

Measuring human capital and the issue of accounting management of human resources in the Algerian economic institution

A case study of the Orient Textiles Foundation Khenchela

قياس رأس المال البشري ومسألة الإدارة المحاسبية للموارد البشرية في المؤسسات الاقتصادية الجزائرية

دراسة حالة مؤسسة أورينت للمنسوجات في خنشلة

boubakeur.BENAMRANE* Abbes Laghrour University of Khenchela – Algeria boubakeur.benamarane@univ-khenchela.dz	yamina MESSANI Abbes Laghrour University of Khenchela – Algeria messani.yamina@univ-khenchela.dz
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Date of submission: 14/08/2025

Date of acceptance: 27/03/2026

Abstract

Through this study, we aimed to highlight the contribution of human resources accounting in measuring human capital through a field study in which. we relied on a research form designated for this purpose . The study used the descriptive analytical approach based on a case study of the Orient Textiles Foundation Khenchela . The study concluded that the issue of accounting management of human resources in the institution under study enabled supervisors and managers to follow up; and evaluate the organization's human capital as one of its basic assets However the issue of accounting management of intangible assets according to the results of the study; is still difficult to apply as is the case with... For physical assets this was clearly evident in the inaccuracy of the economic values of the institution's human capital presented and displayed in the institution's financial statements However this difficulty did not prevent the institution's managers especially at the level of the Human Resources Directorate from benefiting from the various accounting management processes for human resources in evaluating capital Human resources based on various information and data resulting from the organization's human resources accounting

Keywords: Human capital; human assets; human resources; accounting; accounting management, Public institution

المخلص

تهدف هذه الدراسة إلى إبراز مساهمة محاسبة الموارد البشرية في قياس رأس المال البشري من خلال دراسة ميدانية إتمدنا فيها على إستمارة بحث مخصصة لهذا الغرض وقد استخدمت الدراسة المنهج التحليلي الوصفي المبني على دراسة حالة مؤسسة أقمشة الشرق بخنشلة

* Corresponding author: BENAMRANE.Boubakeur, Email: boubakeur.benamarane@univ-khenchela.dz

حيث خلصت الدراسة إلى أن مسألة التسيير المحاسبي للموارد البشرية في المؤسسة محل الدراسة مكنت المشرفين والمسيرين من متابعة وتقييم رأس المال البشري بإعتباره أصلا من الأصول الأساسية للمؤسسة غير أن مسألة التسيير المحاسبي للأصول غير الملموسة حسب نتائج الدراسة لا تزال صعبة التطبيق كما هو الحال بالنسبة للأصول المادية ذلك ما تجلى بوضوح في عدم دقة القيم الاقتصادية لرأس المال البشري للمؤسسة المقدمة والمعروضة في القوائم المالية للمؤسسة إلا أن هذه الصعوبة لم تمنع مسيري المؤسسة خاصة على مستوى مديرية الموارد البشرية من الإستفادة من مختلف عمليات التسيير المحاسبي للموارد البشرية من تقييم رأس المال البشري بالإعتماد على مختلف المعلومات والبيانات الناتجة عن محاسبة الموارد البشرية بالمؤسسة.

الكلمات المفتاحية: رأس المال البشري؛ اصول بشرية؛ محاسبة الموارد البشرية؛ التسيير المحاسبي؛ المؤسسة العمومية؛

Introduction

Human capital represents one of the assets of an organization used in creating and applying knowledge to enhance its competitive edge and sustainability. Researchers agree that individuals within organizations are crucial resources playing a pivotal role in their success. They are classified as productive resources of the organization, and disclosing information related to these resources is vital for the success of various decisions made within the organization. This issue has continued to be of interest to many researchers, particularly economists aiming to find methods and mechanisms through which the economic value of individuals in organizations can be objectively expressed.

It is true that human resources in organizations are not classified as their assets. However, these organizations have the right to utilize the capabilities of their human resources for a specified or unspecified period according to a pre-agreed contract. Therefore, organizations prioritize training and development operations for their human resources, which they have the right to utilize. This entails significant financial burdens and expenses. As a result, the cost of human resources is estimated based on the expenditures incurred for various training and development operations, as well as the value of potential financial losses and expenditures the organization would face if it were to lose these human resources for any reason.

