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The Impact of Bank-Specific Attributes on Web-Based Disclosure Practices of Global Banks

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ABSTRACT

This paper examines the extent of web disclosure practices of the top thirty global banks. The paper also investigates the impact of bank-specific characteristics such as bank size, financial performance and corporate governance on web disclosure practices. To analyse the extent of web disclosure practices, a disclosure index of 101 items of information was formulated. To check the hypotheses of the study, an OLS regression framework was estimated on a sample of the top thirty global banks. Descriptive analysis indicates that global banks' web disclosure is at an acceptable level as the mean value was 73. The results show that large sized banks and banks that follow good corporate governance practices extensively use their websites to disclose information. On the contrary, financial performance negatively affects the extent of web-based disclosure in a global context. The study contributes to the existing literature of web-based disclosure and the findings are useful for managers and investors. For managers it helps to meet the actual and potential informational needs of investors and for investors it helps in the decision to invest in a richer informational environment and better-assessed firm value.

Keywords: Web-based disclosure; global banks

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INTRODUCTION

The web has played an important role to disclose information and helps the market to be efficient. Moreover, the web has created a new environment for companies who want to disseminate information to existing shareholders and to attract potential ones. Jones and Xiao (2003) reported in their study that web-based disclosure will be gaining more and more importance in the near future.

Web-based disclosure refers to the use of internet technology (WWW) by organizations to communicate financial and non-financial information (Lymer et al., 1999). Moreover, the diffusion of insider information of the company into the public domain is known as disclosure. Dissemination of timely, easily assessable and relevant information to investors is the main requirement for the financial market to be efficient.

The phenomenon has mammoth benefits which include paperless annual reports linked with cost saving in printing, ease of access, widespread dissemination of information (Boubaker et al., 2011). Moreover, environmental disasters are the prime concern in today's scenario; hence, the most important advantage of paperless information distribution is a positive step for environmental protection. Furthermore, Web-based disclosure has a vital significance for various stakeholders in terms of the easy availability of global information from anywhere and at any time which assists in investment decisions. Moreover, it has played a paramount role to increase firm value of companies by creating good signals about their financial condition to investors with the help of information dissemination on the internet. Thus, web-based reporting is useful for stakeholders as well as for organizations.

Nowadays, the study of communication through the web is of particular interest. However, web-based disclosure is at the discretion of companies as companies are independent to disclose information according to their requirements due to a lack of standardized regulations on internet reporting (Henchiri 2011). But the US Securities and Exchange Commission (SEC) has adopted the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) filing system and made it compulsory for larger organizations to provide their financial information on the web. Moreover, the System for

Electronic Document Analysis and Retrieval (SEDAR) is utilized by the Ontario Securities Commission in Canada to disclose information on the internet. In other countries, web-based disclosure is still voluntary.

One of the initial studies on web disclosure practices of companies was conducted by Petravick and Gillet (1996). They found that most of the studied companies provided financial information on their websites. It indicates that companies considered the internet as an important medium to distribute information. Several other subsequent pieces of research show that the web nowadays is the prime source to release information (Aljifri and Hussainey, 2007; Mohamed et.al, 2009; Siala et.al, 2014; Kaya 2014; Bhatia and Tuli, 2017)

This study has two objectives. First, to analyze the extent of web-based disclosure of the top thirty global banks worldwide. The second is to investigate the impact of a bank-specific attributes on the extent of web disclosure practices. The selection of global banks worldwide was motivated by two concerns.

First, to the best of our knowledge, there is only one study that was carried out by Savvides and Savvidou (2012), and they analyzed 30 banks in ten countries to check the level of disclosure practices of market risks, is concerned with global banks. They found that there are more variations across banks in different countries and large banks provide more risk-related information than smaller banks. A few studies have made a comparative analysis of web disclosure practices of only two or three countries such as Sukla and Gekara (2010) which investigated web disclosure practices of Indian and Chinese companies. Chatterjee and Hawkes (2008) explored the top 30 Indian and New Zealand companies in relation to web disclosure. Another study was conducted by Debreceeny and Gray (1999) and they examined web disclosure practices of 45 corporations in the United Kingdom, France, and Germany. Thus, it is clear from the above discussion that these researches provide descriptive shreds of evidence on web disclosure practices of only two or three countries. Therefore, this study explores the top thirty banks at the international level which are from 11 different countries. Apart from this, the study also focuses on the various attributes such as bank size, corporate governance and financial performance to investigate their impact on the extent of web disclosure. Moreover, prior

research has focused on the content of annual reports (Hossain, 2008; Bokpin, 2013; Lipunga, 2014; Kaya, 2014; Nahar et.al, 2016). However, the current study pays attention to the information disclosed on different web pages of a bank's website.

