



International Journal of Innovative Research in Science Engineering and Technology (IJIRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)



Impact Factor: 8.699

Volume 15, Issue 3, March 2026

Research on Constructing an Employment Quality Evaluation System for Graduates of Local Universities in the Context of the Digital Economy

Zhigao PENG¹, Wanghui LIU², Xinzhong WANG³, Xin CHEN⁴

Associate Professor, College of Civil Engineering, Hunan City University, Yiyang, China ¹

U.G. Student, College of Civil Engineering, Hunan City University, Yiyang, China ²

Professor, College of Civil Engineering, Hunan City University, Yiyang, China ³

Instructor, College of Civil Engineering, Hunan City University, Yiyang, China ⁴

ABSTRACT: The rise of the digital economy is profoundly reshaping the labor market and posing unprecedented challenges to talent cultivation and employment evaluation in higher education. Traditional employment quality evaluation systems often rely on static indicators such as "employment rate" and "starting salary," which fail to accurately capture the new forms of employment and corresponding competency demands catalyzed by the digital economy. Therefore, this study aims to construct a scientific, systematic, and operable evaluation system for measuring the employment quality of local university graduates in the digital economy context. Drawing on the theoretical mechanisms of how the digital economy affects employment and employing methods such as literature analysis, Delphi expert interviews, and the Analytic Hierarchy Process (AHP), an evaluation framework was established comprising six dimensions and 24 specific indicators, with corresponding weights assigned. These six dimensions are Employment Status, Compensation and Benefits, Employment Structure and Development Prospects, Subjective Satisfaction, Competency Fit and Sustainable Development, and Social Contribution and Regional Service. To validate the system's feasibility, we conducted an empirical investigation at two local application-oriented undergraduate universities in Hunan Province, collecting and analyzing data from graduates and employers. The results indicate that this evaluation system can effectively identify the strengths and weaknesses of different universities in the digital economy job market. Finally, targeted suggestions for enhancing employment quality are proposed for three key stakeholders, namely universities, government, and graduates themselves. It is hoped that this study will provide useful references for local universities to optimize talent cultivation, improve employment services, and thereby contribute to regional high-quality development.

KEYWORDS: Digital Economy; Local Universities; Employment Quality; Evaluation System; Analytic Hierarchy Process (AHP).

I. INTRODUCTION

Currently, the rapid development of digital technologies such as big data, artificial intelligence, and cloud computing has permeated all sectors of the economy, establishing the digital economy as a crucial engine of global growth [1]. This technological revolution has not only spawned many unprecedented new industries and business models but has also systematically reshaped the labor market, leading to increasingly flexible employment forms, the emergence of digital skills as essential "hard currency", and an accelerating pace of occupational change [2]. In this wave, local universities, as suppliers of high-quality regional talent, face a new and significant question, namely, how to evaluate the employment quality of their graduates.

Previous evaluations have largely revolved around metrics such as employment rate and contract signing rate, appearing somewhat narrow and failing to comprehensively capture the quality of employment in the digital economy context, such as the technological content of work, the sustainability of personal skill development, and career growth flexibility [4-6]. Therefore, constructing an employment quality evaluation system that aligns with the characteristics of the digital economy and closely relates to the mission of local universities is not only conducive to scientifically assessing educational effectiveness and identifying shortcomings in employment work but can also drive educational

and teaching reforms to better align with real market demands, genuinely promoting fuller and higher-quality employment for graduates. This holds considerable practical significance for enhancing the capacity of local universities to serve the regional digital economy and fostering coordinated development of education and industry.

Research on employment quality is already extensive both domestically and internationally. Early international studies discussed the quality of work life, followed by the International Labour Organization's concept of decent work, covering aspects such as rights, opportunities, and security [7-8]. The European Union has also constructed a set of employment quality indicators addressing occupational safety and skill development, among others [9]. Domestic research, building on international experience, has gradually developed an evaluation approach combining subjective and objective elements, with common dimensions including compensation, stability, social security, degree-job match, career development prospects, and satisfaction [10].

