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Human Resource Accounting Practices By Indian Companies: The Case Of Hindustan Petroleum Corporation Limited

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Abstract

Human Resource Accounting (HRA) is concerned with measurement and valuation of human resources, and communicating the relevant information to the internal and external parties. In this backdrop, the present study is an attempt to examine the human resource accounting practices of Indian companies with special reference to Hindustan Petroleum Corporation Limited (HPCL) during the period 2007-08 to 2018-19.

The study results reveal that majority of the sample companies adopted Lev & Schwartz model in valuing their human assets. HPCL has given greater emphasis on its human resources and considered them as valued resources in their business. Further, HPCL has been able to generate moderate returns on its human assets which imply that its human assets are efficiently utilized during the study period.

Of late, Indian corporate sector has shown some interest in providing information on its human resources. The study suggested that the value of human assets may be shown by way of foot note in the balance sheet of a company.

Key Words: *HPCL, HRA, Lev and Schwartz Model, Human Assets, Financial Assets, Total Assets.*

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1. THE BACKGROUND

According to American Accounting Association, “HRA is a process of identifying and measuring data about human resources and communicating this information to interested parties.” Thus, Human Resource Accounting (HRA) is concerned with measurement and valuation of human resources, and communicating the relevant information to the internal and external parties.

The basic premises underlying human resource accounting are stated below:

- People are considered as valued resources of an enterprise.
- The importance of human resource is determined by the way in which it is managed.
- Human resource accounting is useful for decision making purpose of an enterprise.

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2. HINDUSTAN PETROLEUM CORPORATION LIMITED (HPCL): A SYNOPTIC OVERVIEW

Hindustan Petroleum Corporation Limited (HPCL) is a Govt. of India enterprise and one of the leading petroleum companies in India. It is listed on the Bombay Stock Exchange (BSE) and National Stock Exchange (NSE). HPCL’s vast marketing network consists of 13 zonal offices in major cities and 101 regional offices. The company is facilitated by a supply and distribution infrastructure comprising terminals, pipeline networks, LPG bottling plants etc.

It operates two major refineries producing a wide variety of petroleum fuels, one in Mumbai (West Coast) of 6.5 MMTPA capacity and the other in Vishakhapatnam (East Coast) with a capacity of 8.3 MMTPA. HPCL owns and operates the largest lube refinery in India producing lube base oils of international standards, with a capacity of 428 TMT.

HPCL has earned “Excellent” performance from FY 1991-92 to FY 2012-13, (except for the single FY 2006-07, when it was adjudged as very good) from the Ministry of Petroleum, Govt. of India. HPCL continuously invests in innovative technologies to increase the effectiveness of employees and bring qualitative changes in service. HPCL has successfully integrated Information Technology (IT) in its activities at different levels.

3. PRIOR STUDIES

For presenting reviews of literature, the available studies are briefly stated below:

Mamun (2009) carried out a study between corporate characteristics and Human Resource Disclosure (HRAD) level in 55 selected companies of Bangladesh. The study results showed that on the average, the selected companies disclosed 25% of the total HRAD items. Further, HRAD

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was found to be significantly related with the size of the company, category of the company (financial or non-financial), and profitability. *Avazzadehfath et al., (2011)* in their study revealed that Human Resource Accounting (HRA) information disclosure in financial statements was relevant and had an effect on the optimal investment decisions. Furthermore, other results indicated that most effective and appropriate evaluating method of human resource consistent with current status of Iranian companies and institutions was the original cost method (i.e., historical cost). *Ratti (2012)* studied the calculation of the value of human resources at different levels of organization and to determine the human resource efficiency quotient. The

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study concluded that the incorporation of the value of human resource is very expensive and also not easy to calculate. *Pandurangarao et al., (2013)* highlighted the significance of human resource valuation and methods to measure the value of human assets. The study identified the organizations that have tried to implement human resource accounting. *Cherian et al., (2013)* indicated the theoretical definitions of human resource accounting and challenges faced during implementation of human resource measurement models to predict the organization's performance. The study stated that HRA implementation helps to improve managerial decisions like layoffs, better performance evaluation measures of the firm and also acts as a guide during buying, selling and merger transactions. *Andrade et al., (2013)* presented an experimental case study of the application of Lev and Schwartz model to a service company. The paper provided a clear integrated framework and measures of forms of human capital accounting to guide and inform the future researchers in this field. *Rahaman et al., (2013)* critically assessed the concept of HRA in order to unveil its strengths and weaknesses. The study revealed that the conceptualization of HRA, the ideas incorporated therein, and arguments are good for the accounting profession and corporate financial reporting. But the existing models yet proposed are not in a state to implement HRA practice worldwide.

