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A COMPARATIVE STUDY ON THE IMPACT OF HUMAN RESOURCE ACCOUNTING PRACTICES ON EMPLOYEE EFFECTIVENESS WITH REFERENCE TO SELECTED INDIAN PUBLIC SECTOR COMPANIES

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Abstract

Human resource is the most vital input on which the success or failure of the organization very much depends upon. The literature survey reveals that majority of the research studies are based on the use of various methods and models of human resource accounting and it relates to the human resource development from the HR perspective only. There are very little studies to find the financial implications of human resource accounting. To fill this research gap, the present study is undertaken, where an effort is made to analyze the financial implications on productivity, effectiveness, return on investment and wealth creation due to investment in human capital resources. The study covers about 40 companies spread over India, and categorized into financial and non-financial companies. This study shows the relationship between human capital investment or employee cost with its returns. The outcome of the study can be a valuable input for future decision making by other stakeholders or prospective investors of the company and also for the management of the company to take strategic decisions. The study may induce other companies to introduce human resource accounting in their financial statements to analyze the worth of their employees to the organization.

Key words: Human Capital, Human Capital Investment, Human Resource Accounting, Employee Cost, Human Capital value addition, Human Capital return on Investment

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Introduction

"Employees are the greatest assets, and the ability to attract and retain them is the key driver of the future success of any company."

Human is the buzzword in the modern knowledge economy. Emerging from an industrial age, this new economy distinguishes itself by a large amount of the value of the company residing in the head of the employee instead of in the tangible assets of the company. Human resource is the most vital input on which the success or failure of the organization very much depends upon.

This realization was made very clear in a 1999 Business Week article that showed the valuation of Microsoft was superior to GM + Ford + Boeing + Lockheed-Martin + Deere + Caterpillar + USX + Weyerhaeuser + Union Pacific + Kodak + Sears + Marriott + Safeway + Kellogg. Yet, the only value at Microsoft resides in the heads of its employees!

Another illustration of the intrinsic value of intangible and human capital is the historical evolution of the ratio of the S&P 500 between the market value and the book value. The ratio of book value to market value was approximately 1 in the early 1980s. In 2000 it had risen to about 6; in the 20 years gap, it increased 6 times. Among those companies, current employees are now perceived as a key element, along with the ability to attract and retain talent. Faced with this issue, many academicians started to review and suggest some new models to give a better account of a corporation's worth and also to consider human resources as an asset in computing the bottom-line of an organization.

Thus, employees who were considered priceless are now posing a challenge for many organizations to survive the severe competition, as no organization can own its human capital the way it owns its other assets. It is the only asset, the value of which increases as the use increases and which can change organizations without any clue. In the present scenario there is no sacred relationship between the employer and the employee. The loyalty of the employees is towards the industry as a whole rather than to an individual organization.

The fundamental and technical analysis of the companies shows a major disparity between the book value of the shares and the market value of the shares. This growing gap reflects the importance of the intangible assets (human capital). This has posed a challenge for the accountants to modify the traditional accounting practices and to identify and measure the value adding elements of the firm which has led to the evolution of human capital accounting.

However, economists consider human capital as a production factor, and they explore different ways of measuring its investment in education, health, and other areas. Accountants have recognized the value of human assets for at least 70 years. Research into true human resource accounting began in the 1960s by Rensis Likert[1] who defends long-term planning by strong pressure on human resources' qualitative variables, resulting in greater benefits in the long run.

According to the Conner's (1991)[2] resource theory, the competitive position of a firm depends on its specific (i.e., its personnel) assets rather than on duplicated assets. It takes advantage of their interdependent knowledge. This explains why some firms are more productive than others. The American Accounting Association[3] [1970] defines human resource accounting as "the human resources identification and measuring process and also its communication to the interested parties.

Schultz[4] (1961) defined human capital as the knowledge and skills people acquire during education and training and this capital is a result of deliberate investment that yields returns. Human resource accounting is the offshoot of various research studies conducted in the areas of accounting and finance. Human resource is an asset whose value gets appreciated over the period of time provided placed, applied and developed in the right direction.

