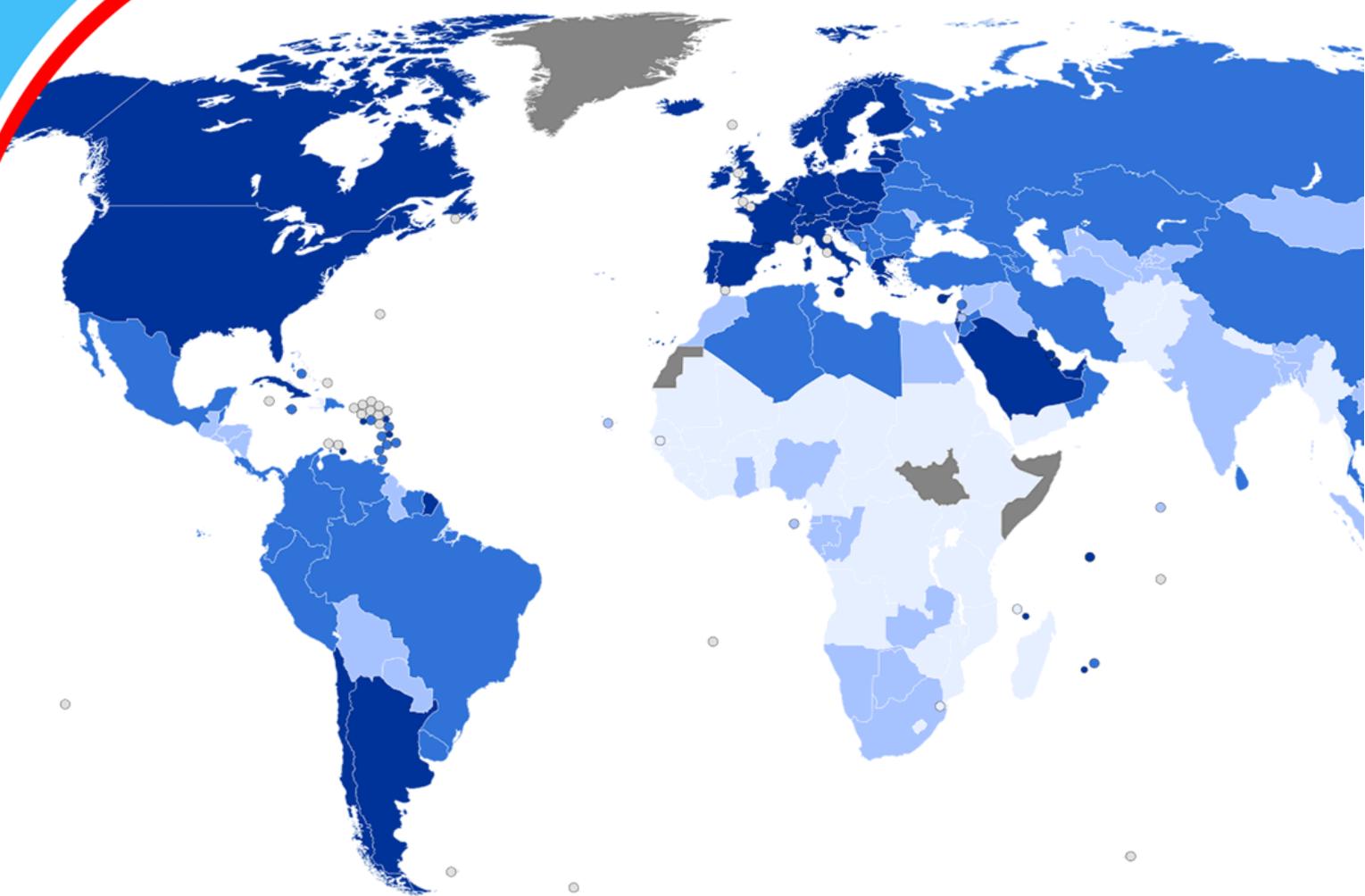


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**Research on the Coordinated Development of the Quality and
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Workers**

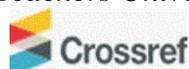
Kun Zhou, Yuxin Lu, Shuying Yu, Wenyu Yang



Research on the Coordinated Development of the Quality and Quantity of Employment of the New Generation of Migrant Workers

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Abstract

Purpose: This study aims to construct an evaluation system for the coordinated development of quantity and quality of employment among China's new-generation migrant workers. Based on five core dimensions' employment capacity, environment, security, remuneration, and labor relations it establishes comprehensive indicators to dynamically measure the coordinated level of employment quality at the national and provincial levels from 2011 to 2023. The study seeks to reveal the evolutionary laws and structural contradictions of this system, identify regional heterogeneity, dynamic polarization, and short-board bottlenecks, and provide theoretical and policy support for addressing the coexisting dilemma of "difficulty in recruiting workers" and "difficulty in finding jobs" while promoting high-quality and full employment.

Materials and Methods: This study employs the CRITIC objective weighting method to determine indicator weights and introduces a multi-system coordination index model along with kernel density estimation to calculate static/dynamic coordinated development indices.

Findings: The comprehensive evaluation of employment quality reveals significant static regional heterogeneity, with a persistent development gap between high- and low-performing regions. Dynamic evolution analysis indicates that overall employment quality is improving, but this improvement is accompanied by local polarization.

Policy intervention has driven short-term convergence and long-term differentiation in resilience. The coordination index evaluation reveals multidimensional structural weaknesses, among which employment security and labor remuneration have become key bottlenecks restricting overall coordinated development.

