

NON-FINANCIAL RISK DISCLOSURE PRACTICE: EVIDENCE FROM SAUDI ARABIAN LISTED COMPANIES

Faizah Alsulami *

* Department of Accounting, Faculty of Business Administration, University of Tabuk, Tabuk, Saudi Arabia
Contact details: Department of Accounting, Faculty of Business Administration, University of Tabuk, P. O. Box 741, Tabuk 71491, Saudi Arabia



Abstract

How to cite this paper: Alsulami, F. (2023). Non-financial risk disclosure practice: Evidence from Saudi Arabian listed companies. *Corporate & Business Strategy Review*, 4(4), 121–143.
<https://doi.org/10.22495/cbsrv4i4art12>

Copyright © 2023 The Author

This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0).
<https://creativecommons.org/licenses/by/4.0/>

ISSN Online: 2708-4965
ISSN Print: 2708-9924

Received: 07.06.2023
Accepted: 06.10.2023

JEL Classification: M41, M48
DOI: 10.22495/cbsrv4i4art12

This study employs content analysis to analyse non-financial risk disclosure (NFRD) practices within the annual reports of Saudi listed companies over eight years (2010–2017). The data gathered shows that the levels of average NFRD are moderate. The descriptive results show that the average level of NFRD in the sample is 35.33%. This number is much lower than that reported in other studies elsewhere (Elamer et al., 2020; Konishi & Ali, 2007; Ntim et al., 2013). For example, Linsley and Shrivs (2006) and Rajab and Handley-Schachler (2009) find that the mean of risk disclosure is 78 and 95 sentences for UK listed firms, respectively. Konishi and Ali (2007) report that Japanese companies offer 47 risk sentences on average. Thus, NFRD in Saudi Arabia appears to be smaller compared to other studies. The low level of NFRD in Saudi Arabia could be mainly clarified by the absence of enforcement. Throughout the study, there were no compulsory requirements for Saudi listed companies to offer information regarding risk or non-financial risk in their annual reports. The rise in the categories of risk-non-financial risk disclosures is more pronounced in the process risk where process risk disclosure grew from 27 (33%) in 2010 to 41 (50%) in 2017. Product, legal, and ethical risk disclosure appeared to be the most frequently disclosed risk, while the Shariah risk is significantly lower. The lack of Shariah risk disclosure can be explained by the fact that only two sectors substantially apply Shariah contracts such as *Murabaha*, *Ijarah*, and *Istisnaa* into their operations. The results of this study have the potential to support those preparing financial reports in firms, as well as regulators to enhance corporate NFRD practices and help investors and other key stakeholders.

Keywords: Non-Financial Risk Disclosure, NFRD, Non-Financial Risk Disclosure Index, Stakeholder Theory, Financial and Non-Financial Firms, Saudi Arabia

Authors' individual contribution: The Author is responsible for all the contributions to the paper according to CRediT (Contributor Roles Taxonomy) standards.

Declaration of conflicting interests: The Author declares that there is no conflict of interest.

1. INTRODUCTION

Due to the worldwide financial crisis touching on corporate scandals, special attention has been drawn to transparency and disclosure practices such risk disclosure by regulators and corporate stakeholders

(Al-Maghzom et al., 2016; Basel Committee on Banking Supervision, 2015; Dobler et al., 2011; Elamer et al., 2020; Elmarzouky et al., 2022; Iatridis, 2010; Oliveira et al., 2011; Solomon et al., 2000). Oliveira et al. (2011) believe firms only aim to disclose enough information in the annual report to

satisfy shareholders' needs. For companies, risk disclosure is quite important because it is a clear reflection of the organisation's annual reporting and long-term financial sustainability. Therefore, organisations more often than not give explanations regarding risk disclosure to elaborate on future forecasts and institutional uncertainty (Elamer et al., 2019; Ntim et al., 2013), though there is an emerging argument on the inadequacy of risk disclosure and the dearth of full transparency from firms in this respect.

This study is motivated by several considerations. First, the crises involving well-known global companies in 1997, 1998, and 2008 resulted from a lack of transparency, and poor disclosure practices (Elamer et al., 2019; Al-Maghzom, 2016; Ntim et al., 2013), and inadequate information related to risk (Barth & Landsman, 2010), particularly for non-financial risks such as operational risk. Non-financial risk disclosure (NFRD) is observed as a key source of financial failures in institutions, mainly when considering the main technological development in the firms' operations, globalisation, and deregulation. In past decades, several companies have drawn attention to identifying losses associated with NFRD, which is due to particular regulatory considerations and huge operational losses¹ in the firms. The failure of stock in the Saudi stock market also revealed several critical weaknesses regarding the efficiency of corporate disclosure and the lack of disclosure, transparency, and risk information, which is supposedly a monitoring device to keep investors safe (Alghamdi, 2012; Al-Maghzom et al., 2016). Regulators and stakeholders put pressure on firms to reveal information related to risk and offer other essential information to decrease uncertainty. The costs and benefits of risk disclosure thus have a serious function in determining the level of risk disclosure practices. Therefore, the field of NFRD is becoming of increasing importance to investigators' decisions in terms of the potential risks associated with their investment (Basel Committee on Banking Supervision, 2001; Elamer et al., 2019; Neifar & Jarboui, 2018).

The current study focuses on the Saudi context for numerous reasons. Saudi companies are exposed to additional diverse kinds of risk due to their educational, social, cultural, and religious context. For instance, Saudi firms face the risk of Shariah non-compliance when they are encouraged by the Saudi government and systems to use Islamic financial contracts such as Murabahah, Ijarah (leasing), and Al-Istisna (commission manufacture). Saudi Arabia is an Islamic country, and the administrative regulations of Saudi Arabia originate from Shariah (Albassam & Ntim, 2017; Al-Shamrani, 2014; Safieddine, 2009). Islamic financial contract systems are based on Islamic principles taken from Shariah, and any violation of these Islamic principles means non-compliance with Shariah. The reason for using Shariah financial

contracts is to prevent any prohibited aspects of investments, e.g., interest rates or the financing of prohibited activities. Funding investments in prohibited activities (such as casino projects) is wholly forbidden in Islam because they are hurtful to society (Molyneux & Iqbal, 2005). From an investor perspective, the risk of such investments can be the involvement of their funds in firms' illegal actions and the non-disclosure of such investments. Dishonesty and untruthfulness are forbidden in Islam. Thus, firms (banks) must disclose their situation and investment involvement to their stakeholders. Since Shariah is an active principle in the business system — e.g., banking — several financial techniques execute the role of the business system based on Islamic rules; thus, each technique conveys its risks. With that in mind, Saudi listed companies are exposed to diverse kinds of risk, which may influence the disclosure of non-financial risk-related information.

At the beginning of 2016, The Saudi Vision 2030 was declared in Saudi Arabia. This is an aspirational financial proposal or plan aiming to maintain the Kingdom's reputation at the core of Arab/Islamic societies as the investment powerhouse and a central area joining three regions. The Vision takes an open economic theory depending on industrialisation and free trade. Making greater use of transparency and accountability is one of the key pillars of this plan, to secure shareholder investments, reduce concerns over business practices, and draw in overseas funds. Therefore, any study concerning corporate disclosure, and specifically corporate risk disclosure, could be regarded as a reaction to enhance the Vision, because risk disclosure enhances transparency and shareholder confidence and maintains external resources at a reduced price of capital (Habtoor et al., 2017; Habtoor et al., 2019). Furthermore, the Saudi stock exchange crisis at the start of 2006 raised important questions about the efficacy of corporate disclosure and developing methods for calculating the costs of risk-related information as a proposed monitoring device to keep stakeholders safe (e.g., shareholders). Lastly, Saudi accounting standards show the benefit of the role of Saudi accounting managers to increase and boost the level and efficiency of disclosure in firms' annual reports, as well as corporate disclosure/risk disclosure. However, no particular standards exist as yet which might help to control risk reporting and risk management. These features make the examination of NFRD practices in Saudi Arabia a motivating matter.

Saudi Arabia is a significant developing economy (Albassam & Ntim, 2017; Al-Filali & Gallarotti, 2012; Al-Maghzom et al., 2016; Alzead & Hussainey, 2017). In 2010, Saudi Arabia's stock market was 44% of the total Arab market capitalisation and 25% of total Arab gross domestic product (GDP) (Hearn et al., 2011; Savard et al., 2009). Saudi Arabia has obtained a valuable economic position as a member of the G20 at the international level since 2008 (Albassam & Ntim, 2017; Al-Matari et al., 2012). It is also one of the largest oil producers of the Organisation of Petroleum Exporting Countries (OPEC). It contributes

¹ In 2006, Lloyds Banking Group and Barclays experienced massive losses of €5.9 billion and €4 billion, respectively. In 2008, Bernard L. Madoff Investment Securities and General Society brought losses of €17 billion and €6.3 billion. In addition, Rabobank and Fondiaria-SAI in 2013 made losses of \$1 billion and €252 million due to various fraudulent actions in their operational risk management.

31% of total OPEC production, and one-quarter of the world's oil reserves are held by Saudi Arabia (Organization of the Petroleum Exporting Countries [OPEC], 2012). It is also extensively involved in foreign investment in both developed and developing countries (Al-Filali & Gallarotti, 2012; Albassam & Ntim, 2017). Therefore, if Saudi Arabia experiences any corporate governance failures, this can have dangerous consequences beyond the Middle East and developing countries. Domestic and foreign shareholders can suffer losses due to a lack of corporate disclosure, which will negatively impact all investments related to Saudi Arabia. Despite its role as a key oil producer, there has been little study of the commerce of Saudi Arabia or other Gulf states (Baydoun et al., 2013).

Lastly, to the best of the researcher's knowledge, the current study makes significant contributions to studies conducted in Saudi Arabia. This study is different from previous studies carried out in Saudi Arabia due to the recent data used and the detailed analysis. The most up-to-date data is used in this study and not simply from a single year with a one-off investigation, but instead is collected in independent ways covering a long period of eight years from 2010 to 2017. More specifically, the period covered in this study is significantly larger than that of previous studies conducted in the Saudi context. For example, Habtoor et al. (2019), Ibrahim et al. (2019), and Alzead and Hussainey (2017) cover the periods 2008–2011, 2012–2015, and 2010–2014, respectively. Habbash et al. (2016) and Al-Maghzom et al. (2016) investigate the periods 2007–2011 and 2009–2013, respectively. Therefore, the sample employed in this study might enhance the generalisability of its results. The objective of this study is to explore corporate NFRD levels and practices within the annual reports of Saudi listed firms over the eight-year period (2010–2017)². This objective is addressed by answering the following research question:

RQ1: What is the level of financial risk disclosure in Saudi listed institutions?

The remainder of this paper is organised as follows. Section 2 discusses the literature review and type of risk disclosure practice. Section 3 outlines the research design. Section 4 provides empirical findings. Section 5 discusses the research results. Section 6 concludes the paper.

2. LITERATURE REVIEW

Disclosure practices play a vital function in protecting stakeholders' interests, and, therefore, they are a significant part of corporate governance reforms (Solomon et al., 2000). Similarly, to promote honesty and increase communal acceptability, firms have reacted to the increasing pressure from stakeholders by voluntarily revealing a larger quantity of risk information (Abraham & Cox, 2007). According to Abraham and Shrivs (2014) and Beretta and Bozzolan (2004), risk disclosure is considered more and more significant to increase

transparency and enhance stakeholder confidence in investment decisions because stakeholders pursue valuable and consistent risk information to ideally discover all risks faced by firms in their activities, including areas such as decision making (Miihkinen, 2013; Solomon et al., 2011). Untrustworthy risk information disclosure could impact investment decision-making approaches and convey the strain of losses to stakeholders (Lajili & Zeghal, 2005; Tan et al., 2017). However, stakeholders require beneficial risk information to direct them in understanding the risk profiles faced by a firm (Miihkinen, 2013).

In explaining the importance of theories, Neuman and Robson (2014) state that the theoretical framework classifies whether and how concepts are related and whether an association exists. Wacker (1998) states that theory is significant for research because it offers a framework for analysis, offers a well-organised method for field development, and clarifies phenomena. In addition, Spira and Page (2010) emphasise that a theoretical framework is required when carrying out research on questions regarding disclosure. Thus, Riahi-Belkaoui (2004) states that accounting theory's key aim is "to provide a basis for the prediction and explanation of accounting behavior and events" (p. 108). Therefore, it is essential to reorganise and understand the theoretical research framework to define the study's path as a whole.

Several theories have been widely used to elucidate corporate disclosure and risk disclosure practice in a large amount of literature. Depending on the literature review relating to various theories in the disclosure accounting literature, stakeholder theory is suitable for developing a theoretical framework for this study — specifically, ethical (normative) and managerial branches of stakeholder theory, where NFRD practices can be investigated in Saudi listed companies. This is supported by Gray et al. (1997), who state that stakeholder theory "defines the influenced groups and explicitly defines what accountability the organisation itself is willing to recognise and discharge" (p. 333).

Stakeholder theory is about the relationship between an organisation and its stakeholders. Freeman (1984) defines stakeholders as "any group or individual who can affect or is affected by the achievement of the firm's objectives" (p. 46), whereas Donaldson and Preston (1995) define stakeholders as "persons or groups with legitimate interests in procedural and/or substantive aspects of corporate activity" (p. 20). According to Chiu and Wang (2015) and Mitchell et al. (1997), the notion of stakeholder theory is proposed to develop management's idea of its function and responsibilities beyond profit maximisation functions to contain interests and claims of non-shareholder groups. Management is anticipated to be accountable to the company's stakeholders by taking on actions known to be significant by its stakeholders, and by reporting information. Directors would, then, balance the interests of all stakeholders, maximising the wellbeing of all stakeholders and mixing several stakeholder interests without favouring a particular group of stakeholders (Freeman & Dmytriiev, 2017). The two

² The sample starts from 2010 since the Saudi corporate governance code was revised in 2010 to organise and evolve the Saudi capital market and enhance the transparency of financial reporting. The sample ends in 2017 since this was the latest year for which data were available when collected — after 2017, risk disclosure became mandatory.

key branches of stakeholder theory are obvious in the literature and these are a managerial branch and an ethical branch (An et al., 2011; Rahman Belal, 2016; Rahman Belal & Owen, 2007; Deegan, 2009; Deegan & Shelly, 2014; Fernando & Lawrence, 2014; Gray et al., 1997; Gray et al., 1995; Guthrie et al., 2006).

In the managerial branch, a company is predicted to be answerable to its financially influential stakeholders, rather than all its stakeholders. This branch is similar to agency theory in that directors maximise shareholders' value, but companies' actions affect their communities and then in maximising shareholders' value, the desires of society have to be accomplished. However, different from the managerial branch, in the ethical branch, corporate directors are required to run the business for the benefit of all stakeholders regardless of whether the management of stakeholders results in enhanced financial performance (Deegan, 2009; Fernando & Lawrence, 2014). Thus, a company is accountable to all its stakeholders rather than only the most influential.

2.1. Type of risk disclosure reporting: Mandatory versus voluntary

In the accounting literature, there are often two types of corporate risk disclosure (CRD), namely mandatory or voluntary (Cooke, 1989; Elshandidy & Neri, 2015; Elshandidy et al., 2013; Ismail et al., 2013). Diamond and Verrecchia (1991) and Gernon and Meek (2001) distinguish between these two types of CRD. Mandatory CRD is defined as information disclosed in company annual reports required by law. Conversely, voluntary CRD is seen as information disclosed in company annual reports that are not mandatorily required. Other authors provide further clarification on this issue when discriminating between mandatory and voluntary CRD. For example, Elshandidy and Neri (2015) indicate that mandatory risk disclosure is limited in the available risk regulations, while voluntary risk disclosure generally appears in the narrative section of a company's annual report. It has been shown that mandatory risk disclosure is associated with less risk than voluntary risk disclosure, which is more risk-prone. Cooke (1992) defines mandatory disclosure as items that firms must disclose due to legal rules; thus, it is the lowest level of information to be disclosed in annual reports. Voluntary disclosure is not mandated; thus, it establishes information supplementary to legal requirements. Typically, a firm voluntarily discloses information to reassure stakeholders that it is a sound firm.