HRA, thus, not only involves measurement of all the costs/investments associated with the recruitment, placement, training and development of employees, but also the quantification of the economic value of the people in an organisation. Flamholtz[5] (1971) too has defined HRA as "the measurement and reporting of the cost and value of people in organizational resources".

As per the research studies of the American Economic history during 1980's and 1990's it can be seen that the majority of firms that used the layoff strategy to cut cost in the short run ended up in the decline of the future revenue and profitability of the tangible assets and the stock prices to be below the pre-layoff price.

Indian Scenario

In India as far as the statutory requirements are concerned, the Indian Companies Act, 1956 does not demand furnishing of HRA related information in the financial statements of the companies.

The need to meet the increasing business opportunities of future, and simultaneously maintain or improve upon the current level of performance, has made organizations to look consciously into the manpower as the future leverage for success. Hence, adopting a sensible and inclusive revelation policy' has become the key differentiating agent among players in the same industry.

These differentiating factors have laid the foundation stone for the ongoing popularity of the Human Resource Valuation. In India the public sector giants (e.g. BHEL, SAIL, etc.) were the forerunners to implement HR valuation. In recent years, HR value reporting has gained momentum amongst the software and other public sector companies. These companies have valued their Human Resources which have been disclosed in their Annual Reports as a statement of intangibles (additional notes to the accounts).

The Institute of Chartered Accountants of India too, has not been able to bring any definitive standard or measurement in the reporting of human resources costs. Though importance of human resources has been pronounced very often, quantitative information about their contribution is rarely recorded or communicated. There are a few organizations, however, that do recognize the value of their human resources, and furnish the related information in their annual reports.

Today, human capital is considered to be an important resource of any organization. As such clear estimation of their worth to the firm has gained significant importance to enhance and retain the talent of the employees in creating a cutting edge among the competitors. The increased pressures for corporate governance and the corporate code of conduct demanding transparency in accounting have further supported the need for developing methods of measuring human value.

Literature Review

The object of the review is to identify the research gap and formulate a conceptual framework regarding the selected topic of research.

Lev and Schwartz[6] (1971) argued that an employee's expected economic value to the firm corresponds to the future earnings of the employee for the remaining active service life. Therefore, the value of the total human resources of the firm is determined by aggregating the present value of services of all employees. Flamholtz (1971) improved on this model by allowing the possibility of employees' career movements within the firm or the possibility of employees leaving the firm before retirement or death. However, determining the probabilities of career movement and early exit for each individual employee is usually a highly subjective exercise, thereby limiting the practicality of this model for valuing human assets. Recognizing the difficulty in predicting the promotion or exit of individual employees, Jaggi and Lau[7] (1974) developed a stochastic model that used the group basis for the valuation of human capital arguing that, as in actuarial sciences, predicting patterns in group behavior is easier than predicting individual behavior.

Human capital theory suggests that investment in people results in economic benefits for individuals and society as a whole (Sweetland, 1996)[8]. The investment in an individual can be made in terms of health, nutrition, education, and any other development that results in long-term benefits. It is important to clarify that the investor in this particular case is the individual who decides whether to invest his or her time, money, and other resources into some activity that will benefit his or her human capital (health, education, etc.). As we get to the discussion of a resource-based view of the firm and strategic human capital, we see that two entities can actually invest in human capital—the individual who decides to whether to participate in some type of training and informal education and the company who decides whether to make similar types of investment.

Psacharopoulos and Woodhall[9] (1985) state that human capital means investing in both formal and informal education and training, which enhances individual productivity by providing knowledge, skills, and attitudes necessary for economic and social development. Fitz-Enz[10] (2000) offers a more modern definition of human capital as traits one brings to the job: intelligence, fulfilling work energy, positive attitude, reliability and commitment, ability to learn, imagination, and creativity. This definition is more appropriate to modern businesses that strive to capitalize on human capital.

Becker[11] (1993) suggested that benefits from investment in human capital are enormous ranging from improved health and nutrition to control of population growth and improvement of overall quality of life. On a macro level, education results in a more enlightened society that is able to participate in social and political processes of the state. Early economic theorists like Adam Smith and John Stuart Mill considered the importance of human capital in forming the wealth of a society. Adam Smith viewed acquired and useful abilities of people as important labor inputs. He also emphasized the value of skill, dexterity, and judgment with which labor is applied. He continued to state that this ability and skills come primarily from education and apprenticeship, which is an expense, “a capital fixed and realized” (Smith, 1776, as cited in Sweetland, 1996). Stuart Mill (1926) asserted that the virtues, genius, and accomplishment of the members of society do not indicate wealth unless these are looked on as marketable articles, which attract wealth from other countries.

