Obstacles of applying human resources accounting in North African countries: A comparative study between Algeria, Tunisia, and Morocco

معوقات تطبيق محاسبة الموارد البشرية في دول شمال إفريقيا: دراسة مقارنة بين الجزائر، تونس والمغرب.

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Abstract:

This study aims at shedding light on the concept of human resources accounting HRA, its horizons, and obstacles in the economic institutions due to the special costs that give it an accounting particularity in processing the assets. In this frame, we shall focus on the obstacles of the application of HRA in North African countries through a field study conducted on a group of companies working in North Africa. To reach the study objectives, we relied on the analytical descriptive method and a questionnaire for data collection. The study sample included 90 members. We used SPSS for data analysis with reliance on arithmetic means and the other statistical styles. Findings show that: there is no consensus about the accounting processing of HR under study. Moreover, there are obstacles that face the application of HRA in North Africa.

In the end, the study recommends a deep focus on the obstacles of the application of HRA in the under study companies in particular in order to reach high efficiency and effectiveness in HRA in the North African companies in general.

Key words: HRA; measures of accounting measurement; accounting disclosure; obstacles of HRA

ملخص:

هدفت هذه الدراسة إلى التعرف على مفهوم محاسبة الموارد البشرية ومعرفة آفاقها ومعوقاتها في المؤسسات الاقتصادية، نظرا لما يرتبط بها من تكاليف خاصة تجعل لها خصوصية محاسبية في معالجة أصولها، وفي هذا الإطار يقدم البحث "**معوقات تطبيق محاسبة الموارد البشرية في دول شمال إفريقيا**" من خلال دراسة ميدانية على مجموعة من المؤسسات الناشطة في دول شمال إفريقيا، ولتحقيق أهداف الدراسة تم الاعتماد على المنهج الوصفي التحليلي وتصميم وتطوير استبانة لغرض جمع البيانات من أفراد عينة الدراسة، والتي بلغ تعدادها 90 مفردة، تم استخدام البرنامج الإحصائي للعلوم الاجتماعية (SPSS) لتحليل بيانات الاستبيان، اعتمادا على المتوسطات الحسابية وغيرها من الأساليب الإحصائية، وقد توصلت الدراسة إلى أنه لا يوجد اتفاق حول المعالجة المحاسبية للموارد البشرية بين الدول محل الدراسة، كما أن هناك معوقات تواجه تطبيق محاسبة الموارد البشرية في دول شمال إفريقيا.

تقترح هذه الدراسة في الأخير ضرورة تعميق الاهتمام بمعوقات تطبيق محاسبة الموارد البشرية في المؤسسات محل الدراسة على وجه الخصوص وذلك لتحقيق الكفاءة والفعالية لمحاسبة الموارد البشرية في مؤسسات دول شمال إفريقيا على الوجه العام.

الكلمات المفتاحية: محاسبة الموارد البشرية، أساليب القياس المحاسبي، الإفصاح المحاسبي، معوقات محاسبة الموارد البشرية.

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1- Introduction and statement of the problem:

Many developed economies face core changes. In this context, the human capital became a source for services more than for material products. This change has started after WWII and had a clear impact on the structure of the labor force. In the present time, the society is adopting a knowledge-based economy which makes the success of any company based on the efficiency and effectiveness of the human capital. Thus, the companies spend huge amounts in attracting and selecting the employees mainly with the technological advance which increases the need for competent and qualified labor force that can optimally manage and employ technology for the company's objectives. The human capital became a part of the company's assets. Thus, the HRA appeared and is applied to get information that determine and measure the various costs of the human resource HR. Moreover, it evaluates and discloses this information in the financial lists according to the accounting system. However, HRA faces some obstacles when applied mainly in the developing economies such as in North Africa. Thus, we find ourselves obliged to grapple with a paramount problematic that is:

To what extent is HRA applied in the North African companies?

To answer this question, we raise sub-questions that are:

- What are the most important concepts related to HRA?

- What are the styles of HR measurement?

- What are the obstacles that face the application of HRA in North African companies?

Hypotheses:

We relied on two hypotheses:

- There is no consensus about the rules and principles of the accounting processing of HR in North Africa.

- There are obstacles that face the application of HRA in North Africa.

Importance of the study:

The importance of the study lies within the fact that it dales with a contemporary accounting topic. It is an attempt to answer some questions in the field of HRA in the light of the contemporary accounting expansion of the companies and the need for providing and developing systems of measuring and analyzing the financial lists that include HRA. Moreover, the study shows the main obstacles that face this accounting. Furthermore, it draws its importance from the position of the HR in any company thanks to their skills and experiences.

Aims of the study:

- It shows the general framework of HRA in North Africa mainly after the last accounting reforms.

- It shows the various styles of measuring the costs and value of HR.

- It shows the main obstacles facing the application of HRA in North Africa.