The requirements linking mandatory risk disclosure vary from one country to another. These variations have led to a number of risk disclosure studies, such as Financial Reporting Release (FRR) No. 48 issued by the Securities and Exchange Commission (SEC) in 1997 (Ashbaugh-Skaife et al., 2007; Doyle et al., 2007; Rice & Weber, 2012) and International Financial Reporting Standards (IFRS) on European companies (Abraham & Cox, 2007; Beretta & Bozzolan, 2004; Deumes & Knechel, 2008; Elshandidy et al., 2013; Hill & Short, 2009; Iatridis, 2010; Linsley & Shrivies, 2006; Lopes & Rodrigues, 2007; Miihkinen, 2012; Oliveira et al., 2011; Rajab &

Handley-Schachler, 2009). Mandatory risk disclosure is when organisations comply with risk reporting requirements and must meet the criteria expected by regulators for mandatory risk disclosure (Cooke, 1989). Mandatory risk disclosure means all companies work under the same conditions and accept the same risk disclosure rules. Therefore, the process of mandatory risk disclosure intends to limit the degree of variation in disclosure between companies and limit the effect of company characteristics on the risk reporting process (Khlif & Hussainey, 2016).

Engaging in voluntary risk disclosure gives firms more encouragement and motivation to convey information regarding risks. This engagement likely offers a higher opportunity for increased political visibility and a more reliable degree of financial risk. In addition, regularly engaging in voluntary risk disclosure can balance risk reporting and company characteristics (Khlif & Hussainey, 2016). The same idea is supported by Ahmed and Curtis (1999), who recommend that the balance between mandatory and voluntary risk disclosure reflects corporate disclosure characteristics. According to Lajili and Zegal (2005), voluntary risk disclosure gives company managers the freedom to incorporate additional information they deem useful to disclose.

Developed countries such as the United States and Canada adopt mandatory rules (the disclosure approach) that are essential to guide issues related to the analysis of financial and market risks (Lajili & Zegal, 2005). Lajili and Zegal (2005) indicate that non-financial risk is primarily disclosed through a voluntary process, as noted in the 'material risk exposure' and 'materiality' sections of the Management's Discussion and Analysis (MD&A). Such a risk disclosure option is optimal because it allows business managers to adopt sound selection criteria when determining the right type of information to disclose to external institutions and other public platforms (Lajili & Zegal, 2005). From the discussion, it is clear that there is no mandatory requirement for risk disclosure in the Saudi context. During the period covered in the present study (2010-2017), the sole regulation regarding risk disclosure was Article 10b (3) of the old version of the Saudi Corporate Governance Code (SCGC) that encouraged the managing, forecasting, and disclosing of risks as one of the main functions of the board. In fact, countries often lack specific guidelines on risk disclosure. They require business managers to adopt a personal reflection on risk disclosure based on professional accounting institutions' recommendations and information to determine the best risk disclosure mechanism. As a result, business managers will only disclose risk information when they believe they will benefit from such disclosure; they could then be expected to disclose it voluntarily (Shrivies & Linsley, 2003). Risk disclosed voluntarily might also reflect the strong obligation to Islamic law recommendations by the country because of the dominant presence of Islam. This dominant presence is expected to stimulate the country's accounting system to offer more voluntary disclosure and transparency as the primary principle of the Islamic accountability

context. In general, voluntary risk disclosure brings several benefits to companies, namely corporate reputation, reducing the cost of capital, increasing inventory liquidation, and driving a higher valuation of the firm (Oliveira et al., 2006; Tsakumis et al., 2006).

2.2. Type of risk disclosure reporting: Quantitative versus qualitative corporate risk disclosure

Both financial and non-financial risks have to be quantified to help incorporate the necessary information reflecting financial and economic situations to ensure users have the right information needed to make crucial decisions (Cabedo & Tirado, 2004). Quantification of risk disclosure enhances the credibility of disclosure methods by making them ex-post verifiable (Schrand & Elliott, 1998, p. 280). Further, Linsley and Shrives (2006, p. 391) advise corporates to quantify the size of risk disclosure necessary in enhancing the quality of risk reporting. Such a move is critical in enabling stakeholder access and a better understanding of the potential consequences of such a risk to the company.

On the other hand, Linsley and Shrives (2006) and Mohobbot (2005, p. 120) categorically argue that it is challenging to measure and quantify most types of risk. For instance, value at risk (VaR) can only be used to market risks. To support that, there are some attempts by prior studies to capture the quality of disclosure rather than quantity (Beretta & Bozzolan, 2004, 2008; Jia et al., 2016), where they suggest a new methodology that attempts to measure the quality of risk disclosure. They say that the quality of disclosure is a blend of two aspects, namely quantity and richness. Quantity is defined as the number of sentences disclosed, and richness is defined as the width and depth of disclosure. Coverage and dispersion are components of width. Coverage is defined as the number of subcategories disclosed divided by total subcategories. Dispersion is a measure of how much risk information is concentrated, while depth is a set of measurements that contains the kind of measures such as economic signs if the predictable influence on upcoming performance is disclosed or not, qualitative or quantitative, and outlook profile (if the disclosure includes decisions and actions).

Botosan (2004) criticises the method of measuring disclosure quality suggested by Beretta and Bozzolan (2004, 2008) and Jia et al. (2016). The author claims that their premises of enhancing the latest measure of disclosure quality are not based on strong debates, and the development of a risk disclosure measurement must begin with well-known debates of the features of the information that locate disclosure quality. For example, Botosan (2004) states that this measurement³ is not based on a conceptual framework originating from standard setters like the International Accounting Standard Board (IASB). Indeed, the IASB suggests four qualitative features of the information that make it more useful and meaningful to decision-makers: relevance, reliability, understandability, and

comparability. These features were not given thought by Beretta and Bozzolan (2008) or Jia et al. (2016). Botosan (2004) then tries to develop the latest risk disclosure quality measure according to those four features. She ends by stating that it is very hard to quantify disclosure quality because of the difficulty of determining disclosure quality in a sufficient manner. Furthermore, in case it is possible to quantify disclosure quality, applying this method empirically is impossible due to the need for an excessive verdict, a dearth of information, or considerable expenses (Botosan, 2004).

Nevertheless, the majority of studies relate to corporate disclosure (Abdallah et al., 2015; Abraham & Cox, 2007; Al-Shamrani, 2014; Elshandidy et al., 2013; Elshandidy et al., 2015; Elzahar & Hussainey, 2012; Lajili & Zéghal, 2005; Linsley & Shrives, 2006; Lopes & Rodrigues, 2007; Muzahem, 2011; Rajab & Handley-Schachler, 2009), as they use the quantity of provided information as a proxy for disclosure quality. Studies conducted among a specified category of disclosure can use quantity to indicate the significance of that category (Krippendorff, 1980). Regarding the development of applicable analysis, Beattie et al. (2004) suggest developing a disclosure index, readability scores, texture index, and themes, which are considered critical in the development of the mandatory illustrations of good disclosure practices. Hammond and Miles (2004) emphasise that quality mentions the variety of problems reported, while they are considered powerful in the enchantment of varied interpretations of quality relating to the operational definition of corporate risk disclosure. The process has led to the development of different categories and items of risk disclosures, which are visible and measurable. Accordingly, the current study measures the quantity rather than the quality of risk disclosure.

2.3. Type of risk disclosure reporting: Financial versus non-financial corporate risk disclosure

Risk disclosure in annual reports is divided into two categories, namely financial risk disclosure and non-financial risk disclosure (Linsley & Shrives, 2006; Souabni, 2011). The non-financial risk may not be easily quantified compared to financial risk (Souabni, 2011). As far as financial risk disclosure is concerned, it focuses on the annual report's financial statements section. It has direct effects on assets, liabilities, and cash flows. The disclosure of non-financial risks does not affect the elements of the company's financial statements (Cabedo & Tirado, 2004). Some developed countries, such as Canada, often enhance a process that affects the disclosure of financial risks more than non-financial risks (Lajili & Zéghal, 2005). In contrast, Konishi and Ali (2007) disclose that Japanese companies offer more financial disclosures of non-financial risk-linked information. A study conducted by Linsley and Shrives (2006) among UK companies on risk disclosure found that NFRD accounts for 73.3% of the overall disclosure level.

Therefore, it should be noted that the discrimination between the notion of disclosure of financial risks and that of disclosure of non-

³ The measurement suggested by Beretta and Bozzolan (2004) to determine risk disclosure quality.

financial risks depends on whether the information published is financial or non-financial. Financial information focuses on the results of past events and is obtained using accounting and probability. It is reliably quantifiable while being based on financial consequences and effects. Due to the financial information mentioned in the annual reports, financial risks can be identified, measured, and controlled according to accounting rules (Leopizzi et al., 2020). According to Leopizzi et al. (2020), non-financial information focuses on the future. It is less measurable and is designed to explain the company's activity and its relationship with society and the environment, the evolution of its performance, the fight against corruption, respect for human rights, and labour rights. Ibrahim et al. (2019) and Veltri et al. (2020) indicate that non-financial information is qualitative information. It is approached in a narrative, forward-looking, and non-measurable form. As a result, it does not comply with accounting rules.

Some prior empirical studies found variations in financial and non-financial risk disclosure (Konishi & Ali, 2007; Lajili & Zeghal, 2005; Linsley & Shrivs, 2006; Mohobbot, 2005; Souabni, 2011). A good example is Linsley and Shrivs (2006), who found that companies in the UK disclose more non-financial risks than financial risks.

3. RESEARCH METHODOLOGY

3.1. Sample selection and data collection

This study is based on all sample companies (financial and non-financial organisations) listed on the Saudi Arabian stock exchange (Tadawul) during the period 2010–2017. Excluding companies that had been merged, recently listed, or suspended, and including those with complete data and with the availability of annual reports for all eight years on Tadawul's website, the complete data for 82 out of 179 firms were gathered. The data for the other companies were not available so it is not possible to determine the market share of these companies. The sample starts from 2010 when the SCGC was revised in order to organise and evolve the Saudi capital market and enhance the transparency of financial reporting. The sample ends in 2017, as this was the latest year for which data were available at the time of data collection, and after 2017, risk disclosure became mandatory.

Financial and non-financial firms are included in this study for several reasons. The first reason is that in Saudi Arabia, all companies (financial and non-financial) receive the same expectations and risk disclosure requirements from the Capital Market Authority (CMA). The regulations on corporate governance include the Companies Act of 1965, the SCGC of 2006, and the Listing Rules of 2004 which are applicable across all firms. Thus, it was expected that there might be an overall convergence across all sectors relating to the content of disclosure. The second reason is that Saudi Arabia is an emerging country with very restricted financial markets. As a result, it has a smaller number of publicly traded companies compared to developed countries. Therefore, the exclusion of either

financial or non-financial firms would limit both the size of the sample and the diversity of industrial composition. Third, most previous studies on corporate operational risk disclosure, particularly in the UK, focus on banking sectors (Barakat & Hussainey, 2013). Thus, the present study pursues to examine all sectors (both financial and non-financial) to fill this gap in corporate operational disclosure literature. Moreover, the inclusion of both financial and non-financial corporations is in line with some studies in the literature on corporate governance (Albassam, 2014; Al-Moataz & Hussainey, 2012; Eng & Mak, 2003; Kouwenberg, 2006; Tsamenyi et al., 2007).

This study relies on annual reports as the primary source for collecting the data. The reasons for relying on the annual reports are: the organisations utilise this essential means to transfer messages and communicate to investors (Holland, 1998), the Companies Act of 1965 (Article 89) and the Listing Rules of 2004 (Article 27) require that Saudi firms issue annual reports that comprise financial statements and the board of directors' reports at the end of the fiscal year, and it is also mandatory for Saudi listed companies to release their annual reports on Tadawul. This means that the researcher was able to obtain all the necessary data to support creating a dataset with the least possible missing values. Though the majority of companies report an isolated section on risk practices, the present study is based on risk information reported throughout the annual report. This process is consistent with prior literature (Al-Maghzom et al., 2016; Elshandidy & Shrivs, 2016; Elzahar & Hussainey, 2012; Linsley & Crumpton, 2006; Ntim et al., 2013; Rajab & Handley-Schachler, 2009). The inclusion of the entire annual report is predicted to increase the reliability of the outcomes of the present study as it is not only restricted to the risk reporting section. The NFRD data are taken from the annual reports of each company for each year published on Tadawul's website during the period 2010–2017.

3.2. Measurement of non-financial risk disclosure (non-financial risk disclosure index, NFRDI)

The current study employs a manual content analysis approach in order to construct the non-financial risk disclosure index (NFRDI) and use the sentence as a coding unit. In previous disclosure literature, paragraphs, words, and sentences are used as measurement units of disclosure. This study picks a sentence as a measurement unit because words may not show any sense and cannot be understood unless used in a complete sentence, and it is more reliable than other units (Milne & Adler, 1999). Moreover, using a bigger measurement unit such as a paragraph might contain information unrelated to the risk information context (Ibrahim et al., 2019). Using a sentence as a coding unit might help avoid the duplication problem (Elshandidy & Neri, 2015; Ibrahim et al., 2019).

The content analysis obtained a greater accuracy and larger fame in the disclosure studies (Abraham & Cox, 2007; Kothari et al., 2009; Linsley & Shrivs, 2006). Furthermore, content analysis

guarantees the repeatability and significant references from data (Krippendorff, 2013). Content analysis allows individual assessment of the annual reports' information apart from its main researcher. Therefore, this study uses manual content analysis to measure NFRD quantity like previous studies (Abdullah et al., 2015; Al-Maghzom et al., 2016; Alzead & Hussainey, 2017; Beretta & Bozzolan, 2004; Kamal Hassan, 2009; Helbok & Wagner, 2006; Linsley & Shrivs, 2006; Moumen et al., 2016). The study prefers to use manual content instead of electronic content analysis to measure NFRD. This is due to most of the inspected annual reports being scanned PDF files, which need to be changed from scanned to editable PDF files, and then changed into TEXT files and then used with any of the available advanced content analysis software (Ibrahim et al., 2019). Therefore, the researcher chose to conduct manual content analysis to guarantee validity and avoid any accidental errors during this procedure. Manual content analysis might be subjective; therefore, two independent expert researchers examined eight annual reports coded the operational risk disclosure independently and found insignificant variances for the NFRD score. This method is also adopted by Marston and Shrivs (1991), who state that the index scores awarded to firms can be considered reliable if other researchers can duplicate the findings.

In this study, the following steps were taken to construct the NFRDI. In the first step, an inclusive review of the previous risk disclosure literature was performed to determine which operational risk disclosure items were utilised in previous studies (Abdullah et al., 2015; Al-Maghzom et al., 2016; Al-Shamrani, 2014; Alzead & Hussainey, 2017; Basel Committee on Banking Supervision, 2001; Helbok & Wagner, 2006; Hemrit, 2019; Peasnell, 1997; Institute of Chartered Accountants in England and Wales [ICAEW], 1999; Linsley & Shrivs, 2006; Lipunga, 2014; Miihkinen, 2012; Ntim et al., 2013). Consequently, the researcher recognised some items which were relevant to the present study.

The second stage focuses on reviewing the risk disclosure sections of the Islamic Financial Services Board (IFSB, <https://www.ifsb.org/published.php>) to classify the operational risk disclosure items that should be included in a Saudi listed institution's annual reports.

