

## CORPORATE FINANCIAL DISCLOSURE: A CONTENT ANALYSIS

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### Abstract

*In this paper, content analysis is being done to study the existing level of disclosures in corporate financial reporting. To study the existing level of disclosures in corporate financial reporting of select listed companies in India. Investigating the level of disclosure in annual reports has been a topic of great research interest for many years in the past. The appropriate level of disclosure in the annual report is considered significant for the stakeholders of a firm, and it generates a favorable impact on the company.*

**Keywords:** *Disclosures, Corporate Financial Reporting, Annual Reports, Content Analysis.*

### Introduction

Although it is true that the coverage of financial disclosure requirements is being increased more and more, yet the number of financial reporting frauds also increasing all over the world. Dye (1985) argued that any increase in the level of mandatory disclosure adopted by statutory bodies and governing laws is an evidence of the unwillingness of managers to voluntarily disclose information. In India, the disclosure requirements in the annual reports of companies are governed by the followings:

- Company act,
- The stock exchange, and
- Accounting standards (AS (1)-AS (29))

Disclosure is broadly divided into two types of disclosures: mandatory disclosure and voluntary disclosure. Mandatory disclosure comprises information which compelled through the regulatory framework in accordance with the terms of accounting standards and principles, corporate law and stock exchange listing requirements. However, the length of such disclosure greatly varies between countries and by and large determined by the strictness or slackness of the legal and regulatory systems in the country. Voluntary disclosure is defined as any disclosure in excess of the mandated requirement (Meek et al., 1995).

Since the objective says only the listed companies will be selected, a choice has to be made regarding the selection of a stock exchange from amongst the existing number of stock exchanges in India. The two most famous Indian stock exchanges are Bombay Stock Exchange and National Stock Exchange. When a stock exchange is selected, a particular set of listed companies on that stock exchange has to be selected which are in the form of an index. Both Bombay Stock Exchange and National Stock Exchange have many indices comprising a

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different number of companies. For the purpose of achieving the aim of the first objective, National Stock Exchange has been selected, and from National Stock Exchange the CNX NIFTY 50 index has been selected. The CNX NIFTY 50 index has 50 companies in the index which reflects overall Indian financial market conditions. This Index is computed on the basis of free float market capitalization method and it covers 13 sectors of Indian Economy.

### **Content Analysis**

“Content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful texts) to the contexts of their use.” (Krippendorff, 2004, p-18)

There are different methodologies of content analysis, and any of them can be chosen depending on the type of goal. Each of them has its own merits and demerits.

### **Creation of Indices in Disclosure Research**

In disclosure research, one instrument that is being widely used is called the disclosure index. This instrument of content analysis was first used by Cerf (1961), Buzby(1975), Stanga (1976), and Cooke (1989, 1992). The construction of the index is done by using a set of selected items which can be used to show a firm’s level of compliance with the selected items or the firm-level of the disclosure. But in most cases importance has been on the number of disclosures, i.e., if an item in the prepared lists disclosed or not.

The existing literature on the topic suggests two methods of identifying the extent of corporate disclosure, weighted and the un-weighted approach. In the weighted approach, the respondents are required to give weights to the items of information selected in the disclosure index by means of point scale method. The scale may be ranging from 1 to 5 points. This approach has been used in previous studies like Singhvi & Desai (1971), Buzby (1974) and Firer & Meth (1986) etc. On the other hand, the un-weighted (dichotomous) approach assigns equal weight to all the items of information included in the index. If the item is disclosed by the firm then it will receive one, otherwise, zero. This approach has been used in earlier studies for instance (Ahmed and Nicholls 1994), (Hossain et al. 1994) and (Wallace and Naser 1995) etc. In this study, the un-weighted (dichotomous) approach is being used. The reason for choosing an un-weighted index is to avoid subjectivity inherent in any weighting and to treat all users equally. Of course, this approach assumes that every information item is equally important for all users of annual reports. This assumption is probably wrong because an erroneous weighting creates more bias in the weighted approach than the equal treatment of items in the un-weighted (dichotomous) approach.

