Research on the Employment Quality of the Ethnic Minority Migrant Population in the Context of New Urbanisation -- Empirical Evidence from CMDS

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Abstract. This paper presents an empirical analysis of the issue of the employment quality among ethnic minority migrant population based on the 2017 China Migrants Dynamic Survey (CMDS) data. Firstly, principal component analysis is used to construct an indicator system for the employment quality of the ethnic minority migrant population, followed by descriptive statistical analysis of the employment quality according to the constructed indicator system. Then, the OLS regression model is used to further explore the influence of various factors under individual, social and mobility characteristics on the employment quality of the ethnic minority migrant population. Finally, corresponding countermeasures are proposed to improve the employment quality of the ethnic minority migrant population.

Keywords: New Urbanisation; Ethnic Minority Migrant Population; Employment Quality.

1. Introduction

At present, the new type of "people-centric" urbanisation is advancing rapidly. Compared with traditional urbanisation, the new type of urbanisation gives more prominence to the main role of "people" and is committed to building a complementary, mutually beneficial and coordinated urban-rural relationship[1]. According to the seventh population census in 2020, China's urban population increased by 236.42 million compared with 2010, rising 14.21%, while the migrant population increased by 69.73%[2]. The development of new urbanisation has created conditions for population mobility, and it has become the norm for people to go out for employment. It cannot be ignored that the mobile population of ethnic minorities plays an important role in the job market[3], and the improvement of their employment quality is of great significance in promoting urban stability and forging a sense of Chinese national community. Therefore, this paper addresses this issue and conducts a specific study based on the 2017 China Migration Dynamic Survey (CMDS) data. A total of 10,276 valid samples were finally screened.

2. Construction of an Indicator System for the Employment Quality of Ethnic Minority Migrant Population

The employment quality in this paper refers to an evaluation of criteria at a micro level such as pay, labour intensity, working environment and social security of individual workers at work[4] [5].

2.1 Selection and Assignment of Employment Quality Evaluation Indicators

2.1.1 Remuneration

Remuneration is the preferred variable of employment quality, which includes direct forms of income such as wages and bonuses, as well as indirect forms such as accommodation and meals. Considering the quantifiability and operability of the data, this paper selects the monthly wage income of the ethnic minority migrant population to express their remuneration. Using the questionnaire's "your personal wage income/net income in the last month (or last employment)" as the wage income indicator. The original continuous data is divided into 10 discrete income groups to form its specific

measure, and the larger the value is, the higher the employment quality of the ethnic minority mobile population will be, while keeping other factors constant.

2.1.2 Labour Intensity

Many studies have used labour intensity as one of the indicators to measure the employment quality[6]. Since human subjective perceptions are unstable and inaccurate, they often cannot accurately describe labour intensity, so a reasonable objective indicator is required in its evaluation. The number of hours worked in the survey questionnaire is used as an indicator of working hours, and according to the legal working hours stipulated by the state, the ideal working hours are no more than 44 hours per week. The larger the value is, the higher the employment quality of the ethnic minority mobile population will be.

2.1.3 Social Security

In terms of social security for the ethnic minority migrant population, contract signing and participation in insurance are indicators that better fit the characteristics of mobile employment and are more desirable indicators of social security. In the questionnaire, "the type of labor contract you have signed with your current employer" is taken as the indicator of contract signing, and the specific assigned value is shown in Table 27. The more stable the type of contract signing is, the larger the value will be, and the higher the employment quality of the ethnic minority migrant population will be while keeping other factors unchanged. In the questionnaire, the number of "whether you participate in the new rural cooperative medical insurance", "whether you participate in urban and rural residents' cooperative medical insurance", "whether you participate in urban residents' medical insurance" and "whether you participate in urban employees' medical insurance" are used as indicators of participation status, which eventually forms its specific measure, and the larger the value taken is, the higher the employment quality of the ethnic minority migrant population will be, while keeping other factors constant.

