CHAPTER - TWO

CONCEPTS AND TECHNIQUES OF HUMAN RESOURCE ACCOUNTING AND THEIR APPLICATION
Introduction

Valuation of HRs associated with NPOs requires a survey of literature on the measurement of the resources, needs a comparative analysis of the various models and demands selection of one of them which is most suitable in the context of availability of data and other considerations. HRs, it has been stated earlier, represent the heart and brain of an organization. For the last few decades, the accounting scenario across the world is much concerned with the valuation of human resources and reporting the same in the annual accounting statements. The accounting scholars are also deeply engrossed in the subject, even though they do not agree in all aspects in the area. This chapter aims to survey, in brief, the major conceptual developments on this issue.

With the object of surveying the ideas developed in the area the present chapter delineates first, what is usually meant by human resource accounting (HRA) and inquires the rationale behind such system of accounting. The crux of the problem of HRA, i.e. the measurement of the value of HRs in an organization is narrated in section three. Subsequently it highlights the early writings and presents also the historical evolution made on this subject. Next to it, a detailed analysis is made on the various models developed by the erudite authorities, followed by a comparative discussion on those issues. An appraisal of these models, leads us to confine our study to one of the most widely accepted theories, the application of which is feasible in measuring the value of HRs in NPOs. How the human assets are reflected by profit-seeking organizations in India in their annual reports is discussed in section nine while a bird's view on the recent practices made by some major
organizations in India reporting HRA is shown in section ten. By way of conclusion the chapter discusses the need for accounting for HRs of the NPOs and for valuing the services of the people associated with these organizations.

I

Major Definitions of HRA

Now discussion on some major definitions of HRA are in order.

The Committee on HRA of American Accounting Association (AAA) defines HRA as "the process of identifying and measuring data about human resources and communicating this information to interested parties".\(^1\)

According to Davidson et al, HRA is, "a term used to describe a variety of proposals that seeks to report and emphasize the importance of human resources — knowledgeable, trained and loyal employees — in a company's earning process and total assets".\(^2\)

Flamholtz defines HRA as "accounting for people as an organizational resource. It involves measuring the costs incurred by business firms and other organizations to recruit, select, hire, train and develop human assets. It also involves measuring the economic value of people to organizations".\(^3\)

Brummet explains HRA as, "the process of developing financial assessments for people within organization and society and the monitoring

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of these assessments through time. It deals with investments in people and
with economic results of those investments".

An observation on the above definitions leads us to the conclusion that accounting for HRs involves the following process, viz :

(i) identification of data on the investment on human resources ;
(ii) measurement and valuation of the economic results of such investments, and
(iii) presentation of the above valuations in the annual financial statements.

While the expenditure incurred for recruiting and developing personnel in an organization is considered by some authorities as investment in HRs, the present values of the series of services derivable from such resources are treated by others as the value of such resources. Anyway, all agree on the point that information on the above is to be provided in the financial statements to make the accounting reporting complete and useful.

II

Needs for HRA

HRs are indispensable components of an organization. They represent the people of all levels engaged within an entity. The inanimate objects alone in an organization can produce nothing without the help from HRs. The success of an organization hangs ultimately on the efficiency of

its HRs. Hence the objectives of an organization should, therefore, be to acquire their services, to develop their skill, to motivate the people to enhance their level of performance and ultimately to ensure that they continue to maintain their commitment to the organization. These operations are performed by all the organizations, whether they are profit-seeking or non-profit seeking to achieve their desired objectives. 

With the increasing sizes and complexities of business units, advancement in the economic role of the governments, the emergence of scientific management within the organization and development in the accounting techniques necessitate to bring new dimensions in accounting for a vital element of the resources — man. Recently, the top level management is very much concerned with the ideas: What is the impact of inclusion of HRs in the financial statements? Can the performance of these HRs be measured and shown in the Balance Sheet? What purposes these financial reports will serve if the HRs find a place in the annual accounting statement? In this section will be discussed in brief the necessity of HRA in an organization.

(i) Providing complete picture - The conventional accounting system is, however, silent on the concept of HRA. According to this system, the expenses incurred for the selection, recruitment, training etc. are considered as current revenue expenses rather than an investment for the purpose of being amortized over its useful economic service life. As a result, the conventional balance sheets fail to represent the value of HRs and hence these financial reports are unable to reflect the true value of the enterprises and the rate of return on actual investments. The ROI, in

such circumstances, shows a brighter image than what is the actual position. This is why information on HRs is necessary to provide a complete picture of the assets-holding of an organization.

(ii) Control - Data derived from HRA can be used as a tool in the hands of management for effective control of the organization. According to Flamholtz, HRA generally provides information essential for management to perform the functions of acquiring, developing, allocating, conserving, utilising, evaluating and rewarding HRs. The result so achieved through using HRA for reporting may also be of crucial significance in the management control system.

(iii) Information to others - The other users of the financial reports may also be benefitted through the publication of HRA information. Some authorities opine in favour of HRA. In the opinion of Rensis Likert, "Bankers making loans, investment house and others, who are interested in the earnings and success of the enterprise, should be just as interested as Board of Directors and senior officers in having these periodic measurement of the causal and intervening variables". Where the causal variables denote the strategy, skill and policies of leadership, the intervening variables reflect internal health, state and performance capabilities of the organizations. Hermanson contemplated that the financial statements would be more complete and more useful to managers and investors if they include in their accounting reporting the value of those HRs who served the entity.

(iv) Information on efficiency of HRs - Investors' need for HRA information, for they feel that an entity with skilled, efficient and wise HRs is more desirable for investment, as they may get higher rate of capital gains from their securities and expect greater service potentials than from those with inefficient working force. As per the report of American Accounting Association (Committee on Human Resource Accounting) the purpose of HRA is to improve the quality of decision making by external users, particularly the investors, who could benefit from HRA through the provision of information on the extent to which the human assets of the organization have been increased, or have diminished during the period. Moreover, the efficiency of HRs can also be measured through the HRA.

