



Firms and sustainability: Mapping the intellectual origins and structure of the corporate sustainability field

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ARTICLE INFO

Article history:

Received 1 June 2011

Received in revised form 1 May 2012

Accepted 29 July 2012

Available online 28 August 2012

Keywords:

Bibliometric analysis

Business

Climate change

Corporate social performance

Corporate social responsibility

Corporate sustainability

Greening

Stakeholder theory

ABSTRACT

Business research has repeatedly been criticized for its lack of engagement with pressing issues such as climate change, despite a surge of publications on corporate sustainability topics in recent years. We are therefore interested in identifying the knowledge development and knowledge gaps in business scholarship on the relationship between firms, environment and society. This paper provides a systematic review of the corporate sustainability field in form of a bibliometric analysis based on citation data acquired from the Social Sciences Citation Index. The final dataset contained 3117 records published between 1953 and 2011. Our analysis shows that, over the last 50 years, the field of corporate sustainability has emerged from a few primary nodes of research and developed into four distinct conceptual genealogies: corporate social performance theory, stakeholder theory, a corporate social performance versus economic performance debate, and a greening of management debate. The results of our analysis suggest four key findings. First, the four genealogies only comprise a relatively narrowly focused research scope. Second, there is very little integration and citation of work in other disciplinary areas such as ecology or environmental science. Third, the existing literature has a strong focus on empirically examining the relationship between a firm's environmental and/or social performance and its financial performance. Finally, there is little consideration of managerial implications and consequences of climate change in the corporate sustainability literature to date. We suggest that while this may be a reflection of an insular field, it may also be a role played by the management literature turning away from problem based issues in favor of empirical results, theory building, and the identification of variables that influence firm profitability and can be subjected to direct managerial control. We conclude by outlining pathways for future research.

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1. Introduction

There has been much written about the principles of sustainable development and the need for firms to pursue sustainability practices that drastically change the way in which they do business. The growing industrialization and scale of economic activity have greatly shaped modern life and the physical and social world which we live in. However, this transformation of the Earth's resources into wealth through industrial activity has also led to a rapidly increasing level of consumption of materials and energy. This trend has been one of the fundamental drivers of global and local environmental change and has been leading to adverse consequences for ecosystems and societies. In response to these issues, firms across sectors have begun to introduce or

change policies, products and processes to address issues such as pollution and resource exploitation, and to improve community and stakeholder relations (Crane, 2000; Dunphy et al., 2007; Dyllick and Hockerts, 2002; Linnenluecke and Griffiths, 2010). The uptake of such corporate sustainability initiatives has become subject to much academic debate, especially how they can be implemented in ways that make economic or business sense.

As this paper will show, the quantity of academic publications in the corporate sustainability field has been growing exponentially in recent years, mirroring the expansion of the concept in the applied settings of corporate life. We chose the label "corporate sustainability" to refer to research within the business and management literature concerned with firm responses to a wide range of social and environmental issues. We felt that this label best reflects this field of research as it refers to corporations (thus distinguishing research on firms from research concerned with other social entities such as households or institutions) and also encompasses the general notion of sustainability. The term sustainability in this context is not restricted to refer to the sustainable competitive (i.e., economic, financial) advantage of

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firms – it refers to firm engagement with social and environmental issues in addition to their economic activities (e.g., Dunphy et al., 2007). While our paper uses the label “corporate sustainability”, it covers research using other labels or terms as well, such as research on Corporate Social Responsibility (CSR) or Corporate Social Performance (CSP). A complete list of all concepts included in this review is provided in the later method section.

In this paper, we are interested in mapping the intellectual origins and structure of the field of corporate sustainability research in order to identify major influences and streams of discussions, and outline knowledge gaps and future research direction. Given that recent findings (e.g., Patenaude, 2011) suggested that there might be fundamental processes hindering the diffusion of new ideas in business scholarship and its engagement with research on pressing issues such as climate change, we are particularly interested in exploring possible difficulties for the corporate sustainability field in integrating findings from other knowledge domains. We investigate to what extent findings from other domains such as ecology and environmental sciences were integrated in the corporate sustainability field, and which new approaches to the relationship between firms, environment and society are emerging in the field.

