Comparative Analysis of Human Resource Accounting Practices and the Effect of Financial Performance on Human Resource Value in Public Sector Companies in India

Hojjat Shukuhian[1], S. Husain Ashraf[2]

[1]Research Scholar, Department of Commerce, Aligarh Muslim University, UP, India
[2]Professor of Commerce, Department of Commerce, Aligarh Muslim University, UP, India

ARTICLE INFO	ABSTRACT
Corresponding Author: **Hojjat Shukuhian** Research Scholar, Dept. of Commerce, Aligarh Muslim University, UP, India	The human asset is an intensive nature of the companies which is critically important for effective management of human resources. Human resources constitute a major element of total operating costs and the ability of management to control these costs is vital in order to long-term business success. Therefore, it is essential to disclose the value of human resource in annual report of companies. But the problem of HR is that most of the companies in India do not recognize it properly, despite of its significant contribution. HR's contribution is also significant in human capital efficiency and firms' financial performance. This research paper is based upon the HRA practices in Indian companies and analyzed empirically the relation between the value of human resource and financial performance. The data used in the study has been collected from the annual reports of nine selected public enterprises for the years 2006-07 to 2015-16. The present study also, intend to examine the relationship between HRV with Net Profit, Total No Employee, Profit per Employee, Return on HRV, ROE by using multiple regression analysis. The findings of this research paper uncover the fact that the HRV of companies is dependent upon two factors Net Profit and Return on HRV, in other hand has clearly shown that Net Profit is the most important factor to improve HRV followed by Return on HRV.

1.0- INTRODUCTION

In recent years, human resources have been recognized as an important source of sustained competitive advantage. HRA is concerned with the value of people as organizational resources and encompasses several approaches to measuring and accounting for their cost and/or value [1]. The American Accounting Association's (AAA) [2] definition of human asset accounting is the process of identifying and measuring information about human assets and communicating this data to interested parties. In other word, its process of identify and measure data related to human resource of an organization for stakeholder

investment. HRA centered on the cost incurred in improving and developing human resources. Human Resource Accounting was envisaged as a way of providing manageril information that they needed to manage human resources more effectively and efficiently and for reporting the external value of human assets to external stakeholders[1]. HRA involves accounting for people as organizational resources and its development has progressed through several stages. The first stage (1960-66) involved the recognition by academicians that a method to account for human resources was needed, Then the second stage (1966-71) involved the development of concepts and models for measuring the cost and value of people as organizational resources. The third stage (1971-1976) involved experiments to apply the measurement in actual companies. The difficulties involved in finding organizations that are willing to serve as research sites has limited the number of these types of studies. The fourth stage (1976-1980) involved empirical testing of human resource accounting information in a behavioral context. The fifth stage (1980 onwards) involved additional experiments to apply human resource accounting technologies to a variety of managerial problems [3] .Though the idea of accounting for human resources started many years back, the concept still lacks general acceptability. Many authors and scholars have conducted researches on how humans within an organization can be valued and reported in the financial statements of such organization. The increased HR costs have converted more apparent in the service industry than in the manufacturing industry, as HR was the leading contributor in the service sector. The strength to contribute the trade unions with the managerial vision of the company accounting for HR resources is required. The concept of HRA in India is a latest occurrence and is waiting for its acceptance. It has not been introduced so far as an accounting system in India. However, a rising tendency towards the measurement and reporting of HR's in the public sectors, particularly, was visible during past few years. Oil and Natural Gas Corporation of India. (ONGC), Bharat Heavy Electricals Limited. (BHEL), Indian Oil Corporation Limited. (IOC), Hindustan Petroleum Corporation Limited. (HPCL), National Thermal Power Corporation Ltd. (NTPC), Bharat Petroleum Corporation Ltd. (BPCL), Hindustan Copper Limited .(HCL), Minerals and Metals Trading Corporation of India Ltd. (MMTC), Steel Authority of India Ltd. (SAIL), Cement Corporation of India, ONGC, Engineers India Ltd, Madras Refineries, Associated Cement Companies, SPIC, Cochin Refineries Limited and others were amongst the some of the companies which have started disclosing more or less valuable information regarding HR in their annual reports and financial statement.

