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Lesson 9

HUMAN RESOURCE VALUATION AND ACCOUNTING

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9.0   OBJECTIVES

After reading this lesson, you should be able to:

a) Define human resource accounting and discuss the objectives and significance of human resource accounting.

b) Explain the different human resource accounting models.

c) Make a comparison of human resource accounting models.

9.1 INTRODUCTION

It is widely recognised that human resources are no lesser important than other productive resources. However the recognition of

importance of people in organisations as productive resources by the accountants is a recent origin. It was in 1960's that behavioural scientists attacked the conventional accounting practice for its failure to value the human resource of the organisation along with other productive resources. They pointed out that the failure of accountants of value human resources was a serious handicap for effective management. As a consequence, valuation of human resources has received widespread recognition. In the course of time a number of accounting models have been developed to value and report human resources of an organisation. In the management terminology this is called as Human Resource Accounting (HRA). Advocates of HRA consider the importance of the human element in organisations and the failure of conventional accounting in dealing with it as an asset. In its simplest form HRA involves the identification of the costs of recruitment, training and maintenance of an entity's human assets.

9.2 CONCEPT OF HUMAN RESOURCE ACCOUNTING

HRA the systematic recording of the transactions relating to the value of human resources. According to American Accounting Association, "HRA is a process of identifying and measuring data about human resources and communicating this information to interested parties."

HRA is the measurement of cost value of people for organisation. HRA is the systematic recording of the transactions relating the value of the human resources. The importance of people in the organisation as productive resource was conspicuously ignored by the management, but now-a-days it has received increasing attention and widespread interest in developing the system of HRA. The productivity of a company's investment is known for the rate of return, which is calculated on the basis of physical assets investment only. There is a need to find out productivity of investment on human beings in any organisation. It is an effective tool for decision-making.

Human resources have certain distinct characteristics from other physical assets like personality, self control, devotion, quality, skill talents, loyalty and initiativeness. It is a basic need of present time to improve productivity that can be improved by the human force. Hence to encourage, it is necessary to account them and to take progressive decisions for them.

Basic Premises of HRA

The basic premises underlying the theory of HRA are:

a) People are valuable resources of an enterprise.

b) The usefulness of manpower as an organizational resource is determined by the way in which it is managed and

c) Information on investment and value of human resource is useful for decision making in the enterprise.

9.3 OBJECTIVES OF HUMAN RESOURCE ACCOUNTING

HRA helps in developing financial assessments for the people within the organisation. However, the specific objectives of HRA may be outlined as under:

a) to assist the management in taking suitable decisions regarding investment on human resources.

b) to provide information to all people concerned regarding the earning potential of human resources of the organisation.

c) to assess efficiency of human resources in obtaining productivity and profitability, and

d) to provide comparative information regarding costs and benefits associated with investment in human assets.

It is an attempt to identify and report investments made in the human resources of the organisation that are not presently accounted for under conventional accounting practice. Basically, it is an information system that tells the management what changes

over time are occurring to the human resources of the business. In a nutshell HRA involves (a) measurement and valuation of human resources and (b) communicating the information so generated for internal and external decision-makers.

9.4 SIGNIFICANCE OF HUMAN RESOURCE ACCOUNTING

HRA as a managerial tool can be used for effective management of human resources. In the field of managerial decision-making, the human resource data as part of management information system helps in making meaningful choices between various types of human investments and investments in other assets. By measuring the value of human resources at different points of time, HRA can reveal whether the management is building up human resources or depleting them. The information generated through HRA can help the management in formulating policies and programmes for the development of human resources. Such information can be of utmost help for making decisions in the following areas:

a) Man power planning.
b) Appraisal of human resource development programmes.
c) Identification of training needs.
d) Usefulness of cost reduction programmes in view of their possible impact on human relations.
e) Studying the impact of budgetary control on motivation and morale of employees.
f) Facilitating allocation, conservation and reward of human resources.

9.5 HUMAN RESOURCE ACCOUNTING MODELS

Traditional accounting system treats human resources as current cost and charges such cost as of revenue nature. On the

basis of contractual obligation, the organisation, pays only salaries, wages and related fringe benefits for human resources, i.e. what the organisation pays in under normal methods of accounting chargeable to revenue only and no human resource is carried over as asset in the balance sheet.

The latest thinking on HRA considers such resources as capital items. The following are relevant:

♦ They render future service that have economic value.

