

HUMAN AND INTELLECTUAL DISCLOSURE PRACTICES OF INDIAN COMPANIES A LONGITUDINAL STUDY

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Abstract *In the current era of knowledge oriented business, intellectual assets are to be valued as much as physical assets and the traditional financial reporting system did not keep pace with the growth of intangibles necessitating its disclosure voluntarily. To improve the usefulness of financial reporting, the companies need to focus on intangibles and innovation. The paper collates 15 items involving human and Intellectual Capital (HIC), the firms can focus to disclose. The items were selected after a rigorous process of examining the human and intellectual capital disclosures practices of companies around the world. After identifying the items of HIC disclosure the study measured the HIC disclosure practices of non-financial companies in the BSE 100 index for a period of five years, from 2009-2010 to 2013-2014. The study found significant differences in the disclosure scores across the years and the industry type. The study also examined the factors influencing the HIC disclosure practices by classifying the variables as firm character, financial and governance. It is found that size, foreign revenue, profitability, are the factors affecting the level of HIC disclosure.*

Keywords: *Intangibles, Intellectual Capital Disclosure, BSE 100, R&D*

INTRODUCTION

In the classical economics theory, labour is one of the important factors of production. The business now thrives on its innovating ability to bring out new products or services the customers do not even exist. Some of the most valued companies in the capital market derive this value from the hidden assets namely intellectual values. The ever changing business landscape necessitate companies to innovate which to a great extent depends on the strength of their intellectual capital, such as Research and Development (R&D), brands, and human resources, etc. In spite of this, the current financial reporting framework does not have too many levies to report the value and the investments made by the companies towards such intangibles. Since conventional financial statements focus more on tangible resources of the firm, it has limited application in the of knowledge intensive era. To improve the usefulness of financial reporting, the companies need to focus on intangibles and innovation. One of the main issues in intangible valuation is the time and resource constraints for companies (Fick, 2010). The other main concern on intangible capitalisation and restating the financial reports to reflect the value of intangibles is that it might promote earnings management and overstate the value of the assets and in spite of this, the benefits of valuation and

disclosure of intangible supersedes the risk associated with it (Lev & Zarowin, 1999).

This study pertains to the disclosure practices of human and intellectual capital (HIC) among Indian companies. India is one of the top emerging economies in the world and is playing a significant role in knowledge driven industries such as information technology and pharmaceuticals. As per the World Bank's estimate the GDP of India could reach 6.6%. India can achieve this growth only through rapid and significant development in human and physical capital and investment in (R&D) and innovation, which will create 240 million new jobs in India (PWC, 2015). As per the PWC report, corporate India will be playing major role in the growth store of India if it addresses key themes, such as growth and innovation mind-set among others. At the current stage, India is rated low on innovation among the peers. As per the Global Innovation Index (2015)¹, India ranks 81 out of 141. The major strength of India as per this report is on knowledge diffusion, general infrastructure and

¹ Global Innovation Index. (2015). *Global Innovation Index*. Retrieved from www.globalinnovationindex.org: <https://www.globalinnovationindex.org/content/page/GII-Home>

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investment. With this background, it becomes imperative to understand the human and intellectual capital investment of Indian companies and its disclosures. This is a longitudinal study on the Human and Intellectual Capital Disclosure (HICD) of Indian companies and the factors determining the level of such disclosures.

The remainder of the paper is structured as follows. Section 2 discusses the literature on the various disclosure items pertaining to human and intellectual capital. Section 3 brings the research gap and the objective of the study. Section 4 discusses the methodology adopted, section 5 discusses the findings of the study, and the concluding section 6 gives the closing remarks.

REVIEW OF LITERATURE

This section is divided into two parts, the first dealing with the various items of disclosures on human and intellectual capital, such as human capital, intangibles, R&D, etc. and the second section discusses the studies on determinants of the levels on such disclosures among companies.

