethnic minorities[J]. 1999, *The Manchester School*, 67(1): 1-20

[19] Berthoud R. Ethnic employment penalties in Britain. *Journal of Ethnic and Migration Studies*, 2000, 26(3): 389-416

[20] Bisin A, Patacchini E, Verdier T, Zenou Y. Ethnic identity and labour market outcomes of immigrants in Europe[J]. *Economic Policy*, 2011, 26(65): 57-92

[21] Chan K W. The Chinese hukou system at 50[J]. *Eurasian Geography and Economics*, 2009, 50(2): 197-221

[22] Chan K W. The household registration system and migrant labor in China: notes on a debate [J]. *Population and Development Review*, 2010, 36(2): 357-364

[23] Zhang L, Wang G. Urban citizenship of rural migrants in reform-era China[J]. *Citizenship Studies*, 2010, 14(2): 145-166

[24] Wang W W, Fan C C. Migrant workers' integration in urban China: Experiences in employment, social adaptation, and self-

identity[J]. *Eurasian Geography and Economics*, 2012, 53(6): 731-749

[25] Fan C C. Settlement intention and split households: Findings from a survey of migrants in Beijing's urban villages[J]. *The China Review*, 2011, 11(2): 11-42

[26] Meng X. The informal sector and rural-urban migration-A Chinese case study[J]. *Asian Economic Journal*, 2001, 15(1): 71-89

[27] Smith J A, Todd P E. Reconciling conflicting evidence on the performance of propensity-score matching methods[J]. *The American Economic Review*, 2001, 91(2): 112-118

[28] Rosenbaum P R, Rubin D B. The central role of the propensity score in observational studies for causal effects[J]. *Biometrika*, 1983, 70(1): 41-55

[29] Lin S, Ye H. Does inflation targeting make a difference in developing countries? [J]. *Journal of Development Economics*, 2009, 89(1): 118-123

[30] Balsa A I, French M T. Alcohol use and the labor market in Uruguay[J]. *Health economics*, 2010, 19(7): 833-854

[31] Bollen K A, Hoyle R H. Perceived cohesion: A conceptual and empirical examination[J]. *Social Forces*, 1990, 69(2): 479-504

[32] Tsai W, Ghoshal S. Social capital and value creation: The role of intrafirm networks[J]. *Academy of management Journal*, 1998, 41(4): 464-476

[33] Mullahy J, Sindelar J L. Gender differences in labor market effects of alcoholism. *The American Economic Review*[J], 1991, 81(2): 161-165

[34] Chan K W. A China paradox: migrant labor shortage amidst rural labor supply abundance[J]. *Eurasian Geography and Economics*, 2010, 51(4): 513-530

[35] Zhang X, Yang J, Wang S. China has reached the Lewis turning point[J]. *China Economic Review*, 2011, 22(4): 542-554

[36] Casey T, Dustmann C. Immigrants' identity, economic outcomes and the transmission of identity across generations [J]. *The Economic Journal*, 2010, 120(542): F31-F51

责任编辑：袁文业