Research on the Correlation between the Development of Computer-based Emerging Strategic Industries and the Employment of College Students

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Abstract

The advanced level of the industrial structure is related to the quality of employees. This article analyzes the current development status of emerging strategic industries and the status of college graduates' employment. By constructing a model of influencing factors on college graduates' employment, and calculating the relationship between industry and college graduates' employment, this article aims to adapt to local conditions, Targetedly develop emerging strategic industries, and provide decision-making support for college students' employment.

Keywords: Strategic Emerging Industries, Employment Effect, Correlation Effect;

1. Introduction

With the advent of the information age, various derivative jobs continue to introduce new ones, and employment has gradually become a problem and problem that contemporary college students must face[1-2]. Although the country is constantly optimizing the business environment and promoting the development of emerging strategic industries, due to the high requirements and professional expertise required by the industry, the shortage of students who can fully meet the emerging strategic industries' jobs has led to the employment problem of students At the same time, there is no one to recruit for job shortages related to emerging strategic industries[3]. This has prompted certain adjustments to the education and response structure to meet the requirements of emerging strategic industries[4].

The advanced level of the industrial structure is interrelated with the quality of employees, that is, the proportion of employees in knowledge-intensive industries with a college degree or above is significantly higher than the proportion of employees in low-tech industries[5]. The new generation of information technology industry is a typical knowledge-intensive industry. Due to the driving role of information technology in the transformation and upgrading of manufacturing and service industries, it has extensive industrial relevance. It not only plays an important role in the transformation and upgrading of traditional industries, but also Driven by technological integration, the vigorous development of new industries also has a profound impact on the renewal of the industrial structure and the adaptability of the employment structure[6]. At present, the development of strategic emerging industries in China has just started, and there is a considerable demand for high-quality professional talents, and professional talents mainly come from university graduates. Therefore, based on the understanding of the interactive effect of industrial structure and employment structure, this article discusses the

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employment effect of college students in the development of strategic emerging industries in Zhejiang Province from the perspective of college student employment.

Based on the econometric model, this article estimates the employment space of the industry by measuring the correlation effect between the emerging strategic industries of computer and the employment of college students.

2. Strategic emerging industries and the employment status of college students

As one of the information technology industries, the industry relevance of the information technology service industry is relatively low, even lower than that of the secondary industry. This shows that the development of my country's information technology service industry has not been able to keep up with the overall economic development, and its development is relatively slow. However, it also reflects the huge development potential of the information technology service industry and needs to be improved. At present, the development of my country's economy is dominated by the manufacturing industry. The core technology requirements of the manufacturing industry are not high. It is at the low end of the industrial value chain and has low added value. As for the information technology service industry, it has high requirements for technological innovation and high quality of human capital, so its added value is high and it is at the high end of the industrial value chain. my

country is a developing country. Relatively speaking, the independent innovation ability is not high, and the overall quality of the people is not high, which leads to low quality of labor. Therefore, the development of my country's information technology service industry is relatively slow, and the industrial relevance is relatively lagging in the development process. This also puts forward requirements for the development of my country's industrial structure. It is necessary to adjust the economic growth mode, transform the development mode of the industrial structure, vigorously develop emerging industries, and develop towards the high end of the industrial chain with high added value.

2.1. Development status of strategic emerging industries

2.1.1. Industrial development shows a steady growth trend

The development of strategic emerging industries in Zhejiang Province has shown a good momentum of steady growth, which has continuously promoted the improvement of Zhejiang's comprehensive economic competitiveness. Among them, the proportion of industrial output value in Zhejiang's GDP has continued to grow (the classification of tertiary industries is shown in Figure 1), from 32.46% in 2016 to 48.92% in 2019, an average annual increase of nearly 25%. In 2016, the added value of Zhejiang's strategic emerging industries was 307.3 billion yuan, accounting for 24.50% of the industrial added value under the provincial regulations, an increase of 1.05 percentage points from 2015.
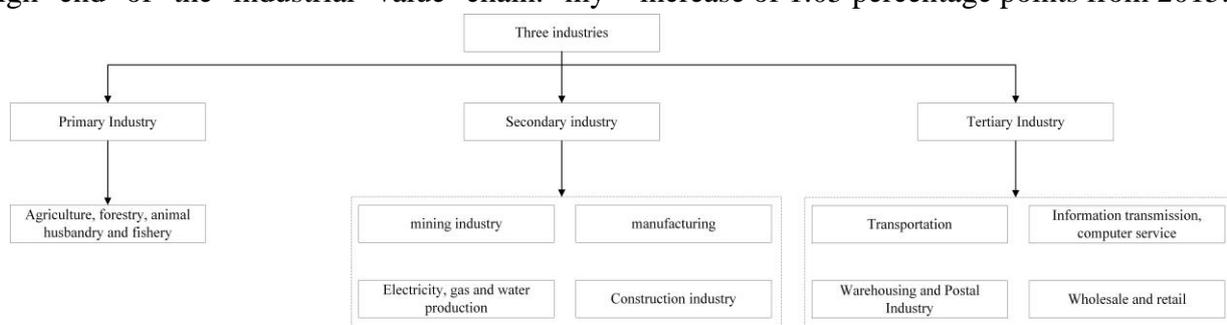

