A Study on the Factors Influencing the Social Integration of Migrant Populations in Wuhan: An Empirical Analysis Based on Structural Equation Modeling

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Abstract. Wuhan, as a developed city in China, has attracted a large number of migrants to live and work. However, due to restrictions such as the household registration system and social welfare benefits, the social integration of migrants in Wuhan is relatively low. Based on survey data from 771 questionnaires in Wuhan, a structural equation model was used to test the theoretical model and analyze the factors influencing the social integration of migrants in Wuhan. The study found that economic integration, policy acceptance, and social culture all have varying degrees of direct positive effects on the social integration of migrants.

Keywords: Migrant Populations, Social Integration, SEM, Wuhan

1 Introduction

Mencius' mother moved three times to find a good place to live, reflecting the long history of population movement driven by wars and natural disasters. China has a long tradition of population mobility, with large-scale migrations in history and ongoing movements of families and individuals. Since the reform and opening up, China has seen a significant influx of rural labor into cities, forming a large migrant population[1]. Urbanization, industrialization, and changes in social structures have further fueled this trend. The number of migrants in China has grown rapidly, from 6.57 million in the third national census to 373 million in the seventh national census in 2020. This new generation of migrants has higher education levels, stronger rights awareness, and different expectations for integrating into cities compared to traditional migrant workers[2].

Wuhan, a developed major city in China, has attracted many migrants. However, due to restrictions like the household registration system and social welfare, there are significant differences between migrants and locals in identity, status, living conditions, and education. This leads to low social integration. The study aims to formulate measures to improve public

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services, social management, and welfare for migrants, enhancing their integration and promoting a more inclusive society.

2 Hypotheses and Theoretical Model

Economic integration, which includes economic status, labor rights, and employment, plays a crucial role in the social integration of migrant populations. Firstly, it creates job opportunities, raises income levels, and improves living conditions, enabling better participation in socio-economic activities and increasing societal engagement. Secondly, it improves education and development prospects, helping with language and cultural adaptation to the new environment and easing integration into local society[3]. Additionally, as their economic status approaches parity with locals, they are more readily accepted as part of the community, which enhances social relationships and their sense of belonging. In summary, economic integration significantly contributes to the social integration of migrant populations.

Policy acceptance, including completeness, inclusiveness, and evaluation, significantly influences the social integration of the floating population. Firstly, it provides institutional guarantees, ensuring equal rights and services as locals in their new residence, reducing discrimination and enhancing social fairness [4]. Secondly, it includes educational and vocational training opportunities, improving their human capital and promoting personal development and social adaptation. Additionally, it provides basic social services like medical care and housing support, improving living conditions and enhancing quality of life. In conclusion, policy acceptance positively impacts the social integration of the floating population by providing multifaceted support and guarantees.

Social culture, which includes social participation, networks, and humanities care, plays a crucial role in the social integration of migrants. It encourages communication and interaction between migrants and locals, enhancing their sense of belonging and participation in education, employment, and social activities. Participation in social and cultural events helps migrants integrate into the community, form friendships, and build trust with locals. A supportive social and cultural environment is essential for their adaptation and development. Collaborative efforts across society are necessary to create an inclusive and supportive environment [5]. In summary, social culture significantly influences the social integration of migrants.

Therefore, we propose hypotheses H1-H3, H1: Economic integration positively influences the social integration of migrant populations in Wuhan, H2: Policy acceptance positively influences the social integration of migrant populations in Wuhan, H3: Social culture positively influences the social integration of migrant populations in Wuhan.

3 Research Design

3.1 Tool Design

We developed a scale to measure social integration of migrant populations in Wuhan, drawing upon existing literature and established scales. To validate the scale, we conducted a survey of 64 migrants across 12 Wuhan districts. Analyses using SPSS 26.0 included item analysis,

reliability and validity assessments, and exploratory factor analysis. Unsuitable items were removed, resulting in a final 18-item scale with four dimensions: economic integration, policy acceptance, social culture, and social integration itself. All items utilize a 5-point Likert scale.

3.2 Study Subjects

This study employed both random and non-random sampling methods to conduct a questionnaire survey. A total of 820 questionnaires were distributed, and 771 valid questionnaires were collected, resulting in an effective recovery rate of 94.02%. Ultimately, a balance was achieved between the sample size and model fit test, ensuring that the sample had broad overall coverage and clear levels.

3.3 Reliability Test

Reliability analysis aims to ensure the effectiveness of model fit assessment and hypothesis testing, using Cronbach's alpha as the test index. A Cronbach's alpha value above 0.7 indicates good internal consistency for a measurement dimension. In Table 1, all four variable dimensions show Cronbach's alpha coefficients exceeding 0.7, suggesting good internal consistency among the items within each variable.

Table 1. Results of Reliability Test.