Method of the study:

To study the concepts related to HRA, we used the analytical descriptive method. Moreover, we used a questionnaire for data collection from a group of North African economic companies in order to find their opinions about the topic. Furthermore, we tested the hypotheses with SPSS.

Spatio-temporal limitations of the study:

- Spatial limitations: The study was carried out on many companies from North Africa (Algeria, Tunisia, and Morocco).

- Temporal limitations: The study was carried out during 2018-2022.

Literature review:

Study	Aim	Findings
1- Hussein Abdul Jalil Al Ghazawi "al mashakil al mohassabia al moassira" (contemporary accounting issues). It is a PhD thesis.	The study aimed at shedding light on the importance of measuring and analyzing the productivity of the HR through HRA in companies, and the ways of HRA measurement	The author found that HRA is the process of determining and analyzing the information related to the HR, and communicating the information to the concerned parts. Moreover, it uses many ways to measure and disclose the future benefits quantitatively in the financial statements of HR.
2- Nour el Houda Haddad, "Muhassabat al mawarid al basharia min mandhur al qyas wal ifsah wa tatbiqatuha fil moassassat al jazairia" (HRA from the perspective of measurement and disclosure and its applications in the Algerian companies" PhD thesis in commercial sciences, major of accounting and audit, University of Setif 2015.	The study aims at shedding light on the nature of HRA, the models and ways of HRA measurement, the importance of recognizing the HR as one of the assets, and the ability of applying HRA in the Algerian companies.	The author found that the accountants in Algeria recognize the necessity of improving the quality of the disclosed information and that the accounting system in Algeria allows applying HRA. Moreover, we can apply HRA in the light of the international accounting standard 38 on the immaterial assets.

3- Ismail Sebti & Faiza Mahkab "Dawr nidham al maalumat al muhassabia fi qyas taklufat al mawarid al basharia" (The role of accounting systems in measuring the costs of HR), the 5th national meeting on HR management on 23-24 February 2016.	The study aims at showing the importance of HR inside the Algerian companies, and the role of the accounting information system in reaching an exact accounting measurement.	The authors found that HRA plays a key role in the organization, in the transparency of the process of the related employment activities, and the disclosure of the financial information through the application of its procedures thoroughly and correctly. On the other hand, the Algerian companies face some difficulties in the procedures of the application of HRA with a big contradiction between the accounting and fiscal rights.

Similarities and differences:

Study	Similarities	Differences
1- Hussein Abdul Jalil Al Ghazawi	It tackles the concepts related to the HR costs and how to register them in an accounting way.	Did not tackle the obstacles of the application of HRA.
2- Nour el Houda Haddad	It tackles general concepts related to HRA and its definition, measurement, and disclosure.	It did not focus on the obstacles of the application of HRA.
3- Ismail Sebti & Faiza Mahkab	It tackles HRA and its main obstacles.	It focused on the information accounting system of the HR.

2- Axes of the study:

The study has been conducted through the discussion and analysis of the following points:

- Introduction and statement of the problem

- The theoretical part.

- The practical part

- Conclusion

First: the theoretical part

In this part, we provide the necessary definitions about the study variables. Moreover, we shed light on the main obstacles that hinder the new application of HRA, and on the consequences.

1. The modern definition of HRA:

The American Accounting Association (1973) defined HRA as the process of determining and measuring the data related to HR and communicating them to the concerned parts[1]. Moreover, Flamholtz sees that it is the costs of selecting, appointing, developing, and administering the human assets, and the measurement of the economic value of the individuals inside the project[2]. In addition, Brumt believes that it is a dynamic process of measurement of the human element in the organization, and the making of the necessary reports[3]. Besides, Einthoven sees HRA as determining and measuring the investment in the human element and it activities[4]. In addition, HR is defined as evaluating the state of the HR and making reports about them in the company, and measuring their changes during a given period[5].

From these definitions, we can say that HRA is a branch of accounting. It works to measure the value and costs of HR through different styles[6], and shows how to process them in an accounting manner. Then, it communicates the information to the concerned parts to help the higher administration take the necessary decision.

2- Obstacles of applying HRA:

The problems of measurement faced by the accountant in the field of HR manifest in two aspects:

- The problems related to measuring the costs of investment in these resources and how to employ them all along the consecutive financial periods[7].

- The problems related to the evaluation of these resources in the economic concept of the value[8].

When the decision to present the value of the human assets in the financial lists is taken, the accountant faces 5 main problems that must be solved:

2.1 The capitalization of HR: the costs of HR must be classified into assets and expenditures. The main criterion to distinguish the asset from the expenditure is the expected services from the expenditure in the future. The cost is taken as expenditure in the period it achieves its benefits. Then, if the benefits of the cost last many years, it is taken as an asset[9].

2.2. Depletion of the HR: When the human assets are capitalized and considered as an asset, the problem becomes measuring the percentage from the value of the asset that will be consumed during the accounting period[10].

