

Article

# Reporting on Long-Term Value Creation—The Example of Public Canadian Energy and Mining Companies

Petra F. A. Dilling

New York Institute of Technology, School of Management, Vancouver campus,  
Vancouver, BC V7Y 1K8, Canada; pdilling@nyit.edu; Tel.: +1-604-639-0942

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**Abstract:** This study empirically analyzes reporting on long-term value creation for Canadian public mining and energy companies. It represents an important first step in determining the quality of reporting and its determinants for large public companies. In this exploratory empirical study, a reporting quality scoring index was developed to measure disclosure quality of long-term value creation reporting. Content analysis was used to examine financial and sustainability reports for a sample of twenty Canadian public mining and energy companies. Corporate disclosure quality scores were then calculated by assessing the quality of reporting in four main categories. The findings suggest that overall disclosure quality on long-term value creation is still low. Companies disclosing higher quality information on long-term value creation are of bigger size, operate in the basic materials sector, have an independent board, are listed in the Dow Jones Sustainability Index, experience higher stock volatility and use more words related to long-term value creation in their annual financial and non-financial reports. In order to increase and restore stakeholder trust and credibility as well as a tool to maintain stability, it is strongly recommended to introduce adequate mandatory standardization resulting in a set of internationally recognized reporting standards as well as a requirement for external assurance of reports.

**Keywords:** sustainability; Canada; content analysis; corporate social responsibility (CSR); long-term value creation; energy and mining sector; legitimacy theory; stakeholder theory; voluntary disclosure theory

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## 1. Introduction

Numerous definitions for sustainability and corporate social responsibility (CSR) have been developed over the decades. Very commonly, corporate social responsibility has been defined as the voluntary activities undertaken by a company to operate in an economic, social and environmentally sustainable manner [1]. Therefore, sustainability reporting is a process of publicly disclosing an organization's economic, environmental, and social performance. The term "sustainability reporting" is usually synonymous with citizenship reporting, social reporting, triple-bottom line reporting and other terms that encompass the economic, environmental, and social aspects of an organization's performance. In contrast to the annual financial reports, a sustainability report is not mandatory in most parts of the world with a few exceptions (e.g., Denmark, and France). Since the beginning of the 2000s, the demand for disclosure has increased immensely for large publicly listed companies [2]. This has resulted in extra pressure on the companies as well as on regulators and standard setters [3]. Increased disclosure (especially in certain areas) has been happening, however, there has been much debate about quality and presentation of data.

There is a consensus among stakeholders that neither the current annual financial reports nor the sustainability reports provide sufficient information needed to determine a company's long-term

value creation process [4]. Frost et al., in 2005, for example, found the annual report the least valuable source of information on sustainability indicators and information diversity [5]. However, regulators, standard setters, executives as well as other stakeholders assert that they have a substantial demand for additional information regarding changes in the business environment and the (long-term) impact on business strategy and strategy implementation plans of a company [6]. Most financial reports will neither address the long-term challenges and opportunities that a company faces nor will they explain the strategy, objectives, business model, materiality analysis, risk management, etc., in detail. In their annual reports, companies are often only reporting the bare minimum required by regulators or professional bodies in their respective countries (if there are any regulations).

Over the last decades, we have seen a drastic development towards sustainability reporting [7]. Consequently, disclosure has been researched by various academics as well as by professional organizations [8–11]. Tschopp and Huefner, in 2014, after comparing financial and sustainability reporting, identified the immense growth potential for CSR reporting in the future [12]. Quite a few international bodies have developed disclosure frameworks in order to address perceived information gaps (e.g., Association of Chartered Certified Accountants (ACCA), Centre for Social and Environmental Research (CSEAR), and Global Reporting Initiative (GRI)). In 1999, the Institute of Social and Ethical Accountability (also known as AccountAbility) developed the triple bottom line (TBL) reporting framework that supported a form of integrated reporting [13]. In 2000, the development of the GRI guidelines started off. The latest version of the GRI, the G4 reporting guidelines, was published in 2013 and since then many corporations use it voluntarily [14–17]. A large percentage of global companies have since adopted the GRI format and voluntarily provide substantive CSR information to their stakeholders in various ways [18]. The newly established Sustainability Accounting Standards Board (SASB) has also made recommendations to disclose material information not only in the sustainability report but also in the Management and Discussion Analysis (MD&A) section of the financial annual report [19].

In the mining industry, the extradition and depletion of non-renewable resources has led to much debate about sustainability reporting [20]. Since then, in order to meet stakeholder demands, extractive companies have been improving their sustainability processes [21]. Due to the importance of disclosure of responsible policies towards environmental protection, several CSR guidelines have been developed by initiatives of the mining and energy industries, namely the CSR guidelines of the Prospectors & Developers Association of Canada (PDAC) [22] and the International Council on Mining and Metals sustainable development framework (International Council on Mining & Metals) [23]. In addition, in 2005, the International Association of Oil and Gas producers (OGP), the American Petroleum Institute (API) and the International Petroleum Industry and Environmental Conservation Association (IPIECA) developed guidelines on sustainable reporting [24].

Sustainability reports are adding information on long-term value creation; however, many of them are focused on certain areas leaving interested stakeholders with significant information gaps in others [25]. In contrast to sustainability reporting, integrated reporting (IR) presents a holistic and complete picture of the business in a clear, concise, connected and comparable manner [26]. Integrated reporting is a means of presenting the material information about the organization's strategy, governance and performance on commercial, social and environmental issues. Through effectively connecting these often siloed areas, businesses are able to provide not only an update on past performance but also a long-term perspective of future value generation [27]. The International Integrated Reporting Council (IIRC) just recently has developed the International <IR> Framework [28]. The idea of integrated reporting is to report on long-term value creation more efficiently than what is presented in either the annual report or the sustainability report [29]. In contrast to financial and sustainability reporting, integrated reporting is forward-looking looking.

Thus far, only companies listed in South Africa are required to apply integrated reporting guidelines [30]. A Global Reporting Initiative (GRI) study found that integrated reporting has been embraced by one third of companies while the remaining companies are still trying to develop

a truly integrated report. About a third of all integrated reports clearly integrate sustainability and financial information. About half of all self-declared integrated reports are actually two separate publications—an annual report and a sustainability report—published together under one cover, with minimal cross-connection [31].

This research study adds to the literature by empirically analyzing the reporting on long-term value creation for large public mining and energy companies in Canada. It provides a comprehensive and detailed analysis on integrated reporting quality as well as on reporting scope in specific content areas related to long-term value creation for large Canadian companies. In addition, for the first time, factors determining reporting quality are identified. As such, a connection between certain company characteristics and reporting quality is established.

The first part of the paper introduces the reader to the main theme and issues of the research field of integrated reporting. The second part will introduce the research theory and study framework, whereas the third part will detail the research sample and methodology. In the fourth part, the empirical results will be presented. Finally, the discussion and conclusion represent the fifth and last part of the paper.

## 2. Materials and Methods

When analyzing CSR disclosure previous research studies have been referring to the stakeholder and legitimacy theory as conceptual frameworks [32,33]. Freeman developed the stakeholder theory in 1984 in which he suggests that an organization will have to deal with stakeholders that affect the organizations as well as stakeholders that are being affected by it [34]. In this by now renowned study, it is argued that companies disclose mandatory information to keep their various stakeholders up to date on any important developments that could have an impact on short term but also long term company value. This goes hand in hand with the assumption of the legitimacy theory which assumes a social responsibility for the company towards society [35]. In the context of environmental disclosure, for example, this means that firms under societal pressure will react with more and/or positive information disclosure [36]. On the other hand, according to voluntary disclosure theory that is based on agency theory, it is predicted that companies that perform well will want to inform stakeholders voluntarily about their relevant activities to showcase their commitment and accountability [37,38].