2.0- OBJECTIVE OF STUDY:
The main objective is to measure the value of Human Resources in the selected public enterprise in India.

2.1 To study the Human Resources Accounting practices in public sector enterprises.

2.2 To examine the relationship between profitability variables and Human Resource values in the selected public sector enterprises.

3.0 - REVIEW OF LITERATURE
Naghshbandi, *et. all*, **(2016)** [4], emphasized the importance of human resource. Propounded that the growth of any business is unconditionally depends on the skillful deployment of its human resources, which is globally recognized. They pointed out that the problem of Human Resource (HR) is that most of the Indian companies do not recognize it properly, despite of its significant contribution. The research investigated the HR practices of disclosing the human resource value and value per employee of selected 4 steel manufacturing companies in India. Analyzed the

data collected on the basis of their contribution by using probabilistic and random sampling method with the data for 8 years taken from 2006-07 to 2013-14 periods. And Auto Correlation Functions (ACF) of time series data has been employed in order to the analysis of the pattern of HRA. The ACF plays a crucial role in time series forecasting and is a valuable tool for investigating the properties of an empirical time series. The result showed that the method of disclosing the value of HR required a Proper initiation. The Central Government and the professional bodies in India in respect of formulation of specific accounting standard and suitable valuation models on the measurement and reporting of value of human resources. Though it is not an easy task to enlist the suitable items of HR information, but it must be reported by every organization in its annual reports. Finally, results revealed that in the steel manufacturing companies' insignificant increase were recorded in value per employee despite of the increase in the turnover.

Safdari and Motiee (2012) [5], estimated the major determinants of Balanced Scorecard system in Telecommunication Company of Iran and investigated how effects of value of human resources have changed the Balanced Scorecard system in selected companies. The theoretical framework was based on this assumption that there is a significant relationship between human resources and Balanced Scorecard system. The results showed that there is a positive and significant relation in all the companies and also level indicators between Human Resource Accounting Index and balance scorecard system structures.

 Ishola Rufus Akintoye (2012)[6] , has examined the relevance of Human Resource Accounting to Effective Financial Reporting, he used secondary data obtained from Oceanic Bank for a period of five years from 2002-2006. The statistical techniques like Simple linear regression and correlation are used to study the impact of total

asset on the profit and capital employed by the bank. The result showed that there is high coefficient of correlation between the total asset and the profit earned after tax, the variables are useful in determining the impact of total asset on capital employed, the rate of return when human resource value was included in the financial report was greater than the rate of return when human resource value was not included in the financial report from 2002-2006. Finally, he concluded that the practice of accounting for investments in human resources as expenses rather than assets results in distorted income statements and balance sheets, the valuation of human resources in any firm creates an impact on the production of such firm and the presentation of the value of human asset in the financial report tends to increase investment in such firm, as investors have the assurance that their resources are in good hands which will be effectively and efficiently managed over time to create wealth.

Verma and Dewe (2008)[7], explored perceptions and practices in the area of valuing human resources and focused on the importance of valuing human resources, current measurement practices, barriers to measurement and the progress expected in this field. This research used by a survey questionnaire to identify and describe perceptions and practices in valuing human resources in three types of UK organizations: traditional companies; knowledge intensive companies; and local authorities. Finally, they showed that the majority of respondents regarding the measurement of human resources is important to their organization, little or moderate progress was expected in measurement practices over the next few years. The main reasons for this included a lack of organizational support, uncertainties as to what should be reported, the lack of precision in current measurement practices and sensitivities around what should be reported.