Obtaining an alternative human resource with the same efficiency to perform the same tasks and achieve the same returns would also incur costs. Therefore, the cost of human resources deserving measurement and representation in the financial statements of the organization becomes evident. This is essential for understanding the value of its human resources that it possesses and has the right to utilize.

The idea of accounting management of human resources in an organization emerged from obtaining information to identify and measure various costs associated with managing and administering human resources within the organization. It involves

evaluating and disclosing these costs in the financial statements of the organization according to accounting standards.

Through this research paper, we aim to answer the following primary question: Does the Algerian economic enterprise care about measuring its human capital and disclosing its human resources in its financial statements?

1.Human Assets in an Organization: Nature and Characteristics

1.1. Human capital

Human capital refers to the accumulated stock of knowledge, skills, physical and mental capabilities, and health that individuals possess throughout their lives, enabling them to exploit their potential as productive members of society. This stock comprises intangible assets that interact with each other, such as knowledge, experience, skills, and education. These assets require investment, protection, and development because their productivity levels increase as individuals age and are not subject to the law of diminishing returns. Moreover, these assets can be used in multiple ways, unlike other assets within the organization.

1.2.Elements and Components of Human Capital

Both the Arab Human Development Report for the year 2003 and the United Nations Development Programme, along with many researchers, agree that human capital consists of the total knowledge, capabilities, skills, professional and scientific experiences, and technological know-how acquired by individuals through education, training, healthcare, and nutritional levels. Therefore, the fundamental elements of human capital include: (Asfour Mustafa, 2017, p. 16)

1.2.1. Knowledge whereby it refers to various accumulated information through personal traits as innate knowledge and through education as acquired knowledge and skills. Knowledge here refers to professional, technical, and specialized knowledge.

1.2.2. Competencies and skills: Researchers differ in defining a precise concept of skills, but Le Boterf indicated that skills only manifest during work. He defined it as the application of theoretical knowledge and represents a set of personal traits possessed by the individual. (Le Boterf, 2001, p. 36)

1.2.3. Accumulated experiments and experiences refer to the level of accumulated knowledge that individuals gain through their current and previous work

1.3.Types of Human Capital

1.3.1.First Classification (Asfour Mustafa, 2017, p. 17) This classification divides human capital in the organization into two groups based on the level and nature of knowledge and skills of each category

General Human Capital refers to knowledge and general skills that are not specific to a particular job, including innate or acquired skills that enhance a person's overall ability to excel and innovate.

Specialized Human Capital represents various knowledge and skills accumulated through education, training, and specialized work experiences specific to a particular job or organization.

1.3.2. Second Classification: This classification divides human capital in the organization into four categories (Mahmoud Al-Anzi, 2006, p. 110)

First Category: Stars and Minds, which includes employees who possess diverse knowledge and skills that can be effectively employed and leveraged for the benefit of the organization.

Second Category: Ordinary Workers (Natural Workers), who are regular individuals within the organization characterized by their strong commitment to it. They are indispensable and efforts should be made to transform them into creative individuals and proactive minds for the benefit of the organization.

Third Category: New Learners represent the category of new employees entering or transferred within the organization, who are promoted to new positions but whose performance does not meet desired levels due to integration and adaptation challenges with the organization's culture and environment.

Fourth Category: Troublesome Workers include employees with work-related issues and a negative impact on productivity

1.4 .Characteristics of Human Capital

Human capital is characterized by features and specifications that distinguish it from physical capital, as outlined by Abdullah Zahi Al-Rachdan. He described three fundamental characteristics of human capital (Zahi Al-Rachdan, 2005)

Human capital cannot be separated from its owner

Human capital both produces and consumes goods and services

Human capital dissipates upon the death of its owner, except for some patented inventions named after their creators and used thereafter

2.Measuring Human Capital

2.1.The Challenge of Measuring Human Capital

Efforts have been made to develop measures and indicators for assessing and evaluating human capital at the organizational level. Despite tangible progress in this field, there remains disagreement among experts regarding these measures. This underscores the ongoing need for further development and improvement of these measures. While various methods are crucial for serious attempts to understand human capital, its components, and establish a strong rationale for its inclusion in analysis and evaluation, these methods still require more substantiation and responsiveness to accounting and financial requirements in assessing intangible assets. Particularly challenging is the stability of value and accuracy of evaluation. Furthermore, there is a significant difference between managing physical assets and managing non-physical assets in organizations; the former can be quantified, whereas the latter cannot due to their intangible nature, making measurement of their impact on performance difficult .(Jean Yvees , 2001, p. 406)