Undoubtedly, some human assets have a service that equals the period the individual spends in the service of the company. The other assets' period of service may equal the individual's period in a given position in the company. A third group equals the period of technology they master, i.e. if they do not master a new technology that appears, their value as a human asset will be depleted. For instance, the costs of training an engineer to work in controlling the quality may be valueless if it moves to working in marketing.

2.3 Settling human assets accounts: Despite that depletion is the main way to change the costs of the human assets into an expenditure, there are some conditions that lead to settling and adapting the value of these assets such as when excluding a value of human assets due to the employee turnover or change in the estimations of the productive age of the human asset. The employee turnover happens selectively, due to phase out, firing, etc. In any of these cases, the value of the undepleted balance of the human asset is dealt with as a loss in the period in which it happened. The estimative productive age of the human asset changes according to different factors[11] such as the health condition, early retirement, technological illiteracy, etc. All these factors lead to the shortness of the productive age of the human asset. In case of a material change that affects the expected productive age of the asset, its value must be settled. In this case, we use the same way used in settling the value of the other assets.

2.4 Presenting the HR data in the financial lists: Among the problems that face the presentation of the human assets in the financial lists, we find the probabilities of the employee turnover. The individuals are not the property of the company. Despite that some companies oblige the employees to sign contracts that limit their movement such as the sport clubs that have the right to buy, sell, or exchange the contracts of the individuals, they still have a relative freedom in leaving the company without its approval in most cases. Thus, there is still a case of uncertainty about the period of benefitting of the future services of the humans.

2.5 Gains Manipulation: There is a probability that the administration makes HRA a pretext to manipulate the gains and affect the net income. There are some accountants that see it is necessary to change the moral assets such as the human resources into an expenditure in the period of their occurrence regardless the expected future benefits due to the increase of the certainty cases about the probability of achieving these future benefits and because their capitalization is just a form of manipulation in the gains[12].

Figure 01: Obstacles of HRA
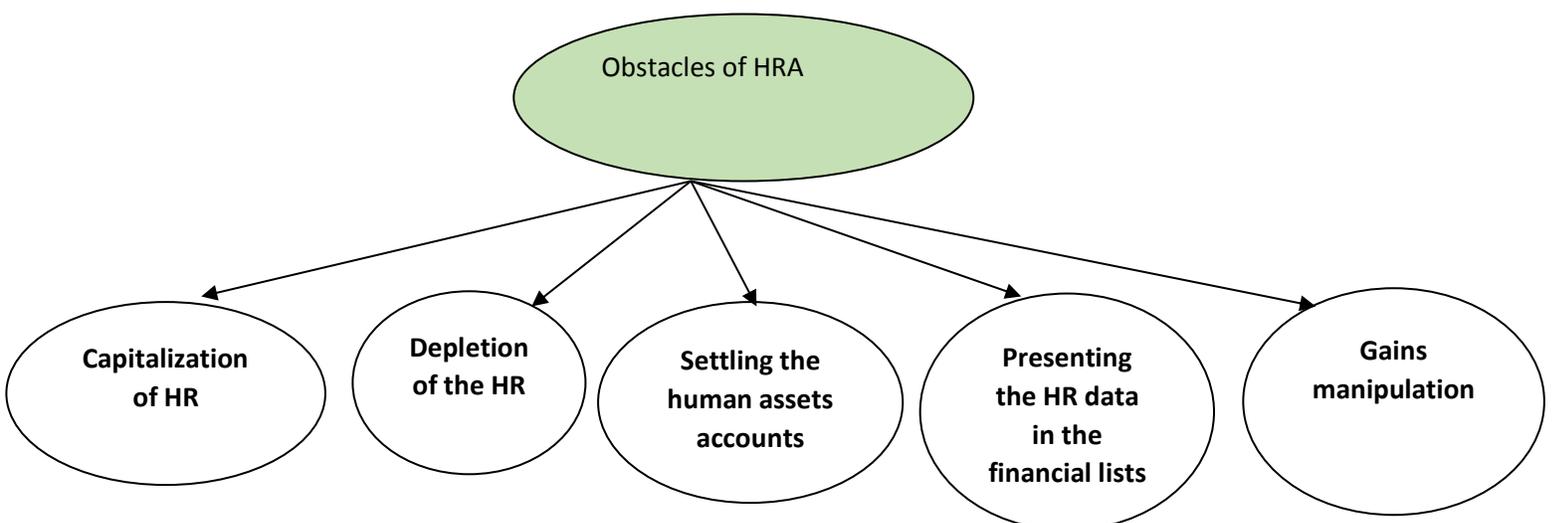
Source: prepared by the author

2. The practical part

In this part, we shall test the hypotheses and analyze and compare the results obtained from the companies under study.