Becker[12] (1960) and Mincer[13] (1974) provided empirical support for the benefits of investments in human capital. It became clear that human capital investments lead to economic development and growth.

Schultz[14] (1993) listed several attributes of human capital that are critical to our understanding of it. These include (a) human capital cannot be separated from the person who has it, (b) human capital is to be had by investing in people, and (c) human capital is related to economic growth. These attributes emphasize the importance of investing in people and increasing their knowledge and education levels. Karl Erik Sveiby[15] introduced the first classification of intangible assets in the late 1980s while working as a consultant for the KONRAD group of Sweden. Sveiby developed the invisible balance sheet, which he uses to explain that an organization's tangible and financial assets reflected in the balance sheet are sustained and supported by intangible assets. These intangible assets, as Sveiby prefers to call them, comprise internal structure, external structure, and competency. In essence, the internal and external structures correspond to structural and customer capital, while competency corresponds to human capital.

According to Vivien Beattie and Sarah Jane Smith,[16] (2010), Employee skills and education, employee commitment, positive employee attitudes and behaviour, and employee motivation are considered to contribute to value creation the most. Information on employee turnover, employee training and development, and workplace safety is frequently collated. There also appears to be attempts to capture information on aspects such as employee satisfaction, motivation, and commitment. Marked differences exist between the extent to which information is internally collated and externally disclosed. C M Lindsay17 (1971) states that the correct measure of return on human capital investment is the wealth effect of the wage increase which the investment makes possible.

The results of the study conducted by Naveed Iqbal Chaudary and Muhammad Azam Roomi,[18] (2010) in the Pakistan textile sector provide evidence of an association between investment in the development of human capital and the benefits, which organizations can reap from such investments. The study further finds that the organizations investing in training and development programs provide high employee productivity that ultimately contributes towards high-organizational performance.

Eric Flamholtz19, (2005) has provided a different conceptualization of human capital relevant to human resources accounting. He has presented a typology of human capital consisting of three types: the economic value of individuals; the economic value of groups or teams; and the economic value of the total human organization. The paper also summarized an empirical investigation relevant to the economic value of human capital of the third kind. The results of this empirical investigation provide support for the notion that culture, or human capital of the third kind, is a significant component of overall financial success. While the results are not

completely definitive, they do provide statistically significant evidence of the impact of culture as a component of human capital. This, in turn, opens the way to a new approach to human resource accounting and value measurement.

Guy Ahonen20, (2009) demonstrates that market-based methods for estimating the value of human capital of the firm can be realistic regardless of the existence of very odd human capital values.

Shraddha Verma, Philip Dewe21, (2008) have explored the perceptions and practices in the area of valuing human resources. Their study focuses on the importance of valuing human resources, current measurement practices, barriers to measurement and the progress expected in this field. The outcome of the study indicates that lack of organizational support, uncertainties as to what should be reported, lack of standardized technique of valuing human resources, lack of precision in current measurement practices are the main reasons for the slow progress in the implementation of human resource accounting system in any organization.

Subhash Abhayawansa, Indra Abeysekera22, (2008) argue that though the importance of human capital in the value creation of the firm is definitely established, the level of emphasis based on the human capital disclosure is only minimal and does not portray HC in a way that is useful to the capital market. The human capital need to be depicted in a way that it has the potential to create value to the firm as it is considered as a valuable resource of the organization.

Research Design

Research Gap

The literature survey reveals that majority of the research studies are based on the use of various methods and models of human resource accounting and it relates to the human resource development from the HR perspective only. There are very little studies to find the financial implications of human resource accounting To fill this research gap, the present study is undertaken, where an effort is made to analyze the financial implications on productivity, effectiveness, return on investment and wealth creation due to investment in human capital resources. The study also attempts to determine how the companies implementing HRA have a better competitive advantage over the other companies.

