

The Empirical Research on Settlement Intention of Immigrant High-skilled Talents

—Data from Jilin Province

Yanling Cao

Yatai School of Business Management
Jilin University of Finance and Economics
Changchun, China
E-mail: caoyanling76@163.com

Abstract—The pull force from uniqueness and the push force from scarcity may both intend to play the key roles to the settlement intention of high-skilled talents, which puts forward serious challenge to the work of attracting and retaining high-skilled talents for a city. Therefore, it is especially important to do some research for the migration intention and influencing factors of high-skilled talents. Based on the data obtained from a questionnaire survey in Jilin Province, selecting the factors that influence the settlement intention of high-skilled talent as independent variable, the settlement intention of immigrant high-skilled talents as dependent variable, through the establishment of a binary logistic regression model, this paper analyzes the settlement intention of immigrant high-skilled talents and the influencing factors. Results show that immigrant high-skilled talents in Jilin Province have weak settlement intention. Living standard satisfaction, job opportunity satisfaction, working satisfaction, housing conditions, gender, marital status, urban environment satisfaction, satisfaction degree of local residents and immigrants' convergence have a significant effect on the settlement intention of immigrant high-skilled talents.

Keywords—high-skilled talent; settlement intention; influencing factors; empirical research

I. INTRODUCTION

The uniqueness and scarcity of high-skilled talents have a push-pull effect on the settlement intention. The uniqueness is embodied in compared with low-skilled labor, high-skilled talents having received a formally vocational and technical education and on-the-job training, carrying a certain amount of human capital, having a certain cultural background and higher professional and technical knowledge, having higher identification for their professional and technical level than for their organization. This uniqueness can promote its settlement intention. The scarcity of high-skilled talents is the result of rapid development of the local economy. As indispensable technical support of local economic development, high-skilled talents increasingly become important resources which adjust regional industrial structure, optimize resources configuration and increase allocation efficiency of other kinds of resource, therefore more and more demand for high-skilled talents exists in all regions, then their scarcity still further pulls its settlement

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intention. Therefore, under the influence of some factors, the pull force stemming from uniqueness and the push force stemming from scarcity may both intend to play key roles to the settlement intention of high-skilled talents, which puts forward serious challenge to the work of attracting and retaining high-skilled talents for a city, to prevent the high-skilled workers be hunted by other cities. Therefore, it is especially important to do some research for the settlement intention and influencing factors of high-skilled talents.

II. RESEARCH FRAMEWORK

Although few academic scholars do research into the settlement intention and the influencing factors of immigrant high-skilled talents, the influencing factors of the immigrant high-skilled talents' settlement intention can still be divided into four aspects: social economic factors, demographic factors, psycho-social factors and family factors through learning from the theory and the empirical research conclusion of the common sense of the labor settlement intention and influencing factors, combining with the characteristics of high-skilled talents.

A. Social and economic factors

Todaro's expected income difference theory points out that economic incentive is the main purpose of labor migration, labor migration originated in the assessment of the expected income difference between the move-in area and their hometown, only when a labor estimates his income in the move-in area higher than his hometown; the greater the difference, emigration will become more intense. Specifically, social and economic factors have five variables:

- Income-spending satisfaction. When measuring settlement intention, immigrant high-skilled talent measures not only his income, but also his living cost in working area^[1]. The higher income-spending satisfaction, the higher possibility of settlement intention of immigrant high-skilled talent.
- Living standard satisfaction. The pursuit of a higher level of life is also an important reason for immigrant high-skilled talent moving in a certain city, and lower level of living standard satisfaction could make them migrate again.

- Job opportunity satisfaction. The dissatisfaction with unfair employment environment, the harsh employment conditions and fewer jobs become important factors which cause immigrant high-skilled talent moves again. Researches show that the higher the job satisfaction, the less strong the settlement intention of immigrant high-skilled talent.
- Work satisfaction. Immigrant high-skilled talent can evaluate job satisfaction by measuring social and technical environment factors self-actualization factor, being-recognized factors. The higher the job satisfaction, the settlement Intention of immigrant high-skilled talent becomes weaker.

