



## Measuring human resources' value using human resources accounting methods and models

### - Theoretical study-

قياس قيمة الموارد البشرية باستخدام طرق ونماذج محاسبة الموارد البشرية -

دراسة نظرية-

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### **Abstract.-**

This article aims to identify the role of human resources accounting methods and models in measuring human resources' value, by showing different concepts human resources accounting its importance and objectives in a fast-changing environment, and its historical evolution, and the most important methods and models to measure human resources' value as Historical cost, Present value, opportunity Cost, Replacement Cost, The Lev & Schwartz, and Hermenson.

In this article we have reached a set of results, human resources accounting gather all the human resource operations costs and capitalize it in the assets of the organization, and by this, it will gain loyalty of its human resources. Organizations have to measure its human resources in order to get an eye to their situations and their competencies. And the financial information about human resources

are very important to the organization and it is a key element in order to take right decisions.

**Key words:** accounting, human resources, human resources accounting, measurement, value.

## الملخص-

يهدف هذا المقال إلى التعرف على دور طرق ونماذج محاسبة الموارد البشرية في قياس قيمة الموارد البشرية، من خلال توضيح مختلف المفاهيم المتعلقة بمحاسبة الموارد البشرية، أهميتها وأهدافها في بيئة سريعة التغير وكذا أهم الطرق والنماذج لقياس قيمة الموارد البشرية مثل التكلفة التاريخية، القيمة الحالية، تكلفة الفرصة البديلة، تكلفة الاستبدال، نموذج ليف وشوارتز، وأخيرا نموذج هيرمنسون. تم التوصل في هذا المقال إلى مجموعة من النتائج أهمها محاسبة الموارد البشرية تعمل على جمع كل تكاليف عمليات الموارد البشرية ورسمتها في أصول المنظمة. يتعين على المنظمات قياس مواردها البشرية من أجل مراقبة آدائهم. المعلومات المالية المتعلقة بالموارد البشرية مهمة للغاية للمنظمة وهي عنصر رئيسي في اتخاذ القرارات الصحيحة.

**الكلمات الدالة:** محاسبة، موارد بشرية، محاسبة الموارد البشرية، قياس، قيمة.

## 1. Introduction

Economic variables and intense competition of institutions led to the need for high levels of performance and to the interest for the human resources, which are the beating heart of any organization. Therefore, new concepts have emerged that are concerned with measuring the value of human resources and considering it as an asset of the organization and the

importance of showing it in the financial statements in order to facilitate the decision-making process within the organization.

For this end, several methods and models have emerged to calculate the value of human resources, taking in consideration the various costs incurred by the organization in obtaining efficient human resources that will achieve excellence for it.

From this point, we can formulate our main question:

**“How can we measure human resources’ value using human resources accounting methods and models ?”**

This main question can be divided into these sub-questions:

- How can we achieve good accounting for human resources?
- How can we rely on human resources accounting methods and models?
- Why financial information about human resources is very important to organizations?

This article aims to achieve these goals:

- The identification of the human resources accounting.
- The exchange of experiences in the field of human-resource accounting.
- Showing the importance of human resources accounting in the contribution of the good practices of business organizations.

The subject that we would like to address, its nature, the type of information available about it and the way it is analyzed, imposes on us the use of a specific approach for such studies, and it is represented in the descriptive analytical approach. The descriptive analytical approach suits the nature and type of our study, especially for the theoretical aspect, in order to reveal the various aspects of the study and determine the relationship between its elements or between them and among other different phenomena.

In order to reach the above objectives we have divided our article into two sections, the first section is about the concepts of human resources accounting where we will highlight on the definition of human resources accounting, its importance, its objectives, and its historical evolution. In the second section, we will discuss about the most important methods and models to measure human resources’ value as Historical cost, Present value,

opportunity Cost, Replacement Cost, The Lev & Schwartz model, and Hermenson's model.