Studies on Various Categories of Human and Intellectual Capital

Several researchers have coined the term intangible to refer all the assets that are measurable in monetary term (such as patents) and those whose measurement can not be done objectively (such as brand value, human capital, etc.). The recent studies have focused on the growing need for firms to disclose the intangible assets which are perhaps more valuable than the tangible assets. Lev and Zarowin (1999) in his longitudinal study of 10 years, identified the deteriorating usefulness of conventional earnings and other metrics reported by the firm. The new age business is driven by intangibles such as brands, R&D, human capital, etc.. The study recommended the twinning proposal of capitalizing intangible investments and systematic restatement of past financial reports. Wyatt (2002) took this case of the possible earnings management led by such capitalisation and intangibles and provided evidence that such doubts were unfounded and the benefit of intangible capitalization would supersede the cost. The study investigated the value relevance of intangibles in Australia for 1366 firm years. The study found that the main challenges of accounting for intangibles were lack of reliable estimates and the uncertainty surrounding the probable future benefits of such investments and called for more further deliberations.

Lev (2001) constructed an index based on the Value Chain scoreboardTM which was pegged as the alternative framework of reporting of intangible-intensive companies. The value chain consisted of three phases, discovery and

learning, implementation and commercialisation and contained 28 disclosure items across the three stages. Helen Kang and Gray (2011) used value chain score board and conducted an empirical research on the 200 emerging market companies. The study found increasing disclosure of intangibles and found that the accounting standards and industry type determined the extent of intangible disclosure.

Wyatt (2008) in the review article on the value relevance of intangible accounting, identified three broad categories, viz., R&D expenditure and related intellectual property, human capital and production resources of intangible assets. The last category includes brands, customer loyalty among other things. According to him, value relevance of R&D varied widely across industries. With respect to human resources, employee satisfaction and firm reputation were correlated with the firm value. In terms of production resources, customer loyalty and goodwill were empirically proved to create value in the long run.

With the proliferation of knowledge intensive industries, there is increasing trend of the disclosures on the plan of research and development among companies. The following papers focussed on this.

Entwistle (1999) devised an index of R&D disclosure consisting of six main categories such as inputs, outputs, future expenditure among other things. Zegal, Moueli, and Louti (2008) conducted a study in Canada to examine the determinants of R&D disclosures using the previous model. Nekhili, Boubaker, and Lakhal (2010) examined the impact of R&D disclosures on the market capitalization of French companies. This study found that R&D disclosure is value relevant, the companies which disclosed R&D more increased the value than the companies which merely increased the R&D spending. Another study by Mukherjee and Zambon (2011) explored the intangible disclosure of the US pharmaceutical industry. This study 67 disclosure items covering strategy, human resources, corporate governance, IPR and innovation, etc. There are numerous studies that encompassed various intangibles along with R&D. Ragini (2012) studied the intangible disclosure practices of three countries of the US, Japan and India. This study used a detailed 180 items of intangibles with broad categories of R&D, strategy, market and customer, human resources, intellectual property (IP), corporate shareholder, environment, etc. This study included both mandatory and voluntary disclosure of intangibles. The knowledge driven industries need to create a framework for reporting the human and intellectual capital and it forms a substantial portion of the valuation of the companies. Thus provided a need for creating a separate category of intellectual capital disclosures.

White, Lee, and Yunninsih (2010) examined the biotechnology firms of Australia and UK to measure the nature and ex-

tent of Intellectual Capital (IC) disclosures. This study used IC Disclosure index with 78 items connected to employees, customers, IT and process, R&D and strategic statements. It had to remove a few items since these items were never disclosed in the annual report. Thus the final list consisted of 45 items of IC disclosure. Abdolmohammadi (2005) used an index of 58 items of intellectual capital which included categories like corporate culture, partnership, personnel, etc., Anam, Fatima and Majdi (2011) used disclosure items consisting of 101 items with three categories of internal capital, external capital and human capital to find EICD (Extent of Intellectual Capital Disclosure). Whiting and Woodcock (2011) used a framework with a trimmed down item under three subcategories of internal, external and human capital. Such framework helps the users of the financial reporting for valuation.

Reinforcing the importance of disclosing the human capital, O'Conner (2013) analyzed the human capital disclosures of fortune 500 companies and ranked them according to the score. As per him, human capital is the decisive force in a company and suggested different types of such disclosures, such as training, employee survey, employee turnover, etc.

