

# Research on Human Capital Measurement in Human Resource Accounting

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**Abstract:** With the continuous development of human resource accounting, human capital measurement in human resource accounting has been paid more and more attention. Scarce human resource is human capital. Therefore, in the measurement of human resource accounting, only those who have the conditions of human resources can be identified as human capital. This paper mainly introduces the measurement model of human capital cost and the measurement model of human capital value. Hope to make some contribution to the measurement of human capital.

**Keywords:** Human resources; Accounting; Human capital; Measurement

## 1. Introduction

At present, there is no agreement on the relationship between human resources and human capital. The author believes that the main body of human resources and human capital is not exactly the same, human capital is only a part of human resources, human capital is scarce human resources. All the staff are human resources, but only the scarcity of human resources is the human capital, its subject is those engaged in creative work and labor workers is difficult to measure, technology innovators and occupation managers. In human resource accounting, only those who have the conditions of human capital can be identified as human assets and human capital.

## 2. Human Capital Cost Measurement Model

The measurement of human capital is the measurement of human capital. Human capital has the initiative, its use process is a process of dynamic and subjective initiative. Therefore, it is difficult for human capital to be determined in monetary terms, like physical capital. Historical cost method, replacement cost method is based on the measurement of physical capital in accounting, but there is a big difference. And the future income discount measurement method, opportunity cost method and so on are similar to the investment accounting measurement method.

The cost of human capital is the cost of the acquisition, development, and replacement of the organization's resources. It is the monetary expression of human capital investment and the value of human capital investment. The measurement model of human capital cost determines the human capital from the angle of capital cost, which includes three methods: historical cost method, replacement cost method and opportunity cost method.

### 2.1. Historical cost method

The historical cost method is the enterprise acquisition and development of all human capital expenditure, including recruitment, selection, training, and other expenses as human capital value orientation. This method can provide the basis for the enterprise to prepare the budget and analyze and evaluate. The advantage is that the information provided is objective, accurate and reliable. But its disadvantage is that it cannot reflect the real value of human capital, nor can it provide the information of human resource. This theory holds that the cost of recruiting, hiring, training, and developing employees is calculated as the present value of the employee. The theory also holds that these costs should be the value of the employee's human assets and that they should be amortized over the course of their work. If the Employee terminates the work prior to the expected working period, the net value of the net assets of the employee shall be deducted from the income of the current period.

### 2.2. Replacement cost method

The replacement cost method is the measurement of enterprises in the real conditions to obtain and existing staff training and technical level, quality and work ability of workers is all expenses incurred, or to obtain and train under realistic conditions with all costs incurred in specific work requirements of workers. It includes acquisition cost, development cost and employee turnover cost. The advantage of this method is to pay attention to the change of the value of human capital. The disadvantage of this method is that the estimation of the cost of human capital is subjective.

### 2.3. Opportunity cost method

In a number of human capital investment programs, if you choose a program you must give up the investment in other programs. The abandonment of this benefit is to choose the opportunity cost of the program. The advan-

tage of this method is that the opportunity cost is close to the actual economic value of human assets, and its disadvantage is that it is difficult to measure the opportunity cost.

In comparison, in the three measurement methods, the replacement cost method not only takes into account the changes in the value of human resources, but also reflects the real value of human resources. Therefore, it is also the most accurate way to measure the cost of human resources.

### 3. Human Capital Value Measurement Model

Human capital measurement is the measurement of human capital. Human capital has the initiative, its use process is a process of dynamic and subjective initiative. It is difficult to be measured in monetary terms, like physical capital. Historical cost method, replacement cost method is based on the measurement of physical capital in accounting, but there is a big difference. The measurement method of the future income discount, the opportunity cost method, and so on. The measurement of human capital value has the following modes:

#### 3.1. Future wage discount method

In this method, the efficiency factor is used as the adjustment value of future wage. In this method, the value of human resource is confirmed and measured by the adjusted future wage discount value. Under the premise of the relationship between the employee's salary and the value of the enterprise, it is assumed that the change period is 5 years. The advantage of this method is that it can reflect the value of human capital output dynamically. The disadvantages are as follows: firstly, the salary paid by the enterprise is regarded as the substitute variable of human capital value. This approach to calculate the lack of convincing the wages are not representative of all the employees' income was the result of the method is highly sensitive to the selection of the discount rate, and determine the efficiency ratio of great subjectivity.