### **The Methodology of Disclosure Index**

In disclosure index construction, the total disclosure score (TS) for a firm is regarded as an additive. Let  $d_i$  be the disclosure value for the  $i^{th}$  item and  $q$  is the number of items the company is required to disclose. In this study, the total number of statutory items are 75 i.e.,  $q=75$

$$TS = \sum_{i=1}^p d_i$$

Where  $d_i = 1$  when  $i^{th}$  item is disclosed, and 0 if  $i^{th}$  item is not disclosed;  $p$  represents the number of items the company has disclosed actually; and  $p \leq q$  or  $p \leq 75$  because  $q=75$ (which are the total items selected) in this study.

When the total disclosure score of each company is calculated, a disclosure index is prepared to measure the relative level of disclosure. The disclosure index is actually a ratio of the scores obtained by a company,  $p$ , to the total scores possible,  $q$ . In this way, the disclosure index is calculated by the following formula in which the denominator of the index is the maximum score (MS) possible a company can acquire:

$$MS = \frac{q}{\sum_{i=1}^q d_i}$$

The total disclosure index (TDI) for each company is then prepared as follows:

$$TDI = \frac{TS}{MS}$$

or

$$TDI = \frac{\sum_{i=1}^p d_i}{\sum_{i=1}^q d_i}$$

Where  $TDI$  is the total disclosure Index

### **Selection of Statutory Items**

For selecting the statutory items, many websites of statutory bodies referred national and international journals were explored. During the time of exploration, it was found that many studies prepared disclosure indexes to measure the level of disclosure in the annual reports of the companies with a varying number of statutory items even in the same country where similar laws operate. Some Studies only chose mandatory information items: Ahmed and Nicholls (1994), Wallace and Naser (1995) and Akhtaruddin (2005). Some studies considered only voluntary information: Firth (1979), Chow and Wong-Boren (1987), Hossain et al. (1994), Raffournier (1995), Al-Shattarat (2010) and Arif and Tuhin (2013). Interestingly, in some studies it, was found that they empirically tried to discover important items of information that should be reported in the corporate annual report by rating the perception of users on a point scale, and then the disclosure index was prepared. Some studies, even in India, have used both mandatory and voluntary information items for constructing their disclosure indices: Singhvi, (1967), Singhvi and Desai, (1971), Barrett, (1976); Wallace, (1987) and Marston and Robson (1997).

In all of the studies, both quantitative and qualitative items were considered for preparing the disclosure index. Similar to Singhvi, (1967), Singhvi and Desai, (1971), Barrett, (1976); Wallace, (1987) and Marston and Robson (1997), this study too considers both mandatory and voluntary information items where quantitative and qualitative items are also considered in each of them. The items were identified, as mentioned earlier, through literature review and disclosure requirements of the company act, stock exchange and accounting standards. Final disclosure index combined 154 items. These 154 items have been categorized into 5 major sections reported in Exhibit 1. In the 5<sup>th</sup> section, Corporate Governance

Information and Corporate Social Responsibility & Environmental Information have been combined. Since it was found in the case of mandatory disclosure items, while creating disclosure index, that each of them was mostly present and were getting the score of 1 in the case of all companies, they were excluded from the study. The decision of selecting very few items in both cases was also influenced by the paucity of time. This study has considered very few mandatory items and more voluntary items.