♦ The value would depend upon how the resource are utilised. Various management actions such as training, development and technological advances have the effect of conserving, enhancing and depleting the value of human resources. Like the accounting for any other asset, HRA involves:

  a) Capitalisting the human resources-recording them as investments.

  b) Recording the routine expiration of the resources on the basis of amortisation.

  c) Record the loss of resources due to obsolescence or labour and staff turnover.

  d) Valuation of the human resources after adjustments.

From time to time many models have been suggested for the valuation of human resources. These models can broadly be classified into cost models and economic valuation models.

9.5.1 Cost Models

The following HRA models based upon costs involve in computation of cost of human resources to the organisation:

1. Historical or Acquisition Cost Model

This model of accounting of human resources was first initiated by Rinses Likert at R.G.Bary Corporation in Ohio

Columbia (USA) in 1967. This model involves capitalisation of the actual cost incurred on recruiting, selecting, hiring, training and developing the human resources of the organisation. The sum of such costs for all the employees of the organisation represents the value of the human resources of the organisation. This value is amortised over the expected length of service of individual employees. The unexpired cost is considered to be the investment in human resources. If an employee leaves the organisation due to resignation, death, dismissal etc., whole of the amount not written off is charged to the current revenue.

The total cost of the investment includes those quantifiable expenditures associated with recruitment, selection, hiring, training, placement, familiarisation and development. This method simply capitalises human resource costs and does not seek to value people. It is similar to the approach followed when valuing fixed assets and writing off their cost over their useful life. The cost is capitalised, not being charged against current income and a deferred taxation charge is made on the notional increase in profit. This method is simple and meets the test of traditional principle of accounting i.e. matching of cost with revenue.

2. Replacement Cost Model

This method of valuation of human resources was developed by Eric G. Flamholty on the basis of concept of replacement cost suggested by Rensis Likert. Replacement cost refers to the sacrifice that would have to be incurred to replace resources presently owned or employed. This method is based on current value or replacement cost. Under this system, an organisation values an employee at the estimated cost of replacement with a new employee of equivalent ability. The application of such a method, however, is

made difficult by the problems of defining and measuring replacement costs. In the contest of human resources, it refers to the cost that would have to be incurred to replace human resources presently employed. Flamholty has referred to two different concepts of replacement cost viz., individual replacement cost and positional replacement cost.

a) **Individual Replacement Cost:** The replacement cost of individuals in an organisation as conceptualised by Flamholty comprises of:

  i) The present estimated cost of hiring, training and developing individuals upto the normal level of productivity of the existing individuals, i.e. it includes the basic cost elements like:

     e) Recruiting outlay cost

     f) Acquisition cost

     g) Formal training and orientation cost

     h) Informal training cost

     i) Efficiency recovery cost

     j) Familarisation cost

     k) Cost of lost productivity during training

     l) Investment building experience cost

     m) Development cost

     n) Others

  ii) Costs associated with moving the existing position holders either out of the organisation or to new positions within the organisation, i.e.

     o) The cost of carrying a vacancy until a suitable replacement can fill it i.e. likely loss of contribution during the period when vacancies remain unfilled.

p) Cost of moving and displacement

q) Loss of productivity of the employees and their co-workers prior to their separation.

r) The effect of a vacant position on other employees.

b) **Positional Replacement Cost:** Besides the assessment of replacement cost of individuals, such a cost item may be estimated with reference to different positions in an organisation rather than specific individuals to be referred to as positional replacement cost.

The following are the limitations of Replacement Cost Model:

a) This model claims to incorporate the current value of company's human resources in its annual accounts at the year end. However its utility in actual practice is limited as it is very difficult to find exact replacements for individuals as no two human beings are alike in terms of abilities.

b) The estimation of the replacement cost of individuals or the rebuilding cost of human organisation would be based on the best judgement of the managers rather than facts and figures, thus being subjective in nature, may not be acceptable to the traditional accountants.

c) The replacement cost of individuals may affect their behaviour significantly and might feel themselves indispensable, leading to subsequent increase in the cost of retaining them.

d) Again if the replacement cost figure is substantially low for certain individuals the management may not perhaps be taking that much efforts and the development rate of those individuals might be low or retarded. The attitude of those employees may also be not favourable, thereby lowering down

the effectiveness of managements efforts towards their development.

e) Decrease in the rebuilding cost of human organisation may also be a cause of concern for the employees.

f) Market imperfections may make the replacement of an individual having specific skill more costly. Moreover, costs are escalated due to inflationary conditions and other influencing factors like union agreements, government legislations and external labour market situations.

g) An increase in the capitalised value due to increase in replacement/rebuilding cost may reflect spurious organisational profit primarily attributable to the operational inefficiency, the effects of inflation, external factors and constraints whereas a decrease in the cost reflect apparent loss due to operational efficiency and better management of the human resource.