Implications to Theory, Practice, and Policy: Theoretically, it reveals the impact mechanism of the five-dimensional synergy of employment ability, environment, security, compensation, and relationship on the coordination of quantity and quality of employment for the new generation of migrant workers, enriching the theoretical explanation of the "quantity and quality imbalance" in structural employment contradictions. At the policy level, it is recommended to establish a dynamic monitoring system, coordinate the five-dimensional improvement policies, implement regional differentiated interventions, and address the shortcomings in employment security and labor remuneration. In practice, providing quantitative guidance for government planning and enterprise manpower adjustment, alleviating the contradiction between skill mismatch and insufficient guarantees, and promoting high-quality and full employment.

Keyword: *New Generation, Migrant Workers, Employment Quality, Coordinated Development*

JEL Codes: *J21, J24, J82*

INTRODUCTION

This study aims to develop an evaluation system for the coordinated development of the quantity and quality of employment among China's new generation of migrant workers defined as rural-to-urban laborers born after 1980, characterized by higher educational attainment and stronger urban integration aspirations compared to earlier generations. Based on five core dimensions: employment ability, employment environment, employment security, labor remuneration, and labor relations, a comprehensive indicator system is established to dynamically measure the level of employment quality coordination at the national and provincial levels from 2011 to 2023, while explicitly incorporating employment quantity as the scale of labor force absorption, measured by employment-to-population ratios and sectoral distribution indicators. This aims to identify regional heterogeneity, dynamic polarization phenomena, and shortcomings and bottlenecks, thereby providing theoretical support and policy leverage to address the coexistence of "difficulty in recruitment" and "difficulty in employment" and to promote high-quality and full employment.

Based on authoritative data from the China Labor Statistical Yearbook and the China Employment Development Report, this study employs the CRITIC objective weighting method, the multi-system coordination index model, and kernel density estimation to measure the coordination between employment quantity and quality among new-generation migrant workers at the national and provincial levels (2011–2023). It outlines their evolution and structural contradictions, reveals regional heterogeneity, dynamic polarization, and short-board bottlenecks via provincial comparisons, and highlights the importance of optimizing coordination for high-quality full employment. Its core value lies in providing theoretical and policy support to address the dual challenges of "recruitment difficulty" and "employment difficulty" and promote coordinated quantity-quality employment.

Problem Statement

Existing studies confirm that, driven by imbalanced regional development, industrial upgrading, and demographic shifts, China's new-generation migrant workers - defined as rural-to-urban laborers born after 1980 with higher educational attainment and stronger urban integration aspirations - exhibit a structural contradiction: the coexistence of "recruitment/employment difficulties" and a fundamental imbalance between employment quantity, measured by labor market absorption scales such as employment-to-population ratios and sectoral distribution, and quality dimensions. Yet a gap remains in the systematic evaluation of this coordination, particularly in the dynamic measurement of regional heterogeneity, polarization, and bottlenecks. Using a five-dimensional framework, this study builds evaluation indicators via CRITIC weighting, multi-system coordination models, and kernel density estimation. Aiming to reveal evolution laws and identify regional/polarization traits by dynamically measuring 2011–2023 national/provincial data across both quantitative scale and qualitative dimensions, results offer empirical support for policies optimizing employment-industrial synergy, boosting high-quality employment, and economic resilience.

Research Objective

This study aims to establish an evaluation system for the coordinated development of quantity and quality of employment for China's new generation of migrant workers, revealing their evolutionary patterns and structural contradictions, with a focus on the following dimensions:

1. Construct a comprehensive five-dimensional indicator system (employability, environment, security, compensation, and relationship) to measure the coordination level of employment quantity and quality, and quantify the deviation between actual and ideal structures.
2. Dynamically measure the coordination level of employment quality at the national and provincial levels from 2011 to 2023, and analyze the evolution patterns and structural contradictions.
3. By comparing provincial-level data, we can reveal regional heterogeneity, dynamic polarization, and characteristics of shortcomings and bottlenecks.
4. Put forward policy suggestions to address the coexistence of "difficulty in recruiting workers" and "difficulty in employment", and promote high-quality and full employment.

Research Questions

1. How to construct an evaluation index system for the coordination of quantity and quality of employment for the new generation of migrant workers, based on five dimensions: employability, environment, security, compensation, and relationship?
2. From 2011 to 2023, driven by industrial upgrading and demographic transition, what dynamic evolution pattern did the coordination level of employment quality of China's new generation of migrant worker's exhibit?
3. What are the significant spatial differentiation characteristics and polarization phenomena in the coordination of employment quality of the new generation of migrant workers at the provincial level?
4. How can we resolve the structural contradiction of the coexistence of "difficulty in recruiting workers" and "difficulty in employment" by optimizing the synergy between employment security and industrial policies?

Relevance and Importance of the Research

This study examines the coordination of employment quantity and quality for China's new-generation migrant workers, analyzing how five dimensions—employability, environment, security, compensation, and labor relations—collectively shape resource allocation efficiency. It develops a systematic framework to uncover structural mechanisms behind the "recruitment-employment difficulty" paradox. By constructing a five-dimensional index, the research identifies key patterns of regional heterogeneity and polarization, providing empirical support for high-quality employment and common prosperity.

LITERATURE REVIEW

This review systematically analyzes the multidimensional evaluation system for the coordinated development of the quantity and quality of employment for the new generation of migrant workers, with a focus on the dynamic interaction among employment ability, employment security, and regional balance. As a key group in China's new urbanization and modernization drive, the employment issues of the new generation of migrant workers have shifted from pure quantitative expansion to quality improvement (Liang, 2024). However, current research often focuses on a single dimension, such as the impact of human capital on employment quality (Congna & Saad, 2025), or inter-regional disparities in employment quality (Ferragina & Pastore, 2008), lacking a systematic framework that can comprehensively measure the coordinated evolution of "quantity" and "quality". In recent years, national

inclusive policies have effectively raised the minimum threshold of employment quality in low-base areas, yet deep-seated structural contradictions remain prominent. On the one hand, the severe lack of skills training and the irregularity of labor relations jointly constrain improvements in employment security and labor remuneration, making them a key shortcoming in coordinated development (Rizky et al., 2024). On the other hand, regional development exhibits a complex pattern of "coexistence of improvement and differentiation": the central and western regions experience short-term convergence driven by policies (Ying, 2006), whereas the high-performing eastern regions face "skills barriers" (Zhang et al., 2020) arising from industrial upgrading, thereby solidifying entrenched internal disparities.