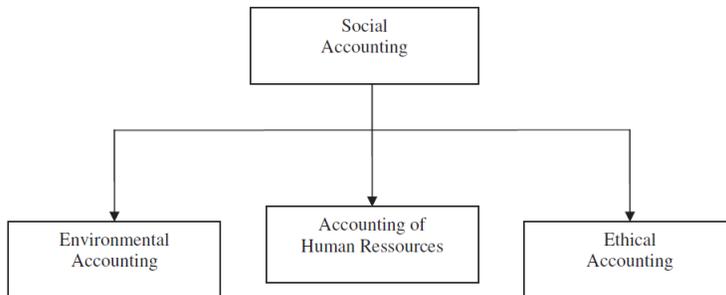
## 2- Concepts of human resources accounting:

In this section, we will highlight on the Definition of human resources accounting, its importance, its objectives, and its historical evolution.

### 2-1-Definition of human resources accounting:

Accounting of human resources forms direct part of the social accounting with the environmental and ethical accounting:

**Figure (01): Relation between Social Accounting and HR accounting**



**Source:** Cornescu Alina, Motoniu Ioan Dumitru, Vatasoiu Cristian Ionel (2010), “**Human resources accounting – accounting for the most valuable asset of an enterprise,**” Annals of the University of Oradea Economic Science, volume 1, issue 2, Bihor, Romania, P 926.

This is why many researchers have defined human resources accounting from their own point of view, and we find:

**The American Accounting Association’s Committee on Human Resource Accounting** has defined Human Resources Accounting as “the process of identifying and measuring data about human resources and communicating this information to interested parties”.<sup>(1)</sup>

**Eric Flamholtz** has defined Human Resources Accounting as: “Human resources accounting is the accounting of individuals as

organizational resources, and includes costs achieved by the organization through the recruitment, selection, training and development of human assets, as well as measuring the economic value of individuals for the organization”.<sup>(2)</sup>

**Newman** has defined Human Resources Accounting as: ”the measurement of the abilities of all employees of a company”.<sup>(3)</sup>

From the above definitions, a comprehensive definition of human resources accounting can be provided. There is no doubt that the financial accounting highlights on the costs of an organization's assets, whereas human resources accounting consider the human resources as capital rather than cost. HR accounting demonstrates the organization's investment towards its staff and how their values change over time, as well as measuring human resources and presenting it as financial reports for the decision makers.

The previous definition shows a set of characteristics of human resources accounting summarized in the following:<sup>(4)</sup>

- An accounting system that identifies human resources.
- Investment by the organization directed to its human resources.
- Includes measuring the value of human resources.
- Track changes in the value of human resources over time.
- HR Accounting provides HR data in the form of financial reports to decision makers.

## **2-2- Importance of human resources accounting:**

Human Resource Accounting (HRA) includes accounting for the management of the business and staff as human resources, which will provide potential benefits. In the HRA approach, human resources expenditure is listed as assets on the balance sheet, as opposed to the conventional accounting approach, which considers human resources

expenses as expenditure on the statement of income that reduce profit. Objective of human resource accounting is to facilitate the management to get information on the cost and value of human resources, which will enhance the quantity and quality of goods and services. This offers data on the cost of human capital to interested individuals and contrasts this correspondingly with the benefit derived from its use. Human resources accounting is used to provide cost-efficient information to make appropriate and successful management decisions on the acquisition, allocation, production and maintenance of human resources with an aim of achieving cost effective organizational objectives. Further, it helps the organization in decision-making in the various areas like Direct Recruitment vs. Promotion, Transfer vs. Retention, Retrenchment vs. Retention, Impact on budgetary controls of human relations and organizational behavior, decision on reallocation of plants, closing down existing units and developing overseas subsidiaries, etc. It helps in evaluating the expenditure incurred for imparting further education and training in employees in terms of the benefits. It helps an organization to take managerial decisions based on the availability and the necessity of human resources. When the human resources are quantified, it gives the investor and other client's true insight into the organization and its future potential. The proper valuation of human resources helps an organization to eliminate the negative effects of redundant labor.<sup>(5)</sup>

### **2-3- Objectives of human resources accounting:**

Human resources accounting has a lot of objectives, among it we can find that:<sup>(6)</sup>

- HRA provides useful information to the management regarding human resource capital which helps them to take valuable decisions for recruitment, training and development, promotion, retrenchment, remuneration, performance appraisal, etc.

