The Establishment of Financial Performance Evaluation Index System in Colleges and Universities Based on Computer Science

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Abstract. The situation of financial performance is an important basis for evaluating the development level of colleges and universities, and the construction of financial performance evaluation index system related to it has also become the focus of people's research. At present, although our country has made some breakthroughs in the construction of the financial performance evaluation index system of colleges and universities, there are still deficiencies in many aspects, which seriously restricts the improvement of the comprehensive development quality of colleges and universities. Therefore, this paper analyses the problems existing in the financial performance evaluation index system of colleges and universities, and expounds the importance of computer science and technology in the construction of the financial performance evaluation index system of colleges and universities. On this basis, this paper constructs the financial performance evaluation index system of colleges and Universities Based on computer science and technology, and puts forward the analytic hierarchy process of the evaluation index integrating computer technology, which provides a solid theoretical support for the evaluation of financial performance of universities and the improvement of the level of running schools.

Keywords: Computer Science, Financial Performance, Evaluation Index System

1. Introduction

With the rapid improvement of the level of higher education in China, the development scale of colleges and universities is constantly expanding, and there are more and more income and expenditure items. However, due to the lack of scientific financial performance evaluation system in Colleges and universities, the evaluation of higher education institutions on their own financial situation is not accurate, which severely restricts the overall operation efficiency of colleges and
universities. Perfect financial performance evaluation index system can not only improve the utilization rate of financial resources, but also further improve the level of financial management. In this context, colleges and universities should abandon the traditional concept of financial management, and flexibly use advanced computer science and technology to build an efficient financial performance evaluation index system. Only in this way can we gradually improve the comprehensive benefits of financial management in Colleges and universities, and lay a solid foundation for the healthy development of colleges and universities.

2. Problems in financial performance evaluation of colleges and Universities

(1) If colleges and universities want to realize the reasonable evaluation of financial performance, they must have a sound financial management information system. But at present, the financial management information system of many colleges and universities is not perfect enough, and its common functions are difficult to meet the increasingly complex financial needs. Especially in the processing capacity of huge data, the existing financial management system is low degree of information, unable to process a large number of data at the same time[1]. This inefficient financial management system not only greatly reduces the timeliness of information, but also greatly affects the normal process of financial management in Colleges and universities.

(2) In the design of financial performance evaluation index system, colleges and universities often choose financial indexes that are easy to be quantified, but ignore some key indexes that are difficult to be quantified or unable to obtain financial data directly[2]. As the cradle of training talents, colleges and universities should not only ensure their own economic benefits, but also pay attention to the social benefits of providing talents reserve for the national quality and economic development. Therefore, both should be taken into account when redesigning the financial performance evaluation system of colleges and universities. However, in the actual evaluation work, most colleges and universities adopt the way of comparing the planned standard with the historical standard[3]. The lack of consistency and universality of the evaluation indexes leads to the lack of systematicness and scientficity of the whole financial performance evaluation system.

3. The necessity of using computer science to construct financial performance evaluation system in Colleges and Universities

3.1. Computer technology can improve the efficiency of financial performance evaluation in Colleges and Universities

The improvement of the efficiency of university financial performance evaluation by computer technology is mainly reflected in two aspects. The first aspect is the remote meaning. The remote meaning lies in the fact that the application of network technology in the financial management of colleges and universities can realize the financial management without the limitation of geographical, time and other factors. The second aspect is that the application of computer technology is conducive to the high efficiency of financial accounting. The use of information technology can create various convenient conditions for financial analysis, such as generating financial data models and accurate financial statements [4]. Through these convenient conditions brought by computer technology, important financial data can be analysed in detail by using statistical software, which not only provides more scientific basis for financial accounting, but also helps to achieve efficient financial accounting.
3.2. Computer technology can make financial performance evaluation more comprehensive

With the diversification of industries, the multi-channel of funds and the complexity of financial management system, financial performance evaluation has become more and more complex[5]. In addition, due to the further deepening of the reform of the national economic system and education system, in order to meet the needs of social development, colleges and universities must form their own independent economic management system, which further improves the difficulty of financial performance evaluation. Therefore, only by abandoning the traditional concept and using computer technology flexibly can universities get out of the misunderstanding of financial performance management and improve the comprehensiveness of financial performance evaluation index system.

