

Coulmont, Michel; Berthelot, Sylvie; Gagné, Vincent

**Article**

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ORIGINAL ARTICLE

Open Access



# Sustainability performance indicator trends: a Canadian industry-based analysis

Michel Coulmont\*, Sylvie Berthelot and Vincent Gagné

## Abstract

This study aims to examine the trends in the sustainability performance indicators disclosed in sustainability reports by Canadian companies. Our sample is comprised of eight companies in four sectors and our observations cover a 19-year period. The results of our analysis show a general increase over time of sustainability performance indicators disclosed, as well as varying degrees of coverage of the three sustainability dimensions. While the focus was more on environmental performance in the early 2000s, social performance indicators, such as employment practices and human rights, have now gained more traction. In addition, the scope of sustainability performance indicators disclosed in sustainability reports reached a plateau around 2010. Our results highlight the need for a standardised approach to sustainability reporting that would help overcome the shortcomings of voluntary initiatives and improve the overall comparability of voluntary reporting mechanisms.

**Keywords:** Corporate social responsibility, Sustainability reporting, Voluntary disclosure, Sustainable performance indicators, Comparability

## Introduction

Sustainable development is defined as “development that meets the needs of the present generation without compromising the ability of future generations to meet their needs” (World Commission on Environment and Development, 1987, p. 37). To conform to this principle and make appropriate decisions, society as a whole and its various stakeholders require quality information. For the past few years, many firms have used sustainability reports as one way to meet at least some of these needs. In addition, the European Parliament and some countries, including France, Denmark, Norway and Sweden, have legislated on various elements of information content relating to the social and/or environmental practices of certain organisations, including large corporations and state-owned companies.

Since Canadian non-financial firms have no legal obligations as to the amount or quality of the sustainability

information they disclose, the content of their reporting is discretionary, as is their use of a reporting framework like the Global Reporting Initiative (GRI) (Global Reporting Initiative, 2002, 2006). The GRI is an international project that was launched in 1997 to enhance the quality, thoroughness and utility of sustainability reports. It has established guidelines to help organisations prepare sustainability reports to account for the sustainability of the economic, social and environmental impacts of their activities.

Issues associated with the quality of information on sustainable development performance are attracting more and more attention. In his seminal report, de Cambourg (2019) notes that although extra-financial reporting is growing at a fast pace, complicated and fragmented reporting structures have a detrimental effect on the clarity of the extra-financial information disclosed. He further states that extra-financial information is beset by a lack of overall consistency, quality and legitimacy, even going so far as to predict that the momentum of sustainability reporting could fade if nothing is done to overcome the major operational issues arising with the

\*Correspondence: [Michel.Coulmont@USherbrooke.ca](mailto:Michel.Coulmont@USherbrooke.ca)

École de gestion, Université de Sherbrooke, Sherbrooke, Québec J1K 2R1, Canada

overwhelming abundance of inconsistent frameworks available to sustainable organisations (de Cambourg, 2019).

Even though many claim that the reporting of sustainability performance indicators is nearing a tipping point and that the abundance of frameworks allows for industry-specific sustainability performance indicators to be disclosed (de Cambourg, 2019; GRI and USB, 2020; IFRS Foundation, 2020; KPMG, 2017), there is little empirical evidence to support such claims. From an empirical standpoint, it remains unclear whether there is any actual convergence between the numerous codes, standards and frameworks available to guide sustainable organisations. One reason might be that, in order to study the convergence and comparability of sustainability performance indicators, the evolution of those indicators has to be examined over a lengthy period of time, which is precisely what we did. Our study examines a 19-year trend in the sustainability performance indicators reported by Canadian companies active in electricity production, oil and gas, banking and metals and mining. These industries are among the most important providers of employment in Canada (Statistics Canada, 2021) and are considered high sustainability impact sectors (Bansal, 2005; Perez-Batres, Miller, Pisani, Henriques, & Renau-Sepulveda, 2012).

Our study complements previous research by revealing a trend toward standardisation of the format and content of sustainability performance indicators over time. In doing so, our results document the institutionalisation of the GRI guidelines within the organisational fields of four major industrial sectors in Canada (DiMaggio & Powell, 1983). It has been noted that sustainability reports more and more frequently include the items listed in the GRI sustainability reporting guidelines. If more of the world's companies adhered to common sustainability reporting guidelines, they would devote fewer efforts and resources to communicating their sustainability information to stakeholders. In addition, such guidelines would help corporations and their consultants develop and hone their sustainability report expertise. Stakeholders would find it easier (and need less training) to interpret and understand sustainability report disclosures if the format and content were consistent with a single set of sustainability reporting guidelines. These observations are also interesting from the perspective of initiating a process of standardisation of the content and format of this type of disclosure. Several countries on the world stage are already engaged in standardising disclosed sustainability performance indicators through laws and regulations. Although for the moment, the empirical evidence on the results achieved by these regulations in some European countries (e.g., France, Norway, Spain, United Kingdom)

is mixed (Aureli, Del Baldo, Lombardi, & Nappo, 2020; Chauvey, Giordano-Spring, Cho, & Patten, 2015; Fallan and Fallan, 2009; Larrinaga, Carrasco, Correa, Llena, & Moneva, 2002; Vormedal & Ruud, 2009), some recent studies (Downer, Ernstberger, Reichelstein, Schwenen, & Zaklan, 2021; Hummel & Rotzel, 2019) tend to show that well-targeted disclosures and monetary penalties for noncompliance can lead companies to make more and better disclosures. It is from this perspective, that our study provides insight into indicators that may be preferred to facilitate companies' engagement in disclosing information (voluntary or mandatory) about their economic, social and environmental practices that contribute to sustainability.

This article is organised as follows. It first presents an overview of the literature, before moving on to describe the research methodology and study sample. It subsequently sets out the study's main findings, which are followed by a discussion of its limitations and potential avenues for further research.

### Prior research

Over the past few years, society has shown a growing concern about sustainable development. To address this concern, many firms have published sustainability information in their annual financial reports, in stand-alone corporate responsibility reports or on company websites. A KPMG study revealed that 93% of G250 companies have published this kind of information (KPMG, 2017). This study also noted that almost three-quarters of the 4900 companies surveyed around the globe issue sustainability reports.

Previous studies explain organisations' voluntary commitment to sustainability reporting according to three theoretical approaches. The economics-based disclosures theories, which largely derive from work by Grossman (1981), Milgrom (1981), Dye (1985) and Verrecchia (1983), focus on the asymmetry of information between managers and investors. Studies by Grossman (1981) and Milgrom (1981) have shown that, in theory, firms should voluntarily disclose all the information in their possession. These authors' work is based on the principle that investors, aware that managers have information that they themselves lack, should interpret non-disclosure as negative information that is being deliberately withheld and evaluate the firm accordingly. Thus, to prevent an unwarranted decrease in the value accorded to their firm, managers should be encouraged to voluntarily disclose all the relevant information in their possession (Berthelot, Magnan, & Cormier, 2003).

However, in actual practice, contrary to Grossman (1981) and Milgrom (1981) claims, firms and their managers do not always disclose all the information available

to them. As a result, various explanations have been suggested to account for this non-compliance with the disclosure principle. For example, Dye (1985) has shown that if, conversely to Grossman (1981) and Milgrom (1981) hypotheses, investors cannot determine whether the firms have the information, full disclosure equilibrium cannot exist. In other words, in these circumstances, managers may not disclose all the information they possess, and the firm's value will not be affected.

Verrecchia (1983) provides another explanation, examining the potential cost of disclosing information. His analysis shows that firms may deliberately withhold information when its disclosure could lead to a decrease in their future cash flows. Since investors cannot determine whether the information is withheld because it is bad news or because the potential costs of its disclosure are higher than the potential benefits, firms can withhold negative information without being penalised by investors. Only information items that are positive enough to offset the cost of their disclosure should be published (Berthelot et al., 2003). In line with these theoretical arguments, Clarkson, Li, Richardson, and Vasvari (2008) have shown a positive association between environmental performance and the level of discretionary environmental disclosures. Bewley and Li (2000) find that firms tend to disclose less when there is considerable uncertainty about the information that is being withheld by managers, with uncertainty being proxied by outsiders' knowledge of environmental exposure and by pollution propensity.