Figure 1. Classification of tertiary industries.

2.1.2. The comprehensive economic benefits of the industry continue to improve

The development of strategic emerging industries in Zhejiang Province focuses on promoting major technological breakthroughs and enhancing core competitiveness, with great growth potential and continuous improvement in overall benefits. In 2019, Zhejiang's strategic emerging industries achieved 5.56 trillion yuan in main business revenue, accounting for 25.40% of the province's designated industries, an increase of 4.24% year-on-year, and the growth rate was 1.1 percentage points higher than the province's average growth rate of designated industries. In 2019, the province's strategic emerging industries achieved a total profit and tax of 101.925 billion yuan, a year-on-year increase of 9.54%, which was 3.3 percentage points higher than the average growth rate of the regulated industries.

2.1.3. The characteristics of industrial agglomeration begin to emerge

The development of Zhejiang's strategic emerging industries presents a trend of cluster and agglomeration development. The industrial chain has been continuously improved and regional characteristics have gradually become prominent. Among them, Hangzhou's development characteristic and advantage is the information software industry, with more than 20 characteristic software parks and public service platforms including the core area of the national software industry base—Hangzhou High-tech Software Park. The new energy industry is the fastest growing and most promising emerging industry in Jiaxing. CECEP Jiaxing Industrial Park, Haining Photovoltaic Industrial Base, Haiyan Qinshan Nuclear Power Related Industrial Park have become important new energy industrial bases in the province and important domestic LED industrial bases . Ningbo utilizes abundant marine resources and superior location conditions to focus on the development of marine high-tech equipment, marine biological breeding and healthy aquaculture, two

major advantages in marine high-tech industries, and seize the commanding heights of marine high-tech industries.

Industrial linkage refers to the extensive, complex and close technical and economic linkages between industries in economic activities. The way of industrial association refers to the way in which industrial departments are associated, and the ways in which different types of industrial associations rely on inter-industry departments. As the name implies, industrial linkage effect refers to the effect produced by industrial linkage, which refers to the changes in an industry's production, output value, technology, etc., which cause its forward linkage and post linkage to have direct and indirect effects on other industrial sectors. influences. Industrial relevance can be divided into forward relevance and backward relevance.

(1) Forward association

Input-output economics defines $X = (x_{ij})n*n$ as the intermediate input matrix. The row direction of the intermediate input matrix indicates the product distribution destination. The listed product is a direct forward correlation effect relative to the row-named product. The calculation formula is as shown in formula (1) Show:

$$L(F_i) = \sum_{j=1}^{n} x_{ij} / x_i \quad (i = 1, 2, \cdots, n)$$

(1)

In the above formula, x_i is the total output of the i-th industry, and x_{ij} is the intermediate input of the i industry to the j industry. The forward correlation coefficient is calculated by the above formula to get the following data.

From the calculation results, we can see that the forward correlation coefficient of the information technology industry, especially the information technology manufacturing industry, is significantly higher than that of other industries, reaching 1.096. It can be concluded that the development of the information technology manufacturing industry provides conditions for the development of other

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related industries, affects the development of the primary, secondary, and tertiary industries by influencing the supply of products required for the development of the primary, secondary, and tertiary industries, and provides a platform for the development of other industries.

2) Backward correlation effect

The column direction of the intermediate input matrix represents the composition of production consumption, reflecting the consumption of the listed products to the row-named products. The row-named products are a backward association relative to the listed products. The calculation formula is shown in formula (2):

$$L\left(B_j\right) = \sum_{i=1}^{n} x_{ij}/x_i \quad \left(j = 1, 2, \cdots, n\right)$$

(2)

x_j is the total output of the j-th product, and x_{ij} is the intermediate input of industry i to industry j. The backward correlation coefficient calculated by the above formula is shown in the following table.