A critical gap in current research lies in the oversimplified assumption of a linear progression between employment quantity and quality. In reality, these two systems often exhibit a trade-off relationship, particularly during industrial upgrading phases. For instance, automation and digital transformation in manufacturing and services may reduce labor demand in medium-skilled (Mandelman & Zlate, 2022) and non-skilled sectors (Santika & Farizki, 2025), thereby constraining employment quantity, while simultaneously elevating productivity and wages for remaining positions thus improving quality metrics such as labor remuneration and working conditions. This nonlinear dynamic challenges the conventional paradigm of synergistic development and underscores the need to evaluate coordination beyond linear models.

Although existing literature has enriched the understanding of the employment of the new generation of migrant workers from multiple perspectives (Li et al., 2024), such as human capital dynamics (Praag, 2025) and social identity (Klapcsik, 2025), it has not yet effectively integrated these dimensions to construct a dynamic and quantifiable coordinated development index. Therefore, how to establish a comprehensive measurement system that integrates employment environment, ability, security, compensation, and labor relations, and reveals its regional dynamic evolution law, providing a theoretical basis for formulating targeted and differentiated policy interventions, has become a core issue in addressing the challenge of high-quality employment for the new generation of migrant workers.

MATERIAL AND METHODS

This study establishes an evaluation system for the coordinated development of employment quantity and quality among new-generation migrant workers and examines its dynamic evolution. Guided by China's "14th Five-Year Plan for Employment Promotion," it integrates job expansion and quality improvement into a unified framework, comprising five core dimensions' employability, employment environment, security, labor remuneration, and labor relations thereby offering a systematic tool to address structural imbalances and advance high-quality, inclusive employment. All employment-related data are sourced from the "China Labor Statistics Yearbook" "China Employment Development Report" "China High-Tech Industry Statistical Yearbook" "China Statistical Yearbook" "China Human Capital Report" "National Enterprise Innovation Survey Statistical Yearbook", the official websites of the China Human Resources Market Information Monitoring Center, the National Bureau of Statistics, the Ministry of Human Resources and Social Security, and the Ministry of Education from 2012 to 2024. Linear interpolation is used to estimate individual missing data. The employment structure balance index system is shown in Table 1.

Table 1: Indicator System for Coordinated Development of Employment Quality

1st index	2nd index	3rd index	calculation formula	Impact
Employability	Level of education investment	Per capita education expenditure	Education expenditure / year-end permanent resident population	+
	Accumulation of human capital	Average years of education for residents	Weighted calculation based on education level	+
		Highly educated employment level	Proportion of employed personnel with a college degree or above	
	Vocational skills training	Number of training sessions provided by private vocational training institutions	Original statistical value	+
Employment environment	Industrial structure distribution	Employment proportion in the tertiary industry	Number of tertiary industry employees / Total number of employees	+
		Employment proportion of the secondary industry	Number of employees in the secondary industry / Total number of employees	+
		Economic environment	Per capita GDP	+
	Macroeconomic fundamentals	Number of registered urban unemployed persons	Original statistical value	-
	Urbanization development	Urbanization level	Urban population / year-end permanent resident population	+
	Training resource supply	Number of employment training institutions per capita	Number of private institutions / permanent resident population	+
Employment security	Social insurance coverage	Pension insurance coverage rate	Number of insured persons / Permanent resident population	+
		Medical insurance coverage rate	Number of insured persons / Permanent resident population	+
		Unemployment insurance coverage rate	Number of insured persons / year-end permanent resident population	+
		Work-related injury insurance coverage rate	Number of insured persons at the end of the year / Permanent resident population at the end of the year	+
	Level of work-related injury insurance benefits	Enjoyment rate of disability benefits	Number of personnel enjoying benefits / Number of employees	+
Labor remuneration	Measurement of income level	Wage income level	Average wage of urban unit employees	+
	Financial support intensity	Expenditure level of social security and employment	Fiscal expenditure / General budget expenditure	+
		Urban-rural wage gap	Urban wage income / Rural wage income	-
	Industry income level	Average wage of urban unit employees in the manufacturing industry	Original statistical value	+
		Average wage of urban employees in the construction industry	Original statistical value	+
	Labor relations	Trade union organization construction	Number of grassroots trade union organizations per 10,000 people	Number of organizations / Permanent resident population
union participation rate			Number of members / Number of employees	+
Dispute resolution efficiency		Efficiency of trade union mediation	Mediation success cases / accepted cases	+
		Settlement rate of labor disputes	Number of settled cases / Number of accepted cases	+
Collective negotiation mechanism		Percentage of parties involved in collective labor disputes	Number of workers involved in collective disputes / Total number of workers involved	-

Based on the established indicator system, the employment quality of the new generation of migrant workers in each province is evaluated. Currently, two evaluation methods are most commonly used in research: first, subjective weighting, where evaluators score indicators based

on their own experience; second, objective weighting, determined by the amount of information provided by variables. This paper employs the CRITIC weighting method (Zhou et al., 2026) to evaluate the employment quality of China's new generation of migrant workers from 2011 to 2023.

