

The Determinants of Voluntary Disclosure in Saudi Arabia: An Empirical Study

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Abstract

Our study has three objectives. The first is to determine the level of voluntary disclosure in Saudi Arabia. The second is to compare this level with that of some other Arab countries. The third is to identify the main drivers of voluntary disclosure in Saudi Arabia. We use a disclosure checklist of 54 items to measure levels of voluntary disclosure. We also use the ordinary least square (OLS) regression analysis to test our hypotheses for a sample of 361 firm-year observations of firms listed on the Saudi Stock Exchange over the period 2007-2011.

We find that the average voluntary disclosure level is 18.38%. This rate is the lowest rate among the other Arab countries studied; the rates ranged from 26.08% in Tunisia to 75.76% in Bahrain. This lowest rate of voluntary disclosure is not commensurate with the size of the Saudi economy which contributes 25% of the total Arab countries' GDP, and is the world's 25th largest exporter/importer. Our analysis also shows that firm size, firm age, firm profitability, auditor specialization, family ownership, and industry type positively affect voluntary disclosure. We find, however, a negative relation between firm leverage and voluntary disclosure. Our analysis also shows that board independence, Big 4 and state ownership have no impact on voluntary disclosure. Our findings should be of interest to the regulating bodies, accounting standards' setters, auditors and managers. These findings should help in recognizing the main drivers of voluntary disclosure and in setting appropriate policies in relation to voluntary disclosure, and hence, encourage firms to disseminate more information voluntarily.

Keywords: Voluntary Disclosure, firm characteristics, corporate governance; Saudi Arabia

1. Introduction

In the business environment, companies are required to disclose minimum levels of information, which is known as mandatory disclosure; if not, they will face sanctions. Therefore, almost all companies comply fully with the minimum levels of the mandatory disclosure (Hassan et al., 2009). However, the current business era makes compliance with this mandatory disclosure neither adequate nor suitable to meet the corporate information users' needs. This raises an urgent need for extra information than is required; this extra information is known as the voluntary disclosure.

Businesses in the current era face information challenges that they never met in the past. First, the current age is the information age, in which information has become a crucial influencer. In other words, any piece of information may make a crucial change to the users' investment decisions; therefore, the present limited mandatory information is not sufficient. Second, the separation of the companies' ownership and management creates what is known as the information asymmetry problem. Traditionally, annual reports are used to minimize this information gap. Lev (1989), Wallace (1988), and Baker and Haslem (1973), however, argue that financial statements do not provide users with adequate information, which increases the information gap between information suppliers (managers) and information demanders (stakeholders). In addition, nowadays, the nature and extent of information demanded are both different and greater than in the past, which means that information asymmetry is larger than in the past. Therefore, to mitigate this problem, companies need to voluntarily disclose more information. Third, recent decades have witnessed financial scandals resulting in the collapse of long-lived companies. We believe that one of the main reasons for these collapses is the concealing and non-disclosure of relevant information, although the failed companies have been found to comply completely with the minimum levels of mandatory disclosure. Consequently, the need for voluntary disclosure has increased.

In order to cope with the information challenges in the current business era, companies are encouraged by the regulating and accounting bodies, pressured by the stakeholders, and directed by the market, to disclose more information than is required. In addition, the regulating bodies have started to set regulations and provide guidelines to help companies provide an effective level of voluntary disclosure. For example, a business reporting research project released by FASB in 2001, entitled "*Insights into Enhancing*

Voluntary Disclosure”, provides guidelines for managers to increase the amount and quality of voluntary disclosure.

Our paper aims to find answers for the following questions: (1) what is the extent of voluntary disclosure in Saudi Arabia?; (2) what is position of Saudi Arabia compared to other Arab countries, based on the extent of voluntary disclosure?; and (3) what are the main determinants of voluntary disclosure in the Saudi Arabia?

Saudi Arabia provides a unique country context for a number of reasons. First, the Saudi Arabia is an Arab emerging country that is different in religious, social and political systems and traditions from developed countries. For example, Islamic principles affect the daily life, business, law, economics and political aspects of the Saudi society. Further, Saudi Arabia has applied a corporate governance code in 2007; this code is affected significantly by the Islamic principles that resulted in introducing Islamic governance characteristics (Albassam, 2014). Second, the economy of Saudi Arabia is a leading in the Arab region, where it represented 25% of the total Arab GDP and 44% of total Arab market capitalization in 2010 (Albassam, 2014; Alshehri & Solomon, 2012). Further, Saudi Arabia holds one quarter of the world’s oil reserves and is one of the largest oil producers in OPEC, about 31% of the total OPEC production in 2010 (Albassam, 2014). Third, the ownership structure in Saudi Arabia is family and state-concentrated, where family-owned firms represent more than 70% of listed firms and Saudi government owns more than 30% of listed firms (Albassam, 2014; Baydoun, et al. 2013; ROSC, 2009). All these aspects motivate us to examine the determinant s of voluntary disclosure in Saudi Arabia, an area that remains really under-researched.

Our analysis shows that the average voluntary disclosure level in Saudi Arabia is 18.38%. This is the lowest rate of the countries studied; these range from 26.08% in Tunisia to 75.76% in Bahrain. This lowest rate is not commensurate with the size of the Saudi Arabian size. Our analysis also shows that firm size, firm age, firm profitability, auditor specialization, family ownership, and industry type positively affect voluntary disclosure. We find, however, a negative relation between firm leverage and voluntary disclosure. Our analysis also shows that board independence, Big 4 and state ownership have no impact on voluntary disclosure.

To the best of our knowledge, only two studies examine the drivers of voluntary disclosure in Saudi Arabia; namely, Al-Janadi et al. (2013) and Alsaeed (2006). Our paper

makes major contributions to research on voluntary disclosure in Saudi Arabia as follows: First, we use a recent and longer period (2007-2011) than Al-Janadi et al. (2013) which cover the period 2002-2003, and Alsaeed (2006) which covers the period 2006-2007. Second, Al-Janadi et al. (2013) investigate the corporate governance impact on voluntary disclosure, while Alsaeed (2006) examines the impact of firm characteristics on voluntary disclosure. Our study investigates the impact of both corporate governance mechanisms and firm characteristics on voluntary disclosure. Third, our study covers a larger number of firm-year observations (361), compared with 87 and 40 by other two studies. Finally, we use a comprehensive disclosure index consisting of 54 disclosure items; while the indices used in the two prior studies consist of only 20 and 21 disclosure items.