### Exhibit 1: The List of Items

<b>1. Financial Information</b>			
1	Highlights of the past 5 to 10 years	69	The total amount of long-term debt (including debentures)
2	Performance at a glance for the year	70	Amount of charges and interest due to each
3	Summarized Balance Sheet	71	Information as to the debt-equity ratio
4	Summarized Profit and Loss Account		<b>2. Information on Human Resources</b>
5	Amount of paid-up capital	72	Number of employees
6	Current Ratio	73	Occupational groups of employees
7	Acid Test Ratio	74	Names of senior executives
8	Inventory Turnover Ratio	75	Status of senior executives
9	Distribution of revenue (Graphical/ chart/ pictorial information)	76	Particulars on Directors
10	Proposed dividend for the year	77	Shares held by senior executives
11	The dividend for the last year	78	Shares held by directors in the subsidiary companies
12	Dividend Payout Ratio	79	General Statement on Industrial Relation
13	Dividend remitted in foreign currency	80	Productivity --
14	Net worth	81	Rate of absenteeism
15	The Original value of Fixed assets	82	Strikes and lockouts
16	Additions or sale or both to fixed assets	83	Workers' participation in Management
17	Amount of Depreciation on fixed assets	84	Amount spent on HRD programme
18	The value after depreciation on fixed assets	85	Description of HRD programme
19	Method of charging depreciation	86	Amount spent on employee welfare activities
20	Amount of intangible asset	87	Employees pension and retirement benefits
21	Profit for the current year	88	Information on labour contracts
22	Proposed addition to general reserve	89	Loans and advances to employees
23	Other reserves		<b>3. Information on Marketing</b>
24	Amount of current liabilities	90	Description of major products
25	Break down of current liabilities		<b>5 - General Information</b>
26	Sources of non-operating income and expenses	93	Number of shareholders
27	Amount of non-operating income and expenses	94	Shareholding pattern
28	Accounting treatment of no-operating income and expenses	95	A narrative history of the company
29	Amount of cash	96	Corporate objectives and profile
30	Receivables - loans and advances	97	Organization chart
31	Details of intangible assets	98	Matching of Budgeted performance with actual performance
32	Break up operating expenses into variable and fixed	99	Cash flow projections
33	Cost of investments	100	Profit forecasts
34	The market value of investments	101	Prior period adjustments
35	Return on Capital Employed	102	Cost of investment in subsidiaries and other firms
36	Investment in government securities	103	The market value of investment in subsidiaries and other firms
37	Amount of debtors	104	Dividend received from subsidiaries and other firms
38	Provision for doubtful debts	105	Book value per equity

39	Aging of debtors	106	Comparative Income Statement ( 2 years)
40	Inventories - raw materials	107	Comparative Balance sheet (2 Years)
41	Inventories - work in progress	108	Cash flow projections
42	Inventories- finished goods	109	The share of the company in the market for its major products
43	Method of valuation of inventories	110	Cost of Goods Sold
44	Total sales income	111	Break down of the cost of Goods Sold
45	Geographical details of sales	112	Sales forecasts
46	Product wise sales break up --	113	Advertisement and publicity expenses
47	Sales to group companies	114	Pricing policy
48	Loans and advances to group companies	115	Trends in product prices for at least the most recent 5 year period
49	Selling, Distribution and administrative expenditure	116	Sales to major customers
50	Fresh purchase and sales value of investments		Information about arrears of sales order
51	Cash flow statement	117	<b>4.Information on Production</b>
52	Contingent Liabilities	118	Licensed capacity
53	Accounting policies followed and changes introduced during the year	119	Installed capacity
54	Details about taxes	120	Actual production
55	Provision for taxes	121	Description of R&D activities
56	Accounting treatment	122	Current Expenditure on R&D
57	Price level adjusted statements	123	R&D expenditure for a future period
58	human resource accounting	124	Quality Initiatives
59	Social accounts	125	Information about major plants/ units
60	Economic Value Added	126	Productive capacity licensed capacity
61	Marke Exhibit Securities - cost, current market	127	Expenditure on repairs and maintenance
62	' Miscellaneous Expenses	138	Information about performance budgeting.
63	Capital expenditure for the year	129	Contribution to national exchequer
64	Capital expenditure for the future period	130	The market value of shares
65	Earning per share	131	Index/contents to the annual reports
66	Forecast for next year's EPS	132	Corporate mission
67	The ratio of Gross Profit to sales	133	Graphs of production/ sale /profits etc
68	The ratio of Net Profit to sales	134	Photo of men at work/ factory/ products

Out of these above 154 mandatory and voluntary information only following 75 items (total) from each section have been selected for the study due to the limitation of time.

