A Study of the Sustainability Risk Disclosure Practices of Listed Companies in Australia

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Abstract

This thesis investigates the extent to which the top 100 ASX-listed companies disclose economic, environmental, and social sustainability risk factors in light of the changes introducing Recommendation 7.4 in the third edition of the *Corporate Governance Principles and Recommendations* (ASX, 2014) in 2014. Using content analysis, I examine the cross-referenced documents in Appendix 4G statements to measure the extent of economic, environmental, and social sustainability risk disclosures by the top 100 Australian listed companies during the 2014-15 financial year, the first full reporting period after the changes came into effect.

Recommendation 7.4 attained a high degree of acceptance among companies. All companies complied with the recommendation, although questions of substance over form were raised for several companies. Annual reports are the main means of disclosing sustainability risk, followed by sustainability reports, web disclosures, annual reviews, and corporate governance statements. Many companies use images to disclose sustainability risks in addition to narratives. Further, economic sustainability risk disclosures are higher in non-sensitive industries, whereas social and environmental sustainability risk disclosures are higher in sensitive industries. Last, company size is positively related to sustainability risk disclosure.

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Statement of Candidate

I certify that the work in this thesis entitled "A Study of the Sustainability Disclosure Practices of the Listed Companies in Australia" has not previously been submitted for a degree nor has it been submitted as part of the requirements for a degree to any other university or institution other than Macquarie University. I also certify that the thesis is an original piece of research and it has been written by me. Any help and assistance that I have received in my research work and the preparation of the thesis itself have been appropriately acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Md Amir Hossain

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TABLE OF CONTENTS

List of Tables

List of Acronyms

ASIC	Australian Securities and Investments Commission
ASX	Australian Securities Exchange
BHP	Broken Hill Proprietary
CERES	Coalition for Environmentally Responsible Economies
DPS	Dividend Per Share
EPA	The Environmental Protection Agency
EPS	Earnings Per Share
FRC	Financial Reporting Council
GFC	Global Financial Crisis
GICS	Global Industry Classification Standard
GRI	Global Reporting Initiative
ICAEW	Institute of Chartered Accountants in England and Wales
IIRC	International Integrated Reporting Council
NGO	Non-Government Organisation
SEC	Securities Exchange Commission
UNEP	United Nations Environment Programme
UK	United Kingdom
US	United States
WBCSD	World Business Council for Sustainable Development

1 Introduction

Increasingly corporations are publishing disclosures on different dimensions of sustainability in their annual reports, standalone sustainability reports, and on the world-wide web (Herbohn, Walker, & Loo, 2014; Klettner, Clarke, & Boersma, 2014; Van Staden & Hooks, 2007). Changes in social, environmental, and economic arenas are redefining the paths by which global corporations are conducting their businesses (GRI, 2013). According to Galbreath (2013), today economies are interwoven with each other. Globalisation coupled with continuously changing political scenarios is causing significant shifts in the world's use of resources and the behaviour of consumers (World Business Council for Sustainable Development, 2004). The World Business Council for Sustainable Development (2004) states that one of the principal challenges currently facing companies is to deal with the sources of these changes and to be aware of their potential long-term impact on business entities. In addition, the global financial crisis (GFC) has shed light on the ways that companies deal with their responsibilities to stakeholders. This, in turn, is leading to progress in the consideration of environmental and social impacts by all stakeholders (Boerner, 2010; Mănescu, 2011).

Sustainability grounds the development debate in a global framework, within which the "continuous satisfaction of human needs constitute the ultimate goal" (Brundtland, 1987). Sustainable development was defined in Brundtland's (1987) report as "development that meets the needs of the present world without compromising the ability of future generation to meet their own needs" (p. 8). When applying this concept to the corporate world, sustainability can be defined "as the needs and demands of the various stakeholders (e.g., customers, citizen groups, investors, workers, and clients) without diminishing the ability of the corporation to meet the needs and demands of the future stakeholders" (Dyllick & Hockerts, 2002). Moreover, emerging business models are incorporating regard for the environment, society, and governance, as businesses are under significant pressure from new regulatory frameworks to prove their legitimacy (Dumay, Frost, & Beck, 2015). Hence, issuing voluntary disclosures about the non-financial aspects of an organisation is an attempt to acquire this legitimacy (Buhr, 1998; Deegan et al., 2002).

Corporate reporting has evolved in scope from the purely financial reporting of the past into sustainability reporting today. However, sustainability reporting has a much wider scope, encompassing economic, environmental, and social issues. Companies that engage in sustainability reporting often do so on a voluntary basis, given it is not mandatory in most countries. In Australia, listed companies must disclose their sustainability risks on an "if not, why not” basis (ASX, 2014, p. 3). For these companies, sustainability reporting might be seen as being required, rather than voluntary. Corporate sustainability reporting generally provides non-financial information to its stakeholders so that they can evaluate if its operation is sustainable or not. A company is considered to be sustainable if it meets three conditions: first, it is economically sound, second, its operations have minimal negative impact on the environment and, third, it complies with the social norms and expectations of society. Given these conditions, it is unlikely that any company is truly sustainable (Gray, 2006).

The motivation of my research emerges from the changes introducing Recommendation 7.4 to the third edition of the *Corporate Governance Principles and Recommendations* – hereafter referred to as the *Principles and Recommendations* – which came into effect in 2014 (ASX, 2014). This recommendation guides the broad disclosure practices of listed companies in Australia relating to economic, environmental, and social sustainability risks. The recommendation marks a shift towards a greater involvement of stakeholders in corporate governance, rather than merely regard for shareholders. The research is novel because this study is the first to analyse the impact of the changes to the ASX framework since they came effect in 2014 and, as yet, there is no publication available regarding the effect of Recommendation 7.4 in Australian listed companies. Thus, this research will make a contribution to the social and environmental accounting literature.

Using content analysis, this research analyses Appendix 4G statements and the documents cross-referenced therein, such as annual reports, standalone sustainability reports, corporate governance statements, annual reviews, and web disclosures to measure the extent of economic, environmental, and social sustainability risk disclosures by the top 100 Australian listed companies during the 2014-15 financial year (FY). This reporting period was chosen because it is the first full reporting period after the changes came into effect.

This study is particularly interesting since publicly traded companies in Australia are not required to follow the *Principles and Recommendations*. The board of a listed company has the discretionary power to *not* adopt the guidelines if, for example, they assess the Council’s recommendations as not appropriate for their particular circumstances (e.g., due to size or complexity), but they must explain why not. This is called the ‘if not, why not’ approach (ASX, 2014, p. 3). In all other circumstances, a listed company must explain the governance systems they have adopted so that shareholders can make informed votes and meaningful decisions about potential investments, and “the investment community can have a meaningful dialogue with the board and management on governance matters” (ASX, 2014).

Thus, we now have a principles-based approach rather than a rules-based approach. The purpose of this study is to determine how effectively these principles-based recommendations have changed corporate governance compliance and reporting behaviours. In this context, it will be of particular interest for me to analyse how listed companies now disclose their sustainability information. It has been said that such guidelines may influence the level of discretionary activities by managers (Buckby, Gallery, & Ma, 2015).

The purpose of my research is to investigate to what extent level Australian listed companies to practice the sustainability risk disclosure in accordance with the ASX corporate governance principles and recommendations (7.4) came into the effect after 2014. Most large companies in Australia are to some extent engaging with social and environmental aspects of sustainability (Klettner et al., 2014) but not all aspects of sustainability (economic, environmental and social), whereas I will investigate all aspects of sustainability risk disclosure practices to uncover the contemporary issues which focus on sustainable business practices and broader stakeholder interests.

The results establish that all of the sampled companies complied with Recommendation 7.4, although some disclosures raise questions of substance over form. Additionally, all of the sampled companies disclosed their sustainability risks except Domino's Pizza Enterprise Ltd. Annual reports were used as the main medium of disclosure, followed by sustainability reports, websites, annual reviews, and corporate governance statements, respectively. Many companies portrayed their sustainability risk disclosures through images in addition to traditional narratives.

Non-sensitive industries tended to publish more economic sustainability risk disclosures, whereas sensitive industries tended to publish more social and environmental sustainability risk disclosures. Economic sustainability risk disclosures may have been higher in non-sensitive industries, because the financials industry accounts for about 28% of total sample size (27 of 97) and, by the nature of their business, they are more concerned with economic activity. Similarly, sensitive industries may have disclosed more social and environmental sustainability risk information because the nature of their business has a direct physical relationship with the environment and society. Within the sensitive industries, the materials industry reported the most environmental and social disclosures. Lastly, I found that firm size is positively related to sustainability risk disclosure; larger firms reported more sustainability risk disclosures than smaller firms.

The rest of the paper is organised as follows. Section 2 presents a literature review of social, economic and environmental sustainability and section 3 discusses how ASX Corporate Governance Principles and Recommendations are shaping the context of sustainability in Australian listed companies. Section 4 outlines the research methodology and section 5 contains results of the study based on data analysis of top 100 ASX listed companies. Section 6 discussions the results and finally, section 7 concludes the study including how the study contributes empirically, theoretically to extend the current literature of social, economic and environmental sustainability, plus outlines limitations further insights for future research.

2 Literature Review

The purpose of this review is to extend the literature on the current sustainability disclosure trends and practices in Australian listed companies. Sustainability is a rapidly evolving issue, both globally and locally. Organisations are feeling a growing need to practice sustainable business to ensure their future survival. In this review, I focus on the evolution of social, economic, and environmental sustainability disclosures, and their importance. This section concludes with development of a research question.

2.1 Background of Sustainability Reporting/Disclosure

Corporate sustainability reporting has a long history in social and environmental accounting. According to Unerman (2000), corporate sustainability reporting can be traced back to as early as the 1880s. Hogner (1982) reports that US Steel has been publishing social disclosures since 1905, and evidence suggests that General Motors published social disclosures as early as 1916 (Tinker & Neimark, 1987, 1988). In Australia, social disclosures can be traced back to Broken Hill Proprietary (BHP) in 1885 (Guthrie & Parker, 1989). In Holland, Shell began publishing annual social disclosures in 1897 (Unerman, 2000). Buhr (1998) and Campbell (2000) note that corporations first published social and environmental performance reports in the 1960s and 1970s. Thus, corporate sustainability reporting, and particularly social disclosures, have more than a 100-year history in social and environmental accounting.

Sustainability reporting has expanded considerably over the last 20 years in small and large companies across many countries (KPMG, 2015). According to (KPMG, 2015), business enterprises have been reporting the social and environmental impacts of their business entities for many years. Higgins, Milne, and van Gramberg (2015) find that over the last 20 years sustainability reporting, which originated in high-profile industries such as utilities, mining, and energy, has spread to a small number, but extensive variety, of low-profile industries, like stationery suppliers, lawyers, and property firms. Their analysis of 126 Australian corporate sustainability reports shows that high-profile industries practice sustainability to garner strategic legitimacy, avoid pressure from lobby groups, and as a result of their involvement in industry memberships. Whereas, low-profile industries experience pressure from stakeholders, especially their customers and employees, if they do not adopt sustainable practices (Roberts, 1992). All companies fear the repercussions, of environmental accidents, such as Exxon Valdez, that pose a very real threat in terms of negative media coverage and reputational risk (Brown & Deegan, 1998; Patten, 1992). The evidence suggests that sustainability reporting and disclosures are emerging in both small and large companies to legitimise their businesses. By adhering to social norms in response to threats, these companies are adopting sustainable business practices to meet the expectations of a wide range of stakeholders.

The concept of sustainability gained momentum after the publication of the Brundtland Report (1987) by the World Commission on Economic Development (Aras & Crowther, 2008). According to the Brundtland Commission, sustainability encompasses many concepts including manpower and the general population, the production of food, industry and energy, and species and biodiversity (Brundtland, 1987). The Commission defined sustainable development as "the development of current generation without reducing the ability of the future generations to satisfy their needs" (Brundtland, 1987, p. 8). This indicates that society must not use resources in amounts it cannot regenerate or replenish in the future (Aras & Crowther, 2008). Further, the Brundtland Report emphasises that sustainable development requires the simultaneous adoption of environmental, economic, and equity principles. Beginning in the early 1990s, sustainability reporting by firms exclusively covered environmental issues (Mathews, 1997) and largely covered the policies taken by the corporation with respect to their operational impacts (ICAEW, 1994). ICAEW (1994) reveal that most disclosures were made in the entities' annual reports. However, from the latter half of the 1990s corporations also began to disclose information about health and safety (Gray, Owen, & Adams, 1996).

Around this time, Elkington (1997) coined the term 'triple bottom line reporting' to describe reporting on the environment, social, and economic aspects of a firm. His *Cannibals with forks* is a visionary publication on the famous 'people, planet, profit' triangle (Elkington, 1997). It aims to harmonise the traditional financial bottom line with environmental and social justice by addressing seven components, i.e., markets, values, transparency, lifecycle technology, partnership, time, and corporate governance. He proposes 39 steps for sustainable business practice to business managers, and he criticises the market and policy makers for their short-sighted vision of sustainable development, while encouraging multinational initiatives whose main aim is to achieve sustainable business practice. He argues that legislation has an important role in achieving sustainable development objectives and that taxation should reflect the true price of economic, environmental, and social justice (Elkington, 1997).

