

# Application Of Lev And Schwartz Compensation Model On The Accounting Practices Of MCF Limited

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**Abstract:** In this competitive world, the efficiency of the labour force determines the competency of the organisations, which indicates that human beings are the greatest asset for any firm. This paper attempts to examine the applicability of human resource accounting and to measure the HRV of one of the largest chemical manufacturing company of India. The study conducted for a period of three years, beginning from 2013 to 2015. Lev and Schwartz compensation model was used to calculate the worth of the workforce at a specified discount rate corresponding to the company. Employee's age, remuneration, education, experience, job performance, cost of living, financial condition and the promotion policy of the firm, are the factors which affect the calculation of employee's worth. The result of the study indicates that employee demographics and human resource values are significantly correlated. The research also advocates the need for an efficient model which could facilitate measuring the intellectual capital at its true potential.

**Index Terms:** Human resource accounting; Lev and Schwartz model; Human resource value; Human Capital Valuation.

## 1. INTRODUCTION

In the current competitive world, it is complicated to find skilled & self-motivated employees. Human intelligence is the most significant element for efficient organisation operation [5]. No machinery can replace their creativity, knowledge and skill. So, humans are the most valuable asset in any organisation [13]. [9] Traditional resources such as financial capital and technological innovation are no longer a source of a competitive edge, as it can be easily replicated though it is necessary for the firms to invest on something which cannot be duplicated. HRA is generally an information system which provides information about the overall changes in the human resources over a period of time on a particular company. At the beginning of 1990s industries of the western countries were used to report the worth and importance of their human resources. When the service sector business started, they understood that the primary source of revenue is by their employees and these industries started considering their employees as human assets. In the other business sectors like IT, BPO's and Banking, the main asset of the organisation are its human resource because their employees are primarily responsible for building investors value. From the year 1960, the process of identifying and valuing of human beings are initiated by some of the behavioural scientists. Countries like China & Japan are forebear in advanced technology because of its high-quality workforce. In the current scenario, there is a massive demand for a skilled workforce. So, the entire world considers human resource as a real asset to any organisation because they bring business and profitability.

Thus, despite all technological improvements, the significance of human resources has in no way lessened. Human capital is an asset which could contribute growth, and competitive advantage for the organisations and this development forced the conceptualisation of HRA. [32] any business transaction involving monetary value must be recognized in the books of transactions regardless of the regulations of economic units. In the traditional bookkeeping methods, human resources were not considered as an asset, in the books of accounts. Conventions and principle based financial accounting system evolved because of the long term social, political, economic and legal influences. Although these conventions and principles are valid, it confines the usefulness of accounting as a tool of organisational decision making in specific areas such as human resources, which is the most valuable asset in an organisation[4]. The principal objective of human resource accounting is to utilise it for managerial decision making rather than for financial reporting [12]. Several research studies have proposed models for measuring human resource value [24] [11] [22] [14] [27] despite there is no model which is globally accepted to measure the economic worth of human resources. After three decades of academic research, corporates are involving HRA in their financial statements. HRA is an emerging methodology in India, which helps the organisations to recognise their employees as an asset in the balance sheet [34]. With the arrival of scientific management, which emphasis on the quantitative methodology to create a more effective function of all its resources and also includes the computation of human resource capital. [24] Points out the dichotomy of accounting practices which distinguishes human capital and non-human capital as the latter is recognised as an asset in the books of accounts; on the other hand, human capital is absolutely ignored. They argued that in the framework of certainty, the distinction does not affect measuring the value of the capital as there exists a perfect knowledge of future earnings and the discount rate. In the case of uncertainty, the non-human capital value can be determined by observing the market values, as it reflects the present value. However, this technique does not apply to human capital as it is not traded in the market. Indian companies like Infosys, ONGC, SAIL and BHEL use this method for evaluating their human resources. This method is calculated by measuring an individual's salary up to their retirement age, the average tenure of employment

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of an employee in a particular designation and discount rate specific to the company's cost capital. In this study, human resource value calculation is done by dividing employees into strata based on the designation. Although the theory of HRA appears to be useful, the terrestrial lack of adequate standards for the valuation of human resources is a challenge for its implementation. Managers will likely treat humans as quantitative data not different from physical resources. They may use HRA as a way of manipulating the employee by decreasing the value of an employee as a phase of punishment or restraint.