#### Exhibit 2: List of the Selected Items for the study

Financial Information			
1	Highlights of the past 5 to 10 years	39	Description of HRD programme
2	Performance at a glance for the year	40	Amount spent on employee welfare activities
3	Summarized Balance Sheet	41	Employees pension and retirement benefits
4	Summarized Profit and Loss Account		<b>Information on Marketing</b>
5	Dividend Payout Ratio	42	Description of major products
6	Dividend remitted in foreign currency	43	The share of the company in the market for its major products
7	Amount of Depreciation on fixed assets	44	Cost of Goods Sold
8	The value after depreciation on fixed assets	45	Break down of the cost of Goods Sold
9	Method of charging depreciation	46	Sales forecasts
10	Amount of intangible asset	47	Advertisement and publicity expenses
11	Details of intangible assets		<b>D -Information on Production</b>
12	The market value of investments	48	Licensed capacity
13	Investment in government securities	49	Installed capacity
14	Proposed addition to the general reserve	50	Actual production

15	Other reserves	51	Description of R&D activities
16	Capital expenditure for the future period	52	Current Expenditure on R&D
17	Earning per share	53	R&D expenditure for a future period
18	Forecast for next year's EPS	54	Expenditure on repairs and maintenance
19	The ratio of Gross Profit to sales	55	Information about performance budgeting.
20	The ratio of Net Profit to sales		<b>E - General Information</b>
21	The total amount of long-term debt (including debentures)	56	Number of shareholders
22	Amount of charges and interest due to each	57	Shareholding pattern
23	Information as to the debt-equity ratio	58	A narrative history of the company
24	Cash flow statement	59	Major industry trends
25	Details about taxes	60	Description of social activities undertaken
26	Provision for taxes	61	Amount spent on 20socialActivities
27	Economic Value Added	62	Use of charts and diagrams
28	Profit forecasts	63	Future expansion programs
29	Prior period adjustments	64	Details of earnings in foreign exchange
30	Book value per equity	65	Expenditure in foreign currency -
	<b>Information on Human Resources</b>	66	Contribution to the national exchequer
31	Number of employees	67	The market value of shares
32	Names of senior executives	68	Employees of weaker section/physically handicapped persons
33	Status of senior executives	69	Measures to control environmental pollution
34	Particulars of Directors	70	Related party disclosures
35	Shares held by senior executives	71	Corporate Governance Report
36	Shares held by directors in the subsidiary companies	72	A number of independent directors on the Board.
37	Workers' participation in Management	73	Stock exchanges, where stocks are listed
38	Amount spent on HRD programme	74	Opportunity, threats, risks, and concerns
		75	Remuneration to Directors

### Selection of Companies

Exhibit 3 reports all the fifty company of the CNX NIFTY 50 index, and the respective weights of the sector percentage are being reported in the next column labeled weight. The Nifty-50 index reflects overall Indian financial market conditions. This Index is computed on the basis of the free float market capitalization method. It covers 13 sectors of Indian Economy. However, only forty listed companies could be taken into the sample frame in twelve sectors. Ten financial sector companies have been excluded from the sample frame because financial companies adopt different reporting practices which make their inclusion in the sample difficult when the purpose is to index the financial information being reported by them. Indexing requires that all the items being used for its construction should be present in the same fashion in all the chosen constituents, but it did not happen in case of financial companies. Finally, 40 companies out of 50 companies have been considered from which the final sample of the companies has been selected from 12 sectors out of 13 sectors which are being covered by the CNX Nifty Index. Exhibit 4 reports the names of financial companies which were excluded from the sample in the first round. Their weights in the index are being shown in the third column. It can be seen that the total weights of the ten excluded financial companies of CNX Nifty are more than thirty-five percent, indicating that nearly 35% information of CNX Nifty is lost because of their exclusion.