#### 3.2. Future income discount method

The method assumes that a person will not leave an organization for the rest of his career, and will be engaged in a career for life. This method can provide the forecast information for the human resource cost, and is helpful for the enterprise to adjust the human resource cost in time. The disadvantage is that: the difficult separation of financial capital and human capital contribution to enterprise's contribution to the annual income; not easy to distinguish between the contribution weights of entrepreneur human capital and the production of human capital management human capital to corporate earnings; due to the human capital to the mortgage and transfer, so the

assumption the method in reality is very difficult to set up.

#### 3.3. Stochastic reward model

It calculates the value of human capital through the value created by human capital. The factors considered in the calculation process of this method are more systematic, comprehensive, and easy to be accepted. However, it has the following limitations: firstly, the value of human capital creation under specific service condition is unknown. Therefore, the operability of this measurement needs to be verified. This method ignores the impact of other assets on the organization's income, which may lead to the overestimation of the value of human capital.

#### 3.4. Internal bidding method

The method considers that only rare human capital is valuable. And the value of human resources is determined by various departments bidding. The highest bidder can obtain the human capital, and the highest price is the value of the employee. It is helpful to determine the true value of human capital by introducing the market mechanism into the measurement of human capital value. However, this method ignores the value measurement of non-scarce human capital.

#### 3.5. Future excess profit discount method

The method considers that the excess profit of enterprise is brought by human capital, so it should be capitalized as the value of human capital. The results of this method can be verified, but whether the excess profit is the value of human capital has not been confirmed.

The measurement method has the following several common shortcomings: it ignores the specific business environment enterprises ignore the human capital in a business cycle is real efforts and create value, prone to moral hazard problem of human capital for the enterprise.

#### 3.6. EVA method

①Economic value added EVA, also known as economic profit.

$EVA = \text{after tax profit} - \text{all capital costs} = \text{NOYAT} - \text{WACC} \times \text{investment cost} = (\text{ROIC} - \text{WACC}) \times \text{investment capital}$ .

Among them: NOYAT is net operating profit after tax, ROIC is the after tax return on investment, WACC is the weighted average cost of capital.

②The basic idea of human capital measurement based on EVA is:

T:  $EVA_t = (\text{ROIC}_t - \text{WACC}_t) \times \text{investment capital}$ ;

T+1:  $EVA_{t+1} = (\text{ROIC}_{t+1} - \text{WACC}_{t+1}) \times \text{investment capital}$

The  $\Delta EVA = EVA_t + mEVA_t$  as a basis for performance assessment of human capital in the past a period of business. The corresponding value of human capital is re-

flected in the increase of enterprise economic value. Only when the delta EVA > 0, human capital to create value. In order to eliminate the influence of other factors, it is necessary to determine the contribution of human capital to economic value. The influence of human capital hypothesis sensitive coefficient Delta EVA is  $\rho$ , our product can be attributed to EVA  $\rho$  and the contribution of human capital to the enterprise human capital value  $X_n = \rho \Delta EVA$ .

The advantage of EVA is that it conforms to the basic theory of modern management theory, which is more in line with the financial goal of maximizing enterprise value. This is helpful to solve the problem of moral hazard in the principal-agent theory, and it can objectively reflect the role of all kinds of capital in the enterprise value increment. The disadvantage is that the capital cost cannot objectively determine the valuation of sensitive coefficient in the formula is very difficult to accurately determine the manager cannot completely rule out the profit manipulation.

#### 4. Conclusion

The measurement result is not directly as the accounting basis of financial accounting, but they are from a different point of view reflects the value of human resources assessment. It is of great significance to confirm the value of human capital and the recruitment of personnel. These models can provide more accurate information of human resource value, and can promote enterprise human resource management. This has important practical significance for the rational selection and employment of talents. But no matter what kind of model cannot be gener-

ally accepted by the enterprise, because it cannot be incorporated into the financial accounting system.

Knowledge intensive industries, such as high-tech industries, through the measurement model can determine the value of human capital, so we should vigorously promote human resources accounting in these industries. As for the traditional enterprise, the human resource accounting can be partially implemented, such as accounting for the human capital value of the senior management. The accounting confirmation and measurement of human capital is still a subject worthy of study. With the gradual deepening of the study of human resource accounting, it is necessary to disclose the accounting information of human resources objectively.

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