Web-based Disclosures and Their Determinants: Evidence from Listed Commercial Banks in Nepal

Narendra Sharma[1]

[1] School of Business and Economics, Elizabeth City State University, North Carolina, USA

Correspondence: Narendra Sharma, School of Business and Economics, 222 Williams Hall, Elizabeth City State University, 1704 Weeksville Road, North Carolina 27909, USA. Tel: 1-252-335-3186. E-mail: nsharma@mail.ecsu.edu

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Abstract

What is the extent of disclosure, using the Internet, by commercial banks listed on Nepal Stock Exchange? What are the determinants of varying levels of web-based disclosure by those companies? These were the research questions addressed in this paper. All 23 commercial banking companies were found to have maintained their own websites and annual reports were made available in compliance with directive number 4 of Nepal Rastra Bank. A 50 items disclosure index, based on existing literature modified for Nepal specific items, was applied to company websites to assess the disclosure levels. At an average, 49.58 % of items in the index were disclosed by the commercial banks in Nepal. With regards to determinants, foreign ownership, board independence, and bank size were found to be significantly associated with web-based disclosure. The model with six independent variables considered for analysis explained 51% of the variations in web-based disclosure by commercial banks in Nepal. The study makes significant contributions to understand the extent of disclosures made by commercial banks and their determinants in a developing country like Nepal.

Keywords: Web-based disclosure, Corporate disclosure, Disclosure index, Nepal Rastra Bank, Nepal Stock Exchange, Developing country

1. Introduction

1.1 Web-based corporate disclosure

Web-based corporate disclosure is the dissemination of corporate related financial and non-financial information using the Internet technologies (Ashbaugh, Johnstone, & Warfield, 1999; FASB, 2000; IASC, 1999). It is a wider term than simply Internet financial reporting as it encompasses other performance measures in the areas of environment, social responsibility, and corporate governance (Cormier, Lediux, & Magnan, 2009). Web is now seen as one of the better mediums of disclosure of financial and non-financial information (Marston & Polei, 2004), the major advantage being its ability to provide a direct contact between the firm's management and stakeholders without depending on intermediaries like the press or analysts (Lymer, 1999). According to FASB (2000), the Internet has expanded the amount of information, with ease, available to investors and allowed speedy delivery of that information at a very low cost. Today, any investor with a computer and Internet connectivity can obtain information that was previously available only to company officials, professional investment analysts, and the press (FASB, 2000). Web-based disclosure, therefore, has the advantage of being cost effective, covering wider audience with speed, and making the information available in a timely manner (Debreceny, Gray, & Rahman, 2002). Considering the dynamic business environment, traditional paper corporate reports are less timely and hence less useful for decision-making (Koreto, 1997).

FASB (2000) identified two main components of web-based disclosure: presentation and content. On the presentation front, websites are used to disclose time sensitive information. Such disclosure combined with multimedia and interactive communication could extend the boundaries and change the framework of financial reporting (Oyelere, Laswad, & Fisher, 2003) because it provides flexibility that was not available under the traditional paper format (Cormier et al., 2009). On the content front, web-based disclosures can include annual reports, press releases, quarterly reports, additional material like records of the annual meeting of the shareholders (Debreceny et al., 2002), Basel II disclosures regarding capital adequacy, and risk management issues. Web-based platform offers several advantages and opportunities to companies to make disclosure about different aspects of their activities (Cormier et al., 2009).

It was apparent that corporate disclosure had continued as the subject of several studies internationally, but it has remained an emerging construct in Nepal (Pokhrel, 2007). There were various promulgations governing corporate disclosures by companies in Nepal especially those listed on Nepal's only stock exchange, i.e. Nepal Stock Exchange (Securities Board of Nepal [SEBON], 2010). There have been efforts directed at building regulatory mechanism for corporate disclosure: (a) directives by Nepal Rastra Bank (the Central Bank of Nepal), and (b) two legislations: the Banks and Financial Institutions Act and the Companies Act to enforce accountability and board independence in the bank and financial institutions there (Thapa, 2008). However, compliance to these requirements and disclosure standards, as envisaged by the disclosure regime in Nepal, were not considered as a subject of enquiry. Especially, web-based disclosure is extensively used in most of the developed countries (Abdelsalam & Street, 2007), and it has become an alternative medium for timely disclosure by companies in other countries (Abdelsalam & El-Masry, 2008), yet there is a lack of evidence of its use in Nepal. Therefore, the need for a research to assess the extent of web-based disclosures in Nepal seems appropriate to fill that apparent gap in the literature. The objectives of this quantitative research were: (a) to identify the components of disclosure regime governing web-based disclosure by commercial banks listed on Nepal Stock Exchange; (b) to investigate and report on the extent of web-based disclosures; (c) to identify and analyze the determinants of varying levels of disclosure by those companies.

The study can make significant contributions towards understanding the extent of disclosures made by commercial banks and their determinants in a developing country like Nepal. The fact that this is one of the very few empirical studies on disclosure by commercial banks in the Nepalese context; it is expected to generate interest in the area for policy makers, companies, and various users of company information. This research will also provide an insight about compliance to transparency and effectiveness of disclosure regimes in Nepalese financial sector. It is also expected to assist in the growth of corporate disclosure literature, in Nepal, as it would provide benchmarks for studies in the future.

The rest of paper is organized as follows. The introduction is followed by the review of literature and hypotheses development, which is followed by research methodology. Then, the results are presented and discussed. The paper ends with the conclusions and opportunities for future research.

2. Review of Literature and Hypotheses Development

2.1 Review of Literature

Web-based reporting of financial and non-financial information became popular with the development of the world-wide-web since 1994 (Allam & Lymer, 2003). Companies are increasingly using their websites to disclose a broad spectrum of corporate information, and it is now a well established activity in many countries (Allam & Lymer, 2003; Brennan & Kelly, 2000; Craven & Marston, 1999; Debreceny et al., 2002; Deller, Stubenrath, & Weber, 1999; Hamid, 2005; IASC, 1999; Khadaroo, 2005; Marston & Polei, 2004; Cormier et al., 2009; Oyelere et al., 2003; Xiao, Yang, & Chow, 2004).

Allam and Lymer (2003) studied 250 largest companies covering 5 countries in the years 2001 and 2002. The countries chosen were USA, UK, Canada, Australia, and Hong Kong. They found that reporting practices differed significantly between companies in different domains. The companies were also found using more interactive technologies than in the past. Debreceny et al. (2002) studied the presentation and content of 660 large companies in 22 countries to identify firm-specific and other environmental determinants of Internet financial reporting. Firm-specific characteristics of size, listing status, technological environment, growth prospects, systematic risk, and leverage were used as independent variables of which firm-specific characteristics of size, US listing, and technology environment were significant determinants of varying levels of disclosures. The two-pronged measure of the dependent variable *content* and *presentation* framework as used by Financial Accounting Standards Board (FASB, 2000, p.42) was adopted (Debreceny et al., 2002). Similarly, Deller et al. (1999) surveyed the use of Internet for investor relations' activities, focusing on the provision of financial data, of UK, German, and US corporations. They used 19-criteria checklist to establish the levels of investor relation activities. The existence in the corporate website of the following were considered as investor relations activities: (a) financial statements and interim reports; (b) presentation of data; (c) press releases and further information services; (d) direct contact via email and mailing lists; and (e) annual meetings, analysts conferences and chat settings. They concluded that 95 percent of companies in US, 85 percent in UK, and 76 percent in Germany had websites. It was also reported that 91 percent of companies in US, 72 percent in UK, and 71 percent in Germany used the Internet for investors' relations.

Brennan and Kelly (2000) investigated the Irish companies for websites and investor relations. 67 percent of the listed companies had websites and 84 percent had investor relations' material. A content analysis of company related material on 10 third-party sites was carried out, and the researchers concluded that 90 percent third-party websites provided investor relations material without any charge, the most common being the current stock price while the least available information was about the industry. Hamid (2005) employed a content analysis methodology to survey Internet reporting of 100 Malaysian companies listed on Kuala Lumpur Stock Exchange by monitoring their websites for three months. The content analysis was based on disclosure index using a dichotomous coding procedure. The results showed that only 74 percent of companies had websites, and 4 out of them did not have any elements of investor-related materials, which were dropped for applying the disclosure index. 93 percent of companies provided company background, 23 percent reported about directors, and 16 percent each provided information about the number of employees and industry overview. Craven and Marston (1999) examined the extent of web-based disclosure of financial information by UK based 206 companies in the year 1998. They found no significant association between industry type and disclosure but a positive and significant association between size and disclosure. They also found that 74 percent of the sample companies had websites and of these only 71 percent of them disclosed financial information.

Marston and Polei (2004) examined the use of Internet for corporate reporting by German companies in the years 2000 and 2003. The sample comprised of 50 companies for the year 2000 and 44 companies for the year 2003. Using the FASB's framework of content and presentation, the dependent variable for the study was an index of 53 items for the year 2000 and 71 for the year 2003. The checklist was applied to see the disclosure and a dichotomous scoring of 1 for disclosure and 0 for non-disclosure was used. Their independent variables were size, profitability, free float, systematic risk, and listing status. The study revealed a significant improvement in the year 2003 as compared to the year 2000. Like many other studies, size of a firm was a significant explanatory variable for both years. However, free float and foreign listing were found significant only in the years 2000 and 2003 respectively. Systematic risk and profitability were found to have no predictive value in both of these years. Around the same period, Xiao et al. (2004) investigated 300 largest Chinese companies in December 2001. They developed a disclosure index of 82 items, 58 of them were related to content and 24 items about presentation. Although, 83 percent were found to have websites only 67 percent were accessible. The index was applied on those accessible websites between August 2 and August 19; scoring the items as 1 (for yes) or 0 (for no). Based on the index, six dependent variables were used including the total score, content score, and format score. There were 7 test variables and 5 control variables. They concluded that size and leverage influenced disclosures. However, firm performance and proportion of fixed assets had minimal or no influence on disclosures. A negative effect due to state ownership was found. Positive effects of foreign share ownership or listing, use of Big-4 auditors, proportion of independent directors, and membership in IT industry were also established for web-based disclosure. Oyelere et al. (2003) studied the 229 companies listed on the New Zealand Stock Exchange at the end of 1998. About 53.7 percent of companies were found to have websites. 99.2 percent provided the product or service information, 94.3 percent discussed the company history or background and 73.2 percent published financial information.

Cormier et al. (2009) surveyed the use of Internet as a disclosure medium for corporate performance in Canada. The study was different from other studies in the sense that it focused only on information provided in HTML format. The sample companies were using such a format voluntarily on the websites. Their sample comprised of 189 large public corporations representing about 80 percent of Canada's market capitalization. They concluded that companies reporting about customer value had well-maintained websites and also reported about innovation, development, and growth. Firms reporting about human/intellectual capital were associated with social related disclosures. Finance related disclosures were associated with corporate governance. Their results showed that determinants of web-based disclosure were beta, leverage, and concentrated ownership.

2.2 Determinants of disclosure practices, their measurement and hypotheses

Assessment of the determinants of disclosure practices by exploring the association between web-based corporate disclosure and firm-specific characteristics was one of objectives of this study. Disclosure decisions of companies are influenced by several firm-specific factors like size, culture, market listing, and corporate governance characteristics (Armitage & Marston, 2008; Cooke, 1992; Khanna, Palepu, & Srinivasan, 2004). Oyelere et al. (2003) concluded that larger companies, internationalized, liquid, and more profitable companies were found to engage in Internet financial reporting. Non-reporting firms were characterized by concentrated ownership. Size, liquidity, internationalization, industry, and share spread were found to be statistically significant predictors. Leverage and profitability were not found to be statistically significant determinants. Hence, the important variables of corporate size, profitability, leverage, percentage of independent directors, multi-nationality or foreign ownership, and the diffusion of ownership were analyzed in this study. The following section develops hypotheses that were tested in this study.

2.2.1 Corporate Size (CSIZE)

The effect of size on the levels of disclosures by companies has been studied in the past (Aerts, Cormier, & Magnan, 2007) and invariably all studies have identified size as a significant determinant of disclosure. Based on agency theory, a positive association between corporate size and disclosure is anticipated as larger companies are expected to disclose more information considering political costs associated with the size.

$H1_1$: There is a positive and significant relationship between the extent of web disclosure and size of a bank.

The total asset as reported by the banks in their Balance sheet was considered as the measure of size.

2.2.2 Profitability (PROFIT)

A positive correlation of profitability and disclosure has been established (Li, Pike, & Haniffa, 2008). However, Ho and Taylor (2007) reported a negative relationship between Triple Bottom-line (TBL) disclosure and profitability. On the other hand, Aljifri (2008) concluded that profitability has an insignificant impact on the levels of disclosure. However, consistent with signaling theory, a positive and significant relationship between profitability and disclosure was expected in this study.

$H1_2$: There is a positive and significant relationship between the extent of web disclosure and profitability of a bank.

The return on assets was considered as the measure of profitability. The measure was computed by dividing the net income with the total assets for that year.

2.2.3 Leverage (LEV)

Higher leveraged firms disclosed less information as compared to other firms (Cormier et al., 2009). Aerts et al. (2007) also reported a negative relationship for both European and North American firms between performance disclosure and leverage. However, their relationship was statistically significant only for European firms and not for the North American firms. On the other hand, leverage did not have any significant impact on the levels of disclosure (Akhtaruddin, Hossain, Hossain, & Yao, 2009; Ho & Taylor, 2007; Aljifri, 2008). A significant relationship between leverage and disclosure was anticipated in this study as leveraged firms had higher incentives to disclose more information to reduce agency costs (Kang & Gray, 2011) by engaging in public disclosures (Jensen & Meckling, 1976).

$H1_3$: There is a significant relationship between the extent of web disclosure and leverage of a company.

Different researchers have measured leverage differently and the variation was apparent (Khlif, & Souissi, 2010). Considering the sample of commercial banks for the study, the ratio of total debt, including the liabilities to depositors by banks, and the total assets was considered appropriate measure of leverage.

2.2.4 Ownership Diffusion (GPOWN)

A significant negative association between ownership concentration and disclosures has been reported (Li et al., 2008; Oylere et al., 2003). Aerts et al., (2007) found a statistically significant negative relationship between performance disclosures and concentrated ownership in European firms but not a significant relationship between the two for North American firms. Akhtaruddin et al. (2009) examined the relationship between the outside ownership and disclosures and found a positive relationship between the percentage of outside ownership and the level of disclosures. Similarly, Oylere et al. (2003) reported a significant positive relationship between share spread and disclosure in New Zealand. Hence, a positive and significant relationship between the extent of disclosure and diffusion in ownership was anticipated in this study.

$H1_4$: There is a positive significant relationship between the extent of disclosure and diffusion in ownership of a bank.

The percentage of shareholding by the general public, as reported by the banks in their schedules accompanying the financial statements as of July 2010 was used as a measure of diffusion in ownership for this study.

2.2.5 Independence of directors on the Board (BIND)

Owing to consequences of various financial scandals and the heightened concern for corporate governance, Boards of companies have become the center of considerable debate and research. One of the reforms suggested has been appointment of independent outside directors. Li et al. (2008) found that greater presence of independent directors on the board, greater the disclosure. Akhtaruddin et al. (2009) also found a positive relationship between the proportion of independent non-executive directors on the board and voluntary disclosures. Consistent with the extant literature, a positive relationship between disclosure and a higher percentage of independent directors was expected for this study too.

$H1_5$: There is a positive and significant relationship between the extent of disclosure and percentage of independent board of directors.

The proportion of professional directors (Note 1) to the total number of directors on the Board as reported in the companies' websites, if not, in their 2009-10 annual report was the measure of board independence.

2.2.6 Multi-nationality or Association of the Firm with a Foreign Firm (FOWN)

The proportion of foreign ownership was found to be a significant predictor of disclosure (Ananchotikul & Eichengreen, 2009; Barako, Hancock, & Izan, 2006; Barako & Brown, 2008) with foreign investors lobbying for reform. Hence, the same positive relationship between an association of a bank with foreign ownership and the levels of disclosures was expected in this study.

$H1_6$: There is a positive and significant relationship between the extent of web disclosure and a foreign association of a bank.

The percentage of foreign ownership in the equity (Bokpin & Isshaq, 2009) of the company as reported in the 2009-10 annual report was considered as the measure of multi-nationality in this study.

3. Methodology

3.1 Population and the sample

The population of the study was the commercial banking companies listed with Nepal Stock Exchange as on 16 July 2010. There were 23 companies listed on that date representing more than half of market capitalization (54.73 %) on that date. The list of the banks was accessed online through the homepage of Securities Board of Nepal. Since the study was first of its kind, all banks were included in the study consistent with Oyelere et al's., (2003) study of companies in New Zealand.

3.2 Web presence

An investigation into the web presence of all commercial banks listed on Nepal Stock Exchange was made. The web presence was ascertained by searching the Internet using the most common search engines like Google, Yahoo, Bing, Ask, and MSN to discover the home pages (or corporate web sites). The search was done by name and during September 2011and re-visited in October 2011 as a validity check. The search for the web presence of all the 23 commercial banking companies listed with Nepal Stock Exchange as on 15 July 2010 returned that all of them had a robust and operational corporate websites. Once the website was located, the disclosure instrument was applied.

3.3 Dependent variable

An index (Note 2) was developed and applied to each of the websites of the sample banks. The score was calculated based on "what was disclosed" and converted into a ratio variable (WDSCORE) by comparing it with "what was expected" to be disclosed by those companies. This WDSCORE was the dependent variable.

The web-based corporate disclosure index (WCDI) was constructed comprising of items that have been identified as items of Internet disclosure in the existing literature (Xiao et al., 2004). Items required and encouraged to be disclosed by banks and finance companies in Nepal by the disclosure regime applicable for these companies were also included. The index was organized in a two-dimensional approach of content and presentation as used or proposed in the existing literature (Aly, Simon, & Hussainey, 2010; Debereceny et al., 2002; FASB, 2000; IASC, 1999; Kelton & Yang, 2008; Marston & Polei, 2004; Trabelsi, Labelle, & Laurin, 2004) to measure the extent of disclosure. The scoring was un-weighted, assigning a score of 1 when an index item was located in the website and a 0 when it was not located. Such a practice is quite popular in disclosure studies using an index to avoid arbitrariness (Inchausti, 1997) in the use of any weighted index and because use of such an un-weighted index will: (a) help avoid a user bias, and (b) the web-sites do not address the needs of a particular group of users but for all users (Cooke, 1989; Chow & Wong-Boren, 1987; Wang, O, & Clairborne, 2008) as a public good available to all users (Cooper & Keim, 1983). Furthermore, studies using both weighted and un-weighted indices (Chow & Wong-Boren, 1987) resulted into similar conclusions.

3.4 The regression model

Multiple regression model was used as the major statistical tool. Students' t-test was used to measure the responsiveness of explanatory variables on the dependent variable, extent of web-based corporate disclosure.

Similarly, to see the overall fit of the model, ANOVA was used, which measured collective influence of all the independent variables on the dependent variable.

The full specification of the regression model was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e \quad (1)$$

Where, Y = disclosure index

Independent variables

X_1 = percentage of foreign ownership in the equity of a company

X_2 = total assets (proxy for size)

X_3 = return on assets (proxy for profitability)

X_4 = ratio of total debt to total funds (proxy for leverage)

X_5 = ratio of shares held by the general public (proxy for diffusion of ownership)

X_6 = ratio of professional directors on the board (proxy for board independence)

e = Error term

$\beta_{0\text{-}6}$ = regression coefficients

4. Results

4.1 Components of Disclosure Regime and Web Presence of Companies in Nepal

The commercial banks were found to have a two- pronged regulatory and monitoring regime requiring them to make disclosures: one as a bank and another as a public company. All commercial banks are required to be registered as public companies and seek a license from Nepal Rastra Bank to conduct the banking business (Nepal Rastra Bank [NRB], 2010). The overall disclosure regime applicable to commercial banks in Nepal comprised of the accounting standards issued by Accounting Standards Board (ASB) of Nepal, requirements of Securities Board of Nepal (SEBON) based on Securities Act 2006, provisions of Companies Act 2006, Banks and Financial Institutions Act 2006 (BFIA), listing requirements of the Nepal Stock Exchange (NEPSE), apart from the directives from Nepal Rastra Bank (NRB) - the Central Bank of Nepal. However, only Nepal Rastra Bank (NRB) specifically required the companies to make web-based disclosure. Directive 4 of NRB requires banks and financial institutions to make their entire annual report available on their websites. On the other hand, Directive 1 requires all commercial banks to make the following disclosures on their websites on a quarterly basis: tier 1 and 2 capital, subordinated term debts, capital adequacy ratios, risk weighted exposures to risk (credit, market, and operational), restructured loan, non-performing assets (NPA), classified investments (Held for trading, Held to maturity, Available for sale), doubtful loan, loan loss provision, and NPA ratios. Commercial banks are also required to disclose about their capital adequacy ratios. At the same time, the Companies Act complimented the web-based disclosure with a date stamp provision for such disclosures. Section 172 (3) of the Act required that any company making its records available on the website needed to indicate the date of such document.

All the 23 commercial banking companies had websites and hence, all commercial banking companies in Nepal had a 100 percent web presence.

4.2 Descriptive Statistics

Table 1 shows the average (Mean), minimum (Min), maximum (Max) and standard deviations (SD) of the dependent variable (WDSCORE) broken into content score (CNSCORE) and presentation (PRSCORE). The same statistics for the six independent variables are also shown in the table.

Table 1. Descriptive statistics for dependent and independent variables

	N	Min.	Max.	Mean	SD
Profitability (PROFIT)	23	.0035	.0815	.0196	.0161
Company Size (CSIZE) -in million NRs	23	7 410	57 305	24 431	13 753
Leverage (LEV)	23	0.8003	0.9356	0.8985	0.0387
General Public Ownership (GPOWN)	23	0.1500	0.7800	0.3824	0.1589
Board Independence (BIND)	23	0.1000	0.2500	0.1372	0.0293
Foreign Ownership (FOWN)	23	-	0.7500	0.1120	0.2118
Content Score (CNSCORE)	23	0.3947	0.7105	0.4989	0.0853
Presentation Score (PRSCORE)	23	0.2500	0.7500	0.4928	0.1229
Web-disclosure Score (WDSCORE)	23	0.3355	0.7171	0.4958	0.0989

Table 1 shows that, at an average, commercial banks disclosed about half (49.58 %) of the items in the overall web-based disclosure index. There was not much of a difference in the content (49.89 %) and presentation (49.28 %) components of the overall score. The variability as depicted by the measure of standard deviation was also very similar.

Table 2 shows the frequency and percentage of sample banks disclosing each item of disclosure; the first 38 items were content-related and the remaining 12 were presentation-related items. The content-related items were disclosure items expected of the sample banks and presentation-related items indicated the ease of navigating the website and locating information.

Table 2. Frequency and percentage of items disclosed by sample banks:

SN	Items in the Index	Percentage
1	A letter to the shareholders	47.83%
2	Activity volume or capacities	13.04%
3	Calendar of events for Investors	0.00%
4	Dividends History	4.35%
5	Identifies the risks faced by the company	13.04%
6	List of Major customers	0.00%
7	Future goals and plans	17.39%
8	Performance overview	100.00%
9	Research and Development activities	0.00%
10	Recent Key Ratios	86.96%
11	Earnings estimates	0.00%
12	Names and pictures of major brands or services	100.00%
13	Historical perspective of the company	100.00%
14	Key drivers to remain successful	4.35%
15	Company Address and Locations of branches etc.	100.00%
16	Mission Statement	60.87%
17	Vision Statement	60.87%
18	Latest Annual report	100.00%
19	Last year's Annual Reports	100.00%
20	Recent Quarterly Reports	100.00%
21	Basel II disclosures	95.65%
22	Foreign Exchange rates	100.00%
23	Code of conduct for managers/employees	17.39%
24	Anti-money Laundering commitment	17.39%
25	Name of the Board of Directors	100.00%
26	Ownership makeup - % of institutional and/or individual investors	39.13%
27	Audit Committees and its composition	13.04%
28	Compensation/Personnel Committee and its composition	0.00%
29	Civic activities supported - charities or events	43.48%
30	Social and Environmental commitment	39.13%
31	Employee related disclosure	86.96%
32	Conservation initiatives	17.39%
33	Copies of press releases/News archives	82.61%
34	Firm's current stock price	56.52%
35	Annual General Meeting minutes	56.52%
36	Agenda of Annual General Meeting	60.87%
37	Charts about stock-price movements	56.52%

38	Industry statistics/data	4.35%
39	Drop-down menu options	100.00%
40	Audio/Video contents	0.00%
41	Hyperlinks to other websites like NEPSE/NRB	39.13%
42	Search Boxes	60.87%
43	Site map	60.87%
44	Annual reports available in both Nepal and English	39.13%
45	Online services /downloads	100.00%
46	Update counter with dates	17.39%
47	Existence of Share holder's / Investor's Relation section	26.09%
48	Email/ SMS alerts	13.04%
49	Feedback Option	100.00%
50	Frequently Asked Questions (FAQs)	34.78%

Note: N=23. The author calculated the percentages based on the 23 websites analyzed.

All companies were found to have feedback option, online services /download facilities and drop-down menu options on the presentation area. On the content area, performance overview, names and pictures of major brands or services, historical perspective of the company, company address and locations of branches, latest annual report in either HTML or PDF, previous year's annual reports, recent quarterly reports, foreign exchange rates, and names of the board of directors were disclosed by all companies. A majority of them (95%) also reported about capital adequacy and risk disclosures as recommended by Basel II framework.

However, the commercial banks were not fully utilizing their website for enhanced features. No company had audio/video contents on their website. Although, some companies had reported R & D expenses in their financial statements, none reported about their research or development activities on the web site. Some companies had several committees other than the audit committee, but details were not reported about them on their websites. Forward-looking information like a calendar of events for investors and the earnings estimates were also not disclosed. Other prominent non-disclosure was the list of major customers and customer base; most likely they were considered as proprietary information.

Table 3. Bivariate correlation analysis of the dependent and independent variables

Variables	*CNSCORE*	*PRSCORE*	*WDSCORE*	*CSIZE*	PROFIT	*LEV*	*GPOWN*	*BIND*	*FOWN*
CNSCORE	1.000								
PRSCORE	0.798	1.000							
WDSCORE	0.927	0.966	1.000						
CSIZE	0.259	0.383	0.350	1.000					
PROFIT	-0.159	-0.237	-0.216	-0.135	1.000				
LEV	0.285	0.468	0.414	0.602	-0.517	1.000			
GPOWN	-0.046	-0.192	-0.139	-0.452	0.076	-0.171	1.000		
BIND	0.214	0.450	0.372	0.018	0.100	0.084	-0.030	1.000	
FOWN	-0.256	-0.150	-0.203	0.560	0.193	0.208	-0.261	0.018	1.000

Note: The variables were: Content score (CNSCORE), Presentation score (PRSCORE), Web-based disclosure score (WDSCORE), Bank Size (CSIZE), Profitability (PROFIT), Leverage (LEV), General Public Ownership (GPOWN), Board Independence (BIND), Foreign Ownership (FOWN)

The bivariate analysis in Table 3 showed relatively high correlation between size variable and the leverage variable (r = 0.602) and between size variable and foreign ownership variable (r = 0.560), which could signal a multi-collinearity situation. Cooper and Schindler (2008) explained that multi-collinearity could have damaging effects on regression as the estimated regression coefficients could fluctuate widely from sample to sample making it risky to consider it as a predictor variable. They believed that a variance inflation factor (VIF) of 10.0 or larger indicated collinearity, whereas Zikmund, Babin, Carr, and Griffin (2010), considered a VIF of above 5.0 as a problem with multi-collinearity. Field (2009) suggested the use of Tolerance Index (TI) statistics which indicated serious problems if the values were below 0.1 (Field, 2009, p. 224). Hence, a test for multi-collinearity was done using the VIF and TI values. They are shown in Table 4. The VIF for all the independent variables were under the threshold of even a conservative 5.0 and TI values were also much higher than 0.1; hence, there were no multi-collinearity problems in the multivariate analysis.

Table 4. *Collinearity statistics to test for multi-collinearity between independent variables*

Independent variables	Tolerance Index	VIF
Company Size (CSIZE)	.366	2.733
Leverage (LEV)	.414	2.414
Board Independence (BIND)	.953	1.049
General Public Ownership (GPOWN)	.767	1.305
Foreign Ownership (FOWN)	.611	1.636
Profitability (PROFIT)	.604	1.657

4.3 Multivariate Analysis

The results based on the regression model as shown in equation (1) are shown in Table 5. The explanatory power of the model (R^2) was 50.9 percent for a confidence level of 95 percent (*p*-value < 0.05) indicating that the model explained more than half (51%) of the variations in web-based disclosure by commercial banking companies in Nepal. The figures show that the probability of producing such an F ratio by chance is less than 5%. Hence, chance alone could not have produced such an explanatory power of the predictors. The ANOVA also confirmed that the relationship was statistically significant with $F(6, 16) = 2.76$, $p < 0.05$. Table 5 provides the summarized unstandardized and standardized beta values, *t*-statistics, and *p*-values for the regression model and the independent variables.

Table 5. Multivariate analysis results

	Un-standardized Coefficients		Standardized Coefficients	*t-stats*	*p-value*
Model	B	SE	Beta		
(Constant)	-.154	.597		-0.257	.800
Company Size (CSIZE)	.000	.000	.556	*1.921**	*.073*
Leverage (LEV)	.460	.696	.180	0.660	.518
Board Independence (BIND)	1.195	.605	.355	*1.976**	*.066*
General Public Ownership (GPOWN)	.003	.124	.005	0.023	.982
Foreign Ownership (FOWN)	-.263	.105	-.563	*-2.51***	*.023*
Profitability (PROFIT)	.159	1.385	.026	0.114	.910

Notes: $R^2 = .509$, F (6,16) = 2.76, p-value <0.05. **p*-value <0.10; ***p*-value <0.05; ****p*-value <0.01.

The significant *p*-values are given in italics. The dependent variable was the web-based disclosure computed using an un-weighted index and applying to the web sites of commercial banks in Nepal. The independent variables were (a) CSIZE: measured as the total assets of the company; (b) LEV: leverage was computed by dividing total liabilities by total assets; (c) BIND: board independence was measured as a proportion of professional over the total board of directors; (d) GPOWN: general public ownership in shares of a company, used as a proxy for diffusion of ownership in the company; (e) FOWN: proportion of foreign ownership in the share capital of a bank, proxy multi-nationality of a company; and (f) PROFIT: return on assets calculated by dividing the net income for the year by total assets, proxy for profitability of a company.

4.4 Validity and Reliability

There were possibilities of validity issues with regards to selection of participants and instrumentation (both internal validity issues) while studying disclosures by listed companies in Nepal. To deal with the validity issue of selection of participants, all commercial banks were included. These companies are regulated by Nepal Rastra Bank (the

Central Bank) and are governed by Banks and Financial Institutions Act 2006. This also mitigates the external validity threat of generalizing the results and inferences to all listed companies, which do not share the same characteristics of these commercial banks. There are also possible construct validity issues regarding the operationalization of dependent variable (extent of disclosures) and independent variables. The dependent variable was calculated based on the items included by several researchers (Aly et al., 2010; Deller et al., 1999; Khadaroo, 2005; Kelton & Yang, 2008; Marston & Polei, 2004; Trabelsi et al., 2004; and Xiao et al., 2004). As a reliability measure, the disclosure index was pilot tested and issues resolved before applying it to collect data for research. Inter-rater differences were also tested. The principal investigator analyzed seven company websites and the research assistant again analyzed the same websites. The scores were very consistent with a high correlation ($r = 0.934$). Also, a Cronbach's alpha, as suggested by Kelton and Yang (2008) was calculated and the coefficient was 0.86 for the two sub-indices (Content and Presentation) and 0.73 for all the 50 items in the index, both of which are above the acceptable limit of 0.70 (Nunnaly, 1978) for assessing scale reliability.

5. Discussion

The commercial banks in Nepal had a two-pronged regulatory and monitoring regime requiring them to make disclosures: one as a bank and another as a public company; the later because all commercial banks are required to register as public companies. The regime comprised of accounting standards, directives from Nepal Rastra Bank (NRB), listing requirements of Nepal Stock Exchange (NEPSE), provisions of Companies Act 2006 and Banks and Financial Institutions Act 2006, and requirements placed by Securities Board of Nepal (SEBON). Considering the multitude of disclosures required of listed companies, a unified directive issued by the Central Bank seemed appropriate. However, it would have been better if it had included all requirements addressing the needs of all the disclosure regimes applicable there. Although, all 23 commercial banking companies (100 %) were found to be maintaining their own websites with annual reports, quarterly reports, and Basel II reports being made available in compliance with directive number 4 of Nepal Rastra Bank, there was the apparent lack of disclosures of items in the index.

At an average, about half (49.58%) of items in the index were disclosed by the commercial banks in Nepal. There was not much of a difference in the content (49.89%) and presentation (49.28%) scores. The six independent variables considered for analysis explained over half ($R^2 = 0.51$; $F = 2.76$; $p = 0.049$) of the variations in web disclosure by commercial banks in Nepal. However, when considered individually, only three variables were statistically significant. Consistent with Marston and Polei (2004), Oyelere et al. (2003), and Xiao et al. (2004), the hypothesis ($H1_1$), bank size was found to be a positive and significant determinant of web-based disclosure ($t=1.921$; $p<0.10$). Consistent with Akhtaruddin et al. (2009), Li et al. (2008), and Xiao et al. (2004), the hypothesis ($H1_5$) that a positive relationship existed between disclosure and board independence was confirmed. The positive relationship was significant ($t=1.976$; $p<0.10$). The proportion of foreign ownership as a positive and significant predictor of disclosure as found by Ananchotikul and Eichengreen (2009), Barako et al. (2006), and Xiao et al. (2004) was not supported in case of commercial banking companies in Nepal. The hypothesis ($H1_6$) was not only rejected. It was found to have a negative and significant effect on web-based disclosure ($t=-2.512$; $p<0.05$). The other variables had a linear relationship with disclosure but were not statistically significant. The hypotheses that there was positive and statistically significant relationship between profitability ($H1_2$), leverage ($H1_3$), diffused ownership ($H1_4$), and web-based disclosure were not significant. The findings, in the extant literature, relating to profitability and disclosures were mixed. Aerts et al. (2007); Akhtaruddin et al. (2009); Li et al. (2008); Tagesson Blank, Broberg, and Collin (2009) found a positive and significant relationship between profitability and disclosure. However, Ho and Taylor (2007 reported a negative relationship between disclosure and profitability. The findings of this research are consistent with Aljifri (2008) and Oyelere et al. (2003), who concluded that profitability had an insignificant impact on the levels of disclosure. The findings, of this research, relating to leverage and its effect on disclosure is consistent with Akhtaruddin et al. (2009); Aljifri (2008), Ho and Taylor (2007); and Oyelere et al. (2003).

The study had limitations. Firstly, the sample of the study included only commercial banks and hence the results could not be generalized to all the listed companies in Nepal. Furthermore, the study included only 23 companies; a larger sample or a panel data could produce a different result. Similarly, there are alternative measures of the same variables used in the study and a simple change in that might impact the results.

6. Conclusions and Opportunities for Further Research

The overall level of web-based disclosure by commercial banks was less than 50% of the items in the index. However, 51% of the variations in such disclosures were explained by the study variables. The research substantiated size and corporate governance mechanism of board independence as predictors of disclosure decisions by commercial banks. On the other hand, foreign ownership was associated negatively and in a statistically significant manner, with disclosure. This outcome should come as a red flag to the monitoring agencies and policy-makers that Banks with foreign ownership do not necessarily make higher levels of disclosure. Although, this study provides a basis for future studies in Nepal on the quality of disclosures, which would be quite difficult without a baseline study of this kind, a research of web-based disclosure by all listed companies will provide a basis for future policy guidelines for all listed companies. At the same time, Nepal has declared itself a republic at the national level and its desire for democratic principles and accountability needs to be expressed in terms of its policy guidelines for corporations, especially considering recent banking bubbles in Nepal.

There are several opportunities for future research. Annual report is considered the official medium of disclosure and hence disclosure studies using annual reports with representative companies from all the sections may be more representative and demonstrative. Even a web-based disclosure study with a larger sample size will provide robust results. Disclosure compartmentalized as mandatory, voluntary, corporate governance, social responsibility and intellectual capital could provide a better understanding of disclosures by listed companies in Nepal. Corporate governance variables have been found to impact disclosure decisions and hence a study with such variables as study variables and size, leverage, and profitability variables as control will add values to existing literature.

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References

Abdelsalam, O. H., & El-Masry, A. (2008). The impact of board independence and ownership structure on the timeliness of corporate internet reporting of Irish-listed companies. *Managerial Finance, 34*(12), 907-918. http://dx.doi.org/10.1108/03074350810915842

Abdelsalam, O. H., & Street, D. L. (2007). Corporate governance and the timeliness of corporate internet reporting by U.K. listed companies. *Journal of International Accounting, Auditing and Taxation, 16*(2), 111-130. http://dx.doi.org/10.1016/j.intaccaudtax.2007.06.001

Aerts, W., Cormier, D., & Magnan, M. (2007). The association between web-based corporate performance disclosure and financial analyst behaviour under different governance regimes. *Corporate Governance: An International Review, 15*(6), 1301-1329. http://dx.doi.org/10.1111/j.1467-8683.2007.00648.x

Akhtaruddin, M., Hossain, M., Hossain, M., & Yao, L. (2009). Corporate governance and voluntary disclosure in corporate annual reports of Malaysian listed firms. *Journal of Applied Management Accounting Research, 7*(1), 1-19.

Aljifri, K. (2008). Annual report disclosure in a developing country: The case of the UAE. *Advances in Accounting, 24*(1), 93-100. http://dx.doi.org/10.1016/j.adiac.2008.05.001

Allam, A., & Lymer, A. (2003). Developments in internet financial reporting: Review and analysis across 5 developed countries. *The International Journal of Digital Accounting Research, 3*(6), 165-199.

Aly, D., Simon, J., & Hussainey, K. (2010). Determinants of corporate internet reporting: Evidence from Egypt. *Managerial Auditing Journal, 25*(2), 182-202. http://dx.doi.org/10.1108/02686901011008972

Ananchotikul, S., &Eichengreen, B. (2009). Corporate governance reform in emerging markets: How much, why? And with what effects? *Journal of Japanese and International Economies, 23*, 149-176. http://dx.doi.org/10.1016/j.jjie.2009.01.005

Armitage, S., & Marston, C. (2008). Corporate disclosure, cost of capital and reputation: Evidence from finance directors. *The British Accounting Review, 40*, 314 -336. http://dx.doi.org/10.1016/j.bar.2008.06.003

Ashbaugh H., Johnstone, K.M., & Warfield, T. D. (1999). Corporate reporting on the Internet. *Accounting Horizons, 13*, 241-258. http://dx.doi.org/10.2308/acch.1999.13.3.241

Barako, D. G., Hancock, P., & Izan, H.Y. (2006). Factors influencing voluntary corporate disclosure by Kenyan companies. *Corporate Governance, 14*(2), 107 - 125. http://dx.doi.org/10.1111/j.1467-8683.2006.00491.x

Barako, D., & Brown, A. (2008). Corporate social reporting and board representation: Evidence from the Kenyan banking sector. *Journal of Management & Governance, 12*(4), 309-324. http://dx.doi.org/10.1007/s10997-008-9053-x

Bokpin, G., & Isshaq, Z. (2009). Corporate governance, disclosure and foreign share ownership on the Ghana stock exchange. *Managerial Auditing Journal, 24*(7), 688-703. http://dx.doi.org/10.1108/02686900910975387

Brennan, N., & Kelly, S. (2000). Use of the internet by Irish companies for investor relations purposes. *Irish Journal of Management, 21*(2), 107-135.

Chow, C. W., & Wong-Boren, A. (1987). Voluntary financial disclosure by Mexican corporations. *The Accounting Review, 62*(3), 533-541.

Cooke, T. E. (1989). Disclosure in the corporate annual reports of Swedish companies. *Accounting & Business Research, 19*(74), 113-124. http://dx.doi.org/10.1080/00014788.1989.9728841

Cooke, T.E. (1992). The impact of size, stock market listing, and industry type on disclosure in the annual reports of Japanese listed corporations. *Accounting & Business Research, 22* (87), 229-37. http://dx.doi.org/10.1080/00014788.1992.9729440

Cooper, D. R., & Schindler, P. S. (2008). *Business Research Methods* (10th ed.). Boston, MA: McGraw Hill Higher Education.

Cooper, K., & Keim, G. D. (1983). The economic rationale for the nature and extent of corporate financial disclosure regulation: A critical assessment. *Journal of Accounting and Public Policy, 2* (3), 189-205. http://dx.doi.org/10.1016/0278-4254(83)90024-8

Cormier, D., Ledoux, M., & Magnan, M. (2009). The use of web sites as a disclosure platform for corporate performance. *International Journal of Accounting Information Systems, 10* (1), 1-24. http://dx.doi.org/10.1016/j.accinf.2008.04.002

Craven B. M., & Marston, C. L. (1999). Financial reporting on the internet by leading UK companies. *European Accounting Review, 8*(2), 321-333. http://dx.doi.org/10.1080/096381899336069

Debreceny, R., Gray, G.L., & Rahman, A. (2002). The determinants of internet financial reporting. J*ournal of Accounting and Public Policy, 21*(4-5), 371-394. http://dx.doi.org/10.1016/S0278-4254(02)00067-4

Deller, D., Stubenrath, M., & Weber, C. (1999). A survey on the use of the internet for investor relations in the USA, the UK and Germany. *European Accounting Review, 8*(2), 351-364. http://dx.doi.org/10.1080/096381899336087

FASB (2000). *Business Reporting Research Project: Electronic Distribution of Business Information*. Financial Accounting Standards Board, Norwalk, CT.

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Hamid, F. Z. A. (2005). Malaysian companies' use of the internet for investor relations. *Corporate Governance, 5*(1), 5-14. http://dx.doi.org/10.1108/14720700510583421

Ho, L. J., & Taylor, M. E. (2007). An empirical analysis of triple bottom-line reporting and its determinants: Evidence from the United States and Japan. *Journal of International Financial Management and Accounting, 18*(2), 123-150. http://dx.doi.org/10.1111/j.1467-646X.2007.01010.x

IASC (1999). *Business Reporting on the Internet*. International Accounting Standards Committee, London: UK.

Inchausti, B. (1997). The influence of company characteristics and accounting regulation on information disclosed by Spanish firms. *European Accounting Review, 6*(1), 45-68. http://dx.doi.org/10.1080/096381897336863

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305-360. http://dx.doi.org/10.1016/0304-405X(76)90026-X

Kang, H., & Gray, S. J. (2011). The content of voluntary intangible asset disclosures: Evidence from emerging market companies. *Journal of International Accounting Research, 10*(1), 109-125.

Kelton, A. S., & Yang, Y. (2008). The impact of corporate governance on internet financial reporting. *Journal of Accounting and Public Policy, 27*(1), 62-87. http://dx.doi.org/10.1016/j.jaccpubpol.2007.11.001

Khadaroo, M.I. (2005). Business reporting on the internet in Malaysia and Singapore: A comparative study. *Corporate Communications, 10*(1), 58-68. http://dx.doi.org/10.1108/13563280510578204

Khanna, T., Palepu, K. G., and Srinivasan, S. (2004). Disclosure practices of foreign companies interacting with US markets. *Journal of Accounting Research, 42*(2), 474-508. http://dx.doi.org/10.1111/j.1475-679X.2004.00146.x

Khlif, H., & Souissi, M. (2010). The determinants of corporate disclosure: A meta-analysis. International Journal of Accounting and Information Management, 18(3), 198-219. http://dx.doi.org/10.1108/18347641011068965

Koreto, R., J. (1997). When the bottom line is online. *Journal of Accountancy, 183*(3), 63-65.

Li, J., Pike, R., & Haniffa, R. (2008). Intellectual capital disclosure and corporate governance structure in UK firms. *Accounting and Business Research, 38*(2), 137-144,146,149,151-159. http://dx.doi.org/10.1080/00014788.2008.9663326

Lymer, A. (1999). The Internet and the future of corporate reporting in Europe. *European Accounting Review, 8*(2), 289-301. http://dx.doi.org/10.1080/096381899336041

Marston, C. L., & Polei, A. (2004). Corporate reporting on the internet by German companies. *International Journal of Accounting Information System, 5*(3), 285-311. http://dx.doi.org/10.1016/j.accinf.2004.02.009

Nepal Rastra Bank [NRB]. (2010). *Unified Directives.* Kathmandu, Nepal: Author.

Nunnaly, J. (1978). *Psychometric Theory* (2nd Ed). New York, NY: McGraw-Hill Book Company.

Oyelere, P., Laswad, F. & Fisher, R. (2003), Determinants of internet financial reporting by New Zealand companies. *Journal of International Financial Management & Accounting, 14* (1), 26–63. http://dx.doi.org/10.1111/1467-646X.00089

Pokhrel, D. R. (2007). Corporate governance in Nepal. *Socio-Economic Development Panorama, 1*(1), 39-53. Retrieved from http://nepjol.info/index.php/sedp/

Securities Board of Nepal [SEBON]. (2010). *Annual Report 2009-10*. Kathmandu, Nepal: Author.

Tagesson, T., Blank, V., Broberg, P., & Collin, S.O. (2009). What explains the extent and content of social and environmental disclosures on corporate websites: A study of social and environmental reporting in Swedish listed corporations. *Corporate Social Responsibility and Environmental Management, 16*(6), 352–364. http://dx.doi.org/10.1002/csr.194

Thapa, R. B, (December 14-15, 2008). *Corporate Governance: Need & Significance in Nepalese Banking System*. Paper presented in a conference at Public Administration Campus of Tribhuvan University, Kathmandu, Nepal.

Trabelsi, S., Labelle, R., &Laurin, C. (2004). The management of financial disclosure on corporate websites: A conceptual model. *Canadian Accounting Perspectives, 3*(2), 235–259. http://dx.doi.org/10.1506/UQXT-3L0K-N9XK-99E1

Wang, K., O, S., & Claiborne, M.C. (2008). Determinants and consequences of voluntary disclosure in an emerging market: Evidence from China. *Journal of International Accounting, Auditing and Taxation, 17* (1), 14-30. http://dx.doi.org/10.1016/j.intaccaudtax.2008.01.001

Xiao, J. Z., Yang, H., & Chow, C.W. (2004). The determinants and characteristics of voluntary Internet-based disclosures by listed Chinese companies. *Journal of Accounting and Public Policy, 23* (3), 191-225. http://dx.doi.org/10.1016/j.jaccpubpol.2004.04.002

Zikmund, W., Babin, B.J., Carr, J.C., & Griffin, M. (2010). *Business research methods* (8th ed.). Mason, OH: Thomson/South-Western.

Notes

Note 1. NRB maintains a pool of eligible candidates for appointment as professional directors by banks and financial institutions in Nepal.

Note 2. The disclosure index used for this study is available from the author, on request.