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Collaborative filtering algorithm-based predictive model for the adaptability of employment policies for vocational college students

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Abstract Career planning for students at higher vocational colleges and universities must be tailored to the actual employment policy environment. Therefore, this paper combines the Structural Topic Model (STM) with the PMC Index Model to mine and analyze employment policy texts, converting policy texts into quantifiable indicators to conduct an analysis of the adaptability of the employment policy environment. The results show that, using policy documents from January 1, 2014, to December 31, 2024, as the research object, vocational college students exhibit high adaptability to the employment policy environment in dimensions such as compensation and benefits (0.84), post-contract mobility (0.95), career development (0.79), and job recruitment (0.78). However, the adaptability of the employment policy environment is relatively low in terms of university education (0.52) and rights protection (0.63). Therefore, optimizing employment policies must address the key “shortcomings” in policy supply and focus on achieving overall policy balance and alignment.

Index Terms Structural Topic Model, PMC Index Model, Employment Policy Text, Adaptability Analysis

I. Introduction

Employment is the most important project for people's livelihood, public sentiment, and the foundation of society. As the main new force for national and social development, college graduates have undoubtedly become the key group in China's employment work. The employment of college graduates is crucial to people's well-being, economic development, and the future of the country. From a micro perspective, the employment of college graduates affects the personal development of students [1], [2]. From a macro perspective, it has a significant impact on the basic livelihood of the people, the maintenance of social harmony and stability, and the healthy and sustainable development of the economy [3], [4]. Therefore, how to effectively address the employment challenges faced by college graduates has become an urgent and important issue that needs to be addressed.

To alleviate the “employment difficulties,” the Chinese government has encouraged and supported college graduates' employment by introducing a series of policies over the years [5]. As an integral part of the employment service system for college graduates, employment policies for this group play a crucial role in guiding, balancing, and ensuring the establishment and improvement of the employment service system [6]-[8]. By analyzing the development process of these policies and their adaptability to students, identifying the driving factors behind policy changes, we can predict the future direction of optimization for China's employment policies for college graduates, enabling the government to take the initiative in adjusting and improving these policies [9]-[12]. This will help alleviate the employment difficulties faced by college graduates, maintain social stability, and ensure the smooth operation of the economy [13], [14].

Some scholars have attempted to analyze the various dimensions of the policy paradigm to identify and address issues in the formulation and implementation of China's graduate employment policies. Yang, S., et al. investigated the moderating effect of reduced perceived employment opportunities on college students' employment stress, using policy support and job-seeking self-efficacy as mediating variables, to explore the mechanisms and boundary conditions of environmental effects on college students' employment stress, providing theoretical insights and practical guidance for college student employment practices [15]. Liu, Y., and Li, A. conducted a quantitative assessment of college student employment policies using text mining methods, extracting high-frequency words from policy texts and performing visualization analysis to optimize and upgrade current employment policies [16]. Cui, C. and Wang, K. constructed a college student employment policy analysis model based on the PMC surface. By intuitively analyzing employment policies in terms of design, tools, and content, the model effectively highlights the strengths and weaknesses of employment policies and proposes improvement and optimization strategies [17].

Wu, M., et al. analyzed the characteristics of China's government employment support policies from the perspectives of process and content. They explored regional differences in employment policies through entry points such as tool selection, policy intensity, and implementation strategies, actively promoting full employment for college students in a complex employment environment [18]. From the current state of research, many scholars have only considered the employment pathways of college students from the perspective of policy makers, lacking a policy-making logic from the perspective of college students themselves, which is somewhat insufficient in addressing the employment difficulties of educated labor.

Facing the dual challenges of the severe employment situation for vocational college students, based on the above status quo, this paper combines the Structural Topic Model (STM) with the PMC Index Model to analyze the matching degree between grassroots employment policies and graduate demands, identify and eliminate factors affecting policy supply-demand matching, and provide policy recommendations for improving grassroots employment policies, alleviating employment pressure on college graduates, and promoting grassroots social development. Employment demand survey questionnaires are distributed to vocational college students nationwide who are willing to seek employment, and their adaptability to the employment policy environment is analyzed.