Statistical Analysis

Based on the analysis of provincial-level data from 2011 to 2013 using the CRITIC weight method, there is significant regional heterogeneity in the employment quality of the new generation of migrant workers (Table 2). High-index regions such as Beijing, Shanghai, Tianjin, and Zhejiang lead the way with their advanced industrial structures, high-quality public services, and institutional advantages, whereas low-index regions such as Gansu, Tibet, Yunnan, and Guangxi are constrained by weak economic foundations and limited social security. Dynamically, regions such as Tibet, Shaanxi, and Anhui have achieved high growth due to the low base effect, national strategic investment, and labor force return; while regions such as Guangdong, Liaoning, and Sichuan have experienced negative growth due to industrial relocation, transformation pains, or cyclical fluctuations. This reveals three major characteristics: static regional imbalance, dynamic growth differentiation, and the dislocation between "level" and "growth rate". Policies need to balance absolute levels and growth drivers, consolidate achievements in high-growth regions, and provide targeted relief to regions experiencing negative growth, in order to promote coordinated and high-quality employment.

Table 2: Comprehensive Score of Employment Quality for The New Generation of Migrant Workers from 2011 to 2013

地区	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Beijing	0.65	0.64	0.65	0.69	0.67	0.66	0.68	0.66	0.69	0.67	0.61	0.61	0.66
Tianjin	0.62	0.59	0.64	0.58	0.60	0.55	0.61	0.58	0.54	0.59	0.61	0.60	0.59
Hebei	0.35	0.31	0.33	0.40	0.35	0.37	0.37	0.38	0.36	0.36	0.40	0.41	0.40
Shanxi	0.41	0.38	0.41	0.41	0.40	0.41	0.37	0.40	0.38	0.39	0.40	0.40	0.37
Inner Mongolia	0.35	0.35	0.38	0.40	0.39	0.37	0.41	0.36	0.34	0.37	0.33	0.39	0.36
Liaoning	0.49	0.45	0.48	0.47	0.45	0.44	0.41	0.44	0.37	0.42	0.41	0.43	0.42
Jilin	0.34	0.31	0.41	0.34	0.33	0.30	0.35	0.34	0.31	0.36	0.35	0.34	0.36
Heilongjiang	0.37	0.33	0.37	0.37	0.35	0.36	0.39	0.39	0.36	0.39	0.35	0.38	0.38
Shanghai	0.66	0.66	0.68	0.66	0.67	0.69	0.74	0.73	0.68	0.68	0.62	0.69	0.65
Jiangsu	0.45	0.42	0.44	0.46	0.47	0.47	0.48	0.51	0.48	0.48	0.45	0.44	0.46
Zhejiang	0.48	0.46	0.49	0.51	0.52	0.51	0.54	0.55	0.57	0.56	0.54	0.55	0.57
Anhui	0.35	0.31	0.33	0.35	0.33	0.32	0.33	0.32	0.33	0.37	0.38	0.41	0.45
Fujian	0.39	0.41	0.39	0.38	0.40	0.39	0.41	0.41	0.37	0.38	0.34	0.36	0.35
Jiangxi	0.37	0.35	0.36	0.29	0.33	0.33	0.34	0.32	0.35	0.34	0.35	0.37	0.36
Shandong	0.37	0.38	0.39	0.39	0.37	0.38	0.39	0.37	0.34	0.35	0.38	0.43	0.43
Henan	0.33	0.36	0.38	0.32	0.35	0.33	0.33	0.34	0.36	0.36	0.34	0.36	0.37
Hubei	0.34	0.35	0.38	0.39	0.35	0.37	0.38	0.38	0.36	0.33	0.36	0.37	0.40
Hunan	0.36	0.32	0.35	0.33	0.30	0.31	0.35	0.34	0.37	0.37	0.34	0.37	0.36
Guangdong	0.49	0.44	0.45	0.45	0.44	0.43	0.42	0.42	0.42	0.40	0.35	0.35	0.39
Guangxi	0.25	0.25	0.29	0.27	0.27	0.27	0.28	0.30	0.30	0.27	0.29	0.29	0.30
Hainan	0.38	0.38	0.38	0.34	0.40	0.36	0.35	0.32	0.33	0.35	0.35	0.31	0.38
Chongqing	0.48	0.47	0.54	0.54	0.49	0.49	0.51	0.48	0.44	0.47	0.49	0.48	0.48
Sichuan	0.39	0.35	0.37	0.37	0.33	0.34	0.35	0.36	0.36	0.35	0.35	0.32	0.35
Guizhou	0.26	0.26	0.26	0.27	0.31	0.30	0.36	0.37	0.36	0.32	0.29	0.30	0.30
Yunnan	0.31	0.27	0.30	0.30	0.29	0.28	0.26	0.30	0.32	0.31	0.29	0.28	0.31
Tibet	0.17	0.22	/	0.29	0.26	0.36	0.33	0.33	0.33	0.36	0.34	0.33	0.35
Shaanxi	0.32	0.32	0.38	0.41	0.40	0.41	0.43	0.41	0.44	0.41	0.40	0.42	0.43
Gansu	0.38	0.31	0.32	0.32	0.31	0.26	0.25	0.30	0.29	0.25	0.29	0.35	0.34
Qinghai	0.45	0.41	0.42	0.41	0.41	0.38	0.37	0.42	0.42	0.46	0.42	0.42	0.43
Ningxia	0.42	0.36	0.43	0.42	0.40	0.44	0.38	0.38	0.39	0.43	0.44	0.46	0.42
Xinjiang	0.32	0.28	0.31	0.35	0.35	0.34	0.35	0.32	0.33	0.35	0.31	0.37	0.38

The kernel density estimation (Figure 1) shows that, from 2011 to 2023, the distribution of employment quality among China's new generation of migrant workers gradually shifted from early polarization toward higher values, reflecting an improvement in the "bottom line". This is attributed to the strengthening of rights and interest protection in poverty alleviation and rural revitalization, the promotion of local employment through industrial gradient transfer, the increase in the minimum wage and its enforcement to improve treatment, and the enhanced awareness of migrant workers' rights. However, significant polarization among high-scoring provinces remains pronounced: Beijing, Shanghai, and Guangdong rely on high-end service industries and innovation ecosystems; Zhejiang and Jiangsu lead in the digital economy and advanced manufacturing; and Tianjin and Fujian focus on equipment manufacturing and logistics, thereby reinforcing path dependence. At the same time, megacities continue to enhance their attractiveness through advantages in the value of registered residence, public services, and soft power. It is evident that the current challenge has shifted from "whether there is employment" to "the quality of employment structure". It is necessary to promote regional balance and to guide all regions to enhance their capacity for high-quality employment, based on their endowments.