Flamholtz, Bullen and Hua (2002)[8], presented a history and overview of HRA with the purpose of

promoting both organizational applications and continued academic research. In their study, they defined HRA and suggests implications of measuring human capital for managerial uses and financial reporting. According to the finding of the study Swedish-based HRA applications with respect to measuring Human Assets and intellectual capital, illustrate the intellectual history and developments in business schools can influence business history.

Cascio (1998)[9] , He proposed a method for measuring human capital based on indicators of human capital of innovation, employee attitudes and the inventory of knowledgeable employees. According to him, innovation can be measured by comparing gross profit margins from new products to the profit margins from old products. Similarly, employee attitudes predicting customer satisfaction and retention are an important indicator of human capital and therefore need to be measured, as well as measures of tenure, turnover, experience and learning.

Dinesh K Gupta (1992)[10] carried out study on Human Resource Accounting Disclosure Practices of the Companies in India, has scrutinized the Annual reports of top Public and Private sector undertakings (100 each as per the Economic Times rating on the basis of capital employed) for the period 1980-81 to 1986-87 were scanned. Out of twelve companies, ten from the Public sector and two from the Private sector, were found to be publishing such information in their respective Annual reports. In order to evaluate the quality of disclosure regarding human resource accounting, certain variables were identified after scanning their Annual reports during the period under review. In all 23 variables, concerning with the system of human resource accounting were identified. He made a comparative analysis regarding the quality of disclosure made by various companies. He also focused that BHEL has given the maximum information, followed by MRL, and the least

information was disclosed by EIL, followed by ONGC. BHEL has made consistent disclosure of these variables and concluded that the disclosure practices of various companies which publish HRA information shows that most of the companies have highlighted on the disclosure of the variables used in the process of valuation.

Ansari and Flamholtz (1978)[11], propounded that a common misconception about human resource accounting (HRA) is that it focuses narrowly upon financial accounting, its purpose is to reflect the asset value of people on financial statements. They suggested that the main purpose of human resource accounting is to provide concepts and measurements to facilitate the effective and efficient management of human resources. And Management science has played an important role in facilitating the development of human resource accounting as a managerial tool. They pointed out that finally, Human Resource Accounting represents a major development in the adjustment of accounting for what has been called "post-industrial society". Human Resource Accounting, reflects both major economic changes and the influence of management science, techniques and approaches.

Nabil Elias (1972)[12], has examined with an experiment conducted with a help of Questionnaire distributed to several groups with different levels of sophistication and orientations of accounting and to the three student groups enrolled in an intermediate accounting course. The financial statements were prepared with human assets and without human assets and the participant were asked to select one of the two companies as the company for better investment. The findings of the study revealed that the differences among occupational groups, given the human assets treatment, were not statistically significant; No significant relationships could be ascertained between the background variables examined and company choice.

Paton (1952)[13], pointed out to people as an asset. They are an important asset of the organization. He suggested that in the business enterprise, a well organized and loyal personnel may be more important "assets" than a stock of merchandise. Further, he concluded that human asset is a factor of production, which has not yet reached the point in the business process where they may be correctly treated as 'Cost of Sales' or expenses.

Rao (1954)[14], stated, that Human Resource Accounting is a factor for measuring the cost and value of people. It is one of the recent developments in the area of accounting. He also suggested that the framework of human resource accounting is concerned with the effort of the accounting research to prepare human resource investment and value analysis for managerial planning and control.

4.0 MEASUREMENT OF HUMAN RESOURCES

According to approaches of human resource accounting, valuing of human resource of organizations can be broadly classified as monetary approaches and non monetary value-based approaches. The monetary approaches are further classified as (a) Cost Based Approaches, which incorporate historical cost approaches, replacement cost approach, opportunity cost model, standard cost method, current purchasing power method, and (b) Value-Based Models that embrace Hermanson's adjusted discounted future earnings model, Lev and Schwartz present value of the future earnings model, rewards valuation model, Jaggi and Lau model, net benefit model, Eric Flamholtz model and Morse model. The lists of the popular methods used all around the world are enlisted in table-1

