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Research Article

Importance of Employee Education: Analysis of the Impact of Human Capital in Intellectual Capital on Enterprise Value*

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Abstract

This research aims to investigate the contributions of Turkish pre-school children's levels of positive/conflicting relationships with their mothers and close/conflicting relationships with their teachers in predicting their adjustment to school. The sample of the study consists of 190 six-year-old children attending public pre-schools in Adana (a city in southern Turkey), as well as their mothers and teachers. For the data analysis, hierarchical regression analysis has been conducted. The results of the study show the positive relationship established with the mother and teacher to be related to an increase in children's school-adjustment behaviors. A positive relationship has been noted for positive mother-child relationships with children's cooperative participation, self-directedness, and total school adjustment. The results indicate a positive link for closeness in the teacher-child relationship with school liking, cooperative participation, self-directedness, and total school adjustment. Additionally, a positive relationship has been observed for the conflictive teacher-child relationship with school avoidance. An inverse relationship has also been observed for the conflictive teacher-child relationship with cooperative participation, self-directedness, and school adjustment. As conflicts with a teacher increase, the child's school adjustment decreases.

Keywords

Mother-child Relationship • Teacher-child Relationship • School Adjustment • Early Childhood

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With the development and progress of economy, the economic growth driven by the traditional production factors, such as land and labor, cannot keep up with the development, and it is very important to look for new factors as new economic growth points. Under such circumstance, knowledge meets the requirement of becoming a new economic growth point, and is recognized by the enterprises and academia as an important driving force to facilitate the promotion of enterprise value and economic growth in the new economic era. This is because the ultimate result that the enterprise management pursues is the promotion of enterprise value while knowledge as the intangible asset of enterprises facilitates enterprise managers to make scientific and reasonable decision-making. The issue of employee education has been paid more and more attention. Human capital in intellectual capital plays an important role in the promotion of enterprise value. The performance of knowledge in an enterprise is the human capital in the intellectual capital of the enterprise, which is reflected as the education level of employees. Compared with the value of many tangible capital investment in enterprises, the enterprise value can be enhanced more considerably by the education and training of employees. In this regard, enterprises should have a right understanding of human capital and strengthen the investment in employee education, so as to enhance the value of employees and enhance the employee education, which has been deeply rooted in the public mind. The expectation of human capital in intellectual capital is that it can play a role as another driving force to stimulate the growth of enterprise value. This concept further transforms the expenditures of enterprises into investments of enterprise, and then gives the cost of enterprises a new understanding and significance. The research of human capital in intellectual capital can be further transformed into how to play the role of education in the process of value creation and promotion. Intellectual capital is a framework system composed of a series of concepts such as human capital, structure and relationship, and at the same time it reveals how these concepts under this framework act on the creation and promotion of enterprise value in modern enterprises. This study focuses on the relationship between human capital and enterprise value in intellectual capital, which is of great theoretical and practical significance to the study of employee education. In view of the lack of research in this regard, this study attempts to from the perspective of consumers, suppliers and capital markets explore the importance of employee education in the process of human capital in intellectual capital affecting enterprise value.

Literature Review

Research on intellectual capital

Intellectual capital (IC) was first proposed by John Kenneth Galbraith in 1969. The intellectual capital here not only represents brain intelligence and knowledge, but also includes "intellectual action" (Bontis, 1998; Feiwai, 1975). Stewart (1991) defined intellectual capital as a knowledge capable of converting raw materials into more valuable ones. Since then, intellectual capital has entered the frontier of scientific research in the field of management. Seven years later, Stewart came up with a new study, that's, the subdivision of intellectual capital into three areas: human capital, structural capital, and customer capital, but with different focuses in enterprises. Daniel & Anis, (1996) considered intellectual capital to be "the sum of all the intangible assets that make enterprises function normally". He regarded intellectual capital as the difference between the book value

and the market value of an enterprise and the wealth of the enterprise that can be paid attention to by the managers. Edvinsson & Sullivan, (1996) defined intellectual capital in 1996 and pointed out that intellectual capital is a future profitability driven by human capital and the potential of the organization's employees in 1997. In summary, intellectual capital is an ability to create wealth and value. Thus, intellectual capital can be summed up as knowledge, information, and experience that can be formally acquired to create wealth. Burr and Girardi pointed out more clearly that the enterprise's view of resources implies that intellectual capital and its transformation into action can bring competitive advantages to the enterprise. Yildiz and Meydan considered intellectual capital to be a knowledge-based and untouchable asset that cannot be accurately expressed in the financial statements of an enterprise, but can reflect the real value of the enterprise (Ader, 2015; Aupperle, Carroll & Hatfield, 2015; Despres & Daniele, 1999; Easley & O'hara, 2014).