2.2.Methods of Measuring Human Capital

Human capital is measured according to three types of metrics (Saadoun & Al-Ribaie, 2015, pp. 96-98)

2.2.1.Measuring Human Capital with Non-Financial Metrics

Many non-financial metrics have been proposed by authors and researchers, reflecting their perspectives on measuring intangible assets in an attempt to find a suitable measure

for assessing human capital in different institutions. Some of the most significant include:

Intellectual Assets: The total number of employees reflects the proportion of intellectual capital within the institution, thereby measuring human capital.

Average Years of Scientific Experience per Human Resource: Total years of experience to assess the inventory of scientific expertise among employees in the institution .

Rate of Assignment of Intellectual Assets to Leadership Positions: Total intellectual assets to understand the extent of support and empowerment for human capital.

Turnover Rate (number of leavers and resignations): Total intellectual capital reflecting the retention of experienced employees with knowledge and skills".

Employee retention turnover rate to identify reasons for employee departure from the institution and the possibility of retaining them.

Training entitlements measure competency levels skill inventory the impact of entitlements and investment in training Employee retention turnover rate to identify reasons for employee departure from the institution and the possibility of retaining them.

2.2.2.Measuring Human Capital with Financial Metrics

There are several financial metrics for evaluating intangible assets including human capital, which can be explained as follows:

Direct methods for assessing human capital at the individual level involve personal interviews, tests, and evaluating these components by directing questions to the institution being evaluated for its human capital. This allows for a clear assessment of its intellectual assets.

Market capitalization method defines market capitalization (MCM) as the enterprise value measured through the price of its shares traded in the financial market. Market capitalization can be calculated using the following equation :

$$P \times SO = MCM$$

MCM: Market Capitalization

SO: Number of shares traded in the market

P: Current share price in the financial market

Return on Assets Method : The return on assets method utilizes the average return on assets after tax specific to the institution over a certain period, which could be three or six months. This average is divided by the average tangible assets for the same period. The result is compared with the industry average to calculate the difference. If the difference is zero or negative, the institution does not possess human capital exceeding the industry average. Conversely, if the calculated difference is positive, the institution has human capital that exceeds the industry average

2.2.3.Measuring Human Capital with Hybrid Metrics

Among the important hybrid metrics, we mention:

Balanced Scorecard: This metric was developed in the late 20th century to provide multidimensional measurement systems for guiding decisions by including key and varied indicators and metrics that focus on both internal and external aspects of the institution.

The Balanced Scorecard includes four main perspectives: Internal Processes Perspective: Focuses on internal processes related to goods and services .

Learning and Growth Perspective: Focuses on individuals within the institution to measure learning and knowledge levels.

Customer Perspective: Focuses on the institution's activities through the customer, encouraging the institution to continue focusing on customer needs and satisfaction

Financial Perspective: Measures the final financial results achieved by the institution for its stakeholders.

Multiple Indicators Model: This model assumes that having sufficient facets of human capital is essential for understanding this phenomenon. The model includes 140 indicators and derivatives related to human capital, encompassing both financial and non-financial indicators. Some of the most important ones are:

Total Assets / Number of Employees (value)

Revenue / Total Assets (percentage%)

Total Revenue from New Customers / Total Revenue (percentage%)

Total Revenue per Employee (value)

Administrative Expenses / Total Expenses (percentage%)

Administrative Expenses per Employee (value)

Information Technology Expenses per Employee

Information Technology Performance per Employee

Various methods for measuring human capital have emerged, as previously presented, due to the challenges faced by those tasked with this measurement process. The unique characteristics that distinguish human capital make its identification and measurement a difficult and complex process. This is because a component of human capital may hold value for a particular institution but not for another, leading to a proliferation of metrics and variations. However, the methods and approaches discussed are considered accounting models that can be relied upon in measuring human capital and human assets within the framework of modern accounting standards

3. Human Resource Accounting

Several concepts and definitions of human resource accounting have emerged from various associations, thinkers, researchers, and specialists, each focusing on specific aspects that human resources represent within organizations.

