Empirical Analysis of Intellectual Capital and Enterprise Performance—A Case Study of Small and Medium-sized Enterprises in Jiangxi Province

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Abstract. This paper focuses on the analysis of the impact of intellectual capital on the performance of small and medium-sized enterprises in Jiangxi Province. Firstly, it analyzes the status and present situation of intellectual capital in enterprise performance in our country. Then, it expounds the internal meaning and measurement method of intellectual capital, and analyzes the performance of small and medium-sized enterprises' intellectual capital in Jiangxi province by empirical analysis method. Finally, it puts forward some suggestions to improve the practice of intellectual capital management in small and medium-sized enterprises.

The Status and Present Situation of Intellectual Capital in Enterprise Performance in China

Since China’s economy has entered the new normal, the economic structure has been constantly updated and upgraded, and small and medium-sized enterprises have gradually become the main force in the process of social productivity development. However, whether an enterprise can have a competitive advantage depends on two factors, one factor is the ability of an enterprise to deliver products and services to consumers, the other factor is its ability to create added value, and the latter is more important than the former. This is the reason why intellectual capital has become the foundation for enterprises to stabilize their performance. Most scholars believe that intellectual capital can help enterprises to acquire sustainable competitiveness and promote enterprises to create value of their own.

Related Theoretical Analysis of Intellectual Capital and Enterprise Performance

The definition of intellectual capital

Scholars at home and abroad generally believe that intellectual capital is an effective expansion and extension of the traditional concept of capital. Most people believe that in the era of knowledge economy, knowledge is a key factor in value creation and performance improvement of enterprises. While paying attention to the traditional assets, enterprises should also pay more attention to the intangible capital of intellectual capital. Therefore, this paper defines intellectual capital as follows: The total of intangible assets owned, controlled and controlled by leaders and employees at all levels of the enterprise, which can bring effective help to enterprise performance.

The measurement method of intellectual capital and enterprise performance

Because the evaluation of intellectual capital is very complex, based on the analysis and comparison of various evaluation methods, this paper mainly takes a set of intellectual capital evaluation system developed by the Australian intellectual Capital Research Center in 2000, namely, the intellectual value-added coefficient (VAIC), as a reference model for this empirical analysis. The evaluation system measures the value-added rate of enterprise value according to the total value of
intellectual capital, and objectively evaluates the value-added efficiency of material capital, human capital and structural capital.

**Empirical Analysis**

**Selecting variable**

**Independent variable.** In this paper, we choose three measurement indexes of Value Added Intellectual Coefficient (VAIC) as independent variables, namely Corporeal Capital Added Coefficient (CEE), Human Capital Added Coefficient (HCE) and Structural Capital Added Coefficient (SCE). Value Added divided by Corporeal Capital (CE) is Corporeal Capital Added Coefficient (CEE). Value Added (VA) divided by Human Capital (HC) is Human Capital Added Coefficient (HCE), Structural Capital (SC) divided by Value Added (VA) is Structural Capital Added Coefficient (SCE). Value added = total profits+ staff compensation+ interest expenses (financial expenses). Material Capital directly refers to the "Net Asset" balance in the balance sheet. Value Added minus Human Capital is Structural Capital.

**Dependent variable.** We select the rate of return on assets as a measure index of corporate performance. The index is ratio between company net profit and average total assets. The higher the ratio, the better performance the business will achieve in terms of cost savings, capital use, and increased revenue. It can fully reflect the level of investors' return on investment.

**Selecting samples and putting forward hypotheses**

This paper selects the financial data of 43 small and medium-sized enterprises in Jiangxi Province from 2015 to 2017. The financial data comes from China's economic and social big data research platform. We collate and calculate the financial data by using the software of SPSS20.0 and AMOS19.0. The categories of this financial data including Internet information services, e-commerce, software and information technology services, education and training, finance and accounting. This paper makes an empirical analysis of the relationship between intellectual capital and corporate performance based on the VAIC method, and puts forward the following three hypotheses:

Hypothesis H1: The Corporeal Capital Added Coefficient (CEE) has a positive impact on the performance of enterprises.

Hypothesis H2: Human Capital Added Coefficient (HCE) has a positive impact on the performance of enterprises.

Hypothesis H3: Structural Capital Added Coefficient (SCE) has a positive impact on the performance of enterprises.