Second, there are a number of studies which were conducted on various sectors other than banks (Alsaed, 2006; Henchiri, 2011; Elzahar and Hussainey, 2012; Roberts et.al, 2012 industry (13; Ho and Taylor, 2013; Haddad et.al, 2017; Sandhu and Singh, 2019). Only a few studies have been found which are related to the investigation of web-based disclosure of the banking industry (Budissusetyo and Almilia, 2008; Menassa, 2010; Narendra Sharma, 2013; Samanta and Dugal, 2016). Thus, this study attempts to examine web-based disclosure practices of global banks and tries to identify the impact of bank-specific attributes on the web disclosure level.

The remainder of this paper is organized as follows: Section II discusses prior research on web-based disclosure, section III presents the hypotheses while section IV describes the research methodology. Finally, section V discusses the results and presents the conclusion.

REVIEW OF LITERATURE

The phenomenon of web-based disclosure is widely acknowledged in different countries such as in UK. Craven, and Marston (1999) examined the leading companies in 1998 to check the level of financial information disclosure on the web. They found that the size of a company has a statistically significant positive relationship with the use and extent of disclosure on the Internet. But there was no significant association between industry type and disclosure. Ponte et.al (2006) explored websites of European financial companies to investigate the extent of information disclosure on Basel II and to check the impact of firm size on web disclosure. They found that web disclosure is better in larger companies than smaller corporations, thus firm size influences the disclosure practices. Elzahar and Hussainey, (2012) investigated the disclosure trend of 72 UK non-financial companies. Their findings indicated that larger companies are more likely to disclose more information. Moreover, the level of disclosed information is positively influenced by industry type. On the contrary firm-specific attributes such

as liquidity, profitably, leverage, cross-listing, and corporate governance mechanisms have no impact on disclosure level.

In Spain, Cinca et.al, (2007) found a positive impact of different variables such as size, internet visibility and financial performance on web disclosure in different companies in Spain. Alvarez et.al. (2016) investigated 110 companies in different countries to check the impact of various factors such as size, leverage and civil law on CSR. The findings showed that size, leverage, and civil law have a positive impact on disclosure.

Apart from this, there are various studies conducted in different countries such as in France, Boubaker et.al (2011) produced evidence by using a sample of 529 French-listed companies on the positive influence of larger companies, audit firm size and dispersed ownership structure on web disclosure level. Other web disclosure related studies in different countries can be found in Japan (Marston 2003); in China (Liu and Eddie 2007), in the US (Kaya, 2014), in Ghana (Tsamenyi et.al, 2007; Mensah, 2011; Bokpin, 2013); in Indonesia (Almilia and budissusetyo, 2008; Pertiwi, 2013); in India (Hossain, 2008; Garg and Gakhar, 2010; Kaur and Kaur, 2015; Samanta and Dugal, 2016; Bhatia and Tuli, 2017; Kaur and Kaur, 2017), in Jordan (Roberts C et.al, 2012; Haddad et.al, 2017;), in Malaysia (Haat et al, 2008; Arussi et.al, 2009; Akhtaruddin and Haron, 2010; Ho and Taylor, 2013; Narendra Sharma, 2013), in Bangladesh (Khan, 2010; Nahar et.al, 2016; Ahmed and Khan, 2016), in Turkey (Kilic, 2016).

There are a number of studies conducted on web disclosure in Arab countries such as in Qatar (Hossain and Hammami, 2009); in Oman (Mohamed et.al, 2009); in UAE (Aljifri and Hussainey, 2007; Alsaeed, 2006; Hassan, 2009; Momany and Pillai, 2013). In Middle Eastern countries, Abdi et. al. (2018) examined the factors which have an impact on the level of web disclosure of 172 listed companies. They found that company size, gearing, and audit firm size have a positive impact on web disclosure level. Some studies worked upon a comparative approach to assess the disclosure practices of different countries such as (Chatterjee and Hawkes, 2008; Henchiri, 2011; Savvides and Savvidou, 2012; Siala et.al, 2014).

All the studies discussed above were carried out on web disclosure of one particular country or two or three countries. Moreover, the researchers

focussed mainly on the economic aspects i.e. the examination of the impact of firm-specific attributes such as size, profitability, firm age, industry type, liquidity leverage, and audit firm size. Lately, researchers have investigated the impact of corporate governance practices on the web disclosure level (Hossain, 2008; Haat et al, 2008; Khan, 2010; Alfraih and Almutawa, 2017).

Despite the wealth of empirical research in the region on web-based disclosure across the Globe, only a few studies have quantified the level of web disclosure practices of corporations in different countries at one platform such as Debreceeny and Gray (1999); Baumann and Nier (2004); Abdi et.al., (2018). Besides, the impact of corporate governance mechanisms was also not appropriately considered in these studies. Thus, this study attempts to check the nature of the relationship between bank size, financial performance (financial factors) and corporate governance mechanisms (non-financial factor). Hence, the current study checks the impact of financial and non-financial factors collectively on web-based disclosure practices of top global banks worldwide. Bank size was captured by the total asset of the company, financial performance was measured as return on assets and corporate governance was quantified by the ratio of non-executive directors on the board, audit committee chaired by a non-executive director and separation of the position of the CEO and the chairman. The comprehensive web disclosure index comprising 101 items was formulated based on prior studies to assess disclosure practices.