1. Presentation of the questionnaire:

We shall discuss how we made the questionnaire and present its structure that is made up of different domains. Then, we shall present the study sample and the population of the study. Finally, we shall provide the limitations of the study and the problems we faced when distributing the questionnaire. We took into consideration:

- The simple style and comprehensible language so that the informant does not find any difficulty ;

- Gradation in the questions;

- Briefness in formulating the questions so that the informant does not get bored.

1.1 Structure of the questionnaire:

The questionnaire has been divided into 03 axes that are:

- Axis one: It contains 05 statements related to the demographic information of the study sample (gender, age, educational level, experience, and specialty).

- Axis two: It contains 13 statements related to the principles and rules of applying HRA in the North African companies. We tackled the information related to HRA regarding the duties, principles, efficiency of the accounting system in giving suitable information for the recognition of the HR as an asset in the company.

- Axis three: It includes 13 statements related to the obstacles that face the application of HRA in North Africa. We tackled the obstacles the company faces when recognizing the HR as an asset such as the difficulty of knowing the value of the HR inside the company as it is one of the factors that contribute to the success of the company, the difficulty of the company in measuring its investments in HR, etc.

We used Likert 05 points scale (strongly agree, agree, neutral, disagree, and strongly disagree). Each answer has been given a degree as shown in table 01:

Table 01: The degrees of Likert scale and the weighted average

The division of the agreement range on the number of the categories of Likert scale:

m 5-1/5=0.8.

No°	Category range (agreement range =0.8)	Degree of agreement
1	Less than 1.8	Strongly disagree
2	1.81.2.60	Disagree
3	2.61-3.40	Neutral
4	3.41-4.20	Agree
5	4.21-5.4	Strongly agree

Source: prepared by the author based on Likert 05 points scale

1.3 Sample and population of the Study:

    We devoted this section to discuss the population of the study and the target sample to represent this population. Moreover, we show the number of the questionnaires and how they were distributed. Through the study topic, we see that the population of the study is the companies working in Algeria, Tunisia, and Morocco. These companies have different activities and have been chosen to study the reality of HRA thoroughly in various sectors. The study sample can be presented in table 02:

Table 02: The distribution of the sample according to the countries of the companies under study

	Tunisia	Morocco	Algeria	North African countries
Sample	37	33	35	105
Collected	31	30	34	95
Percentage	83,78%	% 90,90	% 97,14	% 90,47
Respondents (size of the sample)	30	30	30	% 85,71

Source: prepared by the author

    Despite the big difficulties we faced in distributing and collecting the questionnaires, mainly in Morocco, we collected 95 questionnaires which give a percentage of 90.47% which is a good percentage that shows the interest of the individuals of the sample in the topic of the study. The percentages of responsiveness was 97 .14% in Algeria, 90.90% in Morocco, and 83.78% in Tunisia. For a fair and just study, we took 90 questionnaires from the collected ones (30 from Algeria, 30 from Morocco, and 30 from Tunisia) for analysis and study

1.4 The study tools and the statistical styles used:

    The process of data collection was based on a set of tools that help the process of data collection to test the study hypotheses. The tools include:

- The questionnaire:

In order to achieve the study goals, we use SPSS25 for data analysis through:

- Cronbach's Alpha test to know the consistency of the study tool and the validity of the views of the sample.

- The percentages and relative importance.

- Arithmetic means and standard deviations to know the average of the views of the study sample and the extent of the deviation of the answers from the hypotheses.

- T test, variation and deviation tests, and regression equation.

- Excel for the presenting the graphs.

1.5 Analysis of the questionnaire:

We shall analyze, here, the obtained results after collecting the questionnaires. We shall rely on tables, graphs, and other indices with the help of SPSS. The analysis will be built on the 5 domains of the questionnaire.

Afar data collection, we analyzed them with SPSS25. Before making the necessary tests to achieve the goals of the research, we calculated Cronbach's Alpha for the consistency of the used tool and for making sure that it really measures what it has been designed for. We must note that Cronbach's Alpha is an index used to measure the consistency of the tool, i.e., the correlation between the questions of the questionnaire. In case of applying the questionnaire in similar circumstances, we shall get similar results or conclusions (we do not mean complete similarity).

Results of Cronbach's Alpha are shown in table 03.

Table 03: Consistency coefficient:

Statements	Rules and principles of HRA	Obstacles of applying HRA
Statements	13	13
Cronbach's Alpha	0.78	0.75

Source: the outcomes of SPSS based on the answers of the sample of the study.

Table 03 shows that the value of Cronbach's Alpha coefficient exceeded 0.7 in all the axes. This explains the consistency of the scale and the statements of each axis.

2. Analysis and comparison of the results of the field study in all the countries under study:

In order to compare the obstacles of applying HRA in North Africa, we analyzed and compared the obtained results of each statement separately for the 3 countries. This is through presenting the answers of the questionnaire according to the agreement degrees shown in table 01 and based on the outcomes of SPSS25, Excel 2013, and the different statistical styles in order to reach exact and detailed results that show the similarities and differences between Algeria, Morocco, and Tunisia. The last 03 axes of the questionnaire have been divided into 02 classes; each class aims at presenting and analyzing one of the dimensions of the study.