In view of above limitations replacement cost as a basis of accounting of human resource and assigning their values may not be an acceptable proposition.

3. Opportunity Cost Model

This model of HRA seeks to measure the value of human resources on the basis of common concept o opportunity cost. This model was proposed by Hekimian and Jones to overcome the limitations of replacement cost model. It attempts to estimate the value of human resources by establishing an internal labour market in an organisation through the process of competitive bidding. Under this model all managers of profit centres are encouraged to bid for any scarce employee they want. This is largely artificial method involving the concept of the competitive

bidding process. Under this system, profit-centre managers are encouraged to bid for scarce employees, the successful bid being included in the organisation's human investment calculations. Employee abilities are related to profit generation, and may lead to a more efficient allocation of human resources. The employee is allotted to the highest bidder among the divisional managers and the bid price is included in that division's investment base. The authors of this approach claim that this bidding process is helpful in:

♦ more optimal allocation of human resource and

♦ planning, developing and evaluating human resources of a business as it provides a quantitative base for decision making.

The following are the limitations of Opportunity Cost Model

a) Firstly, it excludes the value of employees who can be readily hired.

b) Secondly, circumstances in which the manager would like to bid will be very rare. Moreover no employee would like to be treated as a saleable commodity.

9.5.2 Present Value Models

Under this method, established capital budgeting techniques are applied to people, the argument being that the value of firm's employees is their discounted future earnings. Present value methods try to measure economic value rather than simply record investment in human resources at historic or replacement cost. An alternative approach to value measurement is that of estimating the contribution of human resources to the economic value of the firm. Valuation is determined by allocating to human resources a

portion of the firm's present value (this being defined as discounted future earnings).

Present value models seeks to measure the value of human resources on the basis of present value of the services to be generated by the employees of an organisation in future. Two approaches have been suggested for this purpose:

a) By discounting the future salaries and employee related capital costs (such as cost incurred on recruiting, training and developing employees) by a certain rate of discount, and

b) By discounting the future earnings of an organisation at a certain date by a suitable rate and allocating a part of such present value to human resources.

Based upon these premises the following HRA models have been developed:

1. Lev and Schwartz Model

Based upon the economic concept of value this model was suggested by Baruch Lev and Abaa Schwartz. According to them, the value of human capital embodied in a person of age X is the present value of his remaining earnings from employments. They have given the following formula for calculating the value of an individual:

$$Vx = \Sigma \; \frac{I(t)}{(I+r)} \; T\text{-}x$$

where

Vx = the value of an individual X years old.

I(t) = the individuals annual earnings upto retirement.

r = a discount rate specific to a person.

T = retirement age.

The model of HRA given by Lev and Schwartz ignored the possibility of death prior to retirement age. The model given by Lev and Schwartz can be considered as an improvement over the cost models as it seeks to value the human resources of an organisation on the basis of the economic value of employees of total organsiation.

The model suffers from certain deficiencies as it ignores

a) the individual's value to an organisation depends upon the role in which an individuals is placed in addition to his qualities, traits and skills;

b) employees change their roles during their career due to promotion, transfer etc. and

c) an individual may leave the organisation for reasons other than death and retirement.

The published annual report for the year 1993-94 of Southern Petrochemicals Industries Corporation Ltd. (SPIC) contain the following information on accounting of their human resources. Human Resources Accounting is based on "Lev & Schwartz" model.

SPIC – Human Resources Accounting   (Rupees in lakhs)

Category of employees	Number of employees		Value of human resources	
	1993-94	1992-93	1993-94	1992-93
Management	112	95	1,213	850
Officers	1,000	958	8,152	6,457
Skilled staff	1,868	1,814	12,484	9,821
Semi-skilled staff	150	140	949	691
Unskilled staff	68	64	366	265
Trainees	298	100	1,320	364
	3,496	3,171	24,484	18,448
Value of Human Resources			24,484	18,448
Total earnings			1,21,309	1,18,222
Value added			19,123	19,184

Ratio of:				
Total earnings/Human Resources			4.95	6.41
Value added/Human Resources			0.78	1.04

Evaluation is based on the present value of the future earnings of the employees and on the following assumptions:

a) Employee compensation includes direct and indirect benefits.

b) Career growth as per present policies and weightages for incremental earnings depending on cadre/age are considered.

c) The future earnings have been discounted.

