Determinants of Website-based Disclosure: An Evidence from Listed Companies in India

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Abstract

This paper extends the literature by examining the extent of voluntary adoption of websites as a medium of information disclosure by 325 companies listed in National Stock Exchange (NSE). The specific objective of this empirical research is to identify the determinants of disclosure via website. Content analysis approach using a structured and pretested dichotomous disclosure index comprising of 110 items divided into seven sub sections were executed on sample companies. The result of descriptive analysis shows that 21 companies do not maintain either functional website or an investor relations link. Standard OLS regression was used to find out the determinants of website disclosure by companies. The results revealed that net worth, price to book ratio and industry type (technology, pharmaceuticals and telecom) are the determinants of disclosure through websites. This paper informs the regulators and policy makers about the disclosure characteristics of companies listed in India and points towards a policy level modification of the existing disclosure regime by making website disclosure mandatory and standardised.

Keywords: Website based disclosure, Internet Financial Reporting, Disclosure index, Investor relations

Introduction

The role of internet as an advanced and more effective medium of information disclosure and communication is gaining tremendous importance in this period of global pandemic. The companies all over the world have realised the need for technology enabled communication which allows remote accessing of information and thereby decision making. It is the pressing priority of the companies to maintain a structured and user friendly website which enables accessibility and retrieval of information for the stakeholders.Corporate financial disclosure practices witnessed significant shift towards the use of corporate website to disseminate information. In this digital information era, websites are the most prominent medium for information disclosure in terms of worth and promptness. Recently companies

have started to maintain an active and well-functioning website and initiated to report through this new medium of disclosure. The augmented demand of information from the stakeholders compels the companies to disclose various general, financial, corporate governance, market and CSR related information at a greater frequency and in a user friendly format through their websites. Thus a properly maintained and updated websites acts as perfect interface between the companies and the stakeholders with minimal cost and effort.

Website based information disclosure is the mechanism of using company's website to disclose the financial and non-financial, mandatory and voluntary information to the stakeholders. Website of the companies can be a reservoir of significant information that can satisfy the varied informational needs of the different categories of users which complements other traditional sources of reporting. Thus website disclosure is the distribution of corporate financial and performance information using internet technologies such as World Wide Web (Lymeret al., 1999; Debrecencyet al., 2002). The benefit of website disclosure over other traditional means of reporting are mainly related to the possibility of disseminating information less expensively in a timely fashion with the possibility of interaction. Website disclosure could allow users to access digitized data without waiting for it to be produced through the traditional channels. Disclosure of corporate financial and non-financial information on websites is voluntary. Companies could provide more timely data, perhaps even breaking free from the historical model of financial reporting. More qualitative and forward looking disclosures are envisioned and the possibility of 'drilling down' and viewing progressively greater levels of detail for the highly summarized information appears technologically feasible. Through internet reporting, companies can reach more potential investors than they can by other traditional communication means. Investors increasingly access basic financial information, such as annual and interim reports, and obtain real-time information such as press releases, analysts' webcasts and daily stock quotes, from corporate websites. By placing information on the company's web page, users can have easy access to financial information and can search, filter, download, and even compare and analyse data at low cost in a timely fashion (Turel,2010).

SEBI's Listing Obligation and Disclosure Requirements (LODR) requires every public limited company listed in a stock exchange to maintain a functional website containing the basic information of the entity, details of its business, corporate governance information, policy details, grievance redressal mechanism and other relevant details. Website disclosure being a voluntary practice without any fixed and definite rules, the information provided through the website of public limited companies has led to non uniformity in disclosure. This non uniformity in disclosure hinders comparability, reliability, faithfulness and creates several inconsistencies. While websites of some companies are presented with more detailed information disclosure using sophistication of the web such as multimedia and analytical tools, certain other entities' website contains partial disclosure which may be deficient and deceptive.

Thus it is imperative to look into the disclosure via websites of listed companies in India and to examine the company specific factors determining website disclosure.