However, the reasons for their exclusion are so restrictive that it becomes almost impossible to include them in the sample where the method of un-weighted content analysis has been chosen.

**Exhibit 3: Constituents companies of Nifty 50 Index with their respective weights in the Index: Note: The column labeled weight shows the percentage weights of respective companies in the index. The total weight of the index is 100%.**

	Company Name	Industry	Weight		Company Name	Industry	Weight
1	NTPC Ltd.	Energy Sector	14.96%	1	Bajaj Auto Ltd.	Automobile Sector	9.77%
2	Oil & Natural Gas Corporation Ltd.			2	Bosch Ltd.		
3	Power Grid Corporation of India Ltd.			3	Eicher Motors Ltd.		
4	Reliance Industries Ltd.			4	Hero MotoCorp Ltd.		
5	Bharat Petroleum Corporation Ltd.			5	Mahindra & Mahindra Ltd.		
6	GAIL (India) Ltd.			6	Maruti Suzuki India Ltd.		
7	Hindustan Petroleum Corporation Ltd.			7	Tata Motors Ltd.		
8	Indian Oil Corporation Ltd.						
1	Tata Consultancy Services Ltd.	IT - Sector	12.58%	2	Dr. Reddy's Laboratories Ltd.		
2	Tech Mahindra Ltd.			3	Cipla Ltd.		
3	Wipro Ltd.			4	Sun Pharmaceutical Industries Ltd.		
4	HCL Technologies Ltd.			5	Lupin Ltd.		
5	Infosys Ltd.					1	Coal India Ltd.
2	UltraTech Cement Ltd.	Cement & Cement Products	1.53%	2	Hindalco Industries Ltd.		
1	Larsen & Toubro Ltd.	Construction	4%	3	Tata Steel Ltd.		
1	Asian Paints Ltd.	Consumer Goods	9.16%	4	Vedanta Ltd.		
2	Hindustan Unilever Ltd.			1	BhartiAirtel Ltd.	Telecom	2.06% (10)
3	I T C Ltd.			2	BhartiInfratel Ltd.		
1	Adani Ports and Special Economic Zone Ltd.	Services	0.77%	1	UPL Ltd.	Fertilisers & Pesticides	0.66%

#### Replacement of Companies in CNX Nifty 50

In the year 2017, the following four firms: Tata Power, ACC Ltd and Bank of Baroda (BoB) and shares of Tata Motors that carry differential voting rights (DVRs) were replaced by the following three firms: Bajaj Finance Ltd, Hindustan Petroleum Corp. Ltd (HPCL) and UPL Ltd. If any revision introduced after this was not considered, and choosing companies from this list is being considered final.

**Exhibit 4: List of companies excluded from the sample with their respective weights in the Index**

	Company Name	Industry	Weights
1	Axis Bank	(Financial Services)	35.28%
2	Baj Finance		

3	HDFC Bank		
4	HDFC		
5	ICICI Bank		
6	IBULHSGFIN		
7	INDUSINDBK		
8	Kotak Bank		
9	SBIN		
10	Yes Bank		

Exhibit 5 shows, in column four, the percentage of the number of companies per sector to the total number of companies, 40, the sample contains in the first round. The maximum number of companies is from the Energy sector with 20.51 percent weight to the total weight, followed by the Automobile sector which has 17.95 percent weight to the total weight. The minimum percentage of companies to the total is being represented by the two sectors of Indian economy i.e., Fertilizers & Pesticides and construction sectors. The percentage representation of the rest of the sectors falls in between these two extremes. However, namely, the IT-sector and Pharmaceutical sector companies have an equal percentage of representation in the sample.