2.1.4 Nature of Work

For the ethnic minority migrant population, the nature of employment unit and employment status are the two indicators that indicate the desirable nature of work, and the questions "the nature of your current employment unit" and "your current employment status" are selected respectively. Among them, the rating of the nature of the employment unit is somewhat subjective and is often used as a standard indicator to judge employment satisfaction, as organs and institutions have the most stable work, the best welfare and generally high social status, so they have the highest scores; although the wages of Hong Kong, Macao, Taiwan, wholly foreign-owned and Chinese-foreign joint ventures are generally high, but the labour intensity is high, so the scores are second, and so on. The higher the value is, the higher the quality of employment of the ethnic minority migrant population will be while keeping other factors unchanged. In terms of employment status, some studies show that [7][8] employers have more stable employment and advantages in terms of social prestige and income, while employees work long hours and have less time for recreation, and self-employed workers not only have unstable income, but also have high stress and poor social security. Therefore, the more stable the job and the higher the social status, the higher the value taken, and the higher the quality of employment of the ethnic minority mobile population will be, holding other factors constant.

The final summary results in a system of evaluation indicators for the quality of employment of the ethnic minority migrant population, as shown in Table 1.

Table.1 Score System of Indicators for Evaluating the Employment Quality of the Migrant Population

Dimension	Indicators	Options	Assignment
Remuneration	Wage income/month	Under 2000 yuan	1
		2000 - 2999 yuan	2
		3000 - 3999 yuan	3
		4000-4999 yuan	4
		5000-5999 yuan	5
		6000 - 6999 yuan	6
		7000-7999 yuan	7
		8000-8999 yuan	8
		9000 - 9999 yuan	9
		10,000 yuan and above	10
Labour intensity	Working hours/week	95 hours and above	0
		85-95 hours	1
		75-85 hours	2
		65-75 hours	4
		55-65 hours	6
		45-55 hours	8
		44 hours and below	10
Social Security	Type of contract entered into	5 No employment contract signed	1
		6 Unclear	2
		3 Complete one-off work assignments	4
		4 Trial period	6
		2 Open-ended	8
		1 with a fixed term	10
	Number of participants	0 type	2
		1 type	4
		2 types	6
		3 types	8
		4 types	10
Nature of work	Nature of employment	1 Institutional and business units 2 State-owned and state-controlled enterprises	10
		7 Wholly-owned enterprises in Hong Kong, Macau and Taiwan 8 Wholly foreign-owned enterprises 9 Sino-foreign joint ventures	8
		3 Collective enterprises 4 Shares/associates	6
		5 Self-employed businesses 6 Private enterprise 10 Associations / private organisations	4
		11 Other	2
	Employment status	5 Other	2
		2 Employees without a regular employer (odd jobs, casual work, etc.)	4
		4 Self-employed workers	6
		1 Employee with a regular employer	8
		3 Employers	10

2.2 Determination of the Weighting of Indicators for Employment Quality Evaluation

2.2.1 Basic Principles

Principal component analysis, or PCA, is a method of analysis that transforms a problem with multiple indicators into a problem with fewer aggregated indicators (principal components). This calculation method uses the idea of dimensionality reduction to simplify the problem by converting a large number of factors into a few principal components. The application of principal component analysis requires attention to whether dimensionality reduction is possible and whether the selected principal components are representative[9].

2.2.2 Calculation Process

① Standardisation of raw data

$$z_{ij} = \frac{x_{ij} - \bar{x}_j}{\sqrt{var(x_j)}} \quad (i = 1,2,\dots,n; j = 1,2,\dots,p)$$

of which

$$\bar{x}_j = \frac{1}{n}\sum_{i=1}^{n} x_{ij}$$

$$var(x_j) = \frac{1}{n-1}\sum_{i=1}^{n}(x_{ij} - \bar{x}_j)^2$$

Formation of a standardised matrix.

$$\mathrm{Z} = \begin{bmatrix} z_{11} & z_{12} & \cdots & z_{1n} \\ z_{21} & z_{22} & \cdots & z_{2n} \\ \vdots & \vdots & \vdots & \vdots \\ z_{t1} & z_{t2} & \cdots & z_{tn} \end{bmatrix}$$

② Calculate the sample correlation coefficient matrix

$$\mathrm{R} = \mathrm{cov(Z)} = \begin{bmatrix} 1 & r_{12} & \cdots & r_{1n} \\ r_{21} & 1 & \cdots & r_{2n} \\ \vdots & \vdots & \vdots & \vdots \\ r_{t1} & r_{t2} & \cdots & 1 \end{bmatrix}$$

where r_{ij} indicates the correlation coefficient corresponding to z_{ij}

$$\mathrm{r}_{ij} = \frac{\sum_{i=1}^{t}(z_{ij} - \bar{z}_j)(z_{ij} - \bar{z}_i)}{\sqrt{\sum_{i=1}^{t}(z_{ij} - \bar{z}_j)^2 \sum_{j=1}^{n}(z_{ij} - \bar{z}_i)^2}}$$

where z_i, z_j denotes the average of the horizontal and vertical quantities in the normalized matrix **Z**, respectively