(v) Indicator of prospective profits - The human-asset investment ratio (i.e. the ratio of investment in human resources to total assets) may be regarded as a very useful tool to indicate the relative position of HRs in relation to other assets of the organization and also serve as an important indicator of future profit performance to the investors and other interested parties.

(vi) Provides information on non-monetary attributes - The users would be served better if non-monetary attributes are presented in the annual reports. It is so, because measurement of services and reporting of such non-monetary attributes will make the information system more logical and authentic. In case of NPOs, where HRs are the most important elements of the organisations, information on them in the financial statement is very much essential to highlight their performances. As Eric Flamholtz


opines, "HRA would first, identify the variables which determine a 
person's value to an organization that would suggest in developing 
monetary measures of human value and second, by identifying the variables 
the theory would facilitate the development of non-monetary surrogate 
measures of human value."12

(vii) Helps developing employee behaviour - Management may also be 
benefited from the information on their human resources in their 
financial statement as it would result in developing employees behaviour 
and skill, monitoring their efficiency of performance, lowering turnover 
and absenteeism and improving the human relation.13 The HRs, when placed 
in the Balance Sheet as assets of the organization, may achieve some 
psychological impetus, which ultimately influence their performance in 
the organization.

(viii) Helps making comparative analysis - Comparison of performance 
between monetary and non-monetary attributes is of immense help to the 
management for efficient control of the organization. A number of ratios 
may be suggested for such comparison. Baruch Lev and Aba Schwartz have 
opined in favour of such ratio analysis and have suggested a set of 
financial ratios. They are: (i) ratio of human to non-human capital 
(labour intensity), (ii) ratio of the value of scientific staff to the 
total value of human capital (skill intensity).14 These ratios will, in 
fact, determine the value of HRs in comparison to the total assets of the

13. P.K.Ghosh, Maheswari and Goyale, Studies in Accounting Theory, 
"Human Resource Accounting", Wiley Eastern Limited, New Delhi, 1990, 
p-450.
14. Baruch Lev and Aba Schwartz, "On the use of the Economic Concept of 
Human Capital in Financial Statements : A Comment". The Accounting 
organization and ultimately measure their performance within the organization.

(ix) Helps in making decisions: The information on HRs in financial statement and the changes in the value of HR assets over time are important to the interested people for making decisions and choosing among alternatives. The resource providers may decide on their proposed investment on the basis of the rate of return of the entity. A firm, incorporating HRs in their financial statements, will present more accurate rate of return on investment than a firm which fails to include HRs in their accounting reporting.

(x) Helps in determining profitability and productivity: The funding agencies of the profit seeking organization are very much concerned with the firm's profitability which is the function of the productivity of HRs associated with it. That is why the HRs should be shown as assets in the financial statement to give a meaningful and comparable measure of productivity. The profitability, on the other hand, presents the performance and credit-worthiness of an entity and such information can only be portrayed by incorporating the value of both human and non-human assets in financial statements.

(xi) Helps in efficient utilisation of human resources: HRA also helps the management in utilising the human resources in the most effective and efficient manner and ultimately stipulating a conceptual framework on the acquisition, development, allocation, conservation, designed to influence the value of the people.\textsuperscript{15}

Thus, it is evident from the above discussions that, to provide a more realistic financial picture of an organization it is essential to integrate the value of both human and non-human assets in the financial statements which will ensure more comparability and completeness of accounting reporting. Thus it provides more useful information as an aid to financial analysis.

III
Hurdles to the introduction of HRA to an organization

Adoption of HRA system helps in deriving some advantages, but some hurdles are to be overcome for the same. Some of the hurdles are listed below:

1. A number of models have been developed for the valuation of HRs of an organization, but it is difficult to collect data to fit the models. That apart, the authoritative bodies do not recommend for the introduction of a specific model. Which is why no uniform principle or standard is established for the measurement of such resources.

2. The management are least interested in the valuation of HRs on the following grounds:
   (a) The valuation models are very complex to comprehend and implement;
   (b) Most of them are least interested in highlighting the value of their subordinates;
   (c) There is no legal compulsion for disclosing the same in the accounting reports.
(d) Introduction of the system does not entitle an organization tax relief on the expenses on HR development programmes.

3. The investors as well as the management of the profit-seeking organizations are interested in the magnitude of profit earned by the entity. The system of HRA, in fact, neither assist in enhancing the profit structure, nor helps in presenting the financial data in brighter way.

4. Since the values are based on estimates rather than on exchanges, the resultant statements are sometimes considered subjective, surmise and imaginative.

5. Moreover, as discussed earlier, something can be considered as asset if it is owned by the entity. As no ownership can be claimed on HRs, they cannot be sold in need. Most of the people concerned are, therefore, reluctant to measure and report such resources in the financial statements.

These limitations notwithstanding, it can be claimed that HRA opens new vistas in the accounting world so that there will be a scope for evaluating and reporting HRs associated with an entity.

IV
Evolution of human resource accounting

Since long past, authorities considered the HRs indispensable in an organization. But the concept of accounting for the services of those HRs of the organization did not take a concrete form in early writings. Adam Smith, for instance, contemplated the investment in human capital.
Alfred Marshall also mentioned that "the most valuable of all capital is that invested in human beings." But a major breakthrough was not made in those days.

Subsequently in the post World war period, scholars like T. W. Schultz, Gary Becker, E. F. Dennison, L. Throw deliberated vigorously on the concept of human capital.