Our paper is organized as follows. Section 2 discussed the theoretical framework and relevant literature. Section 3 discusses the development of the hypotheses. Section 4 discusses the methodology. Section 5 discusses the findings. Section 6 concludes.

2. Theories and Literature Review

2.1 Theories explaining the voluntary disclosure variance

Disclosure studies show wide variances in nature and extent of voluntary disclosure across firms within the same industry and country. Some firms are found to voluntarily disclose large amounts of information, while others do not disclose any more. Accounting Researchers around the world examine the potential determinants of disclosure extensively and provide many theories to explain the voluntary disclosure variance. These theories include agency theory; legitimacy theory; signaling theory; capital need theory and stakeholder theory.

Agency theory postulates that companies tend to disclose more information voluntarily in order to reduce the agency costs that arise from conflicts between managers and stockholders (Alves, 2012; Zayoud et al., 2011; Watson et al., 2002; Lambert, 2001). *Legitimacy theory* argues that firms have a social contract with society, and therefore, firms provide greater levels of voluntary disclosure in order to ensure that they comply with the ethics and regulations of that society, as mandatory disclosure may be insufficient (Bazine & Vural, 2011; Rizk, 2006; Guthrie et al., 2004). *Signaling theory* proposes that firms with large levels of voluntary disclosure intend to reduce the information asymmetry and signal the quality and real value of firms by providing more information to parties who

lack information (Bazine & Vural, 2011; Morris, 1987; Ross, 1977). *Capital need theory* suggests that firms resort to disclosing more information voluntarily when they need to raise more funds whether from banks or financial markets (Meek et al. 1995; Hossain et al. 1994). *Stakeholders' theory* assumes that firms should satisfy and meet the interests and the information needs of all stakeholders rather than only the shareholders (Abdel-Fattah, 2008). This theory expects also that large firms are more likely to provide more voluntary information because of the greater stress of large number of stakeholders. We use these theories in developing our research hypotheses.

2.2 The Literature Review

We review relevant literature that examines the voluntary disclosure in developing countries. Using the Egyptian context, Soliman (2013) examines the association between certain firm characteristics and the extent of voluntary disclosure. He finds that firm size and profitability are positively associated with the extent of voluntary disclosure, while auditor size and firm age do not have any significant association. Samaha and Dahawy (2011) find that the overall voluntary disclosure level by Egyptian firms was low (13.43%). They also find a positive association between the ratio of independent directors on the board, profitability and internationality and voluntary disclosure level. However, managerial and governmental ownerships, number of shareholders, auditor type, size, liquidity, leverage and industry type were found not to affect the voluntary disclosure level. Abdel-Fattah (2008) finds that although the voluntary disclosure level found to be low, there was a gradual increase in the extent of total voluntary disclosure among Egyptian firms over the study years 2003-2006. Furthermore, the findings indicate that board size and board composition do affect the extent of voluntary disclosure. Hassan et al. (2006) find that the sample firms publish 90%, on average, of the mandatory disclosure checklist items and 48%, on average, of the voluntary disclosure checklist items prepared by authors. The results show also a general increase in the disclosure levels over the study period 1995-2002. Moreover, public sector firms appear to disclose less information than private sector firms do. Further, firms that are more profitable found to disclose more information than less profitable firms did and large firms found to disclose more voluntary disclosure and less mandatory disclosure.

Juhmani (2013) examines the association between three ownership structure variables and voluntary disclosure for a sample of 41 firms listed on Bahrain Stock Exchange in the year 2010. The results indicate a negative correlation between blockholder ownership and voluntary disclosure, but there was no correlation found between managerial or governmental ownership and voluntary disclosure. In addition, size and leverage were included as control variables, and were found to be positively correlated with voluntary disclosure.

Kolsi (2012) finds that Tunisian firm leverage, audit quality, financial sector and profitability ratio are significant determinants of voluntary disclosure, while ownership structure and firm size have no effect on voluntary disclosure. Htay (2012) finds that Malaysian firms with higher board size, a higher proportion of independent non-executive directors on the board, and a lower proportion of directors' ownership voluntarily disclose more financial accounting information.

Alves et al. (2012) examine the association between corporate characteristics, and corporate governance variables and voluntary disclosure using a sample of 38 Portuguese and 102 Spanish firms in the year 2007. They find that firm size, growth opportunities, organizational performance, board compensation, and the existence of a large shareholder are the main determinants of voluntary disclosure. Furthermore, Bazine and Vural (2011) explore the influence of firm characteristics on voluntary disclosure for a sample of 149 manufacturing firms listed on the Stockholm Stock Exchange across 2001-2009. They find that firm size and industry type affect the extent of voluntary disclosure.

Hossain and Hammami (2009) investigate the voluntary disclosure drivers in Qatar by analyzing annual reports of 25 firms listed on Doha Securities Market for the year 2007. The results indicate that firm age, size, complexity, and assets-in-place are significantly correlated with the voluntary disclosure index; however, the profitability variable was found to be insignificantly correlated. Aljifri (2008) examines annual reports of 31 UAE firms, for the year 2003. He finds significant differences among sectors, but finds insignificant correlation between size, debt-equity ratio, and profitability and voluntary disclosure. In addition, Barako (2007) examines the extent to which corporate governance traits, ownership structure, and corporate attributes affect voluntary disclosure for a sample of listed firms in Kenya during the period 1992-2001. The findings indicate a low level of voluntary disclosure; however, there is a gradual increase in voluntary disclosure during

the study period. Moreover, He finds that corporate governance traits, ownership structure, and corporate traits (i.e. corporate size and industry) affect voluntary disclosure.