Variable Dimensions	Number of Items	Cronbach's Alpha
Economic Integration	9	0.944
Social Culture	9	0.940
Policy Acceptance	8	0.935
Social Integration	4	0.619

3.4 Validity Test

Firstly, the academic community typically uses indicators such as chi-square, degrees of freedom, chi-square/degrees of freedom, RMSEA, GFI, AGFI, RFI, NFI, IFI, TLI, CFI, etc., to measure the fit of the confirmatory factor analysis model. The specific fit results are shown in Table 2. The model fit results are as follows: chi-square value is 791.582, degrees of freedom is 399, the ratio of chi-square to degrees of freedom is 1.984<3, RMSEA is 0.036<0.08, GFI=0.935, AGFI=0.924, RFI=0.954, NFI=0.957, IFI=0.978, TLI=0.976, CFI=0.978, all of which are greater than 0.9, indicating an acceptable range. In summary, the overall fit of the confirmatory factor analysis model is in a relatively ideal state.

Table 2. The fit results of the confirmatory factor analysis.

Fit Indices	Criterion	Parameter Values	Acceptance of Results
Chi-square		791.582	
DF		399	
Chi/DF	<3	1.984	Acceptable
RMSEA	<0.08	0.036	Acceptable
GFI	>0.9	0.935	Acceptable
AGFI	>0.9	0.924	Acceptable
RFI	>0.9	0.954	Acceptable

NFI	>0.9	0.957	Acceptable
IFI	>0.9	0.978	Acceptable
TLI	>0.9	0.976	Acceptable
CFI	>0.9	0.978	Acceptable

Additionally, as shown in Table 3, the standardized loadings of most items are significant. The composite reliabilities (CR) of most dimensions are mostly greater than 0.6, reaching 0.9 or higher. The average variance extracted (AVE) values of each dimension range from 0.596 to 0.665, all exceeding 0.5. Therefore, the scale in this study has successfully passed the confirmatory factor analysis, and the convergent validity is good.

Table 3. Convergent validity test results of the fitted model.

Dimension	Items	Loadings	S.E.	P	Standardized Loadings	SMC	CR	AVE
Economic Integration	A1	1.142	0.031	***	0.992	0.984	0.946	0.661
	A2	1.019	0.038	***	0.810	0.656		
	A9	1.000		***	0.810	0.656		
	A7	0.957	0.040		0.742	0.551		
	A4	0.993	0.040	***	0.762	0.581		
	A6	1.053	0.039	***	0.817	0.667		
	A10	0.996	0.040	***	0.764	0.584		
	A8	1.070	0.038	***	0.829	0.687		
	A11	1.003	0.040	***	0.766	0.587		
Social Culture	C8	1.000		***	0.799	0.638	0.938	0.665
	C7	0.934	0.041		0.729	0.531		
	C4	0.874	0.039	***	0.719	0.517		
	C9	0.974	0.038	***	0.795	0.632		
	C5	1.024	0.039	***	0.809	0.654		
	C1	1.111	0.031	***	0.995	0.990		
	C2	1.011	0.039	***	0.801	0.642		
	C3	0.996	0.038	***	0.799	0.638		
Policy Acceptance	B9	1.000		***	0.797	0.635	0.942	0.646
	B7	0.955	0.042		0.730	0.533		
	B4	0.967	0.042	***	0.738	0.545		
	B8	0.994	0.039	***	0.790	0.624		
	B6	0.930	0.037	***	0.785	0.616		
	B5	0.974	0.038	***	0.788	0.621		
	B1	1.112	0.031	***	0.994	0.988		
	B3	1.007	0.039	***	0.802	0.643		
	B2	0.947	0.038	***	0.778	0.605		
Social Integration	D3	1.000		***	0.423	0.179	0.284	0.596
	D5	2.338	0.196		0.758	0.575		
	D7	1.082	0.110	***	0.444	0.197		
	D8	0.996	0.103	***	0.430	0.185		

The square roots of the average variance extracted (AVE) of each dimension (bold numbers on the diagonal) are mostly greater than the correlation coefficients between any two variables, demonstrating that the discriminant validity between different variable dimensions in this study is relatively sufficient.

Table 4. Discriminant validity test results.

Variable	Social Culture	Policy Acceptance	Economic Integration	Social Integration
Social Culture	0.646			
Policy Acceptance	-0.124	0.665		
Economic Integration	-0.142	0.072	0.661	
Social Integration	0.044	0.369	0.983	0.596

3.5 Structural Equation Model Fit

The model formed by using AMOS 24.0 software for parameter estimation of the initial constructed model is shown in the Figure 1.