The conventional accounting system, it is discussed earlier, generally reflects the information on uses, utilities and values of inanimate objects without portraying the role and services of the HRs. But the dichotomy in accounting between human and non-human capital is fundamental; while the later is recognised as asset and placed in the financial statement, the former is not considered by the conventional accountants. According to Taylor and Glaeuter, "accounting information originates essentially from the results of financial transactions .... the only transaction which is recognisable (in the case of HR) is the contractual obligation to make a periodic payment in return for periodic services under a wage agreement. Hence wages and salaries are treated as current costs in the manner as rent payments for land leased by the firm, for neither is owned as assets." The rationale of such a statement is that something can be considered an asset only when the

entity can claim legal ownership in one hand and the entity should possess it with the expectation of deriving services from it in future. As the HRs, associated with organization, fail to satisfy these two criteria they, therefore, cannot be treated as asset.

The impending analysis regarding the inclusion of HRs within the purview of accounting system was considered during early sixties. In 1964, Hermanson suggested an 'unpurchased goodwill method' for valuation of human assets. However, his work did not make much impact on the contemporary accountants in favour of incorporating HRs in financial statements. In 1967, in the Harvard Business Review, Hekimian and Jones emphasised that information on HRs should be used in the planning process and also in the resource allocation decisions. In the same year Rensis Likert, in his writings, pronounced the importances of human assets accounting and the relative consequences of accounting for HRs in the organizations.

In the years of 1968 and 1969, R. Lee Brummet and others described the various proposals on HRA in different journals.


The "Human Resource Accounting System" is found to be applied first in the annual report of R. G. Barry Corporation during 1969 (R. G. Barry Corporation, Annual Reports, 1969-73). Some notable institutions in America, Japan and Europe were inspired with the idea of presenting data on HRs. The list includes American Telephone and Telegraph, General Motors, AB Valvo of Sweden, Mobile Oil, Proctor and Gamble, General Telephone and Electronics and others.23

The Committee of American Accounting Association (AAA)24 and the American Institute of Certified Public Accountants (AICPA) also opined in favour of HRA. They remarked that this concept will influence the people of both public and private organizations.

Moreover, some authors also take up the cudgels for the measurement and valuation of HRs. Notable among them are M. Scott Myers and V. S. Flowers (California Management Review, Summer, 1974), Richard B. Frantzrel, Linda L. T., Landau & Donald, P. Lindberg (Business Horizon, 1974), Bikki, Jaggi and Hon-Shiang Lau (The Accounting Review, 1974), and Wayne J. Morse (Accounting and Business Research, Winter 1975). In eighties and early nineties also authors across the world are pondering over the issue and are finding means and ways of applying the models to the real world situations.


V

HUMAN RESOURCE VALUATION MODELS

Now discussion on some of the major HRA models developed so far is in order.

A. Historical cost method: This model was first developed by Rensis Likert and his associates at R. G. Barry Corporation in Ohio Columbia (USA) in 1967. According to them, the expenses incurred on recruitment, training and familiarization, experience building should be capitalised in one group. In another group, information on the investment made for supervisory or managerial personnel or group of individuals for routine or current services may be obtained from basic documents, such as invoices, current vouchers etc. The total value so incurred are to be allocated over the accounting periods the employees expected to remain within the organization. In other words, the total value is being amortized annually over the expected length of services of individual employees. The unexpired cost is considered to be the investment in HRs. The technique of HRA under this method is partially similar to the method of accounting of other inanimate resources. The model is also designated as the cost-based HRA technique. The model is based on the following assumptions:

(i) Capitalisation processes are to be adopted for the recording of investments in HRs.

(ii) A suitable amortization process is to be followed for recording of such capitalised amount.

(iii) Losses due to obsolescence of investment in certain skill or knowledge capabilities are to be identified and recorded.

(iv) The dynamic nature of investment on HRs is to be reported.

How the different types of historical cost based expenses are grouped, capitalised and amortized is shown diagramatically by Brummet. This can be exhibited in the next page.

Table 1

A GENERALIZED MODEL OF COST-BASED HUMAN-RESOURCE ACCOUNTING SYSTEM

<table>
<thead>
<tr>
<th>Total costs to the firm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs of human resources</td>
</tr>
<tr>
<td>Other Costs</td>
</tr>
</tbody>
</table>

Human resource costs capitalised (asset control)

Functional asset Subsidiary

Recruiting Familiarization Training Experience Individual Individual Group

Personalized asset Subsidiary

Write-offs Amortization Write-offs Amortization

Total Expenses (including amortization and write-offs)

Source: R. G. Barry Corporation.
This method of analysis helps control and maintain subsidiary accounts of investment balances by functions, by individuals, groups of individuals, departments or project teams.

Accounting treatments

Expenses incurred on the recruitment, training, experience building of various personnel in the organization and capitalisation of their values can be accounted for through the following journal entries.27

1. Investment in Human Resource A/c......................Dr. To Profit & Loss A/c. (Being the expenses incurred on recruitment, training experience building, advancement of HR capitalised).

2. Profit & Loss A/c................................... Dr. To Deferred Income Tax A/c. To Retained Earnings A/c. (Being the 50% of income on capitalisation transferred to Deferred Income Tax A/c. and 50% to Retained Earnings)

When the capitalised cost is amortized the reverse entries will be:

1. Profit & Loss A/c.....................................Dr. To Investment in Human Resource A/c. (Being the amortization of capital cost).

2. Retained Earnings A/c................................Dr. Deferred Income Tax A/c...........................Dr. To Profit & Loss A/c. (Being the amortized portion recovered from Retained Earnings and Deferred Income Tax provided earlier).

Criticism

1. The value of HRs computed under this model can hardly project the real value of the service potentials of HRs.

2. Such information is of little use for measuring the total value of the organization.

3. Since these costs are historical in nature and such assets cannot be disposed of, information on them are not of much significance for investment decisions.

B. Replacement Cost Method: In order to overcome the limitations of the historical cost method, Hekimian and Jones developed a method for valuing the HRs. According to them, the current cost of replacing the present set of workers by another set with similar efficiency and experience may be considered the value of HRs. Eric G. Flamholtz opined that replacement cost may be necessary for two reasons: one relating to an individual and another to position.

