

# Application of Human Resource Accounting using the Unpurchased Goodwill Method according to Hermanson's Proposal: A Case Study of Bakkar Electric Poles Company in El Oued

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## Abstract:

The main objective of this study is to measure human resources from the perspective of human resource accounting within economic units in the Algerian context. To achieve the study's objectives and test the hypotheses, we adopted the descriptive-analytical method, relying on books and previous studies for the theoretical part, and on some accounting statements of the Bakkar Electric Poles Company in El Oued (e.g., the balance sheet, income statement, etc.) for the practical part. Human resource accounting was applied to the Bakkar Public Works Company in El Oued for the year 2021 through accounting treatment using Hermanson's proposed unpurchased goodwill model based on the value standard, and the impact of this on the elements of the financial statements was demonstrated. The study concluded that the recognition and accounting measurement of human resources have a clear impact on the financial statements.

**Keywords:** Human Resource Accounting; Unpurchased Goodwill Model; Human Assets.

## Introduction:

Amid the changes in the contemporary labor market environment, the field of human capital and its essential components has become one of the determining tools for the value of business enterprises. This is achieved by measuring and evaluating it in a way that yields both scientific and practical benefits, ultimately enhancing competitiveness in the labor market. Providing information on human capital enables users to assess the efficiency and effectiveness of financial markets. Recently, human resource accounting has garnered significant attention, particularly given the substantial investments in training, development, and qualification processes. The need

has emerged to evaluate and measure these expenditures in the short and long term, and to assess the resulting economic returns and values.

### **1.1. Main Research Question:**

The dimensions of the research problem are centered on the lack of disclosure regarding human resource investment information in the financial reports prepared by Algerian economic institutions. These investments comprise three main components: acquisition costs, development costs, and termination costs. This omission leads to reports that suggest the available resources of the economic unit are only material, ignoring the importance of human resources and their role in optimizing material resources to achieve competitive advantage. Based on this, we propose the following problem statement:

**Can human resource accounting be applied at Bakkar Electric Poles Company in El Oued, and what is its impact on financial statements?**

### **1.2. Sub-questions:**

From the main research question, several sub-questions arise to facilitate addressing the core issue:

- Can human resources be measured using Hermanson's unpurchased goodwill method?
- To what extent does human resource accounting, using the unpurchased goodwill method, affect the values of financial statement elements?

### **1.3. Research Hypotheses:**

As provisional answers to the above questions, we rely on the following hypotheses:

- Human resources can be measured using Hermanson's unpurchased goodwill method.
- Applying human resource accounting according to Hermanson's unpurchased goodwill method leads to changes in some of the values of the financial statement elements of Bakkar Electric Poles Company in El Oued.

### **1.4. Research Importance:**

This study attempts to clarify the contribution of human capital in raising the market value of the institution and to highlight the importance and position that human resources hold for every organization.

### **1.5. Research Objectives:**

This study seeks to achieve the following objectives:

- Demonstrate the importance of human resource accounting and its impact on the value of the institution in light of economic competitiveness.

- Explore key theoretical concepts related to human resource accounting using Hermanson's unpurchased goodwill model.
- Highlight the significant differences between financial statements before and after applying human resource accounting.

### **1.6. Methodology:**

In analyzing and addressing the research problem, this study adopted the descriptive-analytical method and employed a case study approach.

### **1.7. Research Structure:**

This research paper is divided into the following sections:

- General concepts of human resource accounting, where we discuss the definition of human resource accounting, highlight its key models, and compare cost-based models and value-based models.
- The second section is dedicated to the field study, where we introduce the studied company, apply the unpurchased goodwill model within human resource accounting to Bakkar Electric Poles Company in El Oued, and demonstrate its impact on the financial statements.

## **2. General Concepts of Human Resource Accounting**

### **2.1. Definition of Human Resource Accounting:**

Flamholtz (1985) provided a more specific definition of human resource accounting, considering it as the process of measuring the costs incurred by businesses and other organizations to hire, select, train, and develop human assets. This definition emphasizes the need to recognize human resource expenditures for the purpose of evaluation and reporting. In other words, Flamholtz views human resource valuation as the measurement of the economic value of individuals to organizations (M. Ojokuku & S. Oladejo, 2015). The definition of human resource accounting involves determining the value of human resources and knowing how to account for and report them to reflect the true value of human assets. It provides the necessary information to interested parties. Additionally, human resource accounting assesses the status of human resources, measures changes over a certain period, and supplies decision-makers with relevant information about individuals within the organization. Human resource accounting is primarily involved in measuring different aspects of human assets, with its main goal being to facilitate effective management of human resources by providing information on the acquisition, development, retention, use, and evaluation of human resources. Physical assets such as factories, machinery, and buildings are unproductive without human resources, thus emphasizing the importance of treating human resources as an investment in the balance sheet (Jelil, OLOTU, Eunice, OMOJOLA, & Olusola, 2014). The American Accounting Association identified three main objectives for human resource accounting (Salmi, 2022):