3.1. The classic concept of human resource accounting

originated from Likert's perspective of the organization as a human entity, where its resources include the loyalty of employee groups and workers in exchange for wages, salaries, and benefits they receive. Thus, human resource accounting is defined as the accounting of wages, which involves calculating various entitlements of workers by identifying components of wages or salary (likert, 1971, p. 144)

Thus, Likert focuses in his definition of human resource accounting on wages or salaries, which is a definition derived from the function of general accounting. In addition to this definition based on wages or salaries, various training and development expenses are added. Therefore, human resource accounting is also defined as the accounting that not only involves monitoring and tracking wages or salaries but also includes various training and development expenses. Consequently, human capital is evaluated based on

the worker's entitlements from wages plus training and development expenses. Criticisms have been directed at these previous definitions because they focus on the tangible value of the individual without considering intangible aspects such as performance (Al-Shirazi, 1990, p. 150)

3.2.The modern concept of human resource accounting

Is defined by the American Accounting Association as a set of concepts, principles, procedures, and methods governing the process of identifying and then measuring data related to human resources, with the intention of subsequently communicating it to relevant parties (Abdelwahhab & Saad, 1984, p. 91)

Whereas Flamholtz defines Human Resource Accounting as treating human resources as assets for the organization. It involves the costs of recruiting, selecting, developing, and managing human assets, as well as measuring the economic value of individuals within the organization (Amin Ali, 2003, p. 53)

It also refers to measuring and reporting on human dynamics within the organization. It involves assessing the status of human resources within the institution and measuring changes in individuals and groups for decision-makers, whether inside or outside the organization (Abdelwahhab & Saad, 1984, p. 113)

Similarly, Brummet defines it as the process of measuring the dynamics of the human element within the organization and preparing necessary reports accordingly (Naji Al-Hayali, 2007, p. 157)

Eric Flamholtz also considers Human Resource Accounting as the process of identifying the value of human resources, processing it, and tracking changes to demonstrate its true value and communicate it to decision-makers (Flamholtz, 1971, pp. 40-45)

4.The overall goal of Human Resource Accounting

Considered as a management tool, is to provide accurate and timely information about the financial and competitive position of the organization, taking into account its organizational and technological environment. The objectives of Human Resource Accounting, as defined by the American Accounting Association, include (Flamholtz, 1971, p. 61)

4.1 Measurement

also involves estimating the value and cost of the human element using objective methods, models, and standards. Measurement primarily includes assessing the value of the workforce, measuring the cost of recruiting and preparing human resources, measuring the cost of utilizing human resources, measuring the productivity efficiency of human assets, assessing the profitability of human asset utilization, measuring the return on human investment

4.2 Reporting on human resources within the organization

involves presenting data on human resources in financial statements and accounting reports, displaying the findings achieved after measurement objectives. This includes generally recording and summarizing human resource data using accounting methods, presenting the results in financial statements, and finally diagnosing various human resource issues, preparing quantitative reports about them, and analyzing these issues

4.3.Decision Support refers to providing

useful data to support management in making appropriate decisions. The goal of Human Resource Accounting is to provide information to the management of the organization, investors, or other interested parties to facilitate the decisions they need to make. These decisions primarily concern human resources.

5. The Assumptions of Human Resource Accounting

Many researchers in the fields of accounting and human resource management have focused on several assumptions that underpin Human Resource Accounting. Researchers have agreed on the following assumptions:

5.1. The first assumption

considers the human element as a significant resource of the organization, if not the most important one. Just as management benefits from physical and technological resources, it also reaps the benefits of its employees. These individuals are capable of contributing to achieving the organization's goals and providing diverse current and future services of specific economic value.

5.2. The Second Assumption

The concept of assets can be applied to the human element. Economists define assets as valuable items owned by individuals or entities, or as production factors that provide specific benefits or services. Accountants define assets as economic resources that provide future benefits, measurable in a cash-oriented and objective manner. Many accountants believe that the concept of assets can be applied to the human element, as this element provides economic benefits to the organization and its value can be estimated. Despite the differences between human assets and tangible assets, especially regarding ownership, some distinguish between owned assets and operational assets. Owned assets are legally owned by the organization and have a certain market value that can be transferred, while operational assets are those not legally owned by the organization.

5.3. The Third Assumption

utilizing human assets incurs economic costs borne by the organization. In return, the organization receives benefits and services that contribute to its efficiency. These benefits and services can be measured and presented in a monetary form that appears in the organization's annual accounts.