The findings reveal that bank size and corporate governance mechanisms (measured as the ratio of non-executive directors in the board and separation of the position of the CEO and chairman position) are more likely to engage in web-based disclosure practices. However, financial performance (ROA) negatively affects the level of web disclosure practices. Besides, the audit committee chaired by the non-executive director has no relation to web disclosure level.

This study makes a significant contribution to the existing literature. We are not aware of any study that has analysed the combined effect of economic and non-economic variables on a sample of top global banks worldwide. A prior study on cross country analysis is that of Debreceeny et.al., (2002) which evaluated the impact of firm-specific attributes on web disclosure practices of financial information only. The findings may

vary in case of a collective investigation of financial and non-financial information of web-based disclosure. Secondly, there exists a difference between disclosure practices of banking and non-banking companies. To the best of our knowledge, almost all previous studies are concentrated on non-banking companies. Thus, the findings of prior studies may not be relevant within a banking sector context. Third, web-based disclosure is a voluntary aspect of companies. Thus, there is a lack of a regulatory framework of web disclosure. Owing to this, the findings of the current study will be of interest to regulators and policymakers to frame policies for standard formats of web disclosure practices.

Theoretical Framework and Hypothesis Development

Several theories elucidate the reasons for companies to reveal voluntary information (web-based information). These theories such as the Agency Theory, Signaling Theory, and Political Cost Theory have the assumption that the companies perceive benefits from disclosure. These theoretical studies on disclosure provide evidence that voluntary information disclosure mitigates the effects of asymmetrical information on the cost of capital and also ameliorate stock market liquidity (Leuz and Verrecchia, 2000). The theoretical arguments on the explanatory variables of voluntary information disclosure are discussed below.

The Agency Theory can be described as an agency relationship in which two parties (principal and agent) get involved in a contract and the agent has to deliver services on the behalf of the principal. For this, some decision-making authorities have been given to the agent. It is presumed that the agent will not always act in the interest of the principal. Owing to this, conflicts can arise which results in incomplete and asymmetrical information flow. Thus, the Agency Theory asserts that appropriate information disclosure can reduce conflicts between management (agent) and stakeholders (principal) and can bring the interest of the management in line with the interest of the stakeholders (Jensen and Meckling, 1976; Urquiza et.al, 2010; Shehata, 2014). Size, profitability, gearing and corporate governance have been identified as some of the determinants of voluntary information, associated with agency problems.

First, given that larger companies have a greater number of contracts which make them more complex than smaller ones, agency cost depends

on company size. To reduce these costs, larger companies disclose more voluntary information (Urquiza et.al, 2010). Second, with the increase in the proportion of debt in capital structure, agency costs are also increased. Thus, the Agency Theory predicts that highly leveraged firms have more obligations to disclose more information to their long term and short-term creditors than less leveraged companies (Urquiza et.al, 2010). Third, more profitable companies have to disclose more information to investors to obtain more contracts so that the manager can ameliorate their compensation arrangements (Giner, 1997). Lastly, companies that follow corporate governance mechanisms such as more non-executive directors in the board, separation of the position of the CEO and chairman and presence of an audit committee, may have more information disclosure (Kelton and Yang, 2008; Yap et al. 2011; Sandhu and Singh, 2019)

The Signaling Theory was developed to reduce information asymmetry in the labor market (Spence, 1973). This theory implies that the management of a company has as its interest to provide ‘good news’ to the market to enhance the value of their shares. Thus, the theory propounds that providing more reliable information to stakeholders generates a good signal in the market about the image of a company (Urquiza et.al, 2010; Siala et.al, 2014). Company size and financial performance are factors that influence the decision of a company to avoid under evaluation of their shares (Giner, 1997).

In large companies, there may be more asymmetrical information flow, to overcome this issue, big companies disclose more voluntary information (Urquiza et.al, 2010). Moreover, the firm with a high profitability index will tend to provide more information to the market, to retain investors’ confidence (Singhvi and Desai, 1971).

The Political Cost Theory asserts that regulators make decisions based on the information made available to them (Watts and Zimmerman, 1986). Thus, companies disclose more voluntary information to minimize political costs. Firm size and financial performance are the incentives for companies to publicize more information to reduce political costs. Larger firms have to bear more political costs which results in large amounts of information disclosure (Urquiza et.al, 2010). Moreover, it is expected from a more profitable firm to circulate more information to justify their profit level and to avoid legal obligations (Giner, 1997).

Prior literature has employed several explanatory variables of voluntary information disclosure such as size, profitability, corporate governance, leverage, and listing status based on the underlying theories. Based on the above discussion, the current study employed three determinants-company size, financial performance, and corporate governance attributes and analyzed the impact of these variables on the extent of web disclosure practices of global banks. The study focussed on the determinants which are more likely to influence web disclosure level.