As mentioned previously, recently, many studies have been conducted in this research area and it was recognized that sustainability reporting is becoming more and more common [6]. Researchers also indicated that many companies are taking tentative steps by presenting CSR data along with financial data in their annual company reports. With regard to the Canadian corporate world, it was further found that corporate social responsibility reporting in Canada has stayed at a high level [39]: the majority of companies (51%) include information on CSR in their annual financial report. Furthermore, in the global KPMG study (2013), it was noted that an increasing number but still a minority (42%) is starting to make the link between CSR and business strategy by including CSR information in the Directors' report. In addition, previous research asserts that there is a focus on individual aspects of reporting, for example, environmental reporting, stakeholder engagement, CSR, etc. In fact, responsible policies for environment protection and reporting are deemed very important when advancing CSR [40,41]. With regard to disclosure extent, Gray et al. suggest that larger companies in socially and environmentally sensitive industries will disclose more information voluntarily [42].

The mining and minerals industry has been identified as one of the leading industries in sustainable and environmental reporting [43]. Therefore, the mining and energy sectors have been chosen due to their significant impact on the environment and the communities. These particular industries face many potential environmental issues and are therefore a focus of attention when it comes to the discussion on CSR and long-term value creation [44]. Adams et al. found that oil and gas companies are reporting the most social and environmental information [45]. In 2001, Kolk et al. concluded that mining and metal companies provided the most environmental reports of the Fortune

Global 250 companies [46]. Both of these sectors are also quite vulnerable to the impact of various potential disgruntled stakeholders. Therefore, it is crucial to find ways to deliver value to stakeholders and engage effectively with them. In order to maintain their “social licenses” to operate, companies in these industries have started early on to embrace corporate social responsibility [47]. Guenther et al. stated that in order to maintain their operating license, mining and oil and gas companies were the first to report on environmental matters [48]. In general, they seem to have a higher report rate than other companies [49]. A study by Mammatt et al. from 2010 also indicated that there has been an increase in quality and effectiveness of disclosure for listed Australian gas companies [50]. It was further found that especially companies in the energy and mining industry are presenting their audience with extensive reports [51]. In 2005, Frost et al. found that Australian oil, gas and mining companies disclosed more GRI indicators than others [5]. According to a KPMG study, oil and gas companies produce the highest quality corporate reports [6,40]. In 2009, Perez and Sanchez, in their research of 31 sustainability reports found “a clear evolution” in the depth and comprehensiveness of sustainability reports of mining companies (including environmental disclosure) [52]. Finally, the KPMG 2013 Reporting Survey mentioned previously found that more than 90% of mining companies provided sustainability information in their annual report while 84% of companies in the mining industry are publishing a sustainability report, which is the highest percentage of all industries. Bewley and Magness found that, as the reporting regulations increase for the Canadian resource sector, companies shift information out of the annual report into standalone reports [53].

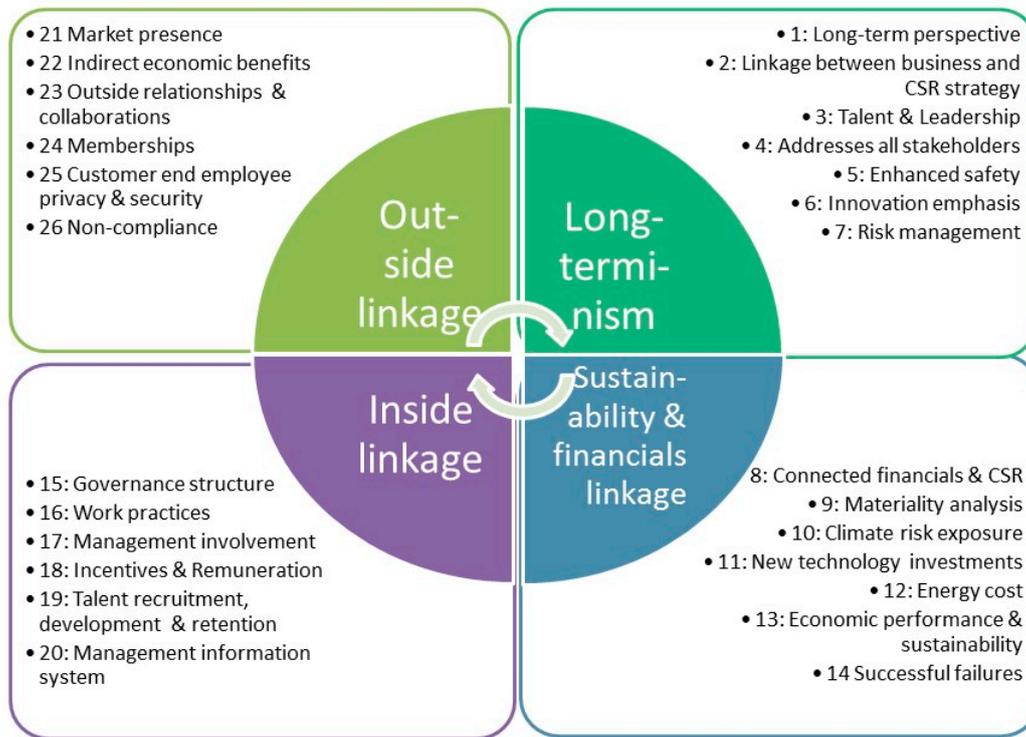
For most of the recommendations and frameworks developed in the past, the focus has mainly been on sustainability reporting rather than reporting on long-term value creation. The framework of the International Integrated Reporting Council (IIRC) differs in the way that through integrated reporting, by connecting the strategy and the business model of a company and linking meaningful metrics to them, the intention is to regain trust with all the major stakeholders of the organization [21].

After a detailed literature review as well as after identifying all the relevant reporting variables based on <IR> and GRI G4, it was decided to use four main categories for the analysis: the subject areas of long-terminism, linkage between sustainability and financials, and outside and inside linkages. These items within the categories were strongly based on the <IR> framework with some additional G4 content for additional information on sustainability issues where deemed crucial for comprehensive reporting on long-term value creation. By doing that some of the variables went beyond the <IR> framework publication requirements. Using this approach, all relevant disclosure items and dimensions on long-term value creation were successfully captured. The above-mentioned four categories were developed for a structured and efficient empirical data analysis. Based on these, a disclosure index for long-term value creation reporting which was previously developed and is presented in Figure 1 [25]. Figure 1 with can be found below.

As can be seen in Figure 1, four main categories have been identified that divide up reporting on long-term value creation. The individual items in each category were then used to analyze disclosure levels for the individual companies. The category “Long-terminism”, for example, includes information on the long-term perspective of the company (company vision, mission, and core values), talent and leadership, safety, innovation, and risk management. Those sub-categories will be called subject areas. For the second category “Linkage between sustainability and financials”, information on key performance indicators (KPIs) that connect financial information with sustainability factors, materiality analysis, climate risk exposure, new technology, energy consumption and cost, and economic performance are important. The third category “Inside linkage” includes information regarding governance, diversity, management involvement and responsible workplace practices, incentives, recruitment and retention and management information system. Lastly, for the fourth category “Outside linkage”, information disclosure on local market presence, local hiring, local suppliers, infrastructure, relationships and collaborations with partners and communities are the main indicators. As previously mentioned, the categories and individual disclosure indicators as well as the long-term value creation disclosure index were developed and applied in a previous study. For further details on

the categorization, please refer to Table 1 in the appendix in which detailed information on categories and individual items is provided.

## Long-term Value Creation Reporting Disclosure Index



**Figure 1.** The four categories and 26 disclosure indicators of the long-term value creation disclosure index.

By analyzing and assessing disclosure content in each of the categories previously mentioned, we will be able to determine overall disclosure quality of the Canadian mining and energy companies. The next step will then be to find out the company characteristics for companies with high disclosure quality level in various areas.