#### Exhibit 5: Sector Wise Percentage of companies to total companies in the Sample

Number	Name of Sector	Number of selected companies	Percentage of Total
1	Automobile	7	17.95
2	Cement & cement products	2	5.13
3	Construction	1	2.56
4	Consumer goods	3	7.69
5	Energy	8	20.51
6	Fertilisers & Pesticides	1	2.56
7	IT	5	12.82
8	Metals	4	10.26
9	Pharma	5	12.82
10	Services	1	2.56
11	Telecom	2	5.13
	Total	39	100.00

#### The Second Round of Selection of Companies

When the forty companies from the Nifty-50 had been selected in the first round, it was found very difficult to collect 75- item-wise information from the three annual reports of each of the forty companies. If it were done, then  $(75 \times 3)40 = 9000$  pieces of information (items) would have to be collected from the annual report of the forty companies. Given the time constraints as mentioned earlier, the final selection of the number of companies to be included in the sample was based on the method that from every twelve sectors; randomly three companies have been selected. If the number of companies is less than three in a sector, then all the companies from that sector have been selected. Exhibit 6 reports the sector-wise sample distribution.

#### Exhibit 6: The Sector Wise Sample Distribution

	Name of Companies	Sector	No. of Companies	%
1	NTPC Ltd.	Energy	3	12
2	Oil & Natural Gas Corporation Ltd.			
3	Power Grid Corporation of India Ltd.			
4	Tech Mahindra Ltd.	IT	3	12
5	HCL Technologies Ltd.			
6	Infosys Ltd.			



7	Larsen & Toubro Ltd.	Construction	1	4
8	Asian Paints Ltd.	Consumer Goods	3	12
9	Hindustan Unilever Ltd.			
10	I T C Ltd.			
11	Adani Ports and Special Economic Zone Ltd.	Services	1	4
12	Bajaj Auto Ltd.	Automobile	3	12
13	Hero MotoCorp Ltd.			
14	Mahindra & Mahindra Ltd.			
15	Dr. Reddy's Laboratories Ltd.	Pharma	3	12
16	Cipla Ltd.			
17	Sun Pharmaceutical Industries Ltd.			
18	Coal India Ltd.	Metals	3	12
19	Hindalco Industries Ltd.			
20	Tata Steel Ltd.			
21	BhartiAirtel Ltd.	Telecom	2	8
22	BhartiInfratel Ltd.			
23	UPL Ltd.	Fertilisers & Pesticides	1	4
24	Ambuja Cements Ltd.	Cement & Cement Products	2	8
25	UltraTech Cement Ltd.			
	<b>Total</b>		25	100.

By doing so the presence or absence of the number of items from  $(75 \times 3)40 = 9000$  items has been reduced to  $(75 \times 3)23 = 5175$  items which can be done during this limited time.

Exhibit 7 shows the number and percentage of disclosure items per category. It can be seen that the maximum percentage belongs to Financial Information, followed by 26.67% of the General Information in which the items of Corporate Governance Information and Corporate Social Responsibility & Environmental Information have been included.

#### Exhibit 7: Percentage of Disclosure Items

Financial Information	30	40.00
Human Resource Information	11	14.67
Information on Marketing	6	8.00
Information on Production	8	10.67
General Information	20	26.67
<b>Total</b>	75	100.00

#### Results and Discussion

Finally the results are being discussed in this section. Exhibit 8 reports the category-wise disclosure scores.

#### Exhibit 8: Disclosure Score of All the Selected NSE Companies Category-wise

1	2	3	4	5
	2014-15	2015-16	2016-17	Average
Financial Information Disclosure	60.133	72.400	78.400	70.311
Information on Human Resources	45.091	55.273	64.364	54.909
Information on Marketing	36.667	52.000	72.667	53.778
Information on Production	44.000	49.000	75.000	56.000
General Information	51.800	73.600	78.200	67.867

It may be observed in the Exhibit above that the disclosure scores of financial information have exceeded from the disclosure scores of all other four categories for all the respective years. In the last column (column 5), the same thing becomes clear that the average

score for all three years is maximum in case of the financial information. However, the second highest disclosure scores may be found for general information where the Corporate Governance Information and the Corporate Social Responsibility & Environmental Information items have been combined. Further, it may also be observed that all the sampled companies disclosed items in each category above 50 percent. The disclosure scores also improved year-on-year in each category.