Based on steps 1 and 2, the NFRDI was constructed by removing some risk disclosure items that are not directly related to NFRD items and changing the terminology to one that is commonly utilised by firms in Saudi Arabia, as per the studies of Abdallah et al. (2015), Al-Maghzom et al. (2016) and Alzead and Hussainey (2017). In addition, Al-Maghzom et al. (2016) mainly focus on banks in Saudi Arabia, Alzead and Hussainey (2017) on non-financial companies, and Abdallah et al. (2015) on financial firms in Gulf Cooperation Council (GCC) countries.

The last step is to send the improved NFRDI for review by accounting expertise members (experts in the area of risk disclosure and financial reporting). Their useful feedback was taken into consideration and the disclosure checklist was modified accordingly. This index focuses on 25 items, divided into eight categories, namely people risk disclosure (PRD), product risk disclosure (PRORD), ethical risk disclosure (ETRD), technology risk disclosure (TERD), process risk disclosure (PRRD), health and safety risk disclosure (HSRD), Shariah compliance risk disclosure (SCRD) and legal risk disclosure (LERD) (see Table 3).

In accounting research, the disclosure index⁵ is often utilised by two approaches, namely weighted and unweighted disclosure index (Kamal Hassan, 2009; Said Mokhtar & Mellett, 2013; Owusu-Ansah, 1998). Some studies apply a weighted disclosure index (Barakat & Hussainey, 2013; Ismail et al., 2013), while other researchers use an unweighted disclosure index (Al-Maghzom et al., 2016; Alzead & Hussainey, 2017; Kamal Hassan, 2009; Said Mokhtar & Mellett, 2013). However, some researchers point out that unweighted and weighted scores generally lead to similar results by including a large number of items (Marston & Shrivs, 1991). From this viewpoint, this study thus applies an unweighted disclosure index through the inclusion of all items, as this is considered to be important (Alzead & Hussainey, 2017; Kamal Hassan, 2009; Said Mokhtar & Mellett, 2013; Oliveira et al., 2011). It uses an unweighted disclosure index because the study does not seek to place emphasis on any particular user group (Alsaeed, 2006; Naser et al., 2006). According to Beattie et al. (2004) and Hassan and Marston (2019), the application of an unweighted disclosure index with a dichotomous scoring system might lead to a relatively greater reduction in subjectivity than in other scoring methods. Therefore, the process may help to limit the bias associated with the disclosure score. This seems to be vital for providing detailed information on the disclosure process. Therefore, the operational risk disclosure index is stated as follows:

$$NFRD = \sum_{i=1}^n d_i \quad (1)$$

where, $d = 1$ if the item is disclosed; $d = 0$ if the item is not disclosed; $n =$ number of items.

To ensure the content validity⁶ of the primary research instrument (NFRDI), it was reviewed independently by two other researchers. The main researcher then obtained the independent researcher's suggestions and comments. The final NFRDI checklists are presented in Table 1.

⁵ Hassan and Marston (2019) define a 'disclosure index' as an instrument used in research to determine the depth of reported information through individual entry analysis in a selected array of information.

⁶ Validity is defined as "the extent to which data collection methods accurately measure what they were intended to measure" (Saunders et al., 2007, p. 614). That is, the index is valid if it exhibits the same thing that the researcher intends to measure (Marston & Shrivs, 1991; Omar & Simon, 2011).

Table 1. Final non-financial risk disclosure index checklists

Categories	Items proposed by the author	Items proposed by the first independent researcher	Items proposed by the second independent researcher	Final index in accordance with the agreement
People risk	4	2	4	3
Product risk	4	3	2	2
Ethical risk	4	4	2	3
Technology risk	5	3	4	3
Process risk	3	2	3	2
Health and safety risk	4	7	6	6
Shariah compliance risk	6	4	3	3
Legal risk	4	3	3	3

For instance, in terms of categories, the main researcher in the primary draft of the index only recommended four items under the 'Health and safety risk' category. However, two more items were included as 'Electrical hazards' and 'Psychosocial risks', proposed by both of the independent researchers after an additional lengthy discussion with the author. Under the 'Shariah compliance risk'

category, the main researcher proposed six items. However, both of the independent researchers recommended the removal of three items, which were 'Mudarabah', 'Musharakah', and 'Qard Hasan'. After further detailed discussion with the author, these items were removed. The final operational risk disclosure checklists are presented in Table 2.

Table 2. Non-financial risk disclosure index

Categories	Type of reported risks	References
People risk: The potential for losses arising from incompetence	1. Lack of experience 2. Skills shortage 3. Leadership shortage	Miihkinen (2012), Ntim et al. (2013), Al-Maghzom et al. (2016)
Product risk: Failure to satisfy end users'/ customers' expectations	1. Price fluctuations of the factors of production (e.g., raw materials) 2. Customer dissatisfaction	Miihkinen (2012), Ntim et al. (2013), Linsley and Shrivs (2006), Al-Maghzom et al. (2016), Abdallah et al. (2015)
Ethical risk: The potential for losses due to moral aspects failure	Corporate risks: 1. Financial losses from asset theft 2. Regulatory violation; fraud 3. Corruption	Ntim et al. (2013), Linsley and Shrivs (2006)
Technology risk: The potential for losses due to technology failure	1. Information technology risks 2. Interruptions in the delivery chain 3. Service obsolescence and shrinkage	Miihkinen (2012), Ntim et al. (2013), Abdallah et al. (2015), Al-Maghzom et al. (2016), Linsley and Shrivs (2006)
Process risk: Failure to meet your responsibilities to your customers or partners	1. Execution failure (risk associated with executive projects like building infrastructure) 2. Product and service failure (issues with suppliers' shipments or the market that disrupt production, operation, sales, and projects)	Ntim et al. (2013), Miihkinen (2012), Linsley and Shrivs (2006)
Health and safety risk: The potential that business activities will have a negative effect on human health or well-being	1. Physical disaster (explosions and fire) 2. Electrical hazards 3. Legal suit 3. Natural disasters 4. Failure in quality controls 5. Psychosocial risks: effects of work stress, bullying, violence, and work-related fatigue	Al-Maghzom et al. (2016), Peasnell (1997), ICAEW (2002); Abdallah et al. (2015), Kamal Hassan (2009), Ntim et al. (2013), Al-Maghzom et al. (2016), Miihkinen (2012)
Shariah compliance risk: Failure to comply with the Shariah rules and principles (IFSB, 2005)	1. Contract risk (<i>Murabaha</i> risk) 2. Contract risk (<i>Ijarah</i> or <i>Mutajara</i> risk) 3. Contract risk (<i>Istisnaa</i> risk)	IFSB (2007), Al-Maghzom et al. (2016)
Legal risk: Potential for loss arising from the uncertainty of legal proceedings	1. Change in regulations 2. Incompliance risk (incompliance with listing rules) 3. Reputational risk/brand name erosion	Ntim et al. (2013), Al-Maghzom et al. (2016), Neifar and Jarbouï (2018) Miihkinen (2012), Linsley and Shrivs (2006), Abdallah et al. (2015)

4. ANALYSIS AND DISCUSSION

4.1. Analysis of the level of corporate non-financial risk disclosure

According to Figure 1, the NFRD level slightly increased from 34.7% in 2010 to 35.9% in 2017. The slight increase in NFRD in 2017 could be explained by the increased non-financial risk in the Saudi economy because of the significant decrease in oil prices, which subsequently turned into a financial disaster in the Kingdom of Saudi Arabia. As a reaction to the extreme decrease in oil prices, the Saudi government put in place an extensive austerity strategy, including cuts to the support for families and companies. This result is

consistent with previous literature (Abraham & Shrivs, 2014; Gulko et al., 2017). Abraham and Shrivs (2014) say that companies' managers reveal more risk information during times of disaster to improve the companies' reputation. Gulko et al. (2017) find that UK companies reported significantly more risk disclosures with enhanced quality in the period of the financial crisis in 2008 than in the period when the economy was constant. This finding is consistent with previous research that reveals risk disclosure rises over the sample period for numerous countries including Saudi Arabia (Al-Maghzom et al., 2016; Alzead & Hussainey, 2017; Ntim et al., 2013; Oliveira et al., 2011).

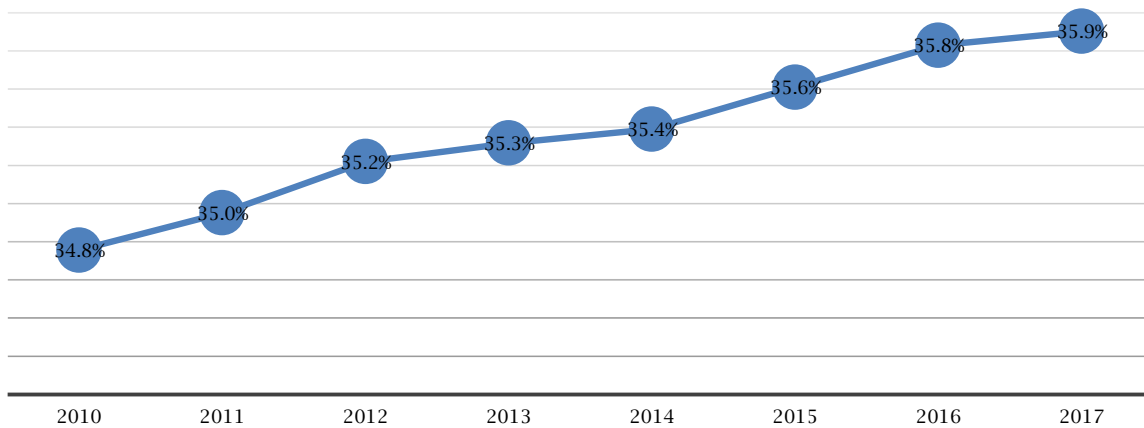
Additionally, the average NFRD level is less than the level revealed by other examinations

performed elsewhere (Elamer et al., 2020; Neifar & Jarboui, 2018). For example, Linsley and Shrivs (2006) and Rajab and Handley-Schachler (2009) find that the mean of risk disclosure is 78 and 95 sentences for UK listed firms, respectively. Muzahem (2011) reports that UAE companies provide, on average, 97 risk sentences, while Konishi and Ali (2007) report that Japanese companies offer 47 risk sentences on average. Thus, operational risk disclosure in Saudi Arabia appears to be smaller compared to other studies.

The low level of NFRD in Saudi Arabia could be mainly clarified by the absence of enforcement. Throughout the study, there were no compulsory requirements for Saudi listed companies to offer information regarding risk or non-financial risk in their annual reports. Nevertheless, there have been

numerous new developments. For example, the updated revised version of the SCGC was released at the end of 2017. This updated version is the first version that emphasises the significance of assigning a risk management committee. The presence of a risk management committee may improve the level of NFRD. One more vital development is the CMA imposes Saudi listed companies to adhere to the requirements of the IFRS from the start of 2018. The implementation of IFRS is anticipated to enhance NFRD practices since the IFRS forces the disclosure of risk including operational risk disclosure. This is supported by Bischof (2009), who discovers that the adoption of IFRS 7 has enhanced the risk disclosure practices significantly in European countries.

Figure 1. Average non-financial risk disclosure level (2010-2017)



Note: This figure presents the average NFRD level for the period 2010-2017. Percentages are calculated as the sum score given to each firm-year observation, divided by the maximum index score to represent the level of actual NFRD.

4.2. Non-financial risk disclosure for all companies per category and year

According to the description of the NFRD level (as discussed in Figure 1), it would be useful to discuss each category of the NFRDI. Table 3 illustrates what categories of non-financial risk Saudi listed firms mostly disclose on average. The percentages of product risk, legal, and ethical risk disclosure are

78%, 50%, and 45%, respectively. It shows that the average level of process risk disclosure has increased significantly from 2010 to 2017. This level rose from 27 (33%) to 41 (50%), followed by the average level of people risk with a score of 12 (14%) rising to 25 (30%), and in third place came the average level of product risk from 59 (72%) to 70 (85%).

Table 3. Average non-financial risk disclosure level for all companies per category (2010-2017)

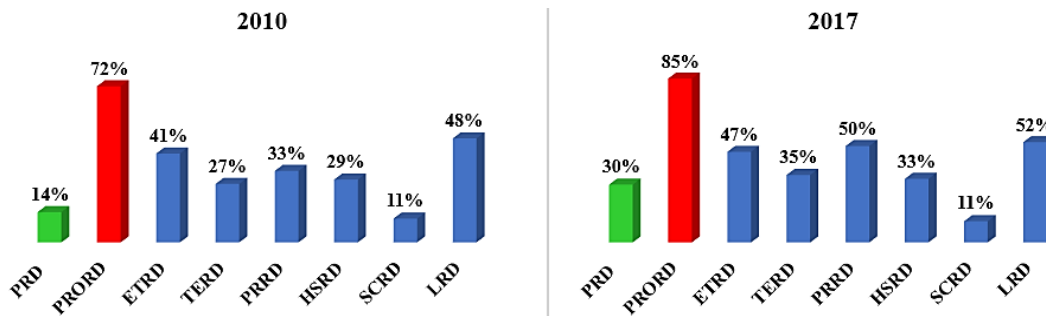
Categories	2010	2011	2012	2013	2014	2015	2016	2017	Average
People risk	14%	16%	15%	18%	18%	19%	24%	30%	19%
	12	13	12	15	15	16	20	25	16
Product risk	72%	73%	73%	79%	78%	80%	84%	85%	78%
	59	60	54	64	64	65	69	70	63
Ethical risk	41%	39%	41%	42%	43%	44%	45%	47%	43%
	34	32	33	34	36	36	37	38	35
Technology risk	27%	27%	29%	30%	32%	32%	35%	35%	31%
	22	22	24	24	26	26	28	29	25
Process risk	33%	34%	36%	40%	40%	43%	48%	50%	41%
	27	28	30	33	33	35	39	41	33
Health and safety risk	29%	30%	30%	29%	29%	30%	31%	33%	30%
	24	24	24	24	24	25	26	27	25
Shariah compliance risk	11%	11%	12%	11%	11%	11%	11%	11%	11%
	9	9	10	9	9	9	9	9	9
Legal risk	48%	48%	50%	48%	50%	51%	52%	52%	50%
	40	39	41	40	41	42	43	43	41

Note: This table presents the average NFRD level for the period 2010-2017. The percentage is calculated as the number of companies disclosed for each item per year divided by the number of companies used in this study.

Figure 2 then illustrates Table 3. It can be seen that all categories related to the NFRDI show a significant increase over the period 2010–2017. Specifically, the average process risk disclosure level represents the highest compared to other non-financial risk disclosures, with an average percentage of 27 (33%) in 2010 and 41 (50%) in 2017. This clearly shows that companies operating in the Saudi Arabian market disclose most in the process risk category. In terms of growth, it can

be noted that disclosure of people risk increased the second highest amount during the 2010–2017 period, rising from 12 (14%) in 2010 to 25 (30%) by 2017. Overall, the results show that most firms experienced a rise in their non-financial risk reporting categories over the sample period. This shows there was an upward trend in the average amount of non-financial risk disclosure being made by the companies in the sample of all listed firms over the period 2010–2017.

Figure 2. Non-financial risk disclosure level in 2010 and 2017



Note: This figure presents the average NFRDI level in 2010 and 2017. Percentages are calculated as the number of companies disclosed for each item per year divided by the number of companies used in this study. Source: Author's elaboration.

4.3. Non-financial risk disclosure per item in each category and per category in each sector

After having a general idea of the non-financial risk disclosure level per category, it is useful to present the average of each category of the non-financial risk disclosure level while considering its different items. It is also helpful to present the average of each NFRDI category in each sector.

4.3.1. People risk disclosure (PRD)

The people risk disclosure (PRD) consists of three items: lack of experience, skills shortage, and

leadership shortage. Table 4 summarises the average level of PRD per item each year. The average level of skills shortage disclosure increased from 13 (16%) in 2010 to 25 (30%) in 2017; this has also enabled a significant increase in the average level of PRD. Moreover, the average leadership shortage disclosure level also increased during the period 2010–2017, from 1 (1%) in 2010 to 12 (15%) in 2017. It seems that the level of leadership shortage disclosure is the lowest compared to the average level of lack of experience disclosure and skills shortage disclosure.