- **Measurement:** Estimating the cost and value of human resources using objective methods, models, and standards.
- **Application:** Designing an appropriate accounting system to benefit from established measurements.
- **Social outcomes:** Analyzing the impact of human resource accounting on the organization's human capital in terms of employee attitudes, behaviors, and performance. Thus, human resource accounting contributes to achieving a broader goal: efficient use of available labor.

## 2.2. Key Human Resource Accounting Models:

These models are categorized into cost-based and value-based models, as follows:

### First: Cost-Based Human Resource Accounting Models

- **Historical Cost Model:** The concept of historical cost for human resources is derived from the historical cost principle in accounting, which is defined as the resources expended to obtain expected benefits or services. This theory is based on generally accepted accounting principles. The historical cost of human resources includes investments made by an organization to directly educate its human resources, often in the form of recruitment, selection, training, and workforce development expenses (Mahmoodi, Babae, & Mohamade, 2013). This method was developed by Bromet, Flamholtz, and Pyle in 1967. These costs can be divided into two categories: acquisition costs and learning costs (K S, 2022).
- **Replacement Cost Model:** This model aligns with the historical cost model in terms of the expenses to be capitalized to determine the value of human assets. The difference lies in the fact that the replacement cost model calculates these values using current prices rather than historical prices (Khater, Diab, & Ibrahim, n.d.).
- **Opportunity Cost Model:** This model was first promoted by Kaiman and Jones for companies that have several department heads who bid for the services of various individuals needed by each department, with the bidding price being included in the cost of investment (<https://www.iedunote.com/ar/>, 2024). There is no opportunity cost for non-rare employees, and top-level employees are not available for auction. Thus, only rare individuals should be considered as part of human resource value.

### Second: Human Resource Accounting Models Based on Value

#### 1. Hermanson's Unpurchased Goodwill Model:

This method is based on evaluating extraordinary profits (profits that exceed the normal average) by capitalizing these excess profits and considering them representative of the human resources within the company (Osman Yousef, Hassan Ali, Eldom Adam, & Abkar Adam, 2023).

Hermanson suggests using adjusted compensation to estimate the human value of an employee to

the organization. The future discounted wages are adjusted using an "efficiency ratio" to measure the relative effectiveness of human capital in a specific organization. The efficiency ratio represents the return on investment (ROI) of a specific organization relative to the ROI of all other organizations in the economy over a given period. The efficiency ratio (Bouali & Hiyali, 2015) is calculated as follows:

$$ER = \frac{5 * \frac{RF0}{RE0} + 4 * \frac{RF1}{RE1} + 3 * \frac{RF2}{RE2} + 2 * \frac{RF3}{RE3} + 1 * \frac{RF4}{RE4}}{15}$$

Where:

- **ER** = Efficiency Ratio
- **RF<sub>1</sub>** = Accounting income rate of the company's owned assets in year "1."
- **RE<sub>1</sub>** = Accounting income rate of all assets owned by other organizations in the economy in year "1."
- The years range from 0 to 4, meaning data from five years are used.

This ratio is justified by assuming that differences in the profitability of the organization compared to other organizations are due to differences in the performance of human assets. Therefore, it is necessary to adjust the compensation value using the previously mentioned adjustment factor.

This model has limited advantages because (Kenoshi, 2018):

- It relies on historical data, limiting its usefulness for predictions.
- Even if it relies on forecasted revenue rates, it may not be superior to the forecasted revenues themselves.
- The model assumes that human resources represent all the "non-owned" assets, leaving no room for other non-owned assets or other standards used to account for owned assets according to the organization's records.
- It implicitly assumes a zero value for human resources in other competing companies, as any positive value would require revenues above the average rate.