As mentioned above, it is important to note that the underlying study does not solely rely on the reporting requirements according to IIRC or GRI guidelines. There are several reasons for this. The <IR> framework, for instance, has received widespread criticism for being “one-sided” and “limited” [54,55]. In 2014, Haller and van Staden also argued that for the application of the concept of integrated reporting at the corporate level using the <IR> framework is not sufficient [56]. It is important to note that the <IR> framework was finalized after the company annual reports were published. This is also true for the GRI G4 guidelines.

**Table 1.** Explanations and origins of long-term value creation variables.

Long-Term Value Creation Through:		Explanations, Examples	GRI G4	<IR> Framework		
1. Long-term 360 degree linkage Perspective/point of view	1	Long-term perspective	Development of vision, mission, systematic organization and processes; stability; growth of new industries and new markets; long-term supplier networks; ethical conduct	5.1 General Standard Disclosures: G4-1, G4-3, G4-42, G4-56, G4-57 5.2 SPECIFIC STANDARD DISCLOSURES: G4-EC5 & EC6	4A Organizational overview and external environment: Content element 4.5	
	2	Linkage between business and sustainability strategy	Identification of mission, core values in both areas	5.1 General Standard Disclosures: G4-1, G4-2	4C Business model: 4.13 4I General reporting guidance: 4.53	
	3	Talent & leadership	New hires with long-term perspective with fit into organization and its culture; are leaders well suited for making decisions (competencies), ethical skills, employee development	5.1 General Standard Disclosures: G4-33 to G-55	4B Governance: 4.9	
	4	Addresses all relevant stakeholders	Examples: dear stakeholders, stakeholder commentaries, etc., stakeholder engagement and feedback	3.1 The Criteria 4.1 Principles for Defining Report Content 4.2 Principles for Defining Report Quality	1A Integrated report defined: 1.8 3C Stakeholder relationships: 3.10 to 3.14	
	Enhancement linkage Improvements/mitigation	5	Enhanced safety	Safety initiatives and their financial implications	5.2 Specific Standard Disclosures: G4 LA5 to LA8, G4-PR1 & PR2, G4-SO1, G4-HR7	n/a
		6	Innovation emphasis	Eco-friendly; growth of new industries and new markets; new innovation platforms and their financial implications	n/a	2D The value creation process: 2.24 4C Business model: 4.16 4E Strategy and resource allocation: 4.29
		7	Risk management	Explanations of risk management, incl. threats and opportunities and financial impacts	4.2 Principles for Defining Report Quality: G4-2, G4-33, G4-45 to 48, 5.2 Specific Standard Disclosures: G4-DMA: G4-EC2, G4-EC2, G4-HR5, G4-HR6, G4-SO3	2D The value creation process: 2.26 3D Materiality: 3.34 4D Risks and opportunities: 4.23 to 26 4F Performance: 4.31, 4.36, 4.37 4H Basis of preparation and presentation: 4.43 to 4.46 1C Purpose and users of an integrated report: 1.7, 1.11, 2A Introduction: 2.3 2B Value creation for the organization and for others: 2.4 to 2.9
2. Financials and sustainability linkage	8	Connectivity between financials and sustainability sections	Quantitative information about outcomes on capitals; KPIs that connect financial outcomes with other sustainability variables (e.g., emissions to sales ratio, financial impact of consumption or employee turnover, etc.)	4.2 Principles for Defining Report Quality: G4-2, G4-44 5.2 Specific Standard Disclosures: G4-DMA: G4-EC2	2C The capitals 3A Strategic focus and future orientation: 3.3 3B Connectivity of information 4C Business model 4E Strategy and resource allocation 4F Performance 4G Outlook 4H Basis of preparation and presentation	

Table 1. Cont.

Long-Term Value Creation Through:		Explanations, Examples	GRI G4	<IR> Framework	
3. Inside linkage Within the organization	9	Materiality analysis	Materiality analysis, materiality matrix	4.1 Principles for Defining Report Content 4.2 Principles for Defining Report Quality 2.2 Using the Guidelines to Prepare a Sustainability Report: The Steps to Follow 5.1 General Standard Disclosures: G4-17, G4-17 to 23 5.2 Specific Standard Disclosures: G4-DMA (Disclosure on Management approach)	1D A principles-based approach: 1.10 2B Value creation for the organization and for others: 2.7 3D Materiality 3F Reliability and completeness 3G Consistency and comparability 4D Risks and opportunities 4F Performance 4H Basis of preparation and presentation 4I General reporting guidance
	10	Climate risk exposure	Financial implications and other risk due to climate change	5.2 Specific Standard Disclosures: G4-EC2	4A Organizational overview and external environment: 4.7
	11	New technology investment	Identification of new technology investments and related financial information	n/a	2D The value creation process: 2.24 3B Connectivity of information: 3.8, 3.9
	12	Energy Costs	Energy consumption practices and related financial impact (not emissions or consumption numbers only); Projects with high climate risk exposure	5.2 Specific Standard Disclosures: G4-EN3 to EN7 (only consumption information)	3B Connectivity of information: 3.8
	13	Economic performance & sustainability	Connection between economic performance and economic sustainability.	3.1 The Criteria 4.1 Principles for Defining Report Content 5.2 Specific Standard Disclosures: G4-EC1 to EC4, G4-EC7 & EC8	2D The value creation process 3B Connectivity of information
	14	Successful failures	Identification of failures and the lessons learned from them	5.1 General Standard Disclosures: G4-1	n/a
	15	Governance structure	Diversity & skill set of people in charge and how they benefit company	5.2 Specific Standard Disclosures: G4-LA12	4B Governance: 4.9
	16	Responsible workplace practices	Sustainable people practices and connection to cost efficiencies, safety practices	5.2 Specific Standard Disclosures: G4-LA1 to LA16, G4-HR7	2B Value creation for the organization and for others: 2.9 3D Materiality: 3.35 4B Governance: 4.9 4C Business model: 4.20 1A Integrated report defined 1G Responsibility for an integrated report 2C The capitals 2D The value creation process 3B Connectivity of information: 3.4, 3.15 3D Materiality: 3.21, 3.22, 3.25 3E Conciseness: 3.37 3F Reliability and completeness: 3.41 & 3.42
	17	Involvement of management	Commitment to sustainability; targets and who is accountable for what; board committees	5.1 General Standard Disclosures: G4-34 to G4-55 5.2 Specific Standard Disclosures: G4-LA12, G4-SO4	4. CONTENT ELEMENTS: 4.1 4B Governance: 4.9 4C Business model: 4.22 4H Basis of preparation and presentation: 4.42 4I General reporting guidance: 4.53, 4.62

Table 1. Cont.