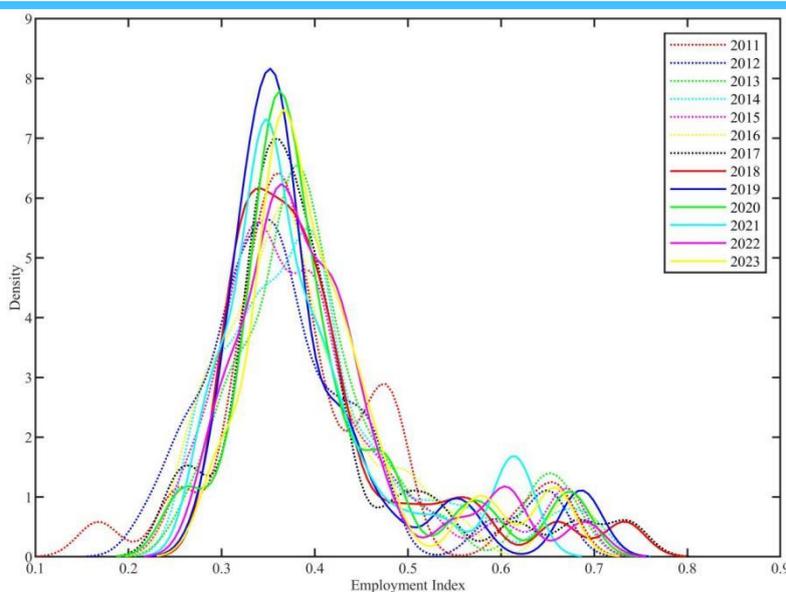


Figure 1: Kernel Density Estimation of China's Migrant Workers' Employment Quality Index from 2011 to 2023

To further characterize the dynamic evolution of the employment quality coordination index for the new generation of migrant workers, this paper employs kernel density estimation to depict the dynamic evolution of China's migrant workers' employment quality coordination index from 2011 to 2023 (Figure 2). The kernel density estimation indicates that the peak value of the employment ability index for the new generation of migrant workers from 2011 to 2023 has remained stable around 0.23, reflecting an overall low-level equilibrium of "low-skilled and low-quality employment," rooted in insufficient investment in human capital. The curve steepened from 2019 to 2022, indicating short-term convergence of regional disparities, driven by inclusive policies, such as poverty alleviation and improved social security coverage, which raised the bottom line of the distribution of ability. However, the persistent presence of secondary peaks on the right side indicates internal polarization within the high-score group: Beijing, Shanghai, and Zhejiang have built "skill barriers" that rely on the digital economy and high-end services, whereas regions such as Jiangsu and Guangdong have experienced a decline in ability due to lagging transformation. In 2023, the curve flattened again, indicating a rebound in polarization and highlighting structural risks such as mismatches between industrial upgrading and skill supply, barriers to urban integration stemming from registered residence requirements, and shrinking corporate training. The overall situation presents a complex pattern of coexistence between "low-level equilibrium" and "high-quality differentiation," urgently requiring precision skill training and industrial policy coordination to break path dependence and achieve capability leapfrogging.

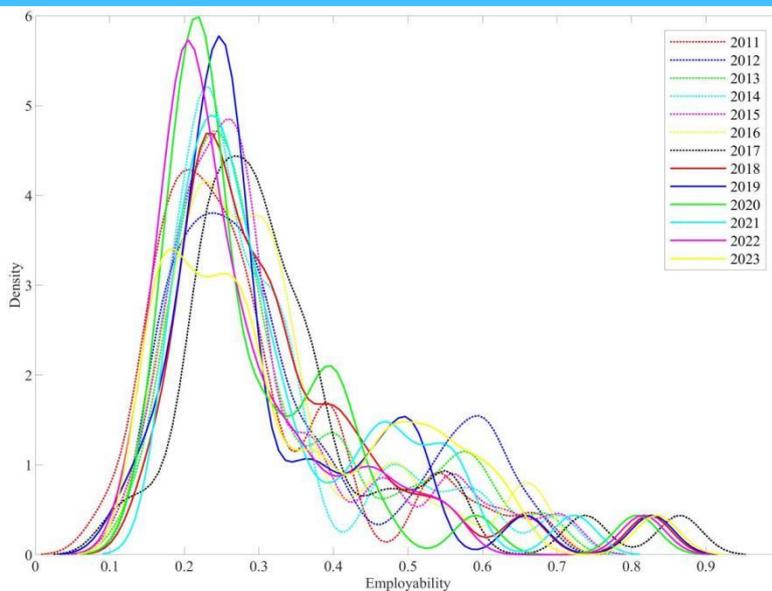


Figure 2: Kernel Density Estimation of China's Migrant Workers' Employability Index from 2011 to 2023

From 2011 to 2023, the migrant workers' employment environment index peaked at approximately 0.35, below the median (Figure 3). This reflects that the overall environment remains "moderately below average," highlighted by a low contract signing rate (53.1%), widespread overtime work, and insufficient social security coverage. The rightward shift of the curve indicates continuous improvement, attributable to policies such as labor collaboration during the "14th Five-Year Plan" period and pilot projects on social security in new business forms, which promote the standardization of employment practices. Early regional polarization was evident, but the secondary peak has flattened in recent years, reflecting that central and western provinces (such as Hubei and Hunan) have significantly improved job stability and security levels through rural revitalization and local industrialization, achieving a "bottom uplift." While high-scoring regions such as Beijing, Shanghai, and Tianjin maintain their lead, their growth rates have slowed or even declined (e.g., Shanghai, which declined by 21.21%). The main reason is the shrinkage of low-skilled jobs due to industrial upgrading, which has led some migrant workers to shift to flexible employment with weak security. Zhejiang and Fujian, on the other hand, have leveraged the digital economy to create standardized new business forms and jobs, alleviating polarization pressure. Overall, it presents characteristics of "overall improvement, convergence of gaps, and difficulties in tackling high-level issues." In the future, based on inclusive security, it is necessary to strengthen the design of systems for emerging employment forms and to promote high-quality collaboration in the employment environment.