According to Li, Richardson, and Thornton (1997), firms facing serious environmental problems (lawsuits or toxic discharges) are less likely to disclose information about these incidents. However, when the media reveals a firm's environmental performance, thus reducing outside stakeholders' uncertainty, firms are more likely to release information about incidents. Findings of the study by Barth, McNichols, and Wilson (1997) on the voluntary disclosure of environmental debts also support the arguments of Dye (1985) and Verrecchia (1983). Lastly, the results of studies by Clarkson, Fang, Li, and Richardson (2013), Schadewitz and Niskala (2010) and Berthelot, Coulmont, and Serret (2012) confirm that investors value sustainability reporting, supporting the hypothesis that firms consider it advantageous to disclose information in response to the information needs of their investors and other interested stakeholders and thus mitigate the problem of asymmetric information.

Other researchers have examined organisations' motivations for sustainability reporting in light of the legitimacy theory. According to Lindblom (1994), legitimacy is a condition or status that exists when an entity's value system is congruent with the value system of the larger

social system of which the entity is a part. When an actual or potential disparity exists between the two value systems, a threat to the entity's legitimacy arises. In other words, legitimacy is a generalised perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Deegan, 2007; Suchman, 1995). To gain or maintain this legitimacy, an organisation can: (1) adapt its outputs, goals and methods of operation to conform to the prevailing definitions of legitimacy of the society within which it operates, (2) attempt, through communication, to alter the definition of social legitimacy within which it operates, or (3) attempt, through communication, to become identified with the concept of legitimacy of the society within which it operates (Deegan, 2007; Dowling & Pfeffer, 1975).

Closely related to Dowling & Pfeffers' work (Dowling & Pfeffer, 1975), Lindblom's study (Lindblom, 1994) highlights four communication strategies used to acquire or maintain legitimacy. An organisation can: (1) seek to educate and inform its "relevant publics", (2) seek to change the perceptions that the "relevant publics" have of the organisation, (3) seek to manipulate perception by deflecting attention from the issue of concern onto other related issues, or (4) seek to change external expectations (Deegan, 2007). From an empirical perspective, several studies have noted positive relations between organisations' size (used as a measure of political visibility) and their level of sustainability (or environmental) disclosures (Gamerschlag, Möller, & Verbeeten, 2011; Legendre & Coderre, 2013; Patten, 2002).

Others have observed that organisations active in sensitive sectors (Cho & Patten, 2007; Gamerschlag et al., 2011; Legendre & Coderre, 2013; Patten, 2002) or posting poor performance (Bewley & Li, 2000) are more involved in sustainability reporting (or environmental reporting). For their part, Clarkson et al. (2008) and Cho and Patten (2007) noted that organisations with poor performance appear to favour "soft disclosures" or "non-litigation-related disclosures" to re-establish or maintain their legitimacy.

Lastly, other researchers have adopted a broader perspective, examining not only organisations, but also their organisational fields (Larrinaga-Gonzalez, 2007). The neo-institutional theory seeks to determine how social choices are shaped, mediated and channelled by organisations and their institutional environment (Larrinaga-Gonzalez, 2007). This theory focuses on the institutionalisation of organisational practices by the process of homogenisation. Arising from the need for organisations to respond to expectations, this process guarantees their survival and increases their potential success in a particular environment (Larrinaga-Gonzalez, 2007). Scott

(1995) suggests that this legitimacy is based on the following three pillars: regulative, normative and cognitive structures. DiMaggio and Powell (1983) focus rather on the following three isomorphic mechanisms: coercive, normative and mimetic. Coercive isomorphism represents, for example, the regulation or discipline of the markets. This leads the organisation to comply and align its structures and activities with the dominant rules in order to gain legitimacy and survive (Larrinaga-Gonzalez, 2007). Normative isomorphism represents the values and norms that could be applicable to all members of the collective (Larrinaga-Gonzalez, 2007), for instance, the norms established by referential bodies such as the GRI. Finally, according to DiMaggio and Powell (1983), organisations imitate those peer organisations that seem to be more successful and legitimate (Larrinaga-Gonzalez, 2007), a process they call mimetic isomorphism.

To date, few studies have empirically documented the explanations provided by this theoretical perspective. Nonetheless, analyses performed by Jensen and Berg (2012) support coercive and normative isomorphism in a firm's decision to opt for traditional sustainability reporting or to publish an integrated report. Their results show that this choice seems to be related to investor and employment protection legislation; the intensity of market coordination and ownership concentration; the level of economic, environmental and social development; the degree of national corporate responsibility; and the value system of the country of origin.

The findings of a number of researchers who have studied the content of sustainability disclosures (Chen & Bouvain, 2009; Fortanier & Kolk, 2007; Gill, Dickinson, & Scharl, 2008; Guenther, Hoppe, & Poser, 2006; Kabir & Akinnusi, 2012; Meyskens & Paul, 2010) tend to show that this content varies according to the countries where the companies are located (Branco, Delgado, Sá, & Sousa, 2014; Chen & Bouvain, 2009; Gill et al., 2008; Kotonen, 2009), their industry sector (Fortanier & Kolk, 2007; Kotonen, 2009), their size (Gamerschlag et al., 2011; Reverte, 2009) and their disclosure antecedents (Meyskens & Paul, 2010). These empirical results also support the explanations of the neo-institutional theory. In documenting the evolution of performance indicators voluntarily disclosed by Canadian firms in four industry sectors, our study contributes empirical observations to this research stream.

To help firms prepare sustainability reports, in 1997 an American NGO, the Coalition for Environmentally Responsible Economies (CERES), established the Global Reporting Initiative, intended to create an international standard for sustainability reporting. The GRI remained under the auspices of the United Nations

Environment Programme (UNEP) until 2002. Since then, it has been managed by an independent entity. The GRI is composed of members belonging to private and public bodies; it is now estimated that there are over 10,000 GRI reporters in more than 100 countries. The organisation is framed by a Board of Directors and a Stakeholder Council that makes recommendations to the Board of Directors on revisions to the GRI Guidelines, a Nominating Committee (for the Board of Directors and the Stakeholder Council), a Due Process Oversight Committee ensuring that due process is followed in the standard-setting process, and a Global Sustainability Standards Board that develops the Sustainability Reporting Standards. The GRI guidelines are developed in consultations with the publics concerned and then tested among a sample of volunteer organisations.

In 2000, the first version of these guidelines was launched with a broader scope to include social and economic governance, as well as environmental issues. G2, a second generation of guidelines, was introduced in 2002, followed by a third version, G3, in 2006. In March 2011, GRI published the G3.1 guidelines – an update and completion of G3 – containing expanded guidance on reporting gender-, community- and human rights-related performance. The G4 version was issued in May 2013; since 2016, the GRI has published the GRI Standards, which are individual standards covering one topic each.

KPMG's, 2017 study showed that the GRI reporting guidelines are now highly popular worldwide. In fact, 75% of G250 firms refer to the GRI reporting guidelines in their sustainability reports. These guidelines and the fact that Canada has no legislation on sustainability reporting make it possible to study the process of organisations' voluntarily affiliating with initiatives like the GRI over a period of years. Accordingly, this study outlines the development of the sustainability reports of Canadian organisations operating in the energy, mines and metals, oil and gas, and financial sectors over a 19-year period. These observations enable us to put into perspective not only the use of the GRI guidelines, but also that of regulatory non-intervention.

Similarly to the situation in several other countries that have not yet regulated sustainability disclosures, the Canadian context makes it possible to answer the following questions:

Is the number of sustainable performance indicators voluntarily disclosed by Canadian companies increasing over time?

Do the sustainable performance indicators voluntarily disclosed by Canadian companies converge over time so as to allow users to make comparisons?

## Methodology

For analysis purposes, the following four industries were selected: electricity production, oil and gas, banking and metals and mining. Two firms were selected in each industry, based on the availability of their sustainability reports on their websites for the years 2000 to 2019. These four industries were selected because they are those that have been the most committed to sustainability reporting in Canada for the longest period of time and they are representative of a significant share of firms listed on the Toronto Stock Exchange.