## 2. Present Value of Future Earnings Model:

Lev & Schwartz developed this model for human resource accounting in 1971. It involves calculating the value of human resources based on the present value of expected future earnings, discounted at the rate of return on investment. This approach is also known as the salary capitalization method (K S, 2022). These earnings represent the price of services that the

employee will provide, compensating for the value of those services. It can be mathematically expressed as follows (Al-Aaraj, 2016):

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

**Where:**

- **V** = Value of the human resource being evaluated.
- **i** = Age of the human resource.
- **t** = Retirement age in the company.
- **I** = Personal earnings of the human resource during the period of service.
- **r** = Discount rate.

**Five Dimensions Model:** This model is based on estimating the workforce in the institution and assessing the costs of various inputs to improve the efficiency of human organization. The human asset dimensions include knowledge, skills, health, abundance, and physical condition (Jmam & Dbach, 2016). It involves using audited regulation estimates and personal evaluations, as well as general observation reports, to assess physical condition. The five-dimensions model is more practical than theoretical, and it can be explained as follows (Lakhsin, 2019/2020):

- **Standard physical condition** = Weighted physical condition score / Physical condition.
- **Physical condition** = Standard physical condition × Annual payments.
- **Net profit** = Physical condition - Annual payments.
- **Profit per human resource** = Total profit / Number of human resources.

Physical condition scores are determined by a balance between leaving and joining the workforce, distributed based on the human resource's status to determine their physical condition. This is calculated by multiplying annual salaries by the physical condition scores of each human resource and the standard condition for the group. The researchers suggest establishing a relationship between physical condition scores and financial returns on salary investments, expressed in terms of profit, loss, and breakeven points. This approach is considered a significant addition from human resource management to the literature on human capital accounting (Hamadeh, 2002).

**3.2. Comparison between Cost Model and Value Model in Human Resource Accounting:** In

general, the key differences between human resource cost accounting and human resource value accounting lie in their objectives, accounting methods, and perspectives. The following table illustrates this:

Differences	Human Resource Cost Accounting	Human Resource Value Accounting
<b>Objective</b>	The primary goal is to meet the needs of external investors, creditors, and government bodies within the institution, as well as serving the employees involved in transaction reporting.	The main goal is to use different accounting measurement methods based on actual internal needs of the institution to support past and ongoing operations.
<b>Accounting Methods</b>	Human resource cost accounting primarily uses statistical data verification, resulting in more scientific and accurate outcomes.	Human resource value accounting involves pre-estimating the human resource value within the institution. The results are uncertain and deviate from traditional accounting principles.
<b>Accounting Principle</b>	Human resource cost accounting starts by considering the company's investment and calculating the capital consumed by employees during their joining, departure, and service, i.e., the human resource cost.	Human resource value accounting starts with the company's output, where the institution estimates the value of human assets based on the services that human resources can provide in the future.

**Source:** Prepared by the researchers.

**3. Field Study**

**1.3 General Introduction to Bakkar Public Works Company in El Oued:** Bakkar Electric Poles Company is a limited liability company headquartered in Al-Kawthar, Bayadha, El Oued Province, with its operational base located in the Industrial Zone of Wadi Alanda, El Oued Province. It operates in the production of electric poles and was established in 2016 with a social capital of 50,000,000.00 DZD and an area of 125/160 m<sup>2</sup>. As of August 6, 2020, the company had 120 employees and operates nationwide, focusing mainly on the southeastern part of the country. The Electric Poles Unit was established as a subsidiary of Bakkar Companies in 2016 and was officially inaugurated by the Minister of Interior during his official visit to El Oued in January 2017. The company strives to provide high-quality products, seeking to enrich the national market and achieve a prominent position. As part of its expanding activities, the company has several projects under construction and study at different stages, including:

- Precast electrical concrete rooms.

- Construction of concrete rooms for telecommunications.
- Precast concrete poles for telecommunications (telephone lines).
- Various underground telecommunication chambers.
- Various ready-made electrical conduits.

**Company Objectives:** Bakkar Electric Poles Company, like any other company, aims to achieve several objectives, most notably:

- Controlling the market through its produced materials with a focus on marketing.
- Rationalizing the use of human resources and refocusing on core tasks.
- Increasing the company's capital, expanding its operations, and competing with other economic institutions.
- Ensuring an acceptable level of wages for its employees, as the company sees them as one of the main beneficiaries of its activities.

### **2.3 Human Resource Accounting at Bakkar Company in El Oued using Hermanson's Unpurchased Goodwill Model (2021):** There are three steps to calculating this value.