Throughout the 1990s, large multinational corporations increasingly published sustainability reports on a voluntary basis, and it became a common trend for companies to inform stakeholders of their awareness of the environment and society (Kolk, 2004, 2005, 2008). During this period, the Coalition for Environmentally Responsible Economies (CERES) and the United Nations Environment Programme (UNEP) jointly initiated a scheme that would ultimately lead to the emergence of the GRI in 1997. Their first set of principles was established in 2000, also known as Guidelines 1 (G1). The second version of the Guidelines, G2, was published in 2002, and in 2006, the third generation was released. As of May 2013, the fourth generation, G4, became available. According to the GRI (2013), G4 was published after extensive discussions with various expert bodies, civil societies, rights groups, academics, labour groups, market participants, and businesses. G4 focuses on materiality and stakeholders' views; it makes connections between a company's strategy, its operations, and its sustainability impacts. The purpose of G4 is to broaden the periphery of the sustainability reporting framework to fit with all kinds of business enterprises (GRI, 2013).

2.2 Sustainability

Sustainability has become one of the most cited terminologies this century (Dyllick & Hockerts, 2002). Diamond (1996) states that the World Commission on Economic Development can be credited with making this concept popular when it published the famous report, *Our Common Future*. According to Brundtland (1987), sustainable development "is development that meets the needs of the present without compromising the ability of future generations to meet their needs" (p. 43). Dyllick and Hockerts (2002) define sustainability as the embodiment of "the promise of societal evolution towards a more equitable and wealthy world in which the natural environment and our cultural achievements are preserved for generations to come" (p. 130).

However, sustainability, from a corporation's point of view, can be viewed as the growth and development of a firm after taking the environmental, social, and economic justice of its stakeholders into consideration (Yilmaz & Flouris, 2010). Dyllick and Hockerts (2002) further argue that sustainability for a company can be defined as the needs and demands of its various stakeholders, for instance, its customers, citizen groups, investors, workers, and clients, without diminishing the ability of the corporation to meet the needs and demands of future stakeholders.

Therefore, the scope of corporate disclosures has been broadened from merely financial disclosures to sustainability risk disclosures that incorporate the social, environmental, and economic risks within it. It is important to mention that the most significant difference between traditional management philosophies and sustainability is that economic sustainability is not enough for the survival of today's corporations (Gladwin, Krause, & Kennelly, 1995). Dyllick and Hockerts (2002) stress that a narrow focus on economic sustainability does not ensure a company's future success. Rather, it requires holistic approach where all three dimensions of sustainability must be looked after, namely economic, social, and environmental sustainability. In the same vein, sustainability risk disclosures disseminate information to stakeholders of the company, so they are better able to evaluate its performance and determine its social, environmental, and economic risks. In brief, we can say that a company is expected to be sustainable if its operations have no negative impact on the environment, match the expectations of society, and are financially sound.

Today, managers are realising more and more that, to achieve sustainability, companies have to comply with the social and environmental norms dictated by stakeholders, as well as maintain their financial bottom-line (Dyllick & Hockerts, 2002). According to Benn, Dunphy, and Griffiths (2006), vocal human rights activities, environmental awareness, environmental movements, and worldwide consensus increasingly concern the fair treatment of social and environmental measures – and these dynamics are driving corporate managers to behave sustainably. Managers in the corporate world are beginning to recognise sustainability as a precursor for conducting and legitimising their businesses (Holliday, 2001). Christofi, Christofi, and Sisaye (2012) emphasise that growing pressure for the regulation of social justice, economic growth, and environmental change lead to the evolution of corporate sustainability.

This evolution is evidenced by the many companies that now employ executives who specialise in creating and maintaining sustainability at a corporate level, issue reports on sustainability risk, and include sustainability risk in their business strategies (Dyllick & Hockerts, 2002). It is worth mentioning that Friedman (1970) famous quote as to the 'social responsibility of business' is now almost obsolete, as businesses all over the world are under pressure from stakeholders to disclose information regarding the environment and society in which they operate (Burritt, Burritt, & Schaltegger, 2010; Kathy Rao, Tilt, & Lester, 2012).

2.3 Context of Sustainability Disclosures

Corporate governance has attracted much attention over the past decade. The corporate collapses and widespread instability caused by the GFC have provoked concern in the world's major financial markets (Abraham & Shrives, 2014). Prominent among these concerns are criticisms of inaccurate and inadequate corporate disclosures about governance practices, particularly those relating to social, environmental, and economic risk. According to Abraham and Shrives (2014), these shortcomings in disclosure are claimed to have an impact on investors' abilities to fully assess information about public companies and their associated risks. Although there is general consensus on the need for effective management of risk disclosure, there is less agreement on how and to what extent risk related to social, environmental, and economic sustainability should be disclosed.

2.3.1 Environmental Sustainability Disclosure

Environmental sustainability principles ensure that human activities do not erode the earth's land, air, and water resources (Bansal, 2005). Human actions can have a substantial negative impact on the natural environment, including reduced biodiversity, depletion of the ozone layer, the emission of greenhouse gasses, poor waste management, the destruction of forests, and the disposal of toxic substances in nature (Bansal, 2005). If the natural environment is endangered, then the fundamental and most important elements of human life, such as air, water, and earth will also be compromised (Bansal, 2005).

Environmental disclosures consider the organisation's impact on the environment (Campbell, 2004). Such disclosures might provide either positive or negative information that is not available in a financial report but is highly significant to shareholders and investors for their decision making (Adams, 2004). Adams (2004) argues that environmental reports should include a clear statement of the organisation's environmental values and the steps taken to uphold those values. Reports should also present stakeholders with measurable outcomes.

Environmental disclosures may be published in a separate report, as a part of an annual report, or on the company's website. Financial disclosures may be numerical, non-numerical, or a combination of both (Gray, Kouhy, & Lavers, 1995). Though it is not mandatory to report environmental information in Australia, stakeholders now expect some environmental disclosures from companies (Gibson & O'Donovan, 2007).

2.3.2 Social Sustainability Disclosure

According to Hess, Rogovsky, and Dunfee (2002), social sustainability includes not only the traditional practice of corporate philanthropy but can also "encompass a variety of forms and points of focus, ranging from corporate support for training and educating adults and youth in local communities, to nationwide programs helping welfare recipients get jobs, to globally focused efforts providing aid to developing countries" (p. 110). To be a socially sustainable business entity, Gladwin et al. (1995, p. 42) suggest that a corporation needs to eliminate social costs, increase the growth of capital, ensure democracy, provide a wide array of choice for all people concerned, and allocate the societal resources in a fair and equitable way to ensure justice for everyone. Today, customers increasingly demand that business entities think about human rights in their employment practices (Brønn & Vidaver-Cohen, 2009). Employees have shown greater interest and loyalty to those companies with a knack for working for the well-being of the society (Aguilera, Rupp, Williams, & Ganapathi, 2007). Social responsibility disclosures can include disclosures pertaining to the interplay between a corporation and its social and physical environment, including information relating to human resources and community development, the natural environment in which it operates, energy, and product safety rules (Deegan & Rankin, 1996).

2.3.3 Economic Sustainability Disclosure

The concept of sustainable development comes, necessarily, from consequences relating to the destruction and exploitation of natural resources. It is now well recognised that large corporate entities, as vehicles for economic development and growth, have a significant impact on the natural and social environment (Shrivastava & Berger, 2010). The GFC is a comparatively recent example that reminds us of the economic aspects of sustainability risk (Lenssen et al., 2014). Lenssen et al. (2014) argue that after the demise of Lehman Brothers in 2008 in the USA, with its huge USD $639 billion in assets, the common people's trust in our financial system has diminished significantly. In addition, they further suggest the sub-prime financial crisis in the United States (US) serves to extend the already intense debate about the way corporations are conducting business. As a consequence, stakeholders would precisely question the typical and superficial methods for taking the principles of corporate sustainability efforts into account (Stevens, Kevin Steensma, Harrison, & Cochran, 2005; Weaver, Treviño, & Cochran, 1999).

Traditional financial statements focus on the profitability of an organisation, whereas the economic dimension of sustainability presents a comprehensive view of the economic interactions of an organisation with its stakeholders (e.g., its investors, customers, the community, and employees). Intangible assets (e.g., goodwill and reputation) gain more weight in sustainability reporting (Ho & Taylor, 2007). Information about economic sustainability provides stakeholders with assurances that a firm is economically viable by maintaining its financial bottom-line and generally comes in the form of net income and future earnings potential.

2.4 The Importance of Sustainability Disclosures

In accordance with stakeholder theory, corporations are accountable to provide their social and environmental performance information, with the exception of patented information, to stakeholders (Gray et al., 1996). In response to this, companies disclose their non-financial information to a wide range of stakeholders for perceived benefits, such as minimising pressure from peer and lobby groups; sustaining and increasing reputation; reducing public debate over negative aspects of their business; representing themselves as an accountable member of society; and to solicit social support (Clarkson, Li, Richardson, & Vasvari, 2008; Matsumura, Prakash, & Vera-Muñoz, 2014; O'Donovan, 2002). For example, if an organisation does not adopt sustainability disclosure practices, but their competitor does, there is a fear that powerful stakeholders may withdraw capital thus threatening business operations. Therefore, companies disclose sustainability information to meet the desires of its stakeholders to maintain their competitive position in the market.

Moreover, companies are confronting ever-increasing weight from persuasive and powerful stakeholders: institutional shareholders, NGOs, financial risk managers, insurance agencies, carbon dealers, and so forth. As a result, they voluntarily disclose sustainability information so stakeholders can observe, measure, and assess their data, particularly carbon discharges (Matsumura et al., 2014, p. 699).

Herbohn et al. (2014) state that corporate sustainability is an important issue. KPMG (2011) report that firms are increasingly concerned with sustainability disclosures. This is further strengthened by evidence that 1793 global companies filed sustainability reports with the GRI in 2010, among which 37% were audited by independent external parties (Borkowski, Weish, & Wentzel, 2011, p. 2). Since 2010, The Johannesburg Stock Exchange has required listed entities to file integrated reports that include social, economic, and ecologic information (Eccles & Saltzman, 2011). For better corporate governance practices, The UK Corporate Governance Code also requires the listed companies to apply "Comply or Explain" approach of corporate governance (FRC, 2016, p. 4). The 'comply or explain' approach is not a rigid set of rules but companies need to explain if they depart from any main and supporting principles. The purpose is to encourage companies to adopt the spirit of the code rather than just comply in principle. Therefore, the ultimate vision of corporate governance is to instil effective corporate governance practices in listed companies in the UK (Arcot, Bruno, & Faure-Grimaud, 2010). A similar approach is also applied in Germany to enhance the quality and transparency of corporate governance practice of listed companies (v Werder, Talaulicar, & Kolat, 2005).

Morhardt, Baird, and Freeman (2002) add further important reasons for companies to engage in environment and social risk management, such as complying with environmental codes, practices, and regulatory requirements, proactively reducing costs, and preparing for stringent future regulations. Additionally, stakeholders around the world are more aware of these issues and want to know how corporations are responding to such challenging issues (GRI, 2013). To match the expectations of stakeholders it has been said that companies voluntarily undertake sustainability disclosures to maintain, repair, or gain legitimacy for their organisations in the community (Deegan, Rankin, & Tobin, 2002; O'Donovan, 2002; Suchman, 1995). As a result of stakeholder expectations, companies prepare sustainability reports or disclosures to legitimise their existence, as well as to meet the needs of the stakeholders (Marquis & Qian, 2014). On the other hand, if a company fails to disclose its sustainability or performance information to society, the community may react in an adverse way resulting in losing its licence to operate, product boycotts, reputation damage, etc. This legitimacy helps to mitigate any potential conflict between the company's management and the external stakeholders (Campbell & Cornelia, 2004).

Morhardt et al. (2002) further argue that legitimacy with society and adhering to societal norms are the two most essential reasons for disclosing social and environmental information to stakeholders. They also argue that disclosing non-financial information depends on: the extent to which management can proactively set its policies and strategies; the cost associated with providing information that is to relevant stakeholders; the company's size; and other indicators of the company's performance.

2.5 The Effect of Firm's Size and Industry's Sensitivity in Sustainability Risk Disclosure

Socio-political theories (legitimacy and stakeholder theory) posit that environmentally sensitive industries will disclose more sustainability information specifically environmental and social information in response to greater pressure from powerful stakeholders (Adams, 2002; De Villiers & Van Staden, 2011; Deegan & Gordon, 1996; Patten, 2002). Additionally, sensitive industries disclose more sustainability information than non-sensitive industries due to their direct physical impact on the environment and in the community (Cho & Patten, 2007; Herbohn et al., 2014). For example, Ho & Taylor (2007) find that the manufacturing industry disclosed more sustainability information than other industries due to their nature of business.

Moreover, Socio-political theories also posit that there has a positive relationship between firm size and disclosure since larger companies are experiencing more pressure from powerful stakeholders, media attack, political intervention, and regulations, and peer groups (Herbohn et al., 2014; Ho & Taylor, 2007). It is also argued that larger companies can reduce costs by disseminating sustainability information because it counters pressure from influential stakeholders and news media. Therefore, voluntary disclosures results in more coverage in news media and allows for engaging with the broad range of interested parties as opposed to a direct meeting or conference (Ho & Taylor, 2007, p. 130). Clarkson et al. (2008) also find that larger firms disclose more sustainability information due to economies of scales. Thus, I also hypothesized in this study that larger companies would disclose more sustainability information to its stakeholders.