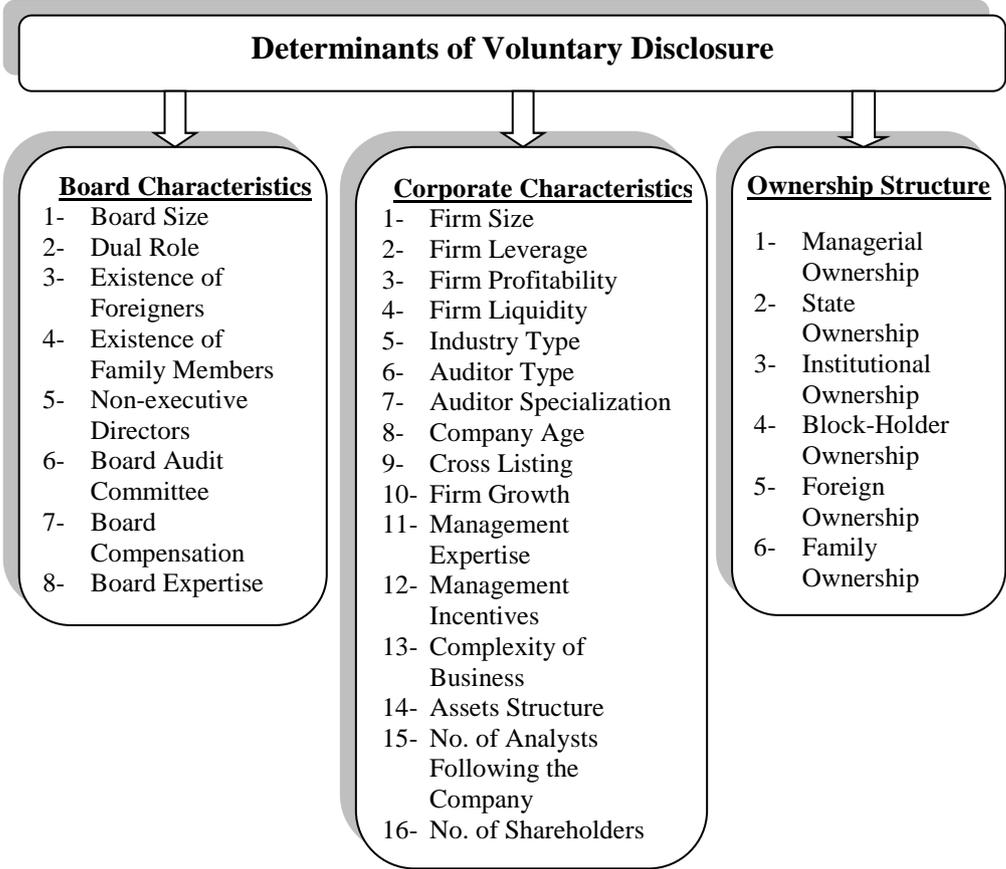
Using the Saudi context, we find only three relevant studies; two of them examine the drivers of voluntary disclosure, while the other one examines the extent of voluntary disclosure. First, Al-Janadi et al. (2013) examine the influence of internal and external corporate governance mechanisms on voluntary disclosure in Saudi Arabia. They collected data from the annual reports of 87 firms for 2006 and 2007 and constructed a disclosure index consisting of 21 items. The results indicate that non-executive directors, board size, CEO duality, audit quality and government ownership contribute positively to voluntary disclosure quality and extent.

Second, Alsaeed (2006) examines the influence of specific variables on the voluntary disclosure using a sample of 40 firms listed on the Saudi Stock Exchange during the period 2002-2003. The results indicate that firm size is significantly and positively correlated with the level of the voluntary disclosure; however, the remaining variables, namely, debt, ownership dispersion, age, profit margin, return on equity, liquidity, audit type, and industry type have no significant correlation with the levels of voluntary disclosure.

The third study conducted in Saudi Arabia is that of Mariq (2009), who examines only the nature and extent of voluntary disclosure in the annual reports of a sample of 52 firms listed on the Saudi Stock Exchange in the year 2005. A disclosure index consisting of 60 items representing the basic items of voluntary disclosure is used. The results indicate that there is a large variance in the extent and nature of voluntary disclosure between the sample firms. However, the study finds a general tendency of firms to disclose voluntarily more information.

Our study offers a number of contributions. First, to the best of our knowledge, we find only two studies that examine the drivers of voluntary disclosure in Saudi Arabia. Al-Janadi et al. (2013) cover the year 2006-2007, while Alsaeed (2006) covers the years 2002-2003. However, this study provides a more recent and longer period 2007-2011. Second, we find that Al-Janadi et al. (2013) focus mainly on the influence of corporate governance variables, while Alsaeed (2006) primarily examines the influence of corporate characteristics. Our study examines the impact of firm characteristics and corporate governance on voluntary disclosure. Third, the disclosure indices used in the two studies

consist of relatively low number of items (21 and 20). However, our study uses a disclosure index consisting of 54 disclosure items. Finally, the two studies analyze relatively small samples (87 & 40) firm-year observations. However, our study analyzes 361 firm-year observations. Figure 1 categorizes the 30 variables that are studied in the disclosure literature as determinants of voluntary disclosure. We classify them into three main categories: board characteristics, corporate characteristics, and ownership structure.



3. Hypotheses Development

Firm Size

Alves et al. (2012), Abdel-Fattah (2008), Brammer and Pavelin (2006), and Chow and Wong-Boren (1987), among others, argue that the larger the firm is the more likely they are to disclose more information voluntarily. The positive relationship between firm size and voluntary disclosure extent may be due to several reasons. First, large firms are more able to afford the additional voluntary disclosure costs than small firms. Second, in the context of stakeholders theory, large firms have more stakeholders pressurizing the management to disclose more information than do small firms. Third, large firms

encounter political costs to a greater extent than small firms; therefore, large firms work to reduce political costs through disclosing more information voluntarily (Abdel-Fattah, 2008; Camfferman & Cooke, 2002; Watts & Zimmerman, 1990; Cooke, 1989). Based on these arguments, we hypothesize that:

Hypothesis 1: *There is a positive relation between firms' size and voluntary disclosure.*