1.2 Analysis and comparison of the results of the 2nd axis between the countries under study:

The 2nd axis has been devoted for knowing the rules and principles applied in HRA in the three countries. Each statement aims at analyzing a specific part of the topic of the axis. In order to find the differences between the companies' structure and the rules of HRA, we relied on the arithmetic mean and standard deviation in one table:

Table 04: Results of the analysis of the axis about the rules and principles for applying HRA in the North African companies

		Morocco		Tunisia		Algeria		Total
		arithmetic mean	Standard deviation	arithmetic mean	Standard deviation	arithmetic mean	Standard deviation	arithmetic mean
1	The concept of HRA is one of the modern unknown concepts for the company.	4,46 (Strongly agree)	0,43	2,44 (disagree)	0,93	3,07 (Neutral)	0,72	3,32 (Neutral)
2	HRA assumes that the human element has a value in the company.	3,10 (Neutral)	0,64	2,50 (disagree)	0,43	1,77 (Strongly disagree)	0,40	2,46 (disagree)
3	The application of HRA provides the suitable information to provide the requirements of disclosure of the HR costs.	3,77 (Agree)	1,13	3,56 (Agree)	1,10	4,11 (Agree)	1,06	3,81 (Agree)
4	The application of HRA contributes to the design of a complementary system for the information related to the human resource.	4,55 (Strongly agree)	0,51	4,11 (Agree)	0,76	4,34 (Strongly agree)	0,43	4,33 (Strongly agree)
5	The accounting system deals with HR as capital expenditures.	3,89 (Agree)	0,68	4,49 (Strongly agree)	0,66	4,79 (Strongly agree)	0,78	4,39 (Strongly agree)
6	The principle of the accounting unity covers the costs of the processes related to HR.	3,44 (Agree)	1,02	4,16 (Agree)	0,72	3,94 (Agree)	0,96	3,85 (Agree)
7	The principle of disclosure covers exact and clear data about the HR	4,67 (Strongly agree)	0,45	1,97 (disagree)	0,71	1,45 (Strongly disagree)	0,53	2,70 (Neutral)
8	The evaluation of the HR as an asset for the company makes the administration recognize more its value.	4,12 (Agree)	1,12	3,96 (Agree)	0,93	3,94 (Agree)	1,02	4,01 (Agree)
9	The styles of the	1,64	0,72	1,73	0,73	1,74	0,68	1,70

	historical value and replacement value are used to measure the cost of HR in the company.	Strongly) (disagree		Strongly) (disagree		Strongly) (disagree		Strongly) (disagree
10	The style of the future returns and the economic value are used to measure the value of HR in the company.	3,84 (Agree	1,07	3,97 (Agree)	0,73	4,13 (Agree)	0,89	3,98 (Agree)
11	The financial statements include data related to the HR which reflect their real value in the company.	4,11 (Agree	0,93	4,03 (Agree)	0,86	4,57 Strongly) (agree	0,97	4,24 Strongly) (agree
12	The value and costs of HR are listed in the assets of the company.	4,53 Strongly) agree)	0,67	4,45 Strongly) (agree	0,87	4,56 Strongly) (agree	0,74	4,51 Strongly) (agree
13	It is necessary to have information about HRA to manage HR efficiently and effectively.	3,78 (Agree)	0,73	3,99 (Agree)	0,80	4,08 (Agree)	0,68	3,95 (Agree)
	Total arithmetic mean for the three countries	3,99 (agree)		3,77 (neutral)		3,31 (neutral)		3,55 (agree)
Total arithmetic mean for all the companies								

Source: prepared by the author based on the outcomes of SPSS25

From table 04 that shows the answers of the individuals of the sample about the existence of rules and principles of the application of HRA in the under study companies under study, we see that the arithmetic mean is between 3.30 and 4. Statement 12 which says that "the value and costs of HR are listed in the assets of the company" ranked first with a total arithmetic mean that equals 4.51. This confirms that the individuals of the sample strongly agree that the value and costs of HR are listed in the assets of the company. Statement 5 ranked the second with an arithmetic mean of 4.39 and a degree of "strongly agree". The statement says that "the accounting system deals with HR as capital expenditures". Statement 04 ranked third with a degree of "strongly agree" and an arithmetic mean that reached 4.33. It says that "the application of HRA contributes to the design of a complementary system for the information related to the human resource". As for statement 11, it ranked fourth with a total arithmetic mean that reached 4.24 and a degree of "strongly agree". It says that "the financial statements include data related to the HR which reflect their real value in the company". Statement 08 ranked the fifth with a total arithmetic mean of 4.01 and a degree of "agree". It says that "the evaluation of the HR as an asset for the company makes the administration recognize more its value". Statement 09 ranked the last with a total arithmetic mean of 1.70 and a degree of "strongly disagree". It says that "the styles of the historical value and the replacement value are used to measure the cost of HR in the company".