II. Structural Topic Model (STM)

II. A.Research Methods

In recent years, with the expansion of enrollment, the issue of employment difficulties for vocational college students has become increasingly severe. Many vocational college students experience various anxieties and confusions when facing career choices, lacking the necessary career counseling and career development guidance. To gain a precise understanding of the current state, existing issues, and future trends in career planning among vocational college students, this paper will explore the adaptability of vocational college employment policies to market demands and seek career planning strategies tailored to the actual circumstances of vocational colleges.

STM is an extension of the Latent Dirichlet Allocation (LDA) model, which enhances its explanatory power for policy text data by integrating additional document-specific information. This model enables researchers to incorporate additional covariate information into the model, thereby enhancing its interpretability and applicability. Among these, the theme popularity covariate is primarily used to adjust and influence the association strength between specific documents and various themes, effectively capturing the popularity or preference differences of themes across different documents. The topic content covariate focuses on how to influence the lexical distribution within a topic through covariates, adjusting the generation probability of keywords in each topic based on the document's metadata. Additionally, STM combines the modeling capabilities of the Related Topic Model (RTM) for inter-topic correlations and the time-series data processing functionality of the Dynamic Topic Model (DTM), enabling it to demonstrate greater flexibility and accuracy when handling complex and dynamic policy text datasets.

The Structural Topic Model (STM) serves as an illustrative article for this model, introducing the relevant definitions of the STM structural topic model: Similar to other topic models, STM is a word-count generative model, meaning it defines a data generation process for each document and then uses this data to discover the parameter values within the model.

The generative model starts from the top, with policy document topics and topic word distributions jointly generating documents (X_d , where d is the document index) with relevant metadata. Within this framework (similar to other topic models, such as LDA without metadata), topics are defined as mixtures of words, where each word belongs to a topic with a certain probability. Policy documents are defined as mixtures of topics, meaning that a single policy document can consist of multiple topics. Therefore, the sum of the proportions of all topics in a policy document and the sum of the word probabilities for a given topic are both 1[19].

For an STM model with K topics, the generation process for each policy document (indexed by d) with a vocabulary size of V can be summarized as follows:

(1) Attract attention to each topic at the policy document level using a logical normal generalized linear model based on the policy document covariate vector x_d :

$$\vec{\theta}_d \left| x_d, \gamma, \Sigma \sim LogisticNormal\left(\mu = x_d\gamma, \Sigma\right)\right. \tag{1}$$

where x_d is a $1*p$ -dimensional vector, γ is a $p*(K-1)$ -dimensional coefficient matrix, and Σ is a $(K-1)$ -dimensional covariance matrix.

(2) Given the policy document content covariate y_d, use the baseline word distribution (m) to form the distribution of the specific policy document on the words representing each topic (k), the topic-specific bias $\kappa_k^{(t)}$, the covariate group bias $\kappa_{\mathbf{y}d}^{(c)}$, and the interaction variable between the two $\kappa_{\mathbf{y}d,k}^{(i)}$. Then we have:

$$\beta_{d,k} \propto \exp\left(m + \kappa_k^{(t)} + \kappa_{yd}^{(c)} + \kappa_{yd,k}^{(i)}\right) \tag{2}$$

In which m and each $\kappa_k^{(t)}$, $\kappa_{\mathbf{y}d}^{(c)}$, and $\kappa_{\mathbf{y}d,k}^{(i)}$ are V-dimensional vectors containing one entry for each word in the vocabulary. When no conventional covariates exist, β can be constructed using $\beta_{d,k} \propto \exp\left(m + \kappa_k^{(t)}\right)$ or a simpler point estimate form.

(3) For each word $\left(n \in \{1, \cdots, N_d\}\right)$ in the policy document, perform the following processing:

Draw the topic distribution of the word based on the topic distribution of the specific policy document:

$$z_{d,n} \left| \vec{\theta}_d \sim Multinomial\left(\vec{\theta}_d\right) \right. \tag{3}$$

Based on the selected topic, extract an observation word from that topic:

$$w_{d,n} \left| z_{d,n}, \beta_{d,k=z_{d,n}} \sim Multinomial\left(\beta_{d,k=z_{d,n}}\right) \right. \tag{4}$$

This estimation method is based on variational inference of the topic model and develops a partially merged variational expectation maximization algorithm, which provides estimates of model parameters when converging. Regularized prior distributions are used for γ, κ, and $\sum$ (optional), which helps enhance interpretation and prevent overfitting.