Research Gap: While reviewing the past studies as stated above, it is observed that few studies are carried out in this context. Hence, the present study may be considered as another attempt to contribute to the existing literature.

4. RESEARCH OBJECTIVE

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The main objective of the study is to examine the human resource accounting practices in Indian companies with special reference to Hindustan Petroleum Corporation Limited during the period 2007-08 to 2018-19.

To achieve the main objective, the following incidental objectives are sought to be achieved:

- To analyze the value of human assets in HPCL.
- To make a comparison between human assets and financial assets in HPCL.
- To analyze the qualitative efficiency of human resource accounting in HPCL.

5. HYPOTHESES DEVELOPMENT

1st Hypothesis:

H_0: There is no significant difference between human assets and financial assets.

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2nd Hypothesis:

H_0: There is no significant difference between employee cost to human assets and net profit before tax to human assets.

6. RESEARCH DESIGN

6.1 Data and Sample: For the present study, data have been collected from secondary sources i.e., published annual reports of the selected companies.

Based on the availability of data, 27 sample companies are selected which form the sample size of our study.

6.2 Methodology: The Lev & Schwartz model is used for the valuation of human resource assets. The evaluation of human resource assets (as stated in the annual reports of HPCL) is based on the present value of future earnings of the employees on the following assumptions:

i) Employees' compensation represented by direct and indirect benefits earned by them on cost to company basis, ii) Earnings up to the age of superannuation are considered on incremental basis taking the Corporation's policies into consideration, and iii) Such future earnings are discounted @ 8.0%.

The Lev & Schwartz model is computed as follows: Vr = [rI(t)]÷[(1+r)t-r]
Where: Vr = human capital value of a person 'r' years old; I(t) = a person's annual earnings up to retirement; r = a discount rate specific to the person; and t = retirement age.

The above formula uses an earnings profile, which is a graphical mathematical representation of the income stream generated by a person.

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To statistically examine whether there is any significant difference in the average indicators of human resources and financial resources, Fisher's 't' test has been applied in the study. The fisher's 't' statistic is computed as follows:

$$t = \frac{\overline{x_1} - \overline{x_2}}{S\sqrt{\frac{1}{n_1}+\frac{1}{n_2}}} \qquad \text{Where: } S = \sqrt{\frac{n_1 s_1^2 + n_2 s_2^2}{n_1 + n_2 - 2}}$$

Apart from the above, simple statistical measures like average, standard deviation, and co-efficient of variation have also been used in the study.

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7. FINDINGS AND ANALYSIS

7.1 Human Resource Accounting Practices by Indian Companies

The human resource accounting practices by selected Indian companies are presented in Table – 1 below:

Table – I: Human Resource Accounting Practices by Selected Indian Companies

SL No.	Name of the Organization	Year of Introduction	Valuation Method	Discount Rate (in %)
1	BHEL	1973-74	Lev & Schwartz Model	12
2	SAIL	1983-84	Lev & Schwartz Model with some refinements as suggested by by Eric. G. Flamholtz & Jaggi and Lev	14
3	MMTC	1982-83	Lev & Schwartz Model	12
4	ONGC	1981-82	Lev & Schwartz Model	12.25
5	NTPC	1984-85	Lev & Schwartz Model	12
6	INFOSYS	1995-96	Lev & Schwartz Model	12.96
7	ACC	1993-94	Lev & Schwartz Model	12
8	CCI	1979-80	Lev & Schwartz Model	15
9	MECON	1984-85	Lev & Schwartz Model	Not Reported
10	MRL	1985-86	Lev & Schwartz Model	15
11	SPIC	1983-84	Lev & Schwartz Model	Not Reported
12	EIL	1980-81	Lev & Schwartz Model	10
13	OIL	1982-83	Lev & Schwartz Model with some refinements as suggested by by Eric. G. Flamholtz & Jaggi and Lev	10.5 to 15
14	HMTL	1986-87	Lev & Schwartz Model	Not Reported
15	HSL	Not Available	Lev & Schwartz Model	Not Reported
16	ELIL	1981-82	Lev & Schwartz Model	Not Reported
17	PEC	1980-81	Lev & Schwartz Model	Not Reported
18	CFSL	1989-90	Lev & Schwartz Model	Not Reported