**Step One:** Calculating the undiscounted value of future wages.

In this step, we calculate the present value of wage payments for human resources over five years, assuming a discount rate of 6% based on previous studies relevant to the Algerian environment, as shown in the table below (in Algerian dinars):

<b>Year</b>	<b>Wage Amount (DZD)</b>	<b>Present Value at 6%</b>	<b>Total Present Value</b>
1	80,000	0.934	74,720
2	100,000	0.890	89,000
3	120,000	0.840	100,800
4	140,000	0.792	110,880
5	150,000	0.747	112,050
<b>Total</b>	<b>590,000</b>	-	<b>487,450</b>

**Source:** Prepared by the researchers based on the company accountant's report.

From the table above, we can see that the present value of future wages amounts to 487,450 DZD according to Hermanson's proposal.

**Step Two:** Calculating the efficiency ratio.

**Due to the unavailability of most data and information, assumptions were made.**

Based on simulations of other studies that share a similar environment to Algeria, we assumed that the accounting income rate for the company's owned assets over the past five years was as follows:

- Year 5 = 10
- Year 4 = 12
- Year 3 = 14
- Year 2 = 15.5
- Year 1 = 17

The income rate for the assets owned by all companies in the same sector was:

- Year 5 = 9
- Year 4 = 10
- Year 3 = 10.5
- Year 2 = 11
- Year 1 = 13

Using the efficiency ratio formula, we calculate the efficiency ratio (ER) as follows:

$$ER = \frac{5 * \frac{10}{9} + 4 * \frac{12}{10} + 3 * \frac{14}{10.5} + 2 * \frac{15.5}{11} + 1 * \frac{17}{13}}{15} = \frac{18.48}{15} = 1.2$$

This indicates that the human resources in these companies generate profits 1.2 times higher compared to other companies in the overall economy.

**Step Three: Adjusting the discounted future wages by the efficiency ratio**

In this step, we adjust the discounted future wages by multiplying the total present value of wage payments for human resources by the efficiency ratio, which is 1.2. This gives us the human resource value in the company: **584,940** = 1.2 × 487,450 **dz**, This is the value of the human resources under this model.

After calculating the value of human resources using Hermanson's method, which benefits from five wages, we divide this value by 5, which equals **116,988 DZD**, and then multiply it by 12 months to find the annual value of the human asset: **1.403.856** = 12 × 116988.

Next, we multiply this result by the number of the company's executives, which is 18 for the year 2021:  $1,403,856 \times 18 = 25,269,408$  DZD

Thus, the total value of human resources for Bakkar Company in 2021 is **25,269,408 DZD**.

### 3.3 Recognition and Accounting Measurement of Human Resources at the Company using Hermanson's Unpurchased Goodwill Model (2021)

#### First: Accounting Entry for the Value of Human Assets

It is known that human assets fall under intangible assets, and therefore, they can be included in account 208 as "Human Assets" on the debit side. On the credit side, we propose to record it under capital for the following reasons:

- Human assets are one of the company's resources, and any increase in their value will be added to capital.
- Human resources, when considered an asset based on the expectation of economic benefit, will increase the capital value, thus protecting the company from losses and depreciation.
- Algerian company law has amended shareholder contributions, allowing the effort of human resources to be considered part of capital.

Therefore, the following accounting entry can be recorded:

**Table (3): Accounting Treatment According to Hermanson's Unpurchased Goodwill Model for Human Resource Accounting**

Debit Account	Credit Account	Description	Debit Amount	Credit Amount
2080		Human Assets	25,269,408.00	
	101	Capital		25,269,408.00
		Recording human assets for 2021		

**Source:** Prepared by the researchers.

#### Second: Recording Impairment Losses for Human Resources

Considering human resources as an asset of the company, without any material cash flows, does not allow us to amortize their value in regular installments. However, in case of a decrease in their value for any reason, we record an impairment loss, and conversely, an increase in value would be recorded as an increase in capital.

