

**DECONSTRUCTING CORPORATE SUSTAINABILITY:
A COMPARISON OF DIFFERENT STAKEHOLDER METRICS**

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Abstract

Although Corporate Sustainability Performance Measurement (CSPM) has been a subject of growing interest both in academia and in practice, knowledge on which Corporate Sustainability (CS) aspects should be considered to account for CSPM is still limited. The purpose of this article is to compare the most widely used CSPM instruments to highlight their similarities and differences as well as to advance toward a more standardized list of sub-dimensions that should be covered when accounting for the economic, social and environmental dimensions of CS. We first conducted a systematic literature review to identify the most relevant CSPM instruments. This process yielded 9 instruments developed by different stakeholders (e.g., KLD, DJSI, GRI, Bansal, 2005). Second, we analyzed their content based on a systematic process. We found the instruments differ quantitatively and qualitatively on how to measure CS, although there seems to be more consensus regarding the CS environmental dimension. Finally, we created a list of sub-dimensions that could be used as a reference for academics, practitioners and other stakeholders interested in measuring CS at the corporate level.

Keywords: Corporate sustainability, performance measurement, sustainability metrics, sustainability sub-dimensions

1. Introduction

Corporate sustainability (CS) has become part of the business community's vernacular worldwide. The origin of the CS concept is mainly linked to the Brundtland report's (1987)

definition of “sustainable development” and it entails the incorporation of the triple bottom line -long-term economic prosperity, social equity, and environmental responsibility- into a company’s operational practices and management (Bansal, 2005). Likewise, CS has also been defined as a heuristic multi-criteria approach composed by economic, social and environmental performance dimensions (Schaltegger and Burritt, 2005). Multiple stakeholders, such as researchers, investors, customers, governments and the civil society now pay attention not only to firms’ economic performance but also to their social and environmental performance (Freeman, 2010; Hörisch et al., 2014). For instance, in 2012 more than one out of every nine dollars under professional management in the United States was invested using sustainability investing criteria (US SIF, 2012). In addition, there is a growing number of international rankings sorting companies worldwide based on their CS performance (e.g., Dow Jones Sustainability Index, Global 100, Newsweek Green Rankings). Given that key stakeholders will reward or penalize corporations based on their CS activities and impacts (e.g., Barnett, 2007), which may threaten firm survival, managers are increasingly paying attention to CS activities and devoting additional resources to assess and report CS performance (Čuček et al., 2012).

Although CS has received growing attention from academics (e.g., Schaltegger and Burritt, 2010) and practitioner scholars (e.g., Porter and Kramer, 2011) over the past decade, research has been mainly focused on understanding the adoption drivers of CS practices (e.g., Berrone and Gómez-Mejía, 2009; Delmas and Montiel, 2009). Other relevant aspects of CS, such as corporate sustainability performance measurement (CSPM), remain underexplored despite its prominence in the business arena (Chelli and Gendron, 2013; Maas and Reniers, 2014). There have been relatively few attempts to provide insights on how to measure sustainability performance (e.g., Krajnc and Glavic, 2005; Labuschangne et al., 2005; Searcy and Elkhawas, 2012), and most of them focus on a more macro level: industries (e.g., Labuschangne et al., 2005), cities (e.g., Shen et al., 2011) or regions (e.g., Wallis, 2006). Furthermore, most of the studies addressing sustainability performance at the corporate level have analyzed a single dimension of CS, mainly environmental sustainability (e.g., Delmas and Doctori-Blass, 2010;

Delmas et al., 2013; Herva et al., 2011, Winn and Pogutz , 2013). Thus, research addressing how to measure sustainability performance at the firm level, CSPM from now on, is still limited and remains in an explorative stage.

The problem is compounded by the fact that there is not agreement on what CS is. There is an ongoing debate on how to conceptualize sustainability at the corporate level and a myriad of definitions with conceptual nuances still exists (Searcy, 2012; van Marrewijk, 2003). However, even though a “one solution fits all” definition for CS might be challenging (van Marrewijk, 2003), some consensus on what CS represents and how to measure it is needed for the progress of the field. The lack of clarity on how to operationalize the CS construct is also reflected in the existence of a great variety of CSPM instruments developed by different stakeholders that vary in the CS aspects they cover and the weight they put on each of them. For example, Čuček et al. (2012)’s overview of sustainability footprint methodologies revealed high variability and a lack of standardization among existing CSPM instruments. In a recent study, Chatterji et al. (2014) also found a lack of convergence of six well-established sustainability ratings regarding their scores for the same company.

The limited research on the topic and the diversity of CSPM instruments and their measurement disparities create complexity and confusion for academics and practitioners on how to measure CS, leaving CSPM as an open question. We still lack knowledge on which aspects or sub-dimensions should be accounted when measuring the economic, social and environmental dimensions of CS. This implies that managers remain orphaned of practical knowledge on how to account for their CS impacts and assess the outcomes of the CS activities developed. Nevertheless, managers are required to assess and report their overall CS performance (Schaltegger and Burritt, 2005), and for that, they need adequate instruments that provide them with an integrative vision of CS to facilitate strategic decision-making towards their sustainability goals. In addition, stakeholders also need CSPM instruments to evaluate and compare companies based on their economic, social and environmental performance, something challenging currently (Chatterji and Levine, 2006).

This paper aims to contribute to this existing literature gap. First, we perform a systematic literature review in order to identify the most relevant CSPM instruments used by different stakeholders and provide an overview of these instruments. Second, we deconstruct the three dimensions of CS and analyze their content in order to identify similarities, differences and/or in(consistencies) on how the CSPM instruments analyzed capture and represent them. This helps to understand why a company obtains different sustainability scores and is ranked differently depending on the instrument used. Third, we outline a list of sub-dimensions that should be covered when accounting for the economic, social and environmental dimensions of CS. The sub-dimensions proposed are the result of the deconstruction of the most widely used CSPM instruments and are also grounded in previous literature addressing what falls under the CS umbrella. This comprehensive list of sub-dimensions for each CS dimension and the examples of items for each one could be used as a reference for academics, practitioners, students and other parties interested in CSPM. Advancing knowledge on the sub-dimensions that compose the economic, social and environmental CS dimensions is key to improve our understanding of what CS is and how to operationalize it. Such knowledge might help to overcome measurement deficiency. For example, the use of partial measures (integral components are excluded) and/or contaminated measures (exogenous components are included) measures (MacKenzie, 2003). Finally, this study helps to integrate and bring closer the distinct CSPM approaches of different stakeholders with the aim of advancing toward a more standardized way of measuring CS. Taken together, this study has practical implications for both academic and practitioners and contributes to build bridges between researchers and practitioners.

2. The Theories of Corporate Sustainability

Before we embark in the comparison of the CSPM instruments, sub-dimensions and items, it is important to provide a brief overview of the theoretical background surrounding CS. We

found that CS researchers have created new theoretical constructs to integrate “sustainable development” within the business context. Gladwin et al. (1995) defined the term “sustaincentrism” as the process of achieving human development in an inclusive, connected, equitable, prudent, and secure manner. Sustainable development components are (a) inclusiveness (environmental and human systems, near and far, present and future), (b) connectivity (world’s problems interconnected and interdependent), (c) equity (fair distribution of resources and property rights), (d) prudence (duties of care and prevention), and (e) security (safety from chronic threats). Valente (2012) validated the term sustaincentric orientation by empirically analyzing the factors that may explain its adoption. In parallel conversations, the term “ecological sustainability” was proposed in a 1995 *Academy of Management Review* special issue. In that issue, Starik and Rands (1995) reflected on the ability of organizations to exist and flourish for lengthy timeframes and Shrivastava (1995) proposed that the way to achieve sustainability was through the integration of four mechanisms: (a) total quality environmental management, (b) ecological sustainable competitive strategies, (c) technology-for-nature swaps, and (d) corporate population impact control.