③ Calculate the eigenvalues and eigenvectors of the correlation coefficient matrix

④ Calculate the contribution of each factor and the cumulative contribution

$$w_i = \frac{\lambda_i}{\sum_{i=1}^{n}\lambda_i}$$

where w_i is the factor contribution rate and λ_i is the non-negative eigenvector

⑤ Calculation of component sub-loads

$$l_{ij} = \sqrt{\lambda_i}\mathrm{a}_{ij}$$

Where,a_{ij} denotes the unit vector component

⑥ Calculate the weight **W**

2.2.3 Calculation Results

As shown in Table 2, the value of KMO is 0.683, indicating that this study can basically use principal component analysis to find the weights.

Table.2 KMO and Bartlett's Test

KMO and Bartlett's test		
KMO Number of sample suitability measurements.		.683
Bartlett Test of Sphericity	Approximate cardinality	323.069
	Freedom	15
	Significance	.000

As in Table 3, the variance contribution and cumulative variance contribution of the six principal components were obtained.

Table.3 Variance Contribution of Principal Components

Total variance explained									
Ingredients	Initial Eigenvalue			Extraction of sum of squares of loads			Sum of squared rotating loads		
	Total	Percentage variance	Cumulative %	Total	Percentage variance	Cumulative %	Total	Percentage variance	Cumulative %
1	2.086	34.771	34.771	2.086	34.771	34.771	2.064	34.405	34.405
2	1.043	17.379	52.150	1.043	17.379	52.150	1.058	17.638	52.043
3	1.036	17.267	69.417	1.036	17.267	69.417	1.042	17.374	69.417
4	.879	14.644	84.061						
5	.505	8.409	92.471						
6	.452	7.529	100.000						

Extraction method: Principal component analysis.

From Table 3, it can be seen that the cumulative variance contribution of the first three principal components has reached 69.417%, which indicates that the first three principal components can reflect nearly 70% of the information of the original variables, so extracting the first three principal components to represent the original variables for analysis can meet the requirements. Table 4 shows the factor loading matrix of the three extracted principal components. From this table, it is obvious that principal component F1 mainly loads the nature of the indicator employment unit, employment status and the type of contract signed; principal component F2 mainly loads the wage income; and principal component F3 mainly loads the number of insurance participants. Therefore, the three extracted principal components, F1, F2 and F3, are able to explain the original variables in a more comprehensive manner.

Table.4 Factor Loading Matrix

Component Matrix[a]			
	Ingredients		
	1	2	3
Nature of employment	.814	-.189	.000
Employment status	.810	.072	-.080
Type of contract entered into	.790	.043	-.198
Wage income	.189	.845	-.079
Working hours	.071	.366	.819
Number of participants	.318	-.390	.560

Extraction method: Principal component analysis.
a. Three components were extracted.

Based on the previous steps, the final weights of each indicator were calculated and are shown in Table 5. therefore, the quality of employment of the ethnic minority mobile population Q = A1 x 17.23% + A2 x 21.39% + A3 x 16.06% + A4 x 10.30% + A5 x 16.05% + A6 x 18.97%

Table.5 Weighting Values for Each Indicator

Indicators	Weighting
Wage income A1	17.23%
Working hours A2	21.39%
Type of contract entered into A3	16.06%
Number of participants A4	10.30%
Nature of employment unit A5	16.05%
Employment status A6	18.97%

3. Descriptive Statistics on the Employment Quality of Ethnic Minority Migrants Population

The descriptive statistics in Table 6 show that the overall level of employment quality of the ethnic minority migrant population is low, with problems such as low pay, high intensity, poor environment and inadequate social security being prevalent. Based on this, the following section will further explore the factors affecting the employment quality of the ethnic minority mobile population.