Long-Term Value Creation Through:		Explanations, Examples	GRI G4	<IR> Framework	
4. Outside linkage Outside relationships	18	Incentives and remuneration	Is reward system tied to long-term value creation?	5.1 General Standard Disclosures: G4-33, G4-50 to G4-53	4B Governance: 4.9
	19	Talent recruitment, development & retention	Training and development expenditures for employees and their impact on company sustainability	5.1 General Standard Disclosures: G4-33, G4-50	n/a
	20	Management information system	Is information system capable to measure and inform about long-term sustainability?	4.1 Principles for Defining Report Content 4.2 Principles for Defining Report Quality 6.9 Process for Defining Reporting content	ABOUT INTEGRATED REPORTING 1F Application of the Framework: 1.18 2D The value creation process: 2.28 3B Connectivity of information: 3.7, 3.8, 3.9 3F Reliability and completeness: 3.40, 3.46, 3.49, 3.50 1C Purpose and users of an integrated report: 1.8 2B Value creation for the organization and for others: 2.6
	21	Market presence	Locally based suppliers policies, local hiring, wages compared to local market (costs and benefits)	4.1 Principles for Defining Report Content 5.1 General Standard Disclosures: G4-1, G4-8, G4-13 5.2 Specific Standard Disclosures: G4-EC5 to EC7, G4-EC9, G4-EN9, G4-LA8, G4-LA15, G4-HR4 to HR11, G4-SO1 to SO11	3A Strategic focus and future orientation: 3.4 3B Connectivity of information: 3.8 3C Stakeholder relationships: 3.13 3D Materiality: 3.35 4A Organizational overview and external environment: 4.5, 4.7 4C Business model: 4.16, 4.20, 4.21 4G Outlook: 4.31
	22	Indirect economic impacts	Infrastructure investments, public benefit, extent of impacts, community investment (costs and benefits)	4.1 Principles for Defining Report Content 5.1 General Standard Disclosures: G4-1, G4-2 5.2 Specific Standard Disclosures: G4-EC1 & EC2, G4-EC6 to EC8, G4-EN12, G4-SO1, G4-SO9 & SO10	2C The capitals: 2.15 2D The value creation process: 2.21 3C Stakeholder relationships: 3.12, 3.13 4A Organizational overview and external environment 4H Basis of preparation and presentation: 4.47
	23	Positive relationships and collaborations with outside stakeholder	Business partners and collaborations (costs and benefits); Stakeholder relationships and engagement with impact	4.1 Principles for Defining Report Content 4.2 Principles for Defining Report Quality 5.1 General Standard Disclosures: G4-1, G4-13, G4-24 to G4-27, G4-37, G4-38, G4-40 & 41, G4-45, G4-53 5.2 Specific Standard Disclosures: G4-EC8, G4-SO1	2A Introduction: 2.2, 2.3, 2.6, 2.7 2C The capitals: 2.15, 2.18 3B Connectivity of information: 3.8 3C Stakeholder relationships 4B Governance: 4.8 4C Business model: 4.17 4F Performance: 4.31, 4.32 4G Outlook: 4.37
	24	Memberships & (industry) associations	Company memberships in industry or other associations (financial impact and benefit)	5.1 General Standard Disclosures: G4-16	n/a
	25	Customer and employee privacy & security	Cyber security breaches, data loss and fraudulent activities and losses therefrom	5.2 Specific Standard Disclosures: G4-PR8	n/a
	26	Non-compliance with laws and regulations	Fines for marketing communication and product and services non-compliance & fines; Reporting of monetary values	5.2 Specific Standard Disclosures: G4-PR7 & PR9	n/a

### *Development of Hypothesis*

In their research on information disclosure in non-financial reports, Vurro and Perrini found that an increase in the quantity of information indicates a stronger commitment to corporate social responsibility [7]. In another previous study related to sustainability reporting, it was discovered that disclosure volume is connected to disclosure quality [44]. It is assumed that in the context of information disclosure on long-term value creation this also holds true. Consequently, the first hypothesis of this study is the following:

H1: The quality of the disclosure on long-term value creation will be positively related to the disclosure volume.

### *Control Variables*

Prior research studies also have been analyzing the impact of corporate governance on the volume and quality of voluntary disclosure [57–59]. They determined that corporate governance is evolving and that responsibility and accountability towards more than one stakeholder group has increased. Chan et al. also argue that there is a link between corporate governance quality and disclosure of CSR information [33]. It is argued that, in order to maximize long-term shareholder value, good corporate governance can help ensure long-term success for the company, not only in a financial sense but also in being a good corporate citizen. In another previous study it was concluded that a board and its composition can help a firm develop and communicate CSR strategies that promote superior environmental and social performance [60]. It is assumed that all this also applies to a proactive disclosure strategy on long-term value creation. Therefore, and also in alignment with the previously mentioned voluntary disclosure theory, it is hypothesized that:

H2: The quality of disclosure on long-term value creation will be positively related to the level of corporate governance of the company.

On another note, the majority of previous empirical studies has found significant evidence of a positive relationship between size of a company and quality of disclosure [61–64]. This assumption is based on the fact that bigger companies have more resources as well as more sensitivity to bad news. This is also consistent with stakeholder theory as larger companies typically would have more stakeholders and therefore, the likelihood for them to have to satisfy all these stakeholders is higher than for smaller companies. Consequently, their propensity to report voluntarily on social and environmental issues is increased for larger companies [7,65]. Accordingly, it is hypothesized that a similar relationship will exist with regard to integrated reporting on long-term value creation:

H3: The long-term value creation disclosure quality will be positively related to the size of the company.

Previously, researchers stated that voluntary disclosure is influenced by industry membership. It was found that in some industries voluntary reporting is much more common than in others. In general, companies that operate in environmentally sensitive areas are more likely to disclose more environmental information [64]. If they do not, it is assumed that pressure groups and ultimately society will turn on these companies [65]. This is the reason why high risk sectors such as mining companies were among the first to manage reputation risk [66]. As pointed out above, according to legitimacy theory, corporations that operate in high profile industries will disclose more non-mandatory information than others [64,67,68]. In particular, companies in extractive industries are being mentioned as more likely to extensively disclose information in order to stay competitive [69]. According to a study by Brammer and Pavelin, the materials sector is being considered as high profile whereas the energy sector is categorized as medium profile [37]. Based on that, and in alignment with the previously mentioned legitimacy theory, it is expected that the disclosure quality on long-term value creation will be related to the sector of the company. Therefore, the following hypothesis was developed:

H4: The disclosure quality on long-term value creation will be related to the sector of the company. It is hypothesized that the quality of disclosure companies in the basic materials sector disclose is higher than the quality of disclosure of the energy companies.

Based on the assumptions of legitimacy theory, when analyzing the reasons why companies disclose information voluntarily, many researchers tried to determine if information is disclosed for the benefit of investors and other financial market participants. For instance, Healy and Papelu, in their 2001 study, found that companies that are faced with volatility and unstable conditions will disclose more information than firms that operate in more robust environments [69]. Considering this, it is assumed that the quality of disclosure on long-term value creation will be related to the level of volatility faced by the company:

H5: The quality of disclosure on long-term value creation will be related to the level of volatility faced by the company. It is hypothesized that the quality of disclosure of companies in a volatile environment is higher.

In the past, researchers have been identifying reporting to stakeholders as part of a corporate strategy which maintains open communication with the owners, employees, lenders, government, community, indigenous groups, etc. Companies that commit to that type of reporting are considered to do so in an effort to create long-term and sustainable value for the organization [59,64]. Thijssens et al., in a similar context, also concluded that stakeholders can be very important when it comes to CSR disclosure [70]. Therefore, it is assumed that “engaged” corporations will also be able to report on long-term value creation more effectively. In that context, and aligned with voluntary disclosure theory, it is projected that the quality of the disclosure on long-term value creation will be positively related to the stakeholder engagement by the company.

H6: The quality of the disclosure on long-term value creation will be positively related to the stakeholder engagement of the company.

Previously, it was also found that some companies provide voluntary information on their intangible assets in an effort to disclose the performance of the company and its market value [64]. Those companies are very serious about transparency and open communication to their various stakeholders. Assuming this also applies to long-term value creation disclosure and also aligned with voluntary disclosure theory, it is hypothesized that the quality of disclosure on long-term value creation will be positively related to the importance of management of intangible assets for the company.

H7: The quality of disclosure on long-term value creation will be positively related to the importance of management of intangible assets for the company.

#### *Sample and Methodology*

This analysis uses the same sample of companies of a study conducted by Dilling in 2014 in which information on long-term value creation in annual financial and non-financial reports for the year 2012 was analyzed. The average page number for the annual financial reports was 128 pages, with the shortest at 79 pages and the longest at 190 pages, as well as stand-alone voluntary sustainability/community/stewardship reports with an average of 90 pages (shortest: 14 pages, longest: 205 pages). Just like in Unerman [71] and Zeghal and Ahmed [72], it is recognized that other forms of corporate communication exists (such as websites, blog, videos, CDs, press releases, tweets, etc.); however, these sources were not included since it would have exceeded the scope of this study.