**Building Model**

We build a model based on literature experience:

\[ \text{ROA} = \alpha_0 + \alpha_1 \text{CEE} + \alpha_2 \text{HCE} + \alpha_3 \text{SCE} + \alpha_4 \text{LNSIZE} + \alpha_5 \text{LEV} + \xi. \]

Among them, ROA refers to return on assets, LEV means the capital structure of an enterprise and \( \xi \) is a random factor.

**Empirical Analysis**

**Regression analysis**

We obtain the required indexes finally through collating and calculating the data of the enterprise. We analyzed the financial data statistically by SPSS20.0, and make regression analysis on the financial data by AMOS19.0. We obtained the regression coefficients through analyzing, which are as follows: The Corporeal Capital Added Coefficient (CEE) is 0.21. The Human Capital Added Coefficient (HCE) is 0.041. Structural Capital Added Coefficient (SCE) is 0.049. Enterprise scale coefficient is -0.004. Enterprise capital structure coefficient is -0.131. Their T statistics were 12.893, 8.901, 3.675, -2.431, -8.104, respectively. The R2 adjustment for the regression results is 0.874, and...
the F value is 133.469, which pass the test (significant level 0.01). The results of regression analysis show that material capital, structural capital and human capital all play a significant role in promoting the performance of enterprises. This indicates that the test of Hypothesis H1, H2, and H3 are valid. In addition, corporeal capital plays a relatively important role in promoting enterprise performance. This shows that as far as the small and medium-sized enterprises in Jiangxi province is concerned, the material capital plays an important role in the performance of the enterprise, and the structural capital and human capital plays a secondary role in the performance of the enterprise. However, the function of structural capital is more obvious than that of human capital.

Correlation analysis

We sort out, calculate the financial data of the enterprise, and then analyze the result, finally obtain the following correlation: The Human Capital Added Coefficient (HCE) has significant positive correlation with enterprise performance (p < 0.01). The Corporeal Capital Added Coefficient (CEE) also has significant positive correlation with the value of enterprises (p < 0.01). Structural Capital Added Coefficient (SCE) is also positively correlated with enterprise performance (p < 0.05). However, there is a difference in the size of the effects of the above said three, which is quite normal. However, the enterprise size and asset structure have a negative impact on the enterprise performance. This is a noteworthy issue for enterprises, and enterprises are required to pay attention to their costs and asset utilization. Of course, while pursuing the maximization of the interests, the enterprises shall also focus on their survival and sustainable development.

Conclusions and Recommendations

Through the analysis in this paper, we can find that the utilization of assets of small and medium-sized enterprises in Jiangxi Province mainly rely on corporeal capital. At present, the corporeal capital plays a very important role in the process of value creation and performance improvement of small and medium-sized enterprises. Although the human capital has a positive influence on the strategic performance of small and medium-sized enterprises, the influence of the material capital on the strategic performance of the enterprise is still greater. This shows that the use of human resources in small and medium-sized enterprises in the province is still not enough at present, they have a large staff mobility, and their stability of organizational structure are not high.

Based on the above conclusions, we offer some suggestions on the consideration and optimization of the intellectual capital of enterprise:

Firstly, small and medium-sized enterprises should strengthen the work of knowledge capital management and lay a good foundation for the improvement of enterprise performance. Small and medium-sized enterprises should attach importance to the strategic orientation of intellectual capital and establish the corresponding efficient management mode for the intellectual capital. The enterprise should also excavate, cultivated and developed the intellectual assets accordingly base on their actual situation, so as to enhance the intellectual capital’ ability to improve the performance of the enterprise. Secondly, small and medium-sized enterprises should increase their investment in human capital, pay attention to the training of employees and urge them to improve their professional skills. They should provide a platform for employees to show themselves, so that the staff can improve their comprehensive ability and quality of work.

Furthermore, small and medium-sized enterprises shall make rational use of the assets of the enterprise, and control the asset-liability ratio and the asset turnover rate at the optimal level, so that they can obtain the leading position in the competition. Moreover, Structural capital is an organizational and institutional capital for human capital to improve enterprise performance. Small and medium-sized enterprises should pay full attention to structural capital and combine structural capital with human capital organically. Such as designing business processes, improving enterprise structures and systems, improving unreasonable management systems, and enabling the employees to
adapt these new systems in a short period of time, thus improving the efficiency of structural capital of small and medium-sized enterprises.

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