Table.6 Descriptive Statistics on the Employment Quality of Ethnic Minority Migrant Population

Indicators	Sample size	Minimum value	Maximum value	Average value	Standard deviation
Quality of employment	10276	2.06	8.28	4.75	1.25
Wage income	10276	0	25000	3262.05	2219.50
Working hours	10276	0	99	52.92	21.27
Type of contract entered into	10276	0	10	4.05	4.50
Number of participants	10276	0	2	0.91	0.39
Nature of employment	10276	0	10	4.13	3.16
Employment status	10276	2	10	6.18	1.95

4. Empirical Analysis of the Factors Influencing the Employment Quality of Ethnic Minority Migrant Population

4.1 Variable Settings and Descriptions

4.1.1 Predicted Variable

Based on the above calculation process, the employment quality of the ethnic minority migrant population is found.

4.1.2 Explanatory Variables

This paper divides the factors influencing the quality of employment of ethnic minority migrants into three levels: individual characteristics, social characteristics and mobility characteristics, with the different levels containing several sub-factors.

Among these, individual characteristics include gender, political affiliation and age, with a squared term for the age of the migrant population added to take into account the non-linear effect of the age of the migrant population on the quality of employment. Social characteristics include education level, nature of household registration, marital status, total monthly household expenditure, total monthly household income and accompanying persons. Mobility characteristics include range of mobility[10], reasons for mobility and frequency of mobility.

4.2 Setting of the Measurement Model

Based on the above analysis, an OLS econometric model was constructed to examine the impact of each sub-factor under individual characteristics, social characteristics and mobility characteristics on the quality of employment of the mobile population, and the regression model is shown below.

$$Q_i^0 = \alpha_p p_i + \alpha_m m_i + \alpha_n n_i + \varepsilon + \eta$$

where Q_i^0 denotes the quality of employment of the ith mobile population, p_i denotes the subfactors under the individual characteristics of the mobile population, m_i denotes the subfactors under the social characteristics of the mobile population and n_i denotes the subfactors under the mobility characteristics of the mobile population. $\alpha\varepsilon$ is a random disturbance term and η is a constant term.

4.3 Regression Results and Analysis

Table.6 OLS Regression Results

Variable name	Model (1)	Models (2)	Models (3)
Gender (reference group = female)			
Male	-0.117	0.00688	0.00339
	(-1.269)	(0.0803)	(0.0390)
Political affiliation (reference group = non-party member)			
Party members	0.674***	-0.00806	-0.0216
	(2.710)	(-0.0344)	(-0.0930)
Age	0.0140	-0.00295	0.00923
	(0.532)	(-0.113)	(0.358)
Age squared	-0.000267	1.43e-05	-0.000144
	(-0.795)	(0.0439)	(-0.448)
Educational attainment (reference group = primary school and below)			
Junior High School		0.237**	0.240**
		(2.234)	(2.289)
High School / Secondary School		0.570***	0.563***
		(3.997)	(3.988)
University specialist		0.929***	0.899***
		(5.226)	(5.098)
Undergraduate		1.014***	0.988***
		(4.854)	(4.799)
Postgraduate students		2.222***	2.093***
		(2.749)	(2.624)
Nature of household (reference group = agricultural)			
Non-agricultural		0.400***	0.394***
		(3.491)	(3.476)
Marital status (reference group = no spouse)			
With spouse		-0.178	-0.0991
		(-1.517)	(-0.850)
Household expenditure		8.86e-06	2.72e-05
		(0.260)	(0.801)
Household income		5.41e-05***	5.22e-05***
		(2.777)	(2.702)
Accompanying persons (reference group = alone)			
Mobility with spouse		0.0237	-0.0579
		(0.203)	(-0.493)
Mobility with parents/in-laws/in-laws		-0.522***	-0.497***
		(-2.871)	(-2.718)
Mobility with children		-0.0648	-0.0445
		(-0.538)	(-0.374)
Mobility with siblings		-0.188	-0.143
		(-0.937)	(-0.726)
Mobility range (reference group = cross-provincial)			
Inter-municipal			0.226
			(1.005)
Inter-county within the city			0.0594
			(0.255)
Reason for mobility (reference group = work)			
Doing Business			-0.428***
			(-3.738)
Other			-0.169
			(-1.444)
Number of movements			-0.0669***
			(-2.878)
Constant	4.666***	4.324***	4.084***
	(9.495)	(8.670)	(7.543)
Observations	11276	11276	11276
R-squared	0.015	0.201	0.230

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

In order to better explore the impact of different levels of factors on the employment quality of ethnic minority migrant population, this paper starts from individual characteristics, and then adds social characteristics and mobility characteristics respectively to the study, and the regression results are shown in models (1), (2) and (3) in Table 7 respectively.