#### Exhibit 9: Company-wise Disclosure Score of the Sampled NSE Companies

	2014-15	2015-16	2016-17	Total Average
Adani Ports and Special Economic Zone Ltd.	58.34	68.44	72.12	66.30
Ambuja Cement	67.86	69.56	75.20	70.87
Asian Paints	57.84	70.46	73.78	67.36
Bajaj Auto	68.67	75.66	74.23	72.85
BhartiAirtel Ltd.	69.33	72.33	71.33	71.00
BhartiInfratel Ltd.	50.33	55.88	66.33	57.51
Cipla Ltd.	74.67	73.67	74.88	74.40
Coal India	60.32	69.33	75.80	68.48
Dr. Reddy	75.33	72.67	74.40	74.13
HCL Technologies Ltd.	55.56	65.67	69.67	63.63
Hero MotoCorp Ltd.	62.67	68.67	71.55	67.63
Hindalco Industries Ltd.	61.33	67.34	66.67	65.11
Hindustan Unilever Ltd.	63.33	60.33	72.67	65.44
I T C Ltd.	67.33	68.33	75.70	70.46
Infosys	72.23	75.33	75.67	74.41
Larsen & Toubro Ltd.	66.49	69.88	72.86	69.74
Maruti Suzuki India Ltd.	56.88	68.88	75.33	67.03
NTPC Ltd.	77.33	83.33	74.67	78.44
ONGC	69.56	70.67	67.43	69.22
Power Grid	62.67	74.67	70.67	69.33
Sun Pharmaceutical Industries Ltd.	65.33	68.67	72.67	68.89
Tech Mahindra	54.55	59.33	69.80	61.23
UltraTech Cement Ltd.	58.65	65.69	70.34	64.89
UPL Ltd.	62.67	69.33	74.33	68.78
Vedanta Ltd	52.68	63.33	64.45	60.15

Exhibit 9 shows the disclosure scores of the sampled companies individually over a period of time. It is imperative to know inter-firm variability in disclosure scores year-wise. The company-wise disclosure has been computed by dividing the total score obtained for a company's annual report in a particular year by the total score applicable to that company using an index of the disclosure. However, it is difficult to have an idea regarding the ranking of the companies just by looking in Exhibit 9. It has been done in the next exhibit 10, shows the ranking of companies on the basis of their disclosure scores in each year.

#### Exhibit 10: Ranking of Top Ten companies Year-wise

	2014-15	2015-16	2016-17
1	77.33 (NTPC Ltd.)	83.33 (NTPC Ltd.)	75.8 (Coal India)
2	75.33 (Dr. Reddy)	75.66 (Bajaj Auto)	75.7 (I T C Ltd.)
3	74.66 (Cipla Ltd.)	75.33 (Infosys)	75.66 (Infosys)
4	72.23 (Infosys)	74.66 (Power Grid)	75.33 (Maruti Suzuki India Ltd.)
5	69.56 (ONGC)	73.66 (Cipla Ltd.)	75.2 (Ambuja Cement)
6	69.33 (BhartiAirtel Ltd.)	72.66 (Dr. Reddy)	74.88 (Cipla Ltd.)
7	68.66 (Bajaj Auto)	72.34 (BhartiAirtel Ltd)	74.66 (NTPC Ltd.)