## 2. LITERATURE REVIEW

### 2.1 HUMAN RESOURCE ACCOUNTING

Every firm has assets which could be either tangible or intangible assets. [1] argues the existence of two intangible assets, they are intellectual and emotional capitals. [7] Intellectual capital attains greater importance, as its contribution to a firm in achieving a competitive advantage, and sustainable development is highly remarkable. It can be further divided into capital internal to the firm, external to the firm and the human capital where the human capital refers to employee knowledge, skills and ability [6]. In recent years, numerous studies have conducted on knowledge capital, and it leads to an increased contribution in the HR accounting literature. Human capital is said to be a key element which generates value in an intellectual based economy hence turn out to be a most directing component in the knowledge capital studies [16]. [3] on HR accounting opined that the various accounting models existing in the academic literature lack in their reference to empirical data but only deals with variables such as replacement cost, training cost and realisable economic value of human resources. [17] In his study published in the journal of human resource, accounting provided empirical evidence to prove that human resource depended firms enjoying higher returns compared to less depended on firms, even in the phase of excess market risk. The study also suggested that disclosing human resource accounting information may tend to influence the market value of the firm too. [10] concluded that after three decades of academic research application of HRA is gaining importance and the use of HRA will significantly influence managerial decisions on layoffs, mergers and valuing at its right potential.

### 2.2 LEV AND SCHWARTZ COMPENSATION MODEL

[33] critically reviewed the reliability of Lev and Schwartz compensation model on determining the value of employees. The researcher used annual reports of the six major companies of India, who implemented Human Resource Accounting in their financial reporting using Lev and Schwartz model. The study concludes that there is no standard model on HRA, which is accepted by the accounting bodies of the world, but Lev and Schwartz's model is used as a critical element to measure the worth of the employees in most of the public sector and IT companies of India. [21] in their study in Zenith Bank of Nigeria from 2008 to 2012 highlighted the use of Lev and Schwartz compensation model, for valuing the human assets and incorporating the cost value information in the financial statements. The study was conducted in Zenith Bank of Nigeria, by using the annual reports of the bank from 2008 to 2012 to review the credibility of Lev and Schwartz compensation model in valuing the human assets. Simple

linear regression was employed to analyse the impact of human resource accounting on the profitability of human resources against the capital employed. The study revealed that human resource accounting using Lev and Schwartz compensation model has a positive impact on the financial position of the bank and it also helps the bank to treat employees as its assets, which also reduces the employee attrition. Human Resource Accounting results in gaining the investor's assurance that their investments are effectively and efficiently managed. [25] carried out an extensive theoretical study about the existing models of human resource accounting. The study provides the limitations of each existing model of human resource accounting, and it recommends historical cost approach for human resource accounting, but this model does not provide any scope for employee's service outcomes, and as per this model the value of employee decreases as they gain experience. [15] examined the consequences of Human Resource Accounting on the investment on Human resource in Iranian Companies by using a t-test and explained that there is a positive correlation among investment on Human Resource and employee motivation. Hence, they concluded that Human Resource Accounting is essential for an organisation because it helps to measure the employee's worth and facilitates the management to take vital decisions on the organisations Human Resources. However, the study reveals that the management of the sample companies does not consider their Human Resources as assets; rather, they believe that investments on human resources are an expense. [28] conducted a study on Human Resource Accounting practices in Infosys Limited to study the existing human resource accounting practices of Infosys using Lev and Schwartz model, to measure the value of the human resources and also to find out the relationship between human resource value and rate of return. The researchers used both primary and secondary data by keeping the profit, efficiency, annual earnings, age and performance as independent variables and human resource value as dependent variables. The researcher has conducted different statistical tests such as ratio analysis, correlation and t-test. The study reveals that there is a high positive correlation between the number of employees and earning capacity of the company and also highlights the fact that human resource accounting helps the employees to understand their contribution towards the company, which results in increased employee motivation. [18] stated that Human Resource Accounting is a systematic methodology to recognise and measure the intangible value of human resources in a company and presenting the HR value information to the stakeholders. The study is conducted using a Five-Point Likert scale to understand the impressions of the chiefs of 24 organisations on initiating Human Resource Accounting framework. The researcher used mean and standard deviation scores to analyse the result. The study unveils that the management doesn't prefer to adopt Human Resource Accounting framework since it is expensive. [20] conducted a study to determine the impact of human capital accounting on the performance of Nigerian microfinance banks. Human capital accounting is carried out by measuring the value of employee salaries and management expertise. The study is conducted in 16 microfinance banks, using the annual reports and financial statements as secondary data sources and questionnaires were used to get response from the executives of 16 microfinance banks of Nigeria. Data analysis is carried out using suitable inferential and descriptive