(i) The first one relates to the cost incurred by the management for replacing one employee by a new employee with equivalent skill, ability and knowledge for better result. In other words, the costs incurred represent the individual's value to the firm.

(ii) The second one relates to the value of series of services expected to be derived from an employee at the respective positions he holds and will hold at present as well as in future. It implies that an individual generally moves in different positions during his total tenure of his service life. Hence the positional replacement cost refers to the

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current cost of replacing the series of services expected from an employee during his total stay at different positions in the firm.

The expected realisable value of an individual may be calculated by taking the following factors into consideration:

(a) 'Mutually exclusive' states or positions that an individual will occupy are to be defined.

(b) Value of each position is to be determined.

(c) The total tenure of service of an individual is to be estimated.

(d) The probability that an individual will hold the expected positions during his total stay with the organization.

(e) The probability that an individual will not leave the organization is to be determined.

The expected realisable value of an individual to an enterprise will be determined with the following formula:

\[
E(RV) = \sum_{t=1}^{n} \left[ \sum_{i=1}^{m} \frac{R_i - P(R_i)}{(1 + r)^t} \right]
\]

Where, \( R_i \) = Value \( R \) (i.e. benefit) that can be derived by the organization in each possible service state 'i'.

\( P(R_i) \) = Probability that a person will hold the position 'i'.

\( m \) = Position at the time of exit (after holding each position)*,


* It refers to cost involved, as a person holds various positions throughout his service career.
n = Number of years an employee is expected to stay with the firm,

r = Appropriate discount rate,

t = Time.

The model with some variations has been operationalized at Lester Witte & Company, CPAS in Chicago and is reported as a case study in some detail in the book by Caplan and Landekich.\(^3\)

**Criticism** : The model is criticized on the following grounds:

1. The measurement is based on probability estimates, which may not be accepted universally.

2. The psychology behind replacement of present set of employees with another set is not considered here.

3. The calculations involved are debatable, critical and expensive.

4. The replacement of some employees, who are indispensable to the organization may not be possible.

Despite such limitations, this method pin points that the contributions from different positions that an individual holds during his stay with an enterprise should be considered while valuing its HRs.

C. **Opportunity cost/competitive bidding method**

For overcoming the difficulties associated with the measurements of HRs as per the replacement cost method, the concept of

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opportunity cost was proposed by Hekimian and Jones.\textsuperscript{31} The opportunity cost of HR is the value of an individual employee in alternative uses. According to the authors, the opportunity cost is the best means to value an individual. The value may also be established by competitive bidding within the organization. A human asset, therefore, will have a value only when it is a scarce resource, i.e. when its employment in one division denies it to another division, the amount payable by the division or department with the highest bid will be opportunity cost of that particular HR.\textsuperscript{32} The model can be justified on the ground that an optimum benefit can be derived from an employee because he is placed in the various positions only through competitive bidding process.

**Criticism**: The arguments against these views are as follows:

1. Here valuation of HRs are based on bidding process. It cannot be accepted as logical as employees are not placed in different position adhering to such principle.

2. The scope of hiring of personnel of similar efficiency, experience and skill are not considered here.

3. Since all the alternative uses of an individual's service available in an organization are not identifiable, application of the method is not feasible.

4. Valuation of performance of an individual in terms of profit is not practicable.


The method is eye-opener in the sense that an employee should be engaged in such a way that the company can be benefitted to its optimum level.

D. **Capitalisation of Salary Method** : This model was propounded by Baruch Lev and Aba Schwartz. According to the authors the valuations of HRs of homogeneous group can be done by aggregating the present values of the wages and salaries payable to individual employees during their stay with the organization. Each individual has an earning ability for the services he rendered to the firm. This earning profile is represented by his productivity which is again depended on his age. As he becomes aged, his productivity may diminish due to the technological obsolescences, deterioration of health etc. Thus all these factors lead to the reduction in annual earnings.

Measurement of HR under this method involves the following considerations:

1. Division of employees according to their age, grade of pay and designation.
2. Determination of the average annual earnings per employee in each group.
3. Calculation of the total earnings based on the remaining tenure of their service life.
4. The total earnings will be discounted on the basis of average rate of return on investment.

The human resources can be valued on the basis of the following formula:

\[ V_r = \sum_{t=1}^{T} \frac{I(t)}{(1 + r)^{t - t}} \]

Where, \( V_r \) = The human capital value of a person 'r' years old,
\( T \) = The person's retirement age,
\( I(t) \) = The person's annual earnings upto retirement,
\( r \) = A discount rate specific to the person.

This model was refined later by the authors considering the possibility of death of an employee before his retirement. Then the formula stands as below:

\[ E(V^*_y) = \sum_{t=y}^{T} P_y(t+1) \sum_{i=y}^{t} \frac{I_i}{(1 + r)^{t - y}} \]

Where, \( E(V^*_y) \) = Expected value of the human capital value of a person 'y' years old.
\( T \) = Person's retirement age.
\( P_y(t) \) = Probability that a person dying at age 't'.
\( I_i \) = Expected earnings of the person in period 'i'.
\( r \) = Discount rate specific to the person.

**Criticism**: This model is criticized on the following considerations:

1. An individual may leave an organization prior to his retirement, death or due to various factors whether personal or impersonal. These factors are not considered here.

2. The promotional aspect of an employee is not highlighted here. It may appear as if there will be no personal betterment of an individual during his service life.
3. The ratios based on the value of HRs calculated through the application of this model is of little consequence to the investors and management.

4. The discounting factor may vary from firm to firm, as there is no specific rate prescribed for such valuation.

5. The cost of recruitment, selection, training, placement and retaining the HRs are not considered here.

6. Here the underlying assumption is that the benefit derivable from an employee just equal to the cost of salary paid to him. If that be the case, there is no need of valuing HRs.