Table 1. Methods to measure Human Resources

For Individuals Value	For Group Value	For expense Centre Group
Cost Methods ☐ Historical Cost method ☐ Replacement Cost method ☐ Opportunity Cost method ☐ Standard Cost method **Economic Value Approach** ☐ Flamholtz's model of determinants of individual value to formal organizations ☐ Flamholtz's stochastic rewards valuation model ☐ Lev & Schwartz Model ☐ Hekimian & Jones Competitive bidding model ☐ Skills Inventory ☐ Performance Evaluation ☐ Assessment of potential ☐ Attitude measurements	☐ The Likert & Bowers Model ☐ Brummet, Flamholtz, & Pyle's economic value model ☐ Hermanson's unpurchased goodwill model ☐ Human organizational dimensions method	☐ Capitalization of Compensation ☐ Replacement Cost Valuation ☐ Original Cost Valuation

Source: Vineet Chouhan and Nader Naghshbandi

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Out of the above methods the most common method used by Indian companies is Lev & Schwartz Model which uses the present value of future earnings of the employees.

The characteristics of the sample companies are enlisted in table-2 as under: Table 2 has shown that out of the five sample companies four were using the Lev & Schwartz model for evaluating their Human resources while one company ONGC is using the present value by discounting the estimated earning which is similar to the Lev & Schwartz model and other company SAIL is using the Lev & Schwartz with refinements as suggested by Flamholtz and Jaggi &Lau.

Table 2. Characteristics of Sample companies (2015-2016)

S. No.	Company Name	Date of Issue	Model used	No. of Employees	Operating Profit (Crore)	EPS (R.s)	HRV
1	Oil and Natural Gas Corporation of India. (ONGC)	1981-82	Jaggi & Lev Schwartz model. The present value by discounting the estimated earnings	33,927	77,791.53	18.71	82,552
2	Bharat Heavy Electricals Limited. (BHEL)	1974-75	Lev & Schwartz	42784	25,137.88	-3.73	8,382
3	Indian Oil Corporation Limited. (IOC)	1982-83	Lev & Schwartz model	33,112	342,907.72	42.83	31,330
4	Hindustan Petroleum Corporation Limited. (HPCL)	1981-82	Lev & Schwartz model	10,538	179,281.07	114.07	25,242
5	National Thermal Power Corporation Ltd. (NTPC)	1986-87	Lev & Schwartz model	21633	70,131.00	12.42	27,921
6	Bharat Petroleum Corporation Ltd. (BPCL)	1986-87	Lev & Schwartz model	12,741	189,098.10	102.78	25,377
7	Hindustan Copper Limited .(HCL)	1986-87	Lev & Schwartz model	3,252	13,433.35	33.62	724
8	Minerals and Metals Trading Corporation of	1982-83	Lev & Schwartz model	1,340	12,460.47	0.55	1,021

	India Ltd. (MMTC)						
9	Steel Authority of India Ltd. (SAIL)	1983-84	Lev & Schwartz with refinements as suggested by Flamholtz and Jaggi &Lau	**85,145**	**38,547.60**	**-10.02**	**6,842**

Source: Author

5.0 METHODOLOGY OF THE STUDY

The research methodology of this study is divided in following points:

5.1 Source of data- The source of data collection is secondary data which is collected from the 9 public sector enterprise providing the Human resource value in their annual reports. Certain information

has been obtained from the companies' websites also. The annual reports for the ten financial

years, 2006-07 to 2015-16, were taken for conducting this study.

5.2 Sample size- For the study a sample of 9 public enterprises were taken on the basis of manufacturing companies.

5.3 Sampling technique- The sampling technique used is convenient sampling.

5.4 Multiple Regression Analysis

The opening model of multiple regression analysis is intended to elucidate the impact of Net Profit, Total No Employee, Profit per Employee, Return on HRV, ROE on Human Resource value.