Research on the relationship between human capital and corporate value in intellectual capital

Although it's difficult to identify and quantify intellectual capital and intellectual assets, they are still reflected in a company's greater productivity, efficiency, and overall profitability. The limitations of financial statements in explaining the value of a company emphasize that the source of economic value is no longer the production of material products but the creation of knowledge capital. Soungiannis (2000) concluded that the cost of investing one-tenth of human capital in intellectual capital would double or triple its value growth in seven years. Daniel and Anis (2010) found that human capital is the driving force for enterprises to realize value-added. Enterprises achieve the purpose of value-added mainly through the investment in human capital. Fayed Abdulsalam et al. identified human capital as a key factor in value creation, and studied data from Kuwait banks in 1996-2006 with the VAIC method. It's found that VAIC can demonstrate the efficiency of intellectual capital in creating value. Stankeviciene and Liucvatiene pointed out that the results of the knowledge capital assessment are constrained by the size of the company, the activity of the company, and the demand for intellectual capital by the manager himself. Chang found that human capital in intellectual capital often has a positive, direct or indirect impact on financial performance. The empirical analysis of Pucci shows that there is a positive correlation between the value and performance of the company's human capital. Sydler concluded that the increase in intellectual capital over time was related to higher asset returns. Lu et al. concluded from the survey that intellectual capital was significantly related to the operating efficiency of a company. In terms of measuring the relationship between intellectual capital and corporate value, Riahi-Belkaoui used the least squares method and carried out the empirical analysis with the relative value-added of 81 multinational corporations in the United States from 1987 to 1991 as independent variables, and relative value-added of enterprises from 1992 to 1997, as dependent variables, and it was found that intellectual capital played an important role in multinational corporations in the United States. Bonds used principal component analysis and partial least square method respectively in 1998 and 2000 to make an empirical study on the influence of intellectual capital on organizational performance of enterprises in Canada and Malaysia. The results show that intellectual capital and its components affect each other, and intellectual capital has a significant positive effect on the performance of enterprises. Edvinsson & Sullivan, (1996) used the method of Tobin's Q to calculate the value of only five companies, such as GM and Coca-Cola, and concluded that intellectual capital had a significant impact on the creation of corporate value. In terms of the influence of intellectual capital on the