5.4. The Fourth Assumption

leadership models within an organization affect its human assets. How individuals are managed in organizations can positively or negatively impact their economic productivity. For example, the effectiveness and efficiency of individuals in organizations, and their performance levels, depend on the careful selection of individuals for tasks that match their abilities, skills, job requirements, and even their personal preferences and inclinations. Additionally, training programs, equipment, tools, specialized work programs, as well as the size of incentives, both monetary and non-monetary, provided by the organization to satisfy individuals' desires, all play a role. The more successful an organization is in utilizing and optimizing its human resources, the greater their economic value increases.

5.5. The Fifth Assumption

management increasingly requires accurate and sufficient information about the human element to make correct decisions regarding the selection, training, and development of individuals' skills and capabilities. Human Resource Accounting provides the necessary information about the cost and value of the human element, helping the organization to base its decisions on a realistic analysis of costs and returns from investing in human resources within the enterprise.

6. Recognition Criteria for Human Assets

Through definitions of Human Resource Accounting, four essential conditions or characteristics can be identified that must be met by any element of production to be considered an asset of the enterprise. Here, we attempt to examine the extent to which these conditions are met by the human element within the organization, in order to recognize it as an asset and deal with it from an accounting perspective.

6.1. Ownership Criterion

Supporters of considering human resources as assets argue that there is a contractual agreement between the enterprise and its human resource, obligating the latter to work for the enterprise throughout the contract period. This contract gives the enterprise the right to replace and change the human resource when necessary and under appropriate conditions. This idea is based on the enterprise's control over this element and its right to manage its various resources and properties as circumstances require. This approach aligns with the definition of economic assets by the American Accounting Association, defining them as economic resources allocated for the enterprise's purposes during a specific accounting period. They are collections of expected future services (Adel Al-SaKer, 2013, p. 176)

This definition does not consider legal ownership as a mandatory condition for an economic resource to be considered an asset of the enterprise. Due to the distinctive characteristics of human resources, which include the three essential elements of ownership:

Possession: The enterprise possesses its human resources for a specified period.

Control: Human resources are under the complete control of the enterprise's management.

Disposition: The ability of the enterprise to manage its human resources includes transferring, promoting, demoting, hiring, and dismissing any individual from its human assets. Therefore, the condition of ownership can be considered fulfilled for human resources.

6.2. Criterion of Productive Capacity

The purpose of acquiring physical assets within the enterprise is to use them in the production process. Undoubtedly, the labour force, as a crucial input in the production process, is among the most important elements. It not only serves as an input but also significantly influences other production elements. Ultimately, human resources contribute to the production of various units within the organization, helping achieve its objectives for which human resources are recruited and utilized in the production process (Khalaf Al-Aybi, 2011, p. 26).

6.3. Criterion of Future Service:

The core essence for any element of an institution to be considered an economic asset is its fulfillment of the following three fundamental conditions:

The element must anticipate future economic benefits for the institution, with human resources possessing the capability to achieve these benefits.

The anticipated benefits from this element must be measurable, as previously mentioned in the ability to measure the benefits resulting from human capital in the institution.

The institution must have the right to possess and own the benefits resulting from this element. This is the primary objective behind the presence of human resources in the institution, thereby fulfilling the criterion of future services in the economic assets of the institution.

6.4. Criterion of Measurability

The element must exhibit the attribute of measurability, which necessitates the presence of three fundamental conditions:

A. The element must possess a measurable attribute, such as cost, value, or the number of employees categorized by their educational qualifications

B. the Selection of the Most Suitable and Important Characteristic for the Use :

The most suitable and important characteristic for the user is typically chosen, often involving cost attribute - accounting processing - in the date of the operation or event, as well as the accounting value characteristic (replacement cost) or the economic value characteristic, in the form of the current value for future benefits anticipated from the available human resources within the organization. In addition, financial measurement can be based on quantitative criteria such as number and qualifications. It is worth noting that disclosure of human resources does not necessarily need to be limited to one characteristic, but can be diverse and thus more suitable. Accordingly, the economic requirements present in human resources to be considered assets from an accounting perspective are met within the institution, thus allowing for the treatment of human resources within the institution and dealing with them accounting-wise as one of its assets.