Bansal (2005) defined “corporate sustainable development” as a tridimensional construct composed of (a) economic prosperity achieved through value creation, (b) social equity through corporate social responsibility, and (c) environmental integrity through corporate environmental management. The most recent theoretical work on CS reiterated the three dimensional characteristics of CS and developed a cognitive perspective proposing two different cognitive frames (business case vs. paradoxical case frames) and how both influence managerial scanning, interpreting and responding to sustainability issues (Hahn et al., 2014).

In general terms, scholars seem to agree that CS is composed by three dimensions, namely economic, social, and environmental or otherwise referred as 3Ps approach to business (Profit, People, Planet) or the “triple bottom line” (e.g., Amini and Bienstock, 2014; Elkington, 1998; Hart and Milstein, 2003). Based on this three dimensional consideration, CS scholars have attempted to operationalize the construct using the term CSPM (see Searcy 2012 for a review on

CSPM). For example, Labuschangne et al. (2005) proposed a CSPM framework and its operational activities in the South African process industry. They used four different frameworks: GRI; United Nations Commission on Sustainable Development Framework, Sustainability Metrics of the Institution of Chemical Engineers, and Wuppertal Sustainability Indicators to propose their own CS measurement framework. In the operational level they suggested sub-dimensions for economic, social and environmental sustainability. Under economic sustainability they listed financial health, economic performance, potential benefits, and trading opportunities. Under social sustainability they identified internal human resources, external population, stakeholder participation and macro social performance. Finally, their environmental sustainability dimension encompassed air resources, water resources, land resources and mineral and energy resources. Lee and Saen (2012) suggested CS measures after analyzing ten firms in the Korean electronics industry and the use of a data envelopment analysis (DEA) technique (a linear programming procedure for a frontier input-output analysis). Finally, Krajnc and Glavic (2005) drew attention to the existence of multiple CSPM frameworks, which created difficulty to easily compare firms' CS performance. To overcome this problem, they developed a composite sustainable development index and tested it in Royal Dutch/Shell Group and BP. However, these analyses are based on how specific firms in certain industries or geographic regions account for CS. Our study provides a more complete picture of how the most relevant stakeholders address CSPM by comparing the items proposed by each stakeholder under each of the three well-established dimensions (economic, social, and environmental).

3. Methodology

In order to first identify the main CSPM instruments that have been used to measure CS and to secondly analyze such CSPM instruments, we followed the methodology suggested by Tranfield et al. (2003) on how to perform a systematic literature review. Figure 1 illustrates a summary of the process and the steps we followed. This approach is also in line with previous systematic reviews on CSPM (e.g., Searcy, 2012). This process started with the setting of the

objectives and conceptual boundaries. The identification of relevant publications was addressed following the search approach of Bansal and Gao (2006) and Montiel (2008). We searched in top academic management journals (*Academy of Management J.*, *Academy of Management Review*, *Administrative Science Quarterly*, *Organization Science*, *J. of Management*, *Management Science*, *J. of International Business Studies*, *J. of Management Studies*, *Organization Studies*, *British J. of Management and Strategic Management J.*) and practitioner management journals listed in the fortune magazine (*Harvard Business Review*, *Academy of Management Perspectives*, *California Management Review* and *MIT Sloan Management Review*). We also searched articles in top social management journals (*J. of Business Ethics*, *Business & Society Review*, *Business Ethics Quarterly*, and *Business & Society*) and top environmental management journals (*Organization & Environment*, *Business Strategy & the Environment* and *J. of Cleaner Production*). In addition, we supplemented our search using the ABI/INFORM, Science Direct, Wiley Online Library and Google Scholar databases to cover a wider range of journals. We electronically searched the following terms in either the title or the abstract: sustainab* (to ensure that the different variations used in the CS field such as “sustainable development”, “sustainable strategies”, “business sustainability”, “environmental sustainability”, “sustainability metrics”, “sustainability performance measurement” and related terms were captured). We also completed the search with the following keywords: social/environmental performance, assessment/measurement, responsibility, strategies, etc. accordingly to previous works (e.g., Montiel and Delgado-Ceballos, 2014; Searcy, 2012). We limited the search to the period from 1995 to 2014. The year 1995 is when the first paper on the links of environmental sustainability, green innovation and competitiveness was published in a top management journal (Porter and van der Linde, 1995). In addition, that same year the *Academy of Management Review* published a special issue on business and sustainability.

Insert Figure 1 around here

We carefully screened each article to exclude those unrelated to the topic or to the goals of our systematic literature review. We only retained articles measuring CS at corporate level. Articles addressing the topic at sector, market or country level were not included in the review. In addition, although we found studies measuring a single CS dimension (e.g., Delmas et al., 2013; Walls et al., 2011), we excluded them from our analysis following previous systematic reviews on the topic (e.g., Montiel and Delgado-Ceballos, 2014; Searcy, 2012). By definition CS is composed by the three dimensions simultaneously and then CSPM should be done managing the triple bottom line (Elkington, 1998). Once we applied the inclusion and exclusion criteria, we examined the final sample of articles to identify the CSPM instruments that they use. We distinguished between the articles creating their own measures and those using an existent CSPM instrument. In the latter case, we identified which type of instrument was used. The systematic review revealed three sustainability metrics developed by academic scholars (Bansal, 2005; Figge et al., 2002; Kolk et al., 2010), albeit most of the articles relied on instruments developed by different types of stakeholders. Our results show that the most used CSPM instruments in the academic and practitioner arenas were Kinder, Lydenberg and Domini –KLD-, Dow Jones Sustainability Index –DJSI- (rating agencies), United Nations Global Compact-UNGC (a multi-lateral organization), ISO 26000, Global Reporting Initiative –GRI- and B-Corp (nonprofit organizations).¹ These instruments are described further in table 1.

Insert Table 1 around here

Once the most popular CSPM instruments were identified, we followed a systematic process to codify the information. First, we independently analyzed each CSPM instrument in order to identify items and sub-dimensions of each CS dimension (economic, social, and environmental). As previous literature reviews on CS measures (Montiel and Delgado-Ceballos,

¹ Governments and regulatory stakeholders are not analyzed in this article because they analyze CS from a macro level perspective such as a city, a state or a region. For example, the European Union has developed the Sustainable Development Indicators to monitor the EU Sustainable Development Strategy (EU SDS) in a report published by Eurostat every two years. See Singh et al. (2009) for an overview of macro-level CS indicators.

2014; Searcy, 2012), manual coding was used because examining each CSPM instrument required careful reading since the instruments use different terms and items. In addition, manual coding allowed as to capture interesting discrepancies such as differences between instruments in the classification of the same item under one dimension or other, differences in terms of how the items are defined (positive vs. negative terms or relative vs. absolute measures, etc.). The range of items and sub-dimensions were derived from an iterative process of data triangulation and checks for consistency.

In the second step, we screened the CSPM instruments to identify which sub-dimensions were encompassed by each one. As we noticed that the boundaries between the three dimensions were fuzzy –especially between social and economic dimensions-, we used two different marks: (√) means that both the authors and the instrument classify the sub-dimension under the same CS dimension, and (O) represents that the sub-dimension was covered by the instrument but included under a different dimension than expected based on previous literature or that the items are similar (not equal). This classification method was adapted from Shen et al. (2011)’s study on sustainability performance metrics for cities. We calculated the Cohen-Kappa statistic between pair of researchers for each CS dimension (cf., Cohen, 1960; Garson, 2013). The calculation of the Cohen-Kappa statistic revealed a high degree of agreement between the author’s classification: .80 (economic dimension), .84 (social dimension) and .86 (environmental dimension). Any differences and discrepancies in the coding were discussed in-depth between the authors, and the instruments were re-visited until agreement was reached.