I. Statement of the Problem

After scrutinizing the existing literature on human capital accounting, it becomes imperative to answer a few questions like have the companies practicing human resource accounting able to improve employee productivity? How is the employee

effectiveness measured in such companies? What will be the return on investment on human capital? Has the investment in human capital resulted in the wealth creation? Is it worth investing in human resources? Have the stakeholders benefitted from such investment? Thus the study is undertaken to find an answer for the above questions.

II. Scope of the Present Study

The study covers about 40 companies spread over India, and categorized into financial and non-financial companies. This is study shows the relationship between human capital investment or employee cost with its returns. The outcome of the study can be a valuable input for future decision making by other stakeholders or prospective investors of the company and also for the management of the company to take strategic decisions. The study may induce other companies to introduce human resource accounting in their financial statements to analyze the worth of their employees to the organization.

III. objectives of the Study

As the human resource has been considered as strategic capital, its accounting and reporting aspects are becoming crucial for the organizational success. But no significant analysis has been done yet on this topic. Hence, the specific objectives of the study are:

- To explore the impact of nature of companies (financial and non-financial companies) on HCVA and HCROI of the listed companies in Bangalore.
- To examine the relationship of profitability and HCVA and HCROI of a few listed companies in Bangalore.
- To investigate the association of listing age of the companies with their HCVA and HCROI pattern.

IV. Hypotheses of the Study

Hypothesis 1: There is no significant difference between financial companies' and non - financial companies' average HCVA.
Hypothesis 2: There is no significant difference between financial companies' and non- financial companies' average HCROI.
Hypothesis 3: There is a negative significant relationship between Recovery rate of a company and the extent of HCVA.
Hypothesis 4: There is a positive significant relationship between Income factor of a company and the extent of HCVA.
Hypothesis 5: There is a positive significant relationship between revenue factor of a company and the extent of HCROI.
Hypothesis 6: There is a positive significant relationship between expense factor of a company and the extent of HCROI.

V. Methodology

The study is empirical in nature based on the secondary data sources. For this study, randomly selected 40 listed public limited companies in Bombay Stock Exchange (BSE) **have been considered over a period of 10 years from 2002-03 to 2011-12**. The companies are classified under 2 broad headings: Financial and Non-Financial sector. Financial sector includes government limited companies. Non-Financial sector includes cement, Information Technology, pharmaceuticals and others.

All the data used in this study are manually collected from the annual reports of the respective companies for the period. For listed companies, annual reports are mandatorily audited by external independent auditors and have generally been approved by the Securities and Exchange Commission (SEC). Listing age and market capitalization data are collected from the web site.

In the study a Human Capital Value Added (HCVA) comprising of two variables (table: 1) was constructed by reviewing of relevant literature and for Human Capital ROI (HCROI). The formula for calculating HCVA is given by *HCVA = Revenue - (Total Costs - Employment Cost) / Average Headcount*. As total cost item is not mentioned in none of the financial statements, it is defined as the difference between the Revenue and Profit before Taxes.

Similarly, HCROI is another relationship of human capital investments to profitability can be made visible through a ratio that follows from the formula for HCVA. HCROI looks at the ROI in terms of profit for monies spent on human capital employment costs. It drives human capital practitioners to the conclusion that they can have as direct an impact upon revenue and non-people related costs as any other business partner. HCROI represents the leverage of human capital employment cost within an Organization.

VI. Results and Discussions

The study uses the R-statistics version to analyze the data. The study has used Kolmogorov -Sminor test which is a non-parametric test used to check the normality of data. This test is particularly considered as the sample size is less and having an advantage of making no assumption about distribution of the data.
Levene's test for equality of variances has been used to check whether the two groups (financial and non-financial) have approximately equal variance on the dependent variable.

In dependent samples t-test: is used to check whether there exists and significant (statistically) in mean HCVA and HCROI between financial and non-financial companies.

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Regression Analysis is used to identify the significance (statistically) of each independent variable on the dependent variable. Further, to measure the variation of the dummy variable (in this case, it is between financial and non-financial company). For testing the hypothesis 1, independent sample t-test is used.

The analysis involves measurement of HRA components.