statistical techniques. The study reveals that Human resource accounting has a considerable impact on the performance of the microfinance banks of Nigeria. The study also stresses the importance of incorporating the human resource value in the books of accounts. [8] identified that the implementation of human resource accounting resulted in increased profitability of Access bank of Nigeria. The researchers applied the ordinary least square multiple regression techniques to determine the relationship between the cost incurred on the development of human resource and the profitability of the bank. The study unveils that the training cost, development cost and the number of employees is the three essential parameters which decide the profitability of the bank. But from the study, it is evident that the third parameter, i.e. the number of employees, does not play an essential role in deciding the profitability rather profit depends upon the other assets of the bank. [23] found the relationship between human resource disclosure information and value of the firm by conducting a descriptive study on ten Indian companies that implemented human resource accounting in their financial reporting. The study resulted that the company's economic value has positively influenced by the disclosure of Human resource accounting information. [26] researched developing a model for valuing the human resources for Indian companies. The primary objective of the study is to analyse the existing HR practices and to improve a human resource accounting model by collecting the views of management and accounting practitioners of different firms in India. The study concludes that human resource accounting will positively impact the operational activities of the firm. But the study lacks to present a most suitable model to implement human resource accounting in Indian firms. [33] emphasized the importance of implementing the modern financial reporting technique, which considers both the time value of money and present value calculations. The main intention of the study is to find out the association between the human resource accounting disclosure and the business characteristics of Bangladesh. The study reveals that in Bangladesh, only a few firms implemented human resource accounting disclosure in their financial reporting. [31, 32] investigated the ethical implication of human resource accounting using institutional economic analysis. They concluded that the existing accounting system reduces the dignity of the human resources, whereas the implication human resource accounting will enforce to refer labour force as valuable asset or resource.

### 3. OBJECTIVES AND HYPOTHESIS OF THE STUDY

#### 3.1 Objectives:

1. To determine the worth of the human resources employed in Mangalore Chemicals and Fertilizers Limited.
2. To establish the relationship between employee demographics, revenue, employee cost with human resource value.

#### 3.2 Hypothesis:

$H_1$ : There is a significant relationship between the employee age, education and career stage with the human resource value of the firm.

$H_2$ : There is a significant relationship between the number of employees and total revenue of the firm.

### 4. METHODOLOGY

This study was conducted at Mangalore Chemicals & Fertilizers Limited during the period 2013 to 2015. The primary source of data used in this study are financial reports, employee database & promotion policy of the firm. Lev and Schwartz Compensation model and ratio analysis are employed to determine the worth of the employees. Correlation is used to determine the relationship between human resource value and the number of employees.

Lev and Schwartz Compensation model:

$$V_r = \sum_{t=r}^T \left\{ \frac{I(t)}{(1+r)^{t-r}} \right\} \quad (1)$$

Here,

$V_r$  = Value of the employee

$I(t)$  = The average annual salary of the employee till retirement.

$t$  = Years of service in a particular designation

$T$  = Retirement age

$r$  = Discount rate

### 5. DATA ANALYSIS & INTERPRETATION

The economic worth of human resource is the present value of the individuals earning till the retirement, at an adjusted discount rate as specified by the firm. Employees are grouped based on their designation, and the economic worth of each designation is calculated by considering the aggregate age, tenure at a particular designation, earnings, retirement age and the adjusted discount rate. The overall concept of this method is to measure the current value of employees future earning[24]. The model assumes that employee salary as a constant irrespective of future changes. However, this study takes into consideration of employee promotional opportunities and salary increments. Contingent earnings, social assistance and other benefits are disregarded from the measurement of human resource value.

**Table 1: Human Resource Accounting Abstract**

Particular	2013	2014	2015
Cost of capital (percent)	15.96percent	9.82percent	9.56percent
Number of employees:			
Officers	580	547	573
Trainees	61	51	59
Workmen	112	86	80
Total number of employees	753	684	712
Value of Human resource			
Officers	1455.27	1436.36	1300.14
Trainees	161.58	120.44	146.94
Workmen	91.14	66.80	50.25
Total Value of Human Resources	1707.99	1623.59	1497.33
Total Revenue	2790.04	3314.81	2590.25
Employee Cost	65.01	63.07	63.33
Value Added	40.19	-216.42	455.87
Net Profit Excluding Extra Ordinary Income	66.57	70.93	37.54
Ratios:			
ratio of total revenue/human resource value	1.63	2.04	1.73
Ratio of value added/human resource value	0.02	-0.13	0.30
Value of Human resource per Employee	2.27	2.37	2.10
Percentage of Employee cost/Human Resources value (percent)	4	3.88	4.23
Percentage of return on Human Resources Value (percent)	3.9	4.37	2.51