4. Who Measures Corporate Sustainability?

According to Freeman’s (1984) seminal definition, the term stakeholder includes “any individual or group who can affect the firm’s performance or who is affected by the achievement of the organization’s objectives” (1984: p. 46). Stakeholders theory has been extensively used in CS research as stakeholders push managers to define what the goals, scope and responsibilities of their companies are (Freeman et al., 2004; Hörisch et al., 2014). The core argument is that the satisfaction of stakeholders’ expectations is key for acquiring competitive

advantages, and then, managers must keep both shareholders' and stakeholders' interests in mind when implementing their strategies.

In order to assess and compare companies based on their sustainability impacts and performance (economic, social and environmental), different stakeholders (business academics, investment rating agencies, multilateral organizations, and non-governmental organizations) have developed their own CSPM metrics. These metrics that serve to measure the responsibility and commitment of companies to CS, are described in depth in the following subsection.

4.1. Business academics

Academics' interest on studying different aspects of CS have increased considerably since publication of the special issue on "Ecologically Sustainability Organizations" in the *Academy of Management Review* in 1995; where seminal CS studies appeared (e.g., Hart, 1995; Shrivastava, 1995). In addition, that same year the Porter hypothesis was published, which drew linkages between environmental government regulation and business innovation (Porter and van der Linde, 1995). Since then, scholars have examined a myriad of CS related topics such as drivers for corporate sustainability (e.g., Delgado et al., 2012), the relationship between financial performance and sustainability (e.g., Kurapatskie and Darnall, 2013; Martinez-del-Río et al., 2015), sustainability standards and certification programs (e.g., Reinecke et al., 2012), managerial perceptions on CS (e.g., Cordano and Frieze, 2000), sustainability supply chains (e.g., Seuring and Müller, 2008) and sustainable innovations (e.g., Klewitz and Hansen, 2014), among others. Management scholars have mainly used secondary data to measure CS such as databases from investment agencies (e.g., DJSI and KLD). However, a few scholars have designed their own CSPM instruments (see Montiel and Delgado-Ceballos, 2014).

Our search showed that even though several studies created measures for one of the dimensions of CS, that is, economic, social or environmental, only three studies have explicitly proposed a system to measure each of the three CS dimensions simultaneously at corporate level. First, Bansal (2005) created a list of twenty-two items to measure CS development: six economic prosperity items, six social equity items, and ten environmental integrity items.

Second, Kolk et al. (2010) examined Chinese companies and proposed three economic items, eight social items, and three environmental items. Finally, Figge et al. (2002) identified social and environmental exposure factors associated at the business unit level to propose a sustainability balanced scorecard. We include these three academic instruments in our comparative analysis.

4.2. Investment rating agencies

Rating agencies are crucial stakeholders not only to inform investors about firms' financial performance but to guide them while choosing firms based on their sustainability performance. Although rating systems based on sustainability and social responsibility have been primarily created for investors, these data are now used by other stakeholders such as business academics, executives and governments. Among them, Asset4, Calvert, DJSI, FTSE4Good, Innovest and KLD have been listed as the six major rating systems in the field of sustainability (Chatterji et al., 2014), being DJSI and KLD the most used in both the academic and business community (Montiel and Delgado-Ceballos, 2014). Recently, other agencies such as the responsible investment research firm Sustainalytics have released new sustainability metrics and datasets that business scholars are beginning to analyze (Surroca et al., 2013). Other agencies like TruCost also calculate firms' environmental sustainability impacts as a tool to be used in investment decisions.

Kinder, Lydenberg and Domini: KLD is an independent rating service that includes all firms listed on the Russell 3,000, representing approximately 98% of the investable U.S. equity market. KLD avoids using data developed by the companies; but instead it uses publicly available information to assess firms' CS (Delmas et al., 2013). It analyzes CS using seven different dimensions: corporate governance, product quality and safety, employee relations, diversity, human rights, community relations and environment. Each of the seven dimensions takes "strength" and "concern" scores, respectively. The KLD index is the most widely used instrument to assess the relationship between social performance and financial performance (e.g., Barnett and Salomon, 2012; Chatterji et al., 2009; Jayachandran et al., 2013; Neubaum

and Zahra, 2006; Waddock and Graves, 1997). In addition, Newsweek uses mostly data from KLD to create its Newsweek Green Ranking (Lyon and Shimshack, 2012).

The Dow Jones Sustainability Index: The Dow Jones Sustainability Index (DJSI) is maintained collaboratively by Standard and Poor's, Dow Jones Indices, and SAM. In addition to their global index, regional indices are also published for Europe, North America, Asia Pacific and South Korea. DJSI identifies representative sustainable corporations (Hartman et al., 2007). According to their website, companies are selected for the index based on a comprehensive assessment of long-term economic, environmental and social criteria that account for both general and industry-specific sustainability trends. Only those firms that lead their industries in CS are included in the indices. DJSI has been previously applied in CS studies for example to assess the relationship between financial and sustainable performance (e.g., Cheung, 2011; Consolandi et al., 2009), as an instrument to identify and rank companies based on the CS performance (Knoepfel, 2001) and to examine the process that firms follow to achieve initial acceptance to the index as well as the steps that companies take to maintain their inclusion in the DJSI (Searcy and Elkhawas, 2012).

The DJSI follows the well-established CS trichotomy: economic, social and environmental. The economic dimension has thirteen items and includes items related to anti-crime policy measures, corporate governance, bioethics, customer relationship management, innovation management, market opportunities, marketing practices, and price risk management. The social dimension includes fourteen items linked to human capital development, labor practice indicators, occupational health and safety, stakeholder management, standards for suppliers, and social reporting, among others. Finally, the environmental dimension consists of eleven items: biodiversity, environmental footprint, climate change governance, climate strategy, electricity generation, and environmental reporting, etc.

4.3. Multilateral organizations

Multilateral organizations, also referred as inter-governmental organizations, are international organizations whose members are nations. These supra-national organizations have also been involved in promoting CS. The most prominent example of CSPM instrument is the United Nations Global Compact (UNGC) released by the United Nations (UN) in 2000 to promote social and environmental in corporations and foster organizational collaborations and partnerships with governments, civil society, labor and the UN (UNGC, 2012).

The UNGC was created as a voluntary corporate responsibility initiative based on a “practical framework for the development, implementation, and disclosure of sustainability policies and practices, offering participants a wide spectrum of workstreams, management tools and resources - all designed to help advance sustainable business models and markets” (UNGC, 2012: p. 7). UNGC includes ten universal principles to measure CS in four main dimensions: human rights, labor, environment and anti-corruption. Despite some critics (e.g., Arevalo and Fallon, 2008; Bremer, 2008), UNGC has been widely adopted by more than 12,000 corporations worldwide. Moreover, researchers also consider UNGC as an influential guideline for firms that aim at promoting social and environmental in the organizations (e.g., Cetindamar and Husoy, 2007; Doh and Guay 2006; Pérez-Batres et al., 2011; Runhaar and Lafferty, 2009).

4.4. Non-Governmental Organizations

Various non-governmental organizations (NGOs) of different nature have developed their own CSPM instruments as well. Three of the most renowned instruments are ISO 26000 designed by the International Standardization Organization (ISO), Global Reporting Initiative (GRI) created by an NGO with the same name, and B-Corp certification established by the non-profit B-Lab.

