International Journal for Housing Science and Its Applications
Publish August 6, 2025. Volume 46, Issue 3 Pages 5295-5305

https://doi.org/10.70517/ijhsa463456

Exploring the Key Barriers and Facilitators of Social Integration of Foreign Migrants Using Multiple Regression Modeling

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Abstract With the acceleration of globalization, the social integration of foreign immigrants has become an important issue affecting social harmony and sustainable development. This study takes foreign immigrants in City A of China as its target, and based on the social integration theory, constructs an analytical framework containing four dimensions, namely human capital, support network, policy factors and social acceptance, and empirically examines the path of each factor's influence on social integration through multiple linear regression modeling. The study used a random sampling method to conduct a questionnaire survey on foreign immigrants in City A. The results of factor analysis showed that human capital r=0.868, social acceptance r=0.826, support network r=0.717, and policy factors r=0.664 were significantly and positively related to social integration ($p<0.01$). Multiple regression analysis showed that duration of stay in China had the strongest contribution to cultural integration $\beta=14.005$ and social integration $\beta=12.421$ ($p<0.01$). Master's degree and above significantly promoted cultural $\beta=10.551$ and social integration $\beta=12.036$, while there was a negative effect of coming from developed countries on psychological integration $\beta=-5.799$, $p<0.01$. The analysis of differences in individual characteristics showed that the overall level of social integration of females (M=3.812) was significantly higher than that of males (M=3.534), and that the level of integration of the group of young adults between the ages of 20-29 years old was the highest (M=4.034), Asian immigrants (M=4.145) performed best due to cultural similarity, and African immigrants (M=2.945) faced significant challenges. The study verified the theoretical hypotheses and revealed that the economic factor, $R^2 = 0.3411$, has more explanatory power compared to the psychological factor, $R^2 = 0.0403$, which provides a scientific basis for policy formulation.

Index Terms multiple regression, foreign immigrants, social integration theory, human capital

I. Introduction

Since the 21st century, with the gradual deepening of global integration, the interaction between countries, groups and individuals has become more and more frequent, and the wave of immigration has swept across the world, and China has also played an important role in the international immigration wave [1], [2]. How to make foreign immigrants better integrate into the society of the place where they move in has always been a difficult problem in front of each country or city that seeks for talents.

It is undeniable that the concentration of foreign immigrants has brought diverse colors and vitality to the internationalized communities, but it has also brought new challenges to urban community governance [3], [4]. Foreign immigrants often have a strong psychological identification with their home country's culture and original identity, a stronger sense of alienation from the area where they live, and a lower degree of community participation [5]. At the same time, due to differences in lifestyle, cultural capital and social support, social life conflicts between foreign residents and local residents occur frequently [6]. All these social integration problems not only weaken the willingness of immigrants, especially high-level talents, to stay in the place of migration, and prevent them from contributing to the construction and development of the local city, but also make the immigrant community more dependent on intra-ethnic relations, forming an ethnic network that is not embedded in the national governance system [7]-[10]. This governance “vacuum” may be alienated into a breeding ground for migrants to engage in illegal and criminal activities such as drug abuse, fraud, and illegal missionary activities, threatening national security and social order [11], [12]. Based on this, helping foreign immigrants to integrate deeply into the local social life has become an important and urgent issue to strengthen and innovate social management [13].

This study takes foreign immigrants in China as the research object, and based on the social integration theory, constructs a multi-dimensional analytical framework including individual, culture and policy, and empirically

examines the influence of each factor on the level of social integration through the multiple regression model, with a view to providing a scientific basis for policy formulation. Firstly, based on the perspective of pluralism in the social integration theory, the dynamic process of social integration of immigrants is sorted out, and the logical main line of "influencing factors-integration situation-integration consequences" is clarified, and a social integration research framework covering the individual level and the group level is constructed. The social integration theory systematically explains the dynamic process of social integration of immigrants. The theory of social integration systematically explains the connotation of pluralism in social integration, compares the differences between assimilationism and pluralism, clarifies that the research is oriented to the dynamic process, and constructs a theoretical framework based on group and individual level factors. Secondly, taking into account the special characteristics of the foreign immigrant group, we extract the key influencing factors from the four dimensions of human capital, support network, policy factors and social acceptance, put forward theoretical assumptions and design measurement indicators, and form a theoretical analysis framework with regional characteristics. Finally, a multiple linear regression model is introduced to verify the reasonableness of the theoretical assumptions through regression equation construction, significance test and coefficient optimization, and to reveal the specific mechanism of each factor's effect on immigrants' social integration.