Despite the above limitations, it may be claimed that the application of this method of valuation is least debatable, as data on the basis of which such values will be determined are objective in nature.

E. Economic Valuation Model

The theme under this model resembles to that under the capitalisation of wages and salaries model. The only difference is that under the Economic Valuation Model\(^{34}\), the aggregate of the services expected to be derived from employees are capitalised whereas under capitalisation of wages and salaries method the earning profile of employees are capitalised. The value of an individual to an organization may be defined as the present value of the future services of employees expected to be derived during the total period of his association with

the organization. The present worth of services of an individual is
determined by multiplying the expected future services by the rate of
pay. The product arrived at is discounted by the rate of return on
investment. Here an individual during his total period of service life is
expected to occupy various positions and performs different activities
during this period. The question generally arises as to the probability
of the changes in position of an employee and the scope of deriving
services from him. Moreover, the probabilities of individual's leaving
the organization before his retirement or death are also considered
here.

The total expected service of an individual in an organization
may thus be obtained as follows:

\[ E(S) = \sum_{i=1}^{n} S_i \cdot P(S_i) \]

Where, 
- \( E(S) \) = The expected total service value.
- \( S_i \) = The service expected to be derived from each state to be
  occupied by the employee.
- \( P(S_i) \) = The estimated probability of the expected service being
  actually derived.

This model is being regarded as the most rational in comparison
to other models as it makes provision for an ex-ante economic value of
human resources.

Criticism: 1. Since the economic values of individuals are measured here
separately, values created by them jointly as a group are not considered
here at all.
2. An objective measurement of the probability of stay of an individual with the organizations at different positions, his services rendered to the organization, other employees' eagerness to stay with the organization etc. is very difficult.

3. It is very fastidious to measure separately the value of the services of individuals.

F. Return on Efforts Employed Method: Under this method value of HRs are not measured directly. Here, individuals are evaluated in order of the efforts they exert for the benefit of an entity. In other words, unlike other methods where the valuation of HRs are based on salaries paid to them or services derivable from them, here performances of individuals are measured in terms of the efforts they give to earn the profit of an enterprise. In this method, efforts are measured on the basis of three factors, viz. the position he holds, the degree of excellence he achieves and the nature of his experience. Contributions of individuals as well as contributions of a group are measured in terms of efforts rendered. The method may be explained with the following illustration:

(a) An entity has four levels of performance, viz.
   (i) directors,
   (ii) managers,
   (iii) foremen, and
   (iv) workmen.

(b) the efficiency of its employees may be classified in three groups, viz.
(i) excellent,
(ii) good,
(iii) satisfactory, and

(c) the experience of an employee may be classified into four categories, viz.,

(i) upto 2 years,
(ii) upto 5 years,
(iii) upto 10 years and
(iv) above 10 years.

Values may be assigned to each of the above variables according to their intensity.

(a) Levels and Grades of work

<table>
<thead>
<tr>
<th>Nos.</th>
<th>Job Grade</th>
<th>Factors i.e. Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Directors (Production)</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>Managers (Production)</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>Foremen</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Workmen</td>
<td>3</td>
</tr>
</tbody>
</table>

(b) Efficiency of Individual Performance

<table>
<thead>
<tr>
<th>Personal assessment</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>2.0</td>
</tr>
<tr>
<td>Good</td>
<td>1.0</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>0.5</td>
</tr>
</tbody>
</table>
(e) Experience and efficiency which increases on ascending order

<table>
<thead>
<tr>
<th>Years of experience</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 years</td>
<td>1.2</td>
</tr>
<tr>
<td>2-5 years</td>
<td>2.5</td>
</tr>
<tr>
<td>5-10 years</td>
<td>5.0</td>
</tr>
<tr>
<td>Over 10 years</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Now, weights or factors of three characteristics of an individual should be multiplied to determine the efforts employed by each individual. For example, efforts employed by a foreman with 5 years experience and good performance are to be measured as \((6 \times 1.0 \times 2.5) = 15\). The sum of the products thus obtained from all employees in production department represents the total efforts employed by the department. Now when the total profit of an organization is determined then the profit earned should be expressed per unit of efforts. For example, if the total profit earned is Rs. 4,00,000 and the total efforts employed in the entity is 2,000, then the average rate of return on human efforts will be 
\((\text{Rs.} 4,00,000 \div \text{Rs.} 2,000) = \text{Rs.} 200\). The method helps inter-departmental, inter-area and inter-firm comparison and also assists the management for efficient planning and control of the business.

Some consider that, this method has some similarities with the ROI method of efficiency measurement technique used in financial accounting. This information also helps management in making efficient HR allocation among the departments and divisions. According to Glaubier and Underdown, if there is any variations in the performances of human efforts year to year, the question may arise as to the cause of such differences. Hence how the difference can be overcome should be sorted out.

Criticism: 1. Where the objective of HRA is to value the HR asset of an organization, this system is unable to provide any plausible way in measuring the value of the same. On the other, it only provides an index of efficiency of HRs of an organization.

2. The numerical factors assigned to each variable are not verifiable. Moreover, the ratings awarded to the different levels and grade may not be appropriate according to the respective contributions. As such this unscientific rating may create dissatisfaction among the efficient employees.

3. Although the efforts exerted by an individual is an important information to the management and also to others but it is difficult to measure here the efforts in monetary terms to get the economic value of an individual in the organization.

4. The ratings awarded to different individual may vary from organization to organization. As such this measure does not help in inter-firm comparison of HR performances.

G. Value Measurement Method: H.R. Hermanson suggests that value of an employee to an entity should not be based on the discounted value of his earning alone. The relative efficiency of the entity in the economy should also be reckoned with in this context on the ground that because of the efficiencies of all the individuals in the entity, the organization has achieved an edge in the economy. The author proposes the following steps to be taken into consideration for valuing HRs of an entity.