In order to provide a comprehensive analysis of major works in the area of corporate sustainability, we utilized the bibliometric mapping and visualization software *HistCite*TM (Garfield, 2004). The software program is based on algorithmic historiography, a method through which historical or genealogical maps of publications within a knowledge domain can be generated. These maps allow insights into a topic's structure and history by visualizing relationships between important works in a certain area; they are therefore particularly well suited to map a field of research (see, e.g., Börner et al., 2003; Janssen et al., 2006; Janssen, 2007). In this paper, we used the *HistCite*TM software to produce a map of the corporate sustainability field which outlines influential publications and identifies the intellectual interrelation and development of publications. Citation data for the bibliometric analysis were acquired from the *Social Sciences Citation Index*. The final dataset contained 3117 records published between 1953 and 2011.

Results from our analysis show that, over the last 50 years, the field of corporate sustainability has emerged from a few primary nodes of research and developed into four distinct conceptual genealogies: corporate social performance theory, stakeholder theory, a corporate social performance versus economic performance debate, and a greening of management debate. We identified an additional stream of research concerned with marketing aspects (see also Fig. 2, this paper) which we do not discuss further as it is primarily concerned with customers and buying decisions rather than with the relationship between firms, environment and society. The first highly cited papers in the corporate sustainability debate are publications by Bowen (1953) and Friedman (1962, 1970) on the advantages and disadvantages of firms assuming social responsibilities. In essence, these publications debated whether a firm's social responsibility should be the production of economic goods and profits, or whether a firm should display its social responsibilities by pursuing a range of broader social goals. While being the first highly cited publications, they follow on from earlier contributions on corporate power and the role of the corporation in modern society (e.g., Berle and Means, 1932) and more fundamental philosophical debates on individual philanthropy and the rights and responsibilities of individuals and organizations within society and the natural environment (see Crane and Matten, 2007 or Kidd, 1992 for an overview). Some of these debates can even be traced back to ancient civilisations (Donald, 1975).

Following Bowen (1953) and Friedman (1962, 1970), many subsequent publications focused on conceptually advancing the

notion of corporate social performance (a firm's uptake of corporate social responsibilities and other activities oriented toward socially beneficial outcomes), discussions of the relationships between social performance and financial performance, as well as stakeholder management. These publications gave rise to a strong influence of stakeholder theory and a debate on the role that corporations should play in terms of listening to or addressing broader societal and stakeholder issues. During the 1990s, an additional debate originated in the field of corporate sustainability around the re-conceptualization of the firm 'environment'. Traditionally, the firm environment was narrowly defined as consisting of the firm's economic environment (encompassing, for instance, the firm's industry environment and its competitors). The emerging debate suggested to define 'environment' more broadly to also encompass a firm's natural environment, and tried to reconcile economic growth and environmental protection by demonstrating that competitive advantages were possible by pursuing environmentally beneficial outcomes.

From the 1990s onwards, a wealth of work was published in the corporate sustainability field (see, e.g., Margolis and Walsh, 2003), yet very few influential works were published on innovative topics outside already existing debates. A picture emerges of a field that is relatively entrenched in four main debates and that has produced very little interdisciplinary discussion – for instance by drawing on findings from the ecology and the environmental sciences literature. Existing debates on firms and sustainability increasingly look like they are missing the emergence and integration of new topic areas. We suggest that while this may be a reflection of an insular field, it may also be a role played by the management literature turning away from problem based issues in favor of empirical results, theory building, and the identification of variables that are subject to direct managerial control and contribute to firm profitability.

2. Mapping the intellectual origins and structure of the corporate sustainability field

Below, we outline the methodology for the bibliometric analysis. We follow established tools and techniques that were developed and have previously been applied for the large-scale mapping of knowledge domains (Börner et al., 2003; Janssen et al., 2006; Janssen, 2007). The bibliometric analysis requires several steps, including the compilation of a high quality, comprehensive dataset of relevant publications, their citation records, as well as their cited references. In a next step, the citation data need to be analyzed and correlated to map relationships between publications; and results need to be visualized for means of communication (Janssen et al., 2006; Janssen, 2007). Each of these steps is detailed below.

2.1. Data collection

We identified relevant publications for inclusion in the bibliometric analysis through Boolean searches within the *Social Sciences Citation Index*, which is an online academic citation database within the *Thomson Reuters (formerly ISI) Web of Knowledge* platform. An initial Boolean search with broad search parameters (sustainability, sustainable, CSR, corporate social responsibility) produced a list of 23,953 publications that addressed a range of sustainability topics, many of which upon closer inspection were only very vaguely related to the topic of corporate sustainability or referred to sustainability topics outside the discipline of business or management.

We therefore created a detailed set of keywords (Table 1) to conduct a keyword based search with more specific search parameters. In order to avoid any potential biases, the set of

Table 1
Keyword search terms.