Human resource accounting is another item of voluntary disclosures under intellectual capital. Since the success of any organization is directly linked to the quality and the efficiency of the workforce with respect to the investment in them, there is an increasing awareness of measuring the effect of the respective activities and its contribution to the overall economic value created by the company. Kaur, Venkat, and Singhanian (2014) analyzed the human resource accounting disclosure of Indian companies and found that the various methods adopted by the companies are inconsistent and called for regulatory bodies to come out with the guidelines to standardize the process.

Studies on Determinants of Human and Intellectual Capital Disclosure

The studies on determinants on HICD used four categories of variables such as firm characteristics, financial, ownership and governance. The ensuing section summarizes the major studies.

Previous studies considered the proportion of export revenue as the possible predictor variable. If firms realize substantial revenue from countries outside the home, they have to comply with the disclosure requirement of the client countries. Webb, Cahan, and Sun (2008) found a positive relationship between the proportion of export revenue and the disclosure level. Studies have also looked at leverage, the extent of debt in the capital structure as a factor for the firms to disclose the HIC. Studies by El-Gazzar, Fornaro,

and Jacob (2008) found that the companies with a higher debt want to attract the debt holders with more information to keep their trust level high. The size of the firm was widely used in the literature as a predictor variable for the level of voluntary disclosure. Bigger companies have higher political costs compared to smaller companies. The cost of gathering information is also justified for larger companies due to the scale of operations and the potential benefit Marston and Poole (2004), Ghazali and Weetman (2006), Owusu and Yeoh (2005) and Akhtaruddin (2005) found a direct relationship between the size of the firm and the extent of voluntary disclosures. Alsaed (2005) found that the companies listed for a longer duration had evolved in the disclosure practices compared to younger firms. Lopes and Rodrigues (2007) used type of the industry as a control variable so that the disclosure regime could be different as per the nature of the industry. The ownership pattern of a company was also found to be a factor that can influence the disclosure decisions. Forker (1992) pointed out that independent directors provide the companies with a diverse knowledge resource which are otherwise not accessible to the board. The level of disclosure could also be associated with the profitability of the firms. A company with a higher profitability in terms of return on assets, return on equity, etc., has more incentive to disclose more information as per the signalling theory. A number of studies for instance, Prencipe (2004) Baroka (2006) and Wang, O and Claiborne (2008) found a positive association between profitability variables and voluntary disclosure.

RESEARCH QUESTIONS AND OBJECTIVE

With the background and the literature survey, the study attempts to address the following research questions. (a) What is the level of human and intellectual capital disclosure of Indian companies? (b) Is the level of disclosure differs across the time period, ownership type, generation or nature of the industry? (c) What are the factors influencing the level of such disclosures?

To address the research questions, the study has framed the following objectives

- To develop an index of disclosure pertaining to human and intellectual capital disclosure relevant to Indian companies and measure the level of the disclosure.
- To study the determinants of level of voluntary disclosures of Indian non-financial companies.

RESEARCH METHODOLOGY

Variables of the Study

To measure the level of HICD of Indian companies, the study constructed an Index of human and intellectual capital

by (a) Referring to the available literature, both Indian and international, collating and consolidating all the disclosure items relating to human and intellectual capital (b) Scanning the award winning annual reports to find out items disclosed (c) Taking into account the latest developments in India and (d) Considering the usefulness of an item of the disclosure by getting an expert opinion. The outcome of this process is Human and Intellectual Capital Disclosure Index (HICDI) containing 15 items. The Index can be found, in the Annexure. The study used content analysis to measure the level of disclosure using dichotomous score namely HICDS.

To assess the differences in the level of corporate voluntary disclosures the sample observations are classified under four categories such as year, industry type, ownership and generation. Five financial years are considered for understanding year-wise differences in the level of disclosures. For understanding the industry-wide differences, the sample is divided into ten different industry types. For understanding ownership-wise differences, the companies are categorised as public sector and private sector companies. For generation-wise differences, the companies are classified into three time periods based on incorporation, viz., Generation 1 (Incorporated before 1950); Generation 2 (incorporated between 1951 to 1991); and Generation 3 (incorporated after 1991).

The variables used to study the determinants of the level of human and intellectual capital are presented in Table 1.