(i) Determination of wage payment to different levels of management for the succeeding five (5) years.

(ii) The wage payment is discounted at the rate of return earned on assets of the firm for the most recent year.

(iii) The discounted value is being multiplied by the firm's efficiency ratio yielding an approximation of the present value of future services of the firm's human resources.

The "efficiency ratio" of an individual is determined by:

**Efficiency Ratio**: Firm's Rate of Return (based on 5 year's average)
Average rate of return (for 5 years) of all firms in the economy

**Criticism**:
1. In this uncertain world it is very difficult to forecast future cash flows and to ascertain objective discount rate.
2. Since forecasting of incremental earning and expenditure is subjective in nature, HR values measured on this basis is debatable.
3. Even an inefficient employee under this method will be valued at higher rate, because his earnings also will be multiplied by the firm's efficiency ratio.

These limitations notwithstanding, it is the method which alone attempts to measure the human resources on the basis of the relative weights the market gives on an entity.

**H. Non-Monetary Measurement**: Previous measurement models are based on the values of rewards or benefits the organization can obtain from the employees. In other words, they are based on monetary benefits derived from ultimate outcomes expressed in monetary terms. But outcomes are the results of some contributing factors which are not usually expressed in monetary terms. In other words, the earlier method does not establish a causal relationship between the human organization, its output and the variable signifying to measure that output. Likert and Bowers\(^{37}\) devised a system with an object of showing a causal relationship. They considered

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non-monetary measures such as work rate, attitude measures, employee turnover etc. most important in their model and accordingly incorporated the items in their models.

According to them the determinants of a group value is based on - (i) Causal variables, (ii) intervening variables and (iii) end-result variables. The causal variables are independent and can be manipulated by the management. They refer to managerial behaviour which reflects the strategy, skill, leadership and policy-making ability of management. These factors again influence the intervening variables like organisational estimates, peer leadership, group process and subordinates' satisfaction. These variables again lead to the end-result variables of productivity, cost of production, sales and profit etc. With the help of information on these items attempt can be made to measure the magnitude of correlation between the variables. It will point out the overall human efficiency.

The relationship among these variables may be reproduced as below:

<table>
<thead>
<tr>
<th>Causal Variables</th>
<th>Intervening Variables</th>
<th>End-result variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managerial behaviour</td>
<td>Perception</td>
<td>Health and satisfaction</td>
</tr>
<tr>
<td>Subordinate/peer behaviour</td>
<td>Communication</td>
<td>Productivity and financial performance</td>
</tr>
<tr>
<td>Organisational Structure</td>
<td>Motivation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decision-making</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Co-ordination</td>
<td></td>
</tr>
<tr>
<td>Feed-back loops.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Human Resource Accounting - an empirical relational system
Source: Likert and Bowers (ref. 19 p. 7).

The HR valuation, under this method, will be measured by predicting the firm's future earnings which is depended on the causal and intervening...
variables. These will be discounted to get the net present value of the business and a proportion of this value may be allocated to HR value.

Criticism: 1. The practicability of the method is open to question because it is very difficult to establish a causal relationship between various behavioural variables and performance variables as suggested in the model.

2. The method attempts to measure HR values as a group. It does not try to evaluate separately the end-results contributed by individuals. Hence application of this model does not help identify the inefficient employees.

Despite such limitations, if the end-result variables like output quality, manpower turnover rates, profits etc. are carefully reported along with causal and intervening variables, at least the changes in the end-results can be explained by changes in the causal or intervening variables. It may help in introducing corrective steps.

An alternative process of measurement is suggested by Flamholtz identifying the individual's value based on social, psychological and economic determinants. According to him the individual's value to an organization can be measured in terms of the present worth of potential services he could render during the total period of his service life in the organization, and secondly, on the probability that the individual will remain with the organization.

An Appraisal

In the previous section major models on HR valuation have been discussed in brief. In some aspects they are similar and in some points they differ. Let us examine them for selecting one of them which can be most suitably applied for accounting in NPOs.

In the Historical Cost Method the underlying assumption is that the present value of the series of services expected to be derived from the employed during their stay with the entity equals the amount spent for their selection, training etc. In other words, through spending money on human resource development, the organization is expected to be benefitted with their present and future services. But it is very difficult, if not impossible, to measure the duration, volume or magnitude and values of such services as nothing has been clearly defined on these respects. The discount factor, essential for the capitalisation of service values, is not considered in this model. The initial expenditure incurred on training, placement and development of personnel are taken into consideration perhaps on the assumption that the personnel will stay with the organization till retirement. Even though the model provides an objective measure of the HRs, it cannot serve our purpose for its inability to supply an indication as to the services expected to be derived from them in future.

The Replacement Cost Method has also its limitations. The basic feature of the method is that it attempts to incorporate the impact of advancement in production methods arising from the rapid change in technology and economic situations. To cope up with the advancement, the present set of HRs require to be replaced by a new combination. The cost
of replacement is not highlighted here. Though it provides a major improvement over the historical cost method, it cannot be applied in practice because of the lack of objective information on the replacement cost of employing the present army of employees.

The Opportunity Cost Method also neither consider the value and volume of services, nor make a provision to consider the discount factor. Moreover, if it is applied, the employees may raise the following questions: Which type of opportunity of them is considered here? What are the alternative uses they have? Who are bidders in the organization? Theoretically, the model does not provide any answer to these questions. Two departments in an organisation usually do not compete with each other for receiving services of an individual employee. It may be possible in those organizations which is less specialised and where workers of each department are capable of performing duties equally well in different department. But it is generally not practicable in large and specialised organizations. In modern times, multifarious activities are required to be performed for smooth functioning of an organization. That apart, specialised training is imparted to employees to make them suitable for a particular department according to its peculiar need. They are not developed with the object of making them competent for bidding. Hence, the application of the model does not appear to be feasible.