In 1979, Abbott and Monsen defined content analysis as a data gathering technique that uses categorization of qualitative information [73]. Krippendorff, in 1980, called it a research technique which inferred information by analyzing data in its appropriate context [74]. The method that is most widely used in the academic literature to measure CSR disclosure actually is content analysis [75]. For example,

Guthrie et al. (2004) used content analysis to analyze capital reporting [76]. Beck et al. applied the method in environmental reporting research [77]. For the underlying study, content analysis has been used to analyze the sample of forty reports of publicly listed Canadian mining and energy companies.

As previously mentioned, the sample included public mining and energy companies in Canada. In fact, the sample included all energy and mining companies that were Toronto Stock Exchange Index 60 (TSX60) constituents and had published an annual financial report and a sustainability report or equivalent for 2012. The total was 20 companies with 40 reports (evenly divided up with 20 financial reports and 20 sustainability reports); 26 long-term value creation reporting disclosure indicators (refer to Figure 1) were scored, so, consequently, a total of 1040 long-term value creation indicators were used for the empirical data analysis.

As mentioned before, the resources sector is significant due to its environmental impact as well as its economic contributions [78]. It is a one of the main industries in Canada. Due to its rich geology, Canada is one of the largest mining nations in the world [79]. The Canadian mining industry, for example, accounted for 19.6% of the value of Canadian goods exports in 2013 [80]. In fact, mining contributed \$54B to Canada's GDP in 2013 and it is noteworthy that sustainable mining is an important goal of the Canadian Association of Petroleum Producers (CAPP). The Canadian Oil and Natural Gas industry, on the other hand, employs more than 550,000 in Canada and represents approximately 20% of Canada's exports [81]. The Mining and Oil and Gas extraction sectors contributed \$125B to the Canadian GDP in 2014 [80].

#### *Dependent Variable*

In order to measure the quality of disclosing information concerning long-term value creation, a disclosure index was created; a measure that is quite common in the research field of information disclosure studies [63].

The Disclosure Quality Index for long-term value creation (DQ\_LTV) is a measure that is calculated by adding the Disclosure Quality Index for the Annual report score (DQ\_AR) and Disclosure Quality Index for the CSR report (DQ\_CSR) score:

$$\text{Disclosure quality index for long-term value creation (DQ\_LTV)} = \text{DQ\_AR} + \text{DQ\_CSR}$$

Further, the DQAR is derived when adding the Disclosure Quality Index for the Annual report, long-term (DQ\_ARLT) score, Disclosure Quality Index for the Annual report, financial (DQ\_ARFIN), Disclosure Quality Index for the Annual report, inside (DQ\_ARINSIDE) and Disclosure Quality Index for the Annual report, outside (DQ\_AROUTSIDE). For the CSR measures, the respective score names apply:

$$\text{DQ\_AR} = \text{DQ\_ARLT} + \text{DQ\_ARFIN} + \text{DQ\_ARINSIDE} + \text{DQ\_AROUTSIDE}$$

$$\text{DQ\_CSR} = \text{DQ\_CSRLT} + \text{DQ\_CSRFIN} + \text{DQ\_CSRINSIDE} + \text{DQ\_CSROUTSIDE}$$

DQ\_ARLT is calculated by averaging all scores for ARLT indicators, the DQ\_CSRFIN is calculated by averaging all scores for CSRFIN indicators, and so forth. Finally, the average DQ\_LTV for all companies is calculated by dividing the sum of all scores by the number of reports.

$$\text{Average DQ\_LTV}_{it} = \frac{\sum_{t=1}^n \text{DQ\_AR}_t}{na} + \frac{\sum_{t=1}^n \text{DQ\_CSR}_t}{nc}$$

where  $i$  is the company;  $t$  is the time;  $na$  is the number of annual financial reports; and  $nc$  is the number of CSR reports.

As all company reports vary enormously in their focus on certain subjects and their use of terminology, it is crucial to ensure validity and consistency in using the content analysis method. Therefore, several pilot testing rounds were performed in which the author reviewed the reports

and assigned quality disclosure scores and another researcher (familiar with the subject matter) independently did the same. This was done for 4 reports (2 annual reports and 2 sustainability reports) and just a few minor discrepancies showed up. Based on these, categories and scoring were further clarified, modified and reviewed again.

For the same reason, it was important to develop strict guidelines to assess the information content for each category. In more detail, an analysis and subsequent scoring took place for each assessment item. Then, based on the scoring methodology of Zyl [82] and Marx and Dyk [50], a score between 0 and 5 was assigned. In the following Table 2, all scores and their respective disclosure scope and type of information are listed.

The scoring was performed for financial and for sustainability reports separately. This procedure was performed for all forty reports. As mentioned, forty reports and 26 indicators were scored, resulting in a total of 1040 indicators that were analyzed each category at a time thereby ensuring consistency and attention to detail.

**Table 2.** Scores and their respective disclosure quality level and type of information.

Score	Disclosure Quality	Type of Information
0	No disclosure quality	No information was provided in the report.
1	Very low disclosure quality	The topic is only mentioned briefly in the report.
2	Low disclosure quality	Little information was provided but more than just a mention was made.
3	Medium disclosure quality	Average information was provided.
4	High disclosure quality	In addition to the average information, a few examples or quantitative information were provided.
5	Very high disclosure quality	Extensive information was provided with many examples or substantial quantitative information.

### *Independent Variables*

#### Information volume (words)

The number of individual words was chosen as a proxy for information volume. The assumption behind this quantitative content analysis is that volume signifies importance. Several authors [33,83–85] argued that using sentences would be a better variable to use but it was found that the use of words was more appropriate for this study as individual words included in graphs, tables, etc., could also be taken into account. This assumption is consistent with Deegan and Gordon that argue that by doing so the disclosure level can be measured in more detail [86].

### *Control Variables*

Previous studies showed that voluntary information disclosure often depends on many different dimensions [7,87]. Accordingly, for this study, several control variables have been identified as variables that affect the level of disclosure quality. Vurro and Perrini, for instance, classified the influencing factors as organization and environmental affecting factors which can affect the “... propensity to report voluntarily on social and environmental issues” [7].

As such, in the past, in many related research studies, several measures have been used as proxies for company size. There are various reasons for each one of them. In this study, the variable “Total revenues” was chosen as it was deemed a good and readily available indicator for the size of the mining and energy companies. Therefore, company size, which was measured as the natural logarithm of revenues, was used as a control variable.

Based on the results of previous studies, which identified the importance of the industry or sector on disclosure quality [65–68], sectors in which the companies operate were included as controlling

factors. The companies were divided up into belonging to either the basic materials or energy (oil and gas) sector.

Another controlling variable used was the independence of the board members as an independent board indicates a supportive internal organization environment and good corporate governance. The percentage of independent board members was used as a proxy of independence level.

In addition, an environmental affecting factor was also included as controlling variable. The stock indicator fast volatility was chosen as a proxy for risk exposure faced by the company from the financial market. This indicator was chosen as empirical evidence of a fast volatility factor was found when analyzing high frequency S&P 500 data [88].

As a suitable proxy for intangible asset management, the price-book ratio was selected. This variable is calculated by dividing the share price by the book value per share for the respective point in time. This is done in order to determine the inherent value of the company (including intangible assets). There are arguments for not using this measure to determine intangible asset management and that the ratio cannot account fully for the value of intangible assets [89]. However, it was found that the advantages of the variable outweigh the potential disadvantages and therefore include it into our analysis.

With regard to stakeholder engagement, the Dow Jones Sustainability Index (DJSI) World 2012 was included as a variable into the analysis by using a dummy equal to 1 if the company was included and 0 if not. The Dow Jones Sustainability Index (DJSI) World index is an index composed of global sustainability leaders through a corporate sustainability assessment representing the top 10% of the largest 2500 companies in the S&P Global Broad Market Index [90,91]. An inclusion in the listing indicates a strong corporate stakeholder engagement policy. It can also be argued that companies being concerned with their stakeholder relationships will be included in the Corporate Knight listing that is published annually for the best 50 corporate citizens in Canada [92]. Therefore, the inclusion in the Corporate Knights list was also added as indicator. Please refer to Table 3 for all control variables.