The sustainability reports were analysed according to coding instruments modelled on the GRI. The three dimensions of sustainable development were examined using coding instruments developed in previous studies. The Clarkson et al. (2008) index was used to analyse environmental performance; Sutantoputra's (2009), social performance; and Leclerc, Berthelot, and Coulmont' (2010), economic performance.

In this study, the sustainability report coding instruments are presented in the same format. Each instrument consists of seven broad categories of disclosure based on the GRI sustainability reporting framework, the first four of which are hard disclosure items, the last three, soft disclosure items. The hard items refer to content that can be backed up by tangible evidence, while the soft items are those that are difficult or even impossible to substantiate.

Table 1 presents an overview of the coding instruments, showing that the main difference among them is the number of performance indicators analysed. Ninety-five items were checked for environmental performance, 83 for social performance and 77 for economic performance, for a total of 255 items. Using a scale composed of the three instruments, each sustainability report was studied and rated out of a possible 255 points. A rating of 1 was given when the disclosure item was included in the

sustainability report, and 0 otherwise. Note that figures, tables and footnotes were included in the analysis.

Other aspects of the sustainability reports, such as number of pages and external assurance obtained, were also examined. When an external opinion was included with the sustainability report, the type of auditor providing the assurance was noted.

## Results

### Description of sample

Our sample is composed of the following eight Canadian firms: TransAlta Corporation and Hydro-Quebec, representing electricity production; Talisman Energy Inc. and Nexen Inc., for oil; the Royal Bank of Canada and the Bank of Nova Scotia for banking; and Barrick Gold Corporation and Teck Resources for metals and mining. Since some reports were not available, the analysis covered a period of 19 years for the electricity sector, 18 years for banking and oil, and 17 years for metals and mining. One hundred and forty-two sustainability reports were studied in all. The head offices of the firms in the sample are located in Calgary (3), Toronto (3), Montreal (1) and Vancouver (1).

Table 2 presents a brief description of the activities of the eight firms included in the sample. These firms are large Canadian companies, as reflected by their total assets and revenues for 2018. All these organisations are businesses that are closely monitored by journalists and financial analysts. TransAlta Corporation, Talisman Energy Inc., Nexen Inc., Barrick Gold Corp, and Teck Resources Ltd. operate in sectors of activity likely to have an impact on the environment, while the Royal Bank of Canada and the Bank of Nova Scotia are two Canadian banks that enjoy oligopoly status, and Hydro-Quebec is a government corporation in a monopoly position in the province of Quebec.

### Analyses

The analysis showed that the GRI sustainability reporting framework is the preferred reporting framework for preparing sustainability reports during the period under study. These results support the conclusion reached in the 2017 KPMG study. However, our results also show that Canadian companies do not solely use the GRI sustainability reporting framework to inform their stakeholders; they are free to report or not, and to use the framework that they deem the most suited to do so.

Figure 1 presents the overall score obtained by firm, taking into account all the elements of the sustainability reports. It was noted that the amount of information generally increased from 2000 to 2010. All firms provided more detailed content in 2010 than in 2002. More specifically, our study reveals an increase in content for each

**Table 1** Content indices

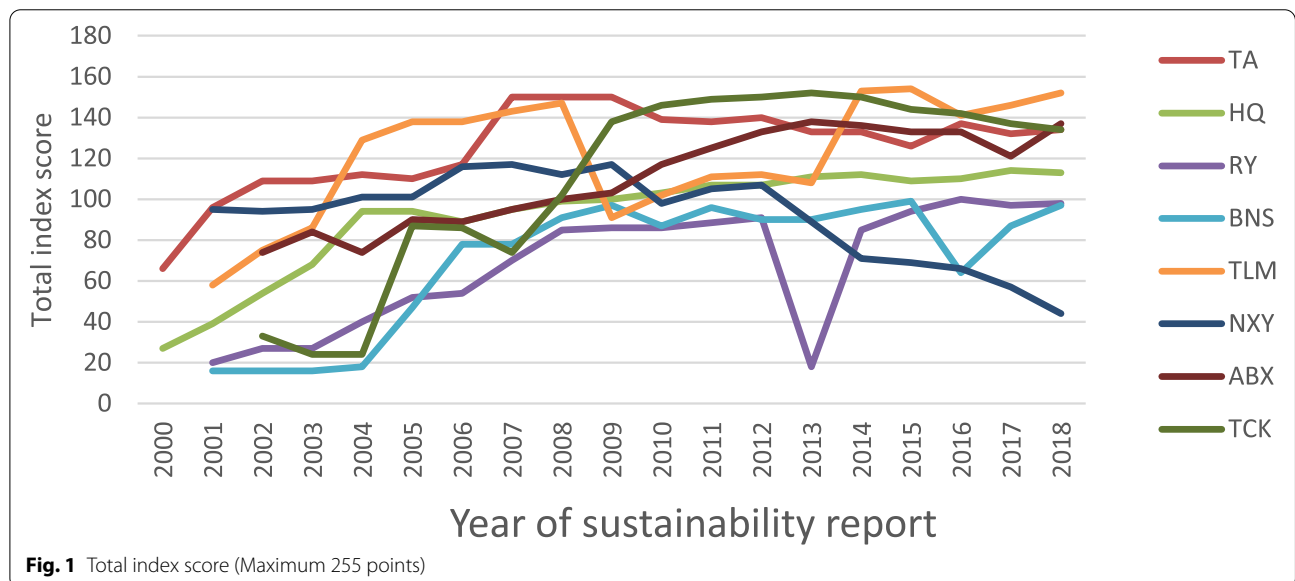
		Env.	Soc.	Eco.
<b>Hard disclosure items</b>				
1	Governance structure and management systems	/6	/6	/6
2	Credibility	/10	/10	/10
3	Performance indicators	/60	/48	/45
4	Spending	/3	/3	/0
<b>Soft disclosure items</b>				
5	Vision and strategy claims	/6	/6	/6
6	Profile	/4	/4	/4
7	Initiatives	/6	/6	/6
<b>Total of 255</b>		<b>/95</b>	<b>/83</b>	<b>/77</b>

Adapted from Clarkson et al. (2008).

**Table 2** Business Description

Business	Symbol/Head office	Assets/ Revenue (2018, M\$)	Business Description ( <a href="http://www.tmxmoney.com">www.tmxmoney.com</a> )
TransAlta Corporation	TA/ Calgary	9428/ 2249	TransAlta Corp is a power generator and electricity marketer. It owns and operates hydro, wind, geothermal, natural gas- and coal-fired facilities, and related mining operations in Canada, the United States and Australia.
Hydro-Québec	n/a <sup>a</sup> / Montréal	70,517/ 12,228	Hydro-Québec is a government-owned public utility established in 1944 by the Government of Quebec. The company oversees the generation, transmission and distribution of electricity for all of Quebec.
Royal Bank of Canada	RY/ Toronto	1,334,734/ 41,269	Royal Bank of Canada is a financial services company that provides personal and commercial banking, wealth management services, insurance, corporate and investment banking and transaction processing services.
Bank of Nova Scotia	BNS/ Toronto	998,493/ 26,164	Bank of Nova Scotia is a full-service financial institution that operates in four major business lines: Canadian Banking, International Banking, Global Wealth Management and Scotia Capital.
Talisman Energy Inc./ Repsol	TLM/ Calgary	94,955/ 68,083	Talisman Energy Inc. is an oil and gas company. It is mainly active in the exploration, development, production, transportation and marketing of crude oil, natural gas and natural gas liquids. The company was acquired by Repsol in 2015 and in January 2016 was renamed Repsol Oil & Gas Canada Inc.
Nexen Inc.	NXY/ Calgary	20,537/ 6711	Nexen Inc. is an energy company. Its conventional oil and gas assets are comprised of large acreage positions in select basins including the UK North Sea, deep-water Gulf of Mexico and offshore West Africa. The company was acquired by CNOOC in 2012.
Barrick Gold Corp	ABX/ Toronto	30,881/ 9883	Barrick Gold Corp produces and sells gold and copper. The company's business activities also include exploration and mine development. It holds interests in oil and gas properties located in Canada.
Teck Resources Ltd	TCK/ Vancouver	39,626/ 12,564	Teck Resources Ltd. is engaged in mining and related activities including exploration, development, processing, smelting, refining and reclamation. Its major products are steelmaking coal, copper, zinc and lead.