Concept	Specific search terms ^a	Records found	Unique records ^b
Corporate sustainability	Sustainability	934	933
	Sustainable corporation*	3	1
	Sustainable organization*	26	19
	Sustainable firm*	3	2
	Sustainable enterprise*	5	5
	Sustainable business*	40	31
	Sustainable compan*	0	0
Environmental/ social sustainability	Sustainability report*	20	0
	Environmental* sustainab*	65	11
	Ecological* sustainab*	36	3
	Social* sustainab*	17	2
	Sustainable development	417	266
Responsibility	Sustainability-oriented	1	0
	Environmental* responsib*	82	60
	Ecological* responsib*	3	3
	Social* responsib*	1807	1581
	Responsible development	1	1
Responsiveness	CSR	556	27
	Environmental* responsive*	11	8
	Social* responsive*	32	13
Greening	Ecological* responsive*	0	0
	Green	724	578
Other	Greening	93	50
	Stewardship	143	116
	Triple bottom line	27	10
	Corporate citizenship	108	48
	Eco-efficient*	19	10
	Environmental performance	178	70
	Social performance	271	118
	Environmental management	295	123
	Environmental protection	161	109
	Environmental report*	27	4
	Social report*	42	20
	Natural environment	140	50
	Global warming	72	47
	Climate change	232	159
Total		6591	4478

All searches were limited to the subject areas of business/management. Data were extracted on February 7, 2011.

^a The asterisk (*) represents any group of characters, including no character.

^b Records excluding duplicates and records included in other searches.

keywords was constructed using three independent experts in the field. The keywords were used to retrieve publications which contain at least one of the keywords in the title, abstract or keywords. We included the asterisk (*) as a wildcard symbol to search for variations of key terms (for instance, the search for “sustainability report*” also returns results for “sustainability reporting” and “sustainability reports”). We limited our search to publications belonging to the topic areas of “business” or “management” within the *Social Sciences Citation Index* to ensure that the search was not too broad. The list of journals covered in the business and management category can be accessed from *Thomson Reuters* and includes all relevant journals in the business and management fields.

2.2. Data cleaning and analysis

After data were extracted from the *Web of Knowledge* database, the extracted reference collection was cleaned. In a first step, the extracted references were imported into the *HistCite*TM program (version 9.8.24). The program has a function to check for duplicate records. Of the 6591 records extracted, 4478 records were unique records (i.e., records without duplicates within the reference collection). Of those 4478 records, 281 publications were book

reviews and subsequently excluded from the publications list, leaving 4197 references. In a next step, we decided to remove foreign language publications as these publications were not cited by other publications within the collection, and did therefore not contribute to mapping the field. A total of 82 foreign language publications were removed, leaving 4115 references

The remaining references within the collection were checked by two independent reviewers to remove publications not relevant to the area of corporate sustainability. As a result, 973 publications were removed from the reference collection. Reviewers were asked to check the title, keywords and abstracts of the extracted citations, and – if necessary – to refer to the full text of the publication to determine its suitability for inclusion in the citation collection. A citation record was removed if the corresponding publication

- (1) did not fit the topic area (example: publications that discussed stewardship theory solely as a corporate governance theory without references to the topic of corporate sustainability);
- (2) addressed sustainability issues but in a way not relevant to corporations (example: a paper on the topic of open spaces in residential areas);
- (3) addressed sustainability issues but in a different sense (example: a paper that addressed the sustainability of best practice nursing guidelines).

In cases where all reviewers agreed that a publication did not fit the topic area of corporate sustainability, the publication was removed from the list. Through discussions with the reviewers we decided to keep publications on the topic of sustainable competitive (i.e., economic, financial) advantage of firms within the collection, as the extent to which corporations pursue growth and financial goals (as opposed to social or environmental goals) has been subject to much debate within the corporate sustainability area. Cases of disagreement were referred back to the reviewers for further discussion and review. In addition, we also conducted a manual check for duplicate records and deleted 36 duplicate records from the dataset which the *HistCite*TM program had not already detected and deleted automatically due to diverging citation styles.

After cleaning of the dataset, 3106 publications remained within the reference collection. In order to check the completeness of our reference collection, we conducted a cited reference search within *HistCite*TM. Through this search function, the program displays all references cited by publications within the collection and allows the user to identify publications that are highly cited by publications in the collection, but are not included in the collection themselves (Garfield, 2004). The omissions of a record can occur if the record does not match the search criteria (i.e., if the record does not contain at least one of the keywords used to conduct the reference search in the title; abstract or keywords); or when the record is related to a publication source not indexed in the *Web of Science* (such as a book or book chapter; newspaper article; non-academic article; non-indexed journal article or a report).