From what has been said, we see that the total arithmetic mean of the sample individuals reached 3.55 with a degree of "agree". This shows that the companies under study see that there are rules and principles of the application of HRA, but with slight differences.

Interpretation:

From the above results, we see that the companies under study give importance to the HR inside the company. The main idea of HRA revolves around the economic value of the HR for the company. The respondents agree that there are rules and principles for the application of HRA, i.e., the HR inside the company is governed by rules and principles from the accounting side for efficient and effective management so that it contributes to the success of the company. The application of the system of the HR information allows disclosing the financial information about HR because this helps increasing transparency and the suitability of the disclosed financial information.

Table 05: results of the analysis of the axis about the obstacles that face the application of HRA in the studied companies

		Morocco		Tunisia		Algeria		Total
		arithmetic mean	Standard deviation	arithmetic mean	Standard deviation	arithmetic mean	Standard deviation	arithmetic mean
1	It is hard to have HR and, thus, it is excluded from the assets.	4,65 (Strongly agree)	0,49	4,71 (Strongly agree)	0,58	4,67 (Strongly agree)	0,41	4,68 (Strongly agree)
2	It is hard to measure the future benefits or services of HR.	3,92 (agree)	0,97	4,06 (agree)	1,05	4,11 (agree)	0,91	4,03 (agree)
3	It is hard to collect information and data about HR.	4,09 (agree)	0,78	3,81 (agree)	0,94	4,34 (Strongly agree)	0,99	4,08 (agree)
4	It is hard for HR to accept that they are goods that have a financial value.	4,77 (Strongly agree)	1,03	4,36 (Strongly agree)	0,73	4,52 (Strongly agree)	0,94	4,55 (Strongly agree)
5	The objective method of costs and value is hard to make in the evaluation of HR.	4,11 (agree)	1,13	4,04 (agree)	1,08	4,31 (Strongly agree)	0,91	4,15 (agree)
6	It is hard to determine the level of experiences related to HR in the company.	4,33 (Strongly agree)	0,79	3,96 (agree)	0,97	4,06 (agree)	0,81	4,12 (agree)
7	The HRA system may face factors of bias, error, and forgetfulness.	4,71 (Strongly agree)	0,61	4,52 (Strongly agree)	0,67	4,33 (Strongly agree)	0,75	4,52 (Strongly agree)
8	It is hard to increase the scientific and practical abilities of HR in the company.	2,43 (disagree)	0,79	2,68 (Neutral)	0,88	3,45 (agree)	1,02	2,85 (Neutral)
9	It is hard to estimate the productive ages of the employees in the company.	4,06 (agree)	0,94	3,99 (agree)	0,92	4,12 (agree)	0,72	4,06 (agree)
10	It is hard to	4,24	0,74	4,36	0,69	4,06	0,84	4,22

	capitalize the HR in the company.	Strongly) (agree		Strongly) (agree		(agree)		Strongly) (agree
11	It is hard for the company to measure its investments in HR	3,99 (agree)	0,65	4,51 Strongly) (agree	0,88	4,64 Strongly) (agree	0,79	4,38 Strongly) (agree
12	It is hard to have an exact system to measure and evaluate the performance of HR.	1,97 (disagree)	0,89	2,54 (disagree)	1,07	4,67 Strongly) (agree	0,66	3,06 (Neutral)
13	It is hard to find a criterion that determines the mechanism for measuring, showing, and disclosing HR costs, and for presenting them in the assets of the company.	4,43 Strongly) (agree	0,63	4,51 Strongly) (agree	0,71	4,62 Strongly) (agree	0,78	4,52 Strongly) (agree
Total arithmetic mean for the three countries		3,60 (agree)		3,81(agree)		4,25 (agree)		3,89(agree)
Total arithmetic mean for all the companies								

Source: prepared by the author based on the outcomes of SPSS25

Table 05 shows the obstacles that face the application of HRA in the companies under study from up to bottom according to the total arithmetic mean. Statement 1 which says that "it is hard to have HR and, thus, it is excluded from the assets" ranked first with a total arithmetic mean that equals 4.68 and a degree of "strongly agree". This shows that the individuals of the sample agree that the HR is hard to possess as the company cannot have it permanently.

Statement 04 which says that "it is hard for HR to accept that they are goods that have a financial value" ranked second with a total arithmetic mean that equals 4.55 and a degree of "strongly agree". This shows that the individuals of the sample refuse that they are financial goods. Statement 13 which says that "it is hard to find a criterion that determines the mechanism for the measuring, showing, and disclosing HR costs, and for presenting them in the assets of the company" ranked third with a total arithmetic mean that equals 4.52 and a degree of "strongly agree". This shows that there is no criterion that shows how to show the cost of HR in calculation of group 2 and to consider it as an asset of the company.