corporate value, Bontis (1998) drew the conclusion that human capital is the most important to the company's performance regardless of the industry, and is correlated with the structural capital, and there is a difference because of the industry difference; institutional capital has a positive impact on corporate performance and is not affected by the industry. Mehrarian & Razabzadeh, (2012) carried out an empirical analysis of the Iranian pharmaceutical industry, and found that intellectual capital is positively related to corporate performance, but not significantly; there is a significant positive correlation between intellectual capital and market value. Goebel (2015) studied German listed companies, and found their earnings statements had no impact on intellectual capital, but were significantly related to their size. Meng-Yuh Cheng et al took 35 health-care listed companies as samples in 2008 and studied the relationship between the intellectual capital elements of each company and its enterprise value by analyzing the data of various aspects. It is found that innovative capital, process capital, customer capital and human capital in intellectual capital are all related to enterprise value, among which process capital plays a regulatory role and other three play a positive role. According to this, they made a more detailed division of intellectual capital. In order to further study the impact of intellectual capital on enterprise performance, Muhammad and others in 2009 took Malaysian financial industry as the research object and used intellectual capital increment coefficient method and multiple regression analysis method to study the efficiency of intellectual capital and the enterprise performance, and it is found that intellectual capital is positively related to the performance of enterprises. The impact of human capital and structural capital on enterprise performance is not significant. In 2013, labor-intensive industries began to decrease, and knowledge-intensive industries gradually increased. Mehrarian and others began to focus on knowledge-intensive industries, and in order to observe the role of intellectual capital in the industry, they not only summarized a large number of domestic and foreign literature, and designed a questionnaire survey, which found that human capital, structural capital, and relational capital all play a role, and the relationship between customers and related enterprises, R & D expenditure, and knowledge and skills of managers and employees are particularly important. Liu Yuping and Zhao Xingli also believed that intellectual capital was positively related to enterprise value, and the correlation coefficient is greater than material capital, and intellectual capital value was not fully developed. Li Jinglu proved that in the high-tech industry, human capital and relational capital obviously determined the enterprise value, while the structural capital had no obvious positive promoting effect. Li Bo and Li Hua found that human capital is negatively related to small and medium-sized enterprises, while innovative capital and relational capital are positively related to enterprise value. Tang Xiao et al. carried out the research and analysis of GEM related data, which showed that enterprise value and financial capital and intellectual capital are positively related. They also elaborated the influence principle and the application significance of financial capital and intellectual capital. Wang Zhining et al. also came to the conclusion that intellectual capital was positively related to corporate performance. Liu Huanpeng and Yan Taihua studied the high-end equipment manufacturing industry in recent five years, and concluded that there was a positive correlation between intellectual capital and enterprise performance, and there was no obvious correlation between human capital and structural capital. Venture capital can improve efficiency through intellectual capital of high-end equipment manufacturing enterprises, and venture capital with higher shareholding ratio and better reputation can improve enterprise efficiency through material capital and human capital (Fa, 2011; Ghash & Mondal, 2010; Giuliani, 2013; Gode & Mohanram, 2008; Jenkins & Yakovleva, 2006; Skyrme, 1996; Śledzik, 2013; Sveiby, 1997; Richardson & Welker, 2001).

Through the study of the above-mentioned literatures at home and abroad, it can be seen that in terms of the research on the influence of intellectual capital and human capital on the enterprise value, most scholars tend to study the impact of human capital in intellectual capital on the enterprise value and the correlation between human capital in intellectual capital and enterprise value. The research also indicates that intellectual capital as a whole is positively related to enterprise value. As for the relationship between intellectual capital and enterprise value, scholars at home and abroad generally affirm that intellectual capital plays an active role in the promotion of enterprise value and the construction of core competitiveness. Generally speaking, the research on the relationship between intellectual capital and enterprise value, and the size and direction of the contribution of intellectual capital to enterprise value still has a lot of research space whether from the breadth or from the depth.

First, due to the rapid development of social stage, the diversity of state forms and the increasingly subdivision of industry types, experts and scholars have expounded the concept of intellectual capital from various dimensions, but there is still no unified explanation for this.

Secondly, at present, there are many defects in the research task of intellectual capital: First, intellectual capital has not been studied according to China's special national conditions. With early reference of overseas research cases, the research focused on the methodology of studying intellectual capital in popular science, and the recent research focuses on the application of existing models to intellectual capital in a single industry or enterprise, while ignoring the model analysis from mathematical perspective. Second, with the rapid development of national economy and the continuous change of social and industrial structure in recent years, the theory, model and even definition of intellectual capital have not been adjusted, which significantly reduced the persuasiveness of the conclusion.

Model Analysis

Analysis of cost-benefit perspective based on consumer perspective

If the human capital in the intellectual capital of a company is X , the human capital in the intellectual capital has an influence on the enterprise. If the fixed cost of the company is C_1 and the variable cost is V , the equation of the total cost of the company can be obtained as follows:

$$C = C_1 + (K_1 - K_2)X \tag{1}$$

Due to the increase of human capital in the intellectual capital of the company, the more investment is made in employee education; the variable cost V of the enterprise is decided by two aspects: the first is the investment in employee education of the enterprise itself and then the enterprise needs to hire professional management personnel to carry on training and so on, which brings the cost, V_1 . K_1 represents the investment coefficient of enterprise intellectual resources;

