International Journal of Finance, Accounting and Economics Studies, 3(1), 2022, 11-22.
Print ISSN: 2251-645X Online ISSN: 2383-2517

Islamic Azad University
Science and Research Branch
Faculty of Management and Economics

International Journal of Finance, Accounting and Economics Studies
Journal homepage: https://ijfaes.srbiau.ac.ir

Designing a human resource valuation model with a data envelopment analysis approach (Case study: Hormozgan Islamic Azad University units)

Samira Rahimi[1]
Qodrat Allah Talebnia [2*]
Rezvan Hejazi[3]
Mohammad Hosein Ranjbar[4]

[1]*PhD student, Department of Accounting, Bandar Abbas Branch, Islamic Azad University, Bandar Abbas, Iran, samira_rahimi_8@yahoo.com*
[2]*Associate professor, Department of Accounting, Science and Research Branch, Islamic Azad University, Tehran, Iran, qodratallahtalebnia@gmail.com*
[3]*Professor, Department of Accounting, Khatam University, Management and Finance, Tehran, Iran.*
[4]*Assistance professor, Department of Management and Accounting, Bandar Abbas Branch, Islamic Azad University, Bandar Abbas, Iran, mhranjbar54@gmail.com*

Article History
Received Date: 11 August 2020
Revised Date: 25 September 2020
Accepted Date: 19 November 2020
Available Online: 19 April 2022

JEL Classification:

Keyword:
Valuation
Human Resources
Islamic Azad University.

Abstract
The purpose of this study is to design a human resource valuation model with a data envelopment analysis approach from the Islamic University of Hormozgan Branch. In this paper, the performance appraisal model of the staff designed for the Islamic Azad University of Hormozgan Branch is presented. In this regard, an attempt has been made to determine the efficiency of university staff by using data envelopment analysis techniques. Since the status of some of the criteria cannot be accurately stated and has ambiguity and uncertainty, so in this article, linguistic variables are considered as points for measuring the questionnaire, since it is a tool for measuring the questionnaire. By considering the proportions of numbers 1 to 5 in the Likert spectrum and using the theory of data envelopment analysis and selecting the output and input variables and in the form of a fixed-scale return model in output-oriented mode using DEA SOLVER software, the evaluated employees are evaluated. And it was analyzed and its capability was described in real environments, and finally the performance evaluation of 10 people from Employees were efficient.

*.Corresponding Author: qodratallahtalebnia@gmail.com

1. Introduction

The organizations are primarily designed to achieve goals that the degree of success in this regard also depends directly on the performance of human resources. The most important asset of an organization is its manpower. In recent years, attention to human resources in organizations has accounted for a large part of the time and capital of leading organizations (Azar et al., 2010).

Given the growing importance of the human factor in organizations and the business process, it can be said that the calculation of human resources has been considered for more than two decades (Flamholtz et al., 2002). The concept of human resource value is based on value theory in general economics. Given that humans are able to generate potential future benefits, the value of humans, like other resources, can be defined as the present value of expected future services. Thus, the value of the individual is the present value of the set of services that the individual is expected to provide during his or her service period in the organization. According to researchers' theory for measuring human resources, there are two basic steps; This means that first the concept of human resources must be defined in non-monetary or qualitative terms so that it can be presented in monetary terms to be shown in the balance sheet of the organization (Abbasifard and Karimi, 2011).

A new perspective in this area is accounting for the organization's human resources, which can be considered a new model in the field of economics. Many experts believe that the organization's human resources should be measured (Tick, 2005). Therefore, many organizations around the world have used human resource accounting as an essential element in the organization and are constantly striving for its development and operational application, especially in the field of formulating the goals and strategies of the organization. (Savino et al., 2012).

There is no doubt that the main forces of the university have been and are committed, professional, knowledgeable and with outstanding human qualities. But to have a virtue in the hope that it will always remain in itself is a form of simplification. Therefore, in order to survive and thrive, we need not only valuable reserves that have been developed over the years at very high cost, but also conditions that need to be systematically recruited, improved and improved. Provide training, maintenance and motivation and leadership of human resources (Abbaspour, 2006).