Regarding the impact of the digital economy on employment, existing research primarily focuses on two areas: first, at the macro level, discussing the disruptive and generative effects of digital technology on total employment, employment structure, and skill demands [11]; second, at the micro level, focusing on the work characteristics and rights protection of platform workers and gig economy participants [12-13]. However, research that deeply integrates the digital economy context with the employment quality evaluation system for university graduates remains scarce. Existing evaluation systems for universities are often too generic and fail to adequately highlight the era-specific features of the digital economy and the regional service orientation of local universities.

In summary, a noticeable gap exists in current research: the lack of a comprehensive evaluation framework for graduate employment quality that organically incorporates key elements of the digital economy while also accommodating the specific mission of local universities. This research will generally follow the logic of theoretical analysis, system construction, empirical testing, and proposal of suggestions. First, it will clarify the internal mechanisms through which the digital economy affects graduate employment. Subsequently, based on theoretical analysis and expert opinions, a multi-level evaluation indicator system will be constructed, and the AHP method will be used to determine the weights of each indicator. Then, two local universities will be selected for field research to test the operability and effectiveness of the system using real data. Finally, based on the findings, practical improvement suggestions will be proposed.

II. ANALYSIS OF THE IMPACT MECHANISM OF THE DIGITAL ECONOMY ON GRADUATE EMPLOYMENT

2.1 Emergence of New Employment Forms and the Quiet Shift in Job Competency Requirements

The digital economy has broken the spatial and temporal constraints of work, making flexible employment forms such as remote work, platform-based tasks, and project-based collaboration increasingly common. While offering graduates more autonomy and flexibility, these new forms also place higher demands on their self-management, cross-domain collaboration, and continuous learning abilities. In terms of job requirements, alongside surging demand for pure technical roles such as data analysts and AI algorithm engineers, integrated roles combining digital technology with a specific domain, such as digital marketing and intelligent manufacturing engineering, have also become highly sought after. This means graduates not only need solid professional expertise but also strong digital literacy, interdisciplinary integration capabilities, and innovative thinking, akin to the often-cited concept of "T-shaped talent," possessing both depth and breadth [14-15].

2.2 Restructuring of Regional Labor Markets and Intensified Talent Mobility

The development level of the digital economy varies significantly across different regions, leading to geographical clustering in digital talent demand and salary levels. Regions with developed digital industries naturally exert stronger attraction for graduates, thereby intensifying talent competition. Simultaneously, digital technologies reduce information asymmetry, making job searches more convenient and increasing the potential mobility of labor. For local universities, this presents both a challenge, related to the risk of brain drain of locally trained talent, and an opportunity, as graduates can potentially serve broader markets through remote means, and the local talent pool might even attract more digital industry investments.

2.3 Multi-dimensional Challenges Facing Employment Work at Local Universities

Firstly, the major issue is how to ensure talent cultivation keeps pace. The updating speed of curriculum systems often lags behind technological iterations, and practical teaching components sometimes detach from real digital work scenarios. Secondly, career guidance services urgently need upgrading. Previously reliant mainly on campus job fairs and resume workshops, there is now a need to address new demands including consulting on flexible employment rights, planning digital career paths, and training in online job search skills. Finally, employment statistics and evaluation methods are somewhat outdated. Current statistical frameworks struggle to accurately capture the real situations of graduates in flexible employment or freelancing. If evaluation orientations remain fixated solely on the initial employment rate, there is a risk of neglecting their medium-to-long-term development potential and value-added competencies.

III. CONSTRUCTION OF THE EMPLOYMENT QUALITY EVALUATION SYSTEM FOR GRADUATES OF LOCAL UNIVERSITIES IN THE CONTEXT OF THE DIGITAL ECONOMY

Constructing a grounded evaluation system requires adherence to the following principles: indicators should be well-founded, with clear logic between dimensions forming an organic whole; the indicator system should guide universities to focus on digital economy demands and allow necessary updates in response to technological and market changes; indicator data should be easy to collect and measure, and should reflect the special mission of universities in serving regional development; it should comprehensively incorporate evaluation information from multiple perspectives including graduates, employers, universities, and society.

Through literature analysis and two rounds of Delphi expert consultation, involving experts from university employment research, the digital economy, and enterprise human resources, an evaluation framework comprising six first-level dimensions and 24 second-level indicators was finalized, as shown in Table 1.