Statement 07 which says that "the HRA system may face factors of bias, error, and forgetfulness" ranked fourth with a total arithmetic mean that equals 4.52 and a degree of "strongly agree". This shows that there is a potential of occurrence of errors, bias, or forgetfulness during the calculation of the various costs resulting from the HR.

Statement 11 which says that "it is hard for the company to measure its investments in HR" ranked fifth with a total arithmetic mean that equals 4.38 and a degree of "strongly agree". This shows that the Algerian companies cannot measure their investments in HR and, thus, cannot know what future benefits the HR shall achieve. Statement 08 which says that "it is hard to increase the scientific and

practical abilities of HR in the company" ranked the last with a total arithmetic mean that equals 2.85 and a degree of "neutral". This shows that the individuals of the sample are neutral regarding this kind of obstacles.

From what has been said, we see that the total arithmetic mean of the individuals of the sample reached 3.89 with a degree of "agree". This shows that the companies in the three studied countries see that there are obstacles when applying HRA.

Interpretation:

The difficulty of possessing the HR is one of the main obstacles that face the North African companies when applying HRA. The company takes advantage of the HR services, but not permanently because it is not obliged to stay there forever unless there is a contract whereby it commits itself to stay in the service of the company. In this context, we find that the under study companies do not aim at training and developing the HR potentials because the application of HRA requires recording a financial value for the HR considering it as an asset; this is the biggest obstacle facing the company.

The loss of HR by the companies under study is harmful because the process of measuring the HR according to HRA assumes its existence; which is very hard to apply in the practical reality. The duration of the depletion of HR as an asset faces difficulty because the abilities of some resources decrease with time and vice versa.

3. Testing the study hypotheses:

After studying and analyzing the statements of the questionnaire and finding the similarities and differences between the companies under study, we interpreted these differences according to the accounting reality of each studied company. In this section, we test the hypotheses according to the following steps:

- We formulate the null hypothesis and the alternative hypothesis for the 02 first ones.

- We use One Sample T-test to study the variations between the arithmetic mean of the sample and that of the population of the study (suppositional mean that equals 3). Then, we calculate the significance level of (T) and compare it to the statistical significance used in the study (0.05), or through comparing calculated T value with T table value; if the calculated T is bigger, we accept the hypothesis and vice versa.

- The null hypothesis and the alternative one are accepted if the values of the arithmetic mean of the answers of the individuals of the sample and the studied companies are bigger or equal to the suppositional arithmetic mean (measurement tool) which equals 03.

- We accept the null hypothesis and the alternative one if the values of the total arithmetic mean of the individuals of the sample and the studied companies are less or than the suppositional arithmetic mean (measurement tool) which equals 03.

3.1 Testing the 1st hypothesis:

There is no consensus about the rules and principles of the accounting processing of HR in North Africa.

- Text of the hypothesis: There is no consensus about the rules and principles of the accounting processing of HR in North Africa.

- The null hypothesis: There is a statistical significant relation between the rules and principles of the accounting processing of HR with the activity of the North African countries H0: X <3

- The alternative hypothesis: There is no statistical significant relation between the rules and principles of the accounting processing of HR with the activity of the North African countries H1: X ≥3

The following table shows the statistical data used to test the validity of the 1st hypothesis in this study:

Table 06: Results of T test, arithmetic mean, and standard deviation of the 1st hypothesis.

The 1st hypothesis	Arithmetic mean	Standard deviation	Calculated T value	Table T	Degree of freedom	Significance level
There is no consensus about the rules and principles of the accounting processing of HR in North Africa.	3.7922	0.56	4.009	1.984	89	0.001

Source: prepared by the author relying on the outcomes of SPSS 25.

We see from table 06 that calculated T value that reached 4.009 is bigger than T table value that equals 1.984. The significance level 0.001 is less than the level of the standard significance 0.05. This makes us refuse the null hypothesis that says that there is a statistical significant relation between the rules and principles of the accounting processing of HR with the activity of the North African countries. This is confirmed by the arithmetic mean of the answers of the individuals of the sample in each studied company that reached 3.7922. When comparing this value with the measurement tool that reached 03, we see that the arithmetic mean is bigger than the value of the measurement tool. This indicates the cohesion of the answers of the sample individuals to the statements of the 2nd axis concerning this hypothesis.

Hypothesis one has been confirmed. The accounting principles are regulations referred to in case of disagreement. From the hypothesis, we notice that the companies agree on the application of the rules and the principles when calculating the costs of HR. These principles and rules include the historical value which means the real value when acquiring the asset. Moreover, it can be evaluated through the future benefits the company may get from its experience or work (future returns). Furthermore, the company must disclose all the information related to the HR in the financial statements and consider it as an important element in the company as it contributes to its success and competitiveness; this is called the principles of the accounting unity.