Table 4. Average of people risk disclosure level per item and year (2010–2017)

Category	Items	2010	2011	2012	2013	2014	2015	2016	2017
People risk disclosure (PRD)	Lack of experience	26%	29%	27%	30%	29%	29%	37%	45%
		21	24	22	25	24	24	30	37
	Skills shortage	16%	17%	17%	21%	21%	20%	27%	30%
		13	14	14	17	17	16	22	25
	Leadership shortage	1%	2%	1%	2%	5%	9%	9%	15%
		1	2	1	2	4	7	7	12

Note: The ratio is calculated as the number of companies disclosed for each item per year divided by the number of companies used in this study.

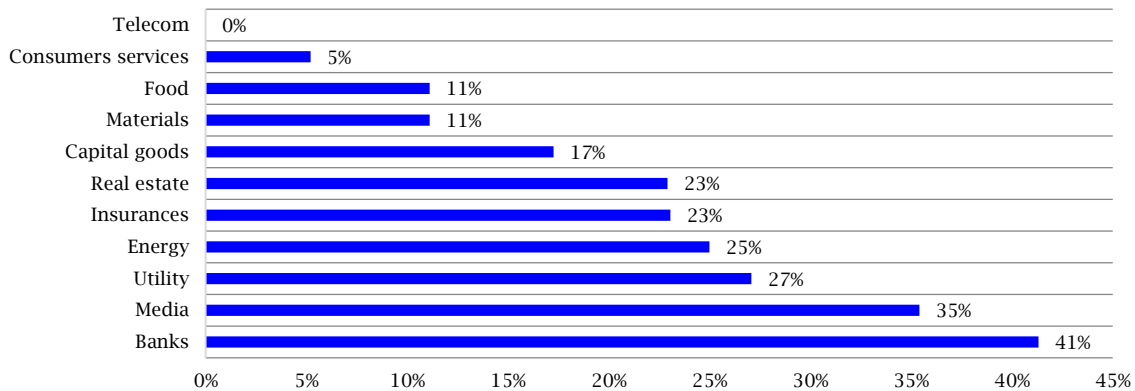
Figure 3 illustrates how the average level of PRD varies across different Saudi sectors. It shows that the average level of PRD in banks is the highest (equal to 41%) compared to other sectors. It also appears that the average PRD level in some sectors is quite low compared to the level of disclosure in banks. These average levels are 27%, 25%, and 23% in the unity, energy, and insurance sectors, respectively. The telecommunications industry does not disclose any information related to people risk. This could be explained by the fact that not all companies choose to disclose all types of operational disclosures and those that do choose disclosure strategies of varying breadth⁷ (Brammer &

Pavelin, 2004). Due to disclosure being costly, it can enforce the costs of measuring and confirming operational impacts as well as the managerial pressure of gathering and disseminating such information (Li et al., 1997; Verrecchia, 1983). Another explanation could be that the telecommunications industry faces rapid changes in its services and products (Alzead & Hussainey, 2017), which could result in companies encountering unanticipated changes in their management team or disclosure strategy/policy. Accordingly, managers are unwilling to reveal more risk information in this type of risk.

⁷ Some firms make voluntary disclosures connecting only to people risk, or only to ethical risk, or only to health and safety, etc. Others have a broader

disclosure policy and might include all of these categories of operational risk disclosure.

Figure 3. Average of people risk disclosure level per sector (2010–2017)



Note: This figure presents the average PRD level per sector for the period 2010–2017. Percentages are calculated as the sum score given to each sector divided by the total PRD items.
Source: Author's elaboration.

4.3.2. Product risk disclosure (PRORD)

Product risk disclosure (PRORD) consists of two items, namely price fluctuations and customer dissatisfaction. Table 5 summarises the average level of PRORD per item each year. The average level of PRORD gradually increased during the period 2010–2017 from 59 (72%) in 2010 to 70 (85%) in 2017 (see Table 3). This increase is generally due to the rise in price fluctuations and customer dissatisfaction disclosure. The average level of price fluctuation disclosure increased slightly between

2010 and 2013, from 67 (82%) in 2010 to 76 (94%) in 2013. However, this level decreased again by 4% to 74 (90%) during the 2013–2014 period. In 2017, it recovered again to reach its maximum level of 79 (96%). The average level of customer dissatisfaction disclosure also experienced a real increase, especially from 2013–2017. There was a downward trend between 2010 and 2012, moving from 51 (62%) to 50 (61%). However, after this period, it began to rise again, from 52 (63%) in 2013 to 61 (74%) in 2017.

Table 5. Average of product risk disclosure level per item and year (2010–2017)

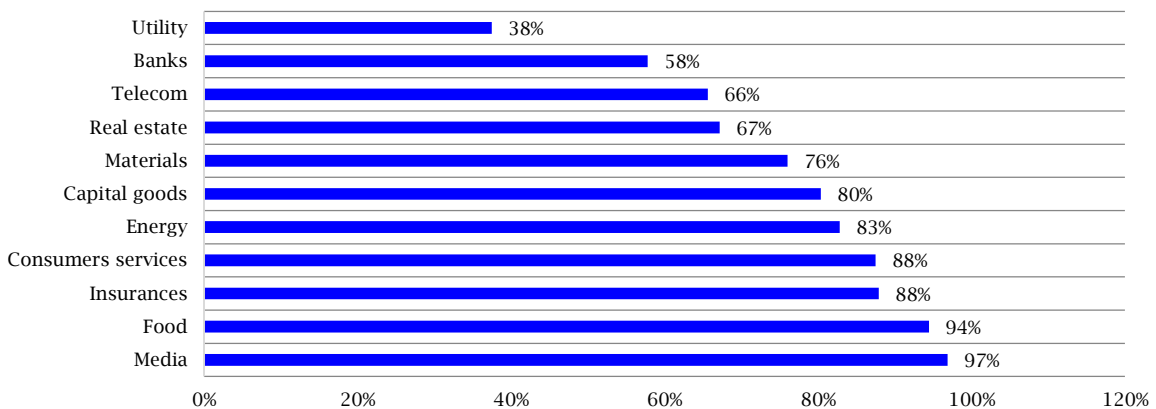
Category	Items	2010	2011	2012	2013	2014	2015	2016	2017
Product risk disclosure (PRORD)	Price fluctuations	82%	84%	84%	94%	90%	94%	96%	96%
		67	69	69	76	74	77	79	79
	Customer dissatisfaction	62%	62%	61%	63%	66%	66%	72%	74%
		51	51	50	52	54	54	59	61

Note: This percentage represents the number of companies disclosed for each item divided by the number of companies used in this study.

Figure 4 shows that the average level of PRORD in utility is the lowest compared to all other sectors, equal to 38%. It should be noted that the rest of the sectors have a high average level of PRORD. In fact, the most remarkable average level is in the food industry, where it reached its maximum level of 94% during the period 2010–2017. This is followed by

the media sector, where the average level of PRORD reached 90%. Then, for both the insurance and the consumer service sectors, the average PRORD level reached 88%. Next comes the energy sector, whose average level reached 83%, and finally the capital goods sector, where the average level of PRORD reached 80%.

Figure 4. Average of product risk disclosure level per sector (2010–2017)



Note: This figure presents the average PRORD level per sector for the period 2010–2017. Percentages are calculated as the sum score given to each sector divided by the total PRORD items.
Source: Author's elaboration.

4.3.3. Ethical risk disclosure (ETRD)

Ethical risk disclosure (ETRD) consists of three items: financial losses, regulatory violations, and corruption. Table 6 summarises the average level of ETRD per item each year, rising from 34 (41%) to 38 (47%) (see Table 3). This increase is related to the increase in the average level of financial losses, regulatory violation, and corruption disclosures. The average level of financial loss disclosure faced an upward and downward trend between 2010 and 2015. In fact, it decreased between 2010 and 2011 from 18 (22%) to 15 (18%). Nevertheless, this average financial loss level started to increase again from

16 (20%) in 2012 to a maximum level of 24 (29%) in 2017. The average level of regulatory violation disclosure showed a gradual increase during the period 2010-2011. Its average level is estimated at 37 (45%) for 2010 and 36 (44%) for 2011. It remained stable between 2015 and 2017. The average level of corruption disclosure, for its part, increased relatively gradually during the 2010-2017 period.

From an analytical viewpoint, the increase in the average level of ETRD in general and the increase in each item (financial losses, regulatory violation, and corruption disclosures), in particular, reflects the good faith of Saudi firms to engage in disclosure.

Table 6. Average of ethical risk disclosure level per item and year (2010-2017)

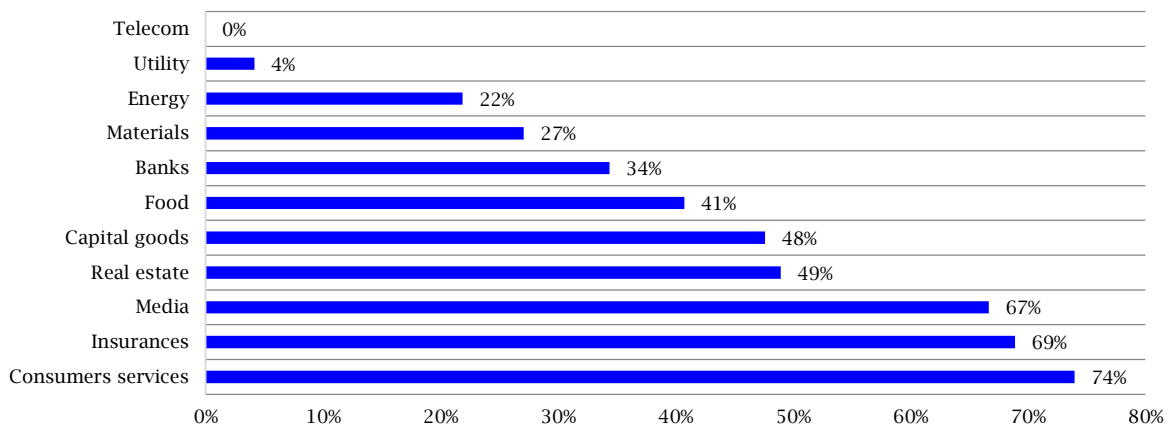
Category	Items	2010	2011	2012	2013	2014	2015	2016	2017
Ethical risk disclosure (ETRD)	Financial losses	22%	18%	20%	20%	22%	22%	26%	29%
		18	15	16	16	18	18	21	24
	Regulatory violation	45%	44%	46%	48%	49%	50%	50%	50%
		37	36	38	39	40	41	41	41
	Corruption	56%	56%	56%	59%	60%	60%	59%	61%
		46	46	46	47	49	49	48	50

Note: This percentage represents the number of companies disclosed for each item divided by the number of companies used in this study.

Figure 5 shows that the average ethical risk disclosure level is relatively high in three main sectors, namely consumer services, insurance, and media, whose average level reached 74%, 69%, and 67%, respectively. On the other hand, the average ethical risk disclosure level is very low or zero in

two sectors – telecom and utility. Their average level of ethical risk disclosure is equal to 0% and 4%, respectively. The explanation for why the telecommunications industry may not disclose any information related to ethical risk is discussed in subsection 4.3.1.

Figure 5. Average of ethical risk disclosure level per sector (2010-2017)



Note: This figure presents the average ETRD level per sector for the period 2010-2017. Percentages are calculated as the sum score given to each sector divided by the total ETRD items.

Source: Author's elaboration.

4.3.4. Technology risk disclosure (TERD)

Technology risk disclosure (TERD) consists of three items: information technology risks, interruptions in the delivery chain, and service obsolescence and shrinkage. Table 7 illustrates the average level of TERD per item each year, the average level of TERD increased from 22 (27%) to 29 (35%) during 2010-2017 (see Table 3). The increase in its average level is often due to the increase in the average levels of technology information risks, interruptions

in the delivery chain, and service obsolescence and shrinkage disclosures. More specifically, the average level of information technology risks increased, rising from 29 (35%) in 2010 to 34 (41%) in 2017. The average level of interruptions in the delivery chain disclosure increased from 20 (24%) in 2010 to 25 (32%) in 2017. Finally, the average level of service obsolescence and shrinkage disclosure increased throughout the period between 2010 and 2017 from 18 (22%) to 26 (32%).

Table 7. Average of technology risk disclosure level per item and year (2010–2017)

Category	Items	2010	2011	2012	2013	2014	2015	2016	2017
Technology risk disclosure (TERD)	Information technology risks	35%	33%	35%	33%	39%	39%	41%	41%
		29	27	29	27	32	32	34	34
	Interruptions in the delivery chain	24%	24%	28%	29%	29%	28%	32%	32%
		20	20	23	24	24	23	26	26
	Service obsolescence and shrinkage	22%	24%	24%	27%	28%	28%	30%	32%
		18	20	20	22	23	23	25	26

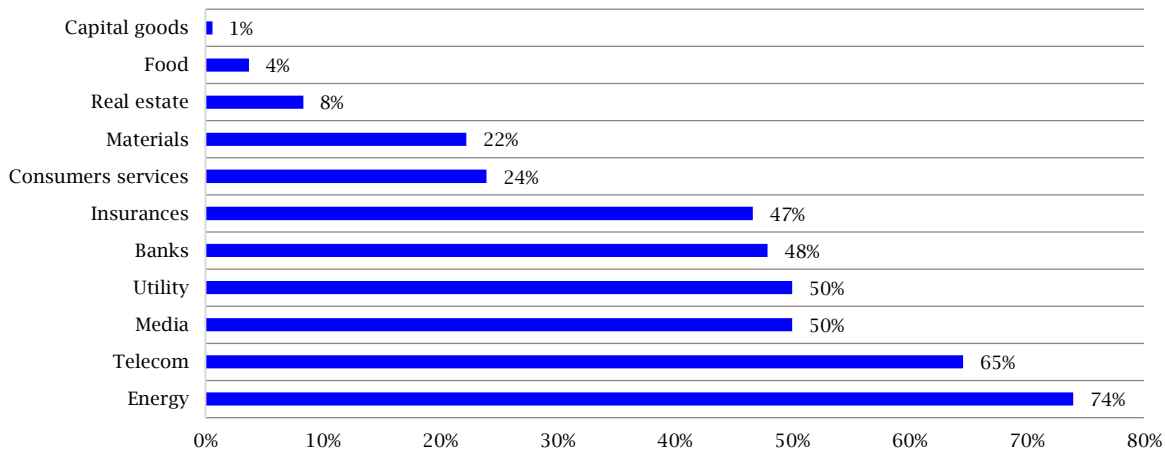
Note: This percentage represents the number of companies disclosed for each item divided by the number of companies used in this study.

Figure 6 provides a more detailed overview of the evolution of the average level of TERD in Saudi industries. In fact, the average level of TERD shows that some industries face a technological risk (or IT risk). In this case, the most notable industries are capital goods and food, with average levels of technology risk disclosure of 1% and 4%, respectively. The average level of TERD in the real estate industry is 8%, however, Figure 6 shows that the average level of TERD is relatively high in two main industries: energy and telecom, where the average level of disclosure is 74%, and 65%, respectively.

It can be observed that energy and telecom companies offer the highest level of technology risk disclosure. A possible explanation could be the fact that energy and telecom firms are substantially bigger. There are two possible reasons that stimulate big companies to produce a higher level of

information related to risk. One reason is that bigger companies tend to have lower costs of preparing, reviewing, and disseminating information, which motivates them to generate a larger amount of information related to risk (Al-Maghzom et al., 2016; Kamal Hassan, 2009; Lopes & Rodrigues, 2007). Another reason is the operations of big companies are larger and much more complicated, leading to a high level of risk which drives more risk disclosure as big companies have more information to disclose (Abraham & Cox, 2007; Al-Maghzom et al., 2016). Capital goods firms provide the lowest level of TERD. This could be justified by the fact that capital goods firms have a lower number of independent directors. Independent directors usually apply more pressure on directors to provide a higher level of disclosure and transparency due to concerns over their reputations (Lopes & Rodrigues, 2007).