II. Framework construction and multiple regression model validation of factors affecting the social integration of foreign immigrants

II. A. Theories of social integration

In some Western countries, the concepts of "social integration" and "social cohesion" are used interchangeably, and there are differences in the definition of the concepts due to the different research perspectives of each country. Overseas researchers have conducted a great deal of research on the issue of social integration, and two opposing theories have been formed, namely, the theory of pluralism and the theory of assimilation. The assimilation theory refers to the tendency to integrate into the middle class in the process of immigration, and the pluralism theory indicates that there is diversity in the results of integration. In this paper, we refer to the pluralism theory of social integration and regard the social integration of immigrants as a systematic and complex process, taking the influencing factors, the integration situation and the consequences of integration as the logical main line, and the framework of social integration research is shown in Fig. 1.

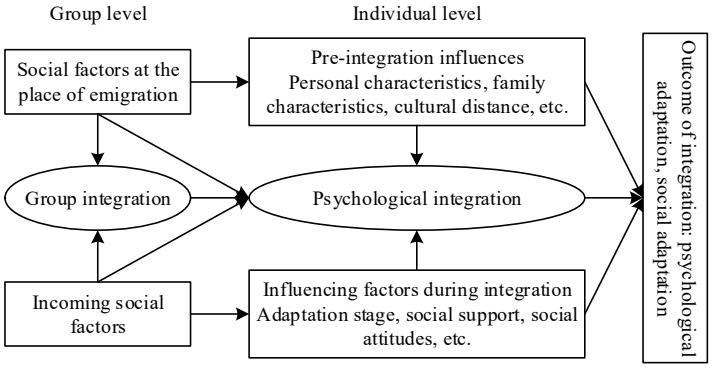

Figure 1: Social Integration Research Framework

In this research framework, factors at the group and individual levels are the key elements influencing the psychological integration of migrants, and factors at the group level include the economic conditions, political environment and social support in the societies of the place of emigration and the place of immigration for social integration. Individual level factors are divided into pre-integration and integration process factors, of which, pre-integration factors include personal characteristics, cultural distance, etc.; integration process factors include social support, social attitudes, etc.; integration results include psychological support. Social attitudes, etc.; and integration outcomes include two categories: psychological adaptation and social adaptation, where psychological adaptation refers to the psychological degree after immigration, and social adaptation indicates an individual's social ability to deal with daily life. Therefore, this study is based on the social integration theory and looks at individual factors, cultural factors, community factors. Media factors and policy cognitive factors, integrating the results of previous research, analyzing the impact of each factor on the willingness to integrate into the community, and constructing a research framework for the analysis of the willingness to integrate into the community as shown in Figure 2.

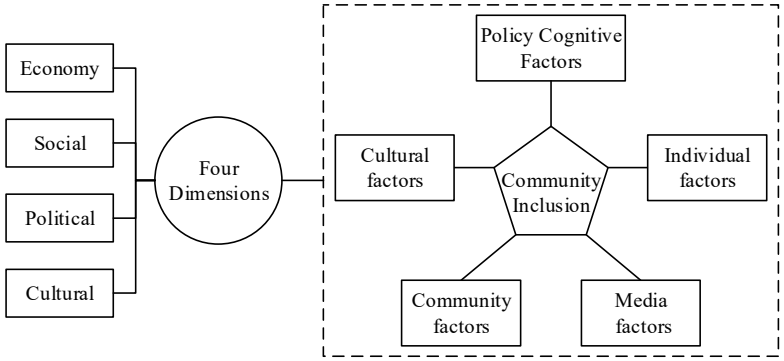

Figure 2: The framework of the dimensions and factors of community integration

II. B. Theoretical framework for analyzing the factors affecting the social integration of foreign immigrants

Based on the interpretation of the social integration theory on the dynamic process and multidimensional factors, this section further focuses on the specificity of the foreign immigrant group, extracting specific influencing factors from the dimensions of human capital and support network to construct a theoretical analysis framework.

II. B. 1) Selection of factors influencing the social integration of foreign immigrants

(1) Human capital

Refers to the ability of foreign immigrants to adapt to the socio-economic production system, the labor market, and occupational mobility. Foreign immigrants' education level, Chinese and English language skills, and occupational ability affect their work permit approval, economic income, and residence level; among employed foreign immigrants, those with high levels of human capital tend to have high levels of economic integration. Therefore, the human capital of foreign immigrants has a significant impact on their level of social integration, and the observed variables include the highest level of education, Chinese language proficiency, and job title status.