We see that the main criterion to distinguish the asset from the cost is the future benefits expected from the expenditure. The cost must be dealt with as expenditure in the period it makes benefits. Then, if the benefits last for years, the cost shall be taken as an asset.

3.2 Testing the 2nd hypothesis:

- Text of the hypothesis: There are obstacles that face the application of HRA in North Africa.

- The null hypothesis: There is no statistical significant relation between the obstacles that face the application of HRA and the activity of the companies in North Africa

H0: X <3.

- The alternative hypothesis: There is a statistical significant relation between the obstacles that face the application of HRA and the activity of the companies in North Africa H1: X ≥3.

To test the 2nd hypothesis, we present the statistical data related to the study sample in the following table:

Table 07: Results of T test, arithmetic mean, and standard deviation of the 2nd hypothesis.

The 2nd hypothesis	Arithmetic mean	Standard deviation	Calculated T value	Table T	Degree of freedom	Significance level
There are obstacles that face the application of HRA in North Africa.	3.6662	0.68	12.662	1.984	89	0.000

Source: prepared by the author relying on the outcomes of SPSS 25.

From table 07, we see that the 2nd hypothesis is confirmed because:

- Calculated T value 12.662 is bigger than T table value 1.984 and the significance level 0.000 is less than the level of the standard significance 0.05. This disconfirms the null hypothesis and leads us to adopt the alternative one.

- The arithmetic mean of the answers of the individuals of the sample in all the studied companies 3.6662 is bigger than the suppositional arithmetic mean 3 and the value of the variation coefficient reached 16.32%. This indicates the cohesion between the answers of the individuals of the sample to the statements of the 3rd axis and confirms this hypothesis again.

The companies in the studied countries face many obstacles when applying HR. These obstacles manifest generally in the difficulty of determining the value of the HR, its capitalization, depletion in the accounting period, and disclosing it in the budget as an immaterial asset. The following lines present an explanation of the obstacles of each company separately in an order that is based on the arithmetic mean of each company according o each statement.

As for the obstacles faced in Morocco, the HR will not accept being taken as a product that has a financial value. This is among the primary obstacles faced when applying this accounting. Then, the HRA faces error and forgetfulness. The HR is hard to possess; therefore, we excluded it

from the assets because it does not meet the ownership standard. Moreover, it is difficult to find a criterion that determines the mechanism of measurement, supply, and disclosure of HR as an asset in the company.

As for Tunisia, the first obstacle faced by HRA when applied is the possession of the HR because it may leave the company at any moment. The accounting system may face error or bias factors. Moreover, it is difficult for the company to measure its investments in HR. In addition, there is no specific criterion that shows the mechanism of measuring the value of HR, and of including it in the assets. Finally, the HR does not accept being taken as a product that has a financial value.

When it comes to Algeria, the informants see that the company cannot possess the HR; thus, it cannot consider it as an asset. Moreover, HR does not accept being taken as a product that has a financial value and to be listed in the assets. Besides, it is difficult to measure the cost and the value of the HR and determine its experience.

Conclusion:

From this study about the obstacles of applying HRA in the North African countries, we defined HRA and tackled its development phases, importance, and goals in order to remove the vagueness related to HRA. Then, we showed the main styles used in measuring the costs of HR and how it is disclosed in the financial statements. Finally, we shed light on the main obstacles facing HRA when evaluating the HR as an asset of the company. This was through a field study in a number of companies. To answer the problematic raised in the introduction, we found results and suggestions that shall be presented in the following lines.

1. Results:

- HRA is an important tool for the measurement of the information related to HR and their communication to the concerned parts.

- IT is based on a set of principles and rules.

- It sees the HR as an energy, competency, and experience.

- It helps the company improve its recruitment decisions.

- It helps disclosing the financial information through the application of all its procedures correctly.

- There is a set of styles for the measurement of HR that allow the company to determine the value of its resources.

- There is a set of criteria that must be found in the HR to be considered as an asset.

- The North African companies face some obstacles when applying HRA due to the difficulty of determining the economic value of the HR.

- There are rules and principles for the application of HRA in the studied countries.

- There are obstacles that face HRA when applied in the North African countries.

2. Suggestions:

Based on the obtained results, we suggest:

- It is better to provide additions to the financial accounting system concerning HRA in the studied countries.

- It is necessary to have a look on the procedures of measuring HR in the international companies of the collective nature in order to know the various phases of measurement, and to avoid the obstacles and the potential risks.

- When applying HRA, it is better to determine the cost and value of the HR based on the principle of the historical value to facilitate its application and cohesion with the accounting principles.

- It is necessary to apply an exact system for the measurement and evaluation of the performance of HR. The system must be based on objectivity, inclusion, and justice.

- It is necessary to set an accounting criterion that determines the mechanism of measurement, supply, and disclosure of HR in the financial lists.

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