Firm Age

There is a debate as to the level of influence of firms' age on voluntary disclosure. Sehar et al. (2013) argue that new firms disclose more information voluntarily than do old ones. However, Hossain (2008) documents that it is not possible to conclude that the older firms disclose more information than do new firms. Furthermore, Owusu-Ansah (1998) argues that a considerable portion of the new firms' information is related to research and development, and expenditure; therefore, these firms can encounter a competitive disadvantage if they fail to disclose such information. In this regard, this study argues that new firms lack the financial resources and expertise to organize and disseminate more information than is required and these firms prioritize meeting the large set-up costs rather than incurring the additional costs of voluntary disclosure. In addition, new firms may encounter less pressure from stakeholders for voluntary disclosure compared to older ones. Therefore, we hypothesize that:

Hypothesis 2: *There is a positive relation between firms' age and voluntary disclosure.*

Firm Profitability

The majority of disclosure studies propose a positive association between firm profitability and voluntary disclosure. Moreover, this proposition has been justified in each of the four theories' perspectives. First, agency theory argues that managers of high profit firms will disclose detailed information in order to win personal advantages and to justify the compensation package (Barako, 2007; Inchausti, 1997). Second, stakeholders theory suggests that high profit firms will disclose more information to satisfy all stakeholders (Abdel-Fattah, 2008). Third, from the political costs theory perspective, Inchausti (1997) argues that the management of profitable firms discloses more information in order to justify these higher profits. Fourth, signaling theory proposes that profitable firms will disclose more information in order to benefit from its success through raising the price and

value of their shares (Inchausti, 1997; Foster, 1986). In sum, achieving high profits is a main indicator of the management success. This will provide an incentive for the management to exploit this success in order to gain many benefits through the voluntary disclosure, such as strengthening its position, improving its reputation in the business market, and justifying compensation. Therefore, we hypothesize that:

Hypothesis 3: *There is a positive relation between profitability and voluntary disclosure*

Firm Leverage

Despite the conflicting results on the relationship between firm leverage and voluntary disclosure, there are several reasons that justify a positive association. First, high leverage levels raise the agency costs, which encourage managers to disclose more information in order to reduce such costs (Alves et al., 2012). Second, Jensen and Meckling (1976) argue that firms with high debt ratios are subject to high monitoring costs, and therefore, they disclose more information. Third, firms with high debt ratios tend to disclose more information voluntarily in order to reassure their lenders, and to prolong or extend the debt contract period. Fourth, firms committed to large debt contracts are often required to comply with certain debt restrictive covenants, and to show their compliance have to disclose more information than is required. Consequently, we hypothesize that:

Hypothesis 4: *There is a positive relation between leverage and voluntary disclosure.*

Independent Directors

The large ratio of independent directors to total board size confirms the independence of the board, and implies that monitoring results will be more effective as long as the directors are unbiased. Consequently, independent directors may induce the management to disclose more information voluntarily (Abdel-Fattah, 2008). Alves et al. (2012) believe in a positive correlation; however, they could not find empirical evidence to support their hypothesis. Nevertheless, Samaha and Dahawy (2010) and Samaha and Dahawy (2011) do find a positive correlation. Furthermore, Lim et al. (2007) find that firms with higher independent boards disclose more forward-looking and strategic information. However, Soliman (2013) and Al-Shammari and Al-Sultan (2010) find no significant correlation. In sum, this study hypothesizes a positive correlation between board independence and the amount of voluntary disclosure, since independent directors

should conduct their monitoring tasks more effectively and should ask the management for greater disclosure to the stakeholders. Therefore, we hypothesize that:

Hypothesis 5: *There is a positive relation between the ratio of independent directors and voluntary disclosure.*

Auditor Specialization

Auditor specialization is one of the least examined variables in the context of voluntary disclosure; therefore, this study contributes by its inclusion. Auditor specialization is one of the main audit quality determinants, since specialized auditors should provide high quality reassurance results, which, in turn, will affect the voluntary disclosure effectively. Furthermore, Peters et al. (2001) document that the literature concludes that auditor specialization is positively correlated with disclosure quality and transparency. In addition, Peters et al. (2001, p.2) state, "Our evidence supports the view that specialized auditors are employed in order to reduce information asymmetry by lending credibility to firms' disclosure". Therefore, we hypothesize that:

Hypothesis 6: *There is a positive relation between the auditor specialization and voluntary disclosure.*

Auditor Type

Abdel-Fattah (2008, p.198) states, "It has been hypothesized that companies audited by an international big audit firm will disclose more information voluntarily". In addition, Abd-Elsalam (1999) argues that large audit firms work hard to protect their reputation, and they are more independent than small audit firms; therefore, they ask their clients to follow the mandatory disclosure rules, in addition to disclosing more information voluntarily. Moreover, the authors consider that since management hires the external auditors, if they hire one of the big-four, this reveals that the management is ready to disclose more information and there is no intention to conceal any information. Further, a firm audited by a big-four (Big 4) auditor implies that in the client acceptance phase the auditor has concluded, that the client is ready to disclose more information as the auditor requires. Therefore, we hypothesize that:

Hypothesis 7: *There is a positive relation between the auditor type and voluntary disclosure.*

Family Ownership

The family ownership variable is not included in the current study randomly. First, we notice that only a few studies around the world address the family ownership variable in the context of voluntary disclosure, e.g., Ghazwy (2010) and Chau and Gray (2002). Second, the Saudi market is dominated by the family firms; the Saudi industrial and commercial chambers council highlights that 95% of firms listed on Saudi Stock Exchange are family firms, and that of the 100 largest firms in the Kingdom 45 are family firms. Practically, Ghazwy (2010) argues that the family ownership may influence positively the social voluntary disclosure; however, no relationship is concluded. However, this study argues that family firms may tend to disclose more information voluntarily, since these firms compete to gain a social position, create a prestige, and improve the image of their families. Consequently, we hypothesize that:

Hypothesis 8: *There is a positive relation between family ownership and voluntary disclosure.*