- This is seen as a very useful tool for measuring the efficacy of HR policies and activities. Human Resource strength and vulnerabilities can be known. A sense of high satisfaction and gratitude for the workers of the firms when they are regarded as an asset and not the company's expenses.
- It helps to determine the importance of an organization's human capital. If two companies provide the same rate of return on capital employed on the basis of the same technology, HRA will enable potential investors to determine which one company should be chosen to make investment by providing details on their human resources.
- The information provided by HRA helps management to control various types of human resource costs and as a result, help to improve profitability of the organization. The management can also judge the present value of its future commitment of giving employee compensation.
- HRA helped the management to disclose the value of its human resources. Such information is more valuable and reliable than the conventional system of accounting where “Return on Capital Employed” is the benchmark for measuring success.
- If intellectual capital is legally expressed in the Balance Sheet (as defined by country law or Accounting Norm by Accounting Body such as India's ICAI), the stock market scenario will take a big shift in securities valuation.

#### **2-4- Historical evolution of human resources accounting:**

The historical evolution of human resources accounting has gone through time in six stages, which are listed as follows:

##### **2-4-1- Inference of the basic concepts of human resource accounting (1960-1966):**

Interest in human resources accounting began in this period. Human resources were seen only as a cost to be constrained, and this cost must be reduced, but in this period, many thinkers and theorists supported the idea of

considering human resources as an asset of the organization, as well as attempting to objectively evaluate it. Organizational psychologists such as Likert also saw human resources as valuable to any organization.<sup>(7)</sup>

#### **2-4-2- Emergence of the primary models of human resources accounting (1967-1970):**

This stage coincided with the establishment of research teams from universities to establish and assess the validity of the model of historical cost determination and the importance of human capital. During this time, work was conducted to assess current and potential human resource accounting applications as an instrument for managers and users of financial information. That means work being applied to formulate potential. In early 1967, research team including Likert Bromet, pile and Flamholtz conducted plans to develop the HRA concepts and methods. The result of this research was published by Bromet and colleagues (1968), the term human resource accounting was used for the first time. They investigated the objections relating to the expense of human cost considering as an asset rather than its calculation.<sup>(8)</sup>

#### **2-4-3- The increasing theoretical interest in human resources accounting (1971-1977):**

Interest in human resource accounting grew steadily in the 1970s and included a great deal of academic work worldwide, while at the same time interest increased at the organizational level. A lot of work on the implementation of the HRA theory within organizations occurred during this time. The American Accounting Association formed a committee to supervise human resource accounting development. (Flamholtz et al. 2002). Several authors reported that human resource accounting had an impact on decision-making, including Tomassini (1974) whose findings showed that the HRA data can be effective for management decisions relating to the

employees' prioritization at retention and selection of employees. Flamholtz (1979) conducted some research to study the effect of figures related to the value of human resources on official accountants' decisions. The results of this study showed a significant statistical difference between the decisions based on figures calculated on traditional methods of personnel selection, and those figures based on the value of human capital including monetary and non-monetary items. In this period Flamholtz (1971–1972) presented a model based on the premise that the value of an individual is based on the services that he/she will provide to the firm.<sup>(9)</sup>

#### **2-4-4- The decreasing interest from the practical side of human resources accounting (1978-1980):**

Over this time the interest in the HRA declined but did not totally vanish and during this time, important activities were carried out in relation to the HRA. Flamholtz and Ansari (1978 ) suggested using HRA as a management method. One of the reasons for the reduction in interest in the HRA was because of the previous preliminary studies carried out in relation to the HRA were easy while the remaining studies were difficult. In addition, the implementation of the necessary studies for the application of HRA required the interest and cooperation of organizations. However, since the implementation of these studies required spending a large amount of expenses and there was insufficient certainty in relation to its benefit toward the expenditure, organizations were not willing to implement it.<sup>(10)</sup>