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19	CRL	1987-88	Lev & Schwartz Model	15
20	TELCO	Not Available	Lev & Schwartz Model	Not Reported
21	GTL	Not Available	Lev & Schwartz Model	Not Reported
22	HPCL	2002	Lev & Schwartz Model	8.5
23	HZL	Not Available	Lev & Schwartz Model	12
24	IDPL	Not Available	Lev & Schwartz Model	Not Reported
25	IOC	Not Available	Lev & Schwartz Model	Not Reported
26	SATYAM	1995-96	Lev & Schwartz Model	15.29
27	UPCCI	Not Available	Lev & Schwartz Model	Not Reported

Source: Annual Report of the Respective Companies

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From Table – 1, it is evident that most of the sample companies followed Lev & Schwartz model in valuing their human assets. In this respect, Bharat Heavy Electricals Ltd. (BHEL) is the pioneer for introducing human resource accounting in the year 1973-74 for the first time in India.

7.2. Human Resource Accounting Practices in Hindustan Petroleum Corporation Limited (HPCL)

7.2.1 Analysis of the value of Human Assets in HPCL

Based on the model as stated in methodology section, the value of human resources in HPCL is presented in Table – II below:

Table – II: Value of Human Assets in HPCL

Years	Human Assets (Rs. in Crores)
2007-08	12730
2008-09	13147
2009-10	15654
2010-11	18493
2011-12	21412
2012-13	25287
2013-14	20846
2014-15	25688
2015-16	25242
2016-17	34881

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2017-18	32030
2018-19	33178
Average	23215.67
S.D.	7551.08
C.V.	32.53%

Source: Annual Reports of HPCL (2007-08 to 2018-19)

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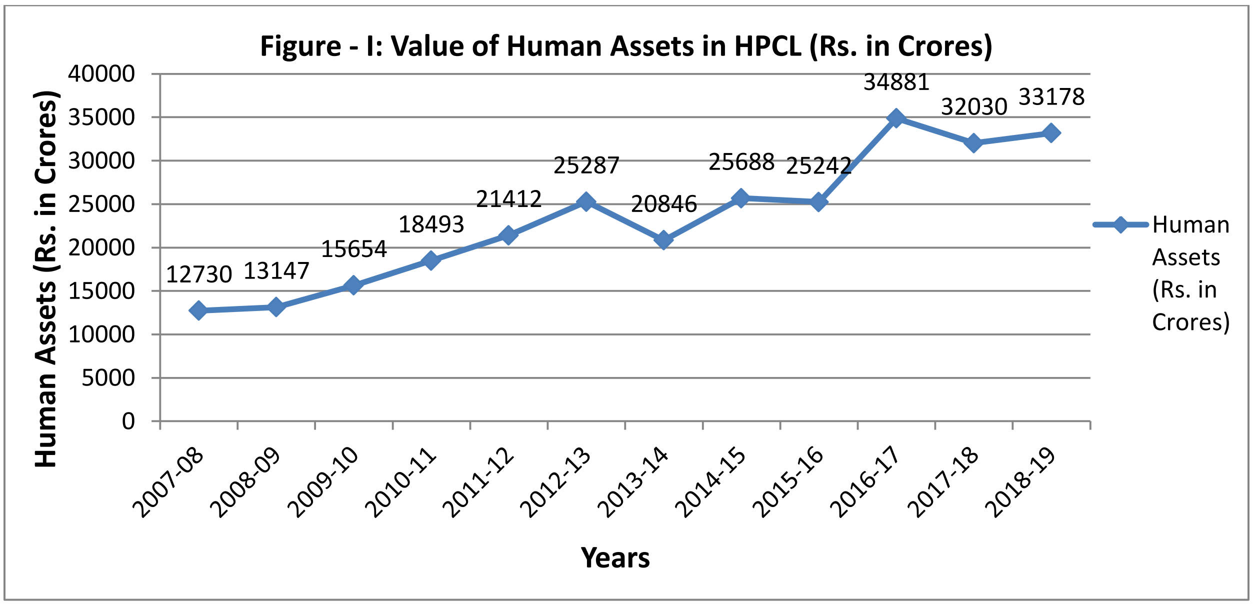