Table 1: Employment Quality Evaluation Framework for Graduates of Local Universities in the Context of the Digital Economy

First-level Dimension (A)	Second-level Indicator (B)	Indicator Description
A1 Employment Status	B1 Graduation Destination Settlement Rate	Overall employment status at the statistical point (including further studies, flexible employment).
	B2 Job-Major Relevance	Degree of relevance between academic major and job content.
	B3 Employment Stability	Turnover rate within one year of graduation (reverse indicator).
	B4 Perceived Promotion Opportunities	Graduates' subjective evaluation of promotion channels and speed within the organization.
A2 Compensation and Benefits	B5 Monthly Starting Salary Level	Average monthly salary of the first job after graduation.
	B6 Salary Growth Rate	Salary increase magnitude after one year of work.
	B7 Social Security Coverage Rate	Proportion of graduates enjoying statutory benefits such as "Five Insurances and One Fund."
	B8 Supplementary Benefits Enjoyment Rate	Proportion enjoying supplementary benefits like enterprise annuities, commercial insurance, training subsidies.
A3 Employment Structure & Dev. Prospects	B9 Employment Ratio in Core Digital Industries	Employment proportion in industries defined by the <i>Statistical Classification of Digital Economy and Its Core Industries</i> .
	B10 Proportion in Technical-Skilled Positions	Proportion engaged in positions requiring high professional/technical or complex skills.
	B11 Participation Rate in New Employment Forms	Proportion and stability in flexible employment forms like platform/sharing economy.
	B12 Opportunities for Career Development Training	Availability of systematic on-the-job training and career development support from employers.

A4 Subjective Satisfaction	B13 Job Content Satisfaction	Evaluation of interest, challenge, and sense of achievement derived from the work itself.
	B14 Satisfaction with Work Environment & Interpersonal Relations	Evaluation of physical environment, corporate culture, and colleague relationships.
	B15 Work-Life Balance Degree	Satisfaction level in handling the relationship between work and personal life.
	B16 Overall Career Satisfaction	Comprehensive satisfaction evaluation of current career status.
A5 Competency Fit & Sustainable Dev.	B17 Digital Skills-Job Match Degree	Extent to which one's digital skill level meets job requirements.
	B18 Core Generic Competencies Match Degree	Match degree of communication, collaboration, innovation, problem-solving skills with the job.
	B19 Number of Skill Certifications Obtained	Number of digital or professional skill certificates obtained after employment.
	B20 Continuous Learning Engagement	Time and resource investment in learning/training during leisure time to enhance professional competence.
A6 Social Contribution & Regional Service	B21 Local (Province/City) Employment Ratio	Employment proportion within the province or city where the university is located.
	B22 Ratio Serving Local Key Industries	Employment proportion in locally prioritized development industries (especially digital industries).
	B23 Innovation & Entrepreneurship Participation	Involvement in founding enterprises or significant innovation projects.
	B24 Employer Evaluation of Graduate Contribution	Comprehensive employer evaluation of graduates' job performance, team contribution, and development potential.

The aforementioned experts were invited to perform pairwise comparisons of indicators at the same level using the 1-9 scale method to construct judgment matrices. Yaahp software was used for calculations, and all matrices passed the consistency test with a consistency ratio below 0.1. The final weight results are shown in Table 2.

Table 2: Indicator Weight Allocation Based on AHP

First-level Dimension	First-level Weight	Weight			
		B1	B2	B3	B4
A1 Employment Status	0.15	0.40	0.30	0.20	0.10
A2 Compensation and Benefits	0.20	0.40	0.30	0.20	0.10
A3 Employment Structure & Dev. Prospects	0.18	0.35	0.30	0.20	0.15
A4 Subjective Satisfaction	0.15	0.35	0.25	0.25	0.15
A5 Competency Fit & Sustainable Dev.	0.20	0.40	0.25	0.20	0.15
A6 Social Contribution & Regional Service	0.12	0.35	0.30	0.20	0.15

The weight allocation reflects the emphasis in the digital economy context. Competency Fit and Sustainable Development and Compensation and Benefits have the highest weights, highlighting the importance of continuous human capital appreciation and market returns in the digital era. Employment Structure and Development Prospects carries significant weight, emphasizing the digital content of employment and future potential. Social Contribution and Regional Service, as a distinctive dimension, clarifies the mission of local universities.

