

# Research on Evaluation Methods of Social Science Training in Information Education System

Yu Zhao<sup>1, a</sup>

<sup>1</sup>SEGi University Graduate School of Business, Malaysia

<sup>a</sup>zhaoyuhrb@163.com

**Abstract:** With the launch of China's 14th Five-Year Plan, the reform and development framework of social science education has been further clarified, and the development prospects of social science education and training enterprises are favored by the capital market due to their large market demand and the trend towards scale. In October 2021, the General Office of the CPC Central Committee and the General Office of the State Council issued the Opinions on Promoting the High-quality Development of Modern Vocational Education, promoting the overall rise of the A-share education sector. At present, vocational education is at the key stage of deepening the reform of industry and education and promoting the transformation and upgrading of talent cultivation. Vocational education and training enterprises will focus their development strategies on the capital market to achieve scale-driven development. With the rapid development of China's education industry, listing will help social science education and training companies further enhance their financing capacity and popularity, and effectively improve their industry competitiveness and brand effect. At the same time, few scholars at home and abroad have studied whether the listing methods of enterprises in the vocational education industry are effective and whether there are differences in the effects after listing. Therefore, this paper analyzes the listing methods and effects of social science education and training enterprises in order to help build and improve a good ecosystem of social science education and training industry, and will also provide some reference for the listing of vocational social science training enterprises.

**Keywords:** Social science education, Development framework, Train.

## 1. Introduction

With the further improvement of China's education system, the popularity of higher education has gradually increased, and the number of college graduates in China has maintained a continuous growth trend[1-2]. It is estimated that the number of college graduates will reach 10.2 million in 2022. In recent years, the overall development of the macro economy has slowed down. Due to the imbalance of the professional structure of higher education and social and economic needs in China, the competitive pressure of college graduates for job hunting has gradually intensified. Affected by the epidemic, China's employment situation is more severe, and the decline in employment rate has become one of the many negative effects of the epidemic[3-4]. As the first task of "six stability and six guarantees", employment is an important guarantee for the normal and stable operation of society and economy, and the development potential of vocational education and training market is huge. The proposal of the vocational education policy system provides the exact development direction for the construction of China's vocational education system. On the one hand, the government strongly supports listed companies and industry leading enterprises to hold vocational education. On the other hand, the state encourages all kinds of enterprises to participate in the holding of vocational education according to law, stimulating the vitality of the development of education industrialization, and the listed companies of vocational education and training have ushered in a broad development prospect. Welcome A-share IPO in educational enterprises[5-6]. At the same time of listing and breaking the ice, vocational education began to be favored by the capital market. As an employment-oriented education type enterprise, vocational education enterprises followed the development of

the Fourteenth Five-Year Plan to carry out reforms, deepen the integration of industry and education, and promote the transformation and upgrading of talent cultivation. In addition, the national policy released a significant positive signal to vocational education, Whether vocational education and training enterprises should choose to go public and how to choose a suitable way to go public has become an important issue to be considered and solved[7-8].

## 2. Establishment Process of Evaluation Model

The impact judgment matrix is established for the criterion layer corresponding to the index with direct impact. Take the risk indicators in the criteria layer corresponding to the affected risk indicators as the judgment basis, compare the impact risk indicators and the importance of the affected risk indicators to the indicators, and assign the value using the 9-level scale value method of Satty1-9. The resulting impact judgment matrix is shown in formula (1):

$$A = \begin{bmatrix} 0 & 0 & \dots & a_{1,2} \\ 0 & a_{3,1} & & 0 \\ \vdots & & \ddots & \vdots \\ 0 & 0 & \dots & 0 \end{bmatrix} \quad (1)$$

Calculate the index weight matrix  $W$  of each impact judgment matrix ( $R_s R_t$ ), the calculation method is shown in formula (2):

$$W_{R_s R_t} = X_{R_s R_t} \cdot W_{R_t} \quad (2)$$

W (Rs) is R Weight matrix of subordinate judgment index of s, X (Rs Rt) is RS vs. R T's influence judgment matrix. There is not only direct influence relationship between indicators, but also indirect influence relationship sometimes. If R There is influence R in pS, while R There is influence R in sT, then R is also a negative effect on RT Indicators with certain influence.

$$W_{RpRt} = X_{RpRs} \cdot W_{RsRt} = X_{RpRs} \cdot X_{RsRt} \cdot W_{Rt} \quad (3)$$

At the same time, the neural network is used for comparative effect analysis. Neural network is a network structure that ensembles a large number of simple neurons according to a certain law. The neuron model mainly contains three basic elements: a set of connections: a set of connections between input signals and neurons, and the connection strength is expressed by the connection weight. The weight can be either positive or negative. Positive value represents activation effect and negative value represents inhibition effect. Used to calculate the weighted sum between input data and neuronal synapses. Neural network is a network like parallel distribution structure with a large number of neurons connected according to certain rules. Each neuron has only a single output and is connected to other neurons. In the research process, the number of input layer nodes can be determined by selecting the number of sample attributes, while the number of hidden layer nodes can be determined by empirical formula, as shown in formula (4):

$$m = \sqrt{n + L} + a \quad (4)$$

In formula (4), m represents the number of hidden layer nodes, n represents the number of nodes input to the input layer, L represents the label encoding rule, a represents a constant, and the value is 1-10.