State Ownership

States can influence the extent and nature of voluntary disclosure through their ownership in companies. Juhmani (2013) believes in a positive association between state ownership and voluntary disclosure, since governments will require more transparency from the companies' management. However, he could not provide empirical evidence. However, Huafang and Jianguo (2007) do find a positive association. In contrast, Ghazali and Weetman (2006) provide empirical evidence that state-controlled firms tend to disclose less information to protect their political linkages and their beneficial owners. However, we propose a positive influence for a number of reasons. First, we expect that governments will be on the stakeholders' side, since governments work for the public interest. Second, governments want to ensure compliance with corporate governance principles, such as the transparency. Third, there are certain specific issues that governments will require the companies' management to provide greater disclosure, such as the social and environmental impacts. Therefore, we hypothesize that:

Hypothesis 9: *There is a positive relation between state ownership and voluntary disclosure.*

Industry Type

In general, the voluntary disclosure level is expected to differ in nature and extent across different sectors. For example, the Egyptian banks were found to have higher disclosure levels than firms in other sectors. Dahaway (2009) explains that banks, in general, are subject to additional disclosure requirements set by the central banks. In addition, due to the special nature of the financial industry, a considerable portion of disclosure is expected to be different in nature from other sectors. Furthermore, companies in harmful environmental sectors, such as the petroleum, chemical, and fertilizers industries, are expected to disclose voluntarily more information than companies in green sectors, such as the tourism sector. This is because the former companies are under pressure from society and environment protection bodies. Therefore, we hypothesize that:

Hypothesis 10: *There is a relation between the industry type and voluntary disclosure.*

4. Methodology

4.1 Sample

Table 1 shows that our initial sample consists of 694 firm-year observations. We exclude 172 observations because they belong to the financial sector. Furthermore, we discarded another 161 observations with missing data. Consequently, the final sample consists of 361 firm-year observations. All firms are listed on the Saudi Stock Exchange, and the data was collected from the annual reports of the sample firms available at "www.tadawual.com.sa". Our sample period covers years 2007-2011 and, therefore, panel data are used. In this regard, Christodoulou and Sarafidis (2008), among others, argue that panel data increase the estimation efficiency, since this data type increases the observations more than time-series data and cross-sectional data.

Table 1: Study Firm-Year Observations

	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>Total</u>
Initial Sample	111	129	146	152	156	694
Banks & Insurance firms	28	32	36	38	38	172
Missing Data	42	38	34	26	21	161
Final Sample	41	59	76	88	97	361

4.2 Content Analysis and the Disclosure Index

We employ content analysis to examine the nature and extent of voluntary disclosure for two reasons. First, content analysis is prevalent in the disclosure literature and the results of many studies have encouraged the researchers to use its methodology (Alves et al, 2012). This is because of its reliability, validity, and the shortage of other means that can measure the disclosure extent effectively (Gray & Haslam, 1990). Second, unlike other methods, such as questionnaires or field studies, this analysis evaluates the annual reports information without the knowledge of the information communicator, which makes it a discrete analysis (Alves et al. 2012). In addition, content analysis can be computerized or manual. The computerized content analysis can save cost and time, and may reduce the subjectivity. However, it requires the availability of annual reports in the same language and in English in most cases, which is not available in many countries (Abdel-Fattah, 2008). Therefore, this study uses manual content analysis.

Furthermore, we built a self-constructed disclosure index, derived from the literature. The process of disclosure index construction in the majority of studies follows four steps. The first is preparing a checklist that consists of the voluntary disclosure items. Therefore, we constructed a checklist consists of 54 information items classified under 10 different categories (See Appendix A). We developed this checklist based on pioneering studies in this field, including Botosan (1997) and Meek et al. (1995). The second step is employing content analysis to analyze the actual information in the annual reports, and then compare them with the prepared checklist. The third step is scoring each firm for the number of disclosed and non-disclosed items; therefore, we adopt the Dichotomous procedure as it is a common evaluation method. We assign one for each firm-year observation if the item is disclosed and assign zero otherwise. The final step is calculating the disclosure index. Following Hodgdon (2004) and Cooke (1989), among others, we measure the ratio of disclosure index as the actual score given to a firm to the maximum disclosure expected. For example, if a firm in a given year discloses 20 items, then its actual score is 20, and the disclosure ratio = $20/54$, which is 0.37.

4.3 Model Specification

The following ordinary least square (OLS) regression model is employed to examine the study hypotheses:

$$\text{VDINDEX}_{jt} = \gamma_0 + \gamma_1 \text{LogAsst}_{jt} + \gamma_2 \text{LogAge}_{jt} + \gamma_3 \text{ROA}_{jt} + \gamma_4 \text{LEVRG}_{jt} + \gamma_5 \text{BrdIndpe}_{jt} + \gamma_6 \text{Audspe}_{jt} + \gamma_7 \text{Big4}_{jt} + \gamma_8 \text{Famown}_{jt} + \gamma_9 \text{Stateown}_{jt} + \gamma_{10} \text{Ind}_{jt} + \varepsilon$$

Table 2 summarizes the symbols, definitions, and measurements of all the study model variables. Moreover, most measurements of the model variables are consistent with previous relevant studies; specifically, the measurement of the voluntary disclosure index is based on Botosan (1997).

Table 2: Model Variables, Symbols, Definitions, and Measurements

Symbol	Proxy	Measurement
<u>Dependent Variable</u>		
VDINDEX	Voluntary Disclosure Index	Number of items actually and voluntarily disclosed by a given firm divided by the total number of relevant items that should be disclosed (Botosan, 1997)
<u>Independent Variables</u>		
LogAsst_{jt}	Firm Size	LogAsst is measured as natural logarithm of book value of total assets for the firm j and period t.
LogAge_{jt}	Firm Age	Firm Age is expressed as the natural logarithm of years number since establishment, for the firm j and period t.
ROA_{jt}	Firm Profitability	ROA refers to return on assets, and is measured as the ratio of net income to total assets for the firm j and period t.
LEVRG_{jt}	Firm Leverage	LEVRG is measured as long-term debts divided by capital equity.
BrdIndpe_{jt}	Independent Directors	BrdIndpe is the ratio of independent directors to total board size
Audspe_{jt}	Auditor Specialization	Audspe is a dummy variable, which equals one if the auditor is specialized in the client industry, zero otherwise.
Big4_{jt}	Auditor Type	Big4 is a dummy variable, which equals one if the auditor is one of the Big4, zero otherwise.
Famown_{jt}	Family Ownership	Famown is the ratio of shares owned by family members to total outstanding shares
Stateown_{jt}	State ownership	Stateown is the ratio of shares owned by the state to total outstanding shares.
Ind_{jt}: stands for Industry Type and is divided into 5 sub-variables representing 5 different sectors:		
Indptroenrg	Petrochemical Sector	Dummy variable , one if the firm belongs to the petrochemical sector, zero otherwise.
Indagr	Agriculture Sector	Dummy variable , one if the firm belongs to the agriculture sector, zero otherwise.