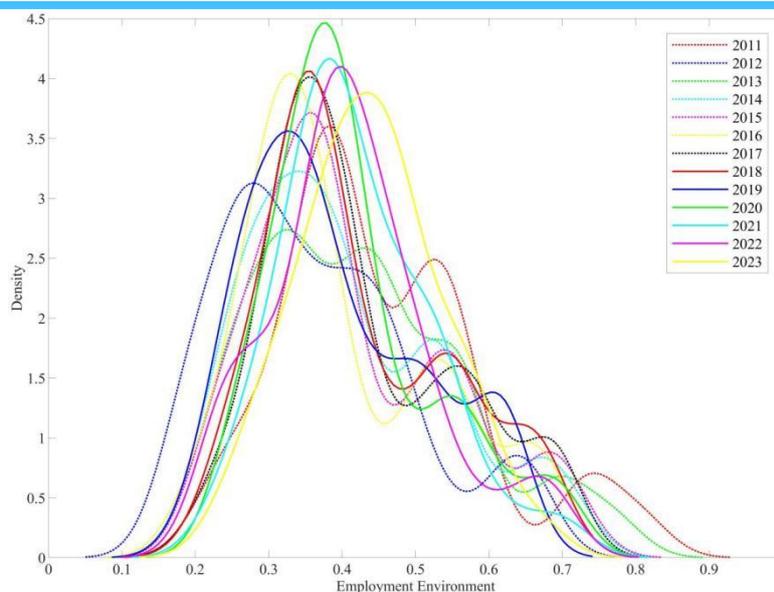


Figure 3: Kernel Density Estimation of China's Migrant Workers' Employment Environment Index from 2011 to 2023

From 2011 to 2023, the peak value of the migrant workers' employment security index hovered at 0.18, far below the reasonable median of 0.5, highlighting systemic shortcomings (Figure 4): the pension insurance coverage rate was only 52.7%, the labor contract signing rate was 53.1%, and it was concentrated in high-risk industries with work-related injury insurance coverage rates of less than 40%. The main peak of the kernel density curve flattened, reflecting the persistent widening of regional disparities: the security index in Beijing and Shanghai exceeded 0.7, whereas that in Tibet and Guangxi remained below 0.05 for an extended period. The root cause lies in the disparity in fiscal capacity and the "security sinkhole" effect in industrial transfer. The secondary peak on the right side intensified, indicating that the high-scoring groups (Beijing, Shanghai, Zhejiang, and Tianjin) formed a "security club" relying on well-established social security and trade union mechanisms, while the low-scoring groups fell into a low-level lock-in due to institutional vacancies; some major provinces such as Guangdong even experienced a decline, exposing the lagging security follow-up in the transformation process. Overall, it presents a triple dilemma of "low level, widening gap, and solidified polarization", urgently requiring a nationwide coordinated institutional design and differentiated policies for industrial receiving areas to break the fragmented security and Matthew effect.

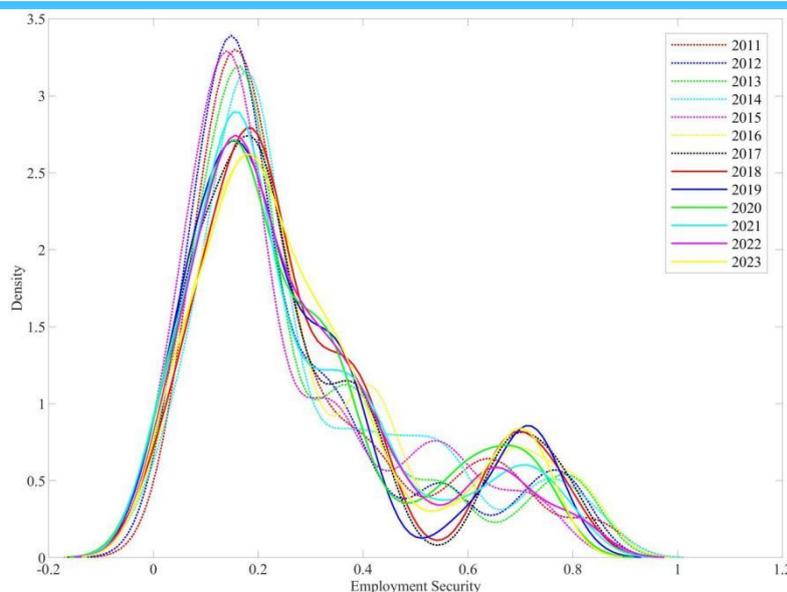


Figure 4: Kernel Density Estimation of China's Migrant Workers' Employment Security Index from 2011 to 2023

From 2011 to 2017, the peak value of the labor remuneration index for migrant workers stabilized at around 0.36, significantly lower than the equilibrium value of 0.5, with prominent regional differentiation (Figure 5): the index in Beijing and Shanghai exceeded 0.7, while it was less than 0.3 in places such as Gansu and Tibet, reflecting the wage gap under the segmentation of industrial structure and labor market. From 2018 to 2023, the main peak steepened and the secondary peak converged, indicating a systematic narrowing of regional disparities. This was attributed to the continuous increase in minimum wage, the gradient transfer of industries (such as high-end manufacturing in Zhejiang and Jiangsu, driving local wage increases), and the income growth in the central and western regions brought about by rural revitalization (with growth rates exceeding 100% in Tibet and Xinjiang). However, the absolute gap between high and low groups remained above 0.4, and there was significant negative growth in provinces such as Gansu and Qinghai, highlighting the persistence of the "Matthew effect". The root causes lie in differences in human capital accumulation, uneven industrial upgrading (a digital-economy premium in the east versus resource dependence in the west), and the implicit welfare benefits of registered residence that drive up actual compensation in first-tier cities. Overall, it presents the triple characteristics of "level improvement, gap convergence, and persistent polarization". In the future, it is necessary to promote quality convergence in the distribution of compensation through skill development, optimization of wage mechanisms, and cross-regional collaboration.