(2) Support network

It refers to the social relationship network of classmates, relatives, friends and other social resources available to foreign immigrants due to their residence experience in the inflow area such as study, marriage and work. Foreign immigrants' experiences of studying and marrying in China, as well as the number of Chinese relatives and friends, have a significant impact on their Chinese language proficiency and recognition of their understanding of Chinese culture; the level of social integration of foreign immigrants who are Chinese or whose spouses are Chinese is generally higher. Therefore, the social support network of foreign immigrants has a significant positive impact on their social integration level, and the observed variables include the length of stay in China and the number of Chinese relatives and friends.

(3) Policy factors

It refers to the policies and institutional arrangements of the government of the place of inflow in terms of employment, social security, housing and children's education of foreign immigrants. The government's policies on visa and employment determine foreign immigrants' residence, employment and enjoyment of social security in China, and have a significant impact on their degree of social integration. Therefore, local policies related to foreign immigrants have a significant positive impact on their social integration level. Observational variables include foreign immigrants' enjoyment of social security and job satisfaction with government departments.

(4) Social Acceptance

It refers to the acceptance and life support of the local society for foreign immigrants moving in. If foreign immigrants are restricted by facilities and rejected by local residents in their daily life, it will limit their social integration, and inconveniences such as clothing, food, housing, transportation and consumption will reduce their sense of integration and belonging. Therefore, the degree of acceptance of foreign immigrants by the local society has a significant positive impact on their social integration level. Observational variables include the degree of convenience of life provided to foreign immigrants by the local society, and whether local residents are prejudiced against foreign immigrants, discriminated against them, and whether they have a rejectionist attitude towards their moving in and integration or engage in rejectionist behaviors.

II. B. 2) Theoretical assumptions on factors affecting the social integration of migrants

Based on the above analysis, the study proposes the research hypothesis that expatriate migrants' human capital, social support networks, local expatriate migration policies and social acceptance of expatriate migrants are

significantly and positively related to the level of social integration of expatriate migrants. To make the theoretical hypotheses clearer, the following sub-hypotheses are proposed.

Human capital hypothesis H1: The more superior the human capital of expatriate immigrants, the higher their level of social integration.

Support Network Hypothesis H2: The stronger the support network of foreign immigrants, the higher their level of social integration.

Policy factors Hypothesis H3: The better the integration policies for foreign immigrants adopted by the government, the higher the degree of social integration of foreign immigrants.

Social Acceptance Hypothesis H4: The higher the acceptance of foreign immigrants by the local society, the higher the degree of social integration of foreign immigrants.

II. B. 3) Indicators for measuring factors affecting the social integration of migrants

In view of the theoretical assumptions made in this study, the corresponding operationalized variables were selected to measure "human capital", "support network", "policy factors" and "social acceptance", and the measurement indicators of the influencing factors of social integration of foreign immigrants are shown in Table 1.

Table 1: Indicators of influencing factor for social integration of foreign immigrants

Variable	Specific variable	Operationalized variable
Human capital	Educational attainment	Highest academic degree
	Language skills	Proficiency in Chinese
	Labor skills	Professional title level
Support network	Residence experience	The duration of residence in China
	Relations in China	The number of relatives and friends in China
Policy factors	Social security	Satisfaction with the social security enjoyed
	The quality of government work	Satisfaction with government work
Social acceptance	Convenience of life	Whether convenient living conditions are provided for foreigners
	Resident acceptance	The frequency of being excluded and discriminated against by local residents

II. C.Multiple linear regression analysis

On the basis of completing the construction of the theoretical framework and the formulation of hypotheses, this section introduces the multiple linear regression model to systematically verify the actual impact of factors on the social integration of immigrants through mathematical modeling and statistical testing, so as to realize the transition from theoretical derivation to empirical research.

In multiple regression analysis, when the dependent variable y is disturbed by external influencing factors, these influencing factors are defined as the independent variable x_i, and if there is a certain correlation between y and x_i, a multiple regression model can be established based on the dependent variable y and the various influencing factors x_i, and the model's The mathematical expression is as follows:

$$y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \cdots + \beta_p x_{ip} + \varepsilon_i \tag{1}$$

II. C. 1) Significance test of regression equation

In many practical problems, the relationship between the dependent variable y and the independent variable x^i is not obvious, and it needs to be tested and verified by certain significance tests to finally determine whether there is a good and significant relationship between the two, and if they do not have a good and significant relationship between them, then it means that there is not a relevant connection between y and x^i. Therefore, the process of testing significance is also important.