II. B.Advantages of the STM model

Compared to ordinary topic models, STM comprehensively considers high-frequency words under multiple metrics, such as Probability, FREX, Lift, and Score. In addition, STM can also use structured information in the corpus (such as time) to assist in solving problems, assuming that information within a certain period of time has similar topics. The description of the policy document generation process highlights possible scenarios: topic popularity and topic content may be functions of document metadata. Topic popularity refers to the amount of content in a document related to the topic (described on the left), while topic content refers to the words used in the topic (described on the right). Therefore, variables explaining local popularity are called local popularity covariates, and variables explaining local content are called local content covariates. However, it should be noted that the model allows the use of local popularity covariates, local content covariates, or both, or neither. Without covariates, the model simplifies to a (fast) implementation of the related topic model.

STM has been extensively studied in English policy text analysis, but its use in Chinese is limited. One possible reason is the difference in format between English and Chinese policy documents, as English policy documents inherently include word-separating spaces. When using STM to analyze Chinese policy text data, the first challenge is Chinese word segmentation, which may require significant time to achieve satisfactory results. Additionally, when conducting STM analysis, two additional variables (time variable and binary covariate) are required as auxiliary variables. These variables are difficult to construct in some policy texts, and in some cases, impossible to construct. These two factors collectively contribute to the current underutilization of this algorithm in China.

III. PMC Index Model

III. A. Application Process of the Model

Currently, many policy evaluation methods have shortcomings, primarily in terms of inevitable subjectivity and low accuracy. This study combines an analysis of the mechanisms underlying policy systems. This study employs the PMC index model method to explore the existing issues and analyze the adaptability of vocational college students to the employment policy environment. Additionally, since the PMC index model method utilizes text mining to extract raw data from actual policy texts, it effectively avoids subjectivity and enhances accuracy. The PMC index model is based on the principle that everything is in motion and interconnected, and it emphasizes that policy research models should comprehensively consider various variables. The PMC index model can be applied in two aspects: first, it can be used to analyze the consistency level of a specific policy model; second, it can intuitively illustrate the advantages and disadvantages of a specific policy. Additionally, it can analyze the specific meanings

and levels of the advantageous and disadvantageous variables [66, 65, 63, 53]. To construct and analyze the PMC index model, first classify the policy variables and identify each parameter based on their content. Then establish a multi-input-output table. Subsequently, calculate the PMC index for each policy based on the data analysis framework presented in the multi-input-output table. Finally, identify the basic patterns based on the PMC indices of each policy and draw conclusions. This paper analyzes the adaptability of vocational college students to the employment policy environment based on the PMC index model [20]. The application process of the model is shown in Figure 1.

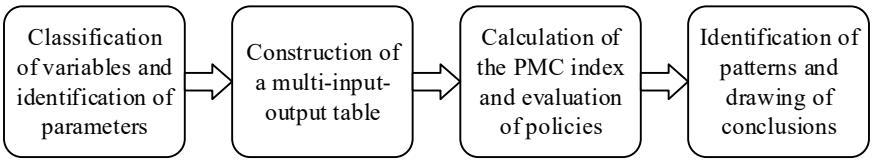

Figure 1: PMC index model operation process

III. B. Advantages of the PMC Index Model

The PMC Index Model is constructed using an index model methodology, where factors are interrelated, influencing and constraining one another, and maintaining close connections. During model construction, it is essential to comprehensively incorporate all relevant factors without bias, analyzing the characteristics of the subject under study. The advantages of the PMC Index Model are primarily reflected in:

(1) Utilizing text mining tools to analyze and process policy texts, extracting keywords and phrases as PMC model indicators. These indicators can represent aspects such as the objectives, content, and effects of policies. The use of objective policy texts and quantified variable settings ensures the objectivity of the model analysis.

(2) The PMC index score can measure the performance of policies in different aspects, while the concavity of the surface diagram reflects the bottlenecks and issues encountered during policy implementation. Through the comprehensive analysis of these indicators, scientific and objective insights and evidence can be provided for policy improvements.

(3) The PMC index model uses text mining technology to convert policy texts into quantifiable indicators, evaluating policies from the perspective of their formulation. This approach addresses the subjectivity inherent in traditional policy evaluation models that focus on implementation outcomes, thereby enhancing the precision and objectivity of evaluations.

(4) Compared to other policy quantification evaluation models, the PMC index model has moderate operational complexity and relatively low research costs.