The answers of the above the first four social and economic factors can be regarded as interval variables, the assignment of "very satisfied", "satisfied", "general", "not satisfied", "very dissatisfied" respectively being 5, 4, 3, 2 and 1.

- Housing conditions. Scores for housing conditions can be as follows: "self-occupied" being four points, "rent" being three points, " dormitory" being two points, "living in the home of relative or friend" being one point.

B. Demographic factors

Immigrant high-skilled talents share some same features with common labor, as a result, the influencing factors of settlement intention such as gender, age and marital status are important ones in research; In addition, immigrant high-skilled talents have high skills and carry a certain human capital, therefore, educational degree, one of the influencing factor of settlement intention can be regarded as a very important factor.

- Gender. In terms of gender, some scholar thinks that male workers tend to have more opportunities in the labor market, so they are more mobile^[2]. But Ravenstien holds the opposite view. Whether gender factors can affect the settlement intention of immigrant high-skilled talents is worth to study. As gender being a virtual variable, "male" can be defined as 1, "female" can be defined as 0.
- Age. Research has shown that labors of 20 to 30 years old that just enter the Labor market incline to seize more opportunities, so are the more mobile (D. Thomas, 1938). As for the variable of age, "under the age of 30", "31-40 year-old", "41 to 50 year-old", "above 51 year-old can respectively be assigned to 1, 2, 3 and 4.
- Marital Status. Marital status is uncertain in the action direction and extent of settlement intention and influencing factors of immigrant high-skilled talents^{[3][4]}. The variable of marital status can also be used as a virtual variable, the "single" can be defined as 0, "married" is defined as 1.
- Educational degree. Because most high-skilled talents have received a medium or above medium education degree, it is not possible to determine the effect degree of this factor acting on the migration intention^[5]. As a virtual variable, education degree can be assigned as

follows: "junior middle school and below" being 1, "high school (secondary vocational school)" being 2, "junior college (vocational college)" being 3, and "college and above" being 4.

C. Social psychological factors

Social psychological factors can show local identity and belonging of high-skilled talents in the work place^[6]. Considering the characteristics of high-skilled talents, the social psychological factors might have a greater influence on the settlement intention of high-skilled talents.

- Urban environment satisfaction. A better climate, natural environment, health and culture environment of the city are also important factors that high-skilled talents consider.
- Satisfaction degree of local residents and migrant population's convergence. The higher the degree of satisfaction, living and employment conditions is better.
- Local social network satisfaction. The scale of friends and relatives circle in the settlement city can reflect local social network satisfaction of immigrant high-skilled talents; the higher the satisfaction, the possibility of settlement Intention is little.

Answers for the above three social psychological factors also can be regarded as interval variables, the assignment of "very satisfied", "satisfied", "general", "not satisfied" and "very dissatisfied" is respectively five points, four points, three points, two points and one point.

D. Family factors

In addition to the above factors, family factors are also the influence factors of the settlement Intention of immigrant high-skilled talent.

- Children education condition satisfaction. This factor is inversely proportional to the settlement Intention of immigrant high-skilled talents.
- Satisfaction with the distance between homeland and work location. If it's too far between homeland and work location, which will cause a big emotional loss, so this kind of emotion makes high-skilled talents being more likely to migrate to a location near from their homeland.

Assignment for the above two factors are following: "very satisfied" being 5, "satisfied" being 4, "general" being 3, "not satisfied" being 2, "very dissatisfied" being 1.

III. RESEARCH METHODS

The dependent variable of the settlement intention of the immigrant high-skilled talents (will move again= 0, have intention to settle= 1) is virtual variables, and is qualitative variables of only with two results, so the binary logistic regression model can be used for the analysis of the influence factors of immigrant high-skilled talent settlement intention.