From Table – II and Figure – 1, it is observed that the value of human assets have shown an increasing trend up to 2012-13 and thereafter a fluctuating trend during the study period. The value of human assets has ranged from Rs.12730 crores in the year 2007-08 to Rs.34881 crores in the year 2016-17 with an average of Rs.23215.67 crores. This is indicative of the fact that HPCL has laid greater emphasis on its human resources and considered them as valued resources in their business. The C.V. of the value of human assets has fluctuated moderately which is observed at 32.53%.

7.2.2 Comparison between Human Assets and Financial Assets in HPCL

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In this section, an attempt is made to compare the human assets with financial assets in HPCL. The results are shown in Table – III below:

Table – III: Human Assets vis-à-vis Total Assets in HPCL

Years	**Human Assets (Rs. in Crores)**	**Financial Assets (Rs. in Crores)**	**Total Assets (Human Assets + Financial Assets) (Rs. in Crores)**
2007-08	12730	25630	38360
2008-09	13147	30088	43235
2009-10	15654	30781	46435
2010-11	18493	36964	55457
2011-12	21412	43584	64996
2012-13	25287	49631	74918
2013-14	20846	52453	73299
2014-15	25688	41034	66722
2015-16	25242	44035	69277
2016-17	34881	50995	85876
2017-18	32030	44336	76366
2018-19	33178	47785	80963
Average	23215.67	41443	64658.67
S.D.	7551.08	8802.33	15450.93
C.V.	32.53%	21.24%	23.90%

Source: Annual Reports of HPCL (2007-08 to 2018-19)

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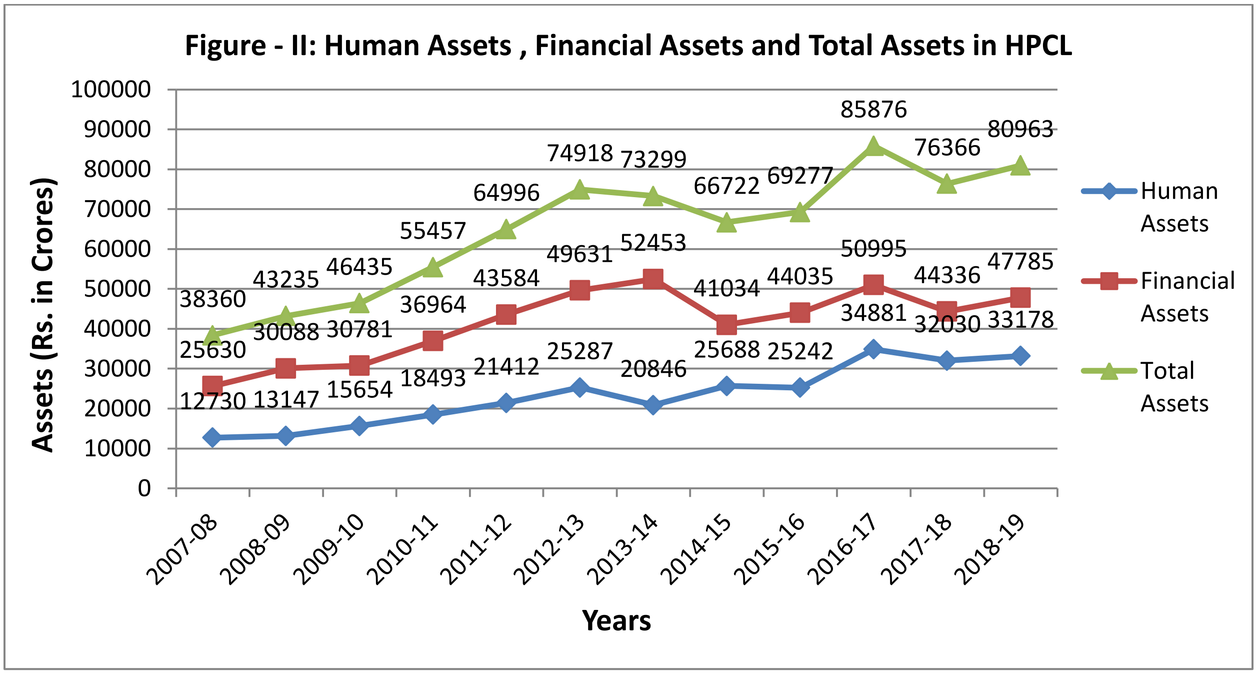