In order to test the robustness of the results, several alternative measures were used for the control variables (examples: industries, GRI guidelines use, profitability, etc.). However, none of these improved the study results and were therefore not included.

**Table 3.** Control variables.

Variable (Expected Sign)	Measurement	Source
Company size (+)	Total revenues 2012	2012 Annual financial report
Sector	Sector 1: Energy (oil and gas) Sector 2: Basic materials	Yahoo Finance Profile page
Corporate governance (+)	Percentage of independent board members	2012 Annual financial reports, circulars or proxies
Risk exposure (+)	Fast volatility	Morningstar Investment Center
Stakeholder engagement (+)	Dow Jones Sustainability Index World 2012 1: yes, 0: no (dummy variables)	Robecco Sam DJSI World 2012
	Corporate Knights Ranking 1: yes, 0: no (dummy variables)	Corporate Knights list 2012
Intangible asset management (+)	Price-Book-Ratio	Morningstar Investment Center

### 3. Results

In Dilling's previous empirical analysis of the data, it has been concluded that many companies place great emphasis on communicating their vision, mission, strategy, industry growth and new market development in both the financial report as well as the sustainability report. She also noted that information disclosure gaps in many other areas for the majority of companies, most notably in

the area of inside linkages (governance, diversity, skills, responsible workplace practices, incentives, etc.). In addition, data and examples were not sufficiently provided, especially no specific KPIs that link financial with sustainability data [25]. However, it is noteworthy that there were a few companies that disclosed also very extensive information on failures and things that did not go as planned during the year 2012. It was found that some items are disclosed in much more detail in the sustainability report compared to the financial report. Only for the assessment items in the area of “long-term perspective” and “risk management” on average more information was disclosed in the annual financial report while all other items that were examined were published to a greater extent in the sustainability report. This is an indicator for the fact that the sustainability report is still the main vehicle to disclose information on long-term value creation while only very limited information is provided in the financial report [18].

The frequencies for the categorical variables are presented in Table 4a. The descriptive statistics for the dependent, independent as well as for the control variables are presented in Table 4b.

The variables “Total revenues” and “Total words” have been transformed by their natural logarithm after discovering non-normality in the data. As can be seen in Table 4b, the total revenues of the companies range from CAD1,148,000 to CAD38,616,000. Forty-five percent of the companies are operating in the energy sector whereas the remaining companies are basic materials companies. Only 35% of the CSR reports have been externally audited. Half of the sampled companies have been listed in the DJSI World Index in 2012. The independence of the boards of directors ranges from 54% to 100%. As for stock indicators, fast volatility for all companies ranges from 0.02 to 0.06.

**Table 4.** (a) Frequencies and descriptive statistics for categorical variables; and (b) means and Standard deviation of raw data, transformed Zscores used for regression.

(a)					
Sector					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	9	45.0	45.0	45.0
	2	11	55.0	55.0	100.0
	Total	20	100.0	100.0	
Ranking					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	7	35.0	35.0	35.0
	1	13	65.0	65.0	100.0
	Total	20	100.0	100.0	
DJSI					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0.00	10	50.0	50.0	50.0
	1.00	10	50.0	50.0	100.0
	Total	20	100.0	100.0	
Ext_assurance					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	13	65.0	65.0	65.0
	1	7	35.0	35.0	100.0
	Total	20	100.0	100.0	

Table 4. Cont.

(b)					
Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Total Revenues 2012	20	1148	38,616	10,865.10	11,083.079
Net income	20	−2794	3766	847.10	1359.532
Employees	20	500	27,000	7646.75	6270.323
Company age	20	6	135	43.45	32.720
Fast volatility	20	0.02	0.06	0.0320	0.01105
Price-book-ratio	20	1.20	5.30	1.9250	0.93969
Board independence in %	20	54	100	85.46	11.190
DQ_AR	20	0.63	1.61	1.0825	0.33488
DQ_CSR	20	1.15	3.39	2.1200	0.69067
AR_CSR_DISCREP	20	0.15	2.11	1.0375	0.58831
DQ_LTV	20	1.97	4.95	3.2025	0.91228
DQ_AR_LT	20	1.21	3.50	2.1430	0.63923
DQ_AR_FIN	20	0.00	1.17	0.5340	0.39328
DQ_AR_IN	20	0.00	1.50	0.5625	0.47894
DQ_AR_OUT	20	0.00	2.25	0.8135	0.72389
WORDS_AR_LT	20	95.14	527.57	265.0295	131.48773
WORDS_AR_FIN	20	0.00	102.67	36.7750	30.98703
WORDS_AR_IN	20	0.00	129.50	44.5250	42.70585
WORDS_AR_OUT	20	0.00	292.50	83.1190	92.25636
DQ_CSR_LT	20	1.57	4.07	2.6920	0.71057
DQ_CSR_FIN	20	0.33	4.08	1.7420	1.17789
DQ_CSR_IN	20	0.33	3.42	1.5000	0.86427
DQ_CSR_OUT	20	1.13	3.50	2.6185	0.67448
WORDS_CSR_LT	20	125.14	811.86	337.8710	182.67149
WORDS_CSR_FIN	20	19.17	702.17	167.6580	172.47048
WORDS_CSR_IN	20	12.33	470.00	148.0080	121.75734
WORDS_CSR_OUT	20	107.75	878.00	419.8930	256.98874
WORDS_AR_AVERAGE	20	39	218	116.30	50.234
WORDS_CSR_AVERAGE	20	84	575	255.95	155.477
WORDS_AR_TOTAL	20	903	5004	2674.65	1155.137
WORDS_CSR_TOTAL	20	1927	13231	5927.30	3656.503
WORDS_TOTAL	20	3677	18235	8601.95	4231.116
Valid N (listwise)	20				

*N* = 20 Frequencies for categorical variables.

With regard to total words that can be counted in the reports relating to long-term value creation it can be said that they range from 3677 to 18,235 with an average value of 8601 words. Total words found in the annual report vary from 903 to 5004 whereas a higher word count can be observed in the sustainability reports with a minimum of 1927 to a maximum of 13,231 words and an average word count of 5927 (2674 for annual reports) for all companies.

The Disclosure Quality Index CSR report score (DQ\_CSR) ranges from 1.15 to 3.39, whereas it is much smaller for the annual report score (DQ\_AR) with a minimum at 0.63 to a maximum of 1.61. The combined score (DQ\_LTV) ranges from 1.97 to 4.95 when adding both scores (it has to be kept in mind that the maximum combined score is 10). When analyzing the various sub-categories, it can be stated that for the annual report the highest word count lies in the long-term category and for the CSR report, the highest count for the outside and the long-term category. When it comes to the scores, there are similar results: The CSR scores for the long-term category were at an average of 2.69 whereas the AR score for the same category was at 2.14, the highest scores for both reports.

The data was checked for normality and linearity. It was examined for outliers by calculating the Mahalanobis distance. Cook's distance maximum value is below 1 and the Mahal distance is lower than the critical value (15.507, *df* = 8). Therefore, no removal of outliers was necessary. When checking

for homoscedasticity it was also found that most of the independent variables are approximately normally distributed.

In Table 5, correlation coefficients are presented for the continuous independent and control variables.