Assuming that a decline in human resource value occurred due to the following reasons:

**Table (4): Reasons for the Decline in Human Resource Value in 2021**

Reasons	Number of Executives
COVID-19	2
Resignations	3
<b>Total</b>	<b>5</b>

**Source:** According to the HR department head.

Thus, the expected loss in human resource value for 2021 equals the human resource value multiplied by the number of human resources lost:  $1,403,856 \times 5 = 7,019,280$  DZD

The accounting entry is as follows:

**Table (5): Accounting Treatment for Impairment Losses of Human Assets according to Hermanson's Unpurchased Goodwill Model**

Debit Account	Credit Account	Description	Debit Amount	Credit Amount
681		Provisions for Depreciation and Impairment Losses	7,019,280	
	2980	Human Asset Impairment Losses		7,019,280
		Recording impairment losses for human assets		

**Source:** Prepared by the researchers.

### **Third: Changes in the Values of Financial Statement Elements after Applying Hermanson's Unpurchased Goodwill Model**

After applying the accounting treatment according to Hermanson's Unpurchased Goodwill Model, several changes were observed in the values of the financial statement elements (balance sheet and income statement) for Bakkar Electric Poles Company in El Oued, as follows:

#### **Changes in the Balance Sheet:**

**Table (6): Balance Sheet before and after Applying the Unpurchased Goodwill Model in 2021**

Assets	Net Amounts Before Applying the Model	Net Amounts After Applying the Model	Change Percentage %
Human Assets	-	18,250,128.00	+100
Total Non-Current Assets	418,720,773.26	436,970,901.26	+4.17
Total Assets	1,036,556,586.79	1,054,806,714.79	+1.73

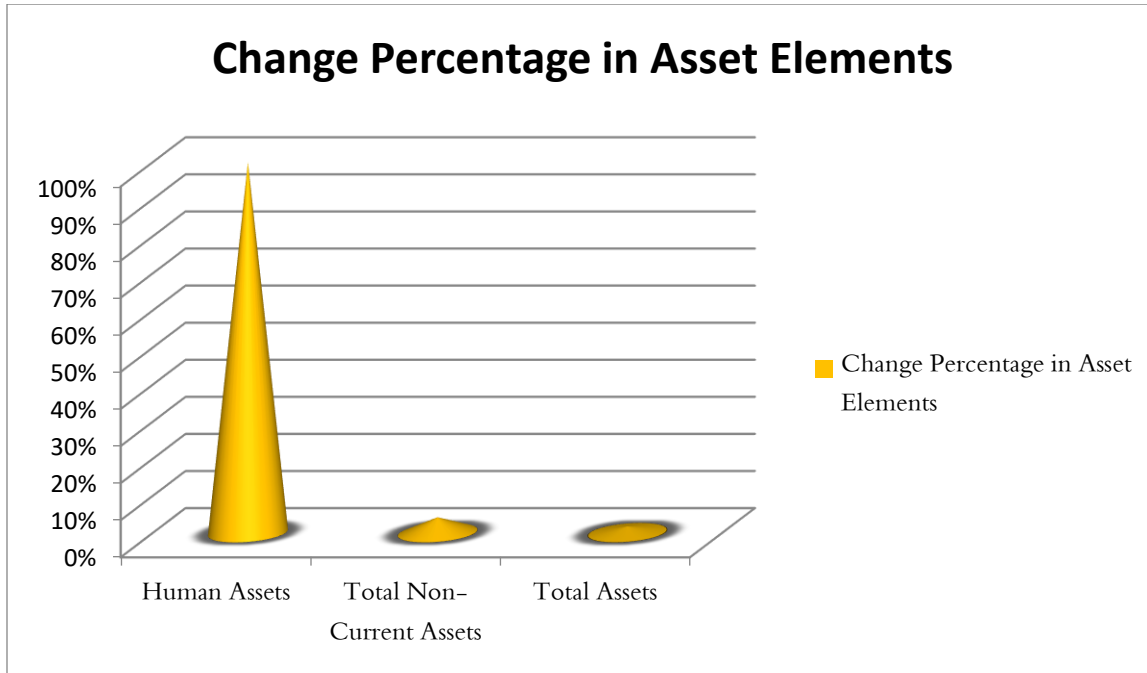
**Source:** Prepared by the researchers.

From Table (6) above, we observe a clear change in the balance sheet with an increase in non-current assets by **18,250,128.00 DZD** due to the addition of a new item, **human assets**, of the same value. This represents the net balance of human assets after deducting the impairment losses, estimated at **7,019,280.00 DZD**. This change results from using Hermanson's Unpurchased Goodwill Model and is the only alteration in asset elements.

Similarly, liabilities also increased by the same value, i.e., **18,250,128.00 DZD**, due to changes in equity, specifically an increase in capital contributions representing human effort, amounting to **25,269,408.00 DZD**, which is the total value of human assets. The net result decreased significantly from **60,575,741.41 DZD** to **53,556,461.41 DZD** due to the increase in expenses related to human asset impairment losses.