ISO 26000: The International Organization for Standardization (ISO) launched its social responsibility guidance standard ISO 26000 in 2010 to provide guidelines to organizations on how to establish a social responsibility program. It aims to contribute to sustainable development and encourage firms to go beyond legal compliance. Similar to other ISO standards, ISO 26000 “provides guidance on the underlying principles of social responsibility,

recognizing social responsibility and engaging stakeholders, the core subjects and issues pertaining to social responsibility and on ways to integrate socially responsible behavior into the organization” (ISO 26000, 2011: p. 13). ISO 26000 divides social responsibility in seven primary dimensions: organizational governance, human rights, labor practices, the environment, fair operating practices, consumer issues, community involvement, and development. It is important to highlight that although there is not a specific dimension for economic aspects, this instrument covers economic issues throughout the seven dimensions entailed. In addition, ISO 26000 pays attention to the evolution of environmental, social and economic concerns; in fact, the instrument stresses the importance of taking into account short- and long-term objectives when assessing the relevance of an issue. ISO 26000 is now implemented in firms such as Maersk, NovoNordisk, TeliaSonera, HSB, HM, Petrobras, Air France, Takeda, Toshiba, AB Volvo, Panasonic, British Telecom, Veolia, TRS, and Toyota (ISO, 2013). By 2012, 64 countries had adopted this instrument as a national standard by the national standardization member bodies, 12,000 copies of the ISO 26000 standard had been sold around the world, and it had been translated into 22 different languages. Scholars are also beginning to use ISO 26000 in their CS related studies (e.g., Chen et al., 2014; Mass and Reniers, 2014).

Global Reporting Initiative: GRI is a nonprofit organization established in 1999 to guide firms on the creation of standardized sustainability reports. Researchers and firms consider GRI as leading voluntary guideline to create sustainability reports (e.g., Brown et al., 2009; Lozano, 2006; Roca and Searcy, 2012). GRI also divides CS in the three dimensions of CS: economic, social and environment. In the economic dimension items are divided in four groups: economic performance, market presence, indirect economic impacts, and procurement practices. The social dimension includes four sub-dimensions: labor practices and decent work, human rights, society, and product responsibility. For instance, society includes items related to local communities, anti-corruption, public policy, anti-competitive behavior, compliance, supplier assessment for impacts on society and grievance mechanisms for impacts on society. Finally,

the environmental dimension includes items linked to materials, energy, water, biodiversity, emissions, effluents and waste, products and services, compliance and transport.

GRI has been widely used by organizations worldwide (Etzion and Ferraro, 2010). More than 6,000 organizations from 60 countries use GRI guidelines to create their CS reports as of year 2014. Levy et al. (2010) pointed out that the success of GRI is based on the multi-stakeholder engagement in the process such as NGOs, consultants or auditors. The extended use of the GRI instrument has contributed to its legitimacy and is recognized as reference disclosure tool to promote CS around the world (Levy et al., 2010), not only for managerial purposes but also in the accounting discipline (Ballou et al., 2006).

B-Corporation: B-Lab is a nonprofit organization aiming at encouraging and supporting companies to solve social and environmental problems (Klewitz and Hansen, 2014). In order to materialize this idea, B-Lab started to certify firms as “sustainable companies” in 2006. By June of 2014, there were more than 1,000 certified B-Corps from 33 countries and over 60 industries. B-Lab conceived the B Impact Assessment that certifies firms as B-Corps when they fulfill a set of standards on social and environmental performance, accountability, and transparency described in their website. B Impact Assessment scores range from 0 to 200 and to become a B-Corp, a firm need to receive a minimum score of 80 in the review. B Impact Assessment divides their indicators in four main dimensions: governance (accountability, transparency), workers (compensation, benefits and training; worker ownership; work environment), community (community products and services; community practices; suppliers and distributors; local; diversity; job creation; civic engagement and giving), and environment (environmental products and services; environmental practices; energy, water, materials; emissions, water, waste; suppliers and transportation). Wilburn and Wilburn (2014) discussed the requirements and benefits of B Lab as well as some of the issues that stakeholders raised about them.

5. Similarities and differences between CSPM instruments

One of the main findings of our comparative analysis of CSPM instruments is the inclusion of distinct sub-dimensions by each stakeholder when accounting for each of the three CS

dimensions. We also observe that some stakeholders divide CS in the well-accepted trichotomy of sustainable development, while other stakeholders use a larger number of dimensions to measure CS. For example, we find that whereas some stakeholders include corporate governance issues either within the social or economic dimensions, some stakeholders place more weight to corporate governance by considering it as the fourth dimension of CS.

It is also important to note that in general the instruments focus more on the social and environmental aspects of CS than on the economic aspects. For example, ISO 26000 does not include economic indicators explicitly, that is, their instruments seem to address corporate social responsibility (CSR); or GRI covering only a few and general economic indicators leaving economic reporting rules to the existing regulatory frameworks such as US GAAP (Hahn and Kühnen, 2013). Rather than looking at CS as a tri-dimensional construct, they focus primarily on the non-financial aspects of the firm, designing indicators to account for social and environmental dimensions. Montiel (2008) pointed out the differences between CS and CSR approaches. While CS looks at the three dimensions as interrelated, a CSR approach separates the financial/economic dimension from the non-financial ones (social and environmental). Even though many companies are devoting efforts to integrate the three dimensions in CSPM activities, the most common practice is to find companies releasing the traditional annual financial report and a separate report to disclose their non-financial (social and environmental) performance (Hahn and Kühnen, 2013). Next, we discuss in more depth the main similarities and differences between the different instruments to account for three CS dimensions.

5.1. Measuring economic corporate sustainability

Drawing on the previous literature, we found the CS economic dimension has been frequently defined showing a high interconnection with the social aspects of CS. For instance, Bansal (2005) described economic prosperity as the creation and distribution of goods and services that helps raising the standard of living around the world. In fact, some scholars theoretically link both dimensions under the term socio-economic sustainability (e.g., Gladwin, et al., 2006). Accordingly, when comparing the CSPM instruments we detected a considerable

overlap between the different sub-dimensions included either under the economic or the social dimension. Table 2 illustrates the economic sub-dimensions encompassed by the instruments examined and examples of items to account for them.

Insert Table 2 around here

Our review of the different CSPM instruments showed that financial performance is rarely included in their metrics. While economic CS is always mentioned as one of the three dimensions in all definitions of CS (Montiel, 2008), only 4 out of 9 instruments analyzed include the economic dimension explicitly (Bansal, 2005; Kolk et al. 2010; DJSI and GRI). Other instruments (Figge et al., 2002; KLD, B-Corp, ISO 26000 and UNGC) take into consideration some indirect economic effects such as product responsibility or consumer issues but include them under social CS. Paradoxically, other stakeholders barely cover any economic sub-dimensions in their instruments. For example, ISO 26000 does not explicitly introduce an economic dimension with different sub-dimensions and items, although the instrument recognizes the relevance of economic/financial aspects when assessing organizational performance: “economic aspects are dealt with throughout the seven core subjects, where appropriate” (ISO 26000, 2012: p. 19). A possible explanation is that as the firms usually release financial reports, stakeholders do not see the need to replicate such information and devote more effort on measuring the social and environmental aspects of firm performance in relation to the economic aspects.

We also found some similarities on how the different instruments account for the CS economic dimension. First, most instruments analyzed (except Bansal, 2005; Figge et al., 2002 and B-Corp) integrate ethical aspects in management as one of their sub-dimensions; which includes items such as anti-crime policy, codes of conduct, corruption and bribery. For example, UNGC includes anticorruption as one of their ten principles or ISO 26000 that adopts the term fair operating practices to group anti-corruption programs, responsible political involvement, fair competition, and property rights.

Second, we also found that most of the instruments agree on including marketing practices as a sub-dimension, albeit with some differential purposes. For instance, Bansal (2005) links their marketing practices with the environment to create differentiation in the products and/or services, whereas ISO 26000 encompasses fair marketing practices to provide more reliable information customers. Furthermore, our review of the different CSPM instruments shows that employee/executive compensation issues are frequently included in their metrics (e.g., Kolk et al., 2010; DJSI, GRI). This is a clear example of the overlap between economic and social sub-dimensions as other employee issues are generally covered under the social dimension.