Table – 1: Measurement of HRA components

Human Capital Value Addition (HCVA)	
1	Recovery rate
2	Income factor
Human Capital ROI (HCROI)	
4	Revenue factor
5	Expense factor

To provide evidence of the impact of corporate attributes on **HCVA and HCROI** of different companies in Bangalore, this study uses the following multiple regression technique:

$$\mathbf{Y_i = \alpha + \beta_1 REC + \beta_2 BUSI_i + \beta_3 INCO_i + \beta_4 Age_i + e_i}$$

Here,
Y = Human capital Value addition (HCVA)
α = inception of the regression line
β_i = Coefficient (Slope of the regression line)
REC = Natural log of recovery rate which is measured as employee Expr/ turnover of the company.
$BUSI_i$ (dummy variable) = Institution, value 1 if the company is an Financial Producing company and 0 otherwise.
$INCO_i$ = income factor = operating income/headcount.
Age_i = Years of operation in the market as a listed public limited company
$_{ei}$ = standard sample error
Similarly for **HCROI,** the regression model would be

$$\mathbf{Y_i = \alpha + \beta_1 REC + \beta_2 BUSI_i + \beta_3 EXPEN_i + \beta_4 Age_i + e}$$

Where
Y = Natural log of Human Capital Return on Investment measured as *(Operating Profit + Employment Cost) / Employment Cost*

α = inception of the regression line
β_i = Coefficient (Slope of the regression line)
REV = Natural log of revenue rate which is measured as turnover/head count of the company.
EXPEN = Natural log of expense factor which is measured as employee expr/headcount
BUSI $_i$ (dummy variable) = Institution, value 1 if the company is an Financial Producing company and 0 otherwise.
Age $_i$ = Years of operation in the market as a listed public limited company
$_{ei}$ = standard sample error

Hypotheses Testing

The Kolmogorov-Sminor test (Table 2) reports the significant value 0.514 for natural log of HCVA and 0.441 for natural log of HCROI which allows accepting that sample data are normally distributed (p-value greater than 0.05).

Table-2: One Sample of Kolmogorov-Sminor Test:

Test	Log_HCVA	Log_HCROI
Kolmogorov-Sminor Z	0.819	0.866
Asymp. Sig (2-tailed)	0.514	0.441

Table - 3 presents descriptive statistics and correlation of variables of both HCVA and HCROI. The results show that only INCOME is positive and significantly correlated (r=0.931) with HCVA and RECOVERY rate is negative and significantly corrected (r = - 0.423) with HCVA.
On the other, Expenditure is positive and significantly correlated (r = 0.507) with HCROI.

Table-3: Descriptive statistics and Pearson Correlations

	Mean	S.D	HCVA	AGE	RECOVER	INCOM
HCVA	**1.401**	**3.593**	1			
AGE	46.50	15.23	- 0.059	1		
RECOVERY RATE	0.200	0.410	**- 0.423****	- 0.573	1	
INCOME	1.791	4.558	**0.931****	- 0.053	- 0.286	1
	Mean	S.D	HCROI	YEAR	REV	EXPEN
HCROI	**7.699**	**19.112**	1			
AGE	46.50	15.233	-0.212	1		
REVENUE	5.661	9.771	0.170	-0.060	1	
EXPENDITURE	1.791	4.558	**0.507****	- 0.062	0.830**	1

Significance at 0.01 level.

Further, it is observed from table -3 that there is a negative relationship between HCVA (natural log) and RECOVERY RATE variable suggesting that the companies with less recovery has larger extent of Human Capital Value Addition. Interestingly, there is statistical evidence to say the relationship is significant.

Similarly, with respect to HCROI, hypothesis 4 supports that there is positive relationship between HCROI and EXPEN factor (r=0.507), again there is a statistical evidence to say that this relationship is significant.

Table 4 reports the significant value for the independent sample t-test (p=0.321) which is greater than 0.05. It accepts our hypothesis 1 that there is no significant difference in average HCVA between financial and non-financial sector. Thus, we conclude that statistically there is no significant difference in average HCVA between financial and non-financial sector. However, with respect to HCROI, it is observed that there is a significant difference (as p-value of 0.000 is less than 0.05) in average HCROI between financial and non-Financial sector companies and thereby rejecting the null hypothesis defined under hypothesis 2.