<sup>a</sup> Hydro-Quebec is not listed



company from 2000 to 2010 and stagnation for the subsequent years. It appears that the sustainability indicators disclosed tended to homogenise before reaching a plateau around 2010. The tendency then faded as indicated

by a decline in the convergence of sustainability indicators disclosed from 2011 to 2018.

Figures 2 and 3 respectively present the scores obtained for the hard and soft disclosure items. As shown in

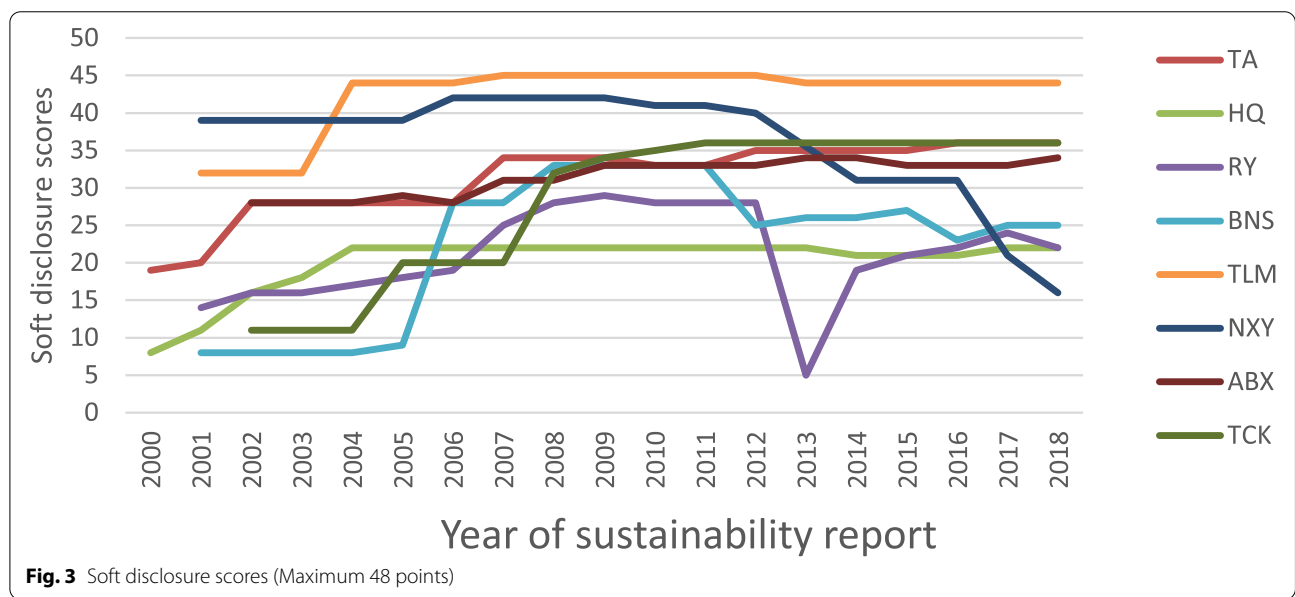
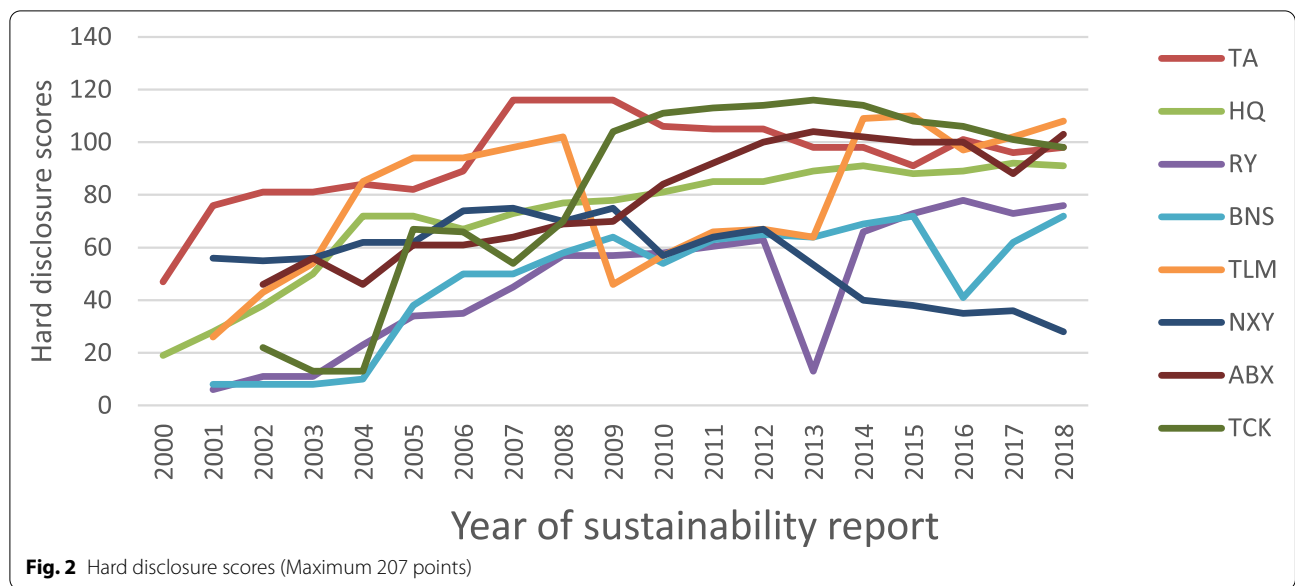


Fig. 2, the firms increased the number of hard disclosure items in their sustainability reports over the period under study. Scores ranged from 8 to 81 points in 2002, that is, the first year for which the sustainability reports of the entire sample were analysed and rose to between 28 and 108 points in 2018. The maximum (average) score awarded was 116 (84.3) points out of a possible 207. A closer look at the range of disclosure shows that the companies covered no more than 56% of the hard disclosure items, or slightly more than half of the recommended items. In addition, on average, the companies covered about 40.7% of the hard disclosure items.

Similarly to the findings on hard disclosure items, Fig. 3 shows that the number of soft disclosure items increased over the years. At the beginning of the period analysed, results ranged from 8 to 39 points, rising to between 16 and 44 points at the end of the analysis period. The highest (average) score for soft disclosure items was 45 (29.4) out of a possible 48 points. These results show that the companies included in our sample covered about 93.8% of the soft disclosure items recommended by the GRI. Also, on average, the firms covered some 61.2% of the soft disclosure items. It therefore seems that firms now tend to concentrate more on soft disclosures. In other