Third, many of the instruments also cover relations with key stakeholders such as suppliers (e.g., supplier management requirements, programs) and governments (e.g., collaboration with governments, political involvement) as CS economic sub-dimensions (e.g., Bansal, 2005, KLD, DJSI, ISO 26000, GRI). For instance, Bansal (2005) listed an item to determine the relationship that a company has with government officials to protect the company's interests. Regarding supplier relations, we found differences on the items used to measure it. For instance, while KLD considers strengths about the supply chain policies and initiatives, DJSI includes several items such as awareness, risk exposure, and transparency and integration, to measure supply chain management-related issues.

Finally, the comparison of the instruments also revealed other sub-dimensions that have been contemplated under the CS economic dimension, albeit they have been only mentioned by a few of the instruments: innovation (Bansal, 2005; Figge et al., 2002; DJSI, KLD), risk management (DJSI, KLD, ISO 26000), profit generation (Figge et al., 2002, DJSI, GRI), and efficiency (Bansal, 2005; Figge et al., 2002). It is striking that items connected to profit generation, a core aspect of the economic dimension, are only mentioned by three of the instruments. This variation seems to suggest that stakeholders have yet to agree on what falls under the umbrella of the CS economic dimension.

5.2. Measuring social corporate sustainability

In recent years companies have expanded their attention devoted to the social dimension of CS as a consequence of the increasing pressures from stakeholders who demand companies to embrace social responsibilities. In fact, some of the CSPM instruments we analyze predominantly focus their attention to the social aspects of CS such as ISO 26000 and B-Corp. Previous literature on CS has already defined and conceptualized social CS. Dyllick and Hockerts (2002) pointed out that a socially sustainable company “adds value to the communities within which they operate by increasing the human capital of individual partners as well as furthering the societal capital of these communities. They manage social capital in such a way that stakeholders can understand its motivations and can broadly agree with the company’s value system” (p. 134). Bansal (2005) proposed the “social equity” principle “to ensure that all members of society have equal access to resources and opportunities” (p. 199). Furthermore, Linnenluecke et al. (2009) attempted to operationalize social CS as they claimed that: “an organization (1) pays attention to its internal staff development, (2) attempts to deal proactively with its community base and, (3) engages with its stakeholders” (p. 434). In sum, all the social CS definitions highlight that corporations need to find ways to commit to all their stakeholders.

Table 3 presents the list of sub-dimensions identified under the social dimension of CS. Similar to what we reported for economic CS, some of the sub-dimensions listed in the social dimension are frequently classified as economic sub-dimensions. In our observations, we found that many of the instruments analyzed still measured social issues despite not having the “social CS” label. Instead, some instruments used different names to classify their social items. For example, KLD classified its social indicators using the following five categories: community, diversity, employees, human rights and products. Similarly, B-Corp encompasses two “social” categories: workers and community.

Insert Table 3 around here

In general, when looking at the categories that the different instruments include, we observe that the CS social dimension addresses programs to commit the social wellbeing of different stakeholders, namely employees, communities, and consumers. For example, there is consensus about the need to account for internal stakeholders such as employees since all the instruments attempt to quantify CS performance with regards to diversity, occupational health and safety affairs as well as forced labor and human rights. Additionally, there is also consensus to include some sub-dimensions to measure the relationship of the firm and external stakeholders. For instance, most instruments included local community/indigenous community programs and philanthropy aspects. However, local commitment is measured differently depending on the nature of the programs. As an example, B-Corp considers that local commitment implies to have more than 40% of significant suppliers that are local independent businesses. A different approach is taken by GRI, that uses two indicators to calculate a firm's local commitment: 1) percentage of operations with implemented local community engagement, impact assessments, and development programs, and 2) number of operations with significant actual and potential negative impacts on local communities. While B-Corp defines its indicators in positive terms GRI combines both positive and negative indicators to measure the same item.

Volunteerism is also identified by some instruments such as KLD, DJSI, B-Corp and Kolk et al. (2010). For instance, Kolk et al. (2010) established the existence of volunteer programs whereas B-Corp includes civic engagement as one of its items. In the latter, B-Corp aims to measure how easy is for the employees to engage within their communities. In addition, consumer relations management is listed as item in KLD, DJSI, ISO 26000 and GRI. In fact, ISO 26000 and go one step further by identifying as a relevant item for customer education on sustainable consumption.

In a lesser degree, we found instruments covering issues regarding product responsibility, sustainable consumption and quality management (Bansal, 2005, Figge et al., 2002; GRI, ISO 26000). Paradoxically, even though economic inequality, poverty alleviation and the bottom of the pyramid (BoP) are two core elements of the social sustainability literature (Gladwin, et al.

2006), none of the instruments included any items or indicators to measure them. Some items mentioned assistance programs for local and indigenous communities (e.g., Bansal, 2005; KLD), which may implicitly attempt to account for poverty alleviation.

5.3. Measuring environmental corporate sustainability

Previous literature agrees upon the notion that environmental CS covers the impacts of the company on living and nonliving natural systems, including ecosystems, land, air and water (e.g., Dyllick and Hockerts, 2002; Krajnc and Glavic, 2005; Labuschagne et al., 2005). This agreement on what the environmental CS represents has contributed positively to have a more integrated vision on how to measure this CS dimension. After our comparison, it can be argued that the boundaries between the environmental dimension and the other two dimensions are relatively well established among the existing CSPM instruments. Whereas the boundaries between economic and social performance are frequently blurred, we only found one overlap of the CS environmental dimension with the other dimensions. Bansal (2005) included environmental reporting within the social dimension under the umbrella of social equity, while the rest of the instruments classified it as part of the environmental dimension.

Insert Table 4 around here

Table 4 shows considerable consensus on the sub-dimensions that should be taken into account when measuring organizational environmental performance; albeit the instruments differ in the number and type of sub-dimensions that they cover. We can find consonance regarding the inclusion of aspects related to resources in the instruments analyzed. All of them (except for DJSI) comprise items relating to resource management such as the use of renewable resources, less impact materials, etc. Some of them even stress the importance of water issues with the creation of a specific category for it (e.g., KLD; DJSI and GRI), which reflects the importance water management is gaining in recent years. In addition, most of them include items for the sub-dimension of energy conservation such as energy efficiency, renewable energy or energy conservation.

All the instruments examined also cover sub-dimensions related to business impacts on the natural environment (except for B-corp), although there are disparities between them. For instance, KLD, DJSI, ISO 26000 and GRI cover items related to the three sub-dimensions of pollution, climate change and biodiversity, whereas there are other metrics that only seem to capture one of them (Bansal, 2005, Figge et al., 2002, and Kolk et al., 2010).

Furthermore, sustainability metrics also encompass sub-dimensions linked to processes as a means to improve environmental performance. Product stewardship emerged as a key sub-dimension because all instruments include aspects for the greening of products or improvement of product impact in any phase of their life cycle (except for Figge et al., 2002 and Kolk et al., 2010). DJSI and B-Corp stress transportation and distribution by creating a specific category within their instrument to account for the impacts in this phase of the product. In addition, some instruments also take into account the implementation of environmental management systems (KLD, DJSI, ISO 26000 and UNGC). Some instruments also cover some items for the selection of greener suppliers. Finally, some CSPM instruments also include environmental risks and environmental compliance (KLD and GRI), and especially environmental reporting (except for Figge et al., 2002 and Kolk et al., 2010).