Therefore, today, human resources and its capabilities are considered as a strategic and effective factor and a competitive advantage for the organization. One tool that can make us aware of the organization's existing human resource talent is performance appraisal. Evaluation is the formal process of assessing and informing the evaluated about how to work and the responsibilities assigned and the desired characteristics, as well as recognizing their potential capabilities to thrive in various dimensions. These assessments must be done objectively and systematically. In other words, performance should be measured in relation to how the work is done and over a period of time. Various methods for performance evaluation have been proposed that can be divided into two main categories of parametric and non-parametric methods. One of the most important non-parametric methods for evaluating the performance of decision-making units is data envelopment analysis (DEA) models, which have several applications in measuring productivity and evaluating efficiency in academic units, banks, hospitals, etc. Emami Meybodi, 1379).

The DEA model consists of a set of linear programming techniques that construct an efficient boundary using the observed data and then evaluate and measure the performance of the decision-making unit, which is vital in Has managerial decision making. The DEA model provides significant information for analysts and managers to extract guidelines for developing their current performance. Given this fact, effective analysis and interpretation of DEA results is crucial. On the other hand, the abundant production of data generated in organizational domains is like gold pieces obtained from sludges from copper processing. Therefore, in today's world, data and basic information are not very important, it is often widely available and distributed, but its processing and rehabilitation and production of knowledge of data enrichment process is very important (Azar et al., 2010).

Measuring the impact of human capital and investments made on it, is always considered as a constant challenge for the development of human resources in organizations. When individuals are considered the assets of organizations, the ability to quantify the value of these assets becomes important. Measuring the value of these assets is effective in preventing the waste of these resources and their optimal use and leads to the efficiency of human resources. Therefore, this is necessary to make informed decisions about how to manage and maximize the rate of return on investment, and the lack of information about the value of the organization's human assets and the amount of costs paid for staff training, is one of the weaknesses of systems. It is considered accounting.

Because traditional financial statements do not have the ability to reflect the human capital that creates wealth over time, the use of organizational resource accounting can increase the effectiveness of decisions that relate to the organization's human resources and therefore It is necessary.

2. Literature and research background

Data Envelopment Analysis

Data envelopment analysis is a mathematical programming method for evaluating the performance of a unit or units of decision making. In this method, using information about inputs and outputs, the sizes related to the different functions of each firm are calculated. In this method, the units are not compared to a predetermined standard level or a known function; Rather, the criterion for evaluating them is decision-making units that perform similar activities in the same situation. The performance of firms in this method is done under two assumptions of return to fixed scale and the assumption of return to variable scale with two input-oriented or output-oriented approaches.

The limitations of resources and production facilities have always been present from the past to the present, when the information age is postmodern and the dramatic development of science and technology, and will impose itself more strongly on economic conditions in the future. Therefore, the optimal use of available facilities and resources and improving efficiency to achieve prosperity and respond to growing needs, has become a very important issue (Charans et al., 1978). In fact, measuring efficiency is necessary from there. Find that due to the lack of resources and facilities in the current situation, these resources should be allocated in such a way that the organization or institution in question can provide maximum products or services through those resources. Therefore, the data envelopment analysis model is used to obtain the efficiency of organizations. In recent years, different applications of data envelopment analysis (DEA) have been seen in most countries of the world to evaluate the performance of institutions and other common activities in various fields. The term DEA means data envelopment analysis by a mathematical

planning model to evaluate the efficiency of decision-making units that have multiple inputs and multiple outputs (Mehregan, 2013).