The Capitalisation of Salary Method, which is popularly known as Lev and Schwartz model, is considered logical and practicable as it takes into account emoluments paid to the employees, their stay with the entity, the discount factor while capitalising their earnings to have a measure of the human resource value. It is assumed here that, the volume
of services expected to be derived from the employees from the date of appointment to the date of retirement follows a fixed pattern. This appears to be static to some extent. Despite such shortcoming this system can provide an objective assessment, though to some extent, of HR value. That is why, the organization reporting HRA, generally value their HR on the basis of this model.

Under the Economic Valuation Method values of the services provided by the individual during his service life rather than the salaries they receive, are capitalised for the purpose. The method is logically sound for it considers the benefit derived from the labour of the employees. The benefit derivable from such labour may not always equal to the sacrifices made to acquire the services. Sometimes benefits may be higher, sometimes they may be lower than the emoluments paid to the employees. Unlike Lev and Schwartz model, here marginal rate of return of wages are not considered equal to the marginal rate of return of money. In other aspects, however, the two systems are similar. But the problem with the system is that it is very difficult to have an objective and separate measure of the value of services of individual employees. Because of this difficulty of quantifying such benefits it is very difficult, if not impossible, to apply the method for measuring HRs of an enterprise.

The basic assumption under the Return on Efforts Employed Method is that the whole of the return earned by an organization is contributed by the employees alone. But this argument is not tenable: The return is the result of various factors of production. In order to make the organization operative and successful, the managements' participation can
never be overlooked. A major part of the profit is the outcome of the pricing policy formulated and implemented by the management. People at the lower and the middle level are directed by the top level management to achieve the desired object. Therefore, the management's contribution should be duly reckoned with. That apart, the business as a whole is valued first through capitalising the total return earned by the entity. Then the cost of other assets are deducted from such capitalised value to have a measure of HR value. This round-about way of measurement is arbitrary in nature. This residual value may be contributed by the goodwill or other factors. Moreover, the method is dependant on the discounting factor and the volume of profit. Any variation in the estimate of the former may lead to a heavy fluctuation in the measure of HR values. Thus, this method fails to provide separately the value of individuals to the entity. However, through measuring the points assigned to an individual a rough estimate may be computed. But that is fraught with so many subjective items that the information they provide appears to be less dependable. Because of these difficulties this method is not usually used for measuring HR values.

Application of the Value Measurement techniques for gauging the HR values is very arduous. The underlying assumption of deriving services from the employees for forthcoming five years is contentious. Moreover, the system of multiplying the capitalized value of the earning of the employee by the efficiency ratio does not stand on sound footing for employee performances are over emphasised through double counting. It may be the fact that due to the higher rate of payment to the employees their productivity is enhanced. If we capitalise the higher rate of payment first and again we multiply it by entity's relative efficiency, then the
efficiency is counted twice. Hence the valuation is inflated. The model has some resemblance with the Lev–Schwartz model as to the method of capitalisation of salaries. Here, capitalised value of salaries of all employees are multiplied with firm's efficiency ratio. It may be interpreted that all the employees are equally efficient. But it cannot be the case. If the management wants to measure the value of individual employee they will be misguided. Because there will be every possibility that an inefficient employee may be overvalued at the cost of another efficient employee. Anyway, the peculiarity of the model is that it attempts to consider the relative efficiency of the entity in the economy. This point is important, no doubt, but if we want to make it logical we should first be sure that rate of return from the spending on salary is at par with the other assets of the entity. But that is a formidable task. Hence the application of the model is not practicable.

In the case of Non-Monetary Measurement Method, the technique of qualifying HR values is very complex and confusing. Here, the end-result may somehow be measurable, but it is very difficult to quantify the causal and the intervening variables. The process of conforming the non-monetary variables to monetary variables, all the non-monetary items are to be quantified first and at the end the amount of service derivable from an employee is to be measured. For such a measure, the managerial leadership, organizational climate are to be quantified, which will help us in gauging the intervening variables of peer leadership, group process etc. so that end result variables like productivity of employees and the financial performance can be correctly measured. Questions may generally arise whether it is, at all, feasible to quantify these variables. Therefore, we can quantify these variables, we cannot subsequently
capitalise them to get the HR value. Although a positive correlation among the three variables has been concluded by several authorities, the application of this method is not practicable for lack of objective and dependable data.

On the basis of the above discussions on the various concepts, it may be inferred that even though most of the above models appear logically sound in appropriate cases, it is not possible to apply most of them in practice because of lack of suitable and proper data, and inability to have objective measurements of all the variables mentioned in the models.

But the application of Lev-Schwartz model, where the value of services derived from the employees are capitalised is operationally feasible. That is why, the present study has attempted to value the HRs of a NPO based on this model. Details of the model are given in Chapter six which is engrossed in measuring the value of HRs to a NPO.

IX

HRA Practices in India

Let us have a glimpse of the HRA practices adopted by different organisations in India. Here, the HRA is yet to be used as an universal system of accounting. Moreover, the Indian Companies' Act, 1956 does not make it compulsory for a company, whether it is a public one or private one to report on HRA in their financial reports. A few organizations, however, of their own value their HRs and report them annually as a supplement to their accounting reports. A list of those companies in India, are given below:
(a) Public Sector Organisations:
1. Bharat Heavy Electricals Ltd. (BHEL).
2. Cement Corporation of India (CCI).
3. Engineers India Ltd. (EIL).
4. Electrical India Ltd. (EIL).
5. Hindusthan Shipyard Ltd. (HSL).
6. Oil India Ltd. (OIL).
7. Oil and Natural Gas Commission (ONGC).
8. Project and Equipment Corporation of India (PECI).
9. Minerals and Metal Trading Corporation of India (MMTC)
10. Steel Authority of India Ltd. (SAIL).

(b) Private Sector Organizations:
1. Tata Engineering and Locomotive Works (TELCO).
2. The Associated Cement Company (ACC).