Table – III as well as Figure – 2 shows that the total assets (comprising of human assets and financial assets) have increased continuously up to 2012-13 and thereafter the value of total assets has fluctuated during the study period with an average of Rs. 64658.67crores. The C.V. of total assets in HPCL is relatively stable which is recorded at 23.90%. Similar trends have also been observed with respect to financial assets as well as human assets during the period under study. It is further observed that human assets have a significant share in the total assets of HPCL.

7.2.3 Human Assets Ratio Analysis in HPCL

The above analysis which is based on the size of human assets is not sufficient to evaluate the qualitative efficiency of accounting for human resources. With a view to avoid this bottleneck, the following ratios (shown in Table – IV) are selected:

- Employee Cost to Human Assets Ratio;
- Human Assets to Total Assets Ratio; and
- Net Profit before Tax to Human Assets Ratio.

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Table – IV: Human Assets Ratios in HPCL

(Figures in %)

Years	Employee Cost to Human Assets Ratio	Human Assets to Total Assets Ratio	Net Profit before Tax to Human Assets Ratio
2007-08	6.82	33.19	8.71
2008-09	8.65	30.41	5.42
2009-10	10.33	33.71	13.58
2010-11	10.91	33.35	12.69
2011-12	7.39	32.96	5.69
2012-13	9.99	33.75	5.38
2013-14	9.74	28.44	12.83
2014-15	9.40	38.50	16.15
2015-16	9.17	36.44	22.73
2016-17	8.45	40.62	25.86
2017-18	8.92	41.94	28.73
2018-19	8.86	40.98	28.15
Average	9.05	35.36	15.49
S.D.	1.16	4.33	8.84
C.V.	12.82%	12.25%	57.07%

Source: Annual Reports of HPCL (2007-08 to 2018-19)

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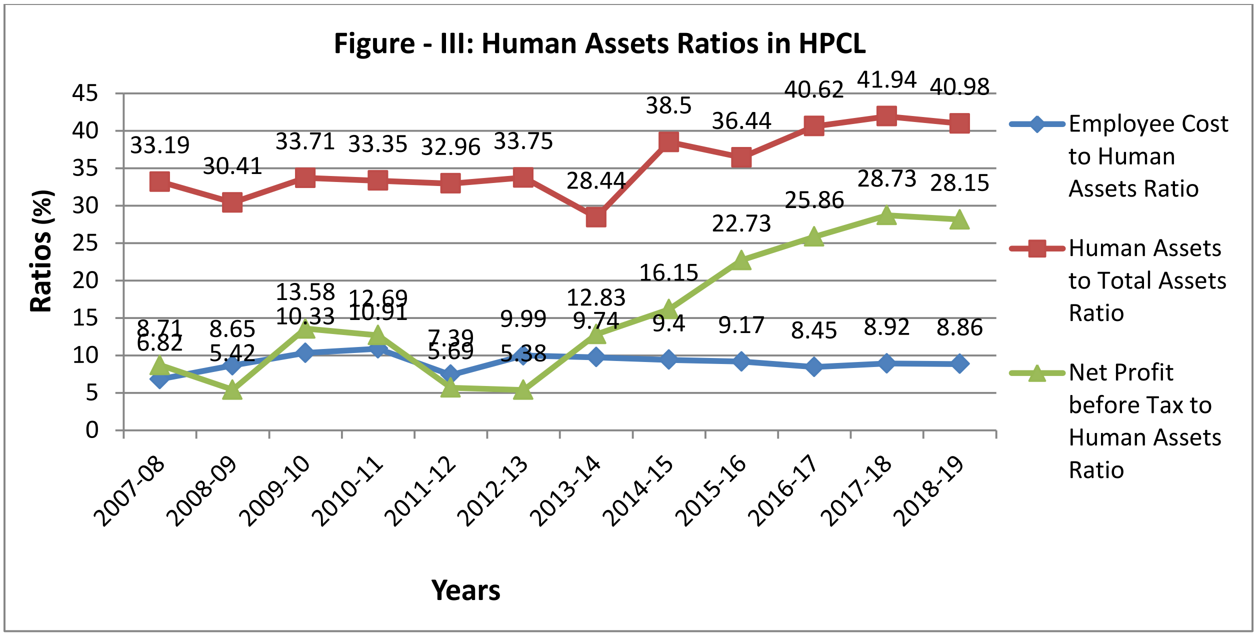