#### **2-4-5- Interest in human resources accounting expanded to the international level (1981-1989):**

In 1981, interest in the HRA once again increased. Throughout this time, studies were conducted to establish and implement the HRA. For instance, the American Marine Management Organization wanted to use the

HRA methodology to handle its own human resources. During this time, the industrial economy based on physical assets in many countries had shifted to the new industrial economy in which the intellectual capitals were emphasized rather than the physical assets. In such circumstances, the future success of the organizations was affected the intellectual capital rather than the physical capital (total human capital and intangible assets). Therefore, organizations should pay more attention to human capital development. In 1995 the Scandia Company that was the largest insurance and financial services provider in the Scandinavian countries was presented the first report on intellectual capital. During this period, companies like Intel and Microsoft were formed that were a symbol of a new era. In these companies human resources have more importance than the companies in the industrial economy period. However, unfortunately, the accounting is not able to respond to changes in the existing conditions. Now, accounting is based on the condition of the industrial economy in which the physical assets were in the spotlight. While in the present era companies need information through that can continuously evaluate individuals' skills and abilities. This information providing tool about the human capital is the same HRA.<sup>(11)</sup>

#### **2-4-6- Developing HR Accounting Concepts and Models (1990-present):**

The focus of human resource accounting over this time has moved from assessing human resources and providing hard accounting information to a system that is more focused on providing soft information. A recent report focuses on the use of accounting as a management method for human resources. Given all the work, the challenges posed by the practical implementation of human resource accounting.<sup>(12)</sup>

### **3- Methods and models of human resources accounting:**

In this section we will highlight on Historical cost model, Present value model, Opportunity Cost Model, Replacement Cost Model, The Lev & Schwartz Model, and Hermenson Model.

### **3-1- Historical cost model:**

This model was developed by William Pyle, Brummet, and Eric Flamholtz in 1968. In this model, human resources are invested against current sacrifice for future benefits, so all expenditure on recruitment, selection, recruitment, training and development of staff and their presentation as a budget asset. Under this method, capital expenditure on human assets is amortized over the life expectancy of human assets. If an employee leaves early, an unamortized portion of capital expenditure will be treated as a loss and charged to profit and loss. However, it remains extremely difficult to know the actual age of human assets and determine the amortization rate to be employed.<sup>(13)</sup>

### **3-2- Present value model:**

Flamholtz et al (2002) proposes in his present-value approach that citizens should be compensated at the present value of the planned potential services to be provided to the organization. We describe the importance of the individual to the organization as the present value of the collection of potential services that the person is expected to provide during the time he/she is expected to stay in the organization.<sup>(14)</sup>

### **3-3- Opportunity Cost Model:**

It is based on a conceptual economic approach, which is the value of an employee, in this case, in his best alternative. That is, valuation of human resources should be based on the worth of labor in terms of the value an employer is prepared to pay for an alternative company or industry.

Quantifying HR value is difficult under this method because alternative use of HR within the organization is restricted and at the same time, the use may not be identifiable in the real industrial environment.<sup>(15)</sup>

### **3-4- Replacement Cost Model:**

According to this model, the value of employees is estimated as the cost of replacement with a new employee of equivalent ability and efficiency. There are two costs, individual replacement cost and positional replacement cost in this model. Cost of recruiting, selecting, training and development and familiarization cost are accounts in individual replacement cost. When an employee present position to another or leave the organization cost of moving, vacancy carrying and other relevant costs reflect in individual replacement cost. Positional replacement cost refers to the cost of filling different positions in an organization and this model is highly subjective in nature.<sup>(16)</sup>