From the calculation results, we can see that the forward correlation coefficient of the information technology industry, especially the information technology manufacturing industry, is significantly higher than that of other industries, reaching 1.164. From this, it can be judged that the information technology manufacturing industry will generate new input requirements and standards for production factors during its rapid development, which will drive the development of the industrial sector that provides inputs for it.

From the above results, it can be seen that regardless of the forward or backward linkage, the information technology industry, especially the information technology manufacturing industry, is relatively high relative to other industries. The reason is that this is related to the vigorous development of manufacturing. Karma is inseparable. my country is a populous country with an advantage in labor-intensive industries, and my country's economic development is export-oriented, relying on exports of manufacturing products to drive

economic growth. This means that the information technology manufacturing industry plays a very important role in stimulating economic growth and stimulating employment, which just confirms the conclusion of the above results, that is, the information technology manufacturing industry has a high degree of industrial forward and backward relevance.

2.2. Employment status of college students in strategic emerging industries

New technologies and emerging industries are deeply integrated and developed. They have the characteristics of high-tech and knowledge-intensive. Therefore, they have a strong demand for higher education talents with professional technical knowledge. Dependence. In order to meet the actual demand for talents in the development of strategic emerging industries, Zhejiang Province has formulated and implemented a series of talent development policies for emerging industries, and actively opened up new channels for graduates to find employment in strategic emerging industries. Awareness and yearning are generally high. From 2010 to 2014, the number of employees with a college degree or above in strategic emerging industries in Zhejiang Province has been increasing year by year, and the proportion of total employment has also increased steadily. In 2014, the proportion has reached 51.7%, and strategic emerging industries have become the best place for college graduates to find employment. platform.

New strategic industries have a strong demand for talents. Among them, in the software industry, it is predicted that the current demand for software talents in my country is about 1 million, and this demand is still growing at a rate of about 20% per year; the Internet of Things industry chain is large, and the demand for talents is mainly concentrated in There are three talents in computer software and hardware, network and communication, applied physics, applied mathematics, and electronic and electrical automation; the shortage of talents in the integrated circuit industry is mainly due to the urgent

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demand for talents in circuit design and chip technology.

The development of industry drives employment, and the improvement of the quality and quantity of employment can in turn promote industry progress. For the new generation of information technology industry, whether the growth of its GDP is related to the employment scale of college students, and if so, to what extent is the correlation, and what measures will be taken to further develop the new generation of information technology industry and Increasing the employment of college students, so such research is very meaningful. According to the detailed classification of information-related industries given in the National Standard (GB/T4754-2011) "Classification of National Economic Industries", the information technology industry is divided into information technology manufacturing industries and information technology service industries, and the electrical machinery And equipment manufacturing and communication equipment, computer and other electronic equipment manufacturing industries are separated into the information technology manufacturing industry, and information transmission, computer services and software industries, and comprehensive technical service industries are classified as information technology service industries.

3. Empirical analysis

The development of industry drives employment, and the improvement of the quality and quantity of employment can in turn promote industry progress. For the new generation of information technology industry, whether the growth of its GDP is related to the employment scale of college students, and if so, to what extent is the correlation, and what measures

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3.1. Analysis of the related effects of strategic emerging industries and employment of college students

From the perspective of the evolution of the industrial structure and the coordinated development of the employment structure in developed countries, there is a strong correlation between the growth of technology-knowledge-intensive emerging industries and the needs of professional knowledge-based employees. On the one hand, the demand for talents and the demand for talents in the development of the industry are increasing; on the other hand, from the perspective of production factors, the rationalization of talent investment will inevitably feed back to the industry and promote its development. This paper uses Eviews statistical software to establish a regression model to analyze whether there is a real correlation between the strategic emerging industries and the employment of college students, and to calculate the actual absorption capacity of the strategic emerging industries for the employment of college students, in order to reduce the heteroscedasticity phenomenon in the time series. In this paper, the variables in the model are processed logarithmically, as shown in formula (3):

$$\ln y_t = a_0 + a_1 \ln x_t + \mu_t$$

(3)

The regression results of the model are shown in Table 1:

Table 1. Model regression results.

Variable	Regression coefficients	t statistics	P value
Constant term C	2.0953	5.8859	0.0097

X	0.75	8.4742	0.0033
R^2	0.9689	F statistics	71.8304
Adjusted R^2	0.9454	D-W statistics	2.4144

At the same time, due to the lagging behind of majors in colleges and universities, the supply of college graduates for major counterparts is insufficient, which affects the further release of the employment effect of the industry.