To test the significance of a regression equation, the statistic F is generally quoted as a constraint of the model, and the expression for the statistic F is:

$$F = \frac{S_{\text{Back}} / p}{S_{\text{Remain}} / (n - p - 1)} \tag{4}$$

In the above equation, S_{Back} is the regression sum of squares, S_{Remain} is the residual sum of squares, and the statistic F should obey the distribution of $F(p, n-p-1)$, i.e., it obeys the level of significance α, α can be determined by the following expression:

$$P\left\{|F| \geq F_{1-\alpha,p,n-p-1} \middle| H_0 \right| = \alpha\} \tag{5}$$

The above equation is the significance test expression, if it satisfies $|F| \geq F_{1-\alpha,p,n-p-1}$, then it means that there is a good significance relationship between y and x_i at the α level of significance, and the model constructed is significant.

II. C. 2) Significance test of regression coefficients

In the multiple regression analysis method, the regression equation obviously does not represent that every independent variable is significant to the dependent variable, at this time, the significance of the independent variables should be investigated, the independent variables with high significance will be preserved, and those with low significance will be eliminated, so that the significance impact of the model can be effectively suppressed. After the irrelevant influences are eliminated, the parameters of the independent variables of the constructed model are also optimized, so that the intrinsic connection between y and x_i can be studied more precisely and the deformation of the dependent variable can also be analyzed better.

If the role and influence of a certain variable x_i on the dependent variable y is not very significant, the value of the coefficient β_j of the multiple regression model should be zero, and the test of whether the dependent variable x_i is significant is often can be verified by the following expression:

$$\frac{\beta_j^2 / C_{jj}}{S_{\text{Remain}} / (n-p-1)} \sim F(1, n-p-1) \tag{6}$$

In the above equation, if the independent variable x_i is significant for the dependent variable y, it obeys the $F(1, n-p-1)$ distribution.

The regression coefficients β_j are considered to be significant at the $1-\alpha$ confidence interval if $|F| \geq F_{1-\alpha,p,n-p-1}$.

Note that the regression model should be rebuilt for each deleted variable and each coefficient should be tested until all regression coefficients are significant.

III. Empirical analysis of the social integration of foreign immigrants

Based on the theoretical framework of social integration and the multiple regression model constructed in Chapter 2, this chapter verifies the specific effects of each factor on the social integration of foreign immigrants through empirical data. First, the sample data of foreign immigrants in City A are analyzed in terms of basic structure to lay the data foundation for the subsequent factor analysis and regression test.

III. A. Analysis of the basic structure of the sample

III. A. 1) Establishment of multiple linear regression equations

The multivariate linear regression model is given in the following equation and represented by a matrix:

$$y = x\beta + \varepsilon \tag{2}$$

The valuation $\hat{\beta}$ of β can be found by the principle of least squares as:

$$\hat{\beta} = (x^T x)^{-1} x^T y \tag{3}$$

III. A. 2) Sample Acquisition

In this study, a comprehensive questionnaire survey was conducted from July to August 2024 with the foreign immigrant population in City A as the study population. This questionnaire survey is based on the principle of random sampling, randomly distributing questionnaires in 30 service stations for foreign population within A city, and further conducting questionnaire surveys on foreign enterprises. In the end, a total of 1,273 questionnaires were distributed through the above various channels, and after excluding invalid questionnaires, 1,189 valid samples were obtained, with an effective recovery rate of 93.40%.

III. A. 3) Descriptive statistics of the indicator system

Based on the indicators for measuring the factors affecting the social integration of foreign immigrants in Table 1, the descriptive statistics of the sample data of the final 1189 valid questionnaires are shown in Table 2.