Finally, we found differences on the indicators suggested by the different CSPM instruments to measure the same issue. The first difference is that some instruments used indicators in absolute terms whereas others are based on relative indicators to account for the same item. For example, B-Corp measures the use of recycled material with tons of recycled material, while GRI calculates it as a percentage of materials used that are recycled. In addition, we found that in some cases the same instrument mixes indicators in absolute and relative terms to measure the same environmental item (e.g., Bansal, 2005; GRI). For instance, for water issues, GRI uses “the total use of water” and “percentage of total volume of water recycled and reuse”. These measurement differences result in non-comparable indicators. Likewise, we noticed that in most of the cases the indicators are not designed in terms of competitors/industry or historic comparisons. However, to assess a company’s sustainability progress it seems of

paramount importance to determine CS performance based on previous years. For instance, Bansal (2005) proposed the number of “mined/manufactured products that have less environmentally harmful impact than in previous years or than its competitors” and the number of “mined/manufactured products with less environmentally damaging inputs than in previous years or competitors” for the product stewardship item.

5.4. Corporate Governance: A Fourth Dimension?

Besides the three most commonly used CS dimensions (economic, social and environmental), some stakeholders defend the inclusion of a fourth dimension: corporate governance (e.g., Kolk, 2008; Shen et al., 2011; Spangenberg, 2002). Some of the sub-dimensions included under the corporate governance dimension are corruption prevention, executive compensation, fair competition practices as well as business-government relations. In fact, instruments such as Sustainalytics refer to their CS indicators as ESG (environmental, social and governance). We found that KLD defines corporate governance as one of its seven dimensions covering items linked to corruption, compensation, public policy and reporting quality issues. Another example is UNGC that disseminates governance as its principle 10: “Businesses should work against corruption in all its forms, including extortion and bribery”. Nevertheless, such sustainability aspects are often contemplated as either economic or social by other stakeholders. For example, anti-corruption indicators are in some cases listed under the economic dimension (e.g., DJSI), whereas other instruments regard them as social (e.g., Kolk et al., 2010; GRI, ISO 26000). We recognize the relevance of these aspects as key elements of CS performance; however, whether they should be contemplated in a fourth standalone dimension or under one of the three traditional dimensions remains an open question.

6. Discussion and General Recommendations

Recent years have witnessed a growing interest in measuring and reporting CS even though these practices are not generally required by law. However, the stakes of not communicating sustainable progress are too high since key stakeholders consider that social and environmental issues should be contemplated when assessing firms’ overall performance (Freeman et al.,

2010). Firms that only inform their shareholders about financial results but fail to inform other relevant stakeholders about their non-financial performance are unlikely to survive in the long term. Nowadays companies receive good ratings and attract investors not only when they perform well financially but also based on their sustainability scores. For these reasons, understanding what CS entails in order to report and measure it becomes crucial. CS is a multi-dimensional concept resulting from the convergence of economic, social and environmental performance with a long-term perspective (Brundtland Commission, 1987). Despite the broad acceptance of these three dimensions both in the literature and among practitioners, our comparative analysis still finds vast heterogeneity on how the different CSPM instruments operationalize each of the three dimensions. In this section, we discuss our general findings to then list a set of recommendations for the different stakeholders involved in CSPM.

First, we observe that the existing CSPM instruments do not integrate the three dimensions in a holistic manner. All stakeholders in their instruments pay more attention to environmental and social aspects of CS overlooking the economic dimension. Indeed, most of the instruments encompass a relatively small number of economic items compared to the other two dimensions. Only the DJSI offers a more complete range of economic indicators. In addition, it is worth noticing that almost none of the instruments analyzed considers financial performance strictly (profit generation per se) when operationalizing economic dimension. These findings seem to suggest that current CSPM instruments follow a CSR approach when assessing sustainability performance (see Montiel, 2008) because they treat and measure the economic/financial aspects independently, without integrating them with the non-financial aspects. This leads to create compartmentalization among the CS dimensions. In fact, even though some attempts to implement integrated reporting of both financial and non-financial information exist (Brown, de Jong and Levy, 2009); most companies still publish two independent reports.

These results are in line with previous research pointing out a lack of integration between the three dimensions when assessing or reporting CS (e.g., Hahn and Kühnen, 2013; Lozano and Huisinigh, 2011; Schneider and Meins, 2012). The problem is that given the holistic nature

of business and sustainability, CSPM instruments that do not integrate the three CS dimensions or capture their inter-linkages provide only an incomplete and biased picture of CS performance. This makes it difficult for a company to progress in improving their CS outcomes. Economic, social and environmental aspects are closely related, and therefore, adjustments or improvements in one dimension might help to improve the others dimensions, and vice versa. Therefore, we acknowledge that more effort is required to conciliate economic performance with environmental and social activities in order to advance CSPM, and in general, to explore the potential synergies and effect between the three CS dimensions.

Recommendation 1. Stakeholders in the CSPM field need to further integrate the financial (economic) dimension with the non-financial (social and environmental) in their instruments.

Second, in our comparative analysis we also detect divergence on the categorization of the three CS dimensions –especially social versus economic. There seems to be consensus on what environmental performance represents, albeit the boundaries between social and economic dimensions are frequently blurred. Such overlap raises complexity when assessing CSPM. One of the reasons for these differences in the operationalization of the social and economic dimensions can be found on the nature of the concept and how interrelated social and economic (socio-economic) aspects are. For instance, ethical issues such as corruption and bribery prevention can be reasonably classified under both the social and/or the economic dimensions depending on the logic used. With the aim of sorting out the confusion in this regard, some scholars have suggested that these issues fall under a fourth stand-alone dimension, corporate governance. Following this perspective, newer CSPM instruments such as SustainAnytics now use the term ESG (Environmental, Social and Governance) in reference to the non-financial factors/indicators that need to be considered under sustainability performance. However, the consideration of corporate governance as a fourth stand-alone dimension by some CSPM instruments seems to contribute to the confusion on how to categorize the dimensions of CS.

Recommendation 2. Stakeholders in the CSPM field would benefit if they reach an agreement regarding what each of dimensions entails, especially economic and social, to minimize ambiguity and confusion among the instrument users.

Besides content disparities between CSPM instruments, we also found differences on how the items were defined and measured. For instance, in our analysis we found a wide range of CS sub-dimensions and items and a variety of operationalizations (e.g., outcome vs. process based measures, relative vs. absolute indicators, positive vs. negative items). We noticed that most of the instruments analyzed still use absolute indicators (e.g., tons of recycled materials used) instead of relative indicators (e.g., percentage of recycled materials used) or mix them when accounting for a CS aspect. These measurement practices result in non-comparable indicators that make it difficult to assess the progress of a company towards its CS goals or to perform competitors/sector comparisons.

Likewise, while some stakeholders such as business academics tend to define the items in positive terms other stakeholders measure the same item with negative indicators or combine negative and positive indicators to measure the same item. For example, GRI captures pollution as “total GHG emissions” – a negative indicator- and “reduction of GHG emissions” – a positive indicator; and KLD compiles both strengths and concerns for each of its seven dimensions. However, several recent studies warn about the measurement problems of using metrics that cover both positive actions and negative actions, for example “good environmental actions” and “bad environmental actions” (Delmas et al., 2013; Minor and Morgan, 2011). According to Minor and Morgan (2011) “doing environmental good” does not necessarily imply “free of harm to the natural environment” suggesting that positive environmental/social performance and negative social/environmental performance are not two opposite ends of a continuum and cannot be linearly transformed into one another. These differences on the operationalization approach, added to the fact that each instrument includes different items under each sub-dimension, may explain why sustainability scorecards for the same company differ depending on the instrument. Proof of these differences has been already discussed in previous studies that found that the same companies were ranked differently by different CS rating agencies (Chatterji et al., 2014; Delmas and Doctori-Blass, 2011).

An explanation for this divergence on operationalization may come from the fact that stakeholders develop their CSPM instruments driven by different purposes. Nevertheless, regardless their ultimate purpose, CSPM instruments should evolve towards a more standardized fashion since they all aim to measure CS. The challenge becomes now how to best coordinate these efforts among multiple stakeholders working in CSPM.