Table 1: Variables Used for Studying the Determinants of the Level of Corporate Voluntary Disclosures

Category	Variable	Formulae used
Firm Characteristics	Firm Size (SIZE)	Natural logarithm Total Assets (LnTA)/
	Industry type (IND)	Dummy Variable 1 to 10 on different categories
	Foreign Listing (FL)	Dichotomous Variable; 1 for foreign listing and 0 otherwise
	Listing Age (AGE)	Natural Logarithm of Days since listing till end of respective financial year
	Auditor Type (AUD)	Dichotomous Variable: 1 for Big 4 auditor and 0 otherwise.

Category	Variable	Formulae used
Financial Variables	Return on Assets (ROA)	Profit After Tax/ Total Assets
	Return on Equity (ROE)	Profit After Tax/ Equity
	Leverage (LEV)	Total Debt/ Equity
	Export Revenue (EXREV)	Export Revenue/ Total Revenue
	Price Earnings ratio (PER)	Market Price/ EPS
	Revenue Growth (REVG)	(Current Revenue / Previous Revenue) - 1
	R&D Expenditure (R&D)	R&D Expenditure / Total expenditure
Governance Variables	Promoters' Holding (PROMHOLD)	Promoters' Shareholding / Total No. shares
	Foreign Holding (FORHOLD)	Foreign Share Holdings / Total No. of Shares
	Institutional Holding (INSTHOLD)	Institutional Shareholdings/ Total No. Of Shares
	Independent Directors (INDD)	No. of Independent Directors/ Board Size
	Board size (BSIZE)	Logarithm of Total No. of Directors on Board
	CEO Duality (CEOD)	Dichotomous: 1 if CEO and MD are different and 0 otherwise

Note: Variables chosen by researchers based on earlier literature
PAT-Profit After Tax; PE Ratio- Price Earnings Ratio; CEO-Chief Executive Officer; MD- Managing Director; ESOP- Employee Stock Option.

Hypothesis

The study tested the following hypothesis:

There is no significant relationship between scores of HICDI and select firm characteristics, financial and governance variables such as H_{01} : Export revenue; H_{02} : Industry type; H_{03} : Auditor type; H_{04} : Size (LnTA); H_{05} : Return on assets; and H_{06} : Promoters' holding.

Period of the Study

This study covered a period of five financial years from 2009-10 to 2013-14. These years are considered to be significant

in the financial reporting regime of Indian companies for various reasons. Indian regulators added a number of mandatory and voluntary disclosure items during this period

Sample

To understand the level of corporate voluntary disclosure, the study selected the companies constituting the BSE 100 Index as on the last date of the financial year. The number of companies chosen for measuring the level of corporate voluntary disclosures is 393. To study the determinants of level corporate voluntary disclosure, balanced panel data is used. Thus, only those companies forming part of the BSE 100 for all the years of the study viz., financial year 2010 to 2014 are considered. Thus, the sample contains 325 observations from ten industries.

Panel Data Regression Using Fixed and Random Effects Model

As the study involves observing a set of firms for several variables over a period of time, balanced panel data model of fixed effects and random effects are used. Panel data helps in considering the omitted variables bias caused by unobserved heterogeneity.

Fixed effects model (FE) is used to understand the relationship between corporate voluntary disclosure scores and the predictor variables on the premises that firm characteristic variables (such as industry type, ownership type, etc.) that are time invariant could influence the outcome variables and such effects are to be controlled. This model also assumes that each company in the sample has such individual characteristics not correlated with the characteristics of other companies and thus, the error terms are not correlated. If the unobserved variables are time invariant, then changes in the disclosure scores should be due to the influence of other variables. Random Effects (RE) model is also used which assumes that the error terms, which are not explained in the model, are caused by random factors and are uncorrelated with the predictor variables (Stock & Watson, 2007).

The best fit among the models is found by the following process. The panel data regressions are performed by using all the three models viz., OLS, FE and RE. First the better model between FE and RE is selected using Hausman test, whose null hypothesis is 'random effects model is suitable'. Thus, if the p-value of the Hausman test is less than the significant value of 0.05, the null hypothesis is rejected and FE model is selected. If the p-value of Hausman test is more

than 0.05, the better model among the other two models, viz., RE and OLS is tested using Breusch Pagan Lagrange Multiplier (LM) test. The null hypothesis of LM test is 'OLS model is suitable' and thus, if the p-value is less than 0.05, the null hypothesis of LM test is rejected and RE model is considered to be suitable. If not, OLS model is selected.