**a. Change in Assets:** From the chart below, we note that human assets increased by **100%** because they were not previously included in the asset side. Meanwhile, total non-current assets increased by a relatively small percentage of **4.17%**, leading to a **1.73%** rise in total assets.

**Figure (1): Percentage Change in Assets after Applying the Unpurchased Goodwill Model in 2021**

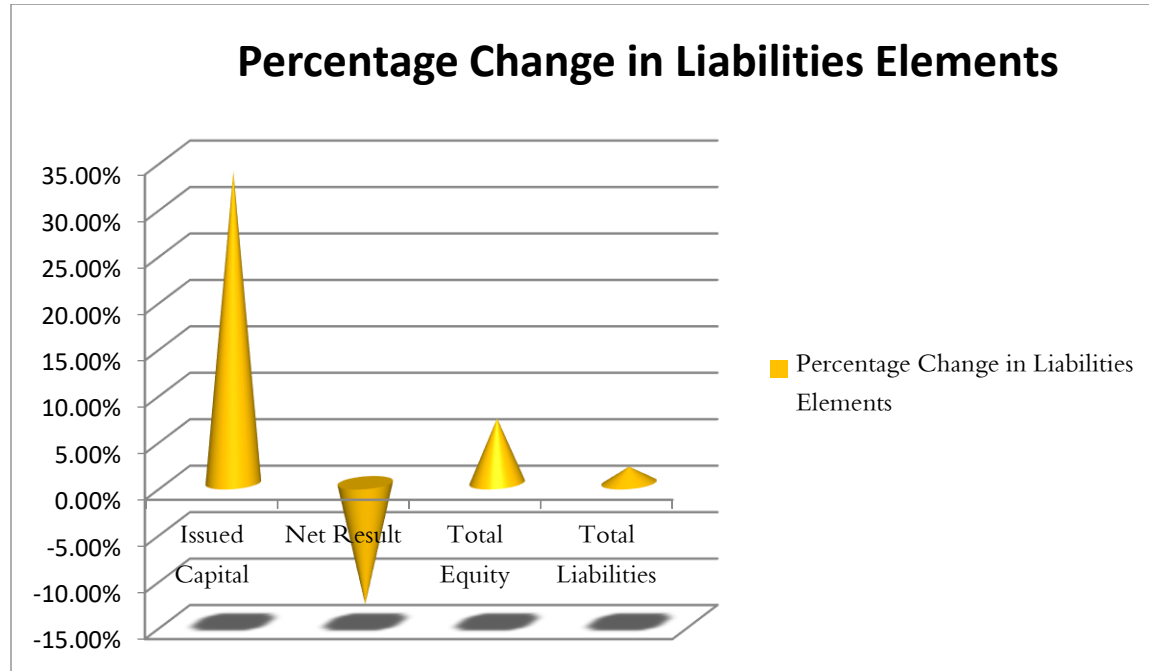


**Source:** Prepared by the researchers based on the above table and using Excel.

**b. Change in Liabilities:**

From the chart (Figure 2), it shows that the issued capital increased significantly by **33.57%** due to the inclusion of human assets in the asset side, with a corresponding increase in the liabilities side as additional capital contributions. On the other hand, the net result decreased as a consequence of including the human assets, with a reduction of **13.10%**, attributed to provisions and impairment losses from the decline in the value of human resources. Equity increased by **6.93%**, which also contributed to a rise in the total liabilities by **1.73%**.

**Figure (2): Percentage Change in Liabilities after Applying the Unpurchased Goodwill Model in 2021**



**Source:** Prepared by the researchers based on the above table and using Excel.

**2. Change in the Income Statement: Table (8): Income Statement after Applying the Unpurchased Goodwill Model for 2021**

Statement	Net Amounts Before Applying the Model	Net Amounts After Applying the Model	Change Percentage %
Depreciation and Provisions	43,458,556.72	50,477,836.72	+13.90
Operating Result	60,669,874.56	53,650,594.56	-13.08
Ordinary Result Before Taxes	60,575,741.41	53,556,461.41	-13.10
Net Result from Ordinary Activities	60,575,741.41	53,556,461.41	-13.10
Net Result for the Year	60,575,741.41	53,556,461.41	-13.10