5.4.1 Dependent Variable: Human Resource Value

5.4.2 Independent Variables: Net Profit, Total No Employee, Profit per Employee, Return on HRV, ROE.

6.0 HYPOTHESES OF STUDY:

H_0 . There is no significant relationship between Net Profit, Total No Employee, Profit per Employee, Return on HRV, ROE and Human Resource value within public sector enterprises.

H_1 . There is a significant relationship between Net Profit, Total No Employee, Profit per Employee, Return on HRV, ROE and Human Resource value within public sector enterprises.

Hypothetical Model:
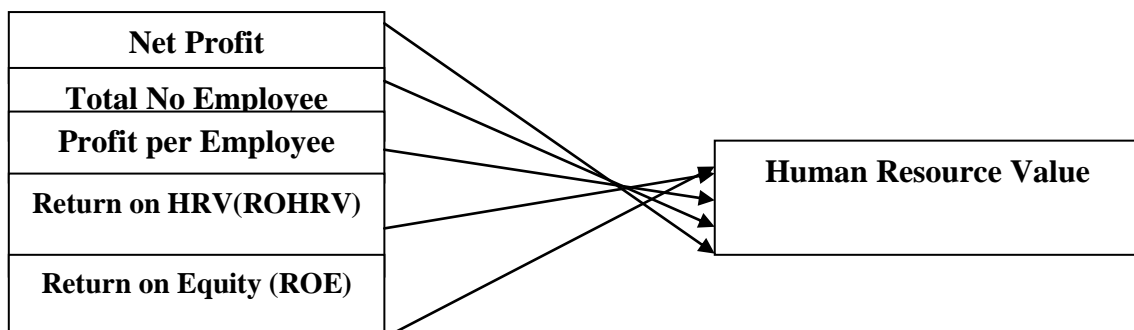
7.0 Figure 1: Hypothetical Model

8.0 DATA ANALYSIS:

As per the research objective of the paper the secondary data were collected from 9 enterprises. To identify that whether the difference between Net Profit, Total No Employee, Profit per Employee, Return on HRV, ROE and Human Resource value are significant or not, following hypothesis were developed:

H_0 . There is no significant relationship between Net Profit, Total No Employee, Profit per Employee, Return on HRV, ROE and Human Resource value within public sector enterprises.

To analyze the data and significant of the hypothesis Multipale Regression Analysis of were conducted by SPSS-21 software in table- 3 as under:

Table 3: Descriptive Statistics

Variables	Mean	Std. Deviation	N
Net Profit*	5195.3604	5914.49635	90
Total No Employee*	30680.0889	31674.06138	90
Profit Per Employee	.2620	.30625	90
Return on HRV*	23.5243	18.44807	90
Return on Equity*	14.4590	8.47057	90
Human Resource Value*	18950.6000	17942.27361	90

Source: Author

Tables 3 present descriptive statistics of all the variables concerning the current research. Descriptive statistics include mean, standard deviation, and number. The Total No Employee obtained the highest mean value of (30680.0889± 31674.06138), then the Human Resource Value followed by a mean value of (18950.60± 17942.27361), the Net Profit mean value of (5195.3604± 5914.49635), Return on HRV with a mean value of (23.5243± 18.44807), Return on Equity (ROE) with a mean value of (14.4590± 8.47057), and Profit Per Employee with a mean value of (0.2620±0.30625) from financial variables employed in the study during 2006-7 to 2015-16, respectively.

Table 4: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23834415614.411	5	4766883122.882	83.127	.000[b]
	Residual	4816925599.189	84	57344352.371		
	Total	28651341213.600	89			
a. Dependent Variable: HRV						
b. Predictors: (Constant), ROE, PPE, TE, Net Profit, Return on HRV						

Source: Author

Result of Multiple Regression Analysis treating Return on Equity (ROE), Profit per Employee (PPE), Total No Employee, Net Profit, Return on HRV as predictors and HRV as criterion variable was shown in Table 4, Table 5 and Table 6 .The overall multiple regression model was found to be significant (F = 83.127, p<0.0) (Refer Table 4) at 5% level of significance. This implies that all the independent variables considered in this multiple

regression model are significant in determining HRV.