3.2. Analysis of the influencing factors of strategic emerging industries on the employment of college students

(1)The impact of industry scale on the employment of college students

Through the analysis of the correlation between the strategic emerging industries and the employment of college graduates in the previous article, it can be seen that the indicator representing the scale of the industry-the gross industrial output value and the employment of college graduates are positively related. Therefore, within a certain period of time, the expansion of the strategic emerging industries in Zhejiang must be strong. Will bring about an increase in the employment of college students. There is a continuous synergistic development effect between the expansion of the industrial scale and the employment of college students. At present, the expansion of the scale of strategic emerging industries in Zhejiang Province still has a large room for increasing the employment rate of college students. The effective expansion of the existing industrial scale expansion can fully release the positive impact on the employment of college students.

(2)The impact of industrial agglomeration on the employment of college students

Strategic emerging industries are mainly based on high-tech industrial parks as the carrier of agglomeration development. The external economic performance of industrial agglomeration effectively enhances the effect of talent accumulation and has a positive impact on the employment of college students. This paper uses the Herfindahl-Hirschman index to measure the agglomeration of strategic emerging industries in Zhejiang. This index is the sum of the market share of the 50 largest companies in a certain market and can better measure the agglomeration of the industrial market. The calculation formula is shown in formula (4):

$$HHI = \sum_{i=1}^{n}\left(X_i/X\right)^2 = \sum_{i=1}^{n}S_i^2$$

(4)

According to the calculation results, except for marine emerging industries and nuclear power-related industries, the Herfindahl-Hirschman Index (HII) of other industries is below 0.5, which shows that the concentration of strategic emerging industries in Zhejiang Province is still relatively low and cannot be fully attracted. And drive the employment of college students.

(3) The impact of industrial policies on the employment of college students

The relevant policies for strategic emerging industries that have been issued are mainly fiscal and taxation policies, supplemented by policies such as human resource construction, technological innovation, and market promotion. From the perspective of the effect of industrial policy implementation, financial support funds are scattered, and key support areas are not highlighted, resulting in insignificant benefits in the use of funds; technological innovation support policies focus on supporting supply-side policies such as scientific research institutions, universities and enterprises, and focus on stimulus The emergence of the market or the restructuring of demand-side policy support is insufficient; the existing industrial policies are even more difficult to deal with the problems of lack of human resources and insufficient independent innovation capabilities faced by strategic emerging industries. The institutional defects in industrial policies will directly affect the employment

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absorption of strategic emerging industries.

(4) The impact of the higher education system on the employment of college students

Under China's current higher education system, colleges and universities lack autonomy in enrollment and major setting, and cannot adjust major setting in time according to the adjustment of industrial structure and changes in market demand, or when major adjustments can be made, because of lack of scientific demonstration of employment situation And mid-to-long-term forecasts have led to professional adjustments that reacted inappropriately to the market. In terms of talent training models, many colleges and universities continue to use traditional teaching methods, which limit the cultivation of students' practical ability and innovative consciousness, and it is difficult to update teaching content to keep pace with the times. The students trained under this kind of education system lack professional skills to apply what they have learned, and cannot meet the demand for high-quality professional skills human resources, which affects the industry's absorption of college students' employment.

In the 21st century where science and technology are the primary productive forces, one cannot blindly claim to be superior in labor resources. Only by studying core technologies to seize the commanding heights of science and technology can they seize opportunities for economic development. my country should accelerate the pace of transforming the economic growth mode, strengthen its independent innovation capabilities, and put forward higher requirements on the industrial growth mode and employees in order to achieve green development. At the same time, as workers, they should strengthen their own quality and ability to meet the requirements of green development.

4. Conclusion

The research results of this paper show that there is a strong correlation between the development of strategic emerging industries and the employment of college students, which is an important channel to effectively alleviate the employment pressure of college students and improve the quality of employment of college students. To fully release the employment effect of industry for college students, the following four points need to be achieved: First, to further accelerate the integrated development of strategic emerging industries and traditional industries, and to actively guide private enterprises to invest in strategic funds by improving the risk aversion mechanism of industrial investment and financing. Emerging industries, thereby broadening the development space of strategic emerging industries and accelerating industrial scale development; the second is to break the situation of "concentration but not gathering" of strategic emerging industries. Use the industrial technology roadmap to gather the high-end resources of the industry, and use the industrial strategic alliance to enhance the agglomeration area's ability to control the high-end of the strategic emerging industrial chain, so as to form a good industrial agglomeration innovation network and promote the establishment of an innovative industrial agglomeration model. Accelerate the development of industrial agglomeration; third, in addition to increasing fiscal and taxation policy support, the government must also innovate industrial support policies.

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