Table 2: Statistical description of the basic information of foreign population

Variable	Specific variable	Indicator	Effective frequency	Percentage	Mean value
Gender		Male	692	58.20%	
		Female	497	41.80%	
Age		Under the age of 20	53	4.46%	34.4
		20-29 years old	269	22.62%	
		30-39 years old	477	40.12%	
		40-49 years old	255	21.45%	
		50-59 years old	108	9.08%	
		Over 60 years old	27	2.27%	
Nation		Asia	373	31.37%	
		America	299	25.15%	
		Europe	274	23.04%	
		Oceania	33	2.78%	
		Africa	210	17.66%	
Human capital	Educational attainment	Junior high school and below	25	2.10%	
		High school	56	4.71%	
		Junior college	144	12.11%	
		Undergraduate	475	39.95%	
		Master's degree or above	489	41.13%	
	Language skills (Proficiency in Chinese)	Don't understand	24	2.02%	
		Understand but can't speak	116	9.76%	
		Can say something	552	46.43%	
		Master daily expressions	367	30.87%	
		Proficient	130	10.93%	
	Labor skills (level of professional title)	No professional title	77	6.48%	
		Beginner	160	13.46%	
		Intermediate	302	25.40%	
		Associate senior	378	31.79%	
		Senior senior	272	22.88%	
Support network	Residence experience	Within 6 months	215	18.08%	1.6 year
		6-11 months	331	27.84%	
		1-2 years	423	35.58%	
		3-4 years	168	14.13%	
		More than 5 years	52	4.37%	
	Relations in China (Number of relatives and friends in China)	No	375	31.54%	
		1 to 5 people	453	38.10%	
		6 to 9 people	191	16.06%	
		10 to 20 people	106	8.92%	
		More than 20 people	64	5.38%	

Except for the descriptive analysis of the expatriate sample's basic information (gender, age, and nationality) as well as their human capital and support network as shown above, the statistical description of the sample data for all other measures is as follows, and the statistical description of the expatriate population's integration into the city sample data is shown in Table 3.

Table 3: Statistics on sample data of foreign population integrating into cities

Variable	Specific variable	Mean value	Standard deviation
Social security	Social security	4.21	0.86
Social acceptance	The quality of government work	3.35	1.06
	Convenience of life	3.81	1.27
	Resident acceptance	3.53	1.35

III. B. Factor analysis of factors affecting the social integration of foreign immigrants

After completing the descriptive statistics of the basic characteristics of the sample, in order to further explore the intrinsic structure of the factors influencing social integration, this section examines the validity of the variables of human capital and support network through factor analysis to ensure the reliability of the subsequent regression analysis.

III. B. 1) Factor analysis applicability test of factors affecting social integration

Among the indicators for the analysis of social integration, the evaluation criteria for such components as knowledge of social security and social acceptance are relatively different and cannot be directly factor analyzed; the data have to be standardized. Therefore, this study used a 5-point Likert scale to allow the respondents to evaluate the indicators on a scale of 1-5, making it suitable for factor analysis.

Before conducting factor analysis, the data collected from the questionnaire is tested for suitability for factor analysis (validity test). The methods used in this study to test the suitability of the indicators for factor analysis are KMO test and Bartlett's spherical test. KMO is a variable used to test the suitability for factor analysis by comparing the correlation coefficient and partial correlation coefficient, and the closer the value is to 1, the better the factor analysis is. According to the metric of KMO: KMO value above 0.9 means very suitable; 0.8 to 0.9 is very suitable; 0.7 to 0.8 is relatively suitable; 0.6 to 0.7 is average; 0.5 to 0.6 is not very suitable. And when KMO>0.5 and the value of concomitant probability of Bartlett's spherical test is less than 0.05, it is suitable for factor analysis. The results of KMO and Bartlett's test using the statistical software SPSS are shown in Table 4.

Table 4: Test results of KMO and Bartlett

KMO metric		0.867
Bartlett's sphericity test	Approximate chi-square	8520.278
	df.	640.24
	Sig.	0.000

From the above results, it can be seen that the value of KMO is 0.867, which is greater than 0.5, while the value of Bartlett's test is 8520.278, and the corresponding probability value is approximated to 0.000, which rejects the original hypothesis at the 5% significance level, and considers that there is a correlation between the original variables. Therefore, the original indicators are suitable for factor analysis.

III. B. 2) Analysis of the degree of social integration and its correlation with the factors

In order to further explore the relationship between the four factors of human capital, support network, policy factors and social acceptance and the degree of social integration, this study conducted a correlation analysis between the influencing factors and the degree of social integration. The Pearson Pearson correlation analysis of the four factors yielded a correlation matrix between each factor and the degree of social integration as shown in Table 5.