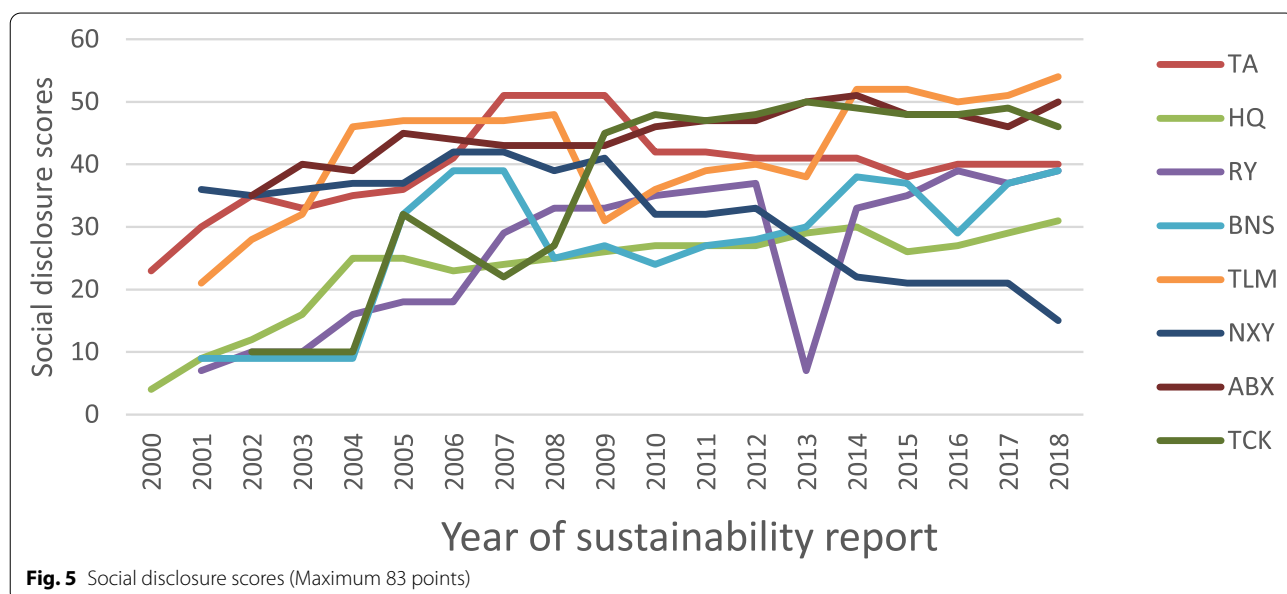
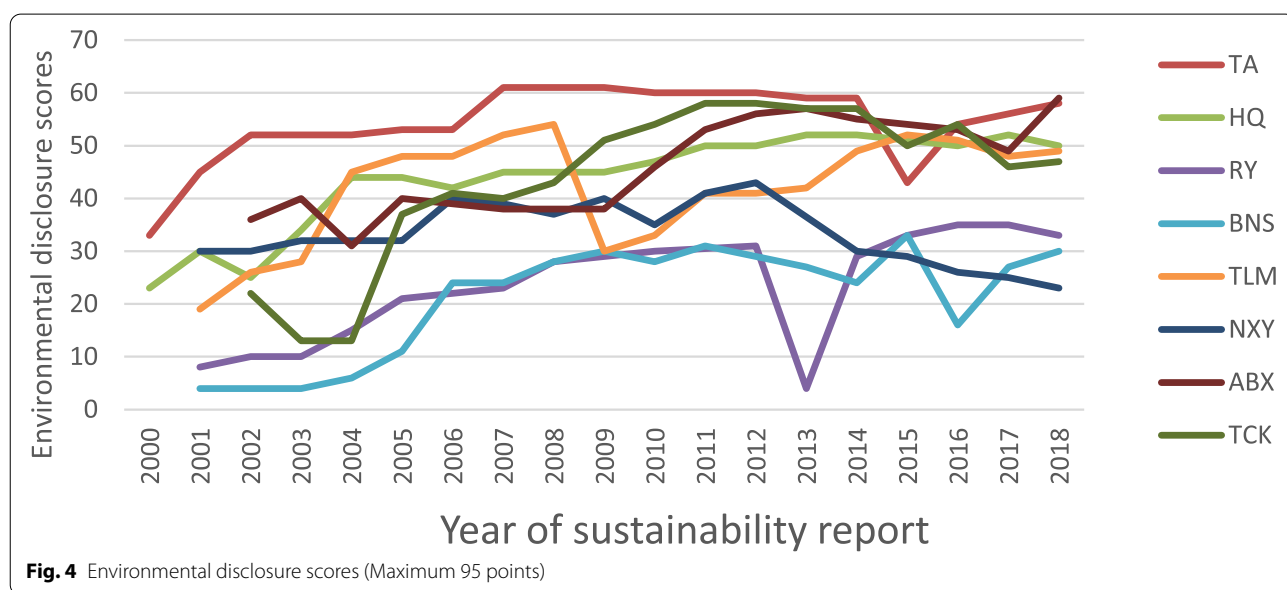


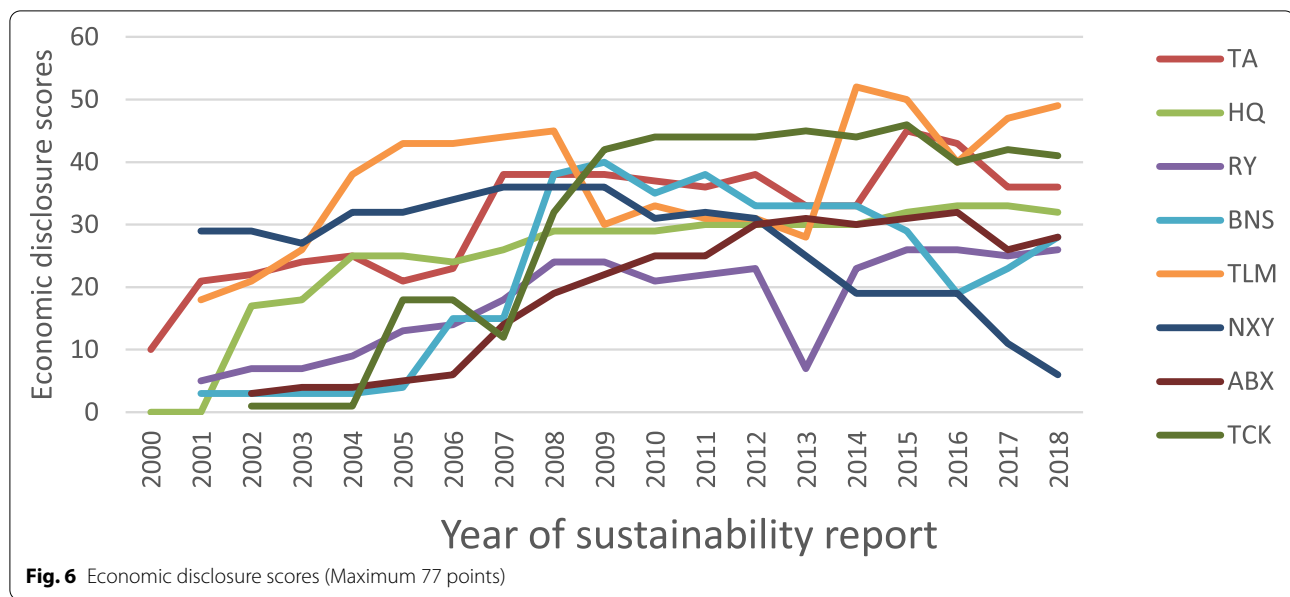
words, companies appear to present more soft disclosure than hard disclosure items. Our analysis shows that they are more likely to disclose their vision and strategies than their performance indicators.

Figures 4, 5 and 6 present the scores obtained for environmental, social and economic performance, indicating that the information for all three components increased from 2002 to 2007 and then stagnated in subsequent years. Figure 4 shows that scores ranged from 4 to 52 points for 2002, and 23 to 59 points for 2018, 61 (43.6) being the highest (average) score out of a possible 95

points. These results equate to 64.2% maximum coverage of environmental items or 45.9% on average. The analysis shows that the firms under study disclosed on average slightly less than half the environmental items.

Figure 5 shows that the social disclosure scores ranged from 9 to 35 points for 2002, and 15 to 54 points for 2018, with 54 (39.3) being the maximum (average) score out of a possible 83 points. This corresponds to 65.1% coverage of social performance or 47.3% on average. Our results also show that the firms in the sample addressed slightly less than half the social disclosure items. Similarly to





**Fig. 6** Economic disclosure scores (Maximum 77 points)

their performance with environmental disclosure items, the companies increased their voluntary disclosures on social issues, indicating that they appear to consider both components equally important.