7. Accounting Measurement Models for Human Resources

Organizational trends in asset management can be divided into two groups as follows:

7.1. First Group:

7.1.1. Historical Cost Model for Human Asset Evaluation

Historical cost refers to the original costs incurred to acquire the asset, including placing it in the appropriate time and place to prepare it for production. This method stands out for its ease of measurement, as accountants assume cash value stability to facilitate measurement processes.

Advocates of this approach argue that when evaluating human assets based on historical cost, the capitalization of expenses related to hiring, selecting, and developing human resources involves calculating the actual costs of these expenses. These costs are considered as capital expenses distributed over the remaining productive life years of

the human assets committed to serving the institution. If any of these assets are disposed of for any reason, the expenses associated with that asset are considered losses, which are reflected in the institution's final accounts.

7.1.2.Replacement Cost Model for Human Asset Evaluation

Supporters of this method, led by Flamholtz in 1971, advocate calculating the cost of hiring, selecting, and developing alternative human resources, including retirement expenses, based on the current market value of human assets. Replacement cost refers to the expenses incurred by an organization to replace human resources with alternatives. There are two types of replacement costs distinguished here:

Functional Replacement Cost: These are the burdens borne by the institution to replace an individual with another who can perform the same tasks and provide the same services associated with a specific job within the institution.

Personal Replacement Cost: These are the burdens borne by the institution to replace one person with another who is capable of providing the same sets of services performed by the current person (Hamada, 2002, p. 155)

7.2.The second group

7.2.1. Alternative Opportunity Cost-Based Human Asset Valuation Model

This concept, advocated by researchers Jaggi and Lau in 1975, seeks to identify the optimal conditions for acquiring human assets in terms of time, effort, money, and adequacy, considering them as alternative costs. Thus, this cost represents a standard for the value of human assets regardless of their specialization, achieved through bidding systems or trading in the human asset market. According to proponents of this approach, the value of human assets is not determined based on their ability to contribute to production, but rather on their serious value in the human resource market .(Belkaoui, 2004, p. 281)

7.2.2.The Model of Human Asset Valuation Based on Salaries and Wages

Another category of specialists advocates for evaluating human assets based on the present value of salaries and wages disbursed to the human resource within the organization until the end of its productive life. This approach relies on a statistical method that categorizes human resources into functionally similar groups (jobs) and efficiency levels, thereby determining the expected net profits to be achieved during the asset's tenure with the organization.

7.2.3.Model of Human Asset Valuation Based on Asset Quality

Supporters of this approach argue that dealing with human assets involves handling assets that differ in nature from other tangible assets within the organization. Unlike other assets that do not undergo behavioural science applications, human assets in the organization are influenced by surrounding factors, interact with them, and their behaviour is driven by specific motives such as work environment, management efficiency, and collective effort. These factors significantly impact the behaviour of the human resource. Therefore, they believe that when measuring human assets, it is essential to consider dealing with diverse wills and large sets of emotions influenced by numerous external factors.

8. Accounting for Human Resources and Implementation Issues

Implementing human resource accounting requires assigning a financial value to individuals, considering them as assets of the organization. This sometimes elicits negative reactions from some individuals within institutions who reject being treated as commodities with financial value. Therefore, it is crucial to consider the ethical aspect in accounting practices when dealing with human resources within the organization (Johanson , 2005, p. 3)

The application of the accounting system in an enterprise requires developing depreciation rates for all assets of the organization. This involves reducing the depreciation rate of assets from its annual profits. For human assets, measuring the depreciation rate is a highly complex process due to the variability in individual contributions. Some individuals may experience declining capabilities and efficiencies over time, leading to their functional depreciation. Conversely, others may increase in capabilities and efficiencies with experience and expertise, thereby increasing their value. Additionally, estimating the depreciation period of human resources within the organization is challenging.

All assets within an organization are owned and utilized by the owning entity in a manner deemed suitable to achieve its objectives. This approach is difficult to apply to human assets unlike tangible assets, as the economic perspective of asset utilization in enterprises, which requires optimal use, does not perfectly align with human resources. Furthermore, the continuous change in personnel composition, their qualities, and turnover rates within the workforce can directly impact their presentation in the financial statements of the organization

9. Case study of East Fabrics Company in Khenchela.

9.1. Using the Schwartz & Lev model.

This model is also known as the compensation model, developed by Schwartz & Lev in the year 1971 (Porwal, 1993, pp. 342-361)

with the derivation of a model for measuring the economic value of human resources by reconciling or combining the concept of human capital as defined by economic experts with accounting logic. The crucial point in this agreement is the ability to distinguish between costs and investments, as well as the ability to measure the acquired value of investing in human resources for a specific organization objectively. This model includes the use of future salaries and wages. To apply this model, the following steps must be followed:

Classify the entire workforce into homogeneous groups.