Models Used

The following model is used for the study

$$HICDS_{it} = \beta_0 + \beta_1 LnTA_{it} + \beta_2 EXREV_{it} + \beta_3 IND_{it} + \beta_4 AUD_{it} + \beta_5 ROA_{it} + \beta_6 PROMHOLD_{it} + \beta_7 R\&D_{it} + \epsilon_{it}$$

FINDINGS OF THE STUDY

The first one discusses the findings on the level of HICD among Indian non-financial companies and the next section discusses the results of correlation and panel data regression results.

Level of Human and Intellectual Capital Disclosure of Indian Companies

The level of HICD is discussed in terms of descriptive statistics in terms of years, generations, ownership type and industry as follows:

Table 2: Year-wise Descriptive Statistics for Scores of HICDI (%)

	2009-10	2010-11	2011-12	2012-13	2013-14	Overall
Mean	36.5	32.4	36.5	37.6	42.6	38.0
Median	31.2	31.5	31.2	37.5	43.7	37.5
Std. Deviation	20.0	19.2	18.0	17.3	16.4	17.5
Minimum	0	0	0	0	0	0
Maximum	87.5	92.0	87.5	87.5	81.25	87.5
	83	79	77	77	77	393

Source: Secondary data; Note: Results calculated using SPSS 20

The year-wise descriptive statistics for the scores HICDI of the companies is found in Table 2. The analysis shows that the level of human and intellectual capital disclosure has increased in 2013-14, while the average is lesser than the average scores of overall corporate voluntary disclosures, indicating that this element of disclosures has been lesser among the Indian non-financial companies.

Table 3: Industry-wise Descriptive Statistics for Scores of HICDI (%)

	1	2	3	4	5	6	7	8	9	10
Mean	40.7	32.3	30.4	38.1	42.6	41.6	38.3	44.4	43.5	49.2
Median	37.5	37.5	31.2	37.5	38.2	39.2	34.8	35.5	37.6	39.2
Std. Deviation	17.8	15.6	12.4	20.6	16.2	14.6	15.6	17.6	19.2	18.6
Minimum	13.3	0	0	6.7	26.6	13.3	26.6	6.7	33.3	40.0
Maximum	87.5	56.2	32.5	75.0	86.6	1.0	73.3	56.2	86.6	32.5
N	21	17	70	30	22	35	48	87	25	38

Source: Secondary data; Note: Results calculated using SPSS 20

1-Diversified; 2-Cement; 3-Infrastructure; 4-Automobile; 5-Capital Goods; 6-Chemicals; 7-Services; 8-Mining&Minerals; 9-FMCG; 10-Pharmaceuticals

Table 3 contains the industry-wise descriptive statistics for the scores of HICDI and suggests that the mean scores of human and intellectual capital disclosure is highest among pharmaceutical companies coded as 10 here. These companies invest substantial amount on research and development and hire skilled scientists for formulation. Companies like Reddy's laboratories give an account of the potential benefit of the patents and give a detailed account of the employees in the R&D activities.

Table 4: Ownership-wise Descriptive Statistics for the Scores of HICDI (%)

	1	2
Mean	41.3	42.3
Median	40.1	46.6
Std.Deviation	1.8	2.1
Minimum	0	0
Maximum	73.3	86.6
N	69	324

Source: Secondary data; Note: Results calculated using SPSS 20

1-Public; 2-Private

Table 4 shows the ownership-wise descriptive statistics for scores of HICDI. Private sector companies have the average disclosure scores slightly higher than the public sector counterparts. A number of public sector enterprises such as ONGC and HPCL presented human resource valuation. Infosys is another company in the private sector, giving human resource valuation and brand valuation in separate statements in the annual report.

Table 5: Generation- wise Descriptive Statistics for the Scores of HICDI (%)

	1	2	3
Mean	46.6	46.6	40.0
Median	41.6	41.6	41.6
Std. Deviation	13.9	16.9	15.9
Minimum	8.3	0	8.3
Maximum	73.3	80.0	80.0
N	94	192	104

Source: Secondary data; Note: Results calculated using SPSS 20

1-Companies incorporated before 1950; 2-Companies incorporated between 1950 and 1990; 3-Companies incorporated after 1990

Table 5 presents the generation- wise descriptive statistics for the scores of HICDI. The intangibles are, seen as the new age phenomena, but here, interestingly the level of disclosure of HICDI is higher for the companies belonging to generation 1 and 2. The maximum score is obtained by new generation company.