**Table 5.** Correlation analysis.

Correlations								
	Sector	fast_vol	price_book	in %	Ranking	log_revenues	log_total_words	DJSI
Sector	1	−0.672 **	0.277	0.289	−0.032	0.499 *	−0.202	0.101
fast_vol	−0.672 **	1	−0.431	−0.077	−0.058	−0.576 **	0.016	−0.279
price_book	0.277	−0.431	1	0.157	0.134	0.219	0.295	0.289
independent %	0.289	−0.077	0.157	1	−0.142	−0.293	−0.152	−0.034
ranking	−0.032	−0.058	0.134	−0.142	1	0.319	0.403	0.314
log_revenues	0.499 *	−0.576 **	0.219	−0.293	0.319	1	0.327	0.414
log_total_words	−0.202	0.016	0.295	−0.152	0.403	0.327	1	0.505 *
DJSI	0.101	−0.279	0.289	−0.034	0.314	0.414	0.505 *	1

*N* = 20; \* *p* < 0.01, two-tailed; \*\* *p* < 0.05, two-tailed.

For the statistical analysis, an OLS estimation regression was performed. The results of the collinearity diagnostics suggested that there might be problems with multi-collinearity. While Tolerance and VIF values were at acceptable levels, some eigenvalues were close to zero indicating that predictors are inter-correlated and small changes in data could lead to a large change in the estimates of coefficients. In addition, some of the condition indices were also higher than 15, which could indicate a problem [93]. Therefore, it was tried to fix these collinearity problems by re-running the regression using Zscores of the independent and control variables. After doing that, the eigenvalues and condition indices were vastly improved in comparison to the original model.

In Table 6, the regression results are being presented.

Through linear regression, almost 90% (89.8%) of variation in the disclosure score is explained by the predictive model ( $F = 12.303$ ,  $p < 0.001$ ). However, there are three variables with non-significant coefficients, an indication that these variables do not contribute much to the model unlike from what was predicted. The contributing variables are “company size”, “sector”, “board independence”, “DJSI membership”, “fast volatility” and “total words”. Those are significant predictors for quality long-term value creation disclosure. When analyzing the standardized coefficients of the significant variables, it can be stated that the variable “company size” contributes the most to the model, followed by the variable “total words” (disclosure volume) and “fast volatility”, then “sector” and “board independence level”. All coefficients of the variables that are significant are positive except the sector variable.

Table 6. Regression results.

Model Summary <sup>b</sup>												
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson							
1	0.948 <sup>a</sup>	0.899	0.826	0.38014	2.189							
<sup>a</sup> Predictors: (Constant), Zscore(log_revenues), Zscore(price_book), Zscore(ranking), Zscore: independent %, Zscore(DJSI), Zscore(log_total_words), Zscore(fast_vol), Zscore(sector)												
<sup>b</sup> Dependent Variable: Combined_score												
ANOVA <sup>a</sup>												
Model		Sum of Squares	df	Mean Square	F	Sig.						
1	Regression	14.223	8	1.778	12.303	0.000 <sup>b</sup>						
	Residual	1.590	11	0.145								
	Total	15.813	19									
<sup>a</sup> Dependent Variable: Combined_score												
<sup>b</sup> Predictors: (Constant), Zscore(log_revenues), Zscore(price_book), Zscore(ranking), Zscore: independent %, Zscore(DJSI), Zscore(log_total_words), Zscore(fast_vol), Zscore(sector)												
Coefficients <sup>a</sup>												
Model		Unstandardized Coefficients		Stand. Coefficients	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Zero-Order	Partial	Part	Tolerance	VIF	
1	(Constant)	3.203	0.085		37.676	0.000						
	Zscore(fast_vol)	0.358	0.136	0.392	2.633	0.023	0.147	0.622	0.252	0.412	2.428	
	Zscore(price_book)	0.193	0.106	0.212	1.824	0.095	0.334	0.482	0.174	0.678	1.474	
	Zscore: independent %	0.264	0.105	0.289	2.509	0.029	0.006	0.603	0.240	0.687	1.456	
	Zscore(sector)	−0.311	0.140	−0.341	−2.214	0.049	−0.155	−0.555	−0.212	0.385	2.595	
	Zscore(ranking)	0.087	0.098	0.095	0.884	0.396	0.444	0.257	0.084	0.784	1.275	
	Zscore(DJSI)	0.245	0.109	0.268	2.242	0.047	0.600	0.560	0.214	0.638	1.568	
	Zscore(log_total_words)	0.409	0.120	0.449	3.399	0.006	0.823	0.716	0.325	0.525	1.906	
	Zscore(log_revenues)	0.443	0.159	0.486	2.793	0.017	0.297	0.644	0.267	.302	3.312	
<sup>a</sup> Dependent Variable: Combined_score.												

These results support H1, H2, H3, and H5. With regard to H4, the negative sign indicates that basic material sector companies have significantly higher disclosure quality scores than energy companies. H6 was partially supported. The 7th hypothesis was not supported in that the “price-book ratio” variable was not significant. The failure to find a positive relationship between the variables price-book ratio and disclosure quality could be explained by the fact that either the price-book ratio is not a good proxy for intangible asset management or that intangible asset management is not a good predictor for disclosure quality. With regard to H6, only the variable DJSI inclusion proved to be significant, whereas the variable Corporate Knight listing was not significant. As mentioned, the listing focuses on the best Canadian corporate citizens and therefore apparently is not a good indicator when it comes to reporting on long-term value creation.

#### 4. Discussion and Conclusions

In this study, drawing upon mandatory reporting disclosure frameworks such as the <IR> framework and the GRI G4 as well as from theoretical results from CSR and stakeholder management literature, a theoretical model is developed and tested by using a comprehensive disclosure index to measure long-term value creation reporting quality and volume of annual financial and non-financial reports of large mining and energy companies in Canada. Several factors have been suggested to influence long-term value creation reporting in previous studies and therefore have been included in the empirical model as control variables.

Using an OLS regression for a Canadian sample of 20 public companies, support is found for several of the developed hypotheses. The results of the empirical analysis based on the proposed theoretical model suggests that companies with certain characteristics are more likely to disclose information on long-term value creation at a high quality level. These companies are of a larger size, with a more independent board of directors, operate in the material sector, and are members of the DJSI with a higher stock volatility. It appears that these companies in particular spend more time and effort on their reports which translates in more high quality content related to long-term value creation in their reports.

However, the findings do not support the hypothesized relationship between intangible asset management and disclosure quality. Neither was there a significant relationship between disclosure quality and the proxy for stakeholder engagement Corporate Knight ranking.

This exploratory study, a first of its kind for Canadian companies, contributes to our understanding of voluntary disclosure in the area of long-term value creation. The results confirm, for the most part, that there is evidence that companies will disclose information they think they have to disclose based on (external) societal pressures (legitimacy and stakeholder theory) but also information they want to disclose (internal voluntary disclosure pressure).

As indicated, in a previous study, Dilling found for the same data set that there are many discrepancies between integrated reporting on long-term value creation in annual financial and sustainability reports with a focus on certain areas. The majority of information disclosed in the annual financial reports was found in the “long-term perspective” subject area. In sustainability reports, these areas are also covered plus information on the “linkage of financials and sustainability” and “outside relationships”. Information gaps were uncovered for a plethora of items. Certain aspects of sustainability information are reported more extensively in the annual financial reports whereas others are reported more often and elaborate in the sustainability report. It can be said that, on average, supporting data and examples were not sufficiently provided. In general, it was found that the study findings are consistent with many previous studies. Just like the study at hand, the IIRC found low levels of disclosure for a large sample of U.S. companies [27]. Chauvey et al. found this also to be true for French firms with regard to CSR disclosure [66]. It also goes hand in hand with van Zyl’s research study’s conclusion that the integrated reporting process is still in the development phase. Lodhia and Hess confirm that sustainability accounting and reporting practices are evolving but that progress is slow [94]. Cheng et al. found that only seven of S&P 500 companies integrated their financial and non-financial information [95]. Dong and Burritt found poor disclosure when examining social and environmental disclosure [96].