Bank Size

The size of a company was found to be a significant explanatory variable to explain the variation in the level of disclosure made by companies. Most of the previous disclosure studies in different countries have empirically shown that company size has a positive relationship with the level of web-based disclosure i.e. (Craven and Marston, 1999; Marston, 2003; Ponte et.al., 2006; Alsaeed, 2006; Cinca et. al., 2007; Liu and Eddie, 2007; Hassan, 2009; Menassa, 2010; Henchiri, 2011; Elzahar and Hussainey, 2012; Savvides and Savvidou, 2012; Bokpin, 2013; Kaya, 2014; Samanta and Dugal, 2016; Nahar et.al, 2016; Kilic, 2016; Haddad et.al, 2017). According to the Agency Theory, large companies have to bear more agency costs due to asymmetrical information flow in the market (Jensen and Meckling, 1976). These costs can only be reduced by delivering more information to market participants. The Political Cost Theory also explicates that large companies have to disclose more information as these firms are more publicly visible which results in capturing the attention of more financial analysts, and as a result, the companies are under pressure to disclose more information. Moreover, the availability of sufficient resources in larger companies enables them to collect, analyze and present information on a large scale at a minimum cost than smaller firms (Alsaeed, 2006). On the contrary, Aljifri and Hussainey (2007) report that company size has no impact on disclosure level. The following directional hypothesis was formulated based upon the above discussion:

H1: There is a significant positive relationship between bank size and the extent of web disclosure.

Financial Performance of Bank

The main focus of corporate disclosure is to present the company at increasing firm value and reducing the risk of being undervalued by the market. According to the Signaling Theory, more profitable companies have incentives which help the companies to distinguish themselves from less profitable companies and attract investors for more capital (Grossman and Hart, 1998). The empirical literature on voluntary disclosure provides mixed pieces of evidence on the relationship between a company's financial performance and disclosure. Some studies proved a positive relationship between the two (Cinca et al., 2007; Liu and Eddie, 2007; Hossain, 2008; Omar and Simon, 2011; Mensah, 2012; Momany and Pillai, 2013).

On the contrary others found no relationship between financial performance and disclosure level (Marston, 2003; Ahmed et.al, 2017;). Surprisingly, a significant negative association has also been reported between disclosure level and financial performance (Bhatia and Tuli, 2017). Moreover, Skinner (1994) found that companies voluntarily disclose information about their earning to spread negative news in the market which leads to the reduction of legal liability. Based on the discussion, the following hypothesis was constructed:

H2: There is a significant positive relationship between the financial performance of a bank and the extent of web disclosure.

Corporate Governance Mechanisms

The study considered three variables of corporate governance namely the ratio of non-executive directors in the board, the separation of the position of chairman and CEO and an audit committee chaired by non-executive directors, to analyze the relationship between corporate governance and web disclosure level. Previous literature has mixed results on these variables. Firstly, some studies provide shreds of evidence that corporate governance measured as the ratio of non-executive directors improve the disclosure level in companies (Hossain, 2008; Khan, 2010). On the contrary, Ahmed and Khan (2016) reported an insignificant relation between these two. Secondly, Alfraih and Almutawa (2017) found that role duality negatively affected the disclosure level. In contrast, Sanchez et.al (2011) claimed that role

duality has a positive influence on strategic information disclosure. Lastly, to the best of our knowledge, no study on corporate governance measured as audit committee chaired by non-executive which has any impact on web disclosure has been found. The above discussion leads to the formulation of the following hypotheses:

H3a: There is a significant positive relationship between the ratio of non-executive directors on the board and the extent of web disclosure.

H3b: There is a significant positive relationship between the separation of the position of chairman and CEO and the extent of web disclosure.

H3c: There is a significant positive relationship between an audit committee chaired by a non-executive director and the extent of web disclosure.

RESEARCH METHODOLOGY

Sample

The sample of the study included the top thirty global banks worldwide (Annexure A). The banks were selected from the banker database, which is a service provided by the Financial Times. This database has huge information on financial data for the 5000 leading banks of the world, in more than 160 countries. The selection of banks was based on asset size. To collect the data, the websites of the banks were used and the websites were visited between September and December 2018. Various types of information were collected under seven categories. These categories were general information, financial information, investor-related information, corporate governance information, and ease of accessibility, technological aspects, and timeliness.

Formulation and Scoring of Disclosure Index

A disclosure checklist was constructed based on previous studies by Pirchegger and Wagenhofer (1999), Craven and Marston (1999), Debreceeny et al. (2002), Abdelsalama and Streetb (2007), Alvarez et.al (2008), Boubaker et.al (2011), Henchiri (2011) and Mensah (2012). The disclosure index comprised of 101 items of information which were computed for thirty sampled global banks. Then these items were categorized under different headings such as general information of the bank, investor relation

information, financial information, corporate governance information, ease of accessibility, timeliness of information and technological aspects information.

The scoring of the web-based disclosure index was done based on previous literature. In the literature, there are two major disclosure index approaches which are the unweighted and weighted disclosure index approaches. Hossain (2009) employed the unweighted or binary approach in which one is assigned to the disclosed item otherwise zero. In the second approach, weights are assigned to disclosed items according to the importance of the item in the disclosure index. These weights are more than zero and less than one. If the item is not disclosed, then a zero is granted.