In addition to F Value, significant ANOVA test robustly supported the employment of multiple regression analysis to appreciate the impact of Return on Equity (ROE), Profit per Employee (PPE), Total No Employee, Net Profit, Return on HRV on HRV. In simple words, it can be said that the multiple regression analysis employed here effectively estimates the degree of influence mentioned factors have in determining HRV.

Table 5: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.912[a]	0.832	0.822	7572.60539
a. Predictors: (Constant), ROE, PPE, TE, Net Profit, ROHRV b. Dependent Variable: HRV				

Source: Author

The first measurement in the Model Summery (See Table 5) is R which commonly known as the multiple correlation coefficient. Table 5 shows that the multiple correlation coefficient is 0.912 and it indicates that the relationship between HRV and predictors (Return on Equity (ROE), Profit per Employee (PPE), Total No Employee, Net Profit, Return on HRV) are strong and positive.

Table 5 also revealed that the value of R-square is 0.832 simply means that about 83.2 % of the variation in HRV is explained by the Return on Equity (ROE), Profit per Employee (PPE), Total No Employee, Net Profit, Return on HRV as the independent variables and R square value is significant at the 1percent level.

Table 6: Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	10914.957	1883.053		5.796	.000	7170.299	14659.615
Net Profit	3.419	.186	1.127	18.404	.000	3.050	3.789
TE	.007	.028	.013	.265	.792	-.047	.062
PPE	-1526.368	3023.023	-.026	-.505	.615	-7537.979	4485.244
ROHRV	-488.312	68.782	-.502	-7.099	.000	-625.093	-351.531
ROE	133.861	128.313	.063	1.043	.300	-121.303	389.025
a. Dependent Variable: HRV							

Source: Author

The above regression model coefficient table 6 reports in among all the four predictors "Net Profit" with its Beta coefficient value of 3.419 has emerged as the most important factor in

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predicting HRV. Looking at the p-value of the t-test for Net Profit, It can be observed that this variable statistically significantly predicted HRV. Next the effect of Total Employee (b=.007, p=0.792) is not significant and its coefficient is negative, indicating that the greater the total employee, the lower the HRV.

The average Profit per Employee (b=-1526.368) is not significant (p=0.055), but only just so, and the coefficient is negative, which would indicate that larger Profit per Employee is related to lower HRV which is what we would expected. The effect of Return on HRV (b= -488.312, p=0.000) is significant and its coefficient is negative, indicating that the greater the Return on HRV , the lower the HRV. Finally, the percentage of Return on Equity (ROE), (b=133.861, p=0.300 is not significant and its coefficient is negative, indicating that the greater the ROE, the lower the HRV.

CONCLUSION

For the current study the data of 9 public enterprises were used which revealed that the companies in India were disclosing the HRV in their annual report. For this purpose the Lev & Schwartz model is being used foremost by 9 public enterprises. Since the different companies are selected, there is a huge difference in the Net Profit, Total No Employee, Profit per Employee, Return on HRV, ROE and Human Resource value. The findings of this research paper uncover the fact that the HRV of companies is dependent upon two factors Net Profit and Return on HRV, in other hand has clearly shown that Net Profit is the most important factor to improve HRV followed by Return on HRV.

. Thus, this study revealed that HRV mainly depends on the profitability of the company. Therefore, we may conclude on the basis of the multiple regression analysis that public enterprise

in India tend to increase their HRVwith increase in Net Profit and Return on HRV.

These results could provide guidance for the success of Indian companies. Net Profit and Return on HRV are shown in this study to be key factors in influencing HRV. Therefore, managers should pay close attention to these factors while taking performing human resource accounting into Indian companies.

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