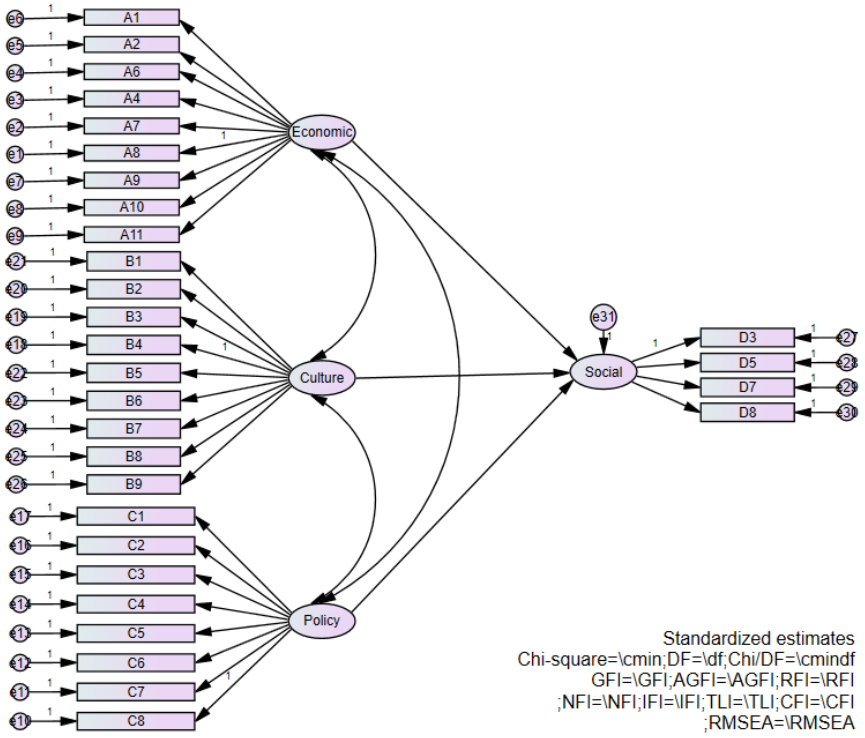

Figure 1. Estimation Results of the Theoretical Model.

The fit indices for the structural equation model in this study are as follows: chi-square value is 791.582, degrees of freedom is 399, chi-square/degrees of freedom is 1.984<3, RMSEA is 0.036<0.08, GFI=0.935, AGFI=0.924, RFI=0.954, NFI=0.957, IFI=0.978, TLI=0.976, CFI=0.978, all of which are higher than 0.9, indicating an acceptable range. In summary, the overall fit of the structural equation model is in a relatively ideal state, As shown in Table 5.

Table 5. Fit Results of the Structural Equation Model.

Fit Indices	Criterion	Parameter Values	Acceptance of Results
Chi-square	-	791.582	-
DF	-	399	-
Chi/DF	<3	1.984	Acceptable
RMSEA	<0.08	0.036	Acceptable
GFI	>0.9	0.935	Acceptable
AGFI	>0.9	0.924	Acceptable
RFI	>0.9	0.954	Acceptable
NFI	>0.9	0.957	Acceptable
IFI	>0.9	0.978	Acceptable
TLI	>0.9	0.976	Acceptable
CFI	>0.9	0.978	Acceptable

Based on the research hypotheses, the path relationships in the model were tested. The results, as shown in Table 6, indicate that all direct effects of the paths have passed the test. Specifically: Economic integration has a significant positive effect on social integration (β=0.991, S.E.=0.03, C.R.=12.883), supporting hypothesis H1; Social culture has a significant positive effect on social integration (β=0.225, S.E.=0.015, C.R.=6.628), supporting hypothesis H2; Policy acceptance has a significant positive effect on social integration (β=0.325, S.E.=0.018, C.R.=7.902), supporting hypothesis H3.

Table 6. Fit Results of the Structural Equation Model.

Hypotheses	Path Relationships	β	S.E.	C.R.	P	Results
H1	Economic Integration ---> Social Integration	0.991	0.03	12.883	***	Acceptable
H2	Social Culture ---> Social Integration	0.225	0.015	6.628	***	Acceptable
H3	Policy Acceptance ---> Social Integration	0.325	0.018	7.902	***	Acceptable

4 Conclusions

The study indicates that economic integration, social culture, and policy acceptance all play significant roles in enhancing social integration among migrants. Economic integration, through stable income and effective work guarantees, boosts migrants' sense of social value. Social culture, fostered through interpersonal networks and collective activities, promotes self-identity and social integration. Additionally, policy acceptance, ensured through sound policies and transparent implementation, guarantees migrants' rights and fosters their social integration.

In the process of writing this paper, there may be certain shortcomings due to the priority of data statistics and the limitations of our own abilities. In terms of sample collection, the number of valid questionnaires in this study was only 771, which may lead to a certain sample selection bias in the empirical analysis. In the future, our research team will conduct further investigations and include more samples of floating populations in the empirical model.

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