CCR pattern

This model has a constant scale efficiency and tries to increase the efficiency of this unit (zero unit) by selecting the optimal weights for the input and output variables of the unit under study, so that the efficiency of other units exceeds the limit. Above one, do not exceed. This model is presented in two natures of input and output and in three forms of fraction, multiplication and coverage, and in the following, we will express different forms in expressing different forms in the nature of input. With the cover form according to the specificity of the cover form, with the CCR pattern in the nature of the input, was selected for this post. Therefore, in this section, we will only describe this form of CCR in the nature of input. In data envelopment analysis, the double multiple form always results in the cover form. If we write the double multiple form CCR, the CCR cover form is obtained as relation (1):

$$\min \ Y_0 = \theta \qquad (1)$$

$$\text{s.t}$$

$$\sum_{j=1}^{n} y_{rj}\lambda_j \geq y_{r0} \qquad , r = 1,2, \dots . , s$$

$$\sum_{j=1}^{n} x_{ij}\lambda_j \leq \theta x_{i0} \qquad , i = 1, 2, \dots . , m$$

$$\lambda_j \geq \theta \qquad \text{Mark in free } \theta \qquad j = 1, \dots . , n$$

As shown in the cover figure, the variable corresponding to the equal constraint in the free multiplicative form is in the sign. The constraints associated with λ≤j provide the optimal option for relating to min θ = θ.

The coverage model provides a set of solutions. These solutions create a high level that covers all observations and gives objectivity as data envelopment analysis. The overlay div is responsible for holding dimming the rest of the page. Therefore, the main advantage of the coating form is the type of response it provides for the performance of different units.

The answer of the coating form in the nature of input directly shows the relative efficiency of the unit under study. If obtained for the unit is equal to one, it means that the unit under study is either an efficient DMU or if its value Is less than one DMU or the unit under review is inefficient (Boolean 2000)

BCC model

The set that applies to the principles of observation inclination, convexity, feasibility, and internalization minimization is denoted by or defined as follows:

$$T_V = \left\{(x, y) \middle| x \geq \sum_{j=1}^{n} \lambda_j x_j \ \& \ y \leq \sum_{j=1}^{n} \lambda_j y_j \ \& \ \sum_{j=1}^{n} \lambda_j = 1, \lambda \geq 0\right\} \qquad (2)$$

The only difference is with the addition of the adverb: $\sum_{j=1}^{n} \lambda_j = 1$

The most important benefits of using the model:

One of the advantages of this method is that there are no restrictions on the use of

various products and inputs of the organization or institution under study.

In this method, the unit of measurement is not sensitive and the inputs can have different units.

The DEA method is a management method that relatively measures the performance of units and provides management solutions.

In case the economic unit has several inputs in the process of creating output, the linear programming method can easily determine the optimal combination of output and input for an efficient unit.

The DEA method compares units with each other and is far from pure idealism.

This method, more than other methods, has the ability to be generalized and expanded, and using it in one unit for one topic, can provide the basis for subsequent work.

This method only determines the efficiency and does not have the disadvantage of other measurement systems that pursue a kind of absolute segregation. Efficiency in this model is an achievable quantity.

Data envelopment analysis provides a very high capability in the complete ranking of the decision-making units under study. There are models such as Anderson Petersen who can also rank efficient firms and choose the most efficient firm among efficient firms (Mir Hosseini, 2013).

3. Research method

This research was applied in terms of purpose and in the category of descriptive research. Library study and electronic search have been used to collect the findings of previous researches as well as theoretical materials related to the research topic. The statistical population of the study is the staff of the service department of Hormozgan Branch of Azad University in 1398. On the other hand, in the study of the statistical population in this study, random sampling method was used. Finally, during consultation with professors and experts, it was concluded that according to the nature and pattern and efficiency relative to the scale used, the CCR model is output-oriented. Input variables include: work experience, level of education, professional commitment, job criteria; The output includes: professional development, human relations. In order to answer the research questions mentioned below, we will analyze the obtained data.

1- Are the variables of empirical models of human resource valuation in Islamic Azad University efficient?
2- Is the predicted model of the researcher effective in valuing human resources in Islamic Azad University?

Model analysis

The model designed in this study is modeled on the mechanisms of a performance appraisal system. The steps for designing an employee performance appraisal model using data envelopment analysis are as follows:

Determining input and output indicators

Evaluation makes sense when criteria are set for comparison. Basically, the definition of measurable indicators is one of the basic requirements in planning. Also, in order to evaluate and measure each organization in terms of achieving its goals, its goals must be measurable and quantifiable. In this case, planning and evaluating the performance of the organization will be easier and more tangible. In this section, according to the definition of the nature of input and output in the data envelopment analysis model, the criteria specified below have been used as input and output in the model.