The regression results show that individual characteristics have almost no significant effect on the employment quality of the ethnic minority mobile population, while social and mobility characteristics have a stable effect on the employment quality of the ethnic minority mobile population.

Looking at the factors influencing social identity, the following conclusions can be drawn.

(1) On educational attainment: To a certain extent, the quality of employment of ethnic minority migrants can be improved to a great extent with higher educational attainment. This is because the higher the level of education, the more employment opportunities there are, and the more they work in brain-based industries with higher benefits, job stability and other aspects[11], the higher the quality of employment in general.

(2) Regarding the nature of the household registration: The quality of employment of the urban-urban migrant population of ethnic minorities is higher than that of the rural-urban migrant population. On the one hand, this is due to the fact that there is still "household registration discrimination" in the job market, and on the other hand, the human capital of rural-urban migrants is lower than that of urban migrants, with migrant workers making up the majority of this group. As a result, the urban-urban migrant population is better off than the rural-urban migrant population in terms of pay, labour intensity and social security, and therefore the quality of employment of the urban-urban migrant population is higher.

(3) With regard to accompanying persons: Among the ethnic minority migrant population, the "familial" migration with parents/parents-in-law/in-laws can have a negative impact on the quality of employment of the migrant population. At a micro level, this is due to the fact that moving with parents/in-laws/parents-in-law has to take into account the health and support of the elderly when working outside the home. In order to balance work and family, the migrant population has to consider not only salary and remuneration but also working hours and geographical location of the job. Ultimately, in order to weigh family, they have to make some concessions on their jobs, which in effect makes their employment quality suffer [12]. At the macro level, the trend of family-based mobility is becoming more and more evident, and although the number of elderly people left behind in the outflow areas has decreased, it has largely increased the ageing population from outside the city, thus creating a series of problems for the inflow areas.

Looking at the factors influencing mobility characteristics, the following conclusions can be drawn.

(1) Regarding the range of mobility: The range of mobility had essentially no effect on the quality of employment of the ethnic minority mobile population. Compared to the reference group (cross-provincial mobility), both intra-provincial cross-city and intra-city cross-county mobility have no significant impact on the quality of employment. With the continuous promotion of new urbanisation and the effective adjustment of social and economic structures, many of the mobile population of Xinjiang ethnic minorities choose to seek job opportunities near or back to their hometowns, and apart from big cities, some small and medium-sized cities or towns are also included in their choices, which reflects the trend of diversification of the spatial pattern of mobility of the mobile population of ethnic minorities.

(2) Regarding the number of movements: The quality of employment of the ethnic minority migrant population gradually decreases as the number of movements increases. This is because mobile people who move more often are constantly changing their working environment and lack the stability of employment, which helps them to accumulate work experience, improve their skills and have more opportunities for economic income and job promotion. In addition, mobile people who are less mobile tend to have a greater willingness to stay and a greater degree of social integration, a mentality that can motivate them to better utilise their value at work and create wealth for society.

5. Suggestions for Countermeasures to Improve the Employment Quality of the Ethnic Minority Migrant Population

With the promotion of the new urbanisation strategy, the coordination between the quantity of employment and the quality of employment of the ethnic minority migrant population becomes very important. The essence is to coordinate the relationship between economic restructuring and employment quality improvement. On the premise of addressing the quantity of employment of the migrant population, by promoting efficient and high quality economic development, more opportunities for high quality employment will be created, effectively raising the income level and security level of the migrant population; conversely, high quality employment through the migrant population can also support high quality economic development. The improvement of the quality of employment of the ethnic minority migrant population is a dynamic, systematic and comprehensive process that requires the efforts of the migrant population itself, especially the new generation of the migrant population, who should pay attention to the importance of investment in human capital and improve their own labour force quality and skills by raising their education level, thereby improving their own employment quality. They should also develop and strengthen the awareness of "lifelong learning", actively participate in vocational training, and actively adapt to the new requirements for the quality and skills of workers in the context of advances in information technology. In addition, the improvement of the quality of employment of the ethnic minority migrant population also depends on the protection of laws and regulations and the active promotion of policies, and requires different bodies such as the government, enterprises and trade unions to take up different responsibilities, cooperate and promote each other, so as to form a systematic support system to improve the quality of employment.

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