The present study utilized the unweighted approach as it gives equal importance to all the elements of the disclosure index. Owing to this, the binary technique is more relevant than the weighted approach. In this approach, if the bank discloses the item of information then one is assigned and vice-versa. The method initially computes the disclosure score which is the ratio of the actual number of items disclosed and the total number of items in the disclosure index (101).

$$\mathbf{WDIS} = \sum_{j=1}^n d_j$$

Where, **WDIS** = Web disclosure index score

d_j = if the bank discloses the item then one is assigned otherwise zero

n = the number of information items in the index which are expected to be disclosed by bank.

Variable Measurement

The study used three explanatory variables to check the impact of these variables on the web-based disclosure level. First, the bank size which was measured as the natural logarithm of the total assets of the bank. Second, financial performance was measured as the return on asset (ROA) ratio. Last,

corporate governance which was measured as the ratio of non-executive directors in the board, the separation of the position of the CEO and the chairman in the company (dummy variable) and the audit committee chaired by a non-executive director (dummy variable).

Table 1: Summary of Variables

Variable name	Description	Notations
Bank size	Natural logarithm of total assets of the bank	(LAS)
Financial performance of the bank	Return on Assets (ROA) (net profit divided by total assets)	(ROA)
Corporate governance	1. The ratio of non-executive directors in the board (non-executive director/total number of directors)	(RONEDIB)
	2. Separation of the CEO and chairman position (Dummy variable)	(SCCP)
	3. Audit committee chaired by a non-executive director (Dummy Variable)	(ACCBNED)

Note: Table represents the definitions and notations used throughout the regression

Univariate Analysis Techniques

The current study used two types of univariate analysis techniques; the first is the descriptive analysis which included mean, median, standard deviation, minimum, maximum, kurtosis, and skewness. The second univariate technique used was correlation analysis, which was used to test the correlation between the dependent variable and each of the independent variables. Spearman’s rank correlation (non-parametric univariate test) was performed to check for significant relationships between the extent of web-based disclosure (dependent variable) and each of bank attributes (five independent variables). Correlation was used to measure the strength and direction of a linear relationship between two variables.

Multivariate Analysis Technique

Multivariate analysis is used to handle three or more variables at a time. Specifically, multivariate analysis is utilized to test the linear relationship between a single dependent variable and a set of combined independent variables. Multivariate analysis is a more powerful technique to test the

relationship between dependent and independent variables than univariate analysis. Most of the previous disclosure studies used a multivariate ordinary least square (OLS) regression model to check the relationship between the dependent variable and independent variables (i.e. Hossain, 2008). Hence, the Ordinary least square (OLS) regression model was used to test the relationship between the extent of web disclosure score (dependent variable) and three commercial bank attributes (independent variables, i.e. bank size, the financial performance of the bank, corporate governance: the ratio of non-executive directors in the board, separation of CEO and chairman, audit committee chaired by the non-executive director) and determine which of these three independent variables are significant in explaining the variations in web disclosure levels among global banks. The multivariate ordinary least square (OLS) regression model is represented by the following equation:

$$TWDIS = \alpha + \beta_1 LAS + \beta_2 ROA + \beta_3 RONE DIB + \beta_4 SCCP + \beta_5 ACCBN ED + \epsilon$$

Where:

TWDIS = Total web disclosure index score (dependent variable)

LAS = Logarithm of asset size

ROA = Return on asset

RONE DIB = Ratio of non-executive directors in the board

SCCP = Separation of CEO and chairman position, the dummy variable

ACCBNED = Audit committee chaired by a non-executive director, dummy variable

β = Model coefficient

α = Constant or intercept

ϵ = Error term

ANALYSIS AND DISCUSSION

Descriptive analysis

Descriptive statistics can be observed from Table 2 that the extent of web-based disclosure is quite good as the mean value is 73 percent with a standard deviation of 6 and ranges from 59 to 84. It implies that none of the banks disclose all items in the disclosure index, but the mean values

indicate widespread utilization of the web to communicate with investors. Table 2 also exhibits that bank-specific attributes such as bank size (LAS), return on asset (ROA), the ratio of non-executive directors in the board (RONEDIB) have a varied range.

It can be seen from Table 2 that bank size (LAS) has a mean value of 7%, with a standard deviation 19, and ranges from 6 to 7. As also shown in Table 2 that return on asset (ROA) ranges from -1.32 to 3, with an average of 56 percent, and the ratio of non-executive director (RONEDIB) has a mean value 67 percent, with minimum 17 percent and with maximum 93 percent. The descriptive statistics of other variables such as the separation of CEO and chairman position (SCCP) and audit committee chaired by a non-executive director (ACCBNED) are also shown in Table 2. The descriptive results elucidate that the mean value of separation of CEO and chairman (SCCP) is 87 percent with a standard deviation of 34 percent and the audit committee chaired by a non-executive director (ACCBNED) has a 97 percent mean with a SD of 18 percent.