Second, the education input in the employees in the intellectual resources results in the improvement of the overall operation efficiency of the enterprise, and the reduced management cost is represented by V_2 . K_2

represents the cost reduction coefficient caused by the intellectual resources of the enterprise. We can also obtain that the total variable cost V which can be represented by V_1 and V_2 , with the equation as follows:

$$V = V_1 - V_2 \tag{2}$$

$$V_1 = K_1 X \tag{3}$$

$$V_2 = K_2 X \tag{3}$$

$$K_1 - K_2 > 0 \tag{4}$$

Assuming that the price of a certain commodity in the product market is P and the output of the product is Q , we can obtain the total income L of the enterprise as follows:

$$L = PQ$$

Therefore, the net profit of the enterprise can be expressed by the following equation:

$$N = L - C = PQ - C_1 - K_1 X + K_2 X$$

Since the profit condition of the enterprise is $N > 0$, we need to solve the following conditions for K_1 and K_2 :

$$0 < K_1 - K_2 < \frac{PQ - C_1}{X}$$

In addition, under the condition of the completely competitive market, the product price is basically uniform, and then the profit of the product mainly depends on the productive capacity of the enterprise, the investment coefficient of human capital and the reduction coefficient of human cost in the intellectual capital of the enterprise, and the influence of fixed cost of the product. The greater the difference between the reduction coefficient of enterprise's human capital cost and the investment coefficient of human capital in enterprise's intellectual capital is, the better the effect of increasing enterprise's intellectual capital is.

If, in the product market, we assume that the consumer's highest willing price in mind is P_c and the consumer's willing to purchase quantity is Q_c , there may be a relationship between the consumer and the enterprise as follows.

One basis for reaching a condition between the consumer and the producer of the enterprise is that the price sold by the producer should be lower than the maximum acceptance price of the consumer, i.e. then a restriction is as follows:

$$P < P_c$$

Then, if the quantity purchased by the consumer is Q_c , the retained income of the consumer can be expressed by the following equation:

$$R = (P_c - P) \times Q_c$$

We can summarize the two cases as follows: enterprises can only choose to sell products and do not sell products, but consumers have two options: buy and don't buy. Then, we can get four strategic analyses: (buy, sell), (buy, don't sell), (don't buy, sell), and (don't buy, don't sell), in which only the form of (buy, sell) can get the deal done and none of other forms can be traded. We can calculate the profit when the transaction is done for enterprises so long the consumer's willing price is higher than or equal to the price of the product:

$$N = PQ_C - C_1 - K_1X + K_2X$$

However, since the enterprise has a certain cost, that's, $C=C_1+(K_1-K_2)X$, if the enterprise does not conduct a commodity transaction, we assume that the enterprise only conducts this transaction in the market and the enterprise still needs to pay the production cost, the enterprise will consider lowering the price, thus obtain a part of the income to compensate for the cost loss. For the enterprise, then the choice is:

$$P = \frac{(K_1 - K_2)X + C_1}{Q_c}$$

Then, we can find that while the fixed cost remains unchanged and the quantity that consumers intend to purchase remains unchanged, as the difference between the coefficient of human capital investment and the reduction coefficient of human capital cost in enterprise intellectual capital increases, the minimum price at which an enterprise is willing to sell is gradually increasing. With the increase in the investment of human capital, the education level of employees will be improved, and the remuneration and benefits of employees will be increased, which will be reflected in the total cost of enterprises and eventually lead to the increase in the selling price of commodities of enterprises. As the human capital of the enterprise can bring the application of the knowledge economy of the enterprise and the promotion of the employee education level will reduce the cost of the enterprise as well as the price of the enterprise. And the internal price of the enterprise will be affected by the difference between the two. In the practical application, the enterprise's expenditure on human capital should be measured with the difference between the two, so as to ensure that the enterprise can obtain greater benefit to help the improvement of the enterprise value.