IV. Empirical research on the adaptability of employment policy environments

IV. A. Spatio-temporal analysis of employment policy themes

The optimal number of topics is determined using four evaluation metrics: Held-Out Likelihood, Residuals, Semantic Coherence, and Lower Bound, and the model performance is assessed. Held-Out Likelihood, also known as document fit, refers to the probability of retaining a portion of words extracted from a set of documents, trained using document-level latent variables to evaluate the model's fit after training and validation. Residuals are referred to as model residuals, which test the excessive dispersion of polynomial variance during the STM data generation process to determine whether the model's topic number assumption is reasonable. Semantic Coherence is referred to as semantic consistency, which maximizes when the most likely words in a given topic frequently appear together. This metric is positively correlated with manual topic quality scores. The lower bound is the lower limit of model convergence, facilitating analysis of the convergence speed of the model with respect to the number of topics. The higher the probability of retaining documents and semantic coherence, the lower the residuals and lower bound, and the better the model performance. The metrics of the topic model under different numbers of topics are shown in Figure 2.

As shown in the figure, when the number of topics K = 11, the document fit and convergence lower bound metrics are high with a slower growth trend, the model residual values are low with a slower decline trend, and the semantic consistency metric is high with a noticeable peak. Therefore, the optimal number of topics is set to 11.

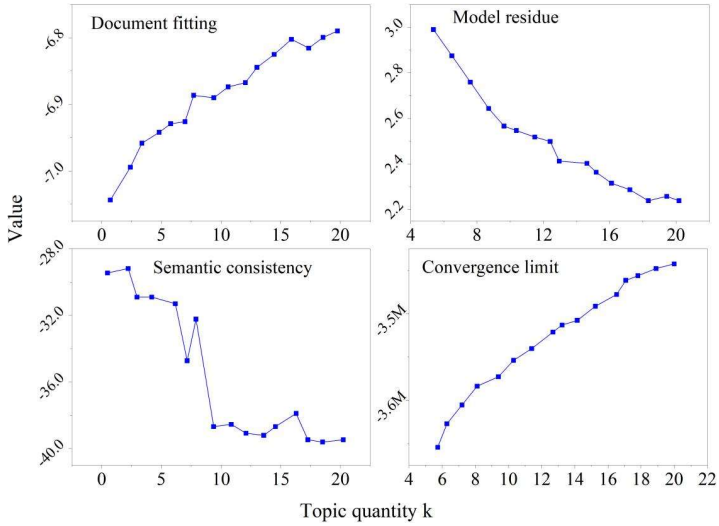

Figure 2: Topic model evaluation

The scope of the study covers all provinces and municipalities in China excluding Hong Kong, Macao, and Taiwan. Based on the socio-economic development index and the classification standards of the National Development and Reform Commission, the spatial analysis units are divided into four major development regions: eastern, central, western, and northeastern. The economic, cultural, legal, industrial, and employment development contexts vary significantly across these regions. The study selects regions with distinct employment characteristics representative of each development region to collect vocational college employment policy documents. Specifically, the employment policies of Beijing and Guangdong, Hubei and Anhui, Sichuan and Xinjiang, and the three northeastern provinces of Heilongjiang, Jilin, and Liaoning are used as research data samples for the eastern, central, western, and northeastern development regions, respectively. The timeframe for the policy documents was set from January 1, 2014, to December 31, 2024. Employment policy documents were obtained from the “Employment and Labor Regulations” category on the Peking University Law Database website and from the official websites of relevant provincial departments, including provincial people's congresses, provincial governments, and other provincial-level institutions.

IV. B. Analysis of the Main Content of Employment Policies

Based on the high-frequency keywords identified by Highest Prob and the significant keywords identified by FREX, the themes were summarized and categorized into 11 employment-related themes. The specific employment policy themes are shown in Table 1.

As shown in the table:

(1) Internship employment themes have occupied a significant position in recent employment policies. The government can alleviate employment pressure through multiple channels by increasing efforts to develop employment internships. Vocational college students can achieve high-quality employment through job matching and internship retention.

(2) With the rapid development of employment work, China's employment services face challenges such as large scale, complex situations, information barriers, and cumbersome procedures. The construction of an employment information research and management system has become an inevitable path toward modernized and precise employment services. Therefore, information research has also become one of the key themes in China's employment policies.