Table 5: The correlation matrix of each factor and the degree of social integration

	Human capital	Support network	Policy factors	Social acceptance	Social integration
Human capital	1.000**				
Support network	0.359**	1.000**			
Policy factors	0.403**	0.372**	1.000**		
Social acceptance	0.366**	0.362**	0.632**	1.000**	
Social integration	0.868**	0.717**	0.664**	0.826**	1.000**

Note**. Significantly correlated at the 0.01 level (two-sided test)

As can be seen from Table 5, the P value of each pair of correlation in the correlation matrix is less than 0.001, and at the level of significance α=0.01, each factor is significantly correlated with the degree of social integration: taking the size of the Pearson correlation coefficient (abbreviated r) as the standard, 0.8-1.0 is very strongly

correlated, 0.6-0.8 is strongly correlated, and 0.4-0.6 is moderately correlated, and the correlation coefficients of each factor in the table are "human capital" (r=0.868), "social acceptance" (r=0.826), "Support network" (r=0.717) and "policy factors" (r=0.664), human capital and social acceptance were strongly correlated with social integration, and support networks and policy factors were strongly correlated with social integration. Therefore, on the whole, all factors were significantly positively correlated with the degree of social integration. In terms of specific factor analysis, except for the strong correlation between policy factors and social acceptance (r=0.632), the correlation between other factors was not obvious.

III. C. Differences in Social Integration of Foreign Migrants with Different Individual Characteristics

After verifying the applicability of the indicators through factor analysis, this section focuses on the differential impact of different individual characteristics (gender, age, and nationality) on the social integration of foreign immigrants, revealing the heterogeneity of the level of integration among groups.

III. C. 1) Differences in the Social Integration of Foreign Migrants by Gender

Statistics on the variability of social integration of foreign immigrants by gender are shown in Table 6.

Table 6: The differences in social integration of foreign immigrant of different genders

Gender		Human capital	Support network	Policy factors	Social acceptance	Social integration
Male	M	3.872	3.415	3.125	3.658	3.534
(N=692)	SD	0.784	0.921	1.043	0.876	0.712
Female	M	3.521	3.768	3.402	3.921	3.812
(N=497)	SD	0.832	0.845	0.967	0.793	0.685
F-test	F	3.872	3.415	3.125	3.658	3.534
	Sig.	0.784	0.921	1.043	0.876	0.712

Two-tailed test for statistical significance:***p<0.001, **p<0.01, *p<0.05

There were significant differences in the dimensions of social integration among foreign immigrants of different genders. Males scored higher on human capital (M=3.872,SD=0.784) and policy factors (M=3.125,SD=1.043), while females performed better on support network (M=3.768,SD=0.845) and social acceptance (M=3.921,SD=0.793). At the overall level of social integration, females (M=3.812,SD=0.685) were significantly higher than males (M=3.534,SD=0.712) (F=5.118,p=0.024*), which may be related to the fact that females are more active in constructing a local social network and that the society is more tolerant of female immigrants.

III. C. 2) Differences in the social integration of foreign migrants of different ages

Statistics on the variability of social integration of foreign immigrants of different ages are shown in Table 7.

Table 7: The differences in social integration of foreign immigrant of different ages

Age		Human capital	Support network	Policy factors	Social acceptance	Social integration
Under the age of 20	M	2.934	2.567	2.812	3.021	2.879
(N=53)	SD	1.125	1.042	1.203	0.945	0.893
20-29 years old	M	4.012	3.845	3.921	4.125	4.034
(N=269)	SD	0.756	0.832	0.918	0.712	0.621
30-39 years old	M	3.785	3.421	3.567	3.789	3.645
(N=477)	SD	0.823	0.901	0.875	0.802	0.734
40-49 years old	M	3.215	3.102	3.234	3.456	3.321
(N=255)	SD	0.945	0.987	1.102	0.921	0.857
50-59 years old	M	2.876	2.745	2.901	3.012	2.934
(N=108)	SD	1.034	1.123	1.215	1.034	0.962
Over 60 years old	M	2.934	2.567	2.812	3.021	2.879
(N=27)	SD	1.125	1.042	1.203	0.945	0.893
F-test	F	12.104	8.765	9.342	7.213	6.879
	Sig.	0.000**	0.000**	0.000**	0.001**	0.002**

Two-tailed test for statistical significance:***p<0.001, **p<0.01, *p<0.05

Age has a significant effect on the social integration of foreign immigrants. young adults aged 20-29 years old scored the highest on human capital (M=4.012,SD=0.756), support network (M=3.845,SD=0.832), and social integration (M=4.034,SD=0.621), and the F-tests for each of these dimensions reached the level of significance ($p<0.01$). This corroborates the hypothesis that young adults are more likely to integrate due to their adaptive ability and lighter life burden. It is worth noting that the 50+ group scored the lowest on the dimensions such as social integration M=2.934,SD=0.962, which may be influenced by language barriers and limited access to local resources.