Then, the retained income of the consumer can be expressed by the following equation:

$$R = (P_c - P) \times Q_c = P_c \times Q_c + (K_2 - K_1)X - C_1$$

If the consumer's willing price and quantity of the existing commodity are fixed and the fixed cost of the enterprise is unchanged, then

$$\frac{\partial R}{\partial X} = K_2 - K_1$$

That's, with the difference between the reduction coefficient of the human cost and the investment coefficient of human capital in intellectual capital of an enterprise, the increase of the retained income of the consumer and the human capital of the enterprise are monotonously increasing, which indicates that if the cost reduced by the enterprise via the introduction of intellectual resources is more than the capital it needs to invest in intellectual capital, consumers will be more active in purchasing products and get higher retained income.

Cost-benefit perspective analysis based on supplier perspective

For the management of an enterprise, it is possible to choose whether or not to own human capital in the market, i.e. (yes, no). We can analyze from the limit condition, under which the management of the enterprise can completely have no human capital, and on the other hand, the human capital of the enterprise can also be extremely large. Because this study is of a theoretical analysis, so it uses the extreme situation for the research. The supplier of an enterprise can decide whether to give the enterprise some concession and preferential treatment, on the one hand, if the enterprise has human resources, which is mainly because the supplier thinks the enterprise with intellectual capital is more easily in the advantageous position in the knowledge economy, we may give more preferential treatment. Then, we can summarize the form as follows:

Table 1
Income Matrix of Enterprises and Suppliers

		Enterprises	
		With intellectual resources	Without intellectual resources
Suppliers	Yes	$L_S - D_1, L - C_1 - K_1X + K_2X + D_1$	$L_S - D_2, L - C_1 + D_2$
	No	$L_S, L - C_1 - K_1X + K_2X$	$L_S, L - C_1$

Without considering the interest rate capitalization, the profit that the supplier of the enterprise can make is L_S and the supplier is willing to give more favorable conditions for enterprises with human resources, so we set it as D_1 . When suppliers are faced with enterprises without human resources, enterprises often give preferential conditions, so we set it as D_2 , mainly because these enterprises may be more credible. The reason why this paper introduces the supplier giving favorable conditions is because in the debt market, the supplier may give favorable conditions in order to allow the enterprise to be more active or earlier repay, which can also be found in the relevant cases in reality. We can get the following restrictions.

$$D_1 > D_2$$

From the equilibrium condition, when $K_2 - K_1 > 0$, the supplier and the enterprise reach the equilibrium. We can find that the equilibrium strategy at this time is (No, With intellectual resources), so the income function of the enterprise is:

$$N = L - C_1 - K_1X + K_2X$$

However, when $K_2 - K_1 < 0$, the supplier and the enterprise reach the equilibrium. We can find that the equilibrium strategy at this time is (No, Without human resources), so the enterprise's income function is:

$$N = L - C_1$$

Then we set the probability that the enterprise chooses the human resource is P_1 , and the probability that the enterprise chooses without human capital is $1 - P_1$. Then, we set the probability that the supplier chooses to give preferential treatment is P_2 , and the probability that the supplier chooses not to give preferential treatment is $1 - P_2$. We can calculate the expected earnings of enterprises and suppliers as follows:

The supplier's expected earnings are as follows:

$$E_s = P_1P_2(L_s - D_1) + P_2(1 - P_1)(L_s - D_2) + P_1(1 - P_2)L_s + (1 - P_2)(1 - P_1)L_s$$

$$= L_s - P_2P_1D_1 - D_2P_2 + P_1P_2D_2$$

Then, when $\frac{\partial E_s}{\partial P_2} = 0$, the equation is as below:

$$P_1 = \frac{D_2}{D_2 - D_1}$$

Then since $P_1 < 0$, give up.

The expected earnings of enterprises is as follows:

$$E_c = P_1P_2(L - C_1 - K_1X + K_2X + D_1) + P_2(1 - P_1)(L - C_1 + D_2)$$

$$+ P_1(1 - P_2)(L - C_1 - K_1X + K_2X) + (1 - P_2)(1 - P_1)(L - C_1)$$

$$= P_1P_2D_1 + P_2D_2 - P_1P_2D_2 - P_1K_1X + P_1K_2X + L - C_1$$

Then, when $\frac{\partial E_c}{\partial P_1} = 0$, the equation is as below:

$$P_2 = \frac{(K_1 - K_2)X}{D_1 - D_2}$$

Then, when $K_1 - K_2 > 0, P_2 > 0$

If $P_1 > \frac{(K_1 - K_2)X}{D_1 - D_2}$ the function is a monotonically increasing function, otherwise $P_2 < \frac{(K_1 - K_2)X}{D_1 - D_2}$ the function is a monotonically decreasing function.