Input (I): 1- Work experience 2- Education level 3- Professional commitment (conscientiousness, altruism) 4- Job criteria (obedience and work conscience, job satisfaction);

Experience

Experience refers to the part of government or non-government services of employees that increases their skills.

Experience (years) Indicator Analysis

$$x = \frac{\text{Legal age}}{5}$$

0	6	6-12	12-18	18-24	24	Analysis
0	1	2	3	4	5	Help table

Quantitative indicator of education

Organizational job category Indicator Analysis

Find the organizational category of the employee in the scoring table and determine the scoring.

Diploma	Diploma above	Bachelor	Master	Ph.d	Analysis
1	2	3	4	5	Help table

Duty

An effort that goes beyond formal requirements is called conscientiousness. Nguyen and Sears (quoted by Zare, 2004) believe that the conscientious dimension guides employees' behaviors to a higher level than expected. Conscientiousness refers to the behavior in which a person performs more than the requirements of a job. Such behaviors increase trust among employees. In other words, conscientiousness is a voluntary behavior to help the organization, in which employees go beyond the minimum requirements of their duties (such as performing voluntary behaviors along with the main tasks, maintaining organizational rules and not wasting working time). (Denicolis et al., 2005) Argan (1988) believes that people with progressive citizenship behavior continue to work in the worst conditions and even in illness and disability, which indicates their high conscientiousness. The components of conscientiousness are:

- Belief in doing the right thing.
- Excessive refusal to commit violations.
- Comply with the rules and regulations of the organization.
- The most conscientious employees.
- Honesty and truthfulness to earn a halal living (Parkov Questionnaire; Beiginia et al., 2012).

Altruism

An altruism is a voluntary behavior whose main purpose is to help other people in the organization with regard to organizational tasks or relationships (such as volunteering to help new or inexperienced employees and helping employees who may be busy or absent. And (Deniculis Brager, 2005) The components of altruism are:

- Includes helping absentees in the organization
- Helping people who have a heavy workload.
- Helping novices even if they do not have the help they need.
- Helps willingly with people who have work-related issues.
- Always ready to help others (Parkov Questionnaire; Javanmard and Mohammadian, 2010)
- Collective work (Beiginia et al., 2012; Zare Qaleh et al., 2013).

Job Satisfaction

Job satisfaction indicates the degree to which a person is satisfied with his or her activities and duties in the organization and

determines to what extent the work that the person should do matches the person's spirits, talents and desires for the job and to what extent the person's different needs. Satisfied in the organization.

- responsiveness
- Organizational affiliation
- Desire to survive
- Positive energy in the work category
- Avoid doing useless work and doing value-added work (Armsterdong et al., 2006; Zarei Matin et al., 2009).

Obedience and work conscience

Conscience of work can be considered as an internal force by which man tends to do more and better work in a way that without the need for external supervision and through self-control and spontaneously to best perform the assigned tasks. Does. According to the definition of the Public Culture Council of the country, work conscience can be considered as a situation in which people in the community, in various occupations, try to do their job in the best way and accurately and completely and by observing the principles of optimization (Mirsapasi, 1381).

The components of obedience and work conscience are:

- Belief in the treasury
- Being useful
- Get involved with work
- Satisfying God and people
- Timely attendance at work
- Low need for external controls
- Doing organizational work outside the job description (Zarei Matin, 2009; Armstrong, 2006).

Output (O): 1- Professional development (number of professional certificates, tacit knowledge, skills) 2- Human relations (teamwork ability, participation, success)

Professional and specialized certification

The first type of certificates that are awarded to participants at the end of each course or short-term training modules and the second type of certificates that holders can benefit from their employment benefits such as holders of postgraduate degrees, Bachelor, master and doctorate in the conditions of obtaining the relevant jobs within the framework of observance of all relevant laws and regulations (site of administrative regulations).