2.6 Media for Communicating Sustainability Risk Disclosures

In previous research, annual reports are viewed as the most significant archive of corporate social and environmental disclosures because arguably they provide reliable information to stakeholders (Adams & Frost, 2006; Magness, 2006), and are a primary channel of communication (Adams & Harte, 1998; Gibson & O'Donovan, 2007). However, over the last two decades, a significant number of companies also used stand-alone sustainability reports to disclose their social and environmental performance information to their stakeholders (Campbell, 2004). Sustainability reporting is a management strategy that can provide competitive advantages to firms among peers and provides value by disclosing sustainability performance to stakeholders (Bebbington, Higgins, & Frame, 2009, p. 588). A recent study conducted by Higgins et al. (2015) based on sustainability reports in Australian context found that large size and sensitive industries already using sustainability reports for disclosing their non-financial information to its stakeholders. They also found that less visible industries are also initiating to use the sustainability reports to communicate their social and environmental performance to its stakeholders. Dhaliwal, Radhakrishnan, Tsang, and Yong George (2012) find that standalone sustainability reports reduce the analyst's earnings forecasting errors and lessen the cost of capital (Dhaliwal et al., 2011).

With the advent of technology in recent years, many organizations have also increased the usage of internet to publish their sustainability information in an interactive form (online sustainability report) and web disclosures on their home site (Guthrie, Cuganesan, & Ward, 2008; Unerman, Guthrie, & Striukova, 2007). The corporate world wide web is a useful media of communicating social and environmental information in addition of financial information to the stakeholders (Lodhia, 2010). The use of the web for social and environmental disclosures brings about communication in a real time, interactive way to present and organise the information rather than merely unidirectional reporting (Lodhia, 2006, 2010).

2.7 From Reporting to Disclosure: A Departure

Disclosure is more than reporting since it comprises divulging information that was previously hidden by companies in channels of communication to their stakeholders. The paper by Dumay (2016) presents an engrossing discussion on the extant and projected evolution of reporting substantive disclosures. He describes disclosure as “the revelation of information that was previously secret or unknown” (Dumay, 2016, p.178). Disclosure means exposing something new about the past, present, or future. From a financial angle, investors are always looking for more timely and relevant information, especially if it is secret or unknown. For these purposes, “three concepts of disclosure generally proposed are adequate, fair and full disclosure” (Porwal, 2001, p. 397). This justifies that disclosure of information can take many forms, even historical financial statements.

This last observation leads to the research question of the thesis: To what extent do companies disclose social, environmental, and economic sustainability risk disclosures? I will discuss in the following section, ASX corporate governance principles and recommendation 7.4 which is the basis of the research in this thesis.

3 ASX Corporate Governance Principles and Recommendations

The 2014 amendments to the *Principles and Recommendations* included Recommendation 7.4 concerning sustainability risk disclosures that became effective from July 2014 present a valid context to answer the research question. These changes are the primary basis for examining sustainability risk disclosures made by listed companies in accordance with that recommendation in the accounting year (2014-15). It has been said that such guidelines may influence the level of discretionary activities of managers (Buckby et al., 2015). In this context, this research examines the disclosures in terms of the social, environmental, and economic sustainability risks of Australian listed companies.

The ASX Corporate Governance Council first published the *Principles and Recommendations* in 2003 to ensure the sound corporate governance practices of listed entities and to meet the reasonable expectations of shareholders (ASX, 2014). The second edition was published in 2007. It included a new recommendation on diversity and guidelines on the composition of the remuneration committee. The GFC in 2008-12 saw many changes to corporate governance practice across the globe; voluntary and mandatory legislation of governance codes in different jurisdictions were initiated and improved to maintain and protect investors' confidence in the market (ASX, 2014).

Given the effects of GFC and developments in corporate governance in other jurisdictions, a third edition was issued in 2014. Its principal purpose is to meet stakeholders' expectations for good corporate governance practice (ASX, 2014), and these recommendations are now considered to be the yardstick of good corporate governance in Australia (KPMG, 2014). The third edition of the *Principles and Recommendations* provide greater flexibility for Australian listed entities, allowing them to adopt different corporate governance practices based on the size and composition of their organisation.

3.1 If Not, Why Not Approach

Although Australian listed companies may choose any corporate governance guidelines based on their composition, ASX guidelines require that every listed company must include a corporate governance statement in their either annual report or a link on their website (ASX, 2014). Additionally, companies are required to follow the 'if not, why not' approach (ASX, 2014, p. 3). If the board considers that a Council recommendation is not appropriate to its particular circumstances, it is entitled not to adopt it, but it must explain why. Companies should explain their approach to corporate governance to help security holders and other stakeholders develop a meaningful dialogue with the board and management on governance matters, exercise their votes on particular matters; and make meaningful investment decisions (ASX, 2014, p. 3).

3.2 Context of Economic, Environmental, and Social Sustainability

Recommendation 7.4 states, "a listed entity should disclose whether it has any material exposure to economic, environmental and social sustainability risks and, if it does, how it manages or intends to manage those risks" (ASX, 2014, p. 30). This recommendation encompasses all three dimensions of sustainability – environmental, social, and economic – and is the primary basis for me to examine the disclosures made by the listed companies in the 2014-15 financial year.

According to the *Principles and Recommendations*, environmental sustainability is "the ability of a listed entity to continue operating in a manner that does not compromise the health of the ecosystems in which it operates over the long term" (ASX, 2014, p. 37). This definition stresses that environmental sustainability is the ability for a corporation to run its business in a way that does not compromise the health of the environment in which it operates. Brundtland (1987) argues that population growth, coupled with unrestrained consumption, increased pollution, and the depletion of natural resources, endangers ecological integrity. As a consequence, companies are urged to consider sustainability and act according to the principles of environmental responsibility (Shrivastava, 1995b).

Companies are now expected to disclose information about the environment in their annual report, which is considered to be the most important channel to communicate environmental information to stakeholders (Chiang & Northcott, 2012). Such expectations by stakeholders are now being increasingly understood by different accounting bodies and stock exchange regulators (Patten & Freedman, 2008). Realising the significance of environmental disclosures, the ASX has provided guidelines for disclosing information about environmental sustainability in Recommendation 7.4.

Social sustainability is defined as "the ability of a listed entity to continue operating in a manner that meets accepted social norms and needs over the long term" (ASX, 2014, p. 38). To be a socially sustainable enterprise, Gladwin et al. (1995, p. 42) asserts that a firm needs to reduce social costs, maintain and grow its capital stock, foster democracy, enlarge the range of peoples' choices, and distribute resources and property rights fairly. Dyllick and Hockerts (2002) argue that socially sustainable companies add value to the communities within which they operate by enhancing the human capital such as skill levels of employees, awareness of rights related activities They emphasized that corporations manage their business activities in a way that all the concerned stakeholders understand the motives and objectives of business firms and they find a common ground which is in line with the welfare of society. According to Hess et al. (2002), "social sustainability includes not only the traditional practice of corporate philanthropy but can also encompass a variety of forms and points of focus, ranging from corporate support for training and educating adults and youth in local communities, to nationwide programs helping welfare recipients get jobs and to globally focused efforts providing aid to developing countries" (p. 110).

Economic sustainability is defined as "the ability of a listed entity to continue operating at a particular level of economic production over the long term" (ASX, 2014, p. 37). From an economic point of view, sustainability means maintaining the wellbeing of society over a period on a continuous basis (Arrow et al., 2004).

Over the last decade disclosures regarding corporate environmental sustainability have been growing in importance to stakeholders, regulatory bodies, and policy-makers (Dobler, John Sands, Lajili, & Zéghal, 2015). As a result, it has been said that the main driver for promulgating such guidelines comes from society as a whole (Spedding & Rose, 2008). Society now demands that large corporations should increase their standards in areas such as ecology, human rights, and other non-financial governance affairs (Solomon & Darby, 2005). According to Anderson and Anderson (2009), it is important for a listed entity to disclose risk that takes into account the environment, as well as the social aspects of business. This is further evidence that companies are now increasingly challenged by their high exposure towards various risks – especially ecological disasters, technological advancement, political change, and above all human actions (Lenssen et al., 2014).

Therefore, to answer my research question, I focus on the voluntary sustainability risk disclosure practices of Australian listed companies, based on Recommendation 7.4.

4 Research Design and Methodology

Using content analysis, I explore the meaning of the narratives (texts) and the images (figures, charts, and pictures) of the sustainability risk disclosures of the top 100 Australian listed companies for the 2014-15 FY, and measure the extent of their sustainability risk disclosure practices. I categorised each disclosure according to the type of risk – economic, environmental, and social – and measured the number of disclosures in each category. Content analysis has long been a tool in social and environmental accounting (Dumay & Cai, 2014; Frost, 2007; Guthrie et al., 2008). I also chose this method to measure the volume of sustainability risk disclosures by the sampled companies in this study to align with previous research (Gibson & O'Donovan, 2007; Ho & Taylor, 2007).

Content analysis is designed to reveal the "hidden meanings in text" (Krippendorff, 2013, p. 24). Further, it is "a method of collecting data and it includes coding qualitative and quantitative data into pre-defined themes to infer designs in the presentation and reporting of data" (Guthrie, Petty, Yongvanich, & Ricceri, 2004, p. 287). Therefore, content analysis provides not only subjective insights into the text but also opportunities for further analysis using both qualitative and quantitative methods. Thus, content analysis is a suitable research methodology for answering my research question.

4.1 Classification of Disclosures

For reliability of classification, I categorised the sustainability risk disclosures into three themes – economic, environmental, and social sustainability risks – based on the definitions in Recommendation 7.4. Due to the exploratory nature of my study, these classifications have no subsets, which decreases coding errors and manipulations. I coded each disclosure according to its theme when I was exploring the hidden meaning of texts. For example, I coded carbon tax as an economic sustainability risk but carbon dioxide/greenhouse gas (volume) as an environmental sustainability risk. It is worth noting that companies published some disclosures that are mutually exclusive, and these were coded as combined disclosures since separating words from sentences can misrepresent their meaning (Krippendorff, 2013, p. 84). For example, "the business impacts the local communities in which it operates, its employees – their health, safety and livelihood, and the natural environment directly through its activities and indirectly through products used daily that are manufactured from aluminium" (Alumina Limited, 2015, p. 11). In this statement, Alumina discloses environmental risk and social risk in the same sentence; the whole sentence was therefore coded as a combined sustainability risk.

4.2 Unit of Analysis

Selecting the unit of analysis for measuring non-financial disclosures in social and environmental accounting is an important stage in content analysis. The most commonly used units of measure are words (Campbell, 2004; Frost, 2007; Wilmshurst & Frost, 2000), sentences (De Villiers & Van Staden, 2011; Deegan et al., 2002), proportion of pages (Gibson & O'Donovan, 2007; Unerman, 2000), and disclosure indices (Clarkson et al., 2008; Dobler et al., 2015). Although there are different standard units of analysis, they are highly associated with each other (Hackston & Milne, 1996). As such, the findings of this study would not vary significantly whether words, sentences, or the proportion of pages were used (Deegan et al., 2002).

In this analysis, I use words as the unit of analysis to measure the volume of sustainability disclosures of the sampled companies, provided as texts, since "quantitative disclosures are more objective and informative to stakeholders than qualitative information" (Al-Tuwaijri, Christensen, & Hughes, 2004, p. 454). Further, using words as a measure is robust since there is less tendency for counting errors when analysing the texts (Campbell, 2004; Zeghal & Ahmed, 1990). Additionally, the best way to maximise robustness to errors is to measure using the smallest unit of analysis (Deegan & Gordon, 1996, p. 189), which in this case is words.

To determine the number of words, I considered both Frost (2007) and Zeghal and Ahmed (1990) mixed usage of reading sentences then counting words as the unit of analysis for coding narrative disclosures. Zeghal and Ahmed (1990) used mixed usage as their unit of analysis for coding, emphasising "whole sentences and logical parts of sentences, for example, '$50,000 was invested in Project A', was counted as six words and monetary" (p. 42). They argue that it provided a more detailed description because of the exploratory nature of their study. However, I considered the narrative risk exposures as sentences, followed the classification scheme, and then converted them to words to measure the extent of sustainability risk disclosures of the sampled companies.

I then considered the non-narrative sustainability exposures – the images, such as figures, tables, and pictures – since companies also use visual elements to disclosure their behaviours to stakeholders. In this study, I measured the images in dimensions (pixels) to account for the length of the disclosure, rather than counting them as words. I followed Unerman (2000, p. 675) argument that images cannot be measured in words or sentences because of their subjectivity (Guthrie et al., 2004, p. 290; Wilmshurst & Frost, 2000, p. 17). However, simply ignoring the contents of these disclosures due to difficulties with a measuring scale would not allow a comprehensive analysis (Al-Tuwaijri et al., 2004, p. 454). Thus, measuring the images in terms of pixels provides another quantitative unit for evaluation.

4.3 Sampling

I used the top 100 ASX-listed companies for the 2014-15 FY as the sample for this study. Using data from this accounting period is aligned with my research objective since the new ASX guidelines apply to the reporting period "commencing on or after 1st July 2014" (ASX, 2014, p. 7). These top 100 companies represent approximately 74% of the total share market capitalisation of the Australian equity market[1]. They also include large and medium capitalised

[1] http://au.spindices.com/indices/equity/sp-asx-100 as of 20th August 2016

entities contained in the S&P/ASX 50 and the S&P/ASX MidCap 50 Indices. Therefore, I argue that my sample size and period will help to generalise the results for current practices of sustainability risk disclosures of Australian listed companies in response to Recommendation 7.4.

I selected the top ASX 100 companies as of 20 July 2016, for the 2014-15 FY then reduced the sample to 97 companies. I excluded two companies because they were established after 2014-15 FY ended. A further firm was removed from the analysis, as I could not locate their Appendix 4G, and their reports were published to meet the reporting criteria of the US Securities Exchange Commission. Notably, "each listed entity must provide to ASX with its annual report a completed Appendix 4G, which has a key to where the various disclosures suggested in the recommendations or required under the Listing Rule 4.10.3 can be found" (ASX, 2014, p. 5).