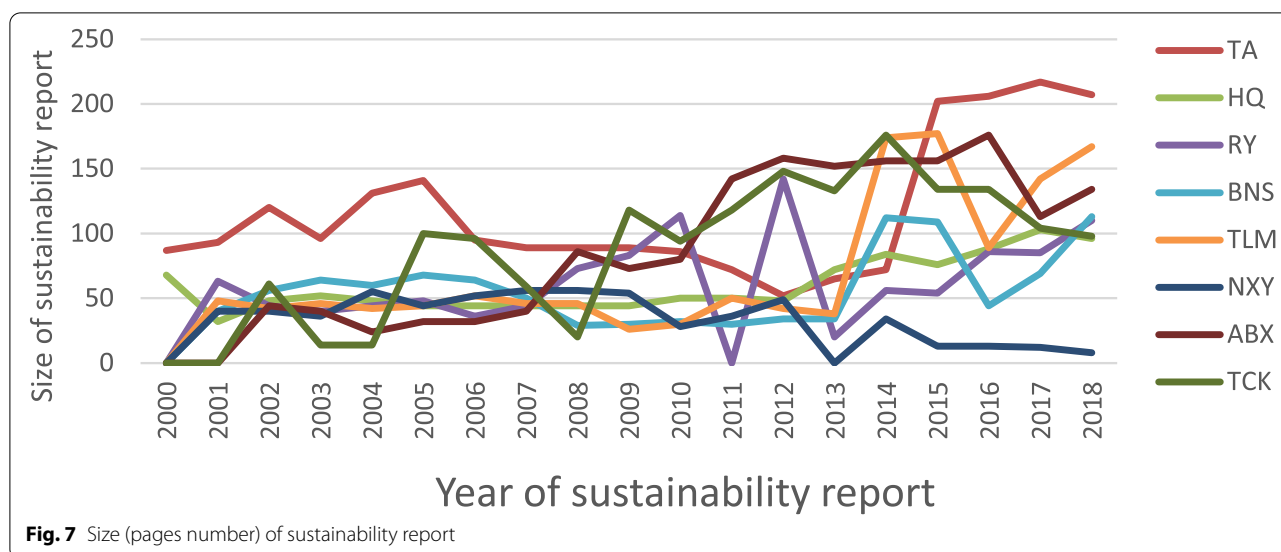
Figure 6 displays the economic disclosure scores, ranging from 1 to 29 points for 2002, and 6 and 49 points for 2018. The highest (average) score was therefore 52 (30.8) out of a possible 77 points, resulting in 67.5% coverage of economic disclosure items or 39.9% on average. Since these companies disclosed less than roughly half the economic items, this type of disclosure may be less important than the other two.

In short, the analysis shows that firms attach more importance to environmental and social disclosures than to economic disclosures. Their sustainability reports frequently state that they do not include economic information since it is presented in the annual report. However, the firms seem to consider environmental and social items equally important. In addition, a wide range was noted between the lowest and the highest coverage for each type of disclosure within one reference year. It would thus appear that each firm prefers certain criteria over others.

As mentioned above, TransAlta Corporation and Hydro-Quebec were selected to represent the electricity sector. Our analysis covered a 19-year period and showed that even though TransAlta Corporation emphasised environmental issues in its coverage, it also seemed to consider social issues to be of equal importance. Figure 4 shows that TransAlta Corporation scored highest for its environmental disclosures for most of the period under study. In addition, Fig. 5 indicates that TransAlta

Corporation scored the highest for the period from 2007 to 2009 as well as for that from 2015 to 2018. Its sustainability reports ranged from a total of 87 pages in 2000 to 217 pages in 2017, decreasing to 52 pages in 2012 (see Fig. 7). Furthermore, TransAlta Corporation did not seek an external opinion until 2007, when it called on an accounting firm. This significant change in the sustainability report's coverage can also be seen with the Royal Bank (– 122 pages between 2012 and 2013) and Talisman Energy Inc. (+ 136 pages between 2013 and 2014 and – 88 pages between 2015 and 2016). If there seemed to be a first trend whereby firms gradually reduced the size of their reports by synthesising the information disclosed, a second trend emerges around 2010 when sustainability reports vary significantly from 1 year to another. It thus appears that around 2010 a change occurred that led to significant changes in Canadian firms' reporting habits.

Hydro-Quebec also gave greater coverage to environmental disclosure items, although, unlike TransAlta Corporation, it elaborated more on economic than on social issues, thereby deviating from the general trend of favouring social over economic disclosure. This could be because Hydro-Quebec has to be more transparent with financial information given that the Government of Quebec is its sole shareholder. As for report length, the publications ranged from 32 to 103 pages over the period in question. The average length in 2018 was 102.5 pages, almost double the 2002 average of 56.9. However, the length of the reports over time has considerably varied. There is a significant gap in the number of pages of sustainability reports published by the companies in our sample in 2018. Lastly, Hydro-Quebec has been



**Fig. 7** Size (pages number) of sustainability report

submitting its sustainability reports to external consultants for assurance since 2003.

In the oil sector, 18 years of reports were examined for Talisman Energy Inc. and Nexen Inc. The former was found to devote more coverage to economic than to social and environmental issues, although they also appeared to be very significant. Talisman Energy Inc. scored higher for economic disclosure between 2004 and 2008 as well as in 2014, 2015, 2017 and 2018 (Fig. 6). Report length varied from 26 to 177 pages over the period in question. The number of pages in 2018 was significantly higher than in 2001, that is, 167 versus 48 pages, confirming the trend toward extended report coverage. One of Talisman Energy Inc.'s shorter reports purposely excluded certain types of information, such as performance indicators, which the firm instead posted on its website.

This would explain the lower score it obtained for its 2009 report relative to 2008 (Figs. 1, 2, 4, 5 and 6). Talisman Energy Inc.'s sustainability reports were submitted to an accounting firm for an outside opinion for each year under study. Even though Nexen Inc. did fairly well up until 2008, a slow but steady decline in the quantity of sustainability indicators disclosed was noted starting in 2009. From 2001 to 2008, the company devoted more coverage to social and economic issues and it also broadly emphasised environmental issues. The length of its sustainability reports ranged from 36 to 56 pages in the period from 2001 to 2008, subsequently falling to a mere 8 pages in 2018. Furthermore, the company submitted its sustainability reports to an accounting firm for external assurance up until 2015.

Eighteen years of reports were reviewed in the banking sample. It was noted that the Royal Bank of Canada

provided greater coverage of social performance and that the length of its reports varied from 20 to 142 pages during the period under study. Its 2018 report was 110 pages long, which is much longer than the 63-page report published in 2001. No external assurance was conducted on its sustainability reports for the entire period under study. The Bank of Nova Scotia devoted more coverage to economic disclosure than to other aspects, and its reports varied from 29 to 113 pages in length over the relevant period. At 113 pages, its 2018 report shows a sizeable increase when compared to its 2001 counterpart, which contained 40 pages.

Seventeen years of Barrick Gold Corp and Teck Resources Ltd. publications were reviewed for the metals and mining sector. The former devoted more coverage to social disclosure and the total length of its sustainability reports ranged from 24 to 176 pages. Its 2018 report was 134 pages long, which is significantly longer than its 44-page 2002 report. Each report reviewed had been the subject of external assurance provided by a consultant, except for that provided by an accounting firm in 2009. However, Teck Resources Ltd. devoted equal coverage to environmental, social and economic disclosure in each publication this study reviewed. The company's reports ranged from 14 to 176 pages in length, the 2014 report, at 176 pages, being much longer than the 2002 report, which contained 61 pages. Interestingly, the reports indicated that the firm had set up a task force composed of various stakeholders to make recommendations on improving its sustainability reports. In 2007, the company began seeking external assurance, which was provided by an accounting firm, except for that provided by an external consultant in 2008 and 2009.

Table 3 presents the history of the affiliation of the firms under study with the Global Reporting Initiative guidelines. The first firm to issue a sustainability report and adhere to these guidelines (G1 version) was TransAlta Corporation in 2000, followed by Hydro-Quebec and Talisman Energy Inc. in 2002. The two firms active in the financial sector (Royal Bank of Canada and Bank of Nova Scotia) published sustainability reports as of 2001. However, it was not until 2004 that the Royal Bank of Canada applied the Global Reporting Initiative guidelines (G2 version), followed by the Bank of Nova Scotia in 2005 (G2 version). In 2007 (BNS) and 2008 (RBC), they adopted the G3 version, but their application level was limited to level C. In the period from 2014 to 2015, companies reporting in accordance with the GRI framework adopted the G4 version of the guidelines, which were replaced 2 years later by the GRI Standards. Interestingly, Table 3 provides strong evidence that companies reporting in a voluntary context can choose whether or not to report on their sustainability performance and that they can do so using the framework that suits them best. This is supported by the fact that in 2018 three of the eight companies (37.5%) in our sample stopped reporting according to the GRI guidelines. Since sustainability reporting is voluntary in Canada, TransAlta Corporation chose to use the IIRC integrated reporting framework as of 2015; the Royal Bank of Canada broadly states that

its 2018 environmental, social and governance report is informed by various international frameworks; and Nexen Inc. abandoned the idea of sustainability reporting within a recognised framework in 2013.