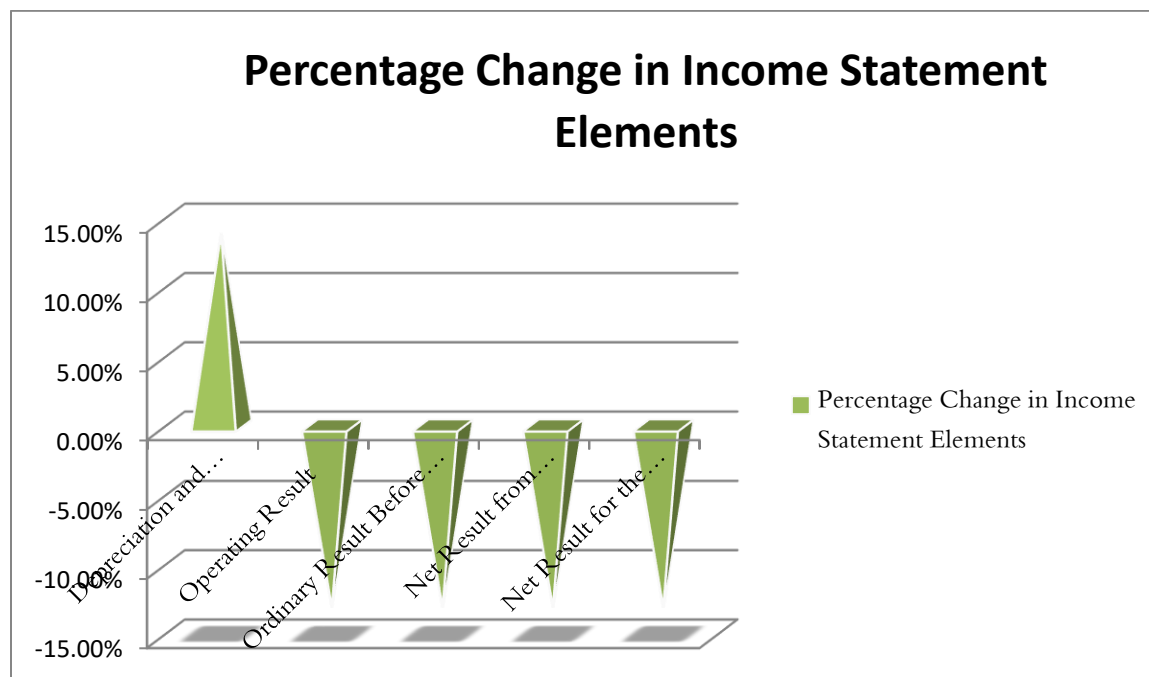
**Source:** Prepared by the researchers.

From Table (8) above, we observe that the change in the income statement affected one element with an increase: the depreciation and provisions, which rose by **7,019,280.00 DZD**, representing the

impairment loss of human assets. This affected the operating result, reducing it by the same value, which also led to a decrease in the ordinary result before taxes and the net result for the financial year by the same amount.

The chart below shows the visible change in some items of the income statement. The provisions and impairment losses increased by **13.90%** due to the decline in human asset value, which was recorded as an expense and provision. Meanwhile, the other affected items experienced a decrease by **13.10%**, reflecting the significance of human resources and their impact on the income statement.

**Figure (2): Percentage Change in the Income Statement after Applying the Unpurchased Goodwill Model for 2021**



**Source:** Prepared by the researchers based on the above table and using Excel.

**4. Conclusion:**

The recent focus on human resource accounting represents a revival of a long-standing, albeit often dormant, discussion rather than a new controversy. Economists' reservations regarding the treatment of humans as assets, which are viewed as unethical or at least impractical, have left the topic stagnant for many years. These reservations, expressed within neoclassical economics, are likely to continue limiting the effects of human resource accounting to internal reporting purposes rather than external ones. To encourage the evaluation of human resource accounting in every organization, there needs to be a globally accepted evaluation method that addresses previously discussed issues. Through our applied study, which relied on a case study of Bakkar Company in the El Oued province to obtain more realistic results regarding the study topic "Application of Human Resource Accounting using Hermanson's

Unpurchased Goodwill Method," the model was applied based on the economic value standard. The study reached the following conclusions:

- It is very possible to apply many asset characteristics to human resources.
- Accounting disclosure of human capital plays a significant role in achieving job satisfaction for employees by helping them understand their role in the development of the organization and in achieving its various goals.
- Accounting measurement and recognition of human resources create significant changes in the financial statements of the institution.
- The financial statements of Bakkar Electric Poles Company in El Oued are far removed from human resource accounting, and the human element is not disclosed in accounting except for acquisition costs or wages.
- The value of the human element for the company is represented by the present value of the future services expected to be provided during the period the employee is expected to remain with the company. Recognizing the human resource using the unpurchased goodwill method increases the value of assets from **1,036,556,586.79 DZD** to **1,048,606,350.79 DZD**, and decreases the final result for the year 2021 from **60,575,741.41 DZD** to **50,631,761.41 DZD**. Thus, the results of the second method followed to calculate the value of the human asset using the unpurchased goodwill method remain hypothetical, with the possibility of being correct or incorrect.
- Although the unpurchased goodwill method provides a value for human resources, it does not represent the true value of human resources and overlooks other assets that impact the economic value of the institution.

Based on the findings, the study recommends that it is necessary to provide sufficient and transparent information about employees regularly in reports, including data on employee turnover, numbers, specialties, and experience. Specialists must consider human resource accounting and the benefits it brings to both the organization and its employees. Furthermore, it is necessary to issue an accounting standard that outlines how to include human resource accounting in financial statements and to require institutions to adopt it to bridge the gap between market value and book value, especially for institutions that heavily rely on human resources.

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## 6. Appendices:

Appendix 01:

<b>Statement</b>	<b>Net Amounts Before Applying the Model</b>	<b>Net Amounts After Applying the Model</b>	<b>Recorded Differences</b>	<b>Change Percentage %</b>
Human Assets	-	18,250,128.00	+18,250,128.00	+100
Intangible Assets	362,898.67	362,898.67	-	No Effect
Other Fixed Assets	411,251,501.69	411,251,501.69	-	No Effect
Financial Assets	0.00	0.00	-	No Effect
Loans and Other Non-Current Financial Assets	7,106,372.90	7,106,372.90	-	No Effect
Total Non-Current Assets	418,720,773.26	436,970,901.26	+18,250,128.00	+4.17
Current Customers	56,319,944.91	56,319,944.91	-	No Effect
Current Inventories	234,200,219.65	234,200,219.65	-	No Effect
Other Debtors	65,512,585.25	65,512,585.25	-	No Effect
Taxes and Similar Liabilities	0.00	0.00	-	No Effect
Treasury	261,803,063.72	261,803,063.72	-	No Effect
Total Current Assets	617,835,813.53	617,835,813.53	-	No Effect
Total Assets	1,036,556,586.79	1,054,806,714.79	+18,250,128.00	+1.73

## Appendix 02:

<b>Statement</b>	<b>Amounts Before Applying the Model</b>	<b>Amounts After Applying the Model</b>	<b>Recorded Differences</b>	<b>Change Percentage %</b>
Turnover	682,927,119.23	682,927,119.23	-	No Effect
Changes in Stock of Finished and In-Process Goods	69,584,400.00	69,584,400.00	-	No Effect
Financial Year Production	752,511,519.23	752,511,519.23	-	No Effect

Statement	Amounts Before Applying the Model	Amounts After Applying the Model	Recorded Differences	Change Percentage %
Consumed Purchases	498,229,666.20	498,229,666.20	-	No Effect
External Services and Other Consumptions	113,801,722.31	113,801,722.31	-	No Effect
Financial Year Depreciation	612,031,388.51	612,031,388.51	-	No Effect
Gross Operating Margin	140,480,130.72	140,480,130.72	-	No Effect
Employee Expenses	36,509,469.60	36,509,469.60	-	No Effect
Taxes and Similar Payments	140,327.39	140,327.39	-	No Effect
Total Operating Surplus	103,830,333.73	103,830,333.73	-	No Effect
Operating Products	298,454.55	298,454.55	-	No Effect
Other Operating Expenses	357.00	357.00	-	No Effect
Depreciation and Provisions	43,458,556.72	50,477,836.72	+7,019,280.00	+13.90
Operating Result	60,669,874.56	53,650,594.56	-7,019,280.00	-13.08
Financial Products	688,602.07	688,602.07	-	No Effect
Financial Expenses	782,735.22	782,735.22	-	No Effect
Ordinary Result Before Taxes	60,575,741.41	53,556,461.41	-7,019,280.00	-13.10
Net Result from Ordinary Activities	60,575,741.41	53,556,461.41	-7,019,280.00	-13.10
Net Result for the Financial Year	60,575,741.41	53,556,461.41	-7,019,280.00	-13.10