(3) China is committed to implementing the Small and Medium-sized Enterprise (SME) Development Plan, which aims to create employment opportunities through measures such as improving the entrepreneurial environment, nurturing entrepreneurial entities, supporting enterprise innovation and development, strengthening entrepreneurial services, and establishing entrepreneurial bases. This approach seeks to stimulate market dynamism and create additional employment opportunities.

(4) Employment policies prioritize providing financial support for various employment initiatives while strictly regulating the use of funds in terms of recipients, scope, principles, procedures, and management. The policies ensure the legality and effectiveness of fund usage to enhance the efficiency of employment-related investments.

(5) Employment policies provide assistance to key employment groups such as the unemployed, unemployed youth, and discharged soldiers through employment subsidies, social insurance, entrepreneurship support policies, and support for enterprises hiring key groups to ensure employment.

(6) Among the 11 themes of China's employment policies, the least attention is given to campus recruitment and targeted talent education.

Table 1: Employment policy theme information

Theme number	High frequency theme words	Subject name	Topic ratio / %
1	Rural, orientation, training, free, training, hygiene, Industry life	Orientation talent education	3
2	Services, information, institutions, public employment services, recruitment, investigation, workers	Information survey	11
3	Subsidies, funds, subsidies, applications, employers, rules Company, start a business	Fund subsidy	12
4	Graduates, universities, entrepreneurship, recruitment, learning, policies, services	Employment in practice	16
5	Entrepreneurship, innovation, business, service, base, platform, student	Innovative entrepreneurship	12
6	Unemployment, business, subsidies, policies, entrepreneurship, insurance, youth	Key population employment protection	12
7	Training, entrepreneurship, skills, institutions, businesses, labor, vocational training	Vocational training	5
8	College, vocational, technical, graduate, senior, education, professional	Campus recruitment	5
9	Entrepreneurship, business, service, policy, training, social security, workers	Job market specification	9
10	Jobs, colleges, three support, projects, services, college students, career units	College graduates are employed at the bottom	9
11	Home, entrepreneurship, migrant workers, rural, agricultural, service, countryside	Migrant workers return home to work	6

IV. C. Policy Adaptability Analysis

Based on a comprehensive analysis of existing policy documents and relevant literature, this paper systematically organizes the key dimensions and evaluation indicators of the employment policy needs survey for vocational college students. With the aim of exploring the match between existing policy supply and demand and understanding the employment needs gap of vocational college students, an employment needs survey questionnaire was distributed to vocational college students nationwide who are willing to seek employment. A total of 1,150 participants took part in this questionnaire survey, with the sample covering vocational college students of different genders, regions, political affiliations, educational backgrounds, grades, and majors. Ultimately, 998 valid questionnaires were identified, with a questionnaire validity rate of 86.78%.

Figure 3: Cloud map of the core appeal of the basic employment

To gain a deeper understanding of vocational college students' needs regarding employment policies, this study collected graduates' core employment demands through the open-ended question “What other measures do you think could attract more vocational college students to stay in employment?” in the demand questionnaire. A word cloud diagram was then created to analyze the results, as shown in Figure 3. The results indicate that graduates primarily focus on salary and benefits, rights protection, and career development in their employment demands.

By establishing an input-output table, we analyze the environmental adaptability between the supply of policy elements and the demand for graduate employment elements. First, it is necessary to determine the valuation standards. All variables are represented using binary rules. Only when the content of an indicator is clearly identifiable and meets the criteria in the employment policy text is it assigned a quantitative value of 0 (not met) or 1 (met) to ensure the accuracy and reliability of the matching results.

The calculation of the PMC value is based on the hierarchical structure of the indicators. Taking the first-level indicator X1 cultivated by universities as an example, the PMC value is the sum of the values of its two second-level indicators, with the values of the second-level indicators ranging from 0 to 1. The results are shown in Table 2.