Table 2: Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
WDIS	0.73	0.72	0.84	0.59	0.06	-0.44	3.06
LAS	7.00	7.01	7.37	6.73	0.19	0.14	1.71
ROA	0.56	0.49	3.00	-1.32	0.76	0.47	5.52
RONEDIB	0.67	0.75	0.93	0.17	0.23	-0.51	1.87
SCCP	0.87	1	1	0	0.34	-2.15	5.65
ACCBNED	0.97	1	1	0	0.18	-5.19	28.03

Note: * WDIS= (Web disclosure index score), LAS (Logarithm of asset size), ROA (Return on asset), RONEDIB (% of total number of directors in the board), SCCP (Dummy variable for separation of CEO and Chairman Position), ACCBNED (Dummy variable for audit committee chaired by non-executive director)

Correlation Analysis

The Spearman Rank Correlation was used to assess the relationship between variables which is exhibited in the Table 3. The table results present that bank size (LAS) has a positive correlation ($r = 0.31$) with disclosure score (WDIS) and the relationship is also significant ($p = 0.09$). RONEDIB and SCCP is also positively correlated ($r = 0.14$) ($r = 0.24$) but not significant as the p value is 0.45 and 0.19 respectively.

On the contrary, the univariate analysis indicates that the extent of web-based disclosure (WDIS) is negatively associated with ROA ($p = 0.27$, $r = -0.20$) and ACCBNED ($p = 0.90$, $r = -0.02$). All in all, the results are in line with the hypotheses framed in the current study.

Table 3: Spearman’s rank correlation matrix

Variables	DIS	LAS	ROA	RONEDIB	SCCP	ACCBNED
WDIS	1					
LAS	0.31** (0.09)	1				
ROA	-0.20 (0.27)	0.17 (0.35)	1			
RONEDIB	0.14 (0.45)	-0.377** (0.04)	0.21 (0.25)	1		
SCCP	0.24 (0.19)	-0.13 (0.49)	-0.26 (0.16)	-0.36** (0.05)	1	
ACCBNED	-0.02 (0.90)	0.21 (0.26)	0.46** (0.01)	0.02 (0.91)	-0.07 (0.70)	1

*P-values are presented in parentheses: ()
The significant value of correlation is 0.05 or 0.01 or 0.10.*

Assessing the model validity

Normality

From the descriptive analysis of dependent and independent variables as displayed in Table 2, it can be seen that the dependent variable (WDIS) is normally distributed as the value of standard kurtosis is not exceeding ± 3 . While LAS and RONEDIB are also normally distributed as the standard value of kurtosis is not exceeding ± 3 . Bank’s ROA is not normally distributed as the value of kurtosis (more than ± 3). The Jarque-Bera test was performed and the test accepted the assumption of normality of residuals ($p = 0.8544$).

Stationarity

The ADF Unit root test which exhibits that mean and variance should remain constant over a while. Unit root test results showed that all series of dependent and independent variables are stationary.

Multicollinearity diagnostic

The other important assumption of OLS regression is multicollinearity. It becomes necessary to check whether collinearity is a problem before running OLS, using the variation inflation factor (VIF).

Table 4 shows that all independent variables have VIF values of less than 10. Thus, it can be concluded that multicollinearity did not create any problem and the results can be interpreted with more confidence.

Table 4: Multicollinearity Test Result (VIF)

Variables	VIF
LAS	1.38
ROA	1.43
RONEDIB	1.53
SCCP	1.29
ACCBNED	1.30
Mean	1.39

Homoscedasticity of residuals

Homogeneity of the variance of the residuals is an important assumption of OLS regression. The White's test was performed to check for the homoscedasticity of residuals. The test results led to the acceptance of the null hypothesis (White's test: $p = 0.1161$), that the errors are normally distributed. Thus, the results can be interpreted with more confidence.

Multivariate Analysis

The multivariate technique is more appropriate to assess the relationship among variables. The regression model indicates that all significant variables have the signs which are expected in hypotheses. These results are also supported by the outcomes already obtained from univariate analysis.

Table 5: Outcomes of OLS Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-89.39	39.78	-2.24	0.03
LAS	20.72	5.39	3.84	0.00*
ROA	-2.76	1.40	-1.96	0.06*
RONEDIB	0.16	0.047	3.49	0.00*
SCCP	8.34	2.97	2.80	0.00*
ACCBNED	0.55	5.66	0.09	0.92

R-squared= 0.48

Adjusted R -squared= 0.37

S.E. of regression= 4.87

F-statistic= 4.45

Durbin-Watson stat= 2.1

Probability (F-statistic)= 0.01

The significant value of the coefficient is at 0.05, 0.01 or 0.10. Note: LAS (Logarithm of asset size), ROA (Return on asset), RONEDIB (% of the total number of directors in the board), SCCP (Dummy variable for separation of CEO and Chairman Position), and ACCBNED (Dummy variable for audit committee chaired by the non-executive director)