III. C. 3) Differences in the social integration of foreign immigrants from different countries

Statistics on the variability of social integration of foreign immigrants from different countries are shown in Table 8.

Table 8: The differences in social integration of foreign immigrant of different nations

Nations		Human capital	Support network	Policy factors	Social acceptance	Social integration
Asia	M	4.123	3.987	4.056	4.213	4.145
(N=373)	SD	0.712	0.823	0.745	0.689	0.621
America	M	3.845	3.621	3.789	3.921	3.812
(N=299)	SD	0.832	0.901	0.876	0.754	0.702
Europe	M	3.567	3.432	3.521	3.678	3.601
(N=274)	SD	0.921	0.945	0.912	0.832	0.789
Oceania	M	2.901	2.765	2.934	3.012	2.945
(N=33)	SD	1.034	1.123	1.102	0.987	0.921
Africa	M	3.215	3.102	3.234	3.456	3.321
(N=210)	SD	0.876	0.945	0.901	0.832	0.802
F-test	F	15.234	12.876	11.045	10.213	14.567
	Sig.	0.000**	0.000**	0.000**	0.000**	0.000**

Two-tailed test for statistical significance:***p<0.001, **p<0.01, *p<0.05

Table 9: Influencing factors of Social integration of foreign immigrants

Variable	Model 1 Psychological integration factor	Model 2 Cultural integration factor	Model 3 Economic integration factor	Model 4 Social integration factor
Male (0= female)	-2.879*	6.901**	0.542	0.918
Age	-0.438	-0.156	0.667	-0.355
Developed countries (0= less developed countries)	-5.799**	2.376	0.341	0.401
Educational attainment (0= College degree or below)	0.417	0.416	0.392	-4.054
Bachelor's degree	0.718	4.414	1.047	2.872
Master's degree or above	4.372	10.551**	3.102	12.036**
Language skills (0= Not proficient in Chinese)	1.407	2.044	4.703	7.688&&
The duration of residence in China	11.195**	14.005**	7.144**	12.421**
Constant value	56.562***	10.412	26.399	38.204***
F-test value	3.412***	7.362***	20.382***	8.741***
R-square	0.0403	0.1382	0.3411	0.1403
D.F	10	10	10	10

Two-tailed test for statistical significance:***p<0.001, **p<0.01, *p<0.05

The difference in social integration among immigrants of different nationalities was significant (F=14.567,p<0.01). Asian immigrants performed the best (social integration M=4.145,SD=0.621), scoring particularly well on human capital (M=4.123,SD=0.712) and social acceptance (M=4.213,SD=0.689), and may have benefited from cultural similarities and linguistic advantages. African immigrants scored the lowest on social integration M=2.945,SD=0.921, or reflecting issues of insufficient policy support and social prejudice. European and American immigrants were in the middle of the scale, indicating the complexity of the impact of geo-cultural differences on the integration process.

III. D. Analysis of factors affecting the social integration of foreign migrants

On the basis of clarifying the differences in individual characteristics, this section further introduces multiple linear regression models to systematically analyze the specific paths of gender, language skills, length of stay and other variables on the dimensions of social integration, and to reveal the key barriers and push factors.

In order to further explore the specific factors affecting the social integration of foreign immigrants in City A, we introduce the six independent variables of gender, age, country of origin, education level, language skills, and length of stay in China into the linear regression equations for social integration and each of the integration factors respectively. The influencing factors of social integration of foreign immigrants are shown in Table 9.

Table 9 demonstrates the results of the multifactor regression analysis affecting the social integration of foreign immigrants in City A, categorized into four dimensions: psychological, cultural, economic and social integration. It can be seen that there are significant differences in the effects of different factors on the dimensions of integration. In terms of gender, males showed a significant negative effect in psychological integration (β=-2.879,$p<0.05$), but a prominent positive effect in cultural integration (β=6.901,$p<0.01$), suggesting that gender roles may differ significantly depending on the dimensions of integration, with females being more likely to achieve cultural adaptation, while males face more challenges in psychological integration.

Duration of residence in China was significantly positive in all models ($p<0.01$), and especially had the strongest effect on cultural integration (β=14.005) and social integration (β=12.421), suggesting that prolonged residence can significantly enhance language familiarity and the accumulation of social networks.