We identified ten seminal publications that were not included in the collection initially, but that were highly cited by publications in the collection and relevant to the area of corporate sustainability (see Table 2). These publications, including their citation list where applicable, were manually added as records to the reference collection. The Local Citation Score (LCS) shows the count of citations to each publication within the collection. In addition to those ten publications, we also identified the Friedman (1970) article from *New York Times* as a highly cited publication. Although not an academic publication, we decided to include this article due to its high citation count.

Once these citations were added, we arrived at a final dataset containing 3117 records which was used for further analysis. We

Table 2
Manual additions of seminal publications to reference collection.

Year	Author (first)	Publication details	LCS
1970	Friedman M	New York Times (Newspaper article)	379
1984	Freeman RE	Strategic Management: A Stakeholder Approach (Book)	349
1979	Carroll AB	Academy of Management Review	287
1987	WCED	Our Common Future (Report)	184
1962	Friedman M	Capitalism and Freedom (Book)	158
2003	Margolis JD	Administrative Science Quarterly	150
1999	Carroll AB	Business & Society	147
1997	Griffin JJ	Business & Society	123
1991	Carroll AB	Business Horizons	122
2001	Hillman AJ	Strategic Management Journal	113
1953	Bowen HR	Social Responsibilities of the Businessman (Book)	97

undertook additional manual cleaning of records within the final dataset as some references such as the Friedman (1970) New York Times article were cited in a highly inconsistent manner throughout the reference collection. Such inconsistencies result from differences in journal styles and data keying, and can be problematic as *HistCite*TM cannot identify connections between publications and visualize these connections when inconsistencies in citation records exist. We therefore unified citation records and edited records manually where required.

2.3. Limitations of the dataset

The dataset generated through the *Web of Knowledge* has a number of shortcomings which need to be considered when interpreting the findings of the analysis. First, the *Web of Knowledge* database mostly indexes journal papers. The search may therefore have missed important contributions such as books, book chapters or non-academic contributions. Second, there are limitations inherent in keyword searches and consequently the coverage of the dataset. While we attempted to conduct a very thorough search, the selection of keywords might introduce biases toward certain streams of research. Furthermore, as we decided to limit our search to the topic areas of business and management, we may have missed contributions outside these domains. We addressed these shortcomings through carefully selecting keywords working with independent experts. Furthermore, we used the cited reference search within *HistCite*TM to identify important publications that may have been missed, and manually added seminal publications into the collection.

3. Results

The final dataset contains 3117 records across 221 journals and other sources (books, reports) published between 1953 and 2011. The yearly output between 1953 and 2010 is displayed in Fig. 1 below. Especially since the early 1990s, there has been an exponential increase in the number of publications on corporate sustainability topics. This compares against a linear increase of publications in the *Web of Knowledge* over time (Janssen et al., 2006). An explanation for the exponential increase in publication output is the growing interest in sustainability and a corresponding uptake of corporate sustainability practices by firms.

3.1. Citation map

Using the *HistCite*TM program, we generated a citation map of the corporate sustainability field based on the records included in the final dataset (see Fig. 2). The citation map shows the most highly cited publications within the dataset as nodes, while citation connections between publications are represented as connectors or arrows. The nodes are displayed along a timeline (see left side); older publications in the corporate sustainability field are displayed at the top of the map, while newer publications are displayed at the bottom.

We limited the display of publications in the citation map to the 50 most highly cited publications within the dataset for two reasons: (1) to maintain visual clarity of the figure due to the density of citation links and (2) because the exponentially decreasing citation count means that additional publications are less connected to the central debate within the field. As papers 50–53 had an equal Local Citation Score, we entered 53 papers into the analysis. Of the 3117 records in the reference collection, 1341 publications were either not cited at all or only cited once by other publications within our dataset (Local Citation Score of 1 or 0), meaning that a large proportion of publications in the corporate sustainability field have had very little influence on the academic debate. A similar picture emerges when considering the Global Citation Score (GSC) of each publication (i.e., the count of citations to each publication within the *Web of Science*). Of the 3117 publications in the reference collection, 1341 publications were either not cited at all or only cited once by other publications within the *Web of Science* (Global Citation Score of 1 or 0).

Citation details for the publications included in the citation map are provided in Table 3. The citation graph allows identifying knowledge development and knowledge gaps in business