Figure 6. Average of technology risk disclosure level per sector (2010–2017)



Note: This figure presents the average TERD level per sector for the period 2010–2017. Percentages are calculated as the sum score given to each sector divided by the total TERD items.

Source: Author's elaboration.

4.3.5. Process risk disclosure (PRRD)

Process risk disclosure (PRRD) consists of two items, namely execution failure and product and service failure. Table 8 summarises the average level of PRRD per item each year, the average level of PRRD increased from 18 (33%) in 2010 to 27 (50%) in 2017 (see Table 3). The increase in the overall average

level of PRRD was mainly due to the increase in the average level of execution failure, and product, and service failure disclosure. In fact, the average level of execution failure increased sharply from 24 (29%) in 2010 to 32 (39%) in 2014, and a maximum level of 39 (48%) in 2017. The average level of product and service failure disclosure also increased from 30 (37%) in 2010 to 43 (52%) in 2017.

Table 8. Average of process risk disclosure level per item and year (2010–2017)

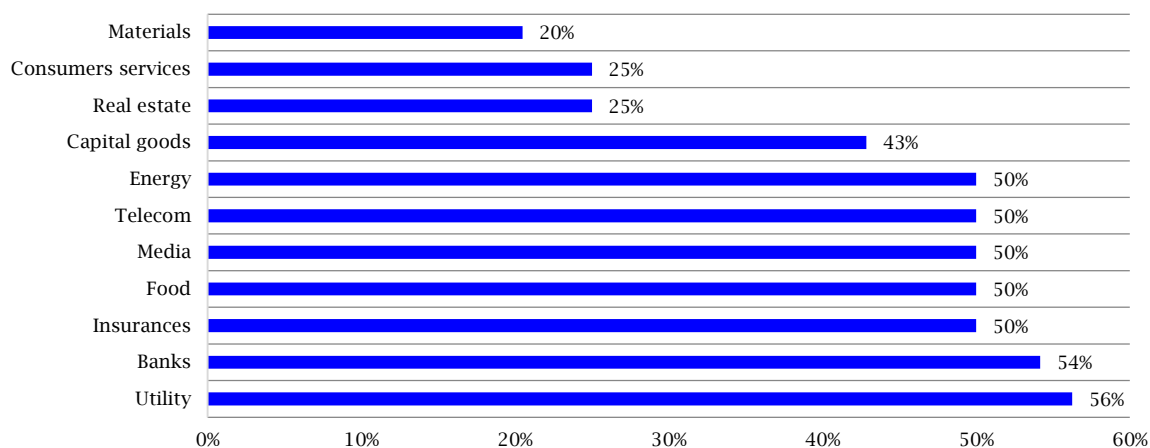
Category	Items	2010	2011	2012	2013	2014	2015	2016	2017
Process risk disclosure (PRRD)	Execution failure	29%	32%	34%	35%	39%	41%	48%	48%
		24	26	28	29	32	34	39	39
	Product and service failure	37%	35%	38%	44%	41%	45%	48%	52%
		30	29	31	36	34	37	39	43

Note: This percentage represents the number of companies disclosed for each item divided by the number of companies used in this study.

Figure 7 shows that the average process risk disclosure levels were almost equal in most Saudi sectors throughout the 2010–2017 period. This equality is seen in the insurance, food, media, telecom, and energy sectors, where levels are equivalent to 50%. However, the average PRRD levels are quite high in two sectors, namely utility and bank, whose average levels are 56% and 54%, respectively. It can be noted that material companies

offer the lowest level of PRRD. A possible explanation could be the fact that material firms have a higher level of liquidity. It could be said that when a company faces a lack of liquidity, directors would be keen to reveal more risk-related information to attract stakeholders and meet their requirements by offering a higher level of transparency (Almania, 2019).

Figure 7. Average of processes risk disclosure level per sector (2010–2017)



Note: This figure presents the average PRRD level per sector for the period 2010–2017. This percentage is calculated as the sum score given to each sector divided by the total PRRD items.
Source: Author's elaboration.

4.3.6. Health and safety risk disclosure (HSRD)

Health and safety risk disclosure (HSRD) reflects the most detailed category, with six items. These items are as follows: physical disaster, electrical hazards, legal suit, natural disasters, a failure in quality, and psychosocial risks. The overall average HSRD level for Saudi companies increased from 24 (29%) in 2010 to 27 (33%) in 2012. Table 9 shows that the average level of physical disaster disclosure increased from 32 (39%) in 2010 to 37 (45%) in 2017. It also shows that the average level of electrical hazards risk disclosure gradually increased from

18 (22%) in 2010 to 25 (30%) in 2017. Then, the average level of legal suit disclosure slightly increased to 31 (38%) in 2010 and 32 (39%) in 2017. The average level of natural disaster disclosure increased by 1% from 2010 to 2017. The average level of failure in quality disclosure gradually increased from 20 (24%) in 2010 to 23 (28%) in 2017. Lastly, the average level of psychosocial risk disclosure showed a slight decrease from 2012 to 2016 with the same score, which is 20 (24%). However, the average level of psychosocial risk disclosure increased in 2017 to 23 (28%).

Table 9. Average of health and safety risk disclosure level per item and year (2010–2017)

Category	Items	2010	2011	2012	2013	2014	2015	2016	2017
Health and safety risk disclosure (HSRD)	Physical disaster	39%	40%	40%	39%	39%	43%	44%	45%
		32	33	33	32	32	35	36	37
	Electrical hazards	22%	24%	23%	23%	23%	23%	24%	30%
		18	20	19	19	19	19	20	25
	Legal suit	38%	37%	38%	37%	37%	38%	38%	39%
		31	30	31	30	30	31	31	32
	Natural disasters	28%	27%	27%	27%	28%	28%	29%	29%
		23	22	22	22	23	23	24	24
	Failure in quality	24%	26%	27%	26%	26%	27%	28%	28%
		20	21	22	21	21	22	23	23
	Psychosocial risks	26%	26%	24%	24%	24%	24%	24%	28%
		21	21	20	20	20	20	20	23

Note: This percentage represents the number of companies disclosed for each item divided by the number of companies used in this study.

As shown in Figure 8 the increase in the average level of HSRD is observed in the banking, insurance, energy, and utility sectors, with average levels of 68%, 48%, 46%, and 40%, respectively. The increased HSRD level translates into these sectors being the most secure and risk-

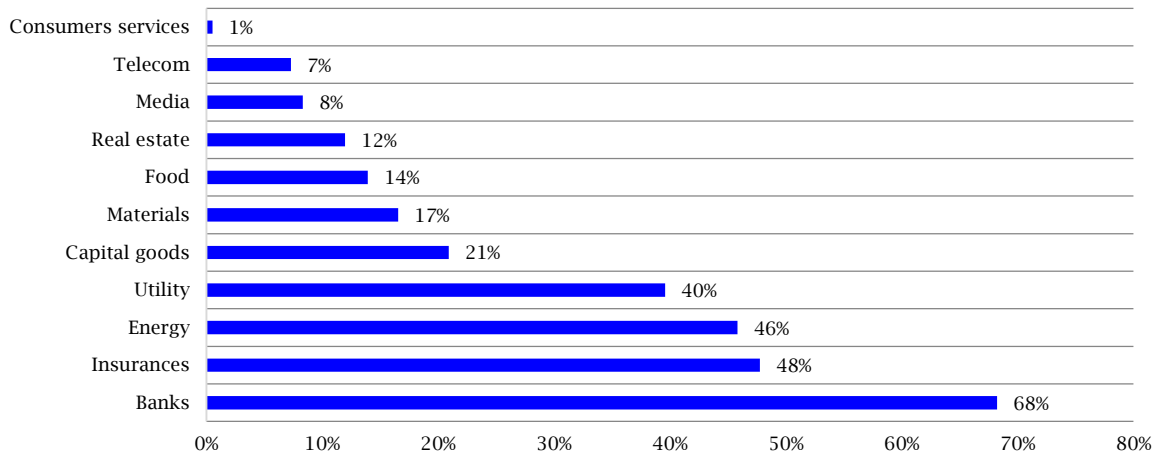
protected industries in Saudi Arabia. They are the least affected by hazards that could damage financial soundness. Protecting these various sectors from potential risks requires them to ensure greater disclosure, allowing them to build more security and trust with their stakeholders, and vice versa. In fact,

the descriptive analysis only gives a general idea of the evolution of HSRD.

Figure 8 shows that consumer services companies offer a lower level of HSRD. A possible explanation could be the fact that consumer services firms have a lower level of profitability. It could be assumed that directors of highly profitable firms

have the motivation to reveal more information as a good indicator to appeal to stakeholders. Highly profitable companies' directors would be keen to disclose more detailed risk-related information to signal that they are professionals at dealing with their companies' risks (Konishi & Ali, 2007; Shrivs & Linsley, 2003).

Figure 8. Average health and safety risk disclosure level per sector (2010-2017)



Note: This figure presents the average HSRD level per sector for the period 2010-2017. Percentages are calculated as the sum score given to each sector divided by the total HSRD items.

Source: Author's elaboration.

4.3.7. Shariah compliance risk disclosure (SCRD)

Shariah compliance risk disclosure (SCRD) consists of three items: *Murabaha* risk, *Ijarah* or *Mutajara* risk, and *Istisnaa* risk. The overall average level of SCRD remained stable at 11% between 2010 and 2017 (see Table 3). Table 10 shows the average SCRD level for Saudi Arabian listed companies for the period 2010-2017. It appears to be much lower compared to the other non-financial risk categories. Table 10 shows that the average levels for both *Murabaha* and *Ijarah* risk disclosure did not change

from 2011, reaching 14 (17%) and 8 (10%), respectively. The average level of *Istisnaa* risk disclosure remained stable from 2013 to 2017. The stability in the SCRD level is due to the fact that banking and industry sectors apply this type of contract in their activities. This is supported by the argument that firms operating in the same sector are more likely to show the same level of risk disclosure to prevent undesirable estimation by the market (Kamal Hassan, 2009; Lopes & Rodrigues, 2007).

Table 10. Average of Shariah compliance risk disclosure level per item and year (2010-2017)

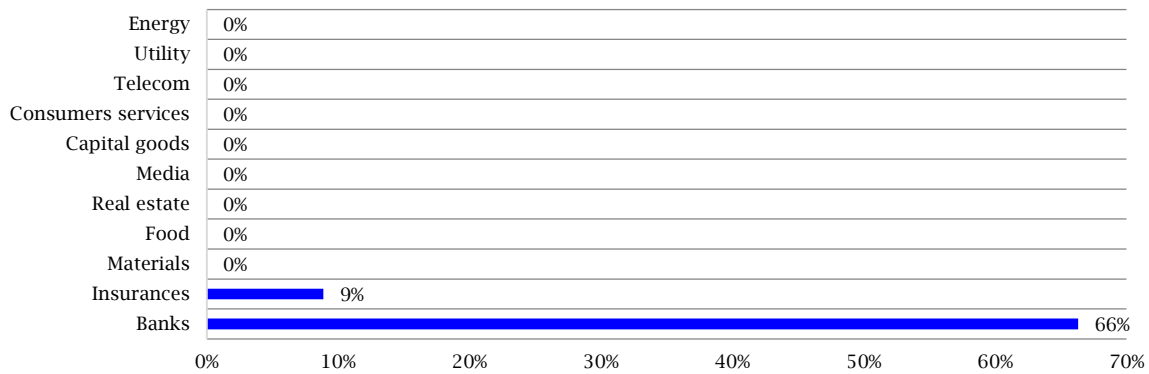
Category	Items	2010	2011	2012	2013	2014	2015	2016	2017
Shariah compliance risk disclosure (SCRD)	Contract risk (<i>Murabaha</i> risk)	16%	17%	17%	17%	17%	17%	17%	17%
		13	14	14	14	14	14	14	14
	Contract risk (<i>Ijarah</i> risk)	9%	10%	10%	10%	10%	10%	10%	10%
		7	8	8	8	8	8	8	8
	Contract risk (<i>Istisnaa</i> risk)	7%	7%	9%	7%	7%	7%	7%	7%
		6	6	7	6	6	6	6	6

Note: This percentage represents the number of companies disclosed for each item divided by the number of companies used in this study.

Figure 9 shows that the average level of SCRD is widely considered in the banking sector. It already reached a level of 66% during the period 2010-2017. The average level of SCRD in the insurance sector is lower than for the bank sector, at 9%. However, the average level of SCRD in the rest of the sectors is equal to 0%. This could be justified by the fact that both banking and insurance sectors substantially

apply Shariah contracts such as *Murabaha*, *Ijarah*, and *Istisnaa* into their operations and establish Shariah supervisory boards. Consequently, they are expected to disclose more information related to Shariah compliance risk. However, the rest of the sectors do not apply Shariah contracts such as *Murabaha*, *Ijarah*, or *Istisnaa* into their operations.

Figure 9. Average of Shariah compliance risk disclosure level per sector (2010–2017)



Note: This figure presents the average SCRD level per sector for the period 2010–2017. Percentages are calculated as the sum score given to each sector divided by the total SCRD items.
Source: Author’s elaboration.

4.3.8. Legal risk disclosure (LERD)

Legal risk disclosure (LERD) consists of three items: change in regulations, in-compliance risk, and reputational risk/brand name erosion. The overall average level of legal risk disclosure of Saudi firms during 2010–2017 is presented in Table 3. Table 11 shows the average level of LERD per item per year. This average level gradually increased from 2010 to

2017. More specifically, the average level of the change in regulations disclosure increased from 37 (45%) in 2010 to 42 (51%) in 2016. The average level of in-compliance risk disclosure also rose from 62 (76%) in 2010 to 63 (77%) in 2017. The same observation is confirmed for the average level of reputational risk disclosure, which was 20 (24%) and 25 (30%) in 2010 and 2017, respectively.

Table 11. Average of legal risk disclosure level per item and year (2010–2017)

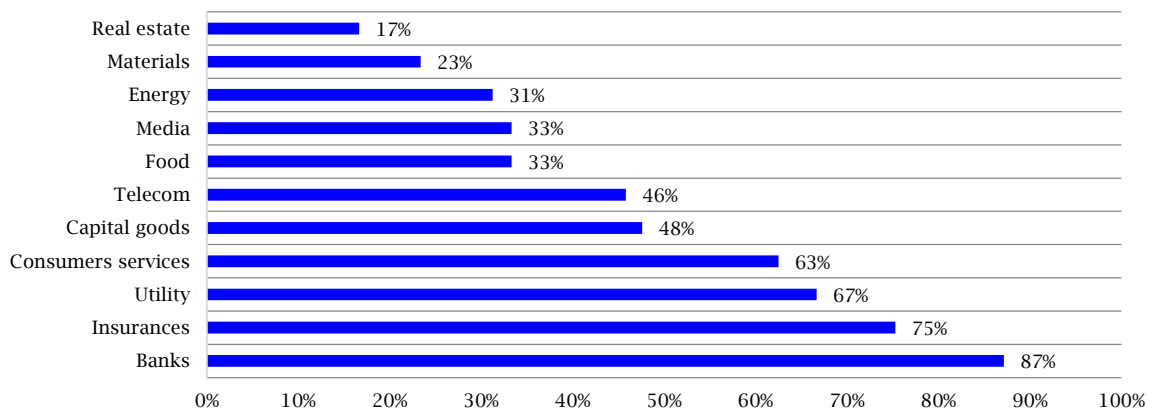
Category	Items	2010	2011	2012	2013	2014	2015	2016	2017
Legal risk disclosure (LERD)	Change in regulations	45%	43%	45%	45%	48%	50%	51%	50%
		37	35	37	37	39	41	42	41
	Incompliance risk	76%	74%	78%	74%	77%	76%	76%	77%
		62	61	64	61	63	62	62	63
	Reputational risk/brand name erosion	24%	26%	26%	26%	27%	27%	30%	30%
		20	21	21	21	22	22	25	25

Note: This percentage represents the number of companies disclosed for each item divided by the number of companies used in this study.