8	67.86 (Ambuja Cement)	70.66 (ONGC)	74.4 (Dr. Reddy)
9	67.33 (I T C Ltd.)	70.45 (Asian Paints)	74.33 (UPL Ltd.)
10	66.48 (Larsen & Toubro Ltd.)	69.33 (Coal India)	74.23 (Bajaj Auto)

It may be seen that the company holding the first rank in a particular year does not continue to hold the same rank in the next year(s). However, the difference among the different ranks of the companies is very tiny i.e. few points after the decimal. This scenario is particularly observed in disclosure studies.

Exhibit 11 reports the descriptive statistics of the companies industry-wise. The mean shows the mean of the disclosure scores of all the companies in that particular industry. The standard deviation quantifies the variability among the mean of all the companies. Similarly, the maximum and minimum values are the maximum/minimum value scored by a company in that particular industry. That industry has been left in Exhibit 11 where the number of the company was one. This happened in the case of Fertilizers& Pesticides, Services, and Construction industries where the total number of companies in the CNX Nifty index was one. In the last column of Exhibit 11, it is evident that the Energy, as well as the Pharmaceutical sector, has the maximum total average score of 72.33 and 72.48 respectively. However, the maximum variability in disclosure score in the measure of standard deviation is present in the Telecommunication sector. The second sector which has the maximum variability in disclosure score is the Information Technology sector where the first two years of the sample period show variability at the rates of 9.93 and 8.06 respectively.

#### Exhibit 11: Industry-wise Disclosure Score and Summary Statistics

Industry	Summary Stats.	2014-15	2015-16	2016-17	Average
Metal	Mean	58.11	66.67	68.97	64.58
	S.D	4.73	3.06	6.02	
	Max	61.33	69.33	75.80	
	Min	52.68	63.33	64.45	
Energy	Mean	69.85	76.22	70.92	72.33
	S.D	7.34	6.48	3.63	
	Max	77.33	83.33	74.67	
	Min	62.67	70.67	67.43	
Automobile	Mean	62.74	71.07	73.70	69.17
	S.D	5.89	3.98	1.95	
	Max	68.67	75.66	75.33	
	Min	56.88	68.67	71.55	
Consumer goods	Mean	62.17	68.71	72.05	67.64
	S.D	4.80	1.59	4.76	
	Max	67.33	70.46	75.70	
	Min	57.84	67.34	66.67	
IT	Mean	60.78	66.78	71.71	66.42
	S.D	9.93	8.06	3.43	
	Max	72.23	75.33	75.67	
	Min	54.55	59.33	69.67	
Pharma	Mean	71.78	71.67	73.98	72.48
	S.D	5.59	2.65	1.16	
	Max	75.33	73.67	74.88	
	Min	65.33	68.67	72.67	

Cement & cement products	Mean	63.26	67.63	72.77	67.88
	S.D	6.52	2.74	3.44	
	Max	67.86	69.56	75.20	
	Min	58.65	65.69	70.34	
Telecom	Mean	59.83	64.11	68.83	64.26
	S.D	13.44	11.63	3.54	
	Max	69.33	72.33	71.33	
	Min	50.33	55.88	66.33	

### Conclusion

Findings of this study suggest that the sampled companies' disclosure scores increased over a period of time per category, and the Financial Information Disclosure and General Information have the maximum disclosure score. In the General Information category, the Corporate Governance Information and the Corporate Social Responsibility & Environmental Information items had been combined. All other categories had nearly equal total average scores, but there was some variability among these categories when observed year-wise. Similarly, it was also observed that no company continued to hold the first rank for all the years of the sample period, even if it was holding a first in a particular/previous year. The results of the study reveal that there was a significant variation in the disclosure score across various disclosure items, industries, and companies. It was found that companies related to energy as well as the Pharmaceutical sector have the maximum total average score of 72.33 and 72.48 respectively, while telecom and metal industries have the lowest disclosure scores of 64.26 and 64.58 percent respectively. It, further, can be concluded that the level of disclosure was increasing overall period among all sectors. But information technology and telecom industries show a high level of variation regarding disclosure of items. The results also reveal that nearly all sectors have some variation regarding disclosure of items.

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