After gathering data, I classified the sampled companies into 10 industry sectors according to the Global Industry Classification Standard (GICS)[2] to determine which industry disclosed the most exposures to their stakeholders (Table I). Further, I divided the 10 industry sectors into sensitive and non-sensitive industries to develop a deeper analysis of the disclosure practices of the sampled companies. I consider materials, industrials, energy, and utility industries as sensitive to align with previous research (Clarkson et al., 2008; Dobler et al., 2015; Patten, 2002), and because these industries have a greater physical impact on the environment and in the community. Consumer discretionary, consumer staples, financials telecommunications, healthcare, and information technology are considered to be non-sensitive industries since they have less impact on their physical environment, and to align with previous research (Klettner et al., 2014).

In this study, I also re-arranged the sampled companies according to their highest net assets book value to measure the relationship between firm size and sustainability disclosures. Prior research concluded that larger firms disclose more sustainability information (Clarkson et al., 2008; De Villiers & Van Staden, 2011; Herbohn et al., 2014) on the assumption that large companies have higher economies of scale, which assists them to reduce the cost of preparing non-financial information compared to smaller firms (Ho & Taylor, 2007). This results in more sustainability disclosures.

[2] http://www.asx.com.au/products/gics.htm as of 20th August 2016

Table I Industry Classifications

Industry Name	Number of companies	Percentage
Consumer discretionary	12	12%
Consumer staples	5	5%
Energy	5	5%
Financials	27	28%
Health care	9	9%
Industrials	12	12%
Information technology	2	2%
Materials	17	18%
Telecommunications	3	3%
Utilities	5	5%
Total	**97**	**100%**

4.4 Data Collection

In content analysis, it is considered critical to determine which documents need to be analysed (Krippendorff, 2013). However, in this study, the nature of my research question limited me to collecting Appendix 4G statements, which outline how companies have complied with the *Principles and Recommendations*.

For the purpose of my analysis, the data collection process can be categorised into two classes. First, I used the Australian Securities Exchange (ASX) website[3] to collect the Appendix 4G corporate governance statements and annual reports for my study. There is a requirement under the ASX listing rule 4.10.3[4] that "every listed company must provide to ASX with its annual reports, a completed Appendix 4G as well as a corporate governance statement or the link of the website address where it is located" (ASX, 2014, p. 5).

Further, for data reliability, I accessed the company's website to locate the cross-referenced documents listed in the Appendix 4Gs statements. I was able to collect many relevant documents, such as corporate governance statements, annual reports, standalone sustainability reports, annual reviews, interactive sustainability reports, and online information. If I could not locate an essential document, I emailed a request for the document to either the ASX or the company.

[3] http://www.asx.com.au/about/corporate-overview.htm accessed on 10th June 2016
[4] http://www.asx.com.au/regulation/rules/asx-listing-rules.htm

4.5 Recording/Coding

I used NVivo Pro 11 (qualitative data analysis software) to code the sustainability risk disclosures according to their pre-specified classifications. I imported each of the relevant documents in either Word Document or PDF format into the NVivo and created different nodes to classify the material to record compliance with Recommendation 7.4, industry classification, the type of sustainability risk disclosure, and the use of visual disclosures. NVivo Pro 11 is capable of searching most cited text within the data and also helped to count the words and extent of the visual disclosures.

All relevant sustainability risk disclosure that were cross-referenced in the Appendix 4Gs were coded with the exception of the financial notes of the annual reports. I did, however, code the disclosures within the financial notes if they were cross-referenced within the entity's Appendix 4G; otherwise, I ignored them since an organisation also discloses their optional and compulsory information in the notes section of their annual report.

4.6 Reliability and Validity of Content Analysis

Krippendorff (2013, pp. 270-271) categorised the reliability of content analysis into three groups – stability, reproducibility, and accuracy. Stability emphasises the consistency of coding over time. Reproducibility goes beyond the static coding system to focus on how the coding process can be reproduced by other analysts using different criteria, similar measuring instruments, or when working in different locations. Accuracy deals with coding processes that conform to pre-set standard criteria or specifications.

Guthrie et al. (2004, p. 287) contend that there are some technical issues or logical constructs in content analysis that should be met to ensure it is efficient and reliable. They suggest three ways to improve reliability. First, the classification of disclosures should be selected from well-grounded, relevant literature and defined accordingly. Second, a solid coding framework needs to be developed with well-specified decision rules. Finally, training for coders should be arranged and a pilot test should be conducted to reach an acceptable level of coding decisions. Milne and Adler (1999, p. 240) add that it may be more reliable and cost effective to provide a single coder with a period of training before setting them the task of coding a full data set.

To ensure the reliability of the content analysis in this study, first, I categorised the disclosures giving consideration to the ASX's definition of economic, social, and environmental sustainability, the literature review, the theories, and the preliminary data analysis, and developed the coding decision rules accordingly. Second, I established a reliable coding framework and the decision rules to analyse the data. Third, before beginning any analysis, I attended an NVivo training session to learn how to code the documents and analyse the data to abduct the inferences from contextual phenomena. I also researched further online assistance, which included the QSR support team and a YouTube video. Fourth, to reach coding agreement, I analysed the sustainability disclosures of top 10 companies of the sampled companies (97) at the initial stage (i.e., my pilot test) and reached coding agreement with my supervisors.

It is worth mentioning that there are limitations to calculating the correlation of agreement of my coding because the nature of my study is open-ended and exploratory. Calculating a correlation coefficient requires a second coder to measure coding disagreements; as a solo-coder this was not possible (Krippendorff, 2013, p. 27). Nevertheless, based on the pilot test I checked my coding process with my supervisors and reached a coding agreement.

To validate the inferences of my study, I use ex-post facto research by comparing internal documents with external reports (Dumay & Cai, 2015). For this, I used the Factiva[5] database (a repository of news, articles, and analyst's reports) to research news and information about the companies that was not disclosed to their stakeholders. Further, I validated my research findings by comparison with previous research on the extent of sustainability disclosure practices.

[5] see, (http://www.dowjones.com/products/product-factiva/) accessed on 21th July 2016

5 Results

In this section, I present the results of my data analysis in support of my research objective. First, I examined compliance, followed by the mediums of disclosure, the type of sustainability risk disclosure, the disclosures by industry, a sensitive and non-sensitive industry analysis, and the relationship between firm size and disclosure practice.

5.1 Compliance

The Appendix 4G statements of 97 companies were analysed to determine whether or not the sampled companies had complied with Recommendation 7.4. While, all companies did comply, a question arises as to whether they merely complied or provided substantial information over their compliance requirement. My analysis reveals that 96 out of 97 companies disclosed at least one form of social, environmental, or economic sustainability risk information. Domino's Pizza Enterprise Ltd acknowledged that they had social, economic, and environmental sustainability risks, but did not disclose any specific information about what they were. Medibank Health Care Ltd also complied but did not disclose any environmental and social sustainability risks. IOOF Holdings Ltd and Perpetual Ltd did not disclose environmental sustainability risk information, and Primary Health Care Ltd did not disclose economic and environmental sustainability risk information. Lastly, I found that Primary Health Care Ltd and IOOF Holdings Ltd disclosed either social or economic sustainability risk information but did not acknowledge it. This may be due to a lack of co-ordination between the preparers of the sustainability risk exposures and the Appendix 4G statements.

5.2 Media of Sustainability Risk Disclosures

The Appendix 4G statements contain cross-references to the documents that contain sustainability risk exposures. I located these documents to determine the mediums through which the sampled companies opted to make their social, economic, and environmental disclosures to stakeholders (see Table II). I found that annual reports were the most popular channel for disclosures, accounting for approximately 52% of the total economic, environmental and social sustainability risk information shared with their stakeholders. The least preferred medium of disclosure was corporate governance statements, which accounted for only 2% of the risk disclosures. Standalone sustainability reports accounted for approximately 30% of disclosures, ranking as the second-most preferred medium. A significant number of companies issued disclosures on their company website (11%), with fewer companies communicating through their annual review (5%).

Table II Mediums of Sustainability Risk Disclosures

Medium of Disclosures	Words	Percentage
Annual reports	282,912	52%
Sustainability reports	161,808	30%
Websites	62,157	11%
Corporate governance statements	10,245	2%
Annual reviews	25,673	5%
Total	**542,795**	**100%**

I coded most of the economic, environmental and social sustainability risk disclosures from annual reports (Table III), which is congruent with the volume of sustainability risk disclosures (Table II). After coding the annual reports, I coded most of the sustainability risk information from standalone sustainability reports, web disclosures, annual reviews, and corporate governance statements in that order. From Tables II and III, it can be concluded that there is a positive relationship between the volume and the source of the sustainability risk disclosures.

Table III Coding References of Sustainability Risk Disclosures

Coding References	Total	Percentage
Annual reports	1453	45%
Sustainability reports	1074	33%
Websites	460	14%
Corporate governance statements	72	2%
Annual reviews	195	6%

5.3 Economic, Environmental and Social Sustainability Risk Disclosures

Table IV Economic, Environmental and Social Sustainability Risk Disclosures

Sustainability Disclosure Category	Narratives (words)	Percentage	Visuals (pixels)	Percentage
Economic	211,131	39%	13,300,773	12%
Environmental	173,800	32%	77,171,306	67%
Social	139,420	26%	21,766,136	19%
Combined	18,444	3%	2,546,930	2%
Total	**542,795**	**100%**	**114,785,145**	**100%**

I measured the extent of social, economic, and environmental sustainability risk disclosures in words for narrative disclosures and in pixels for visual disclosures (images). In terms of narrative disclosures, Table IV shows that economic sustainability risks are the most disclosed among the sampled companies at 39%, followed by environmental disclosures (32%), social disclosures (26%), and combined disclosures (2%). However, in the case of visual disclosures, environmental disclosures dominate at more than triple the rate (67%) of the next closest category, being social disclosures (19%). Economic disclosures follow at 12%, while combined disclosures account for only 2%. It is also interesting that when I divided the total narrative and visual disclosures into financial and non-financial categories, non-financial disclosures (social and environmental) were more dominant than financial disclosures (economic).

The detailed findings of my analysis are discussed in the sections that follow.

5.3.1 Economic Sustainability Risk Disclosure

Table V Economic Sustainability Risk Disclosure

	Economic Disclosures					
Industry Name	**Words**	**Mean**	**Percentage**	**Pixels**	**Mean**	**Percentage**
Consumer discretionary	9368	781	4%	0	0	0%
Consumer staples	6129	1226	3%	384,507	76,901	3%
Energy	9657	1931.4	5%	202,673	40,535	2%
Financials	107,122	3967	51%	10,735,755	397,621	81%
Health care	9808	1090	5%	282,643	31,405	2%
Industrials	9168	764	4%	165,220	13,768	1%
Information technology	1900	950	1%	0	0	0%
Materials	45,739	2691	22%	628,907	36,995	5%
Telecommunications	2268	756	1%	0	0	0%
Utilities	9972	1994	5%	901,068	180,214	7%
Total	211,131	2177	100%	13,300,773	137,121	100%

I further analysed economic sustainability risk disclosures by industry. The results are displayed in Table V. The financials industry issued the most disclosures in terms of words (107.1k) accounting for 51% of the total economic sustainability risk exposures. The industry with the least disclosures was information technology with only 1.9k words or 1% of the total. The materials industry was the second highest disclosing industry with 45.7k words, followed by utilities (10k), health care (9.8k), energy (9.7k), consumer discretionary (9.4k), consumer staples (6.1k), and telecommunications (2.3k).

In terms of images, the financials industry was also dominant, disclosing almost 1.07m pixels (81%) worth of economic sustainability risk information. The financials industry was followed by utilities (0.90m pixels), materials (0.62m), consumer staples (0.38m), health care (0.28m), energy (0.20m), and industrials (0.17m). The consumer discretionary industry, information technology, and telecommunications did not publish any visual disclosures regarding economic sustainability risks. Hence, it can be concluded that the financials industry disclosed the greatest volume of information relating to economic sustainability risk in both words and pixels, whereas the least disclosing industry was information technology. Thus, I argue that the financials industry leads economic sustainability risk disclosures among other industries.

5.3.2 Environmental Sustainability Risk Disclosure

Table VI Environmental Sustainability Risk Disclosure

	Environmental Disclosures					
Industry Name	**Narrative (words)**	**Mean**	**Percentage**	**Images (pixels)**	**Mean**	**Percentage**
Consumer discretionary	8468	706	5%	3,435,364	286,280	4.5%
Consumer staples	9541	1908	5%	2,643,803	528,761	3.4%
Energy	14,112	2822	8%	4,039,049	807,810	5.2%
Financials	40,998	1518	24%	33,789,345	1,251,457	43.8%
Health care	10,102	1122	6%	942,565	104,729	1.2%
Industrials	18,542	1545	11%	11,953,495	996,125	15.5%
Information technology	1031	516	1%	282,270	141,135	0.4%
Materials	57,332	3372	33%	16,889,133	993,478	21.9%
Telecommunications	3955	1318	2%	2,062,560	687,520	2.7%
Utilities	9719	1944	6%	11,33,722	226,744	1.5%
Total	**173,800**	**1792**	**100%**	**77,171,306**	**795,580**	**100.0%**

Table VI shows environmental disclosures by industry. Environmental disclosures accounted for 32% of the total sustainability risk disclosures across the sampled companies. The materials industry published the greatest volume of narratives (57.3k words; 33%), while information technology published the least (1k; 1%). Financials ranks second with 41k words (24%), followed by industrials (18.5k), energy (14.1k), health care (10.1k), utilities (9.7k), consumer staples (9.5k), consumer discretionary (8.5k), and telecommunications (4k).