The convergence noted in the content of the sustainability reports analysed from 2000 to 2010 indicates that one of the benefits sought by the GRI and its guidelines appears to have been achieved. In fact, as can be seen, the content of the sustainability reports of these eight large Canadian corporations tends over the 10-year period not only to be more detailed and concise, but also to converge in terms of the information items disclosed per sector. However, this convergence slowly starts to erode in 2011, giving way to a trend of dispersion and considerable volatility.

Table 4 presents the converging disclosures in the sustainability reports of the two firms from each sector in 2002 and in 2018. In terms of the environment (hard and soft disclosures combined), the organisations had a mean score of 15.75, which rose to 33.5 in 2018. In terms of social disclosures, the firms posted a mean of 13.25 in 2002, a figure that climbed to 28.25 in 2018. As for economic disclosures, the firms showed a mean of 8.5 in 2002, which soared to 18.5 in 2018. For all disclosures (environmental, social and economic), the greatest convergence was noted in the mining industry. In 2002, the two firms in this sector disclosed

**Table 3** GRI application levels for the eight firms over the years

YEAR	TA	HQ	RY	BNS	TLM	NXY	ABX	TCK
/00	1; †	0; †	–	–	–	–	–	–
/01	1; †	0; †	0; †	0; †	0; †	0; †	–	–
/02	2; †	2; †	0; †	0; †	1; †	0; †	0; †	0; †
/03	2; †	2; †	0; †	0; †	1; †	0; †	0; †	0; †
/04	2; †	2; †	2; †	0; †	2; †	2; †	0; †	0; †
/05	2; †	2; †	2; †	2; †	2; †	2; †	2; †	2; †
/06	2; †	3; †	2; †	2; †	2; †	2; †	3; †	3; †
/07	3; †	3; B	2; C	3; C	3; A+	3; †	3; †	3; †
/08	3; B+	3; B	3; C	3; C	3; A+	3; B+	3; A+	3; A
/09	3; †	3; B	3; C	3; C	3; A+	3; B+	3; A+	3; A+
/10	3; †	3; B	3; C	3; C	3; A+	3; B+	3; A+	3; A+
/11	3; †	3; B+	3; C	3; C	3; †	3; B+	3; A+	3; A+
/12	3; †	3; B+	3; C	3; C	3; †	3; B+	3; A+	3; A+
/13	3; †	3; †	0; †	3; C	3; †	–	3; A	3; A+
/14	3; †	4; †	4; †	3; †	3; †	0; †	3; A	4; †
/15	0; †	4; †	4; †	4; †	4; †	0; †	4; †	4; †
/16	0; †	4; †	0; †	4; †	4; †	0; †	4; †	5; †
/17	0; †	5; †	0; †	5; †	4; †	0; †	0; †	5; †
/18	0; †	5; †	0; †	5; †	5; †	0; †	5; †	5; †

0 = no mention of the GRI; 1 = GRI-G1; 2 = GRI-G2; 3 = GRI-G3; 4 = GRI-G4; 5 = GRI Standards; (†) no application level; (‡) content index only; (X) declared to be in accordance – Core option; (δ) declared to be in accordance – Comprehensive option

**Table 4** Converging Disclosures

Disclosure	Score max	Elec.			Bank			Oil			Metals			All sectors Mean	
		02 18			02 18			02 18			02 18			02 18	
		02	18	02	18	02	18	02	18	02	18	02	18	02	18
Environmental Disclosure	95	22	41	4	25	22	21	15	47	15.75	33.50				
Hard disclosure items	79	14	31	1	20	11	12	9	36	8.75	24.75				
A1	6	4	5	1	2	2	2	2	6	2.25	3.75				
A2	10	5	7	0	5	6	2	1	8	3.00	5.50				
A3	60	4	18	0	12	3	8	6	20	3.25	14.50				
A4	3	1	1	0	1	0	0	0	2	0.25	1.00				
Soft disclosure items	16	8	10	3	5	11	9	6	11	7.00	8.75				
A5	6	3	4	3	3	6	5	4	6	4.00	4.50				
A6	4	2	2	0	1	2	2	2	2	1.50	1.75				
A7	6	3	4	0	1	3	2	0	3	1.50	2.50				
Social Disclosure	83	12	28	6	28	25	15	10	42	13.25	28.25				
Hard disclosure items	67	9	23	2	20	14	9	5	30	7.50	20.50				
B1	6	3	4	1	3	3	3	2	6	2.25	4.00				
B2	10	5	7	0	5	6	3	1	8	3.00	5.75				
B3	48	1	12	1	11	5	3	2	15	2.25	10.25				
B4	3	0	0	0	1	0	0	0	1	0.00	0.50				
Soft disclosure items	16	3	5	4	8	11	6	5	12	5.75	7.75				
B5	6	1	3	3	5	6	5	4	6	3.50	4.75				
B6	4	1	1	0	1	2	0	1	2	1.00	1.00				
B7	6	1	1	1	2	3	1	0	4	1.25	2.00				
Economic Disclosure	77	13	25	2	17	19	6	0	26	8.50	18.50				
Hard disclosure items	61	10	20	1	11	9	5	0	18	5.00	13.50				
C1	6	2	3	0	0	2	1	0	2	1.00	1.50				
C2	10	2	5	0	3	6	1	0	4	2.00	3.25				
C3	45	6	12	1	8	1	3	0	12	2.00	8.75				
C4	0														
Soft disclosure items	16	3	5	1	6	10	1	0	8	3.50	5.00				
C5	6	1	3	0	3	6	0	0	4	1.75	2.50				
C6	4	1	1	0	2	2	0	0	2	0.75	1.25				
C7	6	1	1	1	1	2	1	0	2	1.00	1.25				
Total Hard disclosure scores	207	33	74	4	51	34	26	14	84	21.25	58.75				
Total Soft disclosure scores	48	14	20	8	19	32	16	11	31	16.25	21.50				
Total Hard and Soft disclosure scores	255	47	94	12	70	66	42	25	115	37.50	80.25				

25 common content items, as compared to 115 that were disclosed in their 2018 sustainability reports, 84 of which presented hard disclosure items. However, the oil and gas sector, which had the most converging indicators in 2002, showed a significant decrease with a score of convergent content of 42 in 2018. This is by far the sector with the fewest indicators disclosed despite the expected pressures exerted on them.

Table 5 sets out the performance indicators that were disclosed in 2018 but not in 2002 by the two firms in each of the activity sectors studied. Performance indicators are an important component of the content of sustainability reporting advocated by the GRI guidelines. As can be seen, the firms' disclosures significantly improved over the observation period in all three disclosure areas recommended by the GRI. The analysis of the sustainability reports of the eight firms studied shows that in 2018 the two firms in the same activity sector disclosed over 80 performance indicators that were not disclosed in 2002. The mining sector reported the largest number of converging performance indicators, followed by the energy sector and the financial products sector. These results suggest that because of the large number of converging performance indicators disclosed in the mining firms' sustainability reports, users of these reports will be more able to make inter-firm comparisons and their decision making, particularly in terms of resource allocation, should improve. Furthermore, these results tend to show that despite the non-intervention of regulatory bodies, other influences encourage firms to converge in terms of sustainability reporting. As described by DiMaggio and Powell (1983), the mimetic mechanism thus seems to operate.

It should be pointed out that historically the comparability of accounting information items has been key to developing and legitimising accounting standards (Durocher & Gendron, 2011). This is also one of the principles put forward by the GRI for defining the quality of a sustainability report: "Comparability is necessary for evaluating performance. Stakeholders using the report should be able to compare information reported on economic, environmental and social performance against the organization's past performance, its objectives, and, to the degree possible, against the performance of other organizations" (Global Reporting Initiative, 2006). The convergence disclosures in sustainability reports that the firms voluntarily publish suggest that they have the systems for collecting and collating the information and that they are prepared to make this information public. Accordingly, the standardisation of this type of disclosure may not constitute an insurmountable obstacle for organisations.