2. Hermanson's Models

Roger H. Hermanson has suggested two models for the measurement of human resources; one is unpurchased goodwill model and the other is adjusted discounted future wages model.

Under the first model it is argued that super normal profits in a firm are the indicators of presence of human resources. The model requires computation of the ratio of net income after taxes (EAT) to total assets (excluding human assets) of each firm. This in turn is compared with the ratio for the industry as a whole. The value of human resources of a firm is then measured with the help of differential rates.

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

current year and 1 to the preceding fourth year. The following formula is used:

Efficiency Ratio =

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

Where

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

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

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

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

The efficiency ratio measures the rate of effectiveness of the human resources operating in the given entity over a five year period. A ratio greater than one implies that the rate of return of the firm is above the average ratio of return for all firms in the economy. The efficiency ratio has been criticised by certain authors as subjective because of arbitrary weighting scheme and restricting the valuation period to five years only.

3. Stochastic Rewards Valuation Model

The Flamholtz's stochastic rewards valuation model identifies the major variables which determine the value of an individual to the organisation. The model advocates that a person generates value for an organisation as he occupies and plays different roles and renders services to the organisation. The movement of people from one organisational role to another is a stochastic process. As

people move and occupy different organisational roles they render service (rewards) to the organisation. Based upon the above concept, a person's expected realisable value of an organisation can be measured as the discounted mathematical expectation of the monetary worth of the future rewards (services) a person is expected to render to the organisation in future roles he is expected to occupy, taking into consideration the probability of his remaining in the organisation.

The model suggests a five step approach to assess the value of an individual to the organisation.

- ♦ Forecasting the period a person will remain in the organisation i.e., his expected service life.
- ♦ Indentification of service states i.e. the roles he might occupy and the time at which he will quit the organisation.
- ♦ Estimating the value derived by the organisation when a person occupies a particular position (service state) for specified time period.
- ♦ Estimating the probability of occupying each possible mutually exclusive service state at specified future times.
- ♦ Discounting (at a specified predetermined rate) the expected service rewards to their present value.

Flamholtz clarifies that an individual's expected realisable value is determined by two factors (i) the individual's conditional value and (ii) the probability that the individual shall maintain his expected service life. The product of these two variables is the present worth of potential services that are expected to be rendered to the organisation. This value in turn consists of three factors; productivity, transferability and promotability. Productivity refers to the services an individual provides while occupying the present

position. Transferability refers to the set of service an individual is expected to provide if he is transferred to a same position level in a different department of the organisation. Promotability is a set of services an individual is expected to provide after his promotion to higher positions.

Further an individual's conditional value is determined by his skill (currently developed potential to provide services to the organisation) and activation level (the extent to which that person is affected by motivation). In addition to the personal factors the organisation factors also influence the conditional value of an individual. These are; (i) the role occupied/performed by the individual within the organisation and (ii) organisational rewards.

Theoretically the model suggested by Flamholtz is the most scientific model as it provides a future oriented economic value of human assets. However its practical use is very difficult as the collection of reliable data regarding the value of a service state, a person's expected tenure and the probabilities of occupying various service states at specific times is not an easy job.

4. **Jaggi & Lau Model**

The model suggested by Jaggi and Lau is based on valuation of groups rather than individuals. A group implies homogeneous employees who may or may not belong to the same department or division. It might be difficult to predict an individual's expected service tenure in the organisation or at a particular level or position, but on a group basis it is easier to ascertain the percentage of people in a particular group likely either to leave the firm during each of the forthcoming period, or to be promoted to higher levels. In order to consider the role movements of employees within the organisation a Markov Chain representation can be

used. The model required the determination of Rank Transitional Matrix and the expected quantities of servies for each rank of service. The matrix can be prepared from the historical personnel records of the employees available in the organisation. For the purpose of measurement of quantities of services, a certain service or performance criteria is used.

The value of the services an organisation's current employee render in a future period is computed by multiplying the estimated number of current employees that will be in each service state in that period, by the value of the service an employee in each state (i.e. rank) renders to the organisation. The equation for the computation of value of human resources of an organisation using Jaggi & Lau models is given below.

$$TV = (N) \text{ rn } (T)n(V)$$

Where

TV = Column vector indicating the current value of all current
      employees in each rank.

(N) = Column Vector indicating the number of employees currently
      in each rank.

n = time period

r = Discount rate

(T) = Rank transitional matrix indicating the probability that an employee will be in each rank within the organisation or terminated in the next period given his current rank.