Many of the study findings are consistent with the results of other empirical studies. For example, the findings suggest a link between corporate governance level and disclosure on long-term value creation (or integrated reporting) in the annual financial and CSR reports. This is consistent with study findings of Chan et al. [33]. Consistent with studies by Boesso and Kumar and Burgwal and Vieira, the results show that company size is a significant predictor for disclosure. In Boesso and Kumar’s study for the first sample volatility and the variables for stakeholder management were significant predictors for disclosure volume. In this study, they were predictors for disclosure quality. This is consistent with Magness who found that environmental disclosure increases with company size and the fact that the company is active with regard to stakeholder engagement relation management [97].

Spence and Gray claim that academic research has yet to fully explain the reasons for corporations not reporting on CSR [98]. Even if they are reporting, it was found that comparing the sustainability performance of mining firms is difficult [99]. Guenther et al. analyzed environmental reporting of global mining, gas and oil companies and found a big gap when it comes to quantity versus quality of disclosure [48]. In Canada, it was found that CSR reporting quality in the mining industry is only slightly over 25%, trailing behind other industries [83]. In addition, Fonseca et al., in their research findings on sustainability reporting among mining corporations, point out critical limitations in the GRI approach [100]. Coetzee and Staden also state that stakeholder pressure and media attention

(amongst others) could be resulting in social pressure especially in the case of mining companies and therefore be drivers of disclosure [101]. Lastly, a high level of variation in social and environmental disclosure for global mining companies was reported by Jenkins and Yakovleva [43]. Peck and Sinding also indicated that there are even wide variances within a single industry in the reporting process for environmental performance [102]. With regard to social and environmental reporting practice specifically by Australian companies, Dong et al. found in 2014 that disclosure of mining companies is quite narrow and limited in extent and non-quantitative which can lead to reduced investor confidence [96]. Consistent with the underlying study they also found that disclosure mainly focuses on employees and the environment.

However, the underlying study has a wider topic focus than most of the cited studies as it is examining long-term value creation reporting. The findings on the positive relationship between the energy and mining sector and disclosure quality are consistent with Burgwal and Viera's results on environmental disclosure who found that energy companies disclose more [64]. It has been reported that in the United States sustainability reporting is much less developed than in Europe, South Africa or Australia [103]. This coincides with the fact that a low level of disclosure also has been found for the United States: only 1.4% of S&P companies included a statement to integrated reports [26]. To top this off, for a sample of listed mining and minerals companies in South Africa where an integrated report (sustainability report plus IFRS report) is required, Hindley and Buys found in 2012 that many executives are not aware what exactly CSR entails [104]. Furthermore, the Roberts Environmental Centre, in its 2010 survey, found also that environmental reporting and performance scores were particularly low for the mining sector [105].

As far as limitations go, the flaws of content analysis could potentially apply as well as researcher approach could lead to biased results. Moreover, the usage of secondary sources could also cause bias. In addition, the study ignores disclosures other than annual financial and sustainability reports (websites, press releases, blogging, social media, etc.). Furthermore, the sample for the study is quite small and covers only Canadian companies in a particular sector. In addition, the study is limited to the reports of the year 2012 which can only represent a snapshot of the reporting situation. Potential bias could have also been caused by using qualitative content analysis despite best efforts [106]. There is also still the possibility that great reporting could mask bad social performance. The term of "greenwashing" comes to mind that could be a result of too much emphasis on reporting and too little on actual performance [107].

Further research in this area is urgently needed. Despite the limitations of this exploratory study, the results offer some conclusions that can be drawn on the subject of disclosure on long-term value creation. The comprehensive framework with categories and assessment variables (Figure 1), for instance, can be used and refined in futures studies. In addition, there are many potential avenues that researchers could pursue when it comes to future research. The theoretical model and empirical analysis developed in this study can be used to serve as a guidance for further investigations of reporting in the area of long-term value creation. Since this study was using a small sample, it is recommended that the sample size will be increased with an inclusion of companies in other industries as well as other countries. Future research could also include the search for further significant variables (characteristics) as well as an investigation whether reporting is changing over time. An analysis of reporting negative messages or events and the reaction of stakeholders is also a very interesting and rewarding research topic. Yet another option could be the analysis of disclosure quality when information on long-term value creation is disseminated via social media.

Thus far, most governments have shied away from introducing CSR reporting regulation and consider them voluntary initiatives [108]. As stated before, several frameworks have been developed with the intention to categorize voluntary (CSR, environmental, stakeholder engagement etc.) disclosure into information sections with different emphasis (Gray, Atkinson, Eccles, etc.). In addition, frameworks with recommendations for informative and efficient reporting have been developed by different standard setters or organizations. Currently, the Sustainability Accounting

Standards Board (SASB) is in the process of analyzing reporting in the US and trying to develop standards for disclosure for different sectors in mandatory Securities Exchange Commission (SEC) filings [109]. Additionally, several organizations and agencies have stepped in to improve reporting. The National Resource & Defense Council (NRDC), for instance, together with CERES has lobbied for the SEC to require further disclosure on environmental reporting [110]. The Forum for Sustainability and Responsible Investment (US SIF) and the Corporate Disclosure Project also tried to lobby for SEC requirements for corporate disclosure [111]. It is also noteworthy to mention that the GRI is currently working on an integrated framework with the IIRC [112]. As for the latest developments, in 2014, the TMX (Toronto Stock Exchange) and Certified Public Accountants (CPAs) of Canada issued a new publication with regard to environmental and social disclosure and key performance indicators (KPIs) [113]. Also in 2014, the EU reached an agreement of a new directive on disclosure of non-financial and diversity information for large companies [114]. In the same year, the Sustainability Stock Exchange Initiative, the UN Global Compact, the Principles for Responsible Investment and the UN Environment Programme Finance Initiative jointly with nine stock exchange started developing suggestions to improve transparency on ESG issues [115]. With regard to the mining industry, the International Council on Mining and Metals (ICMM), for example, stresses the importance of stakeholder reporting in its framework for sustainable development [116]. The Dodd–Franck Wall Street Reform and Consumer Act enacted in 2010 also implemented a few disclosure requirements that apply specifically to mining companies [117]. However, other than the <IR> framework, no comprehensive standard on integrated reporting has been published by a standard setter or regulator nor has any country other than South Africa introduced mandatory integrated reporting for (large) public companies.

Based on the study results, an urgent recommendation is made to regulators and standard setters towards implementation of mandatory regulation on integrated reporting on long-term value creation since it cannot be relied upon self-regulation and discipline of businesses. However, successful implementation of reporting regulations depends on strong legislation and resources for oversight and enforcement. Dong et al. suggest that industry associations should develop guidelines in which quantifiable outcomes should be presented and promote stronger compliance with voluntary benchmarks. Mandatory assurance has also been recommended by Ackers et al. [118] in order to ensure consistent application of standards and clarity for stakeholders. Eccles goes as far as suggesting a collective approach that includes companies, investors, accounting firms/bodies, government, NGOs, etc. [119]. However, if developing regulations, Fries et al. warn of the likelihood of information overload [120].

In conclusion, this empirical study is an important first step in determining the status quo of reporting quality on creation of long-term value for large public (mining and energy) companies. Based on the data analysis it can be concluded that reporting on long-term value creation is still in the beginning stage for Canadian mining and energy companies. There are many other steps that need to follow suit now. One would be to figure out why companies have been so slow in adapting to the many guidelines and disclosure frameworks and encourage policy makers to lessen or remove the hurdles that companies are facing when it comes to comprehensive reporting. By implementing mandatory reporting, the companies have the opportunity to reflect and elaborate on their intention to create value in the future. By continuously disclosing information companies are also ensuring a high level of relevance and transparency. This can only benefit stakeholders in the short as well as the long run.

Finally, it is hoped that the findings of this research will contribute to CSR and long-term value creation reporting research literature but also be of interest to practitioners, investors, other researchers, asset managers, and other stakeholders. Long-term value creation reporting is here to stay; the only question is how quickly and efficiently it will advance. The study will hopefully advance the dialog between the various stakeholders and result in feasible action plans that are of value for all users of annual company reports.

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