However, in terms of images, the financials industry published the most environmental information (3.37m pixels; 43.8%), and information technology published the least (0.28m; 0.4%). The second highest disclosing industry was materials (21.9%), followed by industrials (15.5%), energy (5.2%), consumer discretionary (4.5%), consumer staples (3.4%), telecommunications (2.7%), utilities (1.5%), and health care (1.2%). It is worth noting that all industries used images in addition to narratives to disclose their environmental sustainability risk exposures. From the environmental sustainability risk disclosure analysis, I find that the materials industry leads total environmental sustainability risk disclosure among the industries.

5.3.3 Social Sustainability Risk Disclosure

Table VII Social Sustainability Risk Disclosure

	Social Disclosures					
Industry Name	**Narrative (words)**	**Mean**	**Percentage**	**Images (pixels)**	**Mean**	**Percentage**
Consumer discretionary	3962	330	2.8%	924,882	77,074	4.2%
Consumer staples	8063	1613	5.8%	1,577,579	315,516	7.2%
Energy	12,866	2573	9.2%	2,152,118	430,424	9.9%
Financials	25,390	940	18.2%	4,529,386	167,755	20.8%
Health Care	8239	915	5.9%	820,945	91,216	3.8%
Industrials	20,281	1690	14.5%	3,965,615	330,468	18.2%
Information technology	236	118	0.2%	0	0	0.0%
Materials	45,989	2705	33.0%	6,804,936	400,290	31.3%
Telecommunications	2692	897	1.9%	624,986	208,329	2.9%
Utilities	11,702	2340	8.4%	365,689	73,138	1.7%
Total	**139,420**	**1437**	**100.0%**	**21,766,136**	**224,393**	**100.0%**

From Table VII, it is clear that the materials industry disclosed the greatest volume of social sustainability narratives (46k words; 33%), while information technology disclosed the least (0.2k words; 0.2%). The financials industry follows materials (25.4k words), then industrials (20.3k), energy (12.9k), utilities (11.7k), health care (8.2k), consumer staples (8.1k), consumer discretionary (4k), and telecommunications (2.7k).

The materials industry also disclosed most visual information (6.80m pixels; 31%). Information technology did not publish any visual disclosures. The second highest disclosing industry was financials (4.53m pixels; 20.8%), followed by industrials (3.97m), energy (2.15m), consumer staples (1.57m), consumer discretionary (0.92m), telecommunications (0.62m), and utilities (0.37 m). It can be concluded that materials industry is the highest disclosing industry for social sustainability risk information among the industries.

5.4 Inter-industry Sustainability Risk Disclosures

In this section, I examine which industry disclosed more sustainability risk information (total economic, environmental, and social) among the 10 industries. Table VIII shows that the financials industry disclosed the most with 34% of the total disclosures in terms of narratives and 43% of the total visual disclosures. Information technology disclosed the least with only 1% of the total narratives and 0.25% of the images.

Table VIII Inter-Industry Sustainability Risk Disclosures

Industry Name	Narrative (words)	Mean	Per cent	Images (pixels)	Mean	Per cent
Consumer discretionary	22,679	1890	4%	4,360,246	363,354	4%
Consumer staples	23,905	4781	4%	4,605,889	921,178	4%
Energy	37,893	7579	7%	7,033,724	1,406,745	6%
Financials	183,876	6810	34%	49,741,154	1,842,265	43%
Health care	2,8506	3167	5%	2046,153	227,350	2%
Industrials	49,753	4146	9%	16,433,511	1,369,459	14%
Information technology	3167	1584	1%	282,270	141,135	0.25%
Materials	151,999	8941	28%	25,194,173	1,482,010	22%
Telecommunications	9624	3208	2%	2,687,546	895,849	2%
Utilities	31,393	6279	6%	2,400,479	480,096	2%

The materials industry was the second highest disclosing industry (28% words; 22% pixels), followed by industrials (9% words; 14% pixels), then energy, utilities, consumer discretionary, consumer staples, health care and telecommunications. Finally, it can be concluded that, among the 10 industries, the financials industry is the highest sustainability risk disclosing industry and information technology is the least disclosing industry.

5.5 Sensitive and Non-Sensitive Industries

Further, I divided my samples into sensitive and non-sensitive industries to determine the extent of sustainability risk disclosures according to their sensitivity. I hypothesised that sensitive or high-profile industries would disclose more environmental and social sustainability risk information than non-sensitive or low-profile industries due to the nature of their operations and the direct physical impact they have on the environment and society. Here, it is also evident that sensitive industries reported more social and environmental sustainability risk disclosures than non-sensitive industries. Sensitive industries published approximately 61% of the total social and environmental disclosures – almost double that of non-sensitive industries – whereas non-sensitive industries disclosed only 39% (see Table IX). Sensitive industries also reported the most environmental disclosures accounting for 57% of this category, whereas non-sensitive industries published 43%. On average, sensitive industries disclosed 2.6k words, while non-sensitive industries disclosed only 1.3k words, i.e., sensitive industries reported more than double the disclosure information of non-sensitive industries.

Further, sensitive industries reported almost double the social sustainability risk disclosures over non-sensitive industries with 65% of the total; non-sensitive industries accounted for only 35%. On average, non-sensitive industries published 0.8k words and sensitive industries published 2.3k words – almost triple that of non-sensitive industries.

However, I found that non-sensitive industries disclosed the highest volume of economic sustainability risk disclosures (65%; 2.4k words); sensitive industries disclosed 35% (1.9k words). Non-sensitive industries account for a large proportion of the sample (58 companies out of 97), which may also contribute to the increased volume of total economic risk disclosures. Further, non-sensitive industries include a large number of companies (27) in the financials industry. Financials companies are more concerned about the economic aspects of sustainability, and as a result, non-sensitive industries disclosed more economic sustainability risk exposures, which increased the total volume of this category.

From the analysis of visual sustainability risk disclosures (Table X), it is clear that non-sensitive industries disclosed slightly more sustainability risk exposures (56%) than sensitive industries (44%). However, sensitive industries disclosed more environmental risk exposures, averaging 0.87m pixels, than non-sensitive industries with their average of 0.74m pixels. Further, sensitive industries also disclosed more social sustainability risk information with an average of 0.34m pixels than non-sensitive industries (0.15m pixels), i.e., sensitive industries published more than double the disclosures of non-sensitive industries. This is also in congruence with the hypothesis that sensitive industries disclose more social and environmental sustainability risk information due to their direct physical impact on the environment and with the society.

On the other hand, non-sensitive industries disclosed more economic sustainability risk information. This may be because a large number of companies in the non-sensitive industry sample (27 of 58) are financials companies. Financials companies are more concerned with economic activity, and this results in an increase in the total economic sustainability risk exposures. Further, non-sensitive industries have less direct physical impact on the environment and society, which results in less environmental and social disclosures.

Non-sensitive industries also disclosed more visual economic sustainability risk information accounting for 86% of total visual disclosures, whereas sensitive industries disclosed only 14%, i.e., non-sensitive industries disclosed about six times more visual information than sensitive industries.

Finally, it can be concluded sensitive industries lead social and environmental sustainability risk disclosures, whereas non-sensitive industries lead economic sustainability risk disclosures.

5.5.1 Sustainability Risk Disclosures in Words

Table IX Sustainability Risk Disclosures in Words

Sensitivity	Economic			Environmental			Social			Combined			Total		
	words	Mean	%	words	mean	%	Words	Mean	%	words	Mean	%	words	Mean	%
Sensitive	74,536	1911	35%	99,705	2557	57%	90,838	2329	65%	5959	153	32%	271,038	6950	50%
Non-sensitive	136,595	2355	65%	74,095	1278	43%	48,582	838	35%	12,485	215	68%	271,757	4685	50%
Total	**211,131**	**2177**	**100%**	**173,800**	**1792**	**100%**	**139,420**	**1437**	**100%**	**18,444**	**190**	**100%**	**542,795**	**5596**	**100%**

5.5.2 Sustainability Risk Disclosures in Pixels

Table X Sustainability Risk Disclosures in Pixels

Sensitivity	Economic			Environmental			Social			Combined			Total		
	Pixels	Mean	%	Pixels	mean	%	Pixels	Mean	%	Pixels	Mean	%	Pixels	Mean	%
Sensitive	1,897,868	48,663	14%	34,015,399	872,190	44%	13,288,358	340,727	61%	1,860,262	47,699	73%	51,061,887	1,309,279	44%
Non-sensitive	11,402,905	196,602	86%	43,155,907	744,067	56%	8,477,778	146,169	39%	686,668	11,839	27%	63,723,258	1,098,677	56%
Total	**13,300,773**	**137,121**	**100%**	**77,171,306**	**795,580**	**100%**	**21,766,136**	**224,393**	**100%**	**2546,930**	**26,257**	**100%**	**114,785,145**	**1,183,352**	**100%**

5.6 Firm Size and Sustainability Risk Disclosures

I found that firm size is positively related to sustainability risk disclosures. The Pearson correlation coefficient (r) between firm size and narrative disclosures is 0.83 and the coefficient of determination (r^2) is 0.70. The results indicate that the relationship between firm size and sustainability risk disclosures is strongly positive. Seventy per cent (70%) of the variation in sustainability risk disclosures (the dependent variable) is predictable from firm size (the independent variable). From an in-depth analysis, I found that firm size is more positively ($r = 0.86$, and $r^2 = 0.74$) related to sustainability risk disclosures within non-sensitive industries than sensitive industries, and the variance in sustainability risk disclosures is more predictable from firm size. Hence, I argue that the sensitivity of relationship between firm size and sustainability risk disclosures depends on economies of scales and the nature of business. Finally, I argue that firm size is a significant factor in disclosing sustainability risk exposures.

However, the relationship between a firm's size and visual sustainability disclosures is not as strong, although it does have a positive relationship ($r = 0.32$, and $r^2 = 0.10$). This may be because 21 companies did not use any images to portray their sustainability risk performance. I also found that most small companies published very few sustainability risk disclosures. This may be because smaller firms have fewer resources. Larger firms published a significant volume of sustainability risk disclosures as both narratives and images, since they are better placed to exploit economies of scale and have greater resources than smaller firms. The management of larger firms may also opt to portray their sustainability performance graphically to strengthen the significance of disclosures to their stakeholders.

From my in-depth analysis, I found that firm size is more positively ($r = 0.34$ and $r^2 = 0.12$) related to sustainability risk disclosures within non-sensitive industries than sensitive industries. Finally, I argue that the sensitivity of the relationship between firm size and visual sustainability risk disclosures depends on economies of scale, the nature of the business, and management's approach in demonstrating their sustainability risk exposure to stakeholders.

6 Discussion

This section includes a discussion of the results, based on the findings of my data analysis in relation to my research question. I explain how the results deal with the issues raised in the literature review, and examine managements' motivations for disclosing sustainability risk information to their stakeholders. The Factiva database was used to validate my results. Compliance issues are discussed first, followed by the medium of sustainability risk disclosures, economic, environmental and social sustainability risk disclosures, an analysis of sensitive and non-sensitive industries, then the relationship between firm size and sustainability risk disclosures.

6.1 Compliance

Compliance with the *Principles and Recommendations* raises questions of whether companies merely comply with Recommendation 7.4, or whether they substantively disclose their risk exposure to stakeholders, i.e., 'substance over form'. The 'substance over form' concept emphasises that economic realities must take precedence over legal requirements when reporting any phenomenon. The application of substance over form entails a debate about whether the regulation seeking sustainability information is specific or whether it should be left to the managers' discretion (Frost, 2007). Frost (2007) argues that imposing mandatory specific requirements may minimise the amount of such disclosures and limit the number of relevant disclosures. However, he also argues that, in a voluntary setting, companies have more flexibility to disclose information to their stakeholders. In this context, it is interesting to examine whether companies simply complied, or substantively disclosed, their economic, environmental, and social risk information under Recommendation 7.4.

Critics of specific regulatory requirements have pointed out that rules eliciting exact disclosures can become impractical and, at times, can turn out to be dysfunctional when the surrounding economic environment changes (Kershaw, 2005). Kershaw (2005) argues that managers may even produce fictitious transactions to exhibit apparently compliant behaviour with a legal requirement, while ignoring the underlying economic substance of many issues that are more material to the decision making of relevant stakeholders. The Enron Corporation is a classic example of where a company conformed to specific SEC requirements, yet ignored the economic reality of many of its transactions and was finally forced to file for bankruptcy.

The compulsion to follow a specific disclosure requirement may tempt managers to disclose less information about their sustainability risk, because increasing the amount of such disclosures may require a firm to comply with even more complex regulatory requirements (Frost, 2007). On the other hand, voluntary sustainability disclosures may give managers the discretionary power to report and disclose incidents related to such risks. Mandatory requirements for sustainability risk disclosures may, in fact, preclude the disclosure of the economic substance the reporting entities face. Thus, I investigated whether companies simply complied with Recommendation 7.4, or whether they disclosed their economic, environmental, and social sustainability risk information as substance over form to allow stakeholders to make rational economic decisions. To illustrate I use examples from companies as follows to report historical problems that would likely have affected companies in the 2014-15 FY, although the evidence may come from involuntary disclosures after the 2015 (see Dumay, 2016).