Master's degree and above significantly contributed to cultural integration (β=10.551,$p<0.01$) and social integration (β=12.036,$p<0.01$), indicating that highly educated immigrants are more likely to cross cultural barriers and build social trust.

Coming from a developed country had a negative effect on psychological integration (β=-5.799,$p<0.01$), which may stem from cultural conflict or high expectation gap; language skills only approached significance in social integration (β=7.688), suggesting that the importance of Chinese language proficiency in social participation needs to be further verified.

The economic integration model had the highest explanatory power (R^2=0.3411), while the psychological integration model had the weakest explanatory power (R^2=0.0403), reflecting that economic factors (e.g., employment, income) are more likely to be captured by objective variables, whereas psychological adaptation may be influenced by subjective or unobserved variables.

IV. Countermeasures for the social integration of foreign immigrants

In order to promote the social integration of foreign immigrants, this paper formulates the following countermeasures around policy support, public services, cultural exchange and management optimization.

(1) Optimize the policy environment to attract high-end talents

Seize the opportunity of building a science and technology innovation center, introduce special policies for the introduction of foreign talents, simplify the process of applying for scientific research funds and registering for business start-ups, and provide tax incentives and career development support for foreign experts. At the same time, improve the management system of foreign-funded enterprises in the Shanghai FTZ, and promote the establishment of an inclusive management model, such as setting up vocational training centers for foreign employees to promote their collaboration and integration with local teams.

(2) Build an internationalized public service system

Strengthen internationalized supporting services in the fields of healthcare and education, such as setting up multilingual service windows in key communities and introducing international medical insurance cooperation mechanisms; and setting up more schools or bilingual classes for children of expatriates to alleviate the problem of education convergence. In addition, a digital platform has been used to develop an expatriate living guide APP, integrating practical information on transportation, medical care, and government affairs to enhance the convenience of life.

(3) Promoting multicultural interaction and identity

Through cooperation between the government and the community, regularly organize cultural festivals, Chinese language corners, traditional handicraft experiences and other activities to enhance expatriates' understanding of Chinese culture. Encourage colleges and enterprises to set up Chinese-foreign exchange clubs and build integrated online and offline social platforms (e.g., language exchange communities, interest groups) to promote daily interactions between local residents and foreign immigrants, and to reduce cultural barriers.

(4) Improve the management system and protection of rights and interests

Optimize policies on residence and visas for the foreign population, explore the “one-stop” mode of government services, and simplify the process of document handling. Strengthen legal publicity, clarify the rights and obligations

of foreigners, and set up a multilingual legal aid hotline. At the same time, it has established a mechanism for monitoring the dynamics of foreign population data, promptly addressing common needs in areas such as employment and housing, and enhancing their sense of belonging to society.

V. Conclusion

This study reveals the key barriers and facilitators to the social integration of foreign immigrants through empirical analysis. The data show that human capital, support network, policy support and social acceptance all significantly affect the level of integration, with human capital (r=0.868) and social acceptance (r=0.826) making the most prominent contributions. Multiple regression results showed that long-term residence (β=14.005) and high education (β=12.036) were the core drivers of cultural and social integration, while gender differences showed that females were more dominant in support network construction (M=3.768) and social acceptance (M=3.921). In addition, age and nationality differences were significant: young adults (20-29 years old) had the highest level of integration due to their adaptability (M=4.034); Asian immigrants benefited from cultural similarities (M=4.145), while African immigrants scored the lowest on insufficient policy support and social prejudice (M=2.945).

In this regard, the article formulates an optimization policy for the social integration of foreign immigrants that unfolds from four aspects. The first is to improve the talent admission policy and simplify the residence process for high-end foreign talents; the second is to build a multilingual public service system and improve the convenience of medical care and education; the third is to promote multicultural exchanges and reduce cultural barriers through community activities; and the fourth is to strengthen the rights and interests protection mechanism and establish a dynamic monitoring system to respond to the needs of immigrants.

Funding

This work was supported by the Social Science Research Program of the Department of Education of Jilin Province, China: ‘Research on the Management of Social Integration of Foreigners in Jilin Province’ (Project No. JJKH20231066SK); the Educational Teaching Reform Program of Jilin Police College: ‘Research on the Innovation of Internationalized Talent Cultivation Mode in Local Public Security Colleges and Universities’ (Project No. JJY-018).

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