4. The construction of financial performance evaluation index system in Colleges and Universities Based on Computer Science

4.1. The construction principle of financial performance evaluation index system

(1) Scientific principle

The construction and index design of the financial performance evaluation system in Colleges and universities should be combined with the specific development environment and practical background of colleges and universities to achieve the combination of theoretical analysis and practical application[6]. This means that only through the comprehensive analysis of multiple interrelated indicators can we accurately evaluate the specific ability of financial performance of colleges and universities in a certain aspect. Only in this way can we make the financial performance evaluation system reflect the current situation of financial management and the efficiency of fund use in Colleges and universities, so as to help colleges and universities optimize the allocation of resources and improve the efficiency of development.

(2) Principle of giving consideration to social and economic benefits

Due to the particularity of the subject of financial performance evaluation in Colleges and universities, it can't work according to the standard of enterprise financial performance evaluation. Colleges and universities should not only improve their development vitality and innovation on the basis of ensuring their own benefits, but also take into account social benefits. This means that colleges and universities should contribute to the transportation of talents for national economic construction and the improvement of national comprehensive quality. Therefore, in order to comprehensively reflect the financial management level of colleges and universities, social and economic benefits should be considered in the design of financial performance evaluation indexes.

4.2. The construction of financial performance evaluation index system

(1) Indicators of fund raising capacity

The fund income of higher vocational colleges mainly includes financial subsidy income and business income. Therefore, the secondary indicators of this indicator include total teaching fund income, financial subsidy income and business income. The total income of teaching funds includes two three levels: total income of teaching funds, annual growth rate and total income of teaching funds
The index of "financial subsidy income" includes two three levels: financial subsidy income, annual growth rate and per capita financial subsidy income. Financial subsidy income refers to all kinds of financial appropriations obtained by institutions of higher learning from financial departments at the same level, including financial education appropriations, financial research appropriations and other financial appropriations. The indicators of career income include two three levels: annual growth rate of career income and per capita scientific research income of teachers. Career income refers to the income from teaching, scientific research and auxiliary activities of colleges and universities. Income from scientific research refers to the income from scientific research and its auxiliary activities carried out by institutions of higher learning.

(2) Indicators of capital growth potential

The indicators of fund growth potential include two secondary indicators: self-raised funds and school run industry income. The index of self-financing includes two three levels: the ratio of self-financing to total income and the annual growth rate of self-financing. The income index of school run industry is mainly reflected by the investment income rate of school run industry.

After determining the specific indicators, the financial performance evaluation index system of colleges and universities constructed in this paper is shown in Figure 1.

![Figure 1. The financial performance evaluation index system](image)

4.3. Analytic hierarchy process of evaluation index based on computer analysis technology

In order to evaluate the overall financial performance of colleges and universities reasonably, we must use computer science and technology to make a comprehensive analysis of the specific evaluation indicators. The analytic hierarchy process (AHP) is a common financial analysis method evolved from computer science. It can analyse complex decisions in an integrated and hierarchical way. Because this analysis method takes both qualitative and quantitative analysis into account, it can help decision-makers to make the judgment of maximizing benefits. This method can establish the financial performance evaluation index matrix as shown in Figure 2. Financial personnel can use computer analysis technology to analyse the index matrix comprehensively, so as to clearly evaluate the comprehensive situation of financial performance of colleges and universities.
Table 1. The financial performance evaluation index matrix

|   | A   | B₁  | B₂  | B₃  | B₄  | W'  |
|---|-----|-----|-----|-----|-----|-----|
| B₁| 1   | 1/7 | 1/5 | 1/3 | 0.0532 |
| B₂| 7   | 1   | 3   | 5   | 0.5485 |
| B₃| 5   | 1/3 | 1   | 5   | 0.2966 |
| B₄| 3   | 1/5 | 1/5 | 1   | 0.1018 |

Figure 2. The financial performance evaluation index matrix

5. Conclusion

With the higher quality requirements for the development of colleges and universities, the traditional financial performance evaluation index system of colleges and universities has exposed more and more disadvantages. Through the research of this paper, it can be found that due to the lack of deep integration with computer science and technology, the existing financial performance evaluation index system in Colleges and universities has a large deviation in the reliability and scientificity of the evaluation results. This imperfect system not only affects the financial management level of colleges and universities, but also restricts the comprehensive development quality of colleges and universities. In this context, the financial performance evaluation index system based on computer science constructed in this paper can not only evaluate the financial situation of colleges and universities more scientifically, but also lay a solid foundation for the development of colleges and universities in the new era.

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