Indindstin-t	Industrial Sector	Dummy variable , one if the firm belongs to industrial sector, zero otherwise.
Indrelstat	Real Estate Sector	Dummy variable , one if the firm belongs to the real estate sector, zero otherwise.
Indtele	Telecommunication Sector	Dummy variable , one if the firm belongs to telecommunication sector, zero otherwise.

5 Study Results & Discussion

5.1 Descriptive Statistics

Table 3 shows the descriptive analysis, however, only the noteworthy observations are discussed. First, the table shows that the mean of voluntary disclosure index is 18.38, which indicates that only 18.38%, on average of all the disclosure index items are actually disclosed by the sample firms. Second, Table 3 shows that the mean of leverage is 10.50%, which indicates that the sample firms are not highly leveraged firms, and do not suffer debt problems. In addition, a minimum value of zero and a maximum value of 62.10% reveal a large dispersion in firms' debt ratios. Third, the board independence mean is 52.50 %, which implies that about half of the sample firms' directors are independent. Fourth, the mean of auditor specialization is 39.80%, which indicates that specialized auditors, on average, audit about 40% of the sample firms. Fifth, the mean of Big4 variable is 0.637, which asserts that a Big4 auditor audits 63.70%, on average, of the sample firms. Sixth, the mean of family ownership variable is 0.15, which infers that families own about 15%, on average, of the sample firms. In addition, the minimum value of family ownership variables is zero, which indicates that ownership structure of some sample firms does not include family ownership. In contrast, the maximum value of family ownership variable is 0.95, which indicates that the ownership structure of some sample firms comprises of 95% family ownership. Finally, concerning the state ownership variable, its mean is 0.07, and its minimum and maximum values are zero and 0.830, respectively, which indicates that ownership structure ranges from 83% state ownership to zero state ownership.

Table 3: Descriptive Statistics of Model Variables

Variable	Mean	Median	Minimum	Maximum	St.Deviation
VD-INDEX	18.384	17.000	6.000	44.000	7.063
LogAsst	9.242	9.216	7.185	11.047	0.685
LogAge	1.207	1.279	0.000	1.740	0.394

ROA	0.077	0.071	-0.108	0.386	0.094
LEVRG	0.105	0.039	0.000	0.621	0.151
BrdIndpe	0.525	0.500	0.000	1.000	0.223
Audspec	0.398	0.000	0.000	1.000	0.491
Big4	0.637	1.000	0.000	1.000	0.481
Famown	0.151	0.000	0.000	0.950	0.238
Stateown	0.077	0.000	0.000	0.830	0.172
Indptroenrg	0.129	0.000	0.000	1.000	0.336
Indagr	0.158	0.000	0.000	1.000	0.365
Indindstin-t	0.086	0.000	0.000	1.000	0.281
Indrelstat	0.169	0.000	0.000	1.000	0.375
Indtele	0.057	0.000	0.000	1.000	0.233

5.2 Comparison with other Arab Countries

In comparison with the voluntary disclosure magnitudes concluded by prior research on some Arab countries, Table 4 summarizes the rates from the current study and those of ten other studies across the Arab world. The table shows that the voluntary disclosure extent in this study is the lowest (18.38%), while the highest extent is in the study by Juhmani (2013) in a sample of Bahraini firms (75.76%). However, the variation in the voluntary disclosure level may be due to different studies' circumstances such as the study period, and the categories of voluntary disclosure included in the disclosure index, or may be because of differences in the accounting standards followed or the mandatory disclosure requirements among these countries.

Table 4 Voluntary Disclosure Rates in the Arab Region

Study	Country	VD- Mean	Sample Years
Current Study	Saudi Arabia	18.38%	2007-2011
Kolsi (2012)	Tunisia	26.08%	2009-2010
Haddad et al. (2009)	Jordan	28%	2004
Aljifri (2008)	UAE	30.50%	2005-2006
Abdel-Fattah (2008)	Egypt	31.19%	2003-2006
Soliman (2013)	Egypt	32%	2007-2010
Zayoud et al. (2011)	Syria	32.50%	2009
Hossain & Hammami (2009)	Qatar	37%	2008
Al-Shammari (2008)	Kuwait	46%	2007
Hassan et al. (2009)	Egypt	48%	1995-2002
Juhmani (2013)	Bahrain	75.76%	2010

5.3 Correlation Matrix and Multicollinearity Analysis

Table 5 shows the correlation analysis. It shows that the highest correlation between the independent variables is 50.70%; this is between the firm size and the Big4.

The next highest correlation is 48%, between the auditor specialization and the Big4. There is no multicollinearity problem, since Bryman and Cramer (2001), among others, argue that the correlation between the independent variables is not harmful if it does not exceed 0.80 or 0.90, while others document that a correlation of less than 70% does not represent a correlation risk.