Results on the Panel Data Regression on Determinants of level of Human and Intellectual Capital Disclosure

Table 6: Panel Data Regression Results on the Determinants of HICDS using Select Firm Characteristics, Financial and Governance Variables

HICDS	OLS	FE	RE
EXREV	0.24009(0.001)*	0.1534(0.269)	0.2453(0.001)
LnTA	0.0906(0.00)*	0.1321(0.001)	0.09345(0)
PROM-HOLD	0.00953(0.678)	0.0062(0.55)	0.0028(0.763)
IND	0.00116 (0.868)	0.01153 (0.839)	0.00467(0.956)

HICDS	OLS	FE	RE
AUD	0.05851(0.668)	0.2171(0.341)	0.0652(0.854)
ROA	0.1903(0.044)**	0.0152(0.961)	0.19294(0.064)
R&D	0.5103(0)*	0.5508(0)	0.5175(0.00)*
R squared	0.1467		
H a u s m a n Test		10.53 (0.3955)	
F test	1.34 (0.0818)		
Breusch and Pagan			1.94(.0817)

Note: Results computed using Stata 12; * Significant at 1%, ** Significant at 5%, *** Significant at 10%; OLS: Ordinary Least Square; FE: Fixed Effects; RE: Random Effects

Table 6 presents the results of the panel data regression on the determinants of HICDS using select variables under categories of firm characteristics, financial and governance. The Hausman test which tests the suitability between FE and RE models shows p-value of more than 0.05, and hence LM test is conducted to check the suitability of OLS and RE models which again has a p-value of more than 5% and hence OLS model is found to be suitable and significant. It is clear from the OLS model that the null hypotheses, H_{01} , H_{04} and H_{05} , H_{07} are rejected indicating positive and significant relationship between the HICDS and variables such as ROA, total assets and export revenue and R&D expenditure. However, the other null hypotheses, H_{02} , H_{03} and H_{06} , are accepted as their p-values are more than 5%.

It is clear that companies with higher income from abroad, larger in size and having high profitability and spending a higher proportion of revenue to R&D disclose information on human and intellectual capital.

CONCLUSION

The study made an attempt to understand the human and intellectual capital disclosure practices of Indian companies and the motivation of companies on such disclosures. It is found that the growth in terms of the extent of disclosures made in terms of human and intellectual capital has significantly increased, from 36% in financial year 2009-10 to 42.6% in 2013-14. In spite of this, the average disclosures are just around 38%. The knowledge driven industries such as pharma and information technology has given more disclosures while the need for the human and intellectual capital is equally becoming important for all industries. Companies deriving income from abroad also tend to have higher disclosures in this category. The proportion of R&D expenditure with respect to revenue is less than 1% in most of the Indian companies. It becomes imperative that the companies rose to the occasion, explore opportunities

to pursue innovation and grow capabilities in the dynamic world marked by rapid change in technology resulting in uncertainty and volatility. Only those companies who have constantly reinvented their business model have passed the test of time.

As far as the limitation of the study is concerned, the sample being limited to BSE 100 companies and the possible bias related to content analysis. In spite of this limitation, this study will help companies understand the various initiatives required to enhance the human and intellectual capital of the companies.

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ANNEXURE

Human and Intellectual Capital Disclosures Index(HICDI)

Sl.No	Variables	Score	Score %
1	Marketing innovation	1	100
2	Brand values	1	100
3	Customer grievance mechanism	1	100
4	Value of patent/trademarks	1	100
5	R&D facilities	1	100
6	No. of employees engaged in R&D	1	100
7	Income per R&D expense	1	100
8	Revenue per customer	1	100
9	Stakeholders survey	1	100
10	Alliances	1	100
11	Ratio of new ideas generated and implemented	1	100
12	Revenue per employee	1	100
13	Average length of service of staff	1	100
14	Human resources accounting	1	100
15	Valued added statement	1	100
Human and Intellectual Capital Disclosures Index		14	100
Note: Constructed by the researchers			