Employee Cost to Human Assets Ratio:

From Table – IV and Figure – 3, it is observed that the first four years shows an increasing trend, while the remaining years have shown no specific trend. The ratio has ranged between 6.82% in the year 2007-08 and 10.91% in the year 2010-11 with an average of 9.05. The C.V. of the ratio is found to be 12.82% which is relatively stable during the study period.

Human Assets to Total Assets Ratio:

This ratio shows the extent of human assets in its total assets (i.e., taking human assets and financial assets together). The ratio varies from 30.41% in the year 2008-09 to 41.94% in the year 2017-18 with an average of 35.36 and C.V. at 12.25% (relatively stable). Thus, human assets have a moderate share in the total assets of HPCL which implies that HPCL has made significant investment in human assets during the study period.

Net Profit before Tax to Human Assets Ratio:

The highest return on human assets (28.73%) is observed in the year 2017-18, while the lowest return (5.38%) is observed in the year 2012-13. The average of this ratio is found to be 15.49 with a C.V. at 57.07% (erratic fluctuation). On the average, HPCL has been able to utilize its human assets efficiently and thereby it has been able to generate a moderate return on its human assets during the study period.

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8. FISHER'S 'T' TEST ANALYSIS

To know whether there is any significant difference between the selected parameters, Fisher's 't' test has been applied. The results are shown in Table – V below:

Table – V: Results of Fisher's 't' Test

Parameters →	**Human Assets & Financial Assets**	**Employee Cost to Human Assets & Net Profit before Tax to Human Assets**
Null Hypothesis (H_O)	Average of Human Assets = Average of Financial Assets	Average of Employee Cost to Human Assets = Average of Net Profit before Tax to Human Assets
Alternative Hypothesis (H_A)	Average of Human Assets ≠ Average of Financial Assets	Average of Employee Cost to Human Assets ≠ Average of Net Profit before Tax to Human Assets
Degree of Freedom	(12+12-2) = 22	(12+12-2) = 22
Level of Significance	5%	5%
Calculated Value of 't'	12.77	2.40
Critical Value of 't' (2-tailed)	2.07	2.07
Result	Null Hypothesis (H_0) rejected	Null Hypothesis (H_0) rejected

Source: Computed

From Table – V, it is observed that the results are statistically significant in both the cases. This is indicative of the fact that on the average, investment in financial assets is more than that of human assets, although human assets have a significant share in total assets of HPCL. This leads to the rejection of the first hypothesis of the study. The second hypothesis of the study has been rejected which implies that HPCL has generated significant amount of profit before tax from its investment in human assets during the period under study.

9. CONCLUDING OBSERVATIONS AND SUGGESTION

In finale, it may be concluded that most of the sample companies followed Lev & Schwartz model in valuing their human assets. HPCL has laid greater emphasis on its human resources and considered them as valued resources in their business. Moreover, HPCL has been able to generate moderate returns on its human assets which imply that its human assets are efficiently utilized during the period under study. This is further strengthened by Fisher's t test.

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In the absence of statutory regulation, human resource accounting is still at a very nascent stage in India. Of late, Indian corporate sector has shown some interest in assigning cost and value to its human resources. In the present competitive scenario, it is suggested that the value of human assets may be shown by way of foot note in the balance sheet of a company.

10. LIMITATIONS AND RESEARCH OPPORTUNITIES

The present study is limited to twelve years only and is based on secondary data. In spite of these limitations, further in-depth study may be undertaken by taking more sample companies, longer time period and using other valuation models.

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