Results of OLS regression displayed in Table 5 reveals that the regression model is highly significant as the p-value is 0.01. The value of the adjusted R-squared is 0.37. It means that OLS regression analysis can explain 37 percent of variations in the WDIS of selected global banks. The results of hypotheses are discussed in the following:

H1: Size of the bank (LAS)

According to the results of correlation analysis, bank size (LAS) has a positive and significant relationship with the level of web disclosure score (WDIS). The regression model results also define the same relation. The results of the regression model as shown in Table 5 indicate that the size of a bank (LAS) has a positive and significant impact on the level of web disclosure as the regression coefficient of the variable is 20.72 with p-value 0.00. Thus : *“There is a significant positive relationship between bank size and the extent of web disclosure practices” is not rejected.*

Larger banks are more likely to disclose a huge amount of information to investors to take the benefits of decreased agency costs (Jensen and Meckling, 1976). They have the advantages of lower competitive costs (Ferguson et al., 2002) and lower cost of disclosure (Ho and Wong, 2001). Moreover, large banking companies have more expertise which assists them to adopt the World Wide Web as a source of information dissemination.

The study results are in line with the outcomes of Marston (2003), who found that company size is significant determinant of web disclosure level in Japanese companies. In the United Kingdom and New Zealand, Siala et.al (2014), found that larger firms disclosed more voluntary information. Craven and Marston (1999), also found that the size of a company has a statistically significant positive relationship with the use and extent of disclosure on the Internet in the UK.

Overall, the findings indicate that web-based disclosure is affected by bank size. Larger banks provide more information on their websites than smaller banks.

H2: Financial performance of bank (ROA)

The correlation analysis shows that financial performance measured by ROA has a negative correlation with the extent of web disclosure (WDIS). OLS regression model results as exhibited in Table 5 are also in line with correlation analysis as there is a negative and significant association between ROA of the banks and WDIS. The regression coefficient of the independent variable (ROA) is -2.76 and $p = 0.06$.

Thus H_2 : “*There is a significant positive relationship between financial performance of the bank and the extent of web-based disclosure.*” is rejected. Hence, it can be inferred that the financial performance of a bank does not influence web disclosure level.

It can be concluded that more profitable banks disclose a lesser amount of information in the market. The findings are in line with Skinner (1994) who claimed that companies voluntarily disclose information about their earning to spread the negative news in the market which leads to the reduction of legal liability.

Some other studies support the current findings. Bhatia and Tuli (2017), found that financial performance has a negative impact on disclosure. In contrast, Omar & Simon (2011) showed that profitability influences the level of disclosure in Jordanian companies. Thus, there is a mixed result on the relationship between financial performance and disclosure.

H3a: Ratio of non-executive directors on the board of the bank (RONEDIB)

According to the results of correlation analysis, the proportion of non-executive directors (RONEDIB) has no impact on the level of web disclosure (WDIS). But the regression analysis results reveal that RONEDIB has a positive and significant relationship with the dependent variable (WDIS) as ($r = 0.17$) and ($p = 0.00$). Hence H_{3a} : *“There is a significant positive relationship between the ratio of non-executive directors of the bank and the extent of web-based disclosure”* is not rejected. Thus, it can be concluded that corporate governance, measured by the proportion of non-executive directors in the board has a positive influence on the level of web disclosure practices. The analysis shows that sound corporate governance practices lead to better web disclosure practices. The outcome of the analysis is in line with other disclosure studies such as in Bangladesh; Khan (2010) found that non-executive directors have a significant impact on CSR reporting of the companies.

The outcome is also consistent with the Agency Theory as good corporate governance practices could lead to the reduction of asymmetrical information between managers and stakeholders. Thus, corporate governance measured as the ratio of non-executive directors may improve web-based disclosure to overcome the agency problem.

H3b: Separation of the position of the CEO and chairman of the bank (SCCP)

OLS regression analysis results reveal that the influence of separation of the chairman and CEO position (SCCP) on the level of web disclosure practices (WDIS) is positive and statistically significant ($p = 0.00$). Hence H_{3b} : *“There is a significant positive relationship between separation of the position of chairman and CEO of the bank and the extent of web-based disclosure.”* is not rejected. So it can be inferred that corporate governance, measured by the separation of the position of chairman and CEO has an impact on the level of web disclosure. Overall it can be concluded that the separation of the position of chairman and CEO can lead to better disclosure practices in selected global banks worldwide.

The findings are consistent with Alfraih and Almutawa (2017) who found that role duality has a negative impact on corporate disclosure level. In contrast, Sanchez et.al (2011) claimed that role duality has a positive influence on strategic information disclosure. Thus, there are mixed results in the literature on the separation of the position of CEO and chairman in the company.

H3c: Audit committee chaired by the non-executive director of the bank (ACCBNED)

According to the regression analysis, statistically, the audit committee chaired by a non-executive director (ACCBNED) has an insignificant relationship with the level of web disclosure (WDIS) as ($p=0.92$). Hence H_{3c} : *“There is a significant positive relationship between audit committee chaired by a non-executive director and the extent of web-based disclosure”* is rejected. It can be inferred from the model results that corporate governance, measured as an audit committee chaired by the non-executive director does not influence web disclosure practices of global banking companies. It indicates that the independence of the audit committee has no impact on the web disclosure level.