Table - 4: Test of variances and equality of means of HCVA and HCROI w.r.t to type of companies

LN_HCVA					
Average HCVA of Financial and non financial company	Levene's Test for Equality of Variances		t-test for equality of means		
	F	Sig	t	df	Sig (2-tailed)
Equal variance is assumed	1.163	0.288	- 1.011	38	0.321

It is also found that null hypothesis of equal variance is rejected as the significant value of Levene's Test is 0.288 (for HCVA) and 0.140 (for HCROI) is greater than α value of 0.05. Under the assumption of equal variance, the null hypothesis of equality of variance cannot be accepted.

To find out the association of HCVA & HCROI under present corporate characteristics, a multiple regression model is run (see Table -5). First, with respect to HCVA, the multiple correlation coefficient (R) is 0.872 (R^2=0.760) and the adjusted R^2 is 0.733, indicates that 76% of the variation in HCVA can be predicted from the selected independent variables namely Recovery and Income factor.

Table - 5 : Model Summary for HCVA[a]

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.872[a]	0.760	0.733	0.838
a. Predictors: (Constant), AGE_COMP, Ln_INCOM, Ln_RECOVER, DUM_COMP			
Model Summary for HCROI[b]			
0.498	0.248	0.160	1.151
a. Predictors: (Constant), AGE_COMP, Ln_REVENU, Ln_EXPEN, DUM_COMP			

Similarly, for HCROI, the multiple correlation coefficient (R) is 0.498 (R^2=0.248) and the adjusted R^2 is 0.160, indicates that about 25 % of the variation in HCROI can be predicted from the selected independent variables namely Revenue and Expense factor.

Table 6. Regression Analysis

Table - 6: Results of Regression Analysis on HCVA [a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-0.346	0.518		-0.668	0.508
LN_RECOVERY	-0.119	0.118	-0.096	-1.010	0.320
LN_INCOM	**0.807**	**0.085**	**0.862**	**9.468**	**0.000***
AGE	- 0.004	0.009	-0.040	-0.460	0.648
BUSI	**- 0.154**	**0.376**	**-0.043**	**-0.409**	**0.685**
Regression Analysis on HCROI[b]					
(Constant)	1.085	0.890		1.219	0.231
LN_REVENUE	**- 0.698**	**0.242**	**- 0.755**	**- 2.884**	**0.007***
LN_EXPEND	**0.691**	**0.221**	**0.709**	**3.125**	**0.004***
AGE	0.009	0.016	0.083	0.543	0.590
BUSI	**1.010**	**0.702**	**0.278**	**1.439**	**0.159**
b. Dependent Variable: log_ HCROI					

* Significant at 5 % level.

The regression model for HCVA would be

$\mathbf{Y_i = \alpha + \beta_2 BUSI_i + \beta_3 INCO_i + e_i}$
$\mathbf{Y_i = \alpha - 0.154\ \beta_2 + 0.807 \beta_3 + e_i}$

Similarly the regression model for HCROI, would be

$\mathbf{Y_i = \alpha + \beta_1\ REV + \beta_2 BUSI_i + \beta_3 EXPEN_i + e}$
$\mathbf{Y_i = \alpha - 0.698 \beta_1\ + 1.010\ \beta_2 + 0.691\ \beta_3 + e}$

Inference:
The regression results shown in Table -6 shows that, for HCVA, INCOME (natural log) is the only significant factor (p-value <0.05) that is influencing the change in HCVA. Furthermore, the interpretation of dummy variable of financial companies and non-financial companies is that with reference to non-financial companies (where it is coded as zero), the HCVA of financial companies (coded as one) is lesser by about 0.15 times (unit). The negative relationship between HCVA (natural log) and RECOVERY RATE suggests that the companies with less recovery have larger extent of Human Capital Value Addition. Interestingly, there is statistical evidence to say the relationship is significant.

With regard to HCROI, it is observed from Table-6, both Revenue and Expenditure has significant influence on HCROI. The results reveal that 25 % of the variation in HCROI can be predicted from the selected independent variables namely Revenue and Expense factor. On the other, interpretation of dummy variable indicates that as compared to non-financial companies, the HCROI of financial companies is higher by about 1.0 times (unit). This result reveals that, there is a significant difference between financial and non-financial companies with respect to the functioning of HCROI.