6.1.1 Domino's Pizza Enterprise Ltd

One example where a company claims to comply and yet does not disclose anything in their reports is Domino's Pizza Enterprise Ltd (Domino's). Domino's is the only company that did not disclose any sustainability risk information to their stakeholders. Of most interest, is that they mention in their annual report "The Consolidated entity is not subject to any significant environmental regulation or mandatory emissions reporting and does consider that it has material exposure to economic, environmental and social sustainability risks" (Domino's, 2015, p. 16). They considered their sustainability risk, but they did not disclose it in their annual report, corporate governance statement, or on their website.

I cross-checked the Factiva database to locate news or reports on Domino's social, economic, or environmental risks and found a news article, "Roll out the dough: Domino's pay pain", in the Herald Sun (Whalley, 2016). Dominos pays $18.99 per hour to their junior staff (aged 21) but, according to their current wage agreements, they do not pay penalty rates (Whalley, 2016). Michael Simotas of Deutsche Bank Analysts states, "if Domino's were to pay penalties in line with the industry award, the group's Australian wage bill would likely blow out 14 per cent, ultimately cutting profit margins and eroding earnings domestically by 24 per cent" (Whalley, 2016).

Simotas also argues that this “pain” needs to be shared with their franchisees, since Domino’s success significantly depends on their franchisees’ profitability (Whalley, 2016). Paying penalty rates could significantly affect Domino’s bottom line, as well as their reputation. This issue is an economic risk that may result in significantly decreased profits. It is also a social risk since they are exploiting their staff by underpaying their workers.

I did not locate reports of environmental risk information by either Domino’s or third parties. However, several aspects of Domino’s business carry potential for environmental risk (using genetically modified food, operating a large fleet of carbon-emitting vehicles, food transport/storage (refrigerants), waste management). It is beyond the scope of my analysis to verify their internal practices, since my study relies on secondary data sources, i.e., cross-referenced documents in their Appendix 4G statement and media reports. Thus, I conclude that Domino’s appear to ‘tick the box’ to comply with the recommendation and legitimise their business. I argue that Domino’s merely complied in legal form but did not disclose the real substance of their economic, environmental, and social sustainability risk.

Further, from legitimacy theory perspective, they simply complied with the recommendation to maintain their licence and fulfil the requirements of their legal compliance. Non-compliance with the recommendation may adversely affect their share price or their reputation, thus risking their future survival. From this perspective, I critique legitimacy theory itself, which does not motivate management to disclose sustainability risk information in substance over form. In this case, legitimacy theory failed to educate stakeholders about Domino’s actual practices.

6.1.2 Medibank Private Ltd

The second sample company is Medibank Private Ltd (Medibank) who claims to comply with Recommendation 7.4 but did not disclose any environmental or social information, which again raises the question of substance over form. Economic sustainability disclosures were acknowledged in their annual report in that “they did not identify any material exposures to environmental or social sustainability risk” (Medibank, 2015, p. 22) but no further explanation was provided. An article in The Sydney Morning Herald contradicts this claim, reporting that:

> *"The Private Health Insurance Ombudsman received 4416 complaints in 2015-16, nearly double the number a decade ago of which the embattled Medibank accounted for 40.2 per cent of the complaints ... The insurer had an embarrassing year, including a legal battle with the Australian Competition and Consumer Commission over slashing coverage without notifying policyholders, an IT bungle that delayed its distribution of tax statements and a public beating by consumer group Choice, which described some policies as "junk" …* [The Ombudsman said] *A high ratio of complaints or disputes compared to market share usually indicates either a less than adequate internal dispute resolution process, especially for complex issues, or an underlying systemic or policy issue. ... the biggest area of complaint was benefits, with the main issues being hospital exclusions and restrictions, general treatment (extras or ancillary benefits) and medical gaps and the second biggest area of complaint was membership, with key problems being policy/membership cancellation, clearance certificates and continuity of cover"* (Han, 2016)

This was followed by misinformation, such as incorrect verbal advice and lack of notification. Thus, last year, members quit the insurer at higher than average industry rates amid scandal and embarrassment, sending numbers backwards by 100,000 to 3.8 million members. Mr Drummond, Medibank's CEO, said they expected to lose even more market share this year (Han, 2016). From this information, it can be concluded that Medibank has economic and social risk exposure they did not disclose. I therefore argue that they merely complied with the recommendation to legitimise their business but, in practice, did not disclose substance over form.

My research did not reveal any environment sustainability risk information about Medibank, but this also raises the question of substance over form since similar companies in the same industry, such as Ramsay Health Care and Ansell, did disclose environmental risks. Again, I argue that Medibank complied with the recommendation to maintain their licence to operate but, in practice, legitimacy theory failed to motivate the company to disclose any environmental and social sustainability risk information to its stakeholders.

6.1.3 IOOF Holdings Ltd (IOOF)

The third company is IOOF Holdings Ltd (IOOF), who complied with Recommendation 7.4 but they did not disclose any environmental sustainability risk information to their stakeholders.

However, they did disclose economic and social sustainability risk information. Further, I found that IOOF Holdings Ltd was accused of “serious misconduct by senior staff including insider trading, front running, misrepresentation of performance figures, and cheating on training and compliance exams” (Ferguson & Danckert, 2015). These misconducts and compliance issues should have been reported to the regulatory agency but IOOF kept them in-house. After the new was reported by Fairfax media, IOOF’s share price fell by about 21%. However, IOOF did not disclose this economic risk to their stakeholders, raising questions of substance over form.

IOOF provides financial services to their clients. Due to the nature of business, they claim to have no direct relationship with the physical environment resulting in environmental risk. However, as a business, they obviously use water and electricity, which creates carbon dioxide and is harmful to the environment. They also produce waste that can either be dumped or recycled, yet no information about these issues was disclosed. IOOF may not consider these issues to be material threats to their organisation. However, while the volume of greenhouse gasses generated or waste produced by their operations may be minimal but companies in the same industry, such as Westpac, ANZ, NAB, and QBE, made substantive disclosures about these environmental risk factors. For instance, in 2015, “QBE included green bonds in its investment portfolio to improve environmental outcomes while generating appropriate risk-adjusted returns” (QBE Insurance Group Limited, 2016, p. 3). Given that IOOF did not disclose any environmental risk information, the question of substance over form is again raised. Thus, I argue that they ticked the compliance box to maintain their legitimacy, but made no disclosures in practice, which is rather misleading to stakeholders considering other companies in their industry make substantial disclosures.

6.1.4 Harvey Norman Holdings

A fourth company is Harvey Norman Holdings Ltd (Harvey Norman) did not disclose any social sustainability risk information to stakeholders, but they complied with Recommendation 7.4 in their Appendix 4G statement. They did, however, disclose economic and environmental sustainability risk information. Harvey Norman is a household goods and electronics retailer. I cross-checked the Factiva database to discover any hidden news or reports about their sustainability risks for the 2014-15 FY and found a news article titled “Harvey shrugs off salary protests” (John, 2014).

> *"Harvey Norman's shareholders railed against chairman Gerry Harvey's salary, but he says nothing is going to change … Mr Harvey's pay rose to $ 1.1 Million, from the previous year's $ 1 million, and Katie Page (CEO) received a 54 percent* pay rise to $2.8 *million. Two other senior executives were awarded 14 percent pay rises. Shareholders overwhelmingly voted against the company's pay structure at its annual meeting but Mr Harvey said the vote would have no consequences and nothing will change" (John, 2014).*

This statement from Mr Harvey indicates that he ignored the shareholders results and did not consider stakeholder engagement. Ignoring shareholders can significantly affect the company's bottom line if shareholders withdraw their capital. Ignoring shareholders is also a social risk, but Harvey Norman did not disclose this information. This raises a question of substance over form since a similar business, JB Hi- Fi Ltd, did disclose economic, social, and environmental risk information. Again, the indications suggest that Harvey Norman only legally complied with the recommendation to maintain their legitimacy. Again, legitimacy theory failed to motivate Harvey Norman's management to disclose social sustainability risk information to their stakeholders.

6.1.5 Primary Health Care Ltd

A fifth company is Primary Health Care Ltd (Primary Health), which is the only company, except Domino's, that complied with Recommendation 7.4 but did not publish any economic and environmental sustainability risk information. Primary Health principally provides health services to their patients. They disclosed social risk information in their annual report; however, in their corporate governance statement they state,

> *"Primary does not have any material exposure to economic, environmental and social sustainability risks under the ASX Recommendations. Primary's operations are highly regulated and subject to a range of State and Commonwealth legislation and accreditation requirements. Each of the Pathology, Medical Centres, Imaging, and Health Technology divisions operate under a range of policies which provide guidance in relation to identifying and responding to risk. An incident notification and response procedure is in place throughout Primary. Implementation of these policies is ultimately overseen by senior executives within each division. A comprehensive insurance program and nation-wide work health and safety program is in place and this is reviewed on an annual and ongoing basis" (*Primary Health Care Limited, 2015, p. 12).

Curiously, their annual report discloses some social risk information along with how to mitigate that risk, indicating that the company may either lack understanding of what sustainability means or did not properly co-ordinate the preparation of their corporate governance statement and annual report. It is beyond the scope of this study to investigate the internal practices of report preparation or interview the preparers of those reports. Additionally, Primary Health did not disclose any economic and environmental sustainability risk information in their annual report, raising the question of substance over form. In their annual report, they state,

> *"The operations of the Group are not subject to any site-specific environmental licences or permits which would constitute particular or significant environmental regulation under the laws of the Australian Government or an Australian Territory. Primary, through its internal policy and processes, is committed to managing operations in an environmentally sustainable manner to maximise resource efficiency in relation to the consumption of energy and natural resources and minimise waste"* (Primary Health Care Limited, 2015, p. 33).

From this statement, it can be concluded that they are aware of environmental sustainability risk but did not disclose any environmental sustainability risk factors. The Factiva database reveals they amortised their goodwill, valued at $426.2 million, in the first half of the 2014-15 FY under pressure from the Australian Securities and Investments Commission (ASIC) (King, 2015). This is evidence of economic sustainability risk since the company inflated their goodwill value through questionable accounting practices and valuations but, in practice, they do not hold that value. Given this information was not disclosed questions of substance over form are again raised. Thus, I conclude that Primary Health's management did disclose their economic and environmental sustainability information; Primary Health merely complied with the recommendation to legitimise their business.

6.1.6 Implications for compliance

The reports published by external parties, such as Factiva, The Sydney Morning Herald, the Sun Herald, and The Australian Financial Review, about the companies' hidden information, like wage scandals, junk policies, and bonuses for over-servicing, are typically published against the will of the companies' management and generally have negative consequences for the companies. These involuntary disclosures are not like periodic, regulated disclosures; they originate from stakeholders' motivations to reveal the hidden information in an organisation for their own benefit or a sense of responsibility to society. Dumay and Guthrie (f) defined involuntary disclosure as "what external stakeholders and stakeseekers[6] disclose about a company" (p. 11). Involuntary disclosures create opportunities and threats to an organisation, which can significantly affect their share price and reputation (Dumay & Guthrie, f). Arguably, a pro-active organisation can create value by better complying with the substance of risk disclosure than allowing involuntary disclosures to impact their legitimacy.

The Volkswagen scandal is an example of involuntary disclosure. The Environmental Protection Agency (EPA) in the US announced on 18 September 2015 that Volkswagen had cheated on car emissions tests. The discovery was first made by a whistle-blower inside Volkswagen, who informed the US EPA and, consequently, Volkswagen's share price plummeted more than 30% in a matter of days (Snyder & Jones, 2015). From a financial perspective, the scandal could cost Volkswagen USD $18 billion in share value, and the company will have to spend up to USD $14.7bn in the US alone to settle allegations of cheating emissions tests and deceiving its customers. However, because senior executives were reluctant to further disclose the 'bad news' and risk contributing further to the demise of Volkswagen's share price in the short term, the real costs may never be known (Dumay & Guthrie, f). This scandal created not only economic costs but also social costs for Volkswagen, since it has a large workforce in Germany (300,000 employees) and a total of 600,000 worldwide (Dumay & Guthrie, f, p. 12).

From the discussion above, I conclude that all the sample companies complied with Recommendation 7.4 to legitimise their business, although some disclosures raise questions of substance over form. From the example of Volkswagen scandal, I conclude that if Domino's, Medibank, Primary Health Care, IOOF, and Harvey Norman incorporate involuntary disclosures into their strategic policies, by implementing the threats and opportunities of those involuntary disclosures, they could create value for themselves, as well as for stakeholders. I argue that to ensure accountable and transparent corporate governance practices in Australian listed companies, it is necessary to mandate rules-based corporate governance guidelines, rather than rely on

[6] Stakeseekers is defined as "groups that seek to uncover privately held information and put new issues on the corporate agenda, such as those with social, environmental and governance concerns who are not investors or do not have a direct influence on a company" (Dumay & Guthrie, f, p. 11).

corporate governance principles. If rules-based corporate governance is imposed on Australian listed companies, then publicly listed companies might more substantially disclose their material sustainability risk information, which will assist investors to assess their investment risks. However, many of these involuntary disclosures expose the wrong-doings of managers who are unlikely to disclose the information because it would immediately have a negative impact on the organisation's share price. Thus, mandated disclosures may need to be accompanied by stiffer penalties to managers and directors who circumvent regulations and continue to conceal information from shareholders and other stakeholders.