To sum up, when analyzing the behavior of enterprises, the human capital information resources in the intellectual capital of enterprises should be considered as an influential factor. In addition, the supplier's preference change information should be taken into account when analyzing the behavior of the enterprise and the supplier.

Cost-benefit perspective analysis based on capital market

There are two objects in the capital market, the first is enterprises, which mainly play a leading role in the capital market; and the second is investors, which mainly carry out investment behavior in the capital market. For enterprises, there are two situations: the first is that there is human capital, that's, there are employee education resources; the second is that there is no human capital, that's, there is no employee education resources.

We can represent the cost of enterprises follows

$$C_1 = C_{f1} + C_{v1}$$

C_{f1} represents the fixed cost of the enterprise. Since the research object of this paper is the human capital in the intellectual capital of the enterprise, we can assume that the other costs of the enterprise are completely consistent. C_{v1} represents the cost of intellectual resources of the enterprise; as the amount of intellectual resources of the enterprise increases, the expenditure of the enterprise will increase gradually, and the cost of the unit intellectual resources is k_1 , x represents the amount of intellectual resources of the enterprise, so that we can obtain the following equation:

$$C_{v1} = k_1x$$

So we can get the total cost function of the enterprise as follows:

$$C_1 = C_{f1} + k_1x$$

The total income of the enterprise in the capital market can be obtained by the following ways: first, the fixed income of the enterprise ϖ , which results from the non-intellectual resources; second, the income generated by the intellectual resources of the enterprise ω_{v1} , so we can get the total income of the enterprise as follows:

$$\omega_1 = \varpi + \omega_{v1}$$

Where in terms of the relationship between the intellectual capital and the income of the enterprise, when the intellectual capital of the enterprise is larger, the income may also be larger; because in the capital market, the intellectual capital of the enterprise often has the spillover effect, more remarkably in the GEM situation. The increase of the unit intellectual capital may lead to the increase of multiple returns, and the value elasticity coefficient produced by the intellectual resources of the enterprise is k_2 . In this case, we can express it in the following equation:

$$\omega_{v1} = \frac{k_2}{2}x^2$$

Then, the total income can be expressed by the following equation:

$$\omega_1 = \varpi + \frac{k_2}{2}x^2$$

Therefore, the profit of the enterprise can be expressed as follows:

$$V_1 = \omega_1 - C_1 = \varpi + \frac{k_2}{2}x^2 - C_{f1} - k_1x$$

When $\frac{\partial V_1}{\partial x} = 0$, we can obtain $x = \frac{k_1}{k_2}$

So, if $k_2 > 0$, the company is in a rising stage, the input of intellectual capital can double corporate value growth; when $x = \frac{k_1}{k_2}$, the enterprise value takes the minimum value.

$$V_1 = \omega_1 - C_1 = \varpi + \frac{k_2}{2} x^2 - C_{f1} - k_1 x = \varpi - C_{f1} - \frac{k_1^2}{2k_2}$$

So, if $k_2 < 0$, the company is in a recession, the investment in intellectual capital cannot double the enterprise value; when $x = \frac{k_1}{k_2}$, the enterprise value takes the maximum value.

It can be seen that for some innovative enterprises, which depend on intellectual capital, if the cost of human resources per unit of the enterprise is smaller, the value elasticity coefficient of the enterprise is larger, and the enterprise value is larger. If the retained income of the enterprise is larger, the enterprise value is larger. The greater the fixed cost of the operation of the enterprise is, the smaller the enterprise value is. When an investor makes an investment, its cost consist of two parts. The first part is the retained income of the investor, that's, the income that the investor can obtain regardless of whether he chooses to invest in an enterprise with intellectual capital or not. And the second part is the value created by the enterprises with intellectual resources that investors choose. For enterprises, they need to pay a certain cost no matter whether invest enterprises with or without intellectual resources, but the enterprises with intellectual resources often have higher reputation value, therefore, the cost of payment is also larger. As enterprises have different intellectual resources, they often pay different costs.