Table 2: college graduates' basic employment requirements factor system

Primary demand	Secondary demand	Tertiary requirement
College culture X1	Grassroots theory X1-1	Curriculum Settings and professional Settings
	Grassroots practice X1-2	Grassroots learning and grassroots entrepreneurship
	Job condition X1-3	Lower service age limit and relaxation registration
Job entry X2	Post setting X2-1	Increase the type of project and increase the type of job
Salary treatment X3	Base pay X3-1	Clear salary standards, adjust salary dynamically, raise salary treatment
Equity protection X4	Primary subsidy X4-1	Expense reimbursement, employment subsidy
Career development X5	Necessary living conditions X5-1	Nothing
Expiry X6	Professional interest X6-1	Household registration, contract protection, working age calculation, leisure rights and purchase insurance
Job entry X7	Family settlement X7-1	Spouse employment and child
Salary treatment X8	Talent culture X8-1	Tracking culture, rotation training, personnel flow
Equity protection X9	Training X9-1	Training in front of the post and training
	Promotion incentive X10-1	Title appraisal, career planning, recognition award
	Employment policy X10-2	Recruitment, employment channel and connection
	Entrepreneurial policy X10-3	Entrepreneurship subsidies and entrepreneurial resources
	Promotion policy X10-4	The first try points, the exemption of admission, the reservation of the admission, the grassroots scholarship

The evaluation value of each secondary indicator is calculated based on its subordinate tertiary indicators. The evaluation value of a secondary indicator is equal to the evaluation value of its corresponding tertiary indicators multiplied by the corresponding weights.

Referring to Estrada's classification of policy employment environment adaptability, the classification of policy supply and demand environment adaptability in this paper is as follows: Poor match (0.0–0.49), adequate match (0.50–0.69), good match (0.70–0.89), and perfect match (0.90–1.00). Based on the calculation method of the PMC index and the classification of matching levels, the adaptability of the employment policy supply to the demand of vocational college students is shown in Table 3.

Table 3: employment policy supply and demand matching

Policy demand	PMC index	Matching grade	Policy mismatch requirements
College culture	0.52	Qualified matching	Policy mismatch requirements
Job entry	0.78	Good match	Grassroots learning and grassroots entrepreneurship
Salary treatment	0.84	Good match	Reduce service age limit
Equity protection	0.63	Qualified matching	Raise salary
Career development	0.79	Good match	The right of rest, the employment of the spouse and the children
Expiry	0.95	Perfect match	Training and career planning
Mean	0.752		

The environmental adaptability radar chart illustrating the alignment between employment policy supply and the needs of vocational college students is shown in Figure 4. Although employment policies exhibit high policy-demand alignment in dimensions such as compensation and benefits, post-graduation mobility, career development, and job recruitment, these advantages are insufficient to compensate for the “shortcomings” in dimensions with low alignment, such as university education and rights protection. As a result, employment policies remain unable to sustainably attract graduates and drive societal development. Therefore, optimizing employment policies necessitates addressing the critical “shortcomings” in policy supply and prioritizing overall policy alignment and balance.

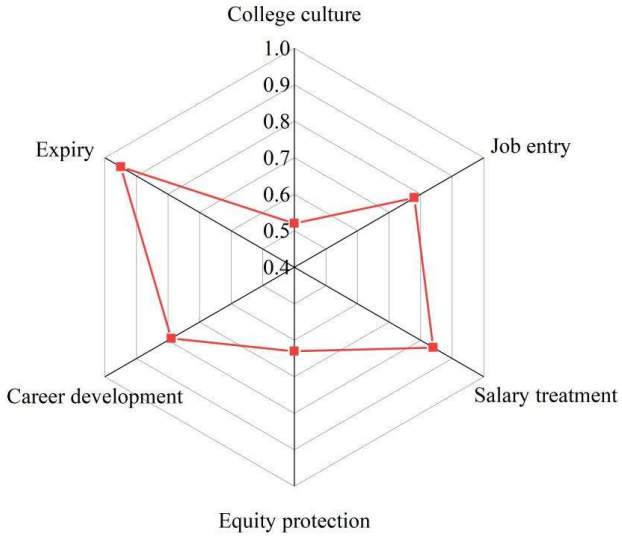

Figure 4: Job requirements matching degree radar

V. Conclusion

This paper primarily utilizes a combination of structural topic modeling (STM) and the PMC index model, with policy documents from January 1, 2014, to December 31, 2024, as the research object, to explore the thematic characteristics of China's employment policies across different time periods and spatial dimensions, and conduct an adaptive analysis of the employment policy environment for vocational college students. The results show that through word cloud analysis, graduates primarily focus on aspects such as compensation and benefits, rights protection, and career development in their employment demands. In terms of adaptability analysis of the employment policy environment across dimensions such as compensation and benefits, post-graduation mobility, career development, and job recruitment, there are shortcomings in dimensions with low matching degrees, such as university education and rights protection, which make it difficult to sustainably attract graduates and drive social development.