6.2 Medium of Sustainability Risk Disclosure

In this study, 96 of 97 companies disclosed their sustainability risk information to stakeholders in some form, which supports stakeholder theory. According to stakeholder theory, corporations are accountable to provide their social and environmental performance information to stakeholders (Gray et al., 1996). In response, companies disclose their non-financial information to a wide range of stakeholders for a perceived benefit, for example, minimising pressures from peer and lobby groups, sustaining and increasing reputation, mitigating public debate about negative aspects of their business, representing themselves as being accountable to society, or eliciting social support (Clarkson et al., 2008; Matsumura et al., 2014; O'Donovan, 2002).

Finally, I argue that Australian companies use non-financial disclosures in annual reports to legitimise their operations. Most of the companies preferred annual reports as their main medium for communicating sustainability risk information to stakeholders. These findings concur with previous researchers (Cho & Patten, 2007; Guthrie & Abeysekera, 2006; Deegan et al., 2002), who also identified the annual report as the most significant medium for disclosing social and environment information. Further, De Villiers and Van Staden (2011) find that firms with poor environmental performance disclose more voluntary information in their annual report to reduce information asymmetry and offset the potential for resulting losses. Further, publishing annual reports is required by legislation in many jurisdictions (Tilt, 2001). In Australia, every listed company is required to submit their annual financial reports to the ASX at the end of financial year under listing rule 4.10.3 (ASX, 2014, p.5). Thus, companies find these reports a convenient way to disclose both their financial and non-financial information to their stakeholders. O'Donovan

(2002) finds that Australian companies disclosed more environmental information in annual reports to gain, maintain, and repair their legitimacy within the expectations of social norms.

After the annual report, the most preferred way of communicating sustainability risk information to stakeholders is sustainability reports. In my study, 37 companies disclosed their sustainability risk disclosure in sustainability reports, in addition to annual reports, to further legitimise their behaviour to stakeholders. Herbohn et al. (2014) used annual reports, sustainability reports, and web-based databases in their corporate social responsibility study to measure sustainability disclosure and sustainability performance, along with other documents. Companies use sustainability reports to further explain the factors related to their sustainability risks, as well as and how to mitigate those risks to sustain their business in the short, medium and long term. I observed that most of the large companies (37) published sustainability reports in addition to annual reports due to political pressure and economies of scale. The sampled companies also used standalone reports to disclose their social, environmental, and economic sustainability information to a wider range of stakeholders (e.g., the community, environmental groups, etc.). Conversely, smaller firms preferred annual reports as their main medium of communication to stakeholders due to economies of scale and the nature of their business.

For example, QBE Insurance Ltd (QBE) disclosed their sustainability risk information solely in a sustainability report to meet their stakeholder's expectation about sustainability risk. This may be due to management's strategic approach to disclose sustainability risk information in separate report to meet the expectation of specific stakeholders. Further, QBE may produce separate reports since some stakeholders look for specific information in an annual report (such as EPS, DPS, etc.) but are not concerned about social and environmental information. According to the positive branch of stakeholder theory, the stakeholders that control the most critical resources of a company require information beyond financial statements, such as social and environmental information. Therefore, QBE may have separated their sustainability risk information to meet the expectations of these powerful stakeholders. I conclude that QBE disclosed sustainability risk information in their sustainability report to meet the specific requirements of certain stakeholders.

Moreover, 28 companies disclosed sustainability risk information on their website in addition to other reports. Most used their websites to provide further explanations about the sustainability risk disclosures in their annual reports, sustainability reports, and corporate governance statements. Given these types of reports are usually produced on an annual basis, they are not able to reflect the current conditions of the company, whereas websites provide an immediacy of communication to stakeholders. Lodhia (2006, 2010) found that the usage of the world wide web for social and environmental disclosures brings about communication in a real time, interactive way to present and organise the information rather than merely unidirectional reporting. De Villiers and Van Staden (2011) examined the discretionary behaviour of management according to medium of disclosure and found that companies use website disclosures when they are experiencing environmental disasters, but use annual reports when they have a long-term environmental reputation crisis. In addition, some companies (Lendlease Ltd, Scentre Group Ltd, AGL Ltd, and Asciano Ltd, etc.) have very large datasets which they disclose on websites for convenience. I conclude that websites are the third most-preferred medium of disclosing sustainability risk information to stakeholders, after the annual report and the sustainability report.

Further, 19 companies used an annual review to disclose their sustainability risk information to stakeholders, in addition to annual reports, sustainability reports or on their website. Companies use annual reviews as an integrated reporting tool, where they focus sustainability information along with concise financial performance information (International Integrated Reporting Council (IIRC), 2013). The annual review is another strategic choice by management to portray their financial and non-financial performance to a multitude of stakeholders.

Finally, 18 companies out of 97 used corporate governance statements to disclose their sustainability risk information to stakeholders. Generally, I found that small companies used corporate governance statements to fulfil the (sustainability risk) information needs of their stakeholders. This may be due to economies of scale or because annual reviews are a convenient way to publish their sustainability information and governance issues simultaneously.

From this analysis, I find that companies still prefer annual reports as their main medium of communicating sustainability disclosure information to stakeholders as did Guthrie et al. (2004) followed by sustainability reports, websites, annual reviews, and corporate governance statements. Large companies (e.g. Westpac, BHP, RIO, QBE) disclosed most sustainability information in a standalone sustainability report due to their large economies of scale and stakeholders pressure, especially from institutional shareholders. In general, companies prefer annual reports since publicly listed companies in Australia need to submit their annual report to the ASX under listing rule 4.10.3 (ASX, 2014, p. 5). Thus, companies can present both their statutory financial and required ASX sustainability information through the annual report. Finally, I argue that stakeholders should use annual reports, standalone sustainability reports, and website disclosures in a complementary way to better understand the non-financial performance of companies and make investment decisions accordingly.

6.3 Economic, Environmental and Social Sustainability Risk Disclosures

In this study, I measured the extent of the economic, environmental, and social risk disclosures of the sampled companies to infer my research objective. Companies usually publish two types of disclosures: narrative (text) disclosures and images (charts, tables, pictures, etc.). I measured the volume of narrative disclosures in words and visual disclosures in pixels. As explained in the methodology section, companies used images in addition to narratives to report their sustainability performance information, specifically, incident rates, health and safety performance, waste performance, carbon emission data, water usage, etc., to signify the importance of their performances to the users of disclosures.

6.3.1 Economic Sustainability Risk Disclosure

The results indicate that the sampled companies disclosed economic sustainability risk information the most, followed by environmental and social information. This may be because 27 constituents among 97 firms in this study belong to the financials industry. The financials industry has more exposure to economic risk than social and environmental, since their main operations are related to financial activities. Further, 28% of the sampled companies belong to the financials industry, and, given they tend to be more concerned about the economic aspects of their business, the level of economic disclosures was significantly higher than other disclosures. Economic disclosures account for 38% of the total narrative disclosures and 12% of the total visual disclosures. From this finding, it is evident that companies are more concerned about their economic sustainability risks than their environmental and social sustainability risks. I also observed that the nature of economic disclosures is more narrative than graphic. For example, the sampled companies disclosed more about their regulatory risk, price volatility, exchange rate risk, interest rate risk, and operational risk in narrative way, since these factors are more descriptive than calculative. For these reasons, narrative economic disclosures were the highest economic disclosure of the sample companies.

6.3.2 Environmental Sustainability Risk Disclosure

De Villiers and Van Staden (2010) find that most retail shareholders require environmental information, such as detailed and specific environmental risk, policy and performance information, for their own investment decision making, accountability, and non-financial needs. Further, they show evidence that about 92% of Australian shareholders require more environmental information, followed by the US and the UK. Thus, they argue that Australian companies need to disclose more environmental information to shareholders.

After economic disclosures, the sampled companies disclosed more environmental information in words (169.7k), accounting for 31% of the total narrative disclosures. I found that Australian companies disclosed on average 1.7k words and 0.8m pixels. Deegan and Gordon (1996) find that the level of voluntary environmental disclosure for Australian companies is very low (an average of 186 words for their sample size of 197). This indicates that the volume of voluntary environmental disclosure is increasing among Australian companies. My results in this study vary from Deegan and Gordon's (1996), since the time and sample size are not identical. Deegan and Gordon studied the period between 1996 and 2015, during which time the first edition of the *Principles and Recommendations* were published (2003) and twice updated with amendments (2007 and 2014). Moreover, the third edition, released in 2014, focusses on stakeholders, rather than shareholders, to make companies more accountable and transparent and to protect the right of information for a wide range of stakeholders. The third edition also introduced sustainability issues by way of Recommendation 7.4 due to increasing pressure from stakeholders to address the social, economic and environmental impacts of business operations, and especially as a result of pressure from institutional shareholders for better transparency on these matters (ASX, 2014, p. 30). The results indicate that Australian companies responded to this recommendation, resulting in an increase in the level of sustainability risk disclosure among the sampled companies.

Environmental disclosures were highest among the visual disclosures of the sampled companies (77.2m pixels). I observed that extractive companies disclosed more environmental information, since they have a more direct physical impact on the environment, such as reduced biodiversity, water contamination, land rehabilitation, carbon emissions, and eradicating soil quality. As a result, extractive companies have great political need to maintain the legitimacy of their business with social norms. To legitimise their physical operations, companies disclosed more environmental information to meet the expectations of a wide range of stakeholders. This may also be because of changes in governmental environmental policy, environmental regulations, industry membership requirements, major environmental incidents, bad publicity, economic performance, compliance requirements, and company's own policy towards the environment.

It is also evident that a large number of companies disclosed their environmental sustainability risk information visually (67% of the total visual disclosures). This is because companies typically demonstrated their environmental performance information, such as carbon emissions, waste recycling, water usage and contamination, rehabilitation of land, and green initiatives, through images accompanied by narrative disclosures. Visual performance information, in graphs, figures and pictures, easily captures the attention of readers. Further, 'a picture tells a thousand words' (Unerman, 2000; Wilmshurst & Frost, 2000), hence companies may use visual disclosures to focus on the significance of the disclosures.

6.3.3 Social Sustainability Risk Disclosure

Social information accounted for the least proportion of the narrative disclosures (134.1k words; 25%), whereas social information was the second highest of the visual disclosures (21.8m pixels; 19%). Companies with direct relationships to the physical environment and society, such as mining and industrial development companies, disclosed more visual information since they create more noise, pollution, and environmental incidents. Affected companies mainly portrayed their social performance information, specifically health and safety, noise, community complaints, pollutants, and incident information, resulting in increased visual disclosures.

6.4 Sensitive/Extractive Industries vs. Non-Sensitive/Extractive Industries

To determine the depth of the sustainability risk disclosures of the industries, I divided the 10 industries into sensitive/extractive and non-sensitive/extractive industries. Political theories like legitimacy and stakeholder theory, posit that environmentally sensitive industries will disclose more sustainability information in response to greater pressure from powerful stakeholders – specifically environmental and social information – and this is evidenced in prior research (Adams, 2002; De Villiers & Van Staden, 2011; Deegan & Gordon, 1996; Patten, 2002). Sensitive industries disclosed more sustainability information than non-sensitive industries due to their direct physical impact on the environment and in the community, which is also evidenced in prior research (Cho & Patten, 2007; Herbohn et al., 2014). Sensitive industries legitimise their physical operations by disclosing more sustainability information to meet the expectations of their stakeholders. Ho & Taylor (2007) find that the manufacturing industry disclosed more sustainability information than other industries due to their nature of business. In this study, I also find that extractive/industrial companies disclosed more environmental social sustainability risk information, due to the nature of their business and pressure by stakeholders to disclose the material risk factors that inform their investment decisions.

Further, I also observed that sensitive industries disclosed more social and environmental sustainability risk information than economic information, whereas non-sensitive industries disclosed more economic sustainability risks. It is well known that extractive industries have direct physical impact on the environment. Specifically, extractive companies are more exposed to biodiversity risk, water contamination, land rehabilitation, carbon emissions, and eradicating soil quality. As a result, extractive industries carry high political costs to maintain the legitimacy of their business. To legitimise their physical operations, companies disclosed more social and environmental information to meet the expectations of a wide range of stakeholders.

Non-extractive industries, however, have less physical impact on the environment and society, resulting in less social and environmental sustainability risk information. Companies belonging to non-sensitive industries disclosed more economic sustainability risk information, accounting for about 65% of total economic sustainability risk disclosures. Further, about 50% of the sampled companies in non-sensitive industries are financials organisations; the nature of their business is providing financial services to their clients. Financial organisations are more concerned about their economic aspects of their operation. Moreover, non-sensitive industries are not directly involved with production and extraction of resources, which results in less environmental and social impact in the community. However, a significant number of companies disclosed social and environmental information in addition to information about economic sustainability.

6.5 Firm Size and Sustainability Risk Disclosures

Prior research (Al-Tuwaijri et al., 2004; Clarkson et al., 2008; Herbohn et al., 2014) provides evidence that larger firms disclose more sustainability information due to high political stakes and stakeholder pressure. It is assumed that larger firms have higher economies of scale, which assist them to reduce the cost of preparing non-financial information to their stakeholders (Ho & Taylor, 2007). It is also argued that larger firms can reduce cost of disseminating sustainability information, since they experience more pressure from powerful stakeholders and using the media allows them to engage with more stakeholders than direct meetings or conferences (Ho & Taylor, 2007). Further, agency theory posits that information asymmetries between companies and shareholder results in larger firms exposes them to higher agency costs. To reduce information asymmetry (hereafter referred to as agency cost), larger firms disclose more information to their stakeholders. Political theories, such as legitimacy and stakeholder theory, also posits that there is a positive relationship between firm size and disclosure, since larger firms experience more pressures from powerful stakeholders, media attacks, political interventions, regulations, and peer groups, etc. To reduce political costs, larger firms disclose more sustainability information (Ho & Taylor, 2007). I also find that larger firms disclosed more sustainability risk information to their stakeholders. Further, the relationship between firm size and sustainability risk disclosure is more positively related within non-sensitive industries. Although, as mentioned, this may be due to industry representation in my sample. Finally, I conclude that firm size is a significant matter for disclosing sustainability risk information.