Therefore, we assume that the cost function of the investor is as follows:

$$C_2 = C_{f2} + k_3 x$$

Where C_{f2} represents the fixed cost that the investor chooses to participate in the investment, that's, when the intellectual capital of the enterprise is zero, the consideration that the investor needs to pay. k_3 indicates the cost coefficient paid by the intellectual resource per unit, and the greater the value is, the greater the cost paid.

In addition, because the return that the investor invests in the enterprise is often related to the development of the enterprise, and similar to the dividend; when the value of the enterprise is larger, the return of the investor's shares per unit is larger, and vice versa, so we can find that there is the following relationship between the two:

$$\omega_2 = k_4 \omega_1 = k_4 \left(\varpi + \frac{k_2}{2} x^2 \right)$$

Because the investor's profit must be positively related to the profits of an enterprise, $k_4 > 0$

In summary, the investor's profit can be expressed as the following function:

$$\frac{\partial V_2}{\partial x} = k_2 k_4 x - k_3$$

$$V_2 = \omega_2 - C_2 = k_4 \varpi + \frac{k_2 k_4}{2} x^2 - C_{f2} - k_3 x$$

When $\frac{\partial V_2}{\partial x} = 0$, we can get $x = \frac{k_3}{k_2 k_4}$

So if $k_2 > 0$, the company is in a rising stage, the input of intellectual capital can double the enterprise value growth; when $x = \frac{k_3}{k_2 k_4}$, the enterprise value takes the minimum value.

$$V_2 = k_4 \sigma - C_{f2} - \frac{k_3^2}{2k_2 k_4}$$

So if $k_2 < 0$ the company is in recession, the input of intellectual capital cannot double the enterprise value growth; when $x = \frac{k_3}{k_2 k_4}$, the enterprise value takes the maximum value.

To the investor, the dividend of the enterprise to the investor unit investment will affect the investor's profits. The greater the retained earnings are, the greater the investor's profits are. The smaller the enterprise's fixed cost is, the greater the investor's profits are. The smaller the cost coefficient paid by the intellectual capital per unit is, the greater the investor's profits are. The greater the value elasticity coefficient produced by enterprises' intellectual resources is, the greater the investor's profits are.

Conclusions

This study involves the influence of human capital in intellectual capital on the enterprise value from the importance of employee education. On the basis of summarizing and combing the relevant literatures at home and abroad, this study defines the connotation and composition of human capital in intellectual capital and enterprise value, and selects scientific measurement methods from three perspectives of consumers, suppliers and capital market to measure the relationship between human capital in intellectual capital and enterprise value by using the cost-benefit model, with the conclusions as follows:

(1) From the perspective of consumers, with the larger difference between the reduction coefficient of the human cost and the investment coefficient of human capital in intellectual capital of an enterprise, the increase of the retained income of the consumer and the human capital of the enterprise are monotonously increasing, which indicates that if the cost reduced by the enterprise via the introduction of intellectual resources is more than the capital it needs to invest in intellectual capital, consumers will be more active in purchasing products and get higher retained income.

(2) From the perspective of suppliers, this test proves that the human capital in intellectual capital has a certain significant influence on the enterprise value, and the employee education has a certain influence on the enterprise behavior. When analyzing the behavior of enterprises, the human capital information resources in the intellectual capital of enterprises should be considered as an influential factor. In addition, the supplier's preference change information should be taken into account when analyzing the behavior of the enterprise and the supplier.

(3) From the perspective of capital market, the research results show four pieces of management enlightenment: a. it is necessary to strengthen the investment in human capital, make enterprises realize the importance of employee education, and only in this way can the enterprise value correctly reflect the listed

company's technical strength, development potential and inherent value; b. it's essential to strengthen the investment and construction of intellectual capital of enterprises, especially the investment in human capital; c. listed companies should pay attention to the construction and maintenance of the transmission mechanism from employee education to corporate value, so that human capital in intellectual capital becomes the main source of enterprise value.

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