Indicator	Number of professional and specialized certificates
Analysis	$x = \frac{(\text{MAX} - \text{MIN})}{5}$
Help table	2-4 | 4-6 | 6-8 | 8-10 | 10-12 1 | 2 | 3 | 4 | 5
Example	$x = \frac{12-2}{5} = 2$

Tacit knowledge

Tacit knowledge is used with terms such as skill, knowledge of how, applied knowledge and expertise that describe the knowledge and ability there. Tacit knowledge is an intangible level of comprehension that is often difficult to express in words. Tacit knowledge is completely embedded in the individual and is rooted in experience and practice, is expressed through skillful execution and is transmitted by apprenticeship by observing and performing forms of learning. The components of knowledge are:

- experiences
- Technical Information
- Deep insight
- The power of analysis (Davinpert and Prasak, 1998; Azar et al., 2009).

Skill

The components of the skill are:

- Skills and speed in finding the information needed
- Perform work with low waste
- Quick understanding of work issues
- Use of modern technologies

Participation in work

Voluntary participation is voluntary and conscious, which is a specific mental and emotional conflict in a group activity, and this conflict encourages the individual to help achieve the group's goals.

The components of participation are:

- Provide creative suggestions to improve employee progress
- Awareness of current issues of the organization
- Attend meetings
- Voluntary acceptance of additional assignments (Beiginia et al., 2012).

Ability to work in a team

The components of teamwork capability are:

- Commitment to team and members
- Trustworthy
- Flexibility
- Regular
- Persistent and persistent
- Ability to participate and social activities
- Accountability for responsibilities
- Tirelessness and perseverance in work and maintaining morale in any situation (Thompson, 2011).

Table - Input and output values

DMU	I_1 Experience	I_2 education	I_3 professional commitment	I_4 job criteria	O_1 professional development	O_2 human relations
Employee	1	1	29	41	32	65
Employee	2	1	32	41	37	65
Employee	1	2	26	37	29	59
Employee	3	1	33	41	37	69
Employee	4	1	32	42	39	72
Employee	3	2	32	38	32	60
Employee	2	2	28	40	38	72
Employee	5	1	33	43	40	77
Employee	1	1	30	41	35	73
Employee	0	1	28	35	37	69
Employee	2	1	23	32	29	53
Employee	3	1	39	47	36	85
Employee	3	1	39	47	37	82
Employee	3	1	38	48	40	85
Employee	3	1	39	47	37	68
Employee	4	1	37	50	37	68
Employee	0	1	35	45	31	64
Employee	2	1	42	46	47	86
Employee	3	1	40	48	41	86
Employee	1	1	41	48	40	84
Employee	1	1	42	48	45	75
Employee	4	1	40	48	38	92
Employee	2	1	36	42	43	73
Employee	2	1	37	38	36	78
Employee	2	1	35	41	36	80
Employee	3	1	31	42	37	73
Employee	4	1	34	43	34	79
Employee	3	1	40	46	37	82
Employee	3	1	38	47	33	74

Source: Research Findings

Success
The components of success are:

- Having initiative
- Competitiveness
- Hard work
- The importance of the result
- Take on responsible tasks

Tendency to set relatively difficult goals (Armstrong et al., 2006; Zarei Matin et al., 2009)

4-Data calculation

In order to collect information about the indicators and different dimensions of the model, theoretical-field studies have been conducted. In order to ensure this issue, by designing a questionnaire and using its information and the information available in the recruitment center of the Islamic Azad University of Hormozgan Branch, the relative values of the criteria for employees were determined. In this research, some of the inputs and outputs identified were of a qualitative nature that needed to be quantitatively defined in order to use these inputs and outputs. Therefore, a questionnaire was prepared and provided to the direct managers of employees to give points to the employees of their department according to the specified criteria. The basis of the application of this questionnaire was modeled on the Likert set and we used the definition and numerical spectrum of the variables of qualitative indicators into quantitative indicators. In this questionnaire, for each employee, which is called DMU for short, based on the direct management opinion and considering the criteria (very high, high, medium, low, very low), we scored from 5 to 1, respectively. We assigned them.