7 Conclusion

This study investigates whether or not ASX-listed companies complied with the new Recommendation 7.4 in the *Principles and Recommendations*. If they complied, then to what extent did companies disclose their social, economic, and environmental sustainability risks to their stakeholders and in what mediums? If they did not comply, what explanations for non-compliance were provide in their Appendix 4G statements and cross-referenced documents under the ‘if not, why not’ approach (ASX, 2014, p. 3).

7.1 Summary of Results

I found that Recommendation 7.4 attained a high degree of acceptance among the sampled companies. Companies in the sample disclosed an average of 5.7k words and 1.18m pixels of sustainability risk information to their stakeholders across various mediums. The results also show that although all the sampled companies complied with the recommendation, there are concerns about substance over form for some companies. All of the sampled companies disclosed some form of sustainability risk disclosure – either economic, environment, or social – except for Domino's Pizza Enterprise Ltd. Medibank Private Ltd complied with the recommendation but did not report environmental or social disclosures. IOOF Holdings Ltd did report any environmental disclosures, and Harvey Norman Holdings Ltd did not report any social disclosures. In addition, I found that IOOF Holdings Ltd and Primary Health Care Ltd reported some sustainability risk but did not acknowledge it, which may be due to a lack of co-ordination between the preparers of the risk exposures and the preparers of the Appendix 4G statements.

Annual reports were the main medium of disclosure, followed by sustainability reports, web disclosures, annual reviews, and corporate governance statements, in that order. Many companies communicated disclosures through the images in addition to traditional narratives.

Economic sustainability disclosures are drivers in non-sensitive industries, whereas social and environmental sustainability risk exposures are drivers in sensitive industries. Economic sustainability risk disclosures may be higher in non-sensitive industries because the financials industry accounts for 27 of the 97 companies in the sample (28%), and this industry is more concerned with economic activity due to their nature of their business. Sensitive industries may have disclosed more social and environmental sustainability risk information because, given the nature of their business, they have a direct physical relationship with the environment and society. Within the sensitive industries, the materials industry published more environmental and social disclosures than economic sustainability risk exposures. Finally, I find that firm size has a positive relationship to sustainability disclosures. That is, larger firms disclose more sustainability risk information to their stakeholders.

7.2 Theoretical, Empirical, and Practical Contributions

7.2.1 Theoretical Contributions

Information as to corporate sustainability has become increasingly significant to a wide range of stakeholders, such as investors, regulators, rating agencies, non-government organisations (NGOs) and policy makers, for making informed decisions (De Villiers & Van Staden, 2011). This demand for information has been perceived by some as a growing pressure for companies to become socially and environmentally responsible (Van der Laan, 2009). According to Patten (2002), such demands on society's part are due to a greater general desire by stakeholders to make the businesses behave more ethically. This phenomenon can be explained by the number of theories that deal with the flow of information between business entities and the social domain (Gray et al., 1995). Deegan (2002) argues that the socio-political theories that seek to explain the information and disclosure behaviour of corporations are the most relevant for explaining corporate social and environmental disclosures.

Political economy theory primarily tries to explain the relationship between political and economic forces in society (Miller, 1994).

> *"The political economy perspective perceives accounting reports as social, political and economic documents. They serve as a tool for constructing, sustaining and legitimizing economic and political arrangements, institutions, and ideological themes which contribute to the corporation's private interests. Disclosures have the capacity to transmit social, political and economic meanings for a pluralistic set of report recipients"* (Guthrie & Parker, 1990, p. 166).

According to Guthrie and Parker (1990), reports published by corporations are the results of continuous mediation and negotiation between companies and the environment. This theory emphasises that politics and economics are so interconnected that environmental and social issues should be explained in the political and economic context of society (Deegan & Blomquist, 2006).

According to Gray et al. (1996) legitimacy theory and stakeholder theory originate from political economy theory. Both theories shed light on the relationship between the business organisation and the external environment in which it operates (Neu, Warsame, & Pedwell, 1998). These two theories consider corporate sustainability reporting and related disclosures are a consequence of corporations' efforts to influence the perception of stakeholders toward corporations. According to Van der Laan (2009), managerial behaviour is best explained by stakeholder theory, whereas legitimacy theory operates at a more conceptual level. Stakeholder theory and legitimacy theory overlap many times within the assumptions of political economy theory (Deegan, 2013; Gray et al., 1995).

With regard to voluntary reporting requirements, prior research has used legitimacy theory and stakeholder theory to consider why companies provide their sustainability performance information to stakeholders (Deegan & Blomquist, 2006; Herbohn et al., 2014; Michelon & Parbonetti, 2012). This paper investigates to what extent Australian listed companies disclosed their sustainability risk information under Recommendation 7.4 after the changes to the new *Principles and Recommendations* came into effect in 2014. The new ASX guidelines focus on all aspects of sustainability that are recommended for Australian listed companies to voluntarily disclose (i.e., social, environmental, and economic). I observed that companies generally complied with the recommendation to legitimise their business operations, i.e., companies were motivated to disclose sustainability risk information to validate their business activities and ensure their future survival. I also found that 96 of the 97 companies disclosed some form of sustainability risk – either economic, environmental, or social – which further strengthens support for stakeholder theory. Further, I observe that companies disclosed more economic sustainability information than environmental or social information. This may be due to the agency cost between company managers and stakeholders, which incentivises managers to adopt a pro-active disclosure strategy to reduce those costs (Dhaliwal et al., 2011). Thus, I conclude that sustainability is an evolving issue that should not be restricted to one theory; rather, it emerges from contemporary practices of sustainability.

7.2.2 Empirical Contributions

This research provides empirical evidence of the extant literature of sustainability disclosure by exploring the current sustainability disclosure practices of the listed companies. This research extends much of the prior research, which has tended to focus on only one facet of sustainability (Galbreath, 2013), by exploring all facets of sustainability disclosure in current practice. Further, this study provides evidence of the impact of the ASX's new sustainability reporting guideline, Recommendation 7.4, on the corresponding disclosure practices of Australian listed companies.

It also provides evidence on whether or not the listed companies complied with the recommendation. This research observed that, while all of the sampled companies complied with the voluntary recommendation, not all companies published substantive disclosures; some merely complied.

From the above results and discussion and in support of previous research, I argue that the corporate governance guidelines should be implemented on a mandatory basis for better practices in sustainability risk disclosure by Australian listed companies (Frost, 2007; Klettner et al., 2014) along with more stringent penalties for mangers and companies who conceal material information.

Frost (2007) found that in Australia, after the introduction of mandatory guidelines (section 299(1)(f) of the Corporations Law), companies disclosed more environmental information than in a voluntary setting. In particular, some companies also disclosed negative environmental information, such as environmental fines, which was absent in the principles-based regime (Deegan & Rankin, 1996; Gibson & O'Donovan, 2007). However, Frost (2007) also argues that imposing mandatory specific requirements may minimise or limit the number of such disclosures. Deegan and Gordon (1996) counter this claim, arguing that voluntary disclosure is not sufficient to govern the environmental disclosure practices of Australian companies, and it does not fulfil the demand of stakeholders. Previous research also argues for the need for compulsory guidelines to make companies more accountable to its stakeholders by meeting their requirements for non-financial information (De Villiers & Van Staden, 2010; Klettner et al., 2014).

A contemporary example of mandatory legislation for reporting the non-financial performance of listed companies in the European Union focusses on the importance of non-financial information to stakeholders. The European Union will pass legislation in 2017 mandating non-financial performance reporting by organisations. The legislation emerges from Directive 2014/95/EU, which requires all European listed companies, banks, and insurers with more than 500 employees to make a statement on:

> *... as a minimum, environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters, including:*
>
> *(a) a brief description of the undertaking's business model*

(b) a description of the policy pursued by the undertaking in relation to those matters, including due diligence processes implemented

(c) the outcome of those policies

(d*) the principal risks related to those matters linked to the undertaking's operations including, where relevant and proportionate, its business relationships, products or services which are likely to cause adverse impacts in those areas, and how the undertaking manages those risks;*

(e) non-financial key performance indicators relevant to the particular business.

If an organisation does not comply with any material matters, the non-financial statement shall provide a clear and reasoned explanation for not doing so. To avoid duplications, companies that are already preparing a comprehensive standalone report or use their website for disclosing the required information will be exempt from the obligation. (Monciardini, Dumay, & Biondi, 2016, pp. 8-9).

The directive was harshly criticised by BusinessEurope, a confederation of EU large enterprises, because it would create an additional administrative burden and make European companies less competitive in a period of crisis. On the other hand, NGOs, the SRI community and some large investors, like Aviva and trade unions, broadly welcomed the directive as an important step forwards (Monciardini et al., 2016, p.8-9).

Thus, I argue that Australia needs to introduce a mandatory guideline to regulate non-financial performance reporting by listed companies, especially concerning the material economic, environmental, and social aspects of organisations that assist stakeholders to assess organisational risk and make decisions regarding their investments. It is also necessary to include guidelines for how to measure and incorporate non-financial performance indicators in reporting entities to ensure the comparability of the non-financial performance information of Australian listed companies to further assist stakeholders to make rational economic decisions. I argue that it is necessary to implement rules-based corporate governance guidelines, rather than principle-based guidelines, to make companies more responsible for disclosing their sustainability risk information to stakeholders and to provide better transparency of, and accountability for, corporate governance practices among Australian listed companies. The evidence from this research shows several clear examples of companies whose compliance is more form than substance.

7.2.3 Practical Contributions

The research is novel and timely because the new ASX guidelines came into effect in 2014. It provides contemporary evidence of the sustainability disclosure practices of ASX-listed companies. Of interest is the extent to which Australian listed companies complied with Recommendation 7.4 since the *Principles and Recommendations* are principles-based rather than rule-based guidelines. The results indicate that all of the sampled companies complied with Recommendation 7.4, although questions of substance over form were raised for some companies. It is evident that economic sustainability risk disclosures are drivers in non-sensitive industries, whereas social and environmental sustainability risk exposures are drivers in sensitive industries. The results also indicate that companies still prefer annual reports as their main medium of communicating sustainability disclosures to stakeholders (Guthrie et al., 2004), followed by sustainability reports, websites, annual reviews, and corporate governance statements, respectively.

Over the last two decades, a significant number of companies have used standalone sustainability reports to disclose their social and environmental performance information to stakeholders (Campbell, 2004). Prior researchers used standalone sustainability reports to investigate non-financial disclosures since these reports disclose social and environmental information more comprehensively than other reports (De Villiers & Marques, 2016; Dhaliwal et al., 2011; Higgins et al., 2015; Ho & Taylor, 2007). With the advent of technology, many organisations have also increased the use of the internet to publish sustainability information (Guthrie et al., 2008; Unerman et al., 2007). Prior researchers (Adams & Frost, 2004; Cho, Phillips, Hageman, & Patten, 2009; Frost, Jones, Loftus, & Laan, 2005; Lodhia, 2005; Patten & Crampton, 2004) provide evidence that companies use web disclosures to meet the expectations of a wide range of stakeholders and engage with interested parties in a timely fashion. I argue that stakeholders use annual reports, standalone sustainability reports, and website disclosures in a complementary way to better understand the non-financial performance of companies and make investment decisions accordingly. However, the substance of the information may not be what the stakeholders require.

Finally, my research is based on current practices and recent changes to the *Principles and Recommendations* and, thus, broadens knowledge about stakeholders and about the sustainability practices of Australian listed companies. My research also supports the grounds that all facets of sustainability risk disclosure, i.e., economic, environmental, and social, need to consequently focus on the advancement of sustainability disclosure practices of the companies.

7.2.4 Limitations and Implications for Future Research

Every research technique has its pros and cons, and content analysis is no exception. The first critique of content analysis is that there is a necessary component of subjectivity required in figuring out what constitutes an exposure (Deegan & Gordon, 1996; Guthrie & Abeysekera, 2006). To overcome this shortcoming, I re-checked my coded disclosures after a period to ensure that the outcome of the current code matched the previous code and further double checked the theme of revelation with my supervisors. If needed, I recorded the disclosure again. Thus, there were no significant difference in either the items or words in my research.

Secondly, content analysis deals with the frequency and volume of disclosures rather than the quality of the disclosures (Deegan & Gordon, 1996; Guthrie & Abeysekera, 2006). This does not affect my research findings, since my objective was to measure the extent (volume) that companies practice sustainability disclosures. To infer my research goal, I analysed and measured narrative in words and non-narrative disclosures in pixels. Furthermore, Zeghal and Ahmed (1990, p. 42) argue that complications in content analysis can result from small sample sizes when counting the volume of disclosures. In my study, I overcome this criticism by analysing the disclosures of 97 companies.

These shortcomings create avenues for further research. Future studies could use a mixed-methods approach, perhaps combining interviews with content analysis, to derive deeper insights into the practices of corporate sustainability. Interviews with the managers that deal with sustainability issues would allow a researcher to cross-check the actual sustainability practices of the company against their publicly available documents to reveal any discrepancies between ‘what is said’ and ‘what is done’. Further research could also analyse larger sample sizes, longitudinal data, and/or more internal and external governance factors to garner more in-depth knowledge of corporate sustainability practice and disclosure.

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