Figure 10 shows that the average LERD level is considered in specific sectors such as banking, insurance, utility, and consumer services. Their disclosure levels are equal to 87%, 75%, 67%, and 63%, respectively. The average level of LERD slightly increased in both the capital goods and telecom sectors at a score of 48% and 46%, respectively. In both the food and energy sectors, the average legal risk disclosure level increased by a mere 2%. Materials and real estate sectors had an average legal risk disclosure level of 23% and 17%, respectively.

As shown in Figure 10, real estate companies provide the lowest level of LERD. This might be explained by the fact that real estate firms have a lower level of leverage. Scholars such as Elshandidy et al. (2013) and Oliveira et al. (2011) are sceptical that companies with high leverage levels can be unpredictable and exposed to more risk. The same idea is reiterated by Abraham et al. (2007), who report that firms recording high market risk are compelled to intentionally release more disclosure information to ensure stakeholder monitoring cost is kept in check.

Figure 10. Average of legal risk disclosure level per sector (2010–2017)



Note: This figure presents the average LERD level per sector for the period 2010–2017. Percentages are calculated as the sum score given to each sector divided by the total LERD items.
Source: Author’s elaboration.

5. DISCUSSION

The low level of non-financial risk disclosure (NFRD) in Saudi Arabia could be mainly clarified by the absence of enforcement. Throughout the study, there were no compulsory requirements for Saudi listed companies to offer information regarding risk or non-financial risk in their annual reports. Nevertheless, there have been numerous new developments. For example, the updated revised version of the Saudi Corporate Governance Code (SCGC) was released at the end of 2017. This updated version was the first version to emphasise the significance of assigning a risk management committee. The presence of a risk management committee may improve the level of non-financial risk disclosure. One more vital development is that the Capital Market Authority (CMA) required Saudi listed companies to adhere to the requirements of the International Financial Reporting Standards (IFRS) from the start of 2018. The implementation of IFRS is anticipated to enhance non-financial risk disclosure practices since the IFRS forces the disclosure of risk, including non-financial risk disclosure. This is supported by Bischof (2009), who discovers that the adoption of IFRS 7 has enhanced the risk disclosure practices significantly in European countries.

The results show that the average of the most frequently reported categories among all listed companies was product, legal, and ethical risk. The average level of product risk increased from 22 (72%) in 2010 to 70 (85%) in 2017, followed by the average level of legal risk with a score of 40 (48%) rising to 41 (50%), and in third place came the average level of legal risk from 43 (41%) to 35 (43%). It also shows that the telecommunication industry does not disclose any information related to people risk. This could be explained by the fact that not all firms choose to disclose about all types of non-financial disclosure, and those that do, adopt disclosure policies of varying breadth (Brammer & Pavelin, 2004). This is because disclosure is costly. It can impose the costs of measuring and verifying operational impacts, as well as the administrative burden of collating and publishing such information (Li et al., 1997; Verrecchia, 1983). It also shows that the average level of Shariah compliance risk disclosure is widely considered in the banking sector. This could be because the banking and insurance sectors substantially apply Shariah contracts such as *Murabaha*, *Ijarah*, and *Istisnaa* into their operations and establish a Shariah Supervisory Board. Consequently, these sectors are expected to disclose more information related to Shariah compliance risk. However, the remaining sectors do not apply Shariah contracts to their operations.

The present study has various implications that are of specific significance to Saudi Arabia (the context), but the implications might be appropriate to other Arab, Islamic, and emerging countries with similar circumstances to Saudi Arabia. The present study has practical implications that are especially significant to researchers, organisations, policymakers, and regulatory bodies (e.g., the Saudi Capital Market Authority (SCMA) and the Saudi Organization for Chartered and Professional Accountant (SOCPA)). The results of

this study would support a better insight into whether the empirical evidence justifies the necessity for affecting the decisions made by policymakers and regulatory bodies. A better insight might increase the capability of firms to be involved in non-financial risk activities by revealing these activities and information in Saudi Arabia.

In terms of policy implications, more calls from stakeholders for proper non-financial risk reporting practices have increased the need for powerful non-financial risk reporting measures and guidelines to gain more confidence in capital markets. First, this investigation shows that stakeholder demand for non-financial risk information is not satisfied currently in Saudi annual company reports. The stated non-financial risk disclosure level is less than the level revealed by other examinations performed elsewhere (Elamer et al., 2020; Neifar & Jarboui, 2018). Therefore, SOCPA and policymakers are aware of the significance of policies and guidance on how to increase non-financial risk reporting practices. Policymakers must enhance the ways to expand firms' involvement in non-financial risk disclosure practices. For instance, it would be mindful to focus its endeavours on creating an outline for non-financial risk reporting practices and strategies for all listed firms to follow to give proper non-financial risk information that investors can utilise when evaluating non-financial risk profiles. Also, the results show a low level of disclosure in some categories, as shown in Table 3. For example, firms rarely disclose information on Shariah compliance risk. This implies that there is a need for regulatory authorities to encourage disclosure among Saudi companies, especially relating to important Shariah compliance risks that could affect shareholders' rights. The level of disclosure of people risk is the lowest. Given the importance of these categories in protecting firms' assets and resources, the SCMA needs to be more accurate in its oversight of firms' disclosure with those categories. Furthermore, external Shariah auditors could be assigned to assess firms' people risk and report the findings to stakeholders.

6. CONCLUSION

This study analysed the level of non-financial risk disclosure practices within the annual reports of Saudi listed companies over eight years (2010–2017). It employs a manual content analysis approach in order to construct the non-financial risk disclosure index (NFRDI). The study prefers to use manual content instead of electronic content analysis to measure non-financial risk disclosure. This is due to most of the inspected annual reports being scanned PDF files, which need to be changed from scanned to editable PDF files, and then changed into TEXT files and then used with any of the available advanced content analysis software (Ibrahim et al., 2019). This study picks a sentence as a measurement unit because words may not show any sense and cannot be understood unless used in a complete sentence, and it is more reliable than other units (Milne & Adler, 1999). Moreover, using a bigger measurement unit such as a paragraph might contain information unrelated to the risk information context (Ibrahim et al., 2019). Using a sentence as a coding unit might help avoid the duplication problem (Elshandidy &

Neri, 2015; Ibrahim et al., 2019). This study thus applies an unweighted disclosure index, as this reduces subjectivity and therefore also potential bias with the score and it comprises 8 main categories with 25 binary coded sub-items after establishing its validity and reliability by two independent researchers.

The sample in this study comprised 82 listed firms and involved making 565 observations. This study relies on annual reports as the primary source for collecting the data. The reasons for relying on the annual reports are: the organisations utilise this essential means to transfer messages and communicate to investors (Holland, 1998), The Companies Act of 1965 (Article 89) and the Listing Rules of 2004 (Article 27) require that Saudi firms issue annual reports that comprise financial statements and the board of directors' reports at the end of the fiscal year, and It is also mandatory for Saudi listed companies to release their annual reports on Tadawul.

The analysis showed that the level of non-financial risk disclosure slightly increased during the period 2010-2017. The descriptive results show that the average level of non-financial risk disclosure in the sample is 35.33%. This number is much lower than that reported in other studies elsewhere (Elamer et al., 2020; Konishi & Ali, 2007; Ntim et al., 2013). Moreover, the low level of non-financial risk disclosure in Saudi Arabia could be mainly explained by the absence of enforcement. Throughout the study, there were no compulsory requirements for Saudi listed companies to offer information regarding risk or non-financial risk in their annual reports.

The managerial branch of stakeholder theory has only been used in disclosure or general risk disclosure. For instance, Azizul Islam and Deegan (2008) use the managerial branch of stakeholder theory when explaining the incentives that motivate the Bangladesh Garments Manufacturing Enterprise Association (BGMEA) to disclose corporate social responsibility (CSR), while Liu and Anbumozhi (2009) employ it when examining the determinant factors that affect Chinese listed companies to disclose environmental information and Ahmad et al. (2003) use it when exploring the factors of environmental reporting. To the best of the researcher's knowledge, the ethical branch of stakeholder theory is less commonly used in corporate disclosure literature. Therefore, this thesis fills the gap and contributes by using both branches. It is selected on account of its strength in providing clarification of the responsibility of stakeholders and the obligations and responsibilities that the firm has to its stakeholders. Based on this theory, the firm must reveal all its cases to maintain a sustainable association with its stakeholders (Freeman, 1994; Gray et al., 1995). Furthermore, stakeholder theory is appropriate for this study by determining the function of institutions to their stakeholders through examining non-financial risk disclosure about their responsibilities. The application of stakeholder theory in the Saudi Arabian context offers an important study tool that can enhance understanding of the critical ethical norms that govern institutions. Furthermore, this theory will provide a more useful perspective to firms that aim to enhance accountability and have a more

transparent approach to non-financial risk disclosure in institutions.

This study has limitations. First, it is dependent on firms' annual reports as the primary source of information. Although the study is limited to mainly one source, Omar and Simon (2011) state that annual reports are a more reliable source than others. According to Knutson (1992, p. 22), "the annual report is the major reporting document, and every other report is in some respect subsidiary or supplementary to it", and there are other sources of disclosure, such as firms' websites (Hussainey & Al-Nodel, 2008). All listed firms must publish their reports formally on the Tadawul website. This allows for complete access to the required data helps create a balanced panel and minimise missing data. Furthermore, the use of the firms' annual reports is in line with prior studies (Neifar et al., 2020; Yang et al., 2018; Abdallah et al., 2015; Al-Maghzom et al., 2016; Ntim et al., 2013; Alzead & Hussainey, 2017; Elshandidy et al., 2013; Dobler et al., 2011). This study used binary coding to score the non-financial risk disclosure index. Though binary coding is extremely common in the majority of corporate disclosure studies (Ammann et al., 2013), Beattie et al. (2004) state that this method has some limitations, such as its failure to differentiate between provisions concerning their significance (Hassan & Marston, 2019). Nevertheless, the use of binary coding is explained as follows. First, the weighted method needs knowledgeable judgement, which might not exist for all researchers. Beattie et al. (2004) state that the development of a weighted index also needs surveys to be performed among related user groups, which also requires additional costs such as effort and time. Additionally, implementing an unweighted index is consistent with prior studies on corporate risk disclosure (Al-Maghzom, 2016; Alzead & Hussainey, 2017; Elamer et al., 2019, 2020), which allows for comparisons between the results.

The limitations themselves unfold new paths for non-financial risk disclosure research and outlined here are some recommendations and thoughts for future study.

Future research could examine the practices of non-financial risk disclosure in Saudi non-listed companies because of their notable involvement in and contribution to the Saudi market. It would be interesting to compare non-financial risk disclosure practices and factors between both listed and non-listed companies.

Future studies could observe both balanced and unbalanced panel data. This can help decide whether the results are unlike based on the methodology used and could also be useful in generalising the outcomes.

Since the present study relies on the annual report as the main source of non-financial risk disclosure, future studies could rely on other sources of information (Elamer et al., 2019; Habtoor et al., 2019). A wider range of sources, such as interim reports and websites, could strengthen the results of this and other studies.

Since the current thesis focuses on the quantitative method, further research could use mixed methods simultaneously to investigate non-financial risk disclosure practices and their determinants. There is a need to encourage and persuade researchers to engage with this method in

their analyses (McNulty et al., 2013; Zattoni et al., 2013). One way to persuade researchers of the value of mixed methods is to find ideal mixed methods studies in the content area/literature on a subject and share studies to educate researchers (Creswell & Clark, 2018). Mixed methods research

also helps to achieve integration between the results from both quantitative and qualitative data, though using mixed methods analysis includes some difficulties regarding the time and cost required to design and execute the research (Creswell & Clark, 2018).

REFERENCES

1. Abdallah, A.A.-N., Hassan, M. K., & McClelland, P. L. (2015). Islamic financial institutions, corporate governance, and corporate risk disclosure in Gulf Cooperation Council countries. *Journal of Multinational Financial Management*, 31, 63–82. <https://doi.org/10.1016/j.mulfin.2015.02.003>
2. Abraham, S., & Cox, P. (2007). Analysing the determinants of narrative risk information in UK FTSE 100 annual reports. *The British Accounting Review*, 39(3), 227–248. <https://doi.org/10.1016/j.bar.2007.06.002>
3. Abraham, S., & Shrivs, P. J. (2014). Improving the relevance of risk factor disclosure in corporate annual reports. *The British Accounting Review*, 46(1), 91–107. <https://doi.org/10.1016/j.bar.2013.10.002>
4. Abraham, S., Solomon, A., & Stevenson, J. (2007). *A ranking of risk disclosure in UK annual reports* (Working paper). Napier University.
5. Ahmad, Z., Hassan, S., & Mohammad, J. (2003). Determinant of environmental reporting in Malaysia. *International Journal of Business Studies*, 11(1).
6. Ahmed, K., & Courtis, J. K. (1999). Associations between corporate characteristics and disclosure levels in annual reports: A meta-analysis. *The British Accounting Review*, 31(1), 35–61. <https://doi.org/10.1006/bare.1998.0082>
7. Albassam, W. (2014). *Corporate governance, voluntary disclosure and financial performance: an empirical analysis of Saudi listed firms using a mixed-methods research design* [Doctoral dissertation, University of Glasgow]. University of Glasgow. <https://theses.gla.ac.uk/5280/>
8. Albassam, W. M., & Ntim, C. G. (2017). The effect of Islamic values on voluntary corporate governance disclosure: The case of Saudi-listed firms. *Journal of Islamic Accounting and Business Research*, 8(2), 182–202. <https://doi.org/10.1108/JIABR-09-2015-0046>
9. Al-Filali, I. Y., & Gallarotti, G. M. (2012). Smart development: Saudi Arabia's quest for a knowledge economy. *International Studies*, 49(1–2), 47–76. <https://doi.org/10.1177/0020881713504673>
10. Alghamdi, S. (2012). *Investigation into earnings management practices and the role of corporate governance and external audit in emerging markets: Empirical evidence from Saudi listed companies* [Doctoral dissertation, Durham University]. Durham University. <http://etheses.dur.ac.uk/3438/>
11. Al-Maghzom, A., Hussainey, K., & Aly, D. (2016). Value relevance of voluntary risk disclosure levels: Evidence from Saudi banks. *Journal of Accounting and Taxation*, 8(1). <https://doi.org/10.2139/ssrn.2765325>
12. Almania, O. (2019). *Risk disclosure, corporate governance, and cost of capital of Saudi listed firms* [Doctoral dissertation, University of Glasgow]. University of Glasgow. <https://theses.gla.ac.uk/81324/1/2019AlmaniaPhD.pdf>
13. Al-Matari, E. M., Al-Swidi, A. K., Fadzil, F. H., & Al-Matari, Y. A. (2012). Board of directors, audit committee characteristics and the performance of Saudi Arabia listed companies. *International Review of Management and Marketing*, 2(4), 241–251. <https://doi.org/10.5296/ijaf.v2i2.2384>
14. Al-Moataz, E., & Hussainey, K. (2012). Determinants of corporate governance disclosure in Saudi corporations. *Journal of Economics and Management*, 5(1), 52–84. https://prod.kau.edu.sa/centers/spc/jkau/Data2/Review_Artical.aspx?No=3813
15. Alsaeed, K. (2006). The association between firm-specific characteristics and disclosure. *Managerial Auditing Journal*, 21(5), 476–496. <https://doi.org/10.1108/02686900610667256>
16. Al-Shamrani, A. S. (2014). *Islamic financial contracting forms in Saudi Arabia: Law and practice* [Doctoral dissertation, Brunel University]. Brunel University Research Archive. <https://bura.brunel.ac.uk/handle/2438/9145>
17. Alzead, R., & Hussainey, K. (2017). Risk disclosure practice in Saudi non-financial listed companies. *Corporate Ownership and Control*, 14(4–1), 262–275. <https://doi.org/10.22495/cocv14i4c1art8>
18. Ammann, M., Oesch, D., & Schmid, M. M. (2013). Product market competition, corporate governance, and firm value: Evidence from the EU area. *European Financial Management*, 19(3), 452–469. <https://doi.org/10.1111/j.1468-036X.2010.00605.x>
19. An, Y., Davey, H., & Eggleton, I. R. (2011). Towards a comprehensive theoretical framework for voluntary IC disclosure. *Journal of Intellectual Capital*, 12(4), 571–585. <https://doi.org/10.1108/14691931111181733>
20. Ashbaugh-Skaife, H., Collins, D. W., & Kinney, W. R., Jr. (2007). The discovery and reporting of internal control deficiencies prior to SOX-mandated audits. *Journal of Accounting and Economics*, 44(1–2), 166–192. <https://doi.org/10.1016/j.jacceco.2006.10.001>
21. Azizul Islam, M. A., & Deegan, C. (2008). Motivations for an organisation within a developing country to report social responsibility information: Evidence from Bangladesh. *Accounting, Auditing & Accountability Journal*, 21(6), 850–874. <https://doi.org/10.1108/09513570810893272>
22. Barakat, A., & Hussainey, K. (2013). Bank governance, regulation, supervision, and risk reporting: Evidence from operational risk disclosures in European banks. *International Review of Financial Analysis*, 30, 254–273. <https://doi.org/10.1016/j.irfa.2013.07.002>
23. Barth, M. E., & Landsman, W. R. (2010). How did financial reporting contribute to the financial crisis? *European Accounting Review*, 19(3), 399–423. <https://doi.org/10.1080/09638180.2010.498619>
24. Basel Committee on Banking Supervision. (2001). *Sound practices for the management and supervision of operational risk*. Bank for International Settlements. <https://www.bis.org/publ/bcbs86.pdf>
25. Basel Committee on Banking Supervision. (2015). *Guidelines: Corporate governance principles for banks*. Bank for International Settlements. <https://www.bis.org/publ/bcbs294.pdf>
26. Baydoun, N., Maguire, W., Ryan, N., & Willett, R. (2013). Corporate governance in five Arabian Gulf countries. *Managerial Auditing Journal*, 28(1), 7–22. <https://doi.org/10.1108/02686901311282470>