Though the paper finds some association of corporate attributes with HCVA and HCROI, the level of association is not so high and also not much significant.

Conclusion
Many studies previously done and models developed reflect better corporate worth by considering human resources as an asset in computing the bottom-line of an organization. However, lack of organizational support, uncertainties as to what should be reported, lack of standardized technique of valuing human resources, lack of precision in current measurement practices are the main reasons for the slow progress in the implementation of human resource accounting system in any organization.

Therefore, companies need to adopt a sensible and inclusive revelation policy' which has become the key differentiating agent among players in the same industry. The human capital, as the leverage of future success of companies need to be depicted in a way that it has the potential to create value to the firm as it is considered as a valuable resource of the organization.

In this direction, this study which is an effort to analyze the financial implications on productivity, effectiveness, return on investment and wealth creation due to investment in human capital resources, so as to have a better competitive advantage over the other companies has shown that Human Resource Value Addition and Return on Investment on human capital are very important factors to decision makers in the era of knowledge based economy. The study tries to reveal to organisations that they need to make serious attempts to revive its HCVA and HCROI information for use by the decision makers. In fact, it is becoming an integral part of management reporting system.

The outcome of the study can be a valuable input for future decision making by other stakeholders or prospective investors of the company and also for the management of the company to take strategic decisions. The study may induce other companies to introduce human resource accounting in their financial statements to analyze the worth of their employees to the organization.
The result emerging from statistical analysis has been interpreted with some caution, as the sample size is very small. Therefore, in order to have a better and pragmatic conclusion on the influence of factors or variables on HCVA and HCROI, the scope of the research may be extended by increasing the sample size and cross-sectional examination.

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Annexure 1
Table of analysis

Sl.no	Company name
	Non Finance Companies
1	Madras Refineries Limited
2	Associated Cement Companies
3	Bharat Earth Movers Limited
4	Steel Authority of India Ltd
5	Oil India Ltd
6	Oil and Natural Gas Commission
7	Cement Corporation Limited
8	National Thermal Power corporation limited
9	Exide Industries Limited
10	Bharat Heavy Electricals Ltd
11	National Mineral Development Corporation Ltd
12	Hindustan Zinc
13	Mecon
14	Minerals and Metals Trading Corporation of India Ltd
15	Southern Petro Chemicals Industries Corporation Limited
16	PGCI
17	Hindustan copper
18	Bharat petroleum corporation limited
19	AAI
20	Madras Refinery and Petrochemicals Ltd
21	Hindustan Petroleum Corporation Ltd
22	SCI
23	Goa ship
24	Garden Reach Shipbuilding and Engineers Ltd
25	National fertilizers Ltd
26	Bharat Electronics Ltd
27	Bharat Dynamics Ltd
28	CSYL
	Finance and Banking companies
29	State Bank of India
30	Power Finance Corporation
31	Bank of Baroda
32	Canara Bank
33	Bank of India
34	UCO Bank
35	Central Bank of India
36	IDBI
37	IFCI
38	Indian Bank
39	Union Bank
40	Indian Overseas Bank

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Annexure II– List of sample Companies

Sl.no	Dependent Variable	Independent variable	Objective / Hypothesis	Interpretation
1	Human capital Value addition (HCVA)	Employee effectiveness Which is measured through two variables a)recovery rate = employee Expenditure/ turnover b)income factor = operating income/headcount	i) To analyze the impact of recovery rate on HCVA ii) To analyze the impact of income factor on HCVA	Decreasing recovery rate increases HCVA Increasing income factor increases HCVA
2	Wealth Creation MPS/BPS (market value per share/ books value per share	Human Capital Return on investment (HCROI)	iii) To analyze the impact of HCROI on wealth creation	Higher the ratio between MPS and BPS higher the wealth creation
3	Human Capital Return on Investment (HCROI)	Employee Productivity which is measured through two variables a)revenue factor = turnover/headcount b)expense factor = employee expenditure/headcount	iv) To analyze the impact of revenue factor on HCROI v) To analyze the impact of expense factor on HCROI	Increase in revenue factor increases HCROI Increase in expense factor increases HCROI