Recommendation 3. Stakeholders in the CSPM need to work towards the standardization and consistency of measurements (e.g. positive vs. negative, absolute vs. relative) used under each of the CS dimensions.

Our comparative analysis also unfolds deficiencies with regards to the integration of the time dimension in CSPM. Although CS aims to be a holistic concept integrating the three dimensions with a time perspective, our analysis indicates that most CSPM instruments fail to include time-dependent indicators and/or account for the long-term view of CS. They instead tend to apply a short-term logic in the items they measure. Thus, even though very recent studies address the tensions between short versus long term consideration in CS (Slawinski and Bansal, 2015), we still need to incorporate this notion into the existing CSPM instruments to better integrate synergies between dimensions and sub-dimensions along with a long term perspective. Ortiz de Mandojana and Bansal (2015) propose a novel approach to CSPM, by suggesting long-term economic indicators to measure CS such as financial volatility, sales growth and survival rates. They suggest that a long-term perspective should be incorporated in the different CSPM instruments, in order to properly account for the outcomes of CS practices.

Recommendation 4. Stakeholders in the CSPM field still need to account for long-term aspects of CS and incorporate the time dimension in their instruments.

Finally, we also noticed that some relevant aspects of CS such as poverty alleviation in the social dimension and biodiversity in the environmental dimension are rarely found as sub-dimensions in most CSPM instruments. One plausible explanation for these omissions may be the difficulty of measuring such aspects at the corporate (meso) level. Even if a company contributes to society through philanthropic programs targeting underprivileged populations, quantifying their positive impact becomes difficult. Likewise, the effect of a single company on

biodiversity protection may be unmeasurable. The root of this problem stems from capturing or operationalizing the effect of an individual agent on a macro-level outcome. One potential solution may be the collaboration of companies operating in a particular region (state, city, industrial park, country, etc.) or in a particular sector to quantify collectively their joint efforts at mitigating a particular problem, e.g., loss of biodiversity, poverty, water resources shortage. For that, it would be necessary to design aggregated macro-level indicators. CS indicators at the company (micro) level may have to be complemented with an umbrella of more aggregate (macro) level indicators. This joint effort will only work if companies are willing to share information and be transparent. For example, the disclosure of environmental emissions in registries such as the US Toxic Release Inventory (TRI) or European Pollutant Release and Transfer Register combined with geographic information systems (GIS) data could help mapping aggregate impacts of a particular set of companies from the same region. Previous research in the field of ecological economics has already proposed different sustainability assessment methodologies at a macro-level (Ness et al., 2007; Singh et al., 2009). Rather than trying to create new macro-indicators, existing sustainability assessment tools may be applied to account for the macro-effects.

Recommendation 5. Stakeholders in the CSPM field need to assess the need for CS macro-indicators measured at the a higher scale (e.g., state, city, industrial park) in addition to the CS micro and meso-indicators and items already included in their instruments.

7. Implications for research and practice, future research avenues, and conclusions

For managers and practitioners, this study has important implications that can help them with the arduous task of carrying out CSPM in their companies. This study can be used as a comprehensive reference guide for managers and practitioners to easily identify the different existing CSPM instruments, the sub-dimensions covered under each of one and how they are defined and operationalized.

First, our analysis can assist practitioners and managers to identify which CSPM instrument or combination of instruments may be more useful to assess the sustainability performance of

their company. Through the deconstruction of the CSPM instruments, we offer a detailed description of the sub-dimensions that are covered by each instrument under the economic, social, and environmental dimensions. Thus, managers can identify which instrument fits better their company or develop their own metrics (relaying and/or combining items from different instruments) based on their activities, their social and environmental impacts, the sub-dimensions they should/want to account for, or their sustainability goals. Thus, practitioners interested in measuring a particular sub-dimension can easily identify those CSPM instruments addressing it and search how it is operationalized in the documents distributed by the instrument designer. This is important because managers frequently lack knowledge on how to measure specific aspects of CS (Chelli and Gendron, 2013). Furthermore, practitioners with more ambitious goals may use our compilation of CS sub-dimensions in tables 2, 3 and 4 as a check list to identify which of the sub-dimensions they are already measuring and which ones not, always keeping in mind that not all of the items might be applicable to their operations. Similarly, the same check list can be used by companies for benchmarking and by anyone aiming to compare CS practices among two firms or competitors.

Second, this study also helps to carry out CSPM with strategic purposes. For example, it helps to identify those CS aspects or sub-dimensions that are most valued by different stakeholders. This knowledge is relevant in order to satisfy the social and environmental expectations of key stakeholders and to achieve particular outcomes. For example, having a good performance in social aspects related to the bottom of pyramid and local commitment might be key to obtain B-Corp status, whereas if the company wants to stand out in the DJSI, key social sub-dimensions are employee programs, occupational health and safety, human rights, philanthropy, volunteerism and consumer relations management. Likewise, since not all the instruments analyzed encompass the same CS aspects for each dimension, our findings can help practitioners and managers to understand why their company receives different scores from CS ratings such as KLD and DJSI. This understanding can help firms to improve their scores.

Finally, this study offers some insights to help in the operationalization of the different sub-dimensions of the economic, social and environmental dimensions because we highlight examples of items for each one. In addition, drawing in our findings, we suggest that practitioners should be consistent in the way they measure CS. For example, they should measure all their items in either positive or negative terms to avoid misleading conclusions (Delmas et al., 2013). They should also measure sustainability impacts in relative terms to make the company results comparable with previous year results and to allow benchmarking with other similar companies (which helps to see the evolution of the company in CS and its position against its main competitors). Finally, they should include indicators that integrate the economic dimension within the social and environmental dimensions to more effectively and efficiently improve their CS performance and plan the CS goals.

Therefore, this study helps practitioners to measure their CS performance more effectively to reduce their sustainability impacts, and more strategically to develop their CS strategy and satisfy all their relevant stakeholders.

7.1. Final conclusions

Despite the growing importance of CS for businesses and society, the CS field still lacks agreement on how to operationalize and measure the construct. A wide variety of stakeholders (e.g., business academics, investors, nonprofit organizations, and rating agencies) have developed their own CSMP instruments but there is substantial differences in the sub-dimensions covered under each CS dimension (i.e., economic, social and environmental) and how they are accounted. The main underlying cause seems to be that stakeholders have still not built consensus on what CS is and what each CS dimension represents. The lack of agreement makes CSMP unclear and challenging, which hampers progress in CS measurement. This implies that managers and practitioners remain orphaned of knowledge and practical guidance on how to account effectively for their CS impacts and improve their CS activities. We feel that bringing closer the different approaches that stakeholders use to measure CS is important for the progress of CSMP. Our deconstruction of the CS dimensions into a comprehensive and

integrated list of CS sub-dimensions can help advance in such direction and provide some guidance for practitioners and other interested parties.