Table 5: Correlation Matrix

	vdindex	logasst	logage	ROA	LEVRG	brdindep	audspec	big4	famown	stateown	indptr~g	indagr	indind~t	indrel~t	indtele
vdindex	1.000														
logasst	0.408*	1.000													
logage	0.014	-0.331*	1.000												
ROA	0.109	0.028*	0.196	1.000											
LEVRG	-0.153*	0.479	-0.356	-0.015	1.000										
brdindep	-0.080	-0.135	0.242*	-0.087	-0.094	1.000									
audspec	0.238*	0.382*	-0.182*	-0.088	0.155	0.053	1.000								
big4	0.200*	0.507*	-0.305*	0.113	0.343	-0.230*	0.479*	1.000							
famown	0.219*	0.184*	-0.271*	-0.073	-0.020	-0.176*	0.124	0.264*	1.000						
stateown	0.319*	0.408*	0.141	0.367*	-0.015	-0.042	0.100	0.194*	-0.201*	1.000					
indptroeng	-0.071	0.144*	-0.134	-0.182	0.391	0.102	0.323*	0.199*	-0.195*	-0.113	1.000				
indagr	0.107	-0.247*	0.158*	-0.106	-0.143	0.019	-0.290*	-0.219*	0.111	-0.203*	-0.206*	1.000			
indindst~t	-0.180	0.036	-0.190*	-0.015	0.057*	-0.036*	-0.079	-0.158	0.060*	-0.094	-0.126*	-0.162*	1.000		
indrelstat	0.030	0.011*	-0.093*	-0.045	-0.123	-0.154	0.036	0.056	0.139	-0.183*	-0.179*	-0.231*	-0.141*	1.000	
indtele	0.305*	0.459*	-0.346	0.027	0.233	-0.044	0.136	0.203*	-0.087	0.426*	-0.095	-0.123*	-0.075	-0.107*	1.000

* Significant at 5% level

5.4 Multiple Regression Results

Table 6 summarizes the results of OLS regression analysis. It is apparent that the F-value is 9.390 (P=0.000), which indicates that the study model is statistically significant. Moreover, the adjusted value of the determination coefficient ($Adj.R^2$) = 0.445, which implies that the independent variables explain 45.50% of total variation in the voluntary disclosure index. In sum, the model is a statistically effective for explaining the variation in the extent of voluntary disclosure.

Regarding the independent variables' results, Table 6 shows that the firm size is positively and significantly correlated with the voluntary disclosure (significance level is 1%) which is consistent with the first hypothesis. This result is consistent with the results

of Soliman (2013), Abdel-Fattah (2008), Wang et al. (2008), Alsaeed (2006), Nasser et al. (2002), and Meek et al. (1995). This result asserts that argument of the stakeholders' theory that large firms are more likely to provide more voluntary disclosure, since these firms are under greater pressure from the large number of stakeholders following the large firms.

The table also shows that firm age is positively and statistically correlated with the voluntary disclosure (significance level is 10%). This finding confirms the argument that the older firms have the incentives, resources, and expertise to organize and disseminate more information than do younger firms. Moreover, this argument agrees with that of Soliman (2013), and with the results of Hossain and Hammami (2009).

Moreover, the analysis shows that firm profitability is positively correlated with the voluntary disclosure and statistically significant at 5%, which consistent with the third hypothesis. This result asserts the arguments of agency and political costs theories that managers of high profit firms will disclose more information to gain personal interests, such as creating a good reputation, and to justify the compensation package (Barako, 2007; Inchausti, 1997). Further, the result asserts the signaling theory argument that profitable firms disclose more information to raise their price and value of their shares (Inchausti, 1997; Foster, 1986). This result is consistent with Wang et al. (2008) and Samaha and Dahawy (2011), among others, who argue that higher profits induce managers to supply more information to signal quality. Furthermore, the analysis shows that the firm leverage is negatively and significantly correlated with voluntary disclosure (significance level is 1%). This contradicts the agency theory argument that leveraged firms are more likely to disclose more information to reduce the increased agency costs created because of high debts (Alves et al. 2012). This also contradicts the authors' expectations that highly leveraged firms are more likely to disclose more information voluntarily in order to reassure their lenders that business is stable, renew the existing debts, and signal that they are able to repay the debts whenever due.

We also find an insignificant negative correlation between independent directors' ratio and voluntary disclosure, which inconsistent with our fifth hypothesis that firms with high ratio of independent directors are more likely to disclose more information. This result contradicts that of Samaha and Dahawy (2011) who find a positive correlation. This result also is inconsistent with the agency theory argument that board independence is an

effective corporate governance mechanism that could increase and improve the voluntary disclosure.

In terms of the quality of auditing environment, we find a positive and significant correlation between auditor specialization and voluntary disclosure (significance level is 10%). This result is consistent with the sixth hypothesis and the argument of Peters et al. (2001) that firms audited by specialized auditors improve the audit quality, which in turn, increases the level of voluntary disclosure. However, we find negative and insignificant correlation between auditor type and the voluntary disclosure. This result conflicts with arguments of Abdel-Fattah (2008) and Abd-Elsalam (1999) and the current study's hypothesis that firms audited by one of the Big4 auditors tend to disclose more information voluntarily, since a Big4 auditor attempts to guard its reputation and supports stakeholder through extra disclosure. However, this result is consistent with that of Soliman (2013), Samaha and Dahawy (2011), and Alsaeed (2006).

In terms of ownership structure, on one hand, we find a positive and significant correlation between family ownership and voluntary disclosure (significance level is 5%). This result confirms the current study's argument that family firms tend to disclose more information, since the families wish to improve their families' image and position and to create prestige within the community. Although, Ghazwy (2010) proposed a positive correlation between the family ownership and voluntary disclosure extent, but his results did not confirm his expectation. On the other hand, we did not find significant correlation between state ownership and the voluntary disclosure extent. This result contradicts the study expectations, and those of Juhmani (2013) and Huafang and Jianguo (2007) that the state-controlled firms tend to disclose more information to show their compliance with corporate governance principles, such as transparency. However, this result is congruent with that of Samaha and Dahawy (2011) who find no significant correlation between state ownership and voluntary disclosure.

Finally, looking at the industry type, the results show that petrochemicals sector is positively correlated with voluntary disclosure, and statistically significant at 5%, and both the agriculture sector and telecommunication sector are positively correlated with the voluntary disclosure extent, and statistically significant at 1%. This positive correlation can be justified, since the activities of petroleum and agricultural firms are more likely to negatively influence society and the environment through the diffusion of polluting

substances. In addition, telecommunication firms potentially affect society negatively through the harmful radiation; therefore, these firms tend to disclose more information, particularly social information, to reassure the population and social organizations that they comply with society and environment protection rules. However, the results show no significant correlation for firms in the industrial or real estate sectors.