27. Beattie, V., McInnes, B., & Fearnley, S. (2004). A methodology for analysing and evaluating narratives in annual reports: A comprehensive descriptive profile and metrics for disclosure quality attributes. *Accounting Forum*, 28(3), 205–236. <https://doi.org/10.1016/j.accfor.2004.07.001>
28. Beretta, S., & Bozzolan, S. (2004). A framework for the analysis of firm risk communication. *The International Journal of Accounting*, 39(3), 265–288. <https://doi.org/10.1016/j.intacc.2004.06.006>
29. Beretta, S., & Bozzolan, S. (2008). Quality versus quantity: The case of forward-looking disclosure. *Journal of Accounting, Auditing & Finance*, 23(3), 333–376. <https://doi.org/10.1177/0148558X0802300304>
30. Bischof, J. (2009). The effects of IFRS 7 adoption on bank disclosure in Europe. *Accounting in Europe*, 6(2), 167–194. <https://doi.org/10.1080/17449480903171988>
31. Botosan, C. A. (2004). Discussion of a framework for the analysis of firm risk communication. *The International Journal of Accounting*, 39(3), 289–295. <https://doi.org/10.1016/j.intacc.2004.06.007>
32. Brammer, S., & Pavelin, S. (2004). Voluntary social disclosures by large UK companies. *Business Ethics: A European Review*, 13(2–3), 86–99. <https://doi.org/10.1111/j.1467-8608.2004.00356.x>
33. Cabedo, J. D., & Tirado, J. M. (2004). The disclosure of risk in financial statements. *Accounting Forum*, 28(2), 181–200. <https://doi.org/10.1016/j.accfor.2003.10.002>
34. Capital Market Authority (CMA). (2006). *Corporate governance regulations*. <https://cma.org.sa/en/RulesRegulations/Regulations/Documents/CorporateGovernanceRegulations.pdf>
35. Chiu, T.-K., & Wang, Y.-H. (2015). Determinants of social disclosure quality in Taiwan: An application of stakeholder theory. *Journal of Business Ethics*, 129(2), 379–398. <https://doi.org/10.1007/s10551-014-2160-5>
36. Combes-Thuelin, E., Henneron, S., & Touron, P. (2006). Risk regulations and financial disclosure: An investigation based on corporate communication in French traded companies. *Corporate Communications: An International Journal*, 11(3), 303–326. <https://doi.org/10.1108/13563280610680876>
37. Cooke, T. E. (1989). Disclosure in the corporate annual reports of Swedish companies. *Accounting and Business Research*, 19(74), 113–124. <https://doi.org/10.1080/00014788.1989.9728841>
38. Creswell, J. W., & Clark, V. L. P. (2018). *Designing and conducting mixed methods research*. SAGE Publications.
39. Deegan, C. M. (2009). *Financial accounting theory*. McGraw Hill Australia.
40. Deegan, C., & Shelly, M. (2014). Corporate social responsibilities: Alternative perspectives about the need to legislate. *Journal of Business Ethics*, 121(4), 499–526. <https://doi.org/10.1007/s10551-013-1730-2>
41. Deumes, R., & Knechel, R. W. (2008). Economic incentives for voluntary reporting on internal risk management and control systems. *Auditing: A Journal of Practice & Theory*, 27(1), 35–66. <https://doi.org/10.2308/aud.2008.27.1.35>
42. Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, liquidity, and the cost of capital. *The Journal of Finance*, 46(4), 1325–1359. <https://doi.org/10.1111/j.1540-6261.1991.tb04620.x>
43. Dobler, M., Lajili, K., & Zeghal, D. (2011). Attributes of corporate risk disclosure: An international investigation in the manufacturing sector. *Journal of International Accounting Research*, 10(2), 1–22. <https://doi.org/10.2308/jiar-10081>
44. Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *The Academy of Management Review*, 20(1), 65–91. <https://doi.org/10.2307/258887>
45. Doyle, J., Ge, W., & McVay, S. (2007). Determinants of weaknesses in internal control over financial reporting. *Journal of Accounting and Economics*, 44(1–2), 193–223. <https://doi.org/10.1016/j.jacceco.2006.10.003>
46. Elamer, A. A., Ntim, C. G., & Abdou, H. A. (2020). Islamic governance, national governance, and bank risk management and disclosure in MENA countries. *Business & Society*, 59(5), 914–955. <https://doi.org/10.1177/0007650317746108>
47. Elamer, A. A., Ntim, C. G., Abdou, H. A., Zalata, A. M., & Elmagrhi, M. (2019). The impact of multi-layer governance on bank risk disclosures in emerging markets: The case of Middle East and North Africa. *Accounting Forum*, 43(2), 246–281. <https://doi.org/10.1080/01559982.2019.1576577>
48. Elmarzouky, M., Hussainey, K., Abdelfattah, T., & Karim, A. E. (2022). Corporate risk disclosure and key audit matters: The egocentric theory. *International Journal of Accounting & Information Management*, 30(2), 230–251. <https://doi.org/10.1108/IJAIM-10-2021-0213>
49. Elshandidy, T., & Neri, L. (2015). Corporate governance, risk disclosure practices, and market liquidity: Comparative evidence from the UK and Italy. *Corporate Governance: An International Review*, 23(4), 331–356. <https://doi.org/10.1111/corg.12095>
50. Elshandidy, T., & Shrivs, P. J. (2016). Environmental incentives for and usefulness of textual risk reporting: Evidence from Germany. *The International Journal of Accounting*, 51(4), 464–486. <https://doi.org/10.1016/j.intacc.2016.10.001>
51. Elshandidy, T., Elmassri, M., & Elsayed, M. (2022). Integrated reporting, textual risk disclosure and market value. *Corporate Governance: The International Journal of Business in Society*, 22(1), 173–193. <https://doi.org/10.1108/CG-01-2021-0002>
52. Elshandidy, T., Fraser, I., & Hussainey, K. (2013). Aggregated, voluntary, and mandatory risk disclosure incentives: Evidence from UK FTSE all-share companies. *International Review of Financial Analysis*, 30, 320–333. <https://doi.org/10.1016/j.irfa.2013.07.010>
53. Elzahar, H., & Hussainey, K. (2012). Determinants of narrative risk disclosures in UK interim reports. *Journal of Risk Finance*, 13(2), 133–147. <https://doi.org/10.1108/15265941211203189>
54. Eng, L. L., & Mak, Y. T. (2003). Corporate governance and voluntary disclosure. *Journal of Accounting and Public Policy*, 22(4), 325–345. [https://doi.org/10.1016/S0278-4254\(03\)00037-1](https://doi.org/10.1016/S0278-4254(03)00037-1)
55. Fernando, S., & Lawrence, S. (2014). A theoretical framework for CSR practices: Integrating legitimacy theory, stakeholder theory and institutional theory. *The Journal of Theoretical Accounting Research*, 10(1), 149–178. <https://www.proquest.com/docview/1629406998>
56. Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
57. Freeman, R. E. (1994). The politics of stakeholder theory: Some future directions. *Business Ethics Quarterly*, 4(4), 409–421. <https://doi.org/10.2307/3857340>
58. Freeman, R. E., & Dmytryiev, S. (2017). Corporate social responsibility and stakeholder theory: Learning from each other. *Symphonya. Emerging Issues in Management*, 1, 7–15. <https://doi.org/10.4468/2017.1.02freeman.dmytryiev>
59. Gernon, H., & Meek, G. K. (2001). *Accounting. An international perspective* (5th ed.). McGraw-Hill.

60. Gray, R., Dey, C., Owen, D., Evans, R., & Zadek, S. (1997). Struggling with the praxis of social accounting: Stakeholders, accountability, audits and procedures. *Accounting, Auditing & Accountability Journal*, 10(3), 325-364. <https://doi.org/10.1108/09513579710178106>
61. Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting. *Accounting, Auditing & Accountability Journal*, 8(2), 47-77. <https://doi.org/10.1108/09513579510146996>
62. Gulko, N., Hyde, C., & Seppala, N. (2017). Disclosure of corporate risks and governance before, during and after the global financial crisis: Case study in the UK construction industry in 2006-2009. *International Journal of Disclosure and Governance*, 14(3), 207-223. <https://doi.org/10.1057/s41310-017-0021-z>
63. Guthrie, J., Petty, R., & Ricceri, F. (2006). The voluntary reporting of intellectual capital: Comparing evidence from Hong Kong and Australia. *Journal of Intellectual Capital*, 7(2), 254-271. <https://doi.org/10.1108/14691930610661890>
64. Habbash, M., Hussainey, K., & Awad, A. E. (2016). The determinants of voluntary disclosure in Saudi Arabia: An empirical study. *International Journal of Accounting, Auditing and Performance Evaluation*, 12(3), 213-236. <https://doi.org/10.1504/IJAAPE.2016.077890>
65. Habtoor, O. S., Ahmad, N., Mohamad, N. R., & Che Haat, M. H. (2017). Linking corporate risk disclosure practices with firm-specific characteristics in Saudi Arabia. *Gadajah Mada International Journal of Business*, 19(3), 247-266. <https://doi.org/10.22146/gamaijb.26769>
66. Habtoor, O. S., Hassan, W. K., & Aljaaidi, K. S. (2019). The impact of corporate ownership structure on corporate risk disclosure: Evidence from the Kingdom of Saudi Arabia. *Business and Economic Horizons (BEH)*, 15(2), 325-356. AgEconsearch. https://ageconsearch.umn.edu/record/301151/files/201909292343_20_BEH_2019_Vol15_Issue2_OS-Habtoor_et_al_Impact_corporate_ownership_325-356.pdf
67. Haija, M. F. A. E., & Hayek, A. F. A. (2012). Operational risk disclosures in Jordanian commercial banks: It's enough. *International Research Journal of Finance and Economics*, 83, 50-61.
68. Hammond, K., & Miles, S. (2004). Assessing quality assessment of corporate social reporting: UK perspectives. *Accounting Forum*, 28(1), 61-79. <https://doi.org/10.1016/j.accfor.2004.04.005>
69. Hassan, O. A. G., & Marston, C. (2019). Disclosure measurement in the empirical accounting literature: A review article. *International Journal of Accounting*, 54(2), Article 1950006. <https://doi.org/10.1142/S1094406019500069>
70. Hearn, B., Piesse, J., & Strange, R. (2011). The role of the stock market in the provision of Islamic development finance: Evidence from Sudan. *Emerging Markets Review*, 12(4), 338-353. <https://doi.org/10.1016/j.ememar.2011.04.004>
71. Helbok, G., & Wagner, C. (2006). Determinants of operational risk reporting in the banking industry. *Journal of Risk*, 9(1), 49-74. <https://doi.org/10.21314/JOR.2006.140>
72. Hemrit, W. (2019). Difference between the determinants of operational risk reporting in Islamic and conventional banks: Evidence from Saudi Arabia. *Journal of Operational Risk*, 15(1), 49-86. <https://doi.org/10.21314/JOP.2019.235>
73. Herghiligi, R. (2013). Operational risk disclosure in Romanian commercial banks. *Journal of Public Administration, Finance and Law*, 4, 171-178. https://www.jopaf.com/uploads/issue4/OPERATIONAL_RISK_DISCLOSURE_IN_ROMANIAN_COMMERCIAL_BANKS_1.pdf
74. Hill, P., & Short, H. (2009). Risk disclosures on the second-tier markets of the London Stock Exchange. *Accounting & Finance*, 49(4), 753-780. <https://doi.org/10.1111/j.1467-629X.2009.00308.x>
75. Holland, J. B. (1998). Private disclosure and financial reporting. *Accounting and Business Research*, 28(4), 255-269. <https://doi.org/10.1080/00014788.1998.9728914>
76. Hope, O.-K., Hu, D., & Lu, H. (2016). The benefits of specific risk-factor disclosures. *Review of Accounting Studies*, 21(4), 1005-1045. <https://doi.org/10.1007/s11142-016-9371-1>
77. Hussainey, K., & Al-Nodel, A. (2008). Corporate governance online reporting by Saudi listed companies. In M. Tsamenyi & S. Uddin (Eds.), *Corporate governance in less developed and emerging economies* (Research in accounting in emerging economies, Vol. 8, pp. 39-64), Emerald Group Publishing Limited, Bingley. [https://doi.org/10.1016/S1479-3563\(08\)08002-X](https://doi.org/10.1016/S1479-3563(08)08002-X)
78. Iatridis, G. (2010). International Financial Reporting Standards and the quality of financial statement information. *International Review of Financial Analysis*, 19(3), 193-204. <https://doi.org/10.1016/j.irfa.2010.02.004>
79. Ibrahim, A., Habbash, M., & Hussainey, K. (2019). Corporate governance and risk disclosure: Evidence from Saudi Arabia. *International Journal of Accounting, Auditing and Performance Evaluation*, 15(1), 89-111. <https://doi.org/10.1504/IJAAPE.2019.096748>
80. Institute of Chartered Accountants in England and Wales (ICAEW). (1999). *No surprises: The case for better risk reporting*.
81. Islamic Financial Services Board (IFSB). (2005). *Guiding principles of risk management for institutions (other than insurance institutions) offering only Islamic financial services*. <https://www.ifsb.org/download.php?id=4357&lang=English&pg=/published.php>
82. Ismail, R., Rahman, R. A., & Ahmad, N. (2013). Risk management disclosure in Malaysian Islamic financial institutions: Pre-and post-financial crisis. *The Journal of Applied Business Research*, 29(2), 419-432. <https://doi.org/10.19030/jabr.v29i2.7647>
83. Jia, J., Munro, L., & Buckby, S. (2016). A finer-grained approach to assessing the "quality" ("quantity" and "richness") of risk management disclosures. *Managerial Auditing Journal*, 31(8-9), 770-803. <https://doi.org/10.1108/MAJ-12-2014-1135>
84. Kamal Hassan, M. (2009). UAE corporations-specific characteristics and level of risk disclosure. *Managerial Auditing Journal*, 24(7), 668-687. <https://doi.org/10.1108/02686900910975378>
85. Khelif, H., & Hussainey, K. (2016). The association between risk disclosure and firm characteristics: A meta-analysis. *Journal of Risk Research*, 19(2), 181-211. <https://doi.org/10.1080/13669877.2014.961514>
86. Knutson, P. (1992). Financial reporting in the 1990's and beyond: An executive summery. *Financial Analysts Journal*, 48(6), 21-23. <https://doi.org/10.2469/faj.v48.n6.21>
87. Konishi, N., & Ali, M. (2007). Risk reporting of Japanese companies and its association with corporate characteristics. *International Journal of Accounting Auditing and Performance Evaluation*, 4(3), 263-285. <https://doi.org/10.1504/IJAAPE.2007.016281>