### **3-5- The Lev & Schwartz Model :**

The Lev and Schwartz model states that the human resource of a co is the summation of value of all the Net present value (NPV) of expenditure on employees. The human capital embodied in a person of age  $r$  is the present value of his earnings from employment. Under this model, the following steps are adopted to determine HR Value:<sup>(17)</sup>

- Classification of the entire labor force into certain homogeneous groups like skilled, unskilled, semiskilled. And in accordance with different classed and age wise.eg. In Infosys the classification is based on software professionals & support staff, etc.
- Construction of average earnings stream for each group.eg. At Infosys Incremental earnings based on group/ age have been considered.
- Discounting the average earnings at a predetermined rate in order to get present value of human resources of each group.

- Aggregation of the present value of different groups, which represent the capitalized future earnings of the concern as a whole.

$$V_r = \frac{I(t)}{(1+r)^{t-r}}$$

Where,  $V_r$  = the value of an Individual  $r$  years old

$I(t)$  = the individual's annual earnings up to retirement

$t$  = retirement age

$r$  = a discount rate specific to the cost of capital to the company.

### 3-6- Hermenson Model:

This model uses compensation as a surrogate measure of persons' value to the firm. Compensation means the present value of future stream of wages and salaries to employees of the firm. The discounted future wages stream is adjusted by an 'efficiency ratio' which is weighted average of the ratio of the return on investment of the given firm to all the firms in the economy for a specified period, usually the current year and the preceding four years. The weights are assigned in the reverse order i.e., 5 to the current year and 1 to the preceding fourth year.<sup>(18)</sup>

The following formula is used:

Efficiency Ratio =

$$5 \frac{RF(0)}{RE(0)} + 4 \frac{RF(1)}{RE(1)} + 3 \frac{RF(2)}{RE(2)} + 2 \frac{RF(3)}{RE(3)} + \frac{RF(4)}{RE(4)}$$

Where:

$RF(0)$  is the rate of accounting income on owned assets for the firm for the current year.

$RE(0)$  is the rate of accounting income on owned assets for all the firms in the economy for the current year.

RF(4) is the rate of accounting income on owned assets for the firm for the fourth previous year.

RE(4) is the rate of accounting income on owned assets for all the firms in the economy for the fourth previous year.

### **3-7- Discussion:**

After studying the above models, we can affirm that no model is better than the other, that's because each of the above models has been focusing on an important side in the measurement of human resources' values. The historical model focuses on the total costs borne by the organization in order to reach the right employee for the right position, whereas the present value model focuses on the amount of income that one employee can bring to his organization. The replacement cost model points that before managers make a decision to appoint an employee to a vacant position that has been previously occupied, a study of costs must be done. In Lev & Shwartz model the employee is considered as capital, and a model has been set in order to convert his competencies and experiences into quantifiable value. The Hermenson model has the same idea as that of Lev & Schwartz, But the Hermenson model focuses on the efficiency of all the human resources of the organization and comparing them to those belonging to other organizations in the same sector.

### **4-Conclusion:**

Human resources accounting has great importance within the organization through the value measurement of human resources by the methods and models that we have presented and that facilitates the decision-making process. Through this research, we got to know the different methods and models that enable us to measure the value of the services that employees perform, and how to handle the value of these services in

accounting, and how they are managed using the data from the financial statements.

From this article, we derived to these results:

- Human resources accounting gather all the human resource operations costs and capitalize it in the assets of the organization, and by this, it will gain loyalty of its human resources.
- Organizations have to measure its human resources in order to get an eye to their situations and their competencies.
- Financial information about human resources are very important to the organization and it is a key element in order to take right decisions.

In order to improve human resources accounting, we propose these recommendations:

- Human resources are very important within the organization, because their success means the success of all the organization, and their failure means the failure of all the organization. That is why organizations must invest in their human resources in order to have more income.
- Organizations must take care of their human resources, provide them with the necessary tools, and fulfill their needs in order for them to feel affiliated with these organizations, and by doing so they will provide a high performance.

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