\*Amount in Crore INR

**Table 2: Designation wise HRV distribution**

Designation	Financial Year								
	2013			2014			2015		
	A <sub>1</sub>	N <sub>1</sub>	HRV <sub>1</sub>	A <sub>2</sub>	N <sub>2</sub>	HRV <sub>2</sub>	A <sub>3</sub>	N <sub>3</sub>	HRV <sub>3</sub>
5B	53	1	1.10	54	1	0.85	55	1	0.60
5A	NA	0	0.00	NA	0	0.00	NA	0	0.00
4B	49	6	7.40	50	6	6.27	51	6	5.93
4A	49	15	14.50	49	14	16.39	51	15	13.43
3B	47	23	32.11	48	20	27.17	47	24	30.07
3A	44	15	25.24	44	12	22.19	45	18	27.55
2B	38	26	62.05	39	19	46.39	39	21	45.19
2A	35	65	148.14	37	63	152.83	36	69	150.84
1B	35	117	287.16	35	111	285.69	36	121	276.28
1A	33	161	449.10	34	143	398.40	35	144	339.58
EB	32	108	318.10	32	124	388.81	33	110	296.52
EA	30	43	110.37	31	34	91.35	31	44	114.14
<b>Total</b>	<b>580</b>	<b>1455.27</b>	<b>547</b>	<b>1436.36</b>	<b>573</b>	<b>1300.14</b>			
MT	23	23	79.09	24	14	49.18	25	14	48.87
AMT	0	0	0.00	25	3	8.13	26	11	30.15
JMT	22.5	35	77.68	23	7	17.96	23	12	27.72
DT	20.5	3	4.81	21	27	45.18	21	22	40.20
<b>Total</b>	<b>61</b>	<b>161.58</b>	<b>51</b>	<b>120.44</b>	<b>59</b>	<b>146.94</b>			
4W	42	22	21.72	43	23	12.65	42	21	10.82
3W	39	31	21.04	31	18	14.59	40	25	15.45
2W	36	42	31.85	28	40	34.94	37	31	21.56
1W	32.5	17	16.54	26	5	4.63	34	3	2.41
<b>Total</b>	<b>112</b>	<b>91.14</b>	<b>86</b>	<b>66.80</b>	<b>80</b>	<b>50.25</b>			

\*Amount in Crore INR

Table 1 illustrates the HRV with regards to MCF Limited during the year 2013 to 2015. From the table, it is evident that the value of human resource from the year 2013 to 2015 is decreased due to the significant number of employees from the different cadre left the company and also as the study identifies that as the employee attain his or her retirement age the value corresponding to the employee decreases. As Table 2 depicts the significant value share is derived from the employees between the age of 31 to 36 years. Employee belonging to this age group possess substantial years of work experience, training, education, knowledge, skills and more years of service balance. It indicates that human resource value has got a significant relationship with employee demographics and thereby supports H<sub>1</sub> [2].

The number of employees in a firm is also a decisive factor in determining the HRV. [19] The present study result also strengthens the argument as the correlation coefficient indicates a strong association between the number of employees and Human resource value ( $r_{n1*hrv1}=0.9557$ ,  $r_{n2*hrv2}=0.9816$ ,  $r_{n3*hrv3}=0.9823$ ). However, the above results need to be considered as a deterrent to the practical applicability of HRA as in the current scenario of technological advancement machines are replacing humans, thereby reducing the number of employees. [2, 32] technological advancements shift production tasks directly from capital to labour, thereby reducing labour's share of output. The current study identifies that, as the employee number increases the value of human resource increases. Nevertheless, in the changing scenario, organisational efficiency is the result of the quality of its staff not depends on the quantity it possesses. Therefore, the study envisages the need for an efficient model which could facilitate measuring the intellectual capital at its true potential.

## 6. CONCLUSION

The ideas and ideologies behind the conceptualisation of HRA are no more hypothetical. The bulk investments in human resources generally made by corporate entities and the impact of such investments on the productivity level of the world justify the investment on employees as an asset rather than cost. Employee development programs like learning and development will result in the long-term profitability of the company[20]; hence, the cost incurred on the development of employees should be capitalized. [32, 35] Such type of asset reporting may result in efficient decision making in terms of human resource perspectives. Because the implication of HRA will describe the company at its right potential. Additionally, the arguments against the concept of HRA and its application are issues that can be solved considerably. The IFRS, IASC, NACAS and the Indian Companies Act is encountering a challenge in establishing standards for HC disclosure so that human resource accounting in India is voluntary for the companies to practice. The current study is an effort to monetise human resource, and the study concludes that Lev and Schwartz's model is an efficient model in determining the employee worth correspondingly this model has successfully executed by some of the giant Indian corporates[24]. The study also found evidence to prove the association of employee demographics with HRV. The study suggests the need for further empirical studies with this regard to support the initial adopters of HRA.

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