88. Kothari, S. P., Li, X., & Short, J. E. (2009). The effect of disclosures by management, analysts, and business press on cost of capital, return volatility, and analyst forecasts: A study using content analysis. *The Accounting Review*, 84(5), 1639–1670. <https://doi.org/10.2308/accr.2009.84.5.1639>
89. Kouwenberg, R. (2006). *Does voluntary corporate governance code adoption increase firm value in emerging markets? Evidence from Thailand*. <https://doi.org/10.2139/ssrn.958580>
90. Krippendorff, K. (1980). *Content analysis: An introduction to its methodology*. SAGE.
91. Krippendorff, K. (2013). Commentary: A dissenting view on so-called paradoxes of reliability coefficients. *Annals of the International Communication Association*, 36(1), 481–499. <https://doi.org/10.1080/23808985.2013.11679143>
92. Lajili, K., & Zeghal, D. (2005). A content analysis of risk management disclosures in Canadian annual reports. *Canadian Journal of Administrative Sciences*, 22(2), 125–142. <https://doi.org/10.1111/j.1936-4490.2005.tb00714.x>
93. Leopizzi, R., Iazzi, A., Venturelli, A., & Principale, S. (2020). Nonfinancial risk disclosure: The “state of the art” of Italian companies. *Corporate Social Responsibility and Environmental Management*, 27(1), 358–368. <https://doi.org/10.1002/csr.1810>
94. Li, Y., Richardson, G. D., & Thornton, D. B. (1997). Corporate disclosure of environmental liability information: Theory and evidence. *Contemporary Accounting Research*, 14(3), 435–474. <https://doi.org/10.1111/j.1911-3846.1997.tb00535.x>
95. Linsley, P. M., & Shrivs, P. J. (2006). Risk reporting: A study of risk disclosures in the annual reports of UK companies. *The British Accounting Review*, 38(4), 387–404. <https://doi.org/10.1016/j.bar.2006.05.002>
96. Linsley, P. M., Shrivs, P. J., & Crumpton, M. (2006). Risk disclosure: An exploratory study of UK and Canadian banks. *Journal of Banking Regulation*, 7(3), 268–282. <https://doi.org/10.1057/palgrave.jbr.2350032>
97. Lipunga, A. M. (2014). Risk disclosure practices of Malawian commercial banks. *Journal of Contemporary Issues in Business Research*, 3(3), 154–167. https://www.researchgate.net/publication/262075044_RISK_DISCLOSURE_PRACTICES_OF_MALAWIAN_COMMERCIAL_BANKS
98. Liu, X., & Anbumozhi, V. (2009). Determinant factors of corporate environmental information disclosure: An empirical study of Chinese listed companies. *Journal of Cleaner Production*, 17(6), 593–600. <https://doi.org/10.1016/j.jclepro.2008.10.001>
99. Lopes, P. T., & Rodrigues, L. L. (2007). Accounting for financial instruments: An analysis of the determinants of disclosure in the Portuguese stock exchange. *The International Journal of Accounting*, 42(1), 25–56. <https://doi.org/10.1016/j.intacc.2006.12.002>
100. Marston, C. L., & Shrivs, P. J. (1991). The use of disclosure indices in accounting research: A review article. *The British Accounting Review*, 23(3), 195–210. [https://doi.org/10.1016/0890-8389\(91\)90080-L](https://doi.org/10.1016/0890-8389(91)90080-L)
101. McNulty, T., Zattoni, A., & Douglas, T. (2013). Developing corporate governance research through qualitative methods: A review of previous studies. *Corporate Governance: An International Review*, 21(2), 183–198. <https://doi.org/10.1111/corg.12006>
102. Miihkinen, A. (2012). What drives quality of firm risk disclosure? The impact of a national disclosure standard and reporting incentives under IFRS. *The International Journal of Accounting*, 47(4), 437–468. <https://doi.org/10.1016/j.intacc.2012.10.005>
103. Miihkinen, A. (2013). The usefulness of firm risk disclosures under different firm riskiness, investor-interest, and market conditions: New evidence from Finland. *Advances in Accounting*, 29(2), 312–331. <https://doi.org/10.1016/j.adiac.2013.09.006>
104. Milne, M. J., & Adler, R. W. (1999). Exploring the reliability of social and environmental disclosures content analysis. *Accounting, Auditing & Accountability Journal*, 12(2), 237–256. <https://doi.org/10.1108/09513579910270138>
105. Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *The Academy of Management Review*, 22(4), 853–886. <https://doi.org/10.2307/259247>
106. Mohobbot, A. (2005). Corporate risk reporting practices in annual reports of Japanese companies. *Japanese Journal of Accounting*, 16(1), 113–133. https://jaiaas.org/content/files/pdf/academic_records/2005bulletin/p113Ali%20Md.Mohobbot.pdf-p113Ali%20Md.Mohobbot.pdf
107. Molyneux, P., & Iqbal, M. (Eds.). (2005). Banking and financial systems in non-Gulf Arab countries. In *Banking and financial systems in the Arab world* (pp. 74–112). Palgrave Macmillan. <https://doi.org/10.1007/978-0-230-51212-2>
108. Moumen, N., Othman, H. B., & Hussainey, K. (2016). Board structure and the informativeness of risk disclosure: Evidence from MENA emerging markets. *Advances in Accounting*, 35, 82–97. <https://doi.org/10.1016/j.adiac.2016.09.001>
109. Muzahem, A. (2011). *An empirical analysis on the practice and determinants of risk disclosure in an emerging capital market: The case of United Arab Emirates* [Doctoral thesis, University of Portsmouth]. University of Portsmouth. <https://researchportal.port.ac.uk/en/studentTheses/an-empirical-analysis-on-the-practice-and-determinants-of-risk-di>
110. Naser, K., Al-Hussaini, A., Al-Kwari, D., & Nuseibeh, R. (2006). Determinants of corporate social disclosure in developing countries: The case of Qatar. *Advances in International Accounting*, 19, 1–23. [https://doi.org/10.1016/S0897-3660\(06\)19001-7](https://doi.org/10.1016/S0897-3660(06)19001-7)
111. Neifar, S., & Jarbou, A. (2018). Corporate governance and operational risk voluntary disclosure: Evidence from Islamic banks. *Research in International Business and Finance*, 46, 43–54. <https://doi.org/10.1016/j.ribaf.2017.09.006>
112. Neifar, S., Salhi, B., & Jarbou, A. (2020). The moderating role of Shariah supervisory board on the relationship between board effectiveness, operational risk transparency and bank performance. *International Journal of Ethics and Systems*, 36(3), 325–349. <https://doi.org/10.1108/IJOES-09-2019-0155>
113. Neuman, W., & Robson, K. (2014). *Basics of social research* (3rd ed.). Pearson Canada.
114. Ntim, C. G., Lindop, S., & Thomas, D. A. (2013). Corporate governance and risk reporting in South Africa: A study of corporate risk disclosures in the pre-and post-2007/2008 global financial crisis periods. *International Review of Financial Analysis*, 30, 363–383. <https://doi.org/10.1016/j.irfa.2013.07.001>

115. Oliveira, J. S., Lima Rodrigues, L., & Craig, R. (2011). Voluntary risk reporting to enhance institutional and organisational legitimacy: Evidence from Portuguese banks. *Journal of Financial Regulation and Compliance*, 19(3), 271-288. <https://doi.org/10.1108/13581981111147892>
116. Omar, B., & Simon, J. (2011). Corporate aggregate disclosure practices in Jordan. *Advances in Accounting*, 27(1), 166-186. <https://doi.org/10.1016/j.adiac.2011.05.002>
117. Onoja, A., & Agada, G. O. (2015). Voluntary risk disclosure in corporate annual reports: An empirical review. *Research Journal of Finance and Accounting*, 6(17), 1-8. <https://core.ac.uk/download/pdf/234631005.pdf>
118. Organization of the Petroleum Exporting Countries (OPEC). (2012). *Annual statistical bulletin*. https://www.opec.org/opec_web/static_files_project/media/downloads/publications/ASB2012.pdf
119. Owusu-Ansah, S. (1998). The impact of corporate attributes on the extent of mandatory disclosure and reporting by listed companies in Zimbabwe. *The International Journal of Accounting*, 33(5), 605-631. [https://doi.org/10.1016/S0020-7063\(98\)90015-2](https://doi.org/10.1016/S0020-7063(98)90015-2)
120. Peasnell, K. V. (1997). *Financial reporting of risk: Proposals for a statement of business risk*. Institute of Chartered Accountants in England and Wales (ICAEW).
121. Rahman Belal, A. (2016). *Corporate social responsibility reporting in developing countries: The case of Bangladesh*. Routledge. <https://doi.org/10.4324/9781315574332>
122. Rahman Belal, A., & Owen, D. L. (2007). The views of corporate managers on the current state of, and future prospects for, social reporting in Bangladesh: An engagement-based study. *Accounting, Auditing & Accountability Journal*, 20(3), 472-494. <https://doi.org/10.1108/09513570710748599>
123. Rajab, B., & Handley-Schachler, M. (2009). Corporate risk disclosure by UK firms: Trends and determinants. *World Review of Entrepreneurship, Management and Sustainable Development*, 5(3), 224-243. <https://doi.org/10.1504/WREMSD.2009.026801>
124. Riahi-Belkaoui, A. (2004). *Accounting theory* (5th ed.). Cengage Learning EMEA.
125. Rice, S. C., & Weber, D. P. (2012). How effective is internal control reporting under SOX 404? Determinants of the (non-) disclosure of existing material weaknesses. *Journal of Accounting Research*, 50(3), 811-843. <https://doi.org/10.1111/j.1475-679X.2011.00434.x>
126. Safieddine, A. (2009). Islamic financial institutions and corporate governance: New insights for agency theory. *Corporate Governance: An International Review*, 17(2), 142-158. <https://doi.org/10.1111/j.1467-8683.2009.00729.x>
127. Said Mokhtar, E., & Mellett, H. (2013). Competition, corporate governance, ownership structure and risk reporting. *Managerial Auditing Journal*, 28(9), 838-865. <https://doi.org/10.1108/MAJ-11-2012-0776>
128. Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research methods for business students* (4th ed.). Prentice Hall.
129. Savard, K., Reeve, J., Gimour, A. B., Agha, R. A., & Ahmed, T. (2009). *The Saudi stock market: Structural issues, recent performance and outlook*. Samba Financial Group. SILO.TIPS. <https://silو.tips/download/the-saudi-stock-market-structural-issues-recent-performance-and-outlook>
130. Schrand, C., & Elliott, J. A. (1998). Risk and financial reporting: A summary of the discussion at the 1997 AAA/FASB Conference. *Accounting Horizons*, 12(3), 271-282. ProQuest. <https://www.proquest.com/openview/c64b454ea0590141a06f2849eee87dc6/1?pq-origsite=gscholar&cbl=3330>
131. Shrives, P. J., & Linsley, P. M. (2003). *Risk disclosure in UK and German annual reports: A comparative study* (Paper presentation). European Accounting Association 26th Annual Conference, Lisbon, Portugal. <https://pure.york.ac.uk/portal/en/publications/risk-disclosure-in-uk-and-german-annual-reports-a-comparative-study>
132. Solomon, J. F., Solomon, A., Norton, S. D., & Joseph, N. L. (2000). A conceptual framework for corporate risk disclosure emerging from the agenda for corporate governance reform. *The British Accounting Review*, 32(4), 447-478. <https://doi.org/10.1006/bare.2000.0145>
133. Solomon, J. F., Solomon, A., Norton, S. D., & Joseph, N. L. (2011). Private climate change reporting: An emerging discourse of risk and opportunity? *Accounting, Auditing & Accountability Journal*, 24(8), 1119-1148. <https://doi.org/10.1108/09513571111184788>
134. Souabni, S. (2011). *Predicting an uncertain future: Narrative reporting and risk information*. ACCA. <https://www.accaglobal.com/gb/en/technical-activities/technical-resources-search/2011/april/predicting-uncertain-future.html>
135. Spira, L. F., & Page, M. (2010). Regulation by disclosure: The case of internal control. *Journal of Management and Governance*, 14(4), 409-433. <https://doi.org/10.1007/s10997-009-9106-9>
136. Tan, Y., Zeng, C. C., & Elshandidy, T. (2017). Risk disclosures, international orientation, and share price informativeness: Evidence from China. *Journal of International Accounting, Auditing and Taxation*, 29, 81-102. <https://doi.org/10.1016/j.intaccaudtax.2017.08.002>
137. Tsakumis, G. T., Douppnik, T. S., & Seese, L. P. (2006). Competitive harm and geographic area disclosure under SFAS 131. *Journal of International Accounting, Auditing and Taxation*, 15(1), 32-47. <https://doi.org/10.1016/j.intaccaudtax.2006.01.003>
138. Tsamenyi, M., Enninful-Adu, E., & Onumah, J. (2007). Disclosure and corporate governance in developing countries: Evidence from Ghana. *Managerial Auditing Journal*, 22(3), 319-334. <https://doi.org/10.1108/02686900710733170>
139. Veltri, S., De Luca, F., & Phan, H.-T.-P. (2020). Do investors value companies' mandatory nonfinancial risk disclosure? An empirical analysis of the Italian context after the EU Directive. *Business Strategy and the Environment*, 29(6), 2226-2237. <https://doi.org/10.1002/bse.2497>
140. Verrecchia, R. E. (1983). Discretionary disclosure. *Journal of Accounting and Economics*, 5, 179-194. [https://doi.org/10.1016/0165-4101\(83\)90011-3](https://doi.org/10.1016/0165-4101(83)90011-3)
141. Wacker, J. G. (1998). A definition of theory: Research guidelines for different theory-building research methods in operations management. *Journal of Operations Management*, 16(4), 361-385. [https://doi.org/10.1016/S0272-6963\(98\)00019-9](https://doi.org/10.1016/S0272-6963(98)00019-9)
142. Yang, R., Yu, Y., Liu, M., & Wu, K. (2018). Corporate risk disclosure and audit fee: A text mining approach. *European Accounting Review*, 27(3), 583-594. <https://doi.org/10.1080/09638180.2017.1329660>
143. Zattoni, A., Douglas, T., & Judge, W. (2013). Developing corporate governance theory through qualitative research. *Corporate Governance: An International Review*, 21(2), 119-122. <https://doi.org/10.1111/corg.12016>