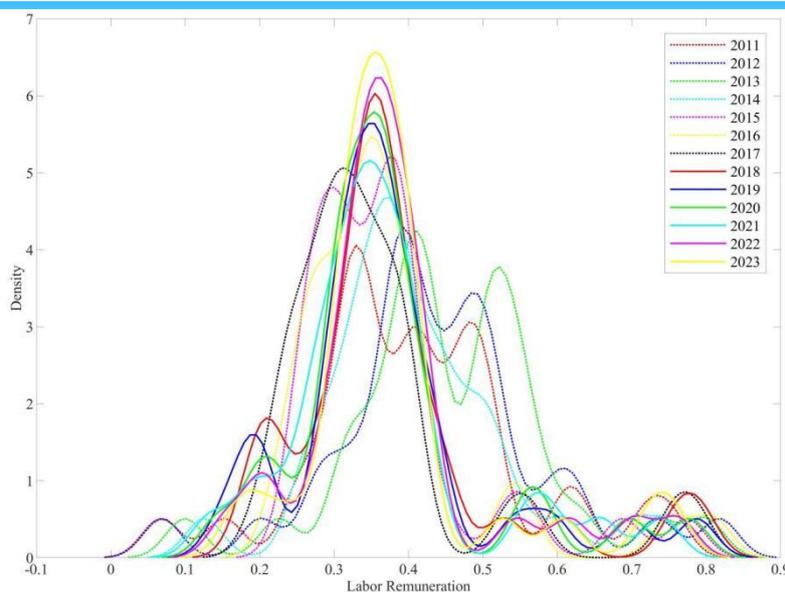


Figure 5: Kernel Density Estimation of China's Migrant Workers' Labor Remuneration Index from 2011 to 2023

From 2011 to 2023, the migrant workers' labor relations index peaked at 0.58, significantly higher than for dimensions such as labor security (0.18) and labor remuneration (0.36), reflecting improved awareness of labor rights and the effectiveness of institutional construction (Figure 6). In the early stage (2012-2019), there was polarization: regions such as Beijing, Shanghai, and Zhejiang exceeded 0.65, owing to effective supervision and digital regulation, whereas regions such as Yunnan and Jilin were below 0.4, constrained by weak law enforcement or challenges of industrial transformation. From 2020 to 2023, the main peak steepened and the secondary peaks converged, with regional disparities significantly narrowing. This was attributed to the promotion of contract signing rates through stable employment assessments, pilot projects to protect the rights and interests of new business forms (such as work-related injury insurance for online ride-hailing workers), and the standardization of county-level poverty alleviation workshops. Regions such as Tibet saw a significant increase in the index (from 0.10 to 0.24). Overall, there is a positive trend of "high-level operation, converging disparities, and improvement at the bottom". In the future, it is necessary to strengthen system enforcement in the central and western regions, address new challenges in the platform economy, and deepen collective negotiation mechanisms to promote labor relations toward a high-level equilibrium.

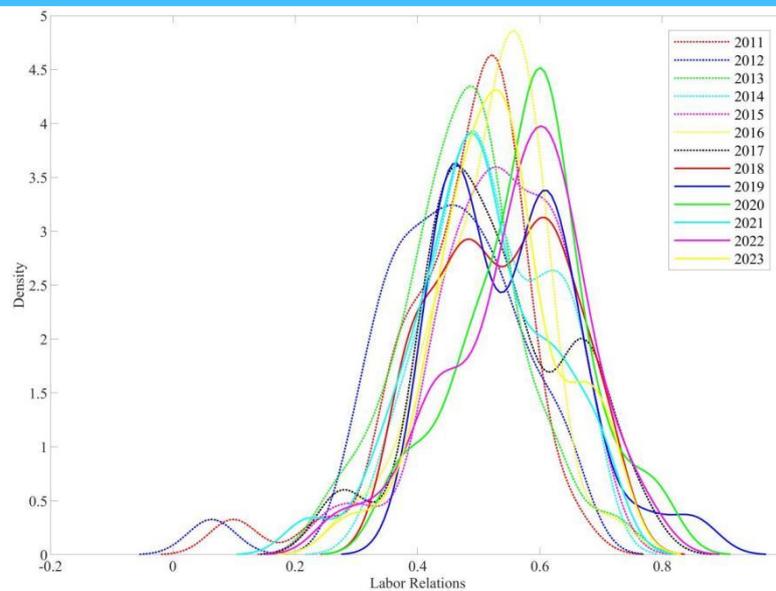


Figure 6: Kernel Density Estimation of China's Migrant Workers' Labor Relations Index from 2011 to 2023