## Conclusion

This study analysed the sustainability performance indicators trends for eight Canadian companies over the period from 2000 to 2018. The results show an increase in the sustainability performance indicators disclosed over the first 10 years of the period under study, followed by a plateau. The environmental performance indicators were the most frequently reported in the early 2000s and the trend then shifted to social disclosures around 2008. The least reported were economic performance indicators, most probably because these disclosures are already part of the annual report. Soft disclosure items received greater coverage than hard disclosure items. This may be explained by the fact that the performance indicators pertain to the hard items of environmental, social and economic performance, which are sometimes difficult and costly to measure. Furthermore, the firms must have systems in place to collect and collate information and must also minimise the potential cost of communicating their performance results.

Perhaps one of the most striking facts our study revealed is that companies voluntarily reporting on their sustainability performance make choices that introduce significant variance in the reported sustainability performance indicators and in the length of the sustainability report. We discovered that the companies in our sample all started voluntarily publishing a sustainability report within a three-year period and that it took at most 5 years for three of them to report in accordance with the GRI guidelines. Given the relatively short period of time in which all the companies in our sample engaged in sustainability reporting using the GRI framework, it is clear that the pressures exerted on the institutional fields by this international institution have been successful in initiating the homogenisation of reporting practices. Furthermore, our results clearly show that the normative isomorphism exerted by the GRI gained strong momentum over the first 10 years of the period under study as we see significant convergence between the reporting practices of our whole sample.

However, starting around 2010, we witness the beginning of a new phase of the isomorphism exerted by the international institution. Most of the companies included in our sample reached a plateau at which the number of sustainability performance indicators reported and the length of their sustainability report stalled. It thus appears that, when reporting in a voluntary context, companies can secure their legitimacy by imitating the majority, no more, no less. They can secure their position in the middle of the plateau by choosing to report either more or less on hard or soft economic, social or environmental sustainability performance indicators, according to those that suit them best.

**Table 5** Converging performance indicators

	Code	Aspects	Electricity	Banking	Oil	Metals/mining
ENVIRONMENTAL	EN03	Energy		x		
	EN04	Energy		x		
	EN08	Water	x	x	x	x
	EN11	Biodiversity	x			x
	EN12	Biodiversity	x			x
	EN16	Emissions, Effluents and Waste	x	x	x	
	EN17	Emissions, Effluents and Waste	x			x
	EN19	Emissions, Effluents and Waste	x			x
	EN20	Emissions, Effluents and Waste	x			x
	EN21	Emissions, Effluents and Waste	x			x
	EN22	Emissions, Effluents and Waste		x		x
	EN23	Emissions, Effluents and Waste	x			x
	EN26	Products and Services	x	x		x
	EN27	Products and Services	x	x		x
	EN28	Compliance with environmental laws and regulations	x			x
	SOCIAL	LA01	Employment			
LA02		Employment				x
LA04		Labour/Management Relations	x	x		x
LA05		Labour/Management Relations	x	x		
LA07		Occupational Health and Safety	x	x		
LA08		Occupational Health and Safety	x	x		
LA10		Training and Education	x	x		x
LA13		Diversity and Equal Opportunity	x	x		x
LA14		Diversity and Equal Opportunity	x	x		x
HR01		Investment and Procurement Practices				x
HR02		Investment and Procurement Practices				x
HR04		Non-discrimination		x		
HR05		Freedom of Association and Collective Bargaining				x
HR06		Child Labour				x
HR07		Forced and Compulsory Labour				x
SO01		Local Community	x			x
SO02	Corruption		x		x	
SO03	Corruption		x		x	
SO04	Corruption		x		x	
SO05	Public Policy					
PR01	Customer Health and Safety	x				
PR08	Customer Privacy		x			
ECONOMIC	EC01	Economic Performance	x			x
	EC02	Economic Performance	x	x		x
	EC03	Economic Performance				x
	EC06	Market Presence				x
	EC07	Market Presence				x
	EC08	Indirect Economic Impacts		x		x
	EC09	Indirect Economic Impacts		x		

Our results also show that companies voluntarily reporting on their sustainability performance can choose to report on significantly more (or less) sustainability performance indicators and that they even have the choice of

the framework to do so. In the case of TransAlta Corporation, in 2018 the company issued a sustainability report based on the IIRC Integrated Reporting framework that is almost twice as long as the average of our sample (207

pages versus an average of 116.6 for our sample in 2018). A contrary example is Nexen Inc. which decided to stop reporting in accordance with the GRI in 2013 and has ever since been significantly under the samples' average for both the soft and hard economic, social and environmental indicators it reports, as well as for the length of its report. Nexen Inc. chose to publish a sustainability report on its website that is not in accordance with any specific framework. This choice significantly reduces the ability of its stakeholders to compare Nexen's sustainability performance with that of any other company and sheds doubts on the relevance and reliability of the sustainability performance indicators it reports.

Even though normative pressures exerted by institutions lead to the homogenisation of sustainable performance indicators reported in the organisational fields of Canadian companies, there appears to be significant limits to the qualities of the information reported. While voluntary initiatives lead to the changes that societies wish to see happen, most companies will be satisfied to comfortably sit in the middle of the plateau to secure their legitimacy. Therefore, our results cast strong doubts on the comparability, clarity and reliability of the sustainability performance indicators reported in a voluntary context like Canada's.

As well, in line with the disturbing observations made by de Cambourg (2019), the abounding and complex normative environment of the sustainability referential may severely impair the capacity of organisational fields where sustainability reporting is voluntary to sustain isomorphism of desired sustainability reporting practices. With regard to the GRI framework, one line of thought lies in the complexity of the G4 version and beyond. Issued in 2013, this version proposed an in-depth review of the perimeter of the entity reporting. Importance was given to the impacts of the supply chain, which made the reporting within the GRI framework more complex and costly. Given the multiple international initiatives like the Sustainability Accounting Standard Board Standards, the Task Force on Climate-related Financial Disclosures framework, the ISO 26000 Standard, the Carbon Disclosure Project environmental impacts disclosure system and the United Nations Global Compact and Sustainable Development Goals, and considering that national initiatives are also undertaken, no single voluntary initiative can provide coverage for and grant the legitimacy associated with the reporting of comparable, accurate, clear and reliable information on sustainability.

This paper contributes to the literature by demonstrating that the sustainability reports of the several large Canadian corporations in the four major industries under study (energy, banking, oil and gas, metals and mining) converged in format and content with the

GRI sustainability reporting guidelines over the first 10 years, and then plateaued. The results support the use by the firms of an international initiative like the GRI to initiate isomorphism but stress the need for a standardised coercive initiative to sustain the reporting of quality sustainability performance indicators. In fact, convergence toward a single model will enable companies and their consultants to develop the relevant expertise and help stakeholders understand and interpret the information, as well as make inter-company comparisons. Although there is still a long way to go before such standardization takes place on a global scale, the results of the Hummel and Rotzel (2019) study, conducted in the United Kingdom, suggest that regulations delimiting in a way that specifies the elements of information to be disclosed, and providing for monetary penalties for non-compliance, would lead companies to increase the quality and quantity of their disclosures.

This study has some limitations. The sample size was restricted to eight firms, although they were large corporations and leaders in sustainability reporting. As well, the analysis was limited to data contained in the sustainability reports and did not include other information issued in annual reports. Furthermore, from the point of view of a retrospective study, the constant updating of corporate websites makes it impossible to analyse their development. Finally, this study does not make it possible to assess stakeholders' actual use of sustainability performance indicators.

This study opens up avenues for further research, such as extending the analysis to large companies in the same industries in other countries to determine whether similar content and format trends exist. It could also be interesting to investigate the distribution of sustainability report users. In the Canadian context, it would be useful to know which stakeholders use the reports and for what purpose. Do stakeholders understand and interpret the information according to GRI expectations? From a closely related perspective, one can also question stakeholders' consideration of the different quality levels of sustainability reporting. Are the levels of application of the GRI standards likely to affect their perceptions of the quality of the information disclosed.

#### Abbreviations

ABX: Barrick Gold Corp; BNS: Bank of Nova Scotia; CERES: Coalition for Environmentally Responsible Economies; GRI: Global Initiative Reporting; IFRS: International Financial Reporting Standards; NGO: Non-Governmental Organization; NXY: Nexen Inc.; RY: Royal Bank of Canada; TA: TransAlta Corporation; TCK: Teck Resources Ltd.; TLM: Talisman Energy Inc.; UNEP: United Nations Environment Programme.

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**Authors' contributions**

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The authors declare they have no competing interests.

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