STUDY OF RELATIONSHIP BETWEEN CORPORATE WEB DISCLOSURE AND SELECTED COMPANY CHARACTERISTICS

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Abstract *The paper deals with analyzing the relationship of web disclosure with select company characteristics namely, profitability, public ownership and firm's size. Fifty companies from five different industry sectors – Automobile, Information Technology, Fast Moving Consumer Goods (FMCG), Capital Goods and Banking are selected. Their web disclosure scores are calculated by using a checklist of disclosure consisting of twenty five items of information disclosed on the websites. These items belong to three important areas of web disclosures namely, Corporate Information, Financial & Stock Information and Management Information. Multiple regression is used to predict the dependent variable i.e., web disclosure score from the independent variables – profitability, percentage of public ownership and firms size. The multiple regression result shows that 'Profitability' and 'Size' positively affects the extent of web-based disclosure while 'Public Ownership' does not affect it significantly.*

Key Words: *Web Disclosure, Non-financial Attributes, Multiple Regression and Company Website.*

INTRODUCTION

Corporate Web Reporting may be defined as the digital version of financial and non-financial information through the medium of internet. It is the latest technique of information dissemination, which is gaining importance in the present complex business environment. It encourages more progressive and innovative corporate reporting (Lev, 1992). By web reporting the companies can create benefits that include supplementing traditional disclosure, reducing the cost and time of distribution, improving and increasing the type of information disclosed and boundary less communication with a wide audience (McKnight et al., 1995). The adoption of corporate web reporting by Indian companies is increasing. However, there is high variability in web disclosures of various items of information made by them.

In the past, many researchers have investigated factors affecting Voluntary Web Disclosure score by employing independent variables (Debreceny et al., 2002; Ettredge et al., 2002; Oyelere et al., 2003; Prabowo et al., 2005; Xiao et al., 2005). Oyelere et al., 2003 extensively enlist previous articles investigating factors affecting the extent of voluntary disclosure practice. They find that there are six most frequently determining variables of voluntary disclosures: firm size, audit size/quality, listing status, profitability, leverage, and industry type. Three independent variables in the form of company characteristics are selected and hypothesis is developed for the relationship between the web disclosure and these company characteristics.

Objectives of the Study

- To analyze the relationship of web disclosure with company characteristics namely, profitability, public ownership and firm's size.

Research Methodology

Secondary sources have been used to study the relationship between web disclosure and select company characteristics. For the study, five reputed sectors are chosen namely –

- Automobile
- Information Technology
- Fast Moving Consumer Goods (FMCG)
- Capital Goods
- Banking

A sample of 10 companies each from different sectors is selected. The websites of these 50 companies have been analyzed to study the disclosure practices. These companies are the most leading firms listed on Mumbai Stock Exchange and hence selected for the analysis. The data regarding web disclosures of companies for the analysis purposes is collected for the year 2010.

Table I: Items of information covered under each category

Corporate Information	**Financial & Stock Information**	**Management & Board of Directors Information**
Corporate Objectives Mission & Vision Statement	Balance Sheet	Corporate Governance
Information about Products/Services	Profit & Loss Account	Human Resource Management, Employee Information & Careers
Research & Development	Cash Flow Statement	List of Directors
Information Relating to JVs & Subsidiaries	Stock Price	Future Plans
Corporate Social Reporting	Key Ratios	
Awards and Honors	Quarterly Audited Results	
Corporate Announcements, Media Releases	Quarterly Un-audited Results	
	Dividend Information	
	Bonus Declared	
	Sales Information	
	Charts, Graphs and Diagrams	
	Key Policies	
	Shareholding Pattern	
	Chairman's Speech	

The corporate web disclosure has been analyzed with the help of a checklist of disclosure containing 25 items of information. The checklist of disclosure has been designed to cover the three important areas of web disclosures namely, Corporate Information, Financial & Stock Information and Management Information. Web disclosure score is calculated as the average number of total items disclosed by the company. The items of information covered in the checklist are displayed in Table I.