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FIGURE 1. SUMMARY OF THE SYSTEMATIC LITERATURE REVIEW AND CODIFICATION PROCESS

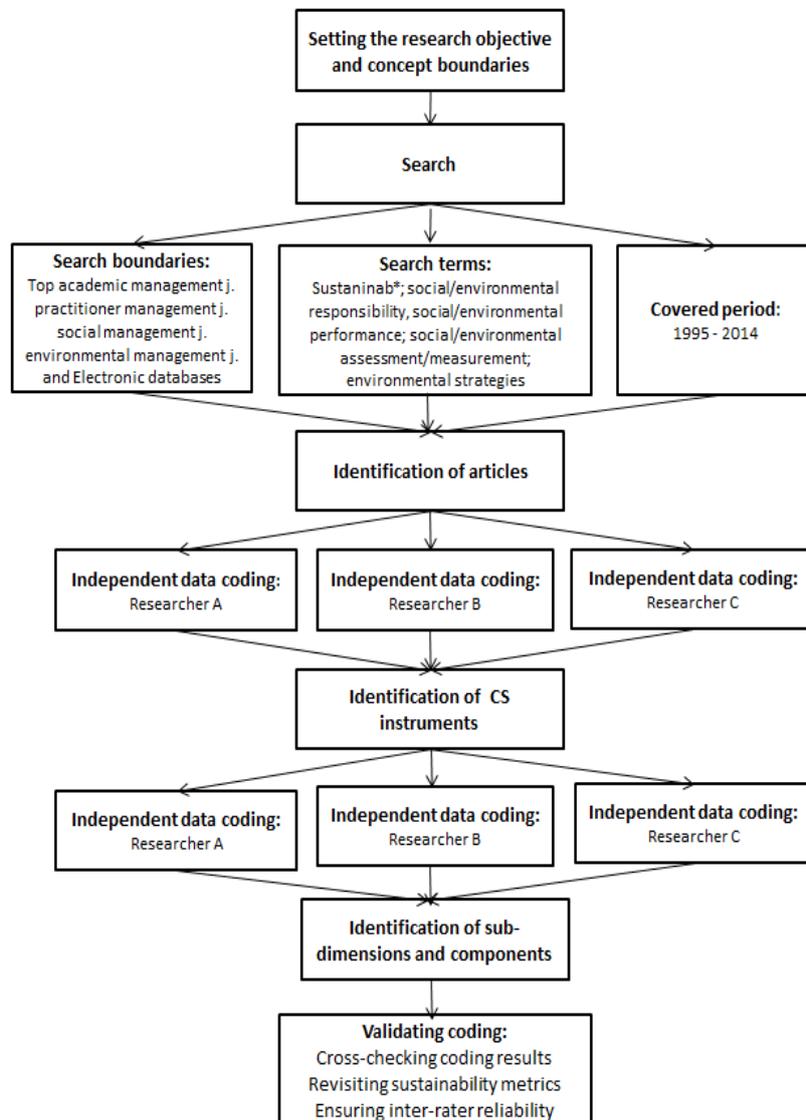


TABLE 1
CORPORATE SUSTAINABILITY PERFORMANCE MEASUREMENT (CSPM) INSTRUMENTS ANALYZED

Instrument	Initiating Stakeholder	Purpose
Figge et al., 2002	Academic	Incorporate social and environmental exposures of business units into the main management system of a firm
Bansal, 2005	Academic	Identify the items for the three dimensions of Corporate Sustainable Development (CSD) for academic purposes
Kolk et al., 2010	Academic	Identify the relevant measurement items for each of the three CS dimensions for academic purposes
Kinder, Lydenberg and Domini (KLD)	Investment rating agency	Provide a metrics system and management tools to integrate CS factors in investment decisions
Dow Jones Sustainability Index (DJSI)	Rating agency	Create an index to evaluate the CS performance of the largest Dow Jones companies
United Nations Global Compact (UNGC)	International organization	Establish a global code of conduct of CS
ISO 26000	Nonprofit organizations	Provide a guidance standard for companies to operate in a socially responsible/sustainable way
Global Reporting Initiative (GRI)	Nonprofit organizations	Provide a standardized system to report CS information to all stakeholders
B-Corporation (B-Corp)	Nonprofit organizations	Provide a framework and certification for companies to benefit society as well as their shareholders

Note: These instruments were identified as the most used by academic and practitioner scholars as a result of our systematic literature review. Identifying which of them have been more broadly implemented by companies is out of our scope.

TABLE 2
ECONOMIC SUB-DIMENSIONS OF CORPORATE SUSTAINABILITY

Economic sub-dimensions	Examples of items	Figge et al. 2002	Bansal 2005	Kolk et al. 2010	KLD	DJSI	UNGC	ISO 26000	GRI	B-Corp
Profit generation	Direct economic value generated; return on investment	O				O			√	
Efficiency	Input cost reduction per outputs; Waste management cost reduction per output	O	√							
Supplier relations	Supply chain management requirements; Supplier development programs			O	O	√		O	O	O
Marketing practices	Marketing based on sustainable premises; Fair marketing practices		√	O	O	√		O	O	
Innovation	R&D investments; Spin-off technologies	O	√		O	√				
Risk & crisis management	Coordinated risk management response; Burma concern				O	√		O		
Employee compensation	Caps on executive compensation; Cash profit sharing			√	O	√		O	√	O
Government relations	Collaboration with government officials; Political involvement		√		O	√		O	O	
Ethics in management	Codes of conduct/compliance/corruption & bribery; Fair competition			O	√	√	√	O	O	

√ = The instrument includes the indicator under economic dimension.

O = Similar/the authors classify the indicator under the economic dimension.

TABLE 3
SOCIAL SUB-DIMENSIONS OF CORPORATE SUSTAINABILITY

Social sub-dimensions	Examples of items	Figge et al. 2002	Bansal 2005	Kolk et al. 2010	KLD	DJSI	UNGC	ISO 26000	GRI	B-Corp
Employee programs	Diversity practices, LGBT policies	√		√	O	√	O	O	√	O
Occupational health & safety	Employee safety improvements; Healthy lifestyle incentives	√	√	√	O	√		O	√	O
Human rights	Forced labor policies; Child labor policies	√	O	√	O	√	O	O	√	
Philanthropy	Charitable giving; Funds for local community activities		√	O	O	√		O		O
Volunteerism	Paid employee volunteer hours; Employee volunteer impact measures			√	O	O				O
Local commitment	Local sourcing; Indigenous communities programs		√	O	O			O	√	O
Bottom of pyramid (BoP)	BoP development programs; Poverty alleviation programs								O	O
Product responsibility	Product life cycle assessment; Waste minimization in packaging	√		√	O				√	
Quality Management	Quality control programs; Quality data & reporting for sustainability	√			O					
Consumer relations management	Customer Satisfaction Management; Customer Feedback Process	√			O	O		O	√	
Sustainable consumption	Responsible labeling; Responsible product disposal information							O		

√ = The instrument includes the indicator under social dimension.
O = Similar/the authors classify the indicator under the social dimension.

TABLE 4
ENVIRONMENTAL SUB-DIMENSIONS OF CORPORATE SUSTAINABILITY

Environmental sub-dimensions	Examples of items	Figge et al. 2002	Bansal 2005	Kolk et al. 2010	KLD	DJSI	UNGC	ISO 26000	GRI	B-Corp
Energy conservation	Energy efficiency; Clean energy	√		√	√	√		√	√	√
Materials management	Low impact resources; Renewable resources	√	√	√	√		√	√	√	√
Water issues	Water use; Recycled water				√	√		√	√	√
Waste management	Waste reutilization; Toxic waste management	√	√	√	√		√	√	√	√
Climate change	Climate change mitigation; Carbon reduction practices				√	√		√	O	
Pollution	Acid rain (NOx and SOx Emissions); Runoff; Noise	√		√	√	√	√	√	√	
Biodiversity	Natural habitats restoration; Elimination of operation in environmentally sensitive locations		√		√	√	√	√	√	
Product stewardship	Green products; Packaging materials		√		√	√	√	√	√	√
Environmental management systems	ISO 14001; EMAS				√	√	√	√		
Distribution and transportation	Low-emissions transport vehicles; Clean outsourced fleet					√				√
Green suppliers	Suppliers monitoring; Suppliers screened by green criteria				√	√			√	√
Environmental reporting	Environmental/sustainability reports; Environmental communications		O		√	√	√	√	√	√
Environmental compliance	Fines for non-compliance with environmental regulations; Environmental laws obedience				√				√	
Environmental risk	Reduction of environmental accidents; Environmental risks prevision	O	√			O	√	√		

√ = The instrument includes the indicator under environmental dimension.

O = Similar/the authors classify the indicator under the environmental dimension.