FINDINGS

Research findings indicate that the coordinated development of both the quantity and quality of employment for the new generation of migrant workers is significantly influenced by three factors: the regional development foundation, the intensity of policy intervention, and industrial-structure transformation. Data reveals that from 2011 to 2023, the comprehensive index of employment quality exhibited notable spatial differentiation: high-value areas (such as Shanghai and Beijing) maintained an index consistently above 0.6, while low-value areas (such as Gansu and Guangxi) hovered around 0.3 for a long time, with a range maintained above 0.3 points, reflecting the development gap solidified by historical differences in industrial capability, fiscal capacity, and public service provision. In terms of dynamic evolution, kernel density estimation showed that the distribution curve steepened and the peak concentrated from 2019 to 2022, indicating that poverty alleviation and industrial transfer policies effectively raised the "bottom line" in the central and western regions, with the employment quality index in places like Tibet and Anhui achieving over 100% growth; however, in 2023, the curve flattened again and a secondary peak emerged, revealing local polarization rebound - Beijing and Shanghai formed skill barriers due to the upgrading of the digital economy, while Guangdong and Liaoning experienced negative growth due to the impact of the relocation of traditional manufacturing industries. Sub-dimensional analysis further revealed structural shortcomings: the peak value of the employment security index was only 0.18, corresponding to a pension insurance participation rate of 52.7%; the peak value of the labor compensation index was 0.36, reflecting that their income was only 60% of urban workers, and both exhibited persistent regional polarization (the security index in Beijing exceeded 0.7, while that in Tibet was less than 0.05). The coordination index calculation also showed that the static coordination level fluctuated significantly from 2011 to 2023, while the dynamic coordination index showed a slow upward trend, but the improvement mainly

stemmed from policy support rather than endogenous capacity enhancement, highlighting the fragility and asymmetry of the synergy between "quantity" and "quality".

CONCLUSION AND RECOMMENDATIONS

Conclusion

Based on provincial-level data from 2011 to 2023, this study develops a multidimensional evaluation system to assess the coordinated development of the quantity and quality of employment for the new generation of migrant workers. By comprehensively applying the CRITIC weighting method and the coordinated development index model, three core findings are drawn:

Firstly, there is significant static regional heterogeneity in employment quality. There is a wide gap between high-scoring groups (e.g., Shanghai, 0.68; Beijing, 0.68; and Zhejiang) and low-scoring groups (e.g., Gansu, 0.34; Tibet, 0.34; and Guangxi), with a difference exceeding 0.3 points. This reflects that the eastern region continues to lead due to its high-end service industry, well-established public services, and strong fiscal capacity, while the central and western regions, limited by weak economic foundations, insufficient social security coverage, and a single industrial structure, have remained at a low level for a long time.

Secondly, the dynamic evolution exhibits characteristics of "overall improvement and local polarization". From 2019 to 2022, driven by policies such as poverty alleviation and rural revitalization, the central and western regions (including Tibet and Anhui) experienced growth exceeding 100%, and regional disparities narrowed in the short term. However, in 2023, the flattening of the kernel density curve and the reappearance of secondary peaks warned of a rebound in polarization - high-scoring groups formed "skill barriers" due to industrial upgrading, while traditional strong provinces such as Guangdong and Liaoning experienced negative growth due to the impact of transformation, highlighting the resilience of structural differentiation.

Thirdly, the coordination index reveals key shortcomings: employment security (peak value of 0.18) and labor compensation (peak value of 0.36) remain persistently low, with pension insurance participation rates of only 52.7% and monthly incomes of only 60% of urban workers. Moreover, regional polarization is stubborn (Beijing's security index exceeds 0.7, while Tibet's is below 0.05). The root causes lie in the lack of skills training (only 15% receive systematic training), low-end industrial lock-in, and incomplete institutional coverage, leading to a dilemma of "low-level equilibrium". The study calls for systematic policy coordination to address the imbalance between quantity and quality.

Recommendations

To further promote the coordinated development of both quantity and quality of employment for the new generation of migrant workers, the following countermeasures and suggestions are proposed:

Firstly, we should implement a regional coordinated development strategy to bridge the static gap. It is suggested that the National Development and Reform Commission take the lead in formulating the "Action Plan for Regional Coordinated Improvement of Employment Quality of the New Generation of Migrant Workers", establishing a mechanism for binding industrial transfer and employment quality, requiring the receiving enterprises to implement full coverage

of labor contracts and full payment of social insurance; setting up a regional balanced development fund to focus on supporting the public service shortcomings in the central and western regions; promoting "pairing and assistance" between high- and low-scoring provinces, sharing labor data and rights protection resources, and striving to increase the low-scoring index by 30% within 5 years, and narrow the range to within 0.15.

Secondly, a dynamic monitoring and adaptive adjustment mechanism should be established to mitigate polarization risks. It is recommended that the Ministry of Human Resources and Social Security, in collaboration with the National Bureau of Statistics, develop a national-level early-warning platform for employment quality based on the CRITIC weight method and a kernel density model. This platform should update provincial-level indices quarterly, identifying "downward risk areas" (e.g., Liaoning and Guangdong) and "high growth potential areas" (e.g., Anhui and Tibet). Differentiated transfer payments should be implemented, providing job-stabilization subsidies to transitioning regions and strengthening investments in skills training in high-growth areas. A policy elasticity connection mechanism should be established, such as the "Rural Revitalization Employment Connection Plan," to consolidate poverty alleviation achievements and avoid policy gaps.

Thirdly, we should strengthen the reform of social security and salary systems to break structural bottlenecks. We should promote the mandatory inclusion of workers in new business forms into work-related injury and medical insurance; explore a "point-based" social security payment model; implement a labor remuneration doubling plan in low-income provinces, link the minimum wage to GDP growth, and promote a skill-level salary system; establish a migrant worker skill improvement fund, incentivize enterprises to conduct training through tax incentives, and strive to achieve a wage level for migrant workers that is 80% of urban workers by 2030, systematically breaking the "low-level equilibrium" dilemma.

Acknowledgments and Conflicts of Interest Declaration.

The authors declare no conflicts of interest regarding the publication of this study. This research was conducted independently, with no financial or personal relationships that could be construed as influencing the work. All data sources are publicly available and cited appropriately, ensuring transparency and objectivity in the analysis. The findings and conclusions presented herein are solely those of the authors and do not reflect the views of any funding bodies or institutions.

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