Three company characteristics are selected for studying the relationship between the web disclosure and these company characteristics. The three selected company characteristics are–

- Profitability
- Percentage of Public Ownership
- Size of the Firm

The internet was searched for the information on the select characteristics for the 50 selected companies. The calculated web disclosure score is used for the regression analysis. The data was then fed to Microsoft Excel, and the ANOVA utility is used for running the multiple regression analysis. Significance of the model and independent variables and the proportion of variance accounted by the model is analyzed and presented.

Multiple Regression is used as a statistical tool to model the relationship between web disclosure score and three selected company characteristics. Multiple regression analysis is used when we want to predict a dependent variable from a number of independent variables. Significance of the model and independent variables and the proportion of variance accounted by the model is analyzed and presented.

Hypotheses Development

In this study, following hypotheses have been developed to examine the relationship between web-disclosures and three company characteristics.

- Effect of Profitability on Web-Based Disclosure Generally, investors perceive profitability as good news. Managers have incentive to disassociate their firms from the less profitable firms. They also expect

that more investors are willing to invest in their firms, which eventually leads to reduction of cost of equity capital. Managers of profitable firms are willing to disclose more to signal the good news to the market in the form of more extensive voluntary disclosure or using novel technology, such as web-based disclosure. In the context of conventionally voluntary disclosure, Patton and Zelenka, 1997, Raffournier, 1995 and Owusu-Ansah, 1998 support the hypothesis. Based on this, the first hypothesis is:

Hypothesis 1: Profitability positively affects the extent of Web-Based Disclosure.

- Effect of Public Ownership on Web-Based Disclosure Public Ownership refers to shareholders with small percentage of shares. These shareholders are minority ones and are less powerful and more limited access to firm's information because they have less resources to monitor manager's behaviour; creating greater agency problems. The agency theory argues that majority shareholders have the potential to exploit minority shareholders in the form of transfer of wealth from the later to the former. Firms with more public ownership are therefore more exposed to be comprehensively scrutinized (such as by regulators, analysts or press). Consequently, the managers have more incentive to disclose more financial information or to disclose in novel device such as web-based disclosure in order to reduce the agency problems.
- Higher percentage of public ownership also indicates more geographically dispersed shareholders. It is more difficult to communicate in such condition using conventional device like the print-based one. Utilization of internet is more useful for firms with higher percentage of public ownership. In the context of conventionally voluntary disclosure, Cooke, 1991 and Malone et al., 1993 support the hypothesis. Therefore, the second hypothesis is:

  Hypothesis 2: Percentage of Public Ownership positively affects the extent of Web-Based Disclosure.
- Effect of Firm's Size on Web-Based Disclosure Larger firms potentially have larger agency costs or political costs than the smaller ones. Larger firms have more resources at stake; creating more risks for the shareholders. Shareholders of larger firms therefore have more incentives to exert their power to press the managers to disclose more information to them. Other stakeholders, such as governmental agencies, press, and NGOs, also put pressures on larger firms involving various issues, such as environment, labour, tax, compliance, ethics, and social responsibility. Larger firms therefore incur higher political costs. They can reduce the political costs by disclosing more of their information to wider array of stakeholders to notify them that the firms have "done more and better", especially in the context of corporate social responsibility.

Larger firms also incur less marginal costs of producing information than the smaller ones. It is cheaper for larger firms to disclose more information as in conventionally voluntary disclosure or to disclose in novel device such as web-based disclosure. This situation induces managers of larger firms to disclose more using the web-based device. In the context of conventionally voluntary disclosure, Debreceny et al., 2002; Ettredge et al., 2002; Oyelere et al., 2003; Prabowo et al., 2005 support the hypothesis. Therefore, the third hypothesis is:

Hypothesis 3: Firm's Size positively affects the extent of Web-Based Disclosure.

Regression Variables

The dependent variable for the study is the company average disclosure score. The independent variables for the study are the characteristics of the reporting firms. The Table II shows the Independent Variable and its Measurement Criteria. The first independent variable is the 'Profitability' measured by the Profit Margin (percentage ratio of net profit to sales of the firm). The second independent variable is the 'Percentage of Public Ownership' which is self evident. The third independent variable is the 'Size of the Firm' measured by Market Capitalization in Rs.100 Crores (1 Crore = 10 Million).

Table II: Independent Variables and the Measurement Method

Independent Variable	Measurement Method
Profitability	Profit Margin (%)
Percentage of Public Ownership	Self evident
Size of the Firm	Market Capitalization (Rs.100 Crores)

The data is collected for the purpose of regression analysis for the year 2010. It corresponds to the three independent variables namely – Profitability, Percentage of Public Ownership and Size of the Firm and the dependent variables that are the web disclosure score for each of the selected 50 companies from 5 industry sectors. The above information for companies covered in the study is given in Table III.

Table III: Dependent and Independent Variables Data for 50 Selected Companies

Company Name	Net Profit/ Loss (Rs in Crore) (1)	Sales (Rs in Crore)(2)	General Public Share Holding (%) (3)	Total No. of Shares (4)	Share Price (Rs) 2010 (5)	Profit Margin (1)/(2) %	Public Share (3)	Market Cap (in 100 Crore) (4) x (5)	Disclosure in % (From Checklists)
Hero Honda Motors Ltd.	1,281.76	12,356.88	6.96	199687500	901.3	10.37284	6.96	179.978343	48
Tata Motors Ltd.	1,001.26	25,660.79	0.55	64175655	145.65	3.901906	0.55	9.34718415	56
Maruti Suzuki India Ltd.	1,218.74	20,852.52	2.26	288909596	675.55	5.844569	2.26	195.172877	48
Bajaj Auto Ltd.	656.48	9,423.08	17.15	144683494	507.05	6.966724	17.15	73.3617656	56
Ashok Leyland Ltd.	190.00	5,981.07	14.15	1330280067	16.6	3.176689	14.15	22.0826491	40
TVS Motor Company Ltd.	31.08	3,736.67	18.86	237543557	19.85	0.831757	18.86	4.71523960	36
Hindustan Motors Ltd.	-38.86	598.26	47.4	161171993	10.88	-6.4955	47.4	1.75355128	24
Eicher Motors Ltd.	40.27	692.58	17.04	28093950	216.55	5.814491	17.04	6.08374487	32
Swaraj Enterprize	4.79	540.85	14.01	10486700	110.7	0.885643	14.01	1.16087769	28
Escorts Ltd.	11.87	2,051.51	20.64	90709496	33.15	0.578598	20.64	3.00701979	36
Infosys Technologies Ltd.	5,819.00	20,264.00	16.89	572830043	1218.75	28.71595	16.89	698.136614	80
Tata Consultancy Services Ltd.	4,696.21	22,404.00	5.16	978610498	459.5	20.96148	5.16	449.671523	48
Wipro Ltd.	2,973.80	20,987.30	6.21	1464960172	202.85	14.16952	6.21	297.167170	40
Mahindra Satyam Ltd.	1,715.74	8,137.28	37.48	673886982	40.3	21.08493	37.48	27.1576453	48
HCL Technologies Ltd.	997.31	4,675.09	4.45	669639268	94.25	21.33242	4.45	63.1135010	36
Hexaware Technologies Ltd.	36.76	498.17	17.05	143650735	24.85	7.379007	17.05	3.56972076	28
Polaris Software Lab Ltd.	111.19	1,171.34	16.64	98676197	41.1	9.492547	16.64	4.05559169	56
Nucleus Software Ltd.	26.15	209.43	17.91	32370024	44.25	12.48627	17.91	1.43237356	40
Patni Computer Systems Ltd.	389.15	1,550.45	3.37	128105007	95.25	25.09916	3.37	12.2020019	44
MindTree Ltd.	30	1,012.57	13.85	37714405	202.45	2.962758	13.85	7.63528129	32
ITC Ltd.	3,263.59	15,582.73	11.82	3774167987	178.7	20.94363	11.82	674.443819	76
Hindustan Unilever Ltd.	2,496.45	20,601.56	15.49	2179846240	244.6	12.11777	15.49	533.190390	48
Dabur India Ltd.	373.56	2,417.91	5.73	865076249	90.2	15.44971	5.73	78.0298776	64
Godrej Consumer Products Ltd.	161.55	1,088.01	8.74	256953908	126.25	14.84821	8.74	32.4404308	32
Tata Tea Ltd	159.06	1,379.25	19.31	61839857	560.55	11.53235	19.31	34.6643318	44
Nirma Ltd.	93.43	3,030.26	19.3	159142282	92.45	3.083234	19.3	14.7127039	40

Table III: Dependent and Independent Variables Data for 50 Selected Companies (Contd.)

Company Name	Net Profit/Loss (Rs in Crore) (1)	Sales (Rs in Crore) (2)	General Public Share Holding (%) (3)	Total No. of Shares (4)	Share Price (Rs) 2010 (5)	Profit Margin (1)/(2) %	Public Share (3)	Market Cap (in 100 Crore) (4) x (5)	Disclosure in % (From Checklists)
Emami Ltd.	67.36	651.01	3.17	62145177	202	10.347	3.17	12.5533257	44
Colgate-Palmolive Ltd.	290.22	1,770.82	22.4	135992817	459.9	16.38902	22.4	62.5430965	40
Procter & Gamble Hygiene & Healthcare Ltd.	131.41	645.02	16.71	32460736	716.15	20.37301	16.71	23.2467560	40
Marico Ltd.	142.12	1,921.85	6.61	609000000	59	7.394958	6.61	35.931	44
BHEL	745.76	4,648.75	2.03	80000000	842.15	16.04216	2.03	67.372	44
ABB Ltd.	547.41	6,946.37	11.47	211907458	358.35	7.880519	11.47	75.9370375	56
L&T Ltd.	3,481.66	34,324.84	26.07	585415491	584.55	10.14327	26.07	342.204625	60
Punj Lyold Ltd.	321.1	6,945.64	18.44	303481943	71.95	4.623044	18.44	21.8355258	52
KSB Pumps Ltd.	64.73	601.00	12.19	17403922	199.9	10.77038	12.19	3.47904400	40
Havells India Ltd.	145.23	2,204.76	6.74	60168406	113.65	6.587112	6.74	6.83813934	32
Kalpataru Power Transmissions Ltd.	94.41	1,884.92	5.22	26500000	233.15	5.008701	5.22	6.178475	48
Kirloskar Brothers Ltd.	67.03	1,841.69	19.54	105764355	80.75	3.639592	19.54	8.54047166	40
EMCO Ltd.	53.1	996.26	12.91	58836860	28.6	5.329934	12.91	1.68273419	44
Bharat Bijlee Ltd.	47.86	545.90	33.65	5651560	364.5	8.767173	33.65	2.05999362	16
PNB	3,090.88	19,326.16	4.66	315302500	324.85	15.99324	4.66	102.426017	40
AXIS Bank Ltd.	1,815.36	10,835.48	5.44	359005118	323.05	16.75385	5.44	115.976603	36
HDFC Bank Ltd.	2,244.95	16,332.27	11.2	425375593	845.65	13.74549	11.2	359.718870	48
SBI	9,121.24	63,788.43	6.7	634879925	995.25	14.29921	6.7	631.864245	60
ICICI Bank Ltd.	3,758.13	31,092.55	7.68	1113246443	304.2	12.08691	7.68	338.649568	44
Bank of India	3,007.35	16,347.36	6.61	525175300	219.15	18.39655	6.61	115.092167	40
Allahabad Bank	768.60	7,364.73	15.92	446700000	39.3	10.43623	15.92	17.55531	32
Canara Bank	2,072.42	17,119.06	5.91	410000000	156.8	12.10592	5.91	64.288	36
Bank of Baroda	2,227.20	15,091.58	6.66	364266384	217.35	14.7579	6.66	79.1732985	48
Yes Bank Ltd.	303.84	2,003.32	10.28	296978930	49.1	15.16682	10.28	14.5816654	36
					Avg	11.01149	13.132	118.760284	43.6
Coefficient of Correlation of Web Disclosure with -			Std Dev	7.044101	9.2534	187.753316	11.911236		
Profit	Public share	Market cap			Min	-6.4955	0.55	1.16087769	16
0.406703581	-0.235370191	0.6382477			Max	28.71595	47.4	698.136614	80

Findings

The normality test and the regression analysis is run using the Microsoft Excel software. The regression equation is as follows:

$$\mathbf{WEB} = \beta 0 + \beta 1\mathbf{PROFIT} + \beta 2\mathbf{PUBOWN} + \beta 3\mathbf{SIZE} + \varepsilon \quad (1)$$

Where: WEB = extent of web-based disclosure, PROFIT= profitability, PUBOWN = percentage of public ownership, SIZE= firm size, and ε= error term.

The descriptive statistic of variables is presented in Table IV. From the data given in Table IV, it can be deduced that firm's extent of web-based disclosure (dependent variable) is low with an average value of 43.6 and standard deviation of 11.911. This result shows that Indian firms still do not utilize much their websites for investor relation. On the other hand, all independent variables vary and the independent variable 'SIZE' has standard deviation higher than its mean.

Table IV: Statistical Data for Dependent and Independent Variables

Variables	N	Min	Max	Mean	Std Deviation
WEB	50	16	80	43.6	11.911
PROFIT	50	-6.4955	28.71595	11.01149	7.0441
PUBDOWN	50	0.55	47.4	13.1326	9.2535
SIZE	50	1.16088	698.1366	118.76028	187.753

Some basic tests have been performed to test the validity of the regression on the collected data. 'Normality test' is conducted by plotting the company's web disclosure score histogram. The data histogram in Figure I is bell-shaped curve, indicating that condition of normality is fulfilled. Using other test (Kolmogorov-Smirnof test using MATLAB software), we find that all variables have significant value greater than 0.1; indicating that data of all variables are normally distributed.

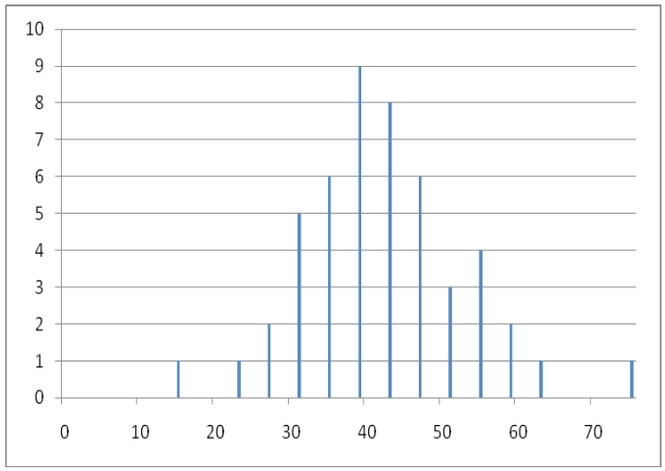

Figure I: Normality Test on the Web Disclosure Score

Since the data does not violate the classical assumptions, the regression model can be used to test the hypothesis. Microsoft Excel is used for running the multiple regression analysis. The results of regression analysis can be seen in Table V.

Table V: Regression Results

Regression Statistics					
Multiple R	0.660159				
R Square	0.43581				
Adjusted R Square	0.399015				
Standard Error	9.233977				
Observations	50				
ANOVA					
	df	SS	MS	F	Significance F
Regression	3	3029.749	1009.916	11.8442562	7.15E-06
Residual	46	3922.251	85.26633		
Total	49	6952			

	Standardized Coefficients		t-Stat	P-value
	Beta	Std. Error		
Constant	39.52654	3.601539	10.9749	1.94556E-14
PROFIT	0.166486	0.220922	0.753598	0.045493096
PUBOWN	-0.15903	0.149971	-1.06037	0.294511424
SIZE	0.036448	0.007959	4.579617	3.54844E-05

The regression model itself is quite conclusive, as indicated by the value of adjusted $R^2 = 0.399$. This means that the regression equation is able to explain up to 40% of the variability over the mean value of web disclosure score, which is quite satisfactory for such analysis.

The direction and significance of independent variables on the dependent variable can be interpreted by the Beta, t-stat and P-value as given in Table V. The positive value of Beta shows a positive relationship of the independent variable with the dependent variable (web disclosure score) while a negative value shows a negative relationship. Profit and Size shows a positive relationship while Public Ownership shows a negative relationship with the web disclosure score. The absolute value of Beta shows how strongly each variable influences the web disclosure score. The relationship is in terms of standard deviation. For example, a change of 1 standard deviation in Profit will result in a change of 0.16 standard deviation in web disclosure score. We also need to see the significance of each variable, which is interpreted from t-stat and P-value. T-stat is basically the standardized difference between a sample mean and a population mean. It indicates that the hypothesized value is reasonable when the t-statistic is close to zero. Alternately, the hypothesized value is not large enough when the t-statistic is largely positive. Finally, a large negative t-stat indicates large hypothesized value. T-stat can be used to calculate p-value. In statistical hypothesis testing, the p-value is the probability of obtaining a test statistic at least as extreme as the one that was actually observed, assuming that the null hypothesis is true. One often rejects a null hypothesis if the p-value is less than 0.05. The column in Table V for t-stat and p-value for Profit (0.7536 and 0.0455) and Size (4.5796 and 3.5E-5) shows that the results are significant. Public Ownership t-stat is -1.06 and p-value is 0.2945 which is less than 0.05, which depicts that the result is not significant and hence Public Ownership doesn't affect Web disclosure score. So, according to the results, the Regression Equation becomes –

WEB (% disclosure) = 39.52654 + 0.166486***PROFIT** + 0.036448***SIZE** (2)

Based on the result, it can be deduced that only Hypothesis 2 cannot be supported. It means that PROFIT and SIZE, as individual variables, positively affect the extent of web-based disclosure. PUBOWN, on the other hand, does not influence the dependent variable.

The significance of PROFIT in explaining the extent of web-based disclosure is consistent with the hypothesis. Profitability is good news for managers and outsiders. Managers of profitable firms can provide this information to market by disclosing more (by extensive voluntary disclosure) or by disclosing in novel technology (in the form of web-based disclosure). Internet enables firms to disclose their information at much lower costs and potentially reaching much more audience.

The result shows that PUBOWN is insignificant for measuring the web disclosure score. This fact can be explained that level of public ownership in India is quite low (only 13.46%), representing minority interests. Minority interests have less power to demand more extensive or novel technology of disclosure of firm's information. Individual shareholders can also access firm's information from more generic website. Another explanation of the insignificance of percentage of public ownership is that this variable does not really represent the number of individual shareholders. Larger number of individual shareholders, and not larger percentage of public ownership, creates larger agency problems for publicly listed firms. Therefore, variable of percentage of public ownership is not the best one to measure the degree of dispersion of shareholders.

The result of regression analysis also supports Hypothesis 3. It provides the supporting evidence of influence of Firm Size on the extent of web-based disclosure. The regression analysis shows that 'Profitability' and 'Firm Size' positively affects the extent of web-based disclosure while 'Public Ownership' doesn't affect the web disclosure score.

CONCLUSION

The study has analyzed the relationship between web disclosure and select company characteristics namely profitability, percentage of public ownership and size of the firm. Fifty companies from five different industry sectors are selected for the study. The results show that the regression model is quite conclusive and the regression equation is able to explain up to 40% of the variability over the mean value of web disclosure score. The multiple regression result shows that 'Profitability' and 'Size' positively affects the extent of web-based disclosure while 'Public Ownership' does not affect it significantly.

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