In sum, the regression results provide evidence that firm size, firm age, firm profitability, auditor specialization, family ownership, and industry type affect positively voluntary disclosure. However, only firms' leverage was found to negatively affect voluntary disclosure, while no significant correlation was found between independent directors' ratio, auditor type, and state ownership and voluntary disclosure.

Table 6: Regression Results

Symbol	Explanatory Variable	Coef.	t-value	Sig.	Pred.Sig	Result
_cons		-29.832	-3.660	0.000	-----	
LogAsst	Firm Size	4.839	5.360	0.000***	+	Accept
LogAge	Firm Age	2.552	1.720	0.088*	+	Accept
ROA	Firm Profitability	9.201	2.230	0.027**	+	Accept
LEVRG	Firm Leverage	-16.870	-5.860	0.000***	+	Reject
Brdindep	Independent Directors	-1.809	-1.140	0.255	+	Reject
Audspec	Auditor Specialization	1.839	1.920	0.056*	+	Accept
Big4	Auditor Type	-0.778	-0.740	0.463	+	Reject
Famown	Family Ownership	5.179	2.080	0.039**	+	Accept
Stateown	State Ownership	1.961	0.470	0.640	+	Reject
Indptroeng	Petrochemicals Sector	2.957	2.080	0.039**	+/-	Accept
Indagr	Agricultural Sector	4.005	3.230	0.002***	+/-	Accept
Indindstin~t	Industrial Sector	-1.599	-1.430	0.154	+/-	Reject
Indrelstat	Real Estate Sector	1.163	0.830	0.407	+/-	Reject
Indtele	Telecommunication Sector	7.486	2.590	0.011***	+/-	Accept
F-value	9.390	* Significant at 1%, ** Significant at 5%, and *** Significant at 10%.				
Prob > F	0.000					
R-squared	.463					
Adj. R²	.445					

6 Conclusion

This study investigates the determinants of voluntary disclosure in Saudi Arabia in the period 2007-2011 by analyzing the panel data of 361 firm-year observations using both content analysis and OLS regression analysis. Moreover, following Botosan (1997) a

voluntary disclosure index consisting of 54 primary voluntary disclosure items was constructed to measure level of disclosure. Our descriptive analysis shows that voluntary disclosure extent, on average, is 18.38%, which is the lowest recorded when compared with the other rates in the Arab region; these range from 26.08% in Tunisia as found by Kolsi (2012), to 75.76% in Bahrain by Juhmani (2013). This low rate in Saudi Arabia is not commensurate with the size and influence of the Saudi Arabia economy. The results also provide evidence on the positive significant association between firm size, firm age, firm profitability, auditor specialization, family ownership, and industry type, and the voluntary disclosure extent. This result implies that these variables are the main voluntary disclosure drivers in Saudi Arabia. However, a negative significant association was found between firm leverage and voluntary disclosure, while no significant association was found between board independence, Big 4, and state ownership, and the voluntary disclosure extent.

Nevertheless, this study has a number of limitations. First, due to data availability, we limit our analysis to ten potential determinants of disclosure. Second, the firm-year observations examined are only 361 and the study period is only 5 years, which are small, relative to the size and age of the Saudi Capital Market.

Our study suggests a number of other avenues for future research. It would be interesting to study the tone of voluntary disclosure in annual reports and to explore the extent to which tone disclosure affects the stock market participants in emerging economies. In addition, Said Ressas and Hussainey (2014) provide evidence that financial crisis affect the tone of disclosure in annual reports. It might be interesting to examine the impact of financial crisis on the disclosure practice in emerging economies. Finally, it would be interesting to extend the present study by looking at the determinants of individual classes of information in emerging economies (i.e. forward-looking disclosure). This research idea has been extensively explored in developed economy (i.e. Abed et al, 2014); however, there has been little evidence on the determinants of individual classes of information in emerging economies.

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Appendix A: Checklist of Voluntary Disclosure Items

<u>Category A:- General Company Information:</u>	
1-	Brief narrative history of the company
2-	Basic organization structure/chart/description of corporate structure
3-	General description of business activities
4-	Date of establishment
5-	Web-address of the company/email address
<u>Category B: Corporate Strategy:</u>	
6-	Management's objectives and strategies/corporate vision/motto/statement of
7-	Future strategy – information on future expansion(capital expenditures)/general
<u>Category C: Financial Performance:</u>	
8-	Brief discussion and analysis of a company's financial position
9-	Qualitative forecast of earnings
10-	Return on equity
11-	Cost-to-income ratio
12-	Earnings per share
13-	Debt-to-equity ratio
14-	Dividend per share
<u>Category D: Accounting Policy Review:</u>	
15-	Discussion on accounting policy
16-	Disclosure of accounting standards uses for its accounts
<u>Category E:- Key Non-Financial Statistics:</u>	
17-	List of top five shareholders of the company
18-	Chairman's/MD's report
19-	Graphical presentation of performance indicators
20-	Performance at a glance – 3 year
21-	Effects of foreign currency fluctuations
22-	Effects of inflation
23-	Information about risk management
<u>Category F: Corporate Social Disclosure :</u>	
24-	Sponsoring public health, sporting or recreational projects
25-	Information on donations to charitable organizations
26-	Supporting national pride/government.-sponsored campaigns
27-	Number of CSR programs
28-	Have their own community program
<u>Category G: Human Resources:</u>	
29-	Health & safety of employees
30-	Number of employees
31-	Employee training
32-	Incentives level
33-	Employment of disabled
34-	Other services to employees
35-	Human rights
36-	Child labor
37-	Offering internship program
38-	Scholarships
39-	Contribution in talent development

40-	Women empowerment
<u>Category H: Community Involvement</u>	
41-	Donations to community
42-	Public welfare
43-	Other activities
44-	Contribution to the national sports
45-	Work to reduce unemployment problem
<u>Category I: Environmental Issues:</u>	
46-	Environment expenditure
47-	Pollution abatement
48-	Environment preservation
49-	Recycling programs
<u>Category J: Corporate Governance Information:</u>	
50-	Directors' engagement/directorship of other companies
51-	Picture of all directors/board of directors
52-	Details about directors (other than name/title)/ background
53-	Number of shares held by directors
54-	List of senior managers (not on the board of directors)/ senior management