HRA reporting practices of Steel Authority of India Ltd., a public sector undertaking, is given here as an example.

STEEL AUTHORITY OF INDIA LIMITED
Social Balance Sheet

<table>
<thead>
<tr>
<th>Liabilities</th>
<th>Rs. (in crores)</th>
<th>Assets</th>
<th>Rs. (in crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisation equity</td>
<td>456.89</td>
<td>Social Capital Investments :</td>
<td></td>
</tr>
<tr>
<td>Social equity</td>
<td>17940.89</td>
<td>Land</td>
<td>9.92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Residential &amp; other Buildings</td>
<td>332.90</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Roads &amp; Bridges</td>
<td>26.93</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water Supply &amp; Sewerage</td>
<td>40.09</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Furniture &amp; Fittings</td>
<td>3.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other Equipments</td>
<td>43.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Human Resources</td>
<td>17940.89</td>
</tr>
</tbody>
</table>

18397.78

18397.78
### Table-3

**HRA System in India Practised by the Different Companies**

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Name of the Company</th>
<th>Published HRA Information since</th>
<th>Model adopted</th>
<th>Discount Factor Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bharat Heavy Electricals Limited (BHEL)</td>
<td>1974-75</td>
<td>Lev and Schwartz</td>
<td>12%</td>
</tr>
<tr>
<td>2.</td>
<td>Cement Corporation of India Limited (OCI)</td>
<td>1980-81</td>
<td>Lev and Schwartz with refinements as suggested by Flamhotz and Jaggi &amp; Lau.</td>
<td>15%</td>
</tr>
<tr>
<td>3.</td>
<td>Engineers India Limited (EIL)</td>
<td>1980-81</td>
<td>Not reported</td>
<td>10%</td>
</tr>
<tr>
<td>4.</td>
<td>Oil &amp; Natural Gas Commission (ONGC)</td>
<td>1981-82</td>
<td>Not reported</td>
<td>12.25%</td>
</tr>
<tr>
<td>5.</td>
<td>Minerals and Metal Trading Corporation of India Limited (MMTC)</td>
<td>1983-84</td>
<td>Lev and Schwartz</td>
<td>12%</td>
</tr>
<tr>
<td>6.</td>
<td>Steel Authority of India Limited (SAIL)</td>
<td>1983-84</td>
<td>Lev and Schwartz with refinements as suggested by Flamhotz and Jaggi &amp; Lau.</td>
<td>14%</td>
</tr>
<tr>
<td>7.</td>
<td>Metallurgical and Engineering Consultants (India) Limited (MECON)</td>
<td>1984-85</td>
<td>Lev and Schwartz</td>
<td>14%</td>
</tr>
<tr>
<td>8.</td>
<td>Madras Refineries Limited (MRL)</td>
<td>1985-86</td>
<td>Lev and Schwartz</td>
<td>15%</td>
</tr>
<tr>
<td>9.</td>
<td>Oil India Limited (OIL)</td>
<td>1984-85</td>
<td>Lev and Schwartz</td>
<td>10.5%</td>
</tr>
<tr>
<td>10.</td>
<td>National Thermal Power Corporation Limited (NTPC)</td>
<td>1986-87</td>
<td>Lev and Schwartz</td>
<td>12%</td>
</tr>
<tr>
<td>11.</td>
<td>Associated Cement Companies Limited (ACC)</td>
<td>1983-84</td>
<td>Lev and Schwartz</td>
<td>Not reported</td>
</tr>
<tr>
<td>12.</td>
<td>Southern Petro-Chemicals Industries Corporation (SPIC)</td>
<td>1983-84</td>
<td>Lev and Schwartz</td>
<td>Not reported</td>
</tr>
</tbody>
</table>
The information as provided in Table '3' reveals that most of the enterprises in India, reporting HRA in their annual accounts, adopted the Lev-Schwartz model for valuation of their HRs. BHEL, one of the leading undertakings in India, is the pioneer in implementing the concept, publish HRA since 1974-75 based on the Lev-Schwartz model. However, SAIL, another frontline undertaking in India adopts the Lev-Schwartz model with modifications suggested by Jaggi, Flamhotz and Lau.

One point is to be noted here that in most cases the discounted factor is around 14%. But the rates ranges from 10% to 15%. The logic of considering such values of this factor is not mentioned in the report. However, the maximum of the rates (i.e. 15%) is near to the rate of interest on fixed deposit payable by a nationalised bank in India during the period of study. The maximum rate is used for discounting with a view to providing a conservative measure of the HR values.

XI

Requirement for introducing HRA in non-profit organizations

So far in India HRA has been practised very little, and whatever small has been done in this direction that has been confined to profit-seeking organizations only. The basic reason for such limited spread of the idea is perhaps that the conventional accounting system is capable of reflecting, though to a less extent, how far the basic objective of earning profit has been realised. Non-adoption of HRA therefore, does not make any barrier to reflect the profit earning capacity of the business.

But in welfare organization, HRA is needed because, in most of the cases the objective of an entity is to render services rather than to
earn profit. Such services flow from the people associated with the organization. The users of the accounting information, the public in general and the funding agencies in particular, are interested in learning the prospect of the flow of services and the sources of the flow of such services. HRA of welfare organization, it is discussed earlier can serve such purpose.

The need for HR information in the financial reporting of NPOs arises from the following three bits of information:

(a) How much services does the NPO contribute to society?

(b) How much are sacrificed by the people of the NPO for rendering such services?

(c) What is the value of the stock of these services? That means, what are the values of the people associated to the NPO?

As the existing accounting system of NPOs is unable to highlight the information on the above aspects, some additional information should be provided along with the traditional accounting reports by these organizations. For the purpose we are to study first the existing system of financial reporting of NPOs, their limitations and how such limitations can be overcome. These issues are discussed in the following chapters.