References

[1] Demetriou, C., Meece, J., Eaker-Rich, D., & Powell, C. (2017). The activities, roles, and relationships of successful first-generation college students. Journal of College Student Development, 58(1), 19-36.

[2] Mok, K. H. (2016). Massification of higher education, graduate employment and social mobility in the Greater China region. British Journal of Sociology of Education, 37(1), 51-71.

[3] Burnside, O., Wesley, A., Wesaw, A., & Parnell, A. (2019). Employing Student Success: A Comprehensive Examination of On-Campus Student Employment. NASPA-Student Affairs Administrators in Higher Education.

[4] Tang, S., Yao, M., Wei, X., & Peng, C. (2025). Wenzhou University’s “Employment Exchange” Application Accurately Boosts College Students’ Employment. In Leading Smart Education: Best Practices from Chinese Schools (pp. 47-50). Singapore: Springer Nature Singapore.

[5] Chan, C. K. Y. (2023). A comprehensive AI policy education framework for university teaching and learning. International journal of educational technology in higher education, 20(1), 38.

[6] Wang, H., & Wang, C. (2024). Review of the impacts of COVID-19 pandemic on the employment of college graduates in China and countermeasures to it. Frontiers in Public Health, 12, 1390055.

[7] Mok, K. H., & Jiang, J. (2018). Massification of higher education and challenges for graduate employment and social mobility: East Asian experiences and sociological reflections. International Journal of Educational Development, 63, 44-51.

[8] Islam, R. (2018). Macroeconomic policy and employment: a development perspective. The Indian Journal of Labour Economics, 61(3), 427-451.

[9] Huang, Y., An, L., Wang, J., Chen, Y., Wang, S., & Wang, P. (2021). The role of entrepreneurship policy in college students' entrepreneurial intention: the intermediary role of entrepreneurial practice and entrepreneurial spirit. Frontiers in Psychology, 12, 585698.
[10] Agarkov, G. A., Tarasyev, A. A., & Sushchenko, A. D. (2020). Optimization of students' graduation by the university taking into account the needs of the labor market. IFAC-PapersOnLine, 53(2), 17399-17404.
[11] Chu, J., Liu, J., & Liu, S. (2019). Research and countermeasure analysis of college students' employment issues. Open Journal of Social Sciences, 8(1), 129-138.
[12] Deng, Q. (2020, December). Study on Improvement in Employment Quality of College Students. In 2020 6th International Conference on Social Science and Higher Education (ICSSHE 2020) (pp. 904-912). Atlantis Press.
[13] Wang, W., Lai, Y., Deng, J., Shi, J., & You, L. (2024). Research on High-Quality Employment of College Students from the Perspective of Self-Marketing: A Case Study of Local Institutions in Guangdong. Modern Economy, 15(10), 1000-1025.
[14] Trolian, T. L., & Rossmann, P. D. (2022). Connecting Students' College Employment Experiences and Attitudes About Diversity. Journal of College Student Development, 63(1), 16-33.
[15] Yang, S., Yang, J., Yue, L., Xu, J., Liu, X., Li, W., ... & He, G. (2022). Impact of perception reduction of employment opportunities on employment pressure of college students under COVID-19 epidemic–joint moderating effects of employment policy support and job-searching self-efficacy. Frontiers in Psychology, 13, 986070.
[16] Liu, Y., & Li, A. (2022). Quantitative evaluation and path optimization of college students' employment policy based on text mining. Wireless Communications and Mobile Computing, 2022(1), 3812215.
[17] Cui, C., & Wang, K. (2024). Quantitatively analyzing the college student employment policy in China based on PMC-index model. PloS one, 19(10), e0310479.
[18] Wu, M., Hao, X., & Tian, Y. (2022, May). Employment management policies for college graduates under COVID-19 in China: diffusion characteristics and core issues. In Healthcare (Vol. 10, No. 5, p. 955). MDPI.
[19] Moumita Basu & Ranjanendra Narayan Nag. (2018). Dualism, exchange rate, and employment: a structuralist model. Indian Economic Review,53(1-2),287-310.
[20] Haoyu Chi,Hanye Tang,Chao Sun,Linjun Zhong,Jiaqi Guo,Yuanheng Li... & Mingli Jiao. (2025). Quantitative evaluation of hospital workplace violence prevention and control policies in China: based on PMC index model. Health Research Policy and Systems,23(1),77-77.