In the propagation process of neural network algorithm, the neurons in different layers need to be weighted. After the calculation results are obtained, the linear data needs to be obtained by bias processing, and then the value of neurons in the later layer can be obtained through the calculation of activation function, so as to finally realize the output of prediction results. The calculation formula is shown in (5) and (6).

$$S_j = \sum_{i=0}^{m-1} w_{ij} x_i + b_j \quad (5)$$

$$x_j = act(S_j) \quad (6)$$

In the above formula,  $w_{ij}$  represents the weight between neurons, corresponding to the relationship between node i and node j,  $x_i$  is the numerical value of node i in the previous layer,  $b_j$  represents the bias, and  $S_j$  represents the node data. The linear data obtained after the accumulation operation,  $act$  is the activation function, and  $x_j$  is the activated data.

Through the research, it has enriched the comparative research on different ways of listing enterprises in the field of education and training industry. Focusing on the unique attributes of education, such as adaptability, online and lifelong, systematically explore the listing methods of education and training enterprises and study relevant issues, make up for the shortcomings of the existing scholars in the comparative study of two cases in the industry, and expand the existing research results of typical listing cases of vocational education and training enterprises. By studying the different listing methods of education and training enterprises and the reasons for choosing IPO or backdoor listing methods, it is concluded that vocational education should make appropriate listing choices according to its own characteristics and external environment, and at the same time, it can enrich the content of research on different listing methods of education and training enterprises.

### 3. Establishment Process of Evaluation Model

Through the verification of the practicability of this algorithm, the edge computing system is analyzed. The parameters of the cloud computing center are: Intel (R) core (TM) i5 4570; 4-core CPU with frequency of 3.20 GHz; Operating memory 8GB; The operating system is selected as windows7 64 bit system. The data is 1000 customer credit data of relevant power companies, including various customer data. Record the operation of the system in the database according to the identification results. At the same time, divide the original data into ten groups, all of which are structured data.

**Table 1.** Comparison of identification results

Number of input data	Traditional error rate	Error rate of this paper	Tradition time(s)	this article Time(s)
100	5.77%	1.8%	5.52	1.27
200	6.82%	2.7%	5.28	1.35
300	9.73%	3.8%	5.79	1.42
400	10.87%	4.6%	6.79	1.57
500	12.14%	4.8%	7.32	1.69
600	13.59%	5.0%	8.59	1.79
700	14.49%	5.7%	9.19	1.83
800	17.19%	5.3%	9.09	1.88
900	18.79%	5.2%	9.78	1.99
1000	19.67%	5.4%	10.89	2.03

According to the results in Table 1, it can be known that the error rate of the traditional model has always been much higher than that of the edge computing-based judgment

system. Although the errors of both will increase with the increase of the amount of data, the error of the system in this paper is obviously lower. When the number of input books is

1000, the error of the traditional algorithm and the algorithm of this paper is quite different, and the difference between the two is more than 3 times. And in terms of the recognition rate, the time of the algorithm in this paper is shorter. When the input data is 1000 pieces, the time of the traditional algorithm is more time-consuming than the algorithm of this paper.

In order to verify the availability of the identification system in this paper, random interference processing is performed on the test data, mainly including the deletion of specific information. The processed data were compared again, and the comparison results are shown in Table 2.

**Table 2.** Comparison of interference item identification results

Number of input data	Traditional error rate	Error rate of this paper	Tradition time(s)	this article Time(s)
100	11.79%	2.7%	5.77	1.32
200	12.82%	3.8%	6.39	1.54
300	12.73%	4.6%	6.79	1.88
400	13.85%	5.0%	7.18	1.92
500	15.59%	6.1%	8.25	2.24
600	17.78%	6.0%	9.57	2.44
700	21.08%	7.7%	11.25	2.64
800	24.33%	7.3%	12.65	2.83
900	27.49%	8.1%	14.78	3.19
1000	30.19%	8.5%	15.80	3.11

Through analysis, we can see that the method proposed in this study has certain significance and practicality compared with traditional methods.

## 4. Conclusion

With the development of the new era of socialism with Chinese characteristics and the progress of the Fourteenth Five-Year Plan, the country is facing a series of challenges such as economic transformation, industrial adjustment, talent optimization and so on. What the middle and high-end manufacturing industry needs is industrial workers with real talents, and industrial models with "craftsman spirit". Similarly, young people who understand innovation, dare to

innovate, and can innovate in the new era are also indispensable backbone. Throughout the world's technological revolution and industrial transformation trend, we must change the concept of development and update the development model if we want to achieve the sustainable development of vocational education. On the one hand, we should build a new vocational education system, build an effective and reasonable capital market mechanism, and coordinate the development of China's vocational education; On the other hand, we should shoulder the mission of cultivating innovative talents, core talents and comprehensive talents entrusted by the times, so as to normalize and effectively optimize the construction of vocational education system.

## References

- [1] Wang Xuyang A study on the market expansion plan of education and training institutions [D]. Northwest University, 2022.
- [2] Qin Jun Text analysis of farmer education policy since reform and opening up [D]. Guizhou Normal University, 2022.
- [3] Chen Yan Research on improving the core competitiveness of Yunnan H education and training institutions in the context of high-quality development [D]. Yunnan Normal University, 2022.
- [4] Zhu Lixue Research on the regulation of off-campus education and training [D]. North University of Technology, 2022.
- [5] Jing Yanchun Research on the development strategy of A Education Company under the background of "double reduction" [D]. Jiangxi Normal University of Science and Technology, 2022.
- [6] Li Qikui Research on brand marketing strategy of AB education and training institutions [D]. Shandong Normal University, 2022.
- [7] Wang Jinru Research on listing methods and effects of vocational education and training enterprises [D]. Shandong Normal University, 2022.
- [8] Li Chao D Research on marketing strategy of education and training institutions [D]. Yunnan Normal University, 2022.