In model design, P can be assumed to be the probability of settlement intention, and $1-P$ can be assumed to be the probability of no settlement intention; Logistic transformation

is put on P , and that's called logit P . A linear regression equation of logit P as the dependent variable is established:

$$\text{logit}P = a + b_1x_1 + b_2x_2 + \dots + b_nx_n \quad (1)$$

A formula can be derived by (1):

$$P = \frac{\exp(a + b_1x_1 + b_2x_2 + \dots + b_nx_n)}{1 + \exp(a + b_1x_1 + b_2x_2 + \dots + b_nx_n)} \quad (2)$$

(2) is the logistic regression model. In (2), a is constant or regression intercept, b_i is the logistic regression coefficient of i th influence factor, and x_i is the independent variable of i th influence factor.

IV. DATA STATISTICS

A. Design, distribution of the questionnaire, and descriptive statistics

In order to obtain reliable data, according to the principle of convenience and concentration, this paper selects working high-skilled talents as the investigation object in Jilin Province. By the way of mail, site distribution and such so on, 387 questionnaires are distributed, the total number of valid return was 323, and the valid usable return rate was 92.2%. The respondents include 128 high-skilled talents who are working in their homeland. For supporting the research purpose of this paper, the respondents also include some high-skilled talents who are working out of their homeland.

B. Logistic regression analysis on the influencing factors of immigrant high-skilled talents' settlement intention

On the confidence level of 95%, using statistical software SPSS22.0, the cross-section data of 323 samples for survey are made logistic regression. During data processing, the independent variables are plugged into the equation step by step; the respective effect of social economic factors, demographic factors, social psychological factors and family factors on settlement intention of immigrant high-skilled talents are analyzed. Regression results show that the income-spending satisfaction does not enter the model 1, children education condition satisfaction and satisfaction with the distance between homeland and work location do not enter model 4. From the model 1 to 4, chi-square values of Hosmer-Lemeshow test are 20.044, 24.216, 33.683, and 20.753, whose Sig values are greater than 0.05. The models pass the tests and fitting degree is good. The regression analysis results are shown in Table II.

The possible reason of independent variable of income-spending satisfaction not entering model 1, is that as high-

skilled talents generally have high income-spending satisfaction throughout the country, so that factor should not serve as the influence factors of settlement intention. In model 1, life satisfaction, job opportunity satisfaction and working satisfaction have a significant effect on the settlement Intention of immigrant high-skilled talents. The effect of housing conditions on settlement Intention mainly reflects in house self-purchase and rent the intention of no settlement Intention is 4 times of the people who rent houses.

The effects of demographic factors on settlement intention of immigrant high-skilled talents are mainly investigated in model 2 after the social and economic factors being controlled. Two independent variables of gender and marital status have a significant effect on settlement intention of immigrant high-skilled talents can be observed from model 1.

Model 1 suggests that female pursuit of the psychological characteristics of stability make less strong settlement intention of immigrant high-skilled talents; while the intention of the male is relatively stronger. In terms of marital status, because of the difficulties of family migration, compared with those singles, settlement intention of married people is relatively lower. As for the independent variable of age, the group under 30 years old and 41 to 50 years old has a significant effect on settlement intention, the empirical results of which verify the argument of the scholars, namely immigrant high-skilled talents under 30 years old with a very active mind and with fewer factors hindering their migration can seize more opportunity; And because immigrant high-skilled talents of 41 to 50 years old are in their maturation of career development, which makes they are less likely to move again. In terms of the education degree, high school and the bachelor have significant effect on the settlement intention, and the education degree of junior college has a less significant effect on settlement intention. People with an educational degree of college and the above have the lowest intention to move again; talents with high school education have the highest intention to migrate to another city. The reason is that although high-skilled talents with high school education who is born in round about 1960's accept shorter academic credentials education due to historical reasons, their earlier entrants to the industry make them occupy the early advantage, be proficient in industry and technology, be unlikely replaced by other people, so their bargaining ability with the enterprise is higher; while highly educated high-skilled talents just graduated is introduced to the enterprise in recent years, most of them concentrate in relatively stable and competitive enterprises, which makes their settlement intention is lower than another education degree.