(V) = Column vector indicating the economic value of an employee
      of rank 1 during each period.

The model given by Jaggi & Lau tries to simplify the calculations of the value of human resources by taking groups of

employees as valuation base. However this method is also difficult to apply in practice because of difficult in obtaining reliable data.

9.6 COMPARISON OF HRA MODELS

The cost models of HRA fail to recognise the factors which determine the economic value of human resources. Also no serious effort is made in these models to identify factors which can enhance the value of human resources. The historical cost model resources on the basis of capital cost incurred to acquire and develop these resources. Since this model fails to recognise the economic value of human resources of an organisation, the data generated through this model is too little significance for making decisions regarding matters relating to human resource development. The replacement cost model seeks to incorporate the current value of company's human resources in its financial statements. However this model cannot be used in practice as it is really difficult to find identical replacements of existing employees. The opportunity cost model is based on the economist's concept of opportunity cost. This method can be used for computing the value of those employees only who can be employed on alternative jobs. This method fails to measure the value of those employees who are specialists in certain fields. From the above analysis it can be said that cost models of HRA are of little use in the process of Human Resource Development.

Among the present value models, the Lev and Schwartz Model and the Hermanson's Model do not make any serious attempt to identify factors determining the value of human resources. At the same time these models also fail to explain the factors which can improve the value of human resources. Both these models suggested to use the future wages and salaries of employees of an

organisation as a surrogate of the value of its human resources. Both these models assume that wages and salaries paid to the employees fairly represent the contribution made by them to their organisation. However in actual practice the things might be quiet different; as there are evidences that employees sometimes are not fairly compensated. Therefore the information generated by the above two models cannot help the management in making HRD related decision to a significant extent.

The Flamholtz's Stochastic Rewards Valuation Model and Jaggi and Lau's model explain the factors determining the value of human resources to a considerable extent. These models also explain the factors which can improve the value of human resources. The Flamholtz's model focuses on individual employees for the measurement of human resources whereas Jaggi & Lau suggest the use of homogeneous groups of employees as the basis for the same. However there are a number of computational problems which make the practical use of these models a difficult proposition. An organisation desirous of using these models for human resource valuation must create facilities for estimating the reliable value of variables determining the value of human resources. If this could be done the information so generated could be of considerable importance for making HRD related decisions.

A discussion of the HRA models reveals that there is not even a single model which fulfills all the requirements of a model which could help in the process of HRD. Certain models fail to recognise the factors determining the value of human resources whereas others have computational problems. Therefore, there is a need for great deal of research which could be of considerable help in the process of human resource development.

9.7 HRA MODELS AND HUMAN RESOURCE DEVELOPMENT

The usefulness of a HRA model in the process of HRD would depend upon how best it meets certain basic requirements. These requirements are:

♦ The model should identify the factors which determine the value of human resources.

♦ The model should identify the factors which can improve the value of human resources.

♦ The model should be capable of measuring the value of human resources operationally. A model can be made operational only if the data which it requires can be made available. Very often, a model can be theoretically sound but, if the required data are not available its usefulness shall be greatly reduced.

♦ The information generated by the model should help users to make decisions relating to the process of human resource development.

9.8 SUMMARY

The concept of HRA is of recent origin and is struggling for its acceptance even in the west. It is said that this concept does not hold good to labour surplus economies of developing countries like India. An analysis of present day situations prevailing in India makes it clear that this concept is of paramount importance here than perhaps to the west. In India, a growing trend towards the measurement and reporting of human assets, particularly in the public sector is noticeable during the past few years.

9.9 KEYWORDS

Human Resource Accounting: It is the systematic recording of transactions relating to the value of human resources.

Replacement Cost: It refers to the sacrifice that would have to be incurred to replace resources presently owned or employed.

Efficiency Ratio: It is the weighted average of the rate of the return on investment of the given firm to all the firms in the economy for a specified period.

Productivity: Productivity refers to the services an individual provides while occupying the present position.

Promotability: It is asset of services as individual is expected to provide after his promotion to highest positions.

9.10 SELF ASSESSMENT QUESTIONS

1. Define human resource accounting. What are its objectives?
2. List out the benefits derived from the human resource accounting.
3. Discuss the different methods of human resource accounting. Which one of them will you recommend for adoption in India under the prevailing circumstances?
4. Distinguish between
    a) Historical cost model and replacement cost model.
    b) Replacement cost model and opportunity cost model.

9.11 SUGGESTED READINGS

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