Calculate the average earnings for each group.

Discount the average income at a predetermined rate.

Aggregate the present value of different groups representing the capitalization of future earnings as a whole .

Accordingly, the value of human capital for an individual of a certain age is the present value of their future income stream derived from their use, expressed in the following model

$$V = \sum_{i=y}^t \frac{I}{(1+r)^{t-i}}$$

V: The value of the human resource to be evaluated

i: The age of the human resource represented by the average age category (Highest age + Lowest age) / 2

t: Retirement age in the institution under study, which is 60 years for men and 55 years for women according to Algerian law.

I: Annual wage rate for the job category during their tenure with the company (Highest wage + Lowest wage) / 2

r: Discount rate for the year 2022 due to absenteeism or any other reason, generally 3% for executives and 2% for workers

9.2. Calculating the economic value of human resources using the Schwartz & Lev model for executive category:

Average age = (Highest age + Lowest age) / 2, which is (22 + 56) / 2 = 39 years

Average wage = (Highest wage + Lowest wage) / 2, which is (61,200.00 + 53,600.00) / 2 = 57,400.00

Retirement age average: [(60 × 9) + (55 × 4)] / 13 = 58 years

Difference between average age and retirement age: 58 – 39 = 19 years

$$V_1 = \sum_{39}^{58} \frac{57.400.00 \times 12 \text{ months} \times 19 \text{ years}}{(1 + 0.03)^{58-39}}$$

= Executive Category Human Resources Value

The total value of human assets in the executive category in the institution:

$V_1 \times \text{number of executives} = V_1 \times 13 \text{ executives}$

Calculating the economic value of human resources in employees category:

Average age = (Highest age + Lowest age) / 2, which is (28 + 58) / 2 = 43 years

Average wages = (Highest wage + Lowest wage) / 2, which is (42,300.00 + 29,050.00) / 2 = 35,675.00

Retirement age calculation: [(60 × 46) + (55 × 81)] / 127 = 57 years

Difference between average age and retirement age: 57 - 43 = 14 years

$$V_2 = \sum_{39}^{58} \frac{35.675.00 \times 12 \text{ months} \times 14 \text{ years}}{(1 + 0.02)^{57-43}}$$

= workers category human resource value

The total value of human assets. The category of workers in the organization: $V_2 \times$
the number of workers = $V_2 \times 127$ workers.

The total economic value of human resources in the institution under study is the sum
of the economic values of both the tire category and the worker category $V = V_1 + V_2$

$$V = \sum_{39}^{58} \frac{57.400.00 \times 12 \text{ months} \times 19 \text{ years}}{(1 + 0.03)^{58-39}} + \sum_{39}^{58} \frac{35.675.00 \times 12 \text{ months} \times 14 \text{ years}}{(1 + 0.02)^{57-43}}$$

We can summarize the previous accounting operations in the table

2022	Number in the sample	Age average	Monthly salary rate	annual salary	The value of one human resource	The total value
Executives	13	39	57.400.00	688.800.00	V1	13V1
Employees	127	43	35.675.00	428.100.00	V2	127V2
Total						13V1+127V2

10. Conclusion

This study aimed to examine the issue of accounting management for human resources in economic enterprises to assess the economic value of human resources. The goal was to explore the transformation of human resource expenses into capital that can yield future benefits, rather than classifying these expenses as economic burdens on the organization.

In addressing the research problem, we explored the concept of measuring human capital and accounting for human resources, its objectives, historical development, and one of the most important accounting measurement models for human resources. We applied this model to one of the Algerian economic enterprises, ultimately arriving at a significant conclusion: it is indeed possible to measure human capital and account for human resources under the accounting standard for intangible assets.

Given the variety of models for measuring and accounting for human resources, each organization seeking to implement accounting management for its human resources should adopt the model best suited to the nature of its human resources. This approach will make the outcomes of human resource accounting management more realistic. Additionally, adopting this approach in Algerian economic enterprises requires precision in information and competence in applying the chosen accounting model to achieve the desired results from the process.

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