IV. EMPIRICAL TESTING AND APPLICATION ANALYSIS OF THE EVALUATION SYSTEM

4.1 Data Collection and Sample Description

The 2023 graduating cohorts from two local application-oriented undergraduate universities, referred to as A and B, in Hunan Province were selected as the research subjects. Online questionnaires were distributed to graduates, yielding 1268 valid responses, with 652 from University A and 616 from University B. Simultaneously, objective data were obtained from the universities' employment departments, and short evaluation forms were sent to employers of the graduates, resulting in 312 valid employer evaluations.

4.2 Calculation and Analysis of Evaluation Results

After standardizing the data for each indicator, comprehensive scores out of 100 were calculated using weighted sums based on the assigned weights. Overall, University A scored 78.5 points, while University B scored 72.1 points. University A showed clear advantages in the dimensions of Employment Structure and Development Prospects and Competency Fit and Sustainable Development. Specifically, University A scored significantly higher than University B on indicators B9, Employment Ratio in Core Digital Industries, with a weight of 35%, and B17, Digital Skills-Job Match Degree, with a weight of 40%. In-depth interviews revealed that University A had earlier initiated a Digital+ major transformation plan and established deep internship base relationships with local digital economy parks. Both universities scored relatively low on B11, Participation Rate in New Employment Forms, and B23, Innovation and Entrepreneurship Participation, indicating that local universities still need to strengthen guidance and support for students entering flexible employment tracks and entrepreneurship. Furthermore, B21, Local Employment Ratio, did not exceed 60% for either university, highlighting the challenge of talent retention. Employer evaluations for B24, Contribution Evaluation, for graduates from both universities were generally good, but higher expectations were expressed regarding innovation initiative and the ability to solve complex technical problems.

The practice of University A demonstrates that proactively aligning with regional digital industry planning, integrating digital literacy education into general and professional courses, and deepening industry-education integration through mechanisms such as industry colleges can effectively enhance graduates' employability and quality within the digital economy. University B reflects that if the adjustment of talent cultivation structure lags, even if traditional employment rates are acceptable, graduates' competitiveness and long-term development potential in high-quality digital economy positions will be limited.

V. SUGGESTIONS FOR ENHANCING EMPLOYMENT QUALITY OF LOCAL UNIVERSITY GRADUATES IN THE CONTEXT OF THE DIGITAL ECONOMY

5.1 Suggestions for Local Universities

Revamp talent cultivation plans with a focus on digital empowerment: Establish dynamic major adjustment mechanisms, offer interdisciplinary digital micro-majors or course modules. Strengthen project-based learning, virtual simulation experiments, and co-build practical platforms with leading digital enterprises. Construct precise and intelligent employment service systems: Utilize big data to analyze graduate job search trajectories and market demands, provide personalized job and skill training information. Offer new guidance courses on digital career planning and rights protection in the gig economy. Establish graduate career development tracking databases for routine monitoring of employment quality. Leverage the evaluation-feedback-improvement closed-loop function: Integrate this evaluation system into institutional quality assessment, regularly publish employment quality white papers. Use evaluation results for backward design of teaching reforms, major adjustments, and resource allocation.

5.2 Suggestions for Government and Society

Strengthen policy guidance and support: Local governments should introduce incentive policies to encourage graduates to work and start businesses in local digital small and medium-sized enterprises. Increase investment in university digital infrastructure and interdisciplinary program development. Build deep industry-education integration platforms: Led by the government, with participation from industry associations, industrial parks, key enterprises, and universities, develop regional digital skill standards, and co-build and share internship and training resources and dual-qualified teaching staff. Optimize the development environment for new employment forms: Improve social security systems and labor rights protection mechanisms adapted to platform and flexible employment, providing graduates with diverse and secure career choices.

5.3 Suggestions for Graduates Themselves

Cultivate a lifelong learning mindset, proactively utilizing online resources such as MOOCs to enhance digital skills and interdisciplinary knowledge. Actively seek internship and project practice opportunities to accumulate real-world work experience. Broaden career perspectives, rationally view and skillfully grasp the opportunities and challenges brought by flexible employment.