TABLE I. THE BINARY LOGISTIC REGRESSION ANALYSIS RESULTS OF FACTORS INFLUENCING IMMIGRANT HIGH-SKILLED TALENTS' SETTLEMENT INTENTION

Independent variable	Regression Coefficients B			
	Model 1	Model 2	Model 3	Model 4
Living Standard Satisfaction	0.341*	0.538*	0.153*	0.531*
Job Opportunity Satisfaction	0.468*	0.252*	0.275*	0.324*
Working Satisfaction	0.352*	0.426*	0.531*	0.238*
Housing Conditions(Take Living in the Home of Relative or Friend as Reference)				
Self-occupied	0.573*	0.257*	0.475*	0.386*
Rent	0.246*	0.263*	0.254*	0.520*
Dormitory	0.362	0.426	0.524	0.532

Cont. to TABLE I				
Gender		0.424*	0.242*	0.249*
Age(Take above 51 as Reference)				
Under 30		0.427*	0.369*	0.251*
31-40		0.376	0.621	0.315
41-50		0.521*	0.252*	0.352*
Marital Status		0.242*	0.426*	0.362*
Education Degree(Take Junior Middle School and Below as Reference)				
High School		0.794*	0.427*	0.252*
Junior College		0.532	0.425	0.424
College and Above		0.573*	0.362*	0.379*
Urban Environment Satisfaction			0.279*	0.424*
Satisfaction Degree of Local Residents and Migrant Population's Convergence			0.252*	0.572*
Local Social Network Satisfaction			0.524*	0.335*
Satisfaction with the Distance between Homeland and Work Location				0.632*
χ^2 Value	20.044*	24.216*	33.683*	20.753*

*P<0.05

By controlling the social and economic factors and demographic factors, model 3 verifies the effect of the psycho-social factors on the settlement intention of immigrant high-skilled talents. The regression results of model 3 suggests that all the social psychological factors have statistical significance, namely higher satisfaction with the urban environment, higher satisfaction degree of local residents and migrant population's convergence and higher local social network satisfaction can reduce the settlement intention of high-skilled immigrant talents.

After taking control of the former three influence factors, the regression results of model 4 show that only the variable of satisfaction with the distance between homeland and work location has a significant effect on high-skilled talents. The further distance, the stronger the onward immigrant intention of high-skilled immigrant talents is.

V. CONCLUSION

Descriptive statistics results show that 37% of immigrant high-skilled talents in Jilin Province have a settlement, the intention is not strong.

Through doing binary logistic regression analysis on the influence factors of the settlement intention of immigrant high-skilled talents, some conclusions can be drawn as follows: living standard satisfaction, job opportunity satisfaction, work satisfaction, housing conditions, gender, marital status, urban environment satisfaction, satisfaction degree of local residents and immigrants' convergence have significant effect on the settlement intention of immigrant high-skilled talents, while the other factors such as income-spending satisfaction, educational degree and age which widely accepted by scholars have no significant effect on the intention. Therefore, expected income difference theory suitable for the labor of common sense cannot be applied to the high-skilled talents, the migration decisions of high-skilled talents are the result of rational choice,

in the process of rational choice, social and economic factors, demographic factors, social psychological factors, family factors all play roles.

Therefore, local governments can retain immigrant talents starting from the hardware and software construction, strengthening psychological counseling of high-skilled talents and strengthening the degree of integration of urban residents and immigrant population.

The housing factor has the greatest effects on the settlement intention of immigrant high-skilled talent, among all sub-factors of it, self-occupied is the most significant factor. Therefore, in order to prevent loss of high-skilled talents, local governments can free high-skilled talents from worry through policies such as public rental housing, affordable housing.

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