After surveying the direct management of each DMU with language variables and collecting questionnaires, the numbers obtained in the questionnaire were thus finalized.

Determine the appropriate pattern (DEA)

The nature of the pattern

To select the nature of the model, in consultation with university administrators and the purpose of the study, we concluded that most administrators tend to increase the development of professions and human relations, which are important variables for the evaluation of human resources, on the other hand, variables The output of the model is commensurate with the valuation of human resources; Therefore, the nature of the model in this study, the output was selected.

Returns to scale

Since return on a fixed scale (CCR) shows a smaller number of employees as efficient, this type of return was assumed to be relative to the scale. For example, the BCC model, which is a variable-scale return model, shows a larger number of employees. This is less true. Therefore, the return to the scale was assumed to be constant.

Selective pattern

Due to the nature of the pattern and the return to the scale of the pattern used, the pattern (CCR) is the output axis with the cover form.

Execution of pattern and solution method

In this section, in order to describe the proposed model, we express the structure of a case study. The structure under study is the staff of the Islamic Azad University, Hormozgan Branch. After standardizing the input and output variables, the values in the model (CCR) were placed in the nature of the output with the cover form. The selected pattern was solved using DEA SOLVER-LV software and the results are presented in the table below. Data envelopment analysis divides the employees under study into two groups of

efficient employees and inefficient employees. Efficient employees are employees whose efficiency score is equal to "one".

Table - Performance and ranking of CCR-O model employees

Ranking	Performance	DMU
14	0/91	Employee
13	0/92	Employee
16	0/89	Employee
15	0/91	Employee
7	0/97	Employee
20	0/79	Employee
1	1	Employee
1	1	Employee
1	1	Employee
1	1	Employee
9	0/94	Employee
8	0/96	Employee
10	0/93	Employee
3	0/99	Employee
19	0/82	Employee
17	0/85	Employee
12	0/92	Employee
1	1	Employee
6	0/97	Employee
1	1	Employee
1	1	Employee
1	1	Employee
1	1	Employee
1	1	Employee
2	0/99	Employee
5	0/98	Employee
4	0/98	Employee
11	0/93	Employee
18	0/85	Employee

5. Conclusion

Since the evaluation of staff performance is done in order to identify strengths and weaknesses, increase capabilities and make appropriate managerial decisions, therefore, human resource evaluation is one of the most important issues that managers, especially in academia and Higher education should pay special attention to it. The methods evaluated by employee performance are mostly experimental and do not have the ability to use quantitative and qualitative indicators simultaneously in calculating efficiency. Therefore, in this research, data envelopment analysis method, which is an efficient non-parametric method in evaluating the performance of production and service organizations, and this method has been used to respond to the efficiency of variables and the efficiency of Hormozgan Islamic Azad University staff. Considering the results of this research in relation to the efficiency of variables and employees, the following can be mentioned:

The results of this model showed that 10 of the employees evaluated in the university are efficient, which is approximately 35% of the efficient employees. That this university unit should consider the necessary measures to increase the efficient workforce. The number of inefficient people in the university is 19, which can be a warning for the university management, and the

management should think fundamentally about improving the performance of these people. According to the results of the template in the reference section, for each of the inefficient employees, the reference staff (template) has been determined that the management of each unit, according to the pattern of the specified reference set, can put their employees to the efficiency limit to be Deliver efficiency among employees.

Suggestions for future research

Recognition of environmental indicators affecting the performance of university staff, their accurate measurement and their application in DEA models and sensitivity analysis of the results with previous results.

Applying other models of data envelopment analysis, including the model with variable scale and comparing it with the method used in this research.

Using the Anderson-Peterson method to rank efficient units.

Examining the growth trend of staff efficiency by implementing this model in different time periods, periodically and regularly and examining the effect of management policies on changing staff performance and creating a DEA model to identify top managers in the university can be a good tool.