VI. CONCLUSION

Through theoretical analysis and empirical research, this study constructed an employment quality evaluation system for graduates of local universities in the context of the digital economy, comprising 6 dimensions and 24 indicators, and determined indicator weights using the AHP method. Empirical testing indicates that this system can more sensitively identify the strengths and weaknesses of graduate employment in the digital economy era, demonstrating strong scientific validity and application value. The research proposes that local universities need to strategically promote the digital transformation of talent cultivation and construct compatible employment service and evaluation mechanisms.

The limitations of this study lie in: the sample being confined to two universities in Hunan Province; future research could expand the geographical and institutional coverage to verify the system's generalizability. Some subjective indicators are susceptible to the timing of the survey and require correction through longitudinal tracking data. Future research could further explore the use of big data and AI technologies for real-time dynamic monitoring and early warning of employment quality, and delve deeper into the influencing factors and enhancement pathways for employment quality among graduates from different regions and academic disciplines.

REFERENCES

- [1] China Academy of Information and Communications Technology. White Paper on Global Digital Economy (2023) [R]. Beijing: China Academy of Information and Communications Technology, 2023.
- [2] Kar S. Data for Better Lives: World Development Report 2021 by World Bank Group[J]. Journal of Data Science, Informetrics, and Citation Studies, 2023, 2(2):136-139.
- [3] Ma Liting. Reflections on the Employment Quality Evaluation Indicator System for Graduates of Application-oriented Undergraduate Universities—Based on the Analysis of the "Graduate Employment Quality Survey Report" [J]. Journal of Beijing Vocational College of Labor and Social Security, 2024, 18(01): 51-58.
- [4] Cao Dong, Yi Yumei. Construction of an Employment Quality Evaluation Indicator System for University Graduates in the New Era—Taking Hunan Province as an Example [J]. Chinese Personnel Science, 2024, (01): 80-92.
- [5] Wang Yanwei, Li Yongneng, Huang Yi, et al. Six Dimensions to Consider in Constructing an Employment Quality Evaluation Indicator System for University Graduates [J]. Journal of Yunnan Agricultural University (Social Science), 2015, 9(02): 87-90.
- [6] Ke Yu. Construction of an Employment Quality Evaluation Indicator System for University Graduates [J]. China Higher Education Research, 2007, (07): 82-84+93.
- [7] Chang Kai. Economic Globalization and Protection of Workers' Rights and Interests[J]. People's Tribune, 2003(5):3.
- [8] Shen Zhiyi. Reflections on the ILO's "Decent Work"[J]. China Business and Market, 2011, 25(11):50-54.
- [9] Conditions L W. Trends in job quality in Europe[M]. Publications Office of the European Union, 2012.
- [10] Lai Desheng, Su Lifeng, Meng Dahu, et al. Measurement and Evaluation of Employment Quality Across Chinese Regions[J]. Economic Theory and Business Management, 2011, V(11):88-99.
- [11] Acemoglu D, Restrepo P. The Race between Man and Machine: Implications of Technology for Growth, Factor Shares, and Employment[J]. American Economic Review, 2018, 108.
- [12] Yan Xiaofei. Research Report on the Status of Chinese Employees[M]. Social Sciences Academic Press (China): 2021:457.
- [13] Wang Jiaqing. Research on the Flexible Employment of Workers Under New Business Forms[D]. Dongbei University of Finance and Economics, 2021.
- [14] Zhang Xiao. Research on the Transformation of Enterprise Management Models in the Era of Digital Economy[J]. China Strategic Emerging Industries, 2024, (17):191-193.
- [15] Qi Yudong, Xiao Xu. Enterprise Management Transformation in the Era of Digital Economy[J]. Management World, 2020, 36(06):135-152+250.

Funding: This research was supported by General Project of the Hunan Provincial Social Science Achievement Evaluation Committee (No.: XSP25YBZ191); Hunan Provincial Degree and Graduate Education Reform Research Project (No.: 2024LXBZZ100)



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  ijirset@gmail.com



www.ijirset.com

Scan to save the contact details