Review of Literature

Substantial accounting literature has emerged in the last two decades that explains corporate financial reporting behaviour. This literature focuses primarily on the voluntary provision of financial information through the traditional medium of paper based information disclosure. The development of internet as a new medium of corporate information creates a new reporting environment that may be different from the traditional paper based one. Despite the growing use of internet for information dissemination, some companies do not have a corporate website or are not using their website to disseminate such information. In this context researchers all over the world have undertaken some studies on website based disclosure by looking into the extent of such disclosure and to identify the determinants.The entire literature in this area can be broadly classified in two sections – studies from the supply side and studies from the demand side. Supply side studies concentrates on the extent of website disclosure by the companies and delve into the various determinants of such disclosure. On the contrary demand side studies concentrate on users' needs and expectations on website based disclosure. This paper focuses on research studies that analyses the extent and determinants of website based disclosure. The major source of the studies reviewed herein includes various websites and selected refereednational and international journals. A number of studies are descriptive in nature discussing the benefits of website disclosure and identifying the problems and prospects of such disclosure as a medium of communication. Some literature surveyed the online disclosure practices in a single country whereas others carried out comparative studies. Some studies examined the company specific characteristics that are associated with website disclosure by companies.

Some prominent studies include Marston and Leow (1998), practices in the UK-based companies. Lymer and Tallberg (1997); Hedlin (1999); Brennan and Hourigan (2000);Fawziet al.,(2001); Ettredgeet al., (2002); Lybaert (2002); Marston and Polei (2004); Adham and Ahmad (2005) and Momany and Shorman (2006) researched onweb reporting practices of companies in Finland, Sweden, Ireland, New Zealand, Europe, Japan, Germany, Malaysia, and Jordan respectively.

Many authors have done comparative analysis of different countries: Debreceny and Gray(1999) studied the US, the UK and German companies; Bonson and Escobar (2002) conducted a study of 20 European countries; Debrecenyet al., (2002) also studied 22 countries; Geeringset al., (2003) carried out a comparative analysis on Belgium, France and the Netherlands; Allam and Lymer (2005) carried out a study on Canada, the UK, the US, Australia and HongKong; Khadaroo (2005) compared Malaysian and Singapore companies; and Joshi andAl-Modhakhi (2003) compared

Kuwaitand Bahrain companies. Finally, Gray and Debreceny(1997) studied Fortune 500 companies for determining the web presence in 1996.

Some studies have also analysed the extent and type of disclosure on those websites, and they have prepared a worksheet and checked the contents available on websites to calculate the total scores of different items of financial and non-financial reporting. The disclosure score thus calculated was named as Internet Financial Reporting by Ashbaughet al., (1999), Debrecenyet al., (2002), Lodhia (2003), Oyelereet al., (2003) and Pervan (2006). While Marston and Polei (2004) calculated Internet Site Quality Score, Gandia (2003) named it as Internet Intangible Disclosure Index. Allam and Lymer (2003) termed it as Reporting Practices Level. Xiao et al., (2005) defined it as Corporate Financial Reporting. Delleret al., (1999) studied it under Investor Relations Information. Lymeret al., (1999) named it as Detailed Financial Reporting. Brennan and Hourigan (2000) termed it as Internet Disclosure. Spanos (2006) named it as Internet Disclosure Index. Oyelereet al., (2001) termed it as Voluntary Disclosure. Bonson and Escobar (2002) studied it under Company's Transparency. Boesso and Kumar (2007) defined it as Content Analysis.

To analyse the relationship between web reporting practices and company characteristics, different studies have considered different independent variables. Xiao et al., (2002); Marston and Leow (1998); Ashbaughet al., (1999); Craven and Marston (1999); Moleroet al., (1999); Hassan et al., (1999); Oyelereet al., (2001); Bonson and Escobar (2002); Debrecenyet al., (2002); Ettredgeet al., (2002); Larran and Giner (2002); Allam and Lymer (2003); Geeringset al., (2003); Joshi and Al-Modhakhi (2003); Marston (2003); Oyelereet al., (2003) and Pervan (2006) have studied the relationship between the size of a company and its web disclosure practices. Marston and Leow (1998); Craven and Marston (1999); Brennan and Hourigan (2000); Hassan et al., (2000); Oyelereet al., (2001); Bonson and Escobar (2002); Allam and Lymer (2003); Joshi and Al-Modhakhi (2003) and Oyelereet al., (2003) studied the relationship between Internet disclosure and the industrial sector to which these companies belong. Oyelereet al., (2001); Ettredgeet al., (2002);Marston (2003) and Pervan (2006) studied the relationship between profitability and type of disclosure on websites. Xiao et al., (1997); Brennan and Hourigan (2000); Oyelereet al., (2001) and Oyelereet al., (2003) studied the leverage of companies in relationship with Internet disclosure practices. Liquidity of companies as independent variable was studied by Oyelereet al., (2003); Ettredgeet al., (1999); Brennan and Hourigan (2000) and Oyelereet al., (2003) also considered share spread as an independent variable. Xiao et al., (1997) considered user type, listing status, and compensation plan of the management as independent variables, while web disclosure was considered as a dependent variable. Bonson and Escobar (2002) and Gandia (2003) also evaluated the relationship between web disclosure and the country of origin of the companies. Ettredgeet al., (2002) studied the relationship between the need for capital and Internet reporting.

The review of various studies further indicated that size and Internet financial reporting have a positive significant relationship, as revealed by Marston and Leow (1998); Ashbaughet al., (1999); Craven and Marston (1999); Brennan and Hourigan (2000); Hassan et al., (2000); Oyelereet al., (2001); Bonson and Escobar (2002); Debrecenyet al., (2002); Ettredgeet al., (2002); Larran and Giner (2002); Allam and Lymer (2003); Geeringset al., (2003); Marston (2003); Joshi and Al-Modhakhi (2003); Oyelereet al., (2003) and Pervan(2006). Profitability, as an independent variable, was found to be significantly related to Internet reporting by Hassan et al., (2006). A positive association between industrial sector and Web reporting was established by Brennan and Hourigan (2000); Hassan et al., (1999); Joshi and Al-Modhakhi(2003);However, Marston and Leow (1998); Craven and Marston (1999) and Oyelereet al., (2003) found that industrial sector was not significantly related to Internet reporting practices. Share spread was found to be positively associated with Internet reporting practices by Ettredgeet al., (1999) and Oyelereet al., (2003), but Brennan and Hourigan(2000) found it to be negatively associated. Leverage was not a statistically significant variable with Web reporting, as concluded by Brennan and Hourigan (2000) and Marston (2003). Liquidity is positively related to Web reporting, as revealed by Oyelereet al., (2003). Even 'country of origin' was found to be statistically significantly related to Internet reporting practices of the companies, as inferred by Bonson and Escobar (2002) and Gandia (2003).

The present studyanalyses the relationship between website based reporting practices and various company characteristics like net worth, industry type, price to book ratio, market price and market capitalisation.

Theories on Internet Reporting

While conducting a study on web based disclosure practices, the researcher has to address two aspects: what motivates the companies to adopt such a practice as opposed to hard copy disclosure practices and whether the stakeholders are better informed through web based disclosure. Therefore, researchers have to look upon the theoretical aspects from two angles: theories that explain why companies may use web based disclosure and theories that explain the usefulness of web based reporting to various users. The former theories are labelled as theories from the supply side and the latter as theories from the demand side.

Theories from the supply side

Prior studies have employed several theories to explain why companies may use the internet reporting. Theories that explain voluntary disclosure include agency theory, signalling theory, cost-benefit analysis and Legitimacy theory.

Agency Theory

Agency theory is concerned with the problem of interest conflicts arising from the separation of ownership and control of a company. If managers do not act on behalf of their shareholders but try to

further their own interests, this may lead to agency costs, such as the decline in the value of the company and monitoring costs to supervise the management (Marston and Polie, 2004). Watson et al.,(2002) stated that managers have incentives to increase disclosure to convince shareholders that they are acting optimally because they know that shareholders seek to control their behaviour through bonding and monitoring activities. The theory assumes that the agency cost will vary with corporate attributes (e.g. size, leverage, listing status, corporate governance compliance). It is argued that voluntary disclosures lower agency costs. This argument would be the same for larger company in terms of size, because if the larger company would use the higher debt because of the tax advantage, then they will disclose more to satisfy the creditors. The other corporate characteristics might be explained in the same argument .So, by disclosing more, the managers will reduce the agency cost to be trustworthy to the shareholders, and then the agency theory would be justified in this regard.

Signalling theory

This theory can explain why some firms disclose more information than the others. The theory assumes that the disclosure of information is a reaction to informational asymmetry in markets. Companies hold much more information than the investors. Therefore, if the company discloses much more information, it would reduce the information asymmetry. Signalling theory suggests that profitable companies have an incentive to disclose more information to signal the firm's profitability to investors, to support management continuation of their positions and levels of compensation and to raise capital at the lowest price(Oyeler et al., 2003).Signalling theory also suggests that higher quality firms will use the internet to disseminate "old" accounting information (Almilia, 2009). Based on Signalling Theory, firms tries to adopt the same level of disclosure as other firms within the same industry do because if a firm does not keep up with the same level of disclosure as others, it may be perceived by stakeholders that it is hiding bad news (Craven and Marston, 1999). Therefore, firms may use internet disclosure to keep pace with other firms in the same industry. Craven and Marston (1999) stated that *"The very use of the Internet might itself be a signal of high quality. It implies that the firm is modern and up-to-date with the latest technology rather than old fashioned and conservative*.In an attempt to reduce cost and contribute towards a sustainable environment, listed firms can publish their annual report online or send a PDF copy of the annual report to their shareholders. IFR can be one of the signalling means, where companies would disclose more voluntary information than the mandatory ones required by laws and regulations in order to signal that they are better (Thorne et al., 2014).

Cost -Benefit Theory

The cost-benefit theory suggests that voluntary disclosure can reduce investor's cost of transacting in the firm's securities, which in turn will reduce cost of capital and enhance firm value (Yeo and Ziebart, 1995). Information and communication technologies in general and the Internet in particular, are modifying the cost-benefit relation of voluntary disclosure. The use of the Internet allows companies to increase the number of information users, as well as to offer higher quality information at a lower cost than the information supplied by using traditional media. In this sense, the possibility of disclosing

voluntary information on the Internet is considered by the companies as a new source of competitive advantages. It could allow them to improve their image to investors and other stakeholders, to reduce the capital costs, and to increase the company's market value at a lower cost of elaborating and communicating the voluntary information.(Bonson and Escobar, 2002). Meek etal., (1989) considered the cost and benefits of voluntary disclosure and investigated perceptions of the costs and benefits empirically. They found that for British multinationals, the most important perceived voluntary disclosure benefits were improved reputation of the company, better investment decisions by investors, improved accountability to shareholders, more accurate risk assessment by investors and fairer share prices. The most important cost factors constraining voluntary disclosure were competitive disadvantage costs and data collection and processing costs.

Legitimacy theory

Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Suchman, 1995). Normally, the legitimacy theory is used to explain disclosure of social and environmental reports. Legitimacy theory can also be used in the corporate report to communicate with the shareholders and clarify the importance of this relationship. Tsang (2001) has concluded that the organizational legitimacy is a useful concept to explain corporate reporting behaviour. The stakeholder theory is closely linked to the legitimacy theory. Whatever be the aims of the organization, management must take into account the interest of those who affect and those who are affected by the firm's decision. The more powerful the stakeholders, the more the company must adapt. As a result, IFR can be used as a tool to influence the perception of stakeholders about the company (Willis et al., 2007).

Theories from the demand side

The second group of theories and models that apply either on the expectations of the users regarding the content of accounting information or to their acceptance of improved technologies enabled by the World Wide Web at forwarding these information. Interest Group Theory, Innovation Diffusion Theory andTechnology Acceptance Model (TAM)are some of the theories that explain the user behaviour with respect to web based disclosure practices of companies.

Interest group theory

The beginning of this theory dates back to 1980, when Edward Freeman defined an interest group as any group or individual who can affect or is affected by the achievement of the organization's objectives (Freeman, 1984). Various groups of accounting information users, or interest groups, have various aims regarding the operations of a company and thus, also, various needs for information. The type of information required depends on the individual's approach to information, the nature of instrument they use, the nature and circumstances of the operations of a company and the individual's needs for information (Horvat, 2003). Of all interest groups, web based reporting is intended mostly for a financial public that includes owners (shareholders), other investors (owners of bonds, lenders) and all

other individuals who influence investment decisions (stockbrokers, analysts, regulators). To this end, companies will usually create a website for investors and publish information intended for the financial public in it.

Innovation Diffusion Theory

The Innovation Diffusion Theory attempts to explain and describe the mechanism that will study the process from the acceptance of a certain invention up to its successful implementation in practice. The diffusion of Innovation (DOI) model has emphasized the attributes of new technology as key determinants of adoption (Lee, Kim & Ahn, 2011). Although there is a rich research literature related to the diffusion of innovation, the most prominent of them is the work of Rogers first published in 1962. Many researchers adopted Rogers' conceptual framework, which identifies the characteristics of an innovation that influence the acceptance of that innovation (Rogers, 2003). The DOI model by Rogers (2003) suggests that five attributes of innovations can affect the rate of adoption. These five attributes include relative advantage, compatibility, complexity, triability and observability.

Tornatzky and Klien (1982) reviewed the literature on studies made on innovation characteristics and its relation to adoption. They came to conclusion that three innovation characteristics (compatibility, relative advantage and complexity) had the most consistent significant relationships to innovation adoption. Moore and Benbasat (1991) identified eight Perceived Characteristics of Innovating (PCI) factors that influence the diffusion of an innovation: relative advantage, compatibility, ease of use, image, result demonstrability, visibility, trialability, and voluntariness of use. Image according to Moore and Benbasat (1991) is the degree to which use of an innovation is perceived to enhance one's image or status in one's social system. Voluntariness of use is defined as the degree to which use of the innovation is perceived as being voluntary or of free will. Moore and Benbasat (1991) argued that Roger's (2003) observability can be decomposed into two different constructs, which are: result demonstrability and visibility. Result demonstrability is defined as tangibility of the results of using the innovation. On the other hand, visibility is meant by how the advantages of the innovation can be visible to users.

This theory deals largely with technological innovations, Internet financial reporting being one of such innovation. Innovativeness in the field of web based reporting is manifest in terms of the content, as well as in terms of the form of reports. Every innovation also carries a certain degree of risk, which can be seen in lower trust in the information presented by companies on their websites, which is one of the weaknesses of web based reporting.

Technology Acceptance Model (TAM)

The Technology Acceptance Model is the most frequently used model of information technology acceptance in literature (Sharp, 2007) with which we are able to explain how users accept information in information technology and implement them into their work. The model, which was developed by Davis (1989), predicts how and when users will accept or begin to use a new technology, whereby two

factors are important. The first is the perceived usefulness – PU, which denotes a user's conviction that technology will improve their work or effectiveness; and the second is the perceived ease-of-use – PEOU, which measures the effort required for an efficient use of the new technology. If we transfer the model onto Internet financial reporting we find that it provides several benefits to the users, for instance: Timeliness of information, access to information at any time and from any location, accessibility to a larger number of users, use of interactive and multimedia tools, low costs and transparency of information. One of the more interesting features of the Internet is that it allows companies to provide information targeted at different stakeholders and to obtain feedback from them (Branco and Rodrigues, 2006). In research conducted by Ali Khan and Ismail (2012), users indicated easier acceptance of investment decisions and greater effectiveness at obtaining accounting information as its greatest advantages.

Sample Description and Methodology

Inorder to analyse the extent of disclosure via website, a dichotomous disclosure index comprising of 110 items was developed which was broadly classified into content related attributes and presentation format related attributes. 325 sample companies representing15 different industries were identified from National Stock Exchange on the basis of random sampling method. The search engine Google was used to find the companies' web address and thereby their respective websites. The websites were examined in the month of December 2019. The disclosure index applicable to the sample companies was constructed through an unweighted dichotomous scoring procedure under which a score of '1' is assigned if an item is present in the web site and '0' if the item is absent.

The data was collected from the websites of listed companies during January 2020. The measures of the independent variable like net worth, price to book ratio, market capitalisation, market price and industry type were also collected during this period. The website of these sample companies were revisited again as a validity check and any changes therein was noted and updated. The relationship between website based information disclosure and performance measures were tested using OLS multiple regression.

Data Analysis

The relationship between company characteristics and website-based disclosure of the listed companies is examined using Standard OLS Multiple Regression. As the assumptions of multiple regressionwerenot met, the data was transformed using Box-Cox transformation available in R programming. The convergence analysis of the Box-Cox formula for the regression model gives $\lambda = 0.45$.

Model I: Website based disclosure and company's performance measures

A multi-regression model is built with the website based disclosureasthe dependent variable and

performance measures like net worth, price to book ratio, market price and market capitalization as independent variables. The summary of the model is given in Table 1.

Table 1:Summary of Regression Model I

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	0.2682	0.0513	5.22	0.0000***
Net Worth	0.0389	0.0042	9.22	0.0000***
Price to book	0.0043	0.0013	3.32	0.0010***
Market Capitalization	-0.0028	0.0090	-0.32	0.7529
Market Price	0.0000	0.0000	0.59	0.5565
Source: Secondary data			*** 1% Sig.Level	

From the above table it is clear that *Net worth* and *Price to book ratio*are highly significant in predicting the financial disclosure index. But the attributes *Market Capitalization* and *Market price* are found to be not that much significant in predicting the website disclosure.

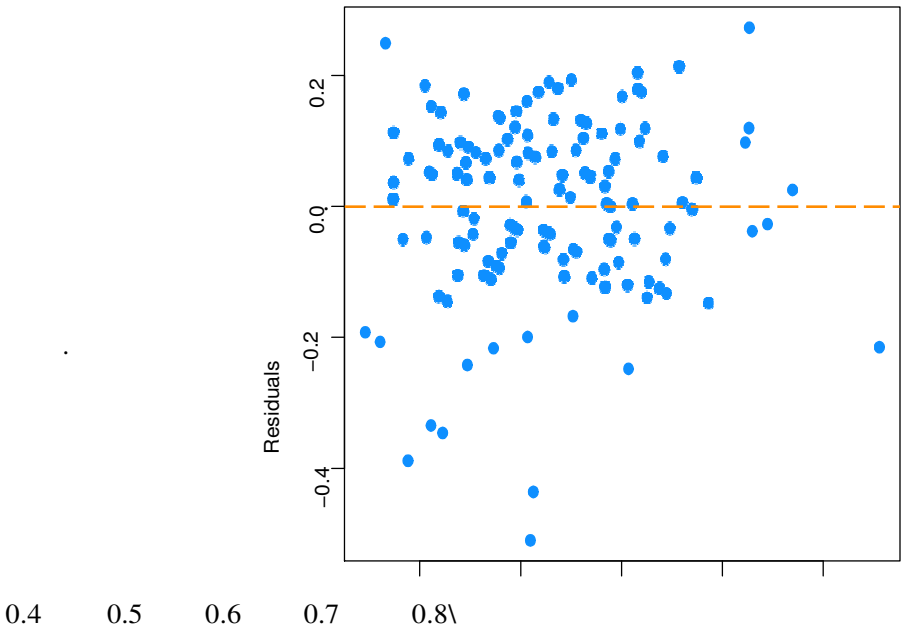
A one way ANOVA of Model I is given in Table 2. This summary also substantiate the outcome of model I

Table 2:ANOVA summary of Model I

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Net Worth	1	1.96	1.96	85.40	0.0000***
Price to Book	1	0.27	0.27	11.81	0.0007***
Market Capitalization	1	0.00	0.00	0.09	0.7630
Market Price	1	0.01	0.01	0.35	0.5565
Residuals	320	7.34	0.02		
Source: Secondary data			*** 1% Sig.Level		

The Residual standard error for this model is 0.1514 on 320 degrees of freedom and the Multiple R^2 value is 0.7338 and the adjusted R^2 value is 0.7242.

The ShapiroWilk's normality test gives w value 0.678 and p value 0.067 for model residuals. So this model can be accepted at 5 percent significance level. The residual plots for Model-I is shown in Figure 1



Fitted Figure 1: Scatter plot showing distribution of residuals of Model I

The Quartile to Quartile plot of model I residuals is shown in Figure 2

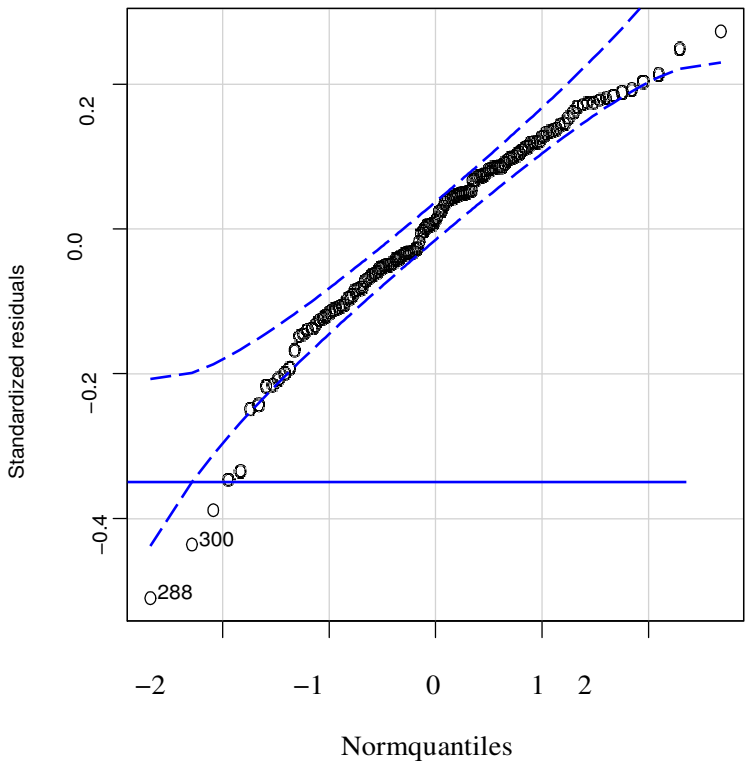


Figure 2: Quartile toQuartile Plot for Model I residuals

There are a few outliers in the data. Residuals created by these data points are embedded into the Q-Q plot to illustrate how they affect the normality of residuals. A new model by removing the non-

significant variates doesn't improve the model accuracy.

Model II - Regression of financial disclosure index on performance variates along with industrytype

The industry type of a company is represented as factor variable in this study. A one-hot encoding is used to create an independent variable from the fifteen industry types. Each of these variable is a (325, 1) column vector with 0's and 1's.

A multi regression model is built with the website based disclosure as the dependent variable and performance measures like net worth, price to book ratio, market price and market capitalization and industry type as the independent variables. The summary of this model is shown in Table 3.

Table 3: Summary of Regression Model II

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	0.2562	0.0587	4.36	0.0000***
Net Worth	0.0433	0.0045	9.57	0.0000***
Price to book	0.0042	0.0013	3.25	0.0013***
Market Capitals	-0.0043	0.0091	-0.47	0.6379
Market Price	0.0000	0.0000	0.64	0.5217
Cement & Construction.	-0.0389	0.0411	-0.95	0.3437
Chemical	-0.0368	0.0405**	-0.91	0.3637
Consumer Goods	-0.0072	0.0441	-0.16	0.8708
Food & Beverages	0.0123	0.0432	0.28	0.7765
Technology	0.0912	0.0411	2.22	0.0273**
Manufacturing	0.0188	0.0360	0.52	0.6014
Metals & Minerals	-0.0162	0.0417	-0.39	0.6977
Oil & Gas	-0.0538	0.0421	-1.28	0.2014
Pharmaceuticals	0.0665	0.0454	1.46	0.0444**
Real Estate & Construction.	-0.0321	0.0489	-0.66	0.5113
Service	-0.0617	0.0431	-1.43	0.1539
Telecoms	-0.0921	0.0417	-2.21	0.0280**
Engineering	-0.0148	0.0401	-0.37	0.7130
Power Generation	-0.0466	0.0416	-1.12	0.2632
Misc.	0.0176	0.0424	0.42	0.6781
Source: Secondary data		*** 1% & ** 5% Sig.Level		

From Table 3, it is clear that along with the performance variates*Net worth* and *Price to book ratio*, the industry types *Technology*,*pharmaceuticals and Telecoms* are highly significant on predicting the financial disclosure through websites.

A one way ANOVA of Model II is given in Table 4. This summary also substantiate the outcome of model II

Table 4: ANOVA summary of Model II

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Net Worth	1	1.96	1.96	88.42	0.0000***
Price to book	1	0.27	0.27	12.23	0.0005***
Market-Capitals	1	0.00	0.00	0.09	0.7589
Market Price	1	0.01	0.01	0.36	0.5497
Cement & Construction	1	0.02	0.02	0.71	0.3994
Chemicals	1	0.02	0.02	0.78	0.3780
Consumer Goods	1	0.00	0.00	0.01	0.9249
Food & Beverages	1	0.01	0.01	0.25	0.6204
Technology	1	0.20	0.20	9.00	0.0029***
Manufacturing	1	0.04	0.04	1.69	0.1952
Metals & Minerals	1	0.00	0.00	0.01	0.9264
Oil & Gas	1	0.02	0.02	0.80	0.3726
Pharmaceuticals	1	0.11	0.11	5.17	0.0237**
Real Estate & Construction	1	0.00	0.00	0.02	0.8960
Service	1	0.02	0.02	1.12	0.2898
Telecom	1	0.11	0.11	4.83	0.0287**
Engineering	1	0.00	0.00	0.05	0.8188
Power Generation	1	0.04	0.04	1.72	0.1901
Misc.	1	0.00	0.00	0.17	0.6781
Residuals	305	6.76	0.02		
Source: Secondary data			*** 1%, **5% Sig.Level		

The Residual standard error for this model is 0.1488 on 305 degrees of freedom and the Multiple R^2 value is 0.5947 and the adjusted R^2 value is found to be 0.5242.

The Shapiro Wilk's normality test gives w value 0.923 and p value 0.057 for model residuals. So this model can be accepted at 5 percent significance level.

Model II with fifteen more independent variables gives a just fit model with comparatively lower R^2 value and less normal residual distribution.The residual plots for Model-II is shown in Figure 3.

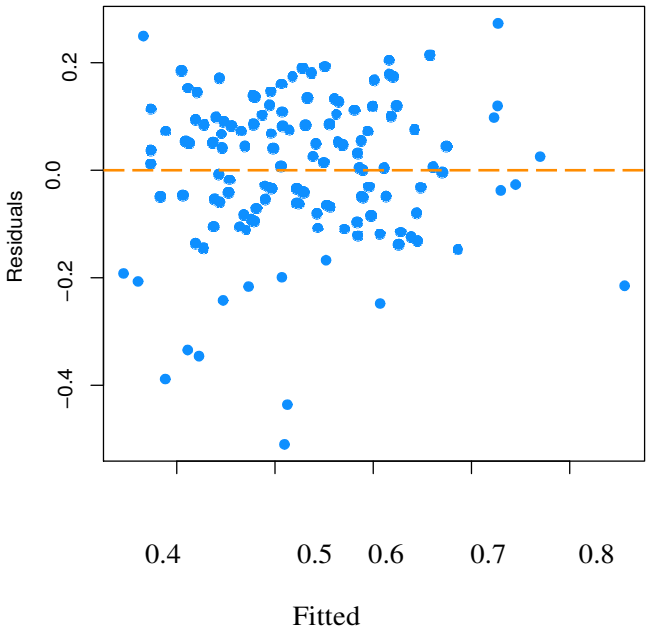


Figure 3: Scatter plot showing distribution of residuals of Model-II

The Quartile to Quartile plot of model II residuals is shown in Figure 4.

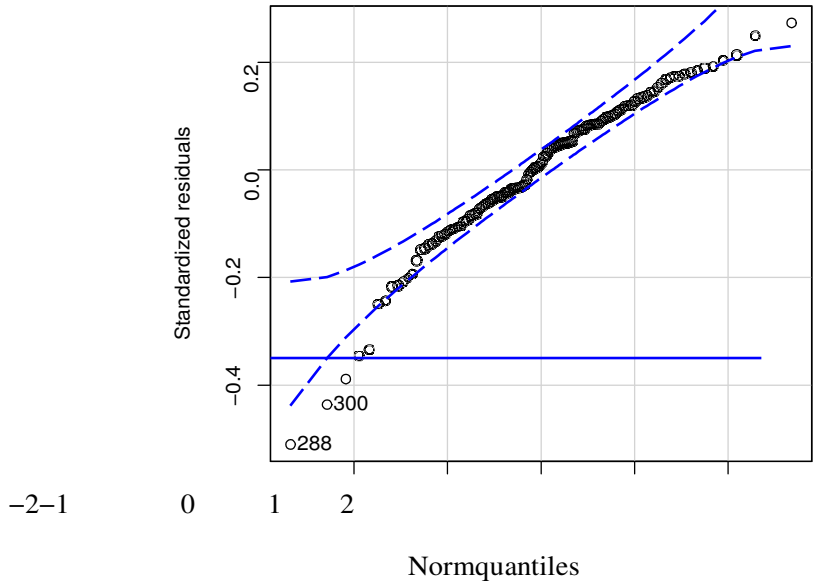


Figure 4: Quartile to Quartile Plot for Model II residuals

There are a few outliers in the data. Residuals created by these data points are embedded into the Q-Q plot to illustrate how they affect the normality of residuals.

A new model with removing the non-significant variates doesn't improve the model accuracy.

Model Comparison

The researcher has applied ANOVA test to compare the statistically acceptable models. Result of model comparison is shown in Table 5

Table 5: Comparison of Model I & Model II using ANOVA

Model	Res.Df	RSS	Df	Sum of Sq	F	Pr(>F)
I	320	7.34				
II	305	6.76	15	0.58	1.76	0.0404**
Source: Secondary data			**1% Sig.Level			

Second row of Table 5 shows the model attributes of Model II. Addition of more variables in regression model is significant at 5 percent significance level. So it is reasonable to conclude that even though Model II is complex it is more fitted to the research framework and the data set.

Findings and conclusion

As the current data do not meet the normality assumptions, data transformation was done using Box-Cox and normal scores wasused. Standard OLS multiple regressionwasrun using general regression method in R programming on a large sample comprising of listed Indian companies which had websites. It was concluded that Net worth, price to book value and industrial sector (Technology, Telecoms and Pharmaceuticals) are the important determinants affecting the financial information disclosed on listed Indian companies' websites.

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