References

Abbasi F, Mohammad; K, (2011), The effect of human resource accounting system on managers' decision making and employee behavior, Journal of Human Resources Management in the Oil Industry, No. 14, pp. 144-117. (In Persian)

Abbaspour, A, (2006), Comparison of University Human Resources Functions with Strategic Human Resources Management Functions, Management Knowledge Article, No. 58. (In Persian)

Armstrong, M, (2006), Performance Management, translated by Behrouz Ghelicholi and Dariush Gholamzadeh, Tehran, Iran Center for Industrial Research.

Azar, A, Ahmadi, P, Sabt, M, (2009), Designing a Human Resource Selection Model with a Data Mining Approach (Case Study: Hiring Candidates for Entrance Exams of a Commercial Bank in Iran, Journal of Information Technology Management, Volume 2 , number 4. (In Persian)

Beiginia, A; Sardari, A, Ghasemipoor, A, (2012), A Study of the Relationship between Organizational Culture and Intellectual Capital, Quarterly Journal of Human Capital Management Research, First Year, No. 2, pp. 131-109. (In Persian)

Bowlin, W.F. (2000). Measuring Performance: An Introduction to Data Envelopment Analysis (DEA), http: //llans.panam.edu / edu/ 8305/ papers/ intotodea. pdf, 3-25.

Charnes A., Cooper W.W., Rhodes E.L., (1978). Measuring the efficiency of decision making units. European Journal of Operational Research, 2, 429–444.

Davenport , T.H. and L. Prusak (1988), Working knowledge, how organizations manage what they know, Boston: Harvard Business School Press.

DeNicolis Bragger, Jennifer & Rodriguez Srednick I, Ofelia& J.Kutcher ,Eugene& Indovino Lisa & Rosner, Erin."Work family conflict, work-family culture, and organizational citizenship behavior among teacher", *Journal of Business and Psychology*, Vol. 20, No. 2, pp. 303-323,(2005).

Emami Meybodi, A, (2000), Principles of Measuring Efficiency and Productivity, Institute of Business Studies and Research, p. 103. (In Persian)

Flamholtz,E. G.,M.L. Bullen and W.Hua, (2002), "Human resource accounting A historical perspective and future implications",Management Decision,Vol. 40,No. 10,P.P 947-954.

Javanmard, H and Mohammadian, F, (2010), Effective Indicators in Measuring Human Capital, Human Resources Management Research, Imam Hossein University, 2nd year, Vol. 1: 86-67. (In Persian)

Mehregan, M (2012). Data Envelopment Analysis: Quantitative models in evaluating the performance of organizations. Tehran, university book. (In Persian)

Mirsapasi, N, (2002), Strategic Management of Human Resources and Labor Relations, Mir Publications. (In Persian)

Mir Hosseini, A, (2013), Data Envelopment Analysis Applications and Models, Tehran: Amirkabir University of Technology (Tehran Polytechnic). (In Persian)

prasada Rao, D.S; ODonnell, Christopher j. Battese, George E.(2003). Metaferontier Functions for the study of Interregional Productivity Differeneces, University of New England, p.p.1-6.

Savino, D.M.; McGuire, K.S.; White, K. M. (2012). "Human Asset Measurement: A Comparison of the Artifact-Based Approach Versus Input Methods". *Journal of Management Policy and Practice*, 13, 39-43.

Theek,herman A (2005), a human resource accounting transmission: shifting from failure to a future, journal of human resource costing & accounting, .vol.7,no.1,pp.41-57.

Zarei Matin, H, (2009), Advanced Organizational Behavior Management, Tehran: Agah. (In Persian)

Zare Baz Qaleh, B; Rabiee Azbarmi, S, and Taleghani, M, (2013), Evaluation and Measurement Indicators in Human Resource Accounting, Second National Conference on Management and Accounting, Industrial Engineering. (In Persian)

HOW TO CITE THIS ARTICLE

Rahimi, S., Talebnia, Q.A., Hejazi,R., Ranjbar,M.H.(2021). Designing a human resource valuation model with a data envelopment analysis approach (Case study: Hormozgan Islamic Azad University units). International Journal of Finance, Accounting and Economics Studies, 3(1): 11-21.

DOI:

Url: https://ijfaes.srbiau.ac.ir/article_16610.html

Journal homepage: https://ijfaes.srbiau.ac.ir