Overall, it can be concluded that good corporate governance practices are the backbone of today’s banking industry. The globalized pressure helps to enforce the implementation of good corporate governance practices which ameliorate the disclosure practices of the banking sector worldwide. Theoretically, The Agency Theory, Stakeholders Theory, and the Legitimacy theory are the origins of corporate governance. All in all, these theories propound that the disclosure of relevant and more information can reduce agency problems in the corporate sector.

Table 6: Summarized Results of the Study

Hypotheses	Study Results	Results are in line with prior studies
H1: There is a significant positive relationship between bank size (LAS) and the extent of web disclosure.	Accepted There is a significant positive relationship	Craven and Marston (1999) Marston (2003) Siala et.al (2014)
H2: There is a significant positive relationship between the financial performance (ROA) of the bank and the extent of web disclosure.	Rejected There is a significant negative relationship	Bhatia and Tuli (2017),

H3: There is a significant positive relationship between the ratio of non-executive directors on the board of the bank and the extent of web disclosure	Accepted There is a significant positive relationship	Khan (2010)
H4: There is a significant positive relationship between the separation of the position of CEO and chairman and the extent of web disclosure.	Accepted There is a significant positive relationship	Alfraih and Almutawa (2017)
H5: There is a significant positive relationship between the audit committee chaired by a non-executive director and the extent of web disclosure.	Rejected There is no significant positive relationship	To the best of our knowledge, no study has been found on this variable.

CONCLUSION

The study extends previous research by investigating the impact of explanatory variables on web-based disclosure level of global banks. For this purpose, the top thirty global banks worldwide were examined on a comprehensive disclosure index checklist capturing both financial and non-financial attributes of the banks' websites. The findings reveal that the index score ranged from 59 to 84 and the overall mean score was 73 percent indicating that disclosure of web-based information is quite impressive in global banking companies. But there still exists a considerable need for improvements in web disclosure of banks worldwide.

The current study provides empirical shreds of evidence that bank size and good corporate governance mechanisms (measured as the ratio of non-executive directors and separation of the position of CEO and chairman) have a positive influence on the web disclosure level of global banks. On the contrary, some findings also show a negative impact of explanatory variables on web-based disclosure levels which include financial performance measured as return on assets and audit committee chaired by the non-executive director does not influence web disclosure level.

The findings are in congruence with the Agency Theory that asserts the complementary relationship between management and shareholders due to the proper disclosure of relevant information. Sound corporate governance practices help managers to take the benefits from increased disclosure of voluntary information in terms of reduced agency costs. This

theory also purports that large companies have to bear more agency costs due to asymmetrical information flow in the market and these costs can only be reduced by delivering more information to market participants. The results are also in line with the Political Cost Theory which asserts that large companies have to disclose more information as these firms are more publicly visible which results in capturing the attention of more financial analysts, and as a result, the companies are under the pressure to disclose more information.

The findings of the study are useful for managers who want to ameliorate disclosure practices to meet the informational needs of actual investors and potential investors. It is also useful from the point of the investor as it helps them to assess the financial condition of the banks to make further investment decisions. The findings can also be useful for policymakers to frame regulations for standardizing formats of information disclosure on websites.

The current study has some limitations in which the prime one is the composition of the disclosure index is based on the subjective judgment. Alteration in the disclosure index can lead to the modification in the results. Moreover, the sample size is small as only the top thirty global banks were considered in the study. An increased sample size can affect the results of the study. In the future, the following issues can be considered for research:

1. The present study is conducted in the banking industry only. Other industries can also be considered.
2. An annual report based longitudinal study should be initiated.
3. The addition of more company-specific attributes will help to understand more insights into the determinants of the extent of disclosure.

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ANNEXURE- I: SAMPLE GLOBAL BANKS

Sr. No	Banks	Country
1	ICBC	China
2	HSBC Holdings	UK
3	China Construction Bank	China
4	BNP Paribas	France
5	Mitsubishi UFJ Financial Group	Japan
6	JP Morgan Chase & Co	US
7	Agricultural Bank of China	China
8	Credit Agricole	UK
9	Bank of China	China
10	Deutsche Bank	Germany
11	Barclays	UK
12	Bank of America	US
13	Citigroup	US
14	Societe Generale	France
15	RBS	UK
16	Mizuho Financial Group	Japan
17	Groupe BPCE	France
18	Banco Santander	Spain
19	Sumitomo Mitsui Financial Group	Japan
20	Wells Fargo & Co	US
21	Lloyds Banking Group	UK
22	UniCredit	Italy
23	UBS	Switzerland
24	ING Bank	Netherlands
25	Credit Suisse Group	Switzerland
26	Bank of Communications	China
27	Royal Bank of Canada	Canada
28	Goldman sSachs	US
29	China Merchant Bank	China
30	Toronto Dominion Bank	Canada