A study on the employment attractiveness of college students in Jinan, Shandong Province

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Abstract: *Jinan, as the capital of Shandong Province, has introduced a series of policies to attract talents in recent years. Based on the research on the urban attractiveness of Jinan, this paper selects the young talent group of college graduates as the survey object, and deeply studies the employment attractiveness and influencing factors of Jinan through the combination of qualitative analysis and quantitative analysis, so as to provide reference for helping Jinan further deepen the reform of talent development system and mechanism, improve the ability to attract young talents, build a talent gathering highland in inland areas, and accelerate the construction of a national central city.*

Keywords: *Jinan, college students, employment attractiveness, indicator*

1. Introduction

The revitalization of cities depends mainly on the gathering of young talent. Under the supply-side reform, the urban development logic is moving from resource-oriented to talent-oriented. The competition for talents among cities is fierce. Strengthening the attraction of cities is the fundamental way to achieve high-level talent gathering. Nowadays, domestic urban competition has entered a new stage, and many cities have launched "new talent policies", launched "competition for talents", and searched for "strongest brains" to seize the commanding heights of economic development. This "competition for talents" is the real demand of economic transformation and upgrading, focusing on the group of college graduates, and attracting graduate talents to the local area.

In June 2022, the Jinan government issued "Double 30" talent policies. The preferential policy conditions include loose settlement policy, employment and entrepreneurship incentive policy, preferential housing policy and cash subsidy policy. Based on the research on the urban attractiveness of Jinan, this paper explores the reasons why Jinan college graduates choose to stay in Jinan for employment in the past five years and the reasons why they choose to leave Jinan through the questionnaire method, and deeply studies the employment attractiveness and influencing factors of Jinan, so as to provide reference for helping Jinan further deepen the reform of talent development system and mechanism, improve the ability to attract young talents, build a talent gathering highland in inland areas, and accelerate the construction of a national central city.

2. Literature review

Under the premise of the attraction of cities to talents, this paper focuses on the research on the urban attractiveness of college students. Most of these literature focus on the research on the factors of the city's attractiveness to college students' employment, the research on the design of comprehensive evaluation indicators and the research on the proposed strategies.

2.1. Factors affecting the attractiveness of cities to college students' employment

First, the proportion of non-material factors in cities is increasing. A survey on the choice of city type shows that the employment environment (47.67%), urban development potential (46.51%), urban consumption level (42.44%), information openness and circulation (40.11%), and human and natural environment (43.02%) have become the five major influencing factors for graduates to make choices, of which the selectivity of urban employment environment is particularly obvious [1].

In 2017, there were 7.95 million college graduates nationwide, 300 thousand more than in 2016. An Investigation Report on the Job hopping Index of White Collars in Autumn 2017 released by Zhaopin Recruitment in September 2017 shows that household registration, housing price, medical care, education, etc. are still important factors for job seekers to choose to stay in their cities.

Second, college students' sense of urban integration is related to the choice of cities[2]. [3] Yu Meng, etc. from the perspective of inter group relationship, paid attention to the integration of college students into cities with cross regional employment: post competition contradiction, lack of welfare treatment, difference in cost of living and other factors are all problems of urban integration, which are important factors affecting which city college students choose for employment. Exploring the degree of urban integration plays an important role in college students' choice of cities.

2.2. Comprehensive index design of city's attractiveness to college students' employment

[4]Zhang Beijia and Ding Rijia built a comprehensive evaluation index of urban employment attractiveness based on the principle of index system design. Then they used factor analysis to make an empirical analysis of the employment attractiveness level of 13 cities under the jurisdiction of Jiangsu Province. Through the analysis of the research results, they proposed measures to improve urban employment attractiveness for cities in different regions of Jiangsu Province, providing decision-making basis for further improving the employment level of Jiangsu Province; [5]Wang He and Li Zhonghong built a comprehensive evaluation index system of regional attractiveness to college students' employment from four dimensions of regional basis, employment environment, living conditions and social harmony, determined the weight of the model index system by using the analytic hierarchy process (AHP), and established a hierarchical regional college students' employment attractiveness measurement model, calculated and evaluated the comprehensive index of the attractiveness of 25 cities in the Pearl River Delta and Yangtze River Delta to college students' employment; Sun Xiang and Zhao Yong (2010) analyzed the employment attraction from four aspects of economy, social environment policy system and natural environment by establishing a relevant indicator system. On this basis, they used the K-means clustering method to divide the national natural administrative regions into four categories and summarize the employment attraction of the four categories.

2.3. Strategies for Improving the Attraction of Cities to College Students

Strategies to make cities more attractive to college students can be summarized in three ways:

First, the government should improve infrastructure construction, further improve the registered residence system, and further reform the welfare system. Advocate for fairer social promotion mechanisms, positive public opinion guidance. Accelerate the construction of a regionally integrated big data platform for college student employment services[3].

Second, colleges should adjust their professional settings and strengthen employment guidance, which is an effective way to promote college students' employment, improve the employment guidance system for college students, and strengthen entrepreneurship education.

Third, the "elite complex" of newly graduated college students has deeply constrained their employment concept[6]. When choosing a job, the concept of considering developed areas, big cities, large institutions, and large enterprises is gradually changing, and they have realized that contemporary college students no longer have any sense of superiority, as long as college graduates can change their thinking and change their concepts, they will definitely go wider and wider, flying higher and higher. In addition, the key to promoting college students' employment is to improve their comprehensive quality. Change their employment concept, establish the awareness of "employment first and then employment selection", and use various opportunities to accumulate experience and capital for themselves[7].

3. Collection of Employment Attraction Evaluation Data of Jinan City

3.1. Design of the questionnaire

First, the questionnaire design procedures and methods

The literature on "city employment attractiveness" is scarce, and the analysis of these articles is based on panel data, such as city economic development index, public service index, natural environment index, and the number of top talents. Based on these data, we analyze the employment attractiveness of cities.

This paper believes that such analysis has limitations and cannot fully understand the real thoughts of college students. In this paper, we try to compile a questionnaire to investigate the employment attractiveness of Jinan city to college students from the perspective of college students. And analyze the attractiveness of Jinan city to different types of college students and different years of college students. Not only explore the overall situation of attractiveness factors in Dalian city and each year, but also explore whether the attractiveness of different groups of college students changes and how the attractiveness changes in different years.

The self-administered questionnaire in this paper is divided into two parts. The first part is the basic information, and the second part is the factors influencing the city's employment attractiveness to college students. The structure of the questionnaire and the dimensional division of the influencing factors came from the following three aspects: (1) The key words mentioned by the students were screened and classified through the analysis of the pre-interview data. (2) Through several expert interviews as well as interviews with teachers related to the university employment office. (3) Reference to previous literature.

On this basis, attractiveness factors can be divided into five categories: "corporate factors," "environmental factors," "policy factors," "urban economic development factor" and "public service factor". In order to verify the scientific rationality of the questionnaire, item analysis, reliability test, validity test, and factor analysis are conducted after the test data are collected.

3.2. Survey Program

This project selected Jinan college graduates, an important group of young talents, as the survey target. Multi-stage sampling was used in sample selection. In the first stage, 25 colleges and universities in Jinan were proposed to be selected, covering different types, schooling nature and academic levels; in the second stage, college graduates covering different demographic characteristics such as gender, household registration and place of origin (junior year of college, senior year of undergraduate and third year of postgraduate) were selected as far as possible to make the sample highly representative. Finally, 854 valid sample data were obtained, and the sample size met the requirements.

3.3. Questionnaire design and collection

Most of the articles on "employment attractiveness of cities" analyze the employment attractiveness of cities based on the index of economic development level, public service index, natural environment index and the number of top talents, which cannot fully understand the real thoughts of college students and has limitations. This paper tries to compile a questionnaire to investigate the employment attractiveness of Jinan city to college students from the perspective of college students. And analyze the employment attractiveness of Jinan city to college students of different types and different years.

This paper follows a series of principles such as scientificity, comprehensiveness, measurability, and comparability in the selection of indicators. The questionnaire design of this paper is mainly divided into two parts. In the first part, the statistical characteristics include gender, place of origin, major, education level, school nature, school type, employment intention in Jinan, expected salary, etc. In the second part, the Likert scale was used to design the evaluation scale of employment attractiveness of Jinan city, which is a comprehensive measure of policy and economy, living environment, employment pressure and personal ability.

4. An Empirical Study of Factors Influencing Employment Attractiveness in Jinan

4.1. Reliability and validity test

SPSS26.0 was used to test the reliability and validity of the questionnaire. The results of reliability test: Cronbach's reliability coefficient $\alpha=0.892>0.8$, Gettleman's half coefficient was 0.864, and the overall reliability of the scale was good. Validity test results: KMO and Bartlett ball test were used to measure the construct validity of the scale. KMO=0.945, Bartlett sphericity test P=0.000<0.05, and the structural validity of the questionnaire meets the requirements.

4.2. Variance Analysis of Employment Attractiveness Evaluation in Jinan

The employment attractiveness evaluation scale of Jinan was designed according to the employment attractiveness index of the city, and the sample data were analyzed by using SPSS26.0. The factors of

gender, major, education level, university location, type of institution and place of origin were used as control variables to test the differences in the employment attractiveness evaluation of college graduates in Jinan.

(1) Analysis on the Differences of Evaluation of Employment Attraction of Different Gender Graduates in Jinan

The results of the independent samples T test (Table 1) show that there is a significant difference between female and male students' employment attractiveness ratings for Jinan (p-value < 0.05), and female students are higher than male students. In other words, Jinan is more attractive to female college students for employment.

Table 1: Independent sample T test on evaluation of employment attractiveness of college graduates of different genders in Jinan

	Gender	Average value	Standard deviation	t	P
Jinan Employment Attractiveness Evaluation	Male	3.567	0.989	3.226	0.001
	Female	3.670	0.947		

(2) Analysis on the Differences of Evaluation of Jinan's Employment Attraction by Graduates with different education level

The results of the one-way ANOVA (Table 2) show that there is a significant difference (p value < 0.05) in the ratings of the employment attractiveness of Jinan among college students with different education levels, with college students rating the highest, followed by undergraduates, and the lowest by masters and above. In other words, the higher the education level is, the less attractive Jinan is to them.

Table 2: One-way ANOVA on the evaluation of employment attractiveness of Jinan by college graduates with different education levels

	education level	M±SD	F	p	Ex post facto testing
Jinan Employment Attractiveness Evaluation	college students	3.721±0.953	8.186	0.000	college students > undergraduates > masters and above
	undergraduates	3.674±0.924			
	masters and above	3.219±0.994			

(3) Analysis on the Differences of Evaluation of Jinan's Employment Attraction by Graduates of Different majors

The results of the one-way ANOVA (Table 3) showed that there were significant differences (P value < 0.05) in the ratings of employment attractiveness in Jinan among college students of different majors, with graduates of humanities and business classes rating employment attractiveness in Jinan the highest, followed by graduates of science, agriculture and medicine classes, and graduates of arts and sports classes rating employment attractiveness in Jinan the lowest.

Table 3: One-way ANOVA on the evaluation of employment attractiveness of Jinan by college graduates of different majors

	Majors	M±SD	F	p	Ex post facto testing
Jinan Employment Attractiveness Evaluation	humanities and business classes	3.625±1.044	5.133	0.005	arts and sports classes < humanities and business classes
	science, agriculture and medicine classes	3.571±0.911			arts and sports classes < science, agriculture and medicine classes
	arts and sports classes	3.439±0.977			science, agriculture and medicine classes < humanities and business classes

4.3. Analysis of factors influencing the employment intention of college graduates in Jinan

A binary Logisitic regression model was used to analyze the factors influencing the employment attractiveness of Jinan city with graduates' willingness to be employed in Jinan (willing or unwilling) as the dependent variable and gender, major, education level, school location, school type, place of origin and expected salary as the independent variables. The results of the analysis are as follows: first, a single-

factor Logisitic regression analysis was conducted, and the factors of gender, major, and employment pressure were not significant (P value > 0.05), while all other independent variables were significant, and the Logisitic model was entered for multi-factor analysis. The results are shown in Table 4.

Table 4: Binary Logisitic Regression Model of Employment Attractiveness in Jinan

		B	S.E.	Wald	df	Sig.	Exp(B)
Influencing Factors	Education level			7.168	3	0.019	
	College students	0.925	0.356	5.564	1	0.019	2.526
	Undergraduates	0.786	0.455	4.598	1	0.026	0.987
	School type			8.581	2	0.015	
	Undergraduate institutions	0.236	0.436	0.245	1	0.617	1.257
	Key institutions	0.921	0.386	5.096	1	0.026	2.562
	Place of origin	1.273	0.291	19.081	1	0.000	1.573
	Expected Salary			5.452	3	0.142	
	Less than 3000 Yuan	0.129	0.421	0.098	1	0.861	1.156
	3000~5000 Yuan	0.802	0.310	4.775	1	0.049	1.625
	5000~8000 Yuan	0.405	0.345	1.568	1	0.259	1.487
	Policy economic factors	0.669	0.193	5.282	1	0.049	1.174
	Living Environment Factor	0.484	0.084	9.216	1	0.000	1.513
	Personal ability factor	0.392	0.194	8.647	1	0.012	1.339
	Constants	-2.989	0.541	9.531	1	0.000	1.137

According to the results of the logistic regression model (Table 4), the employment intention of college students in Jinan is 2.526 times higher than that of undergraduates (Exp(B) = 2.526), which is much higher than that of postgraduates, indicating that the attractiveness of Jinan to people with higher education needs to be improved; The willingness of ordinary college graduates to be employed in Jinan is 2.562 times higher than that of graduates from key universities (Exp(B) = 2.562), indicating that the attractiveness of Jinan to key universities needs to be improved; Shandong college graduates are 1.573 times more willing to work in Jinan than foreign college graduates in the province (Exp (B)=1.573), indicating that compared with students from other provinces, college graduates in the province are more willing to stay for employment development, indicating that Jinan is far from attractive to non-Shandong talents; Graduates with expected salary of RMB 3,000-5,000 have the highest employment intention in Jinan, followed by those with expected salary of RMB 5,000-8,000, and those with expected salary of less than RMB 3,000 have the lowest employment intention in Jinan, which also reflects from the side piece that the average salary level of new graduates in Jinan is not high; The policy and economic factor, living environment factor and personal ability factor all have positive effects on the employment intention of college graduates in Jinan, and each unit increase in policy and economic factor, living environment factor and personal ability factor increases the employment intention of college graduates in Jinan by 17.4%, 51.3% and 33.9% respectively. It can be seen that living conditions and living environment factors have the greatest influence on the employment attractiveness of Jinan, national center city.

5. Conclusion

This paper empirically analyzes the degree of employment attractiveness of Jinan City, Shandong Province to college graduates in Shandong Province through Logisitic regression model based on the questionnaire survey data of college graduates in Shandong Province. A series of strategies to enhance the employment attractiveness of Jinan city are summarized as follows based on the analysis results:

5.1. The government should provide preferential policies to actively support and encourage college students to start their own businesses

The introduction of talents is regulated through government regulations or local laws and regulations; sound policies for the introduction of talents should be strengthened to build a system for the introduction of talents and introduce preferential policies to attract talents, especially for highly-educated and high-level talents, and increase the introduction efforts. Improve the channels for the orderly flow of talents, provide good conditions for employment and entrepreneurship, and create an institutional environment

suitable for the growth of talents. At the same time, the government should introduce policies to help college students to finance their own business. In addition, the government should continue to improve the social security system, strengthen infrastructure construction, and expand the demand for related jobs and increase the number of employment in the implementation of projects that benefit the country and the people.

5.2. Improving urban living environment and social security system

Starting from material treatment and living conditions, we will create superior material treatment and favorable living environment for the introduction of talents, improve environmental quality, transportation convenience and public service level, and create a livable ecological city. Regulate the price of housing, reduce the burden of home ownership and living pressure of graduates, and enhance the happiness of life of graduates employed in Jinan. Improve the city's ecological environment, employment environment, medical and health environment, transportation environment, and living environment. Jinan can make use of its own advantages to create a city card, attract talents to gather with its rich cultural heritage, increase urban innovation, improve urban vitality, and increase the sense of belonging and integration of imported talents. Improve the medical insurance and pension insurance system and build a standardized and high-quality social security system. Attach importance to overseas talents, try to keep them Van the city, attract them with a good environment by establishing and introducing research institutes, and attract them to stay by giving preferential policy conditions and financial support, and give them more practical and reliable employment security treatment, striving to make Jinan a place where talents gather, cultivate and realize their value.

5.3. The school should adjust the teaching content and mode, and cultivate college graduates with high comprehensive quality and strong professional ability for the society from the perspective of social needs

From the whole employment situation, the current supply of college students is obviously greater than the actual demand. It is not the oversupply of the total amount, but the structural oversupply. It is mainly because the direction of the college students and the content they should learn are disconnected from the actual needs of the society. The reason for this may be, on the one hand, the rapid updating of knowledge, the increasing depth and breadth of knowledge, and the increasingly comprehensive professional quality; On the other hand, school education is lagging behind, the knowledge structure of education is not reasonable, and the update of teaching contents cannot keep pace with the demand of society; On the other hand, students have not yet formed the psychological quality of being brave to challenge; in terms of the cultivation of innovative ability, the school lacks the environment for cultivation. Therefore, schools should adjust the teaching content according to the needs of society, improve the level of professional knowledge and business ability of students; strive to improve the psychological quality of students' courage to challenge and cultivate their innovative ability; they should also adjust the teaching mode, adopt the school-enterprise cooperation, cultivate practical talents by means of order training, orientation training, and the establishment of enterprise training bases in schools.

In addition, it is essential for colleges and universities to strengthen career guidance and career psychological counseling. Most of the career guidance centers in colleges and universities still mainly face the graduating class, but at this time, most of them have the regret that "the book is too short to use". There is a great need for career guidance work to spread from the graduating class to the junior students and to go through the whole process of university education. From the problems reflected in the survey, it is worth further studying and improving to further standardize the management of students' employment guidance, especially how to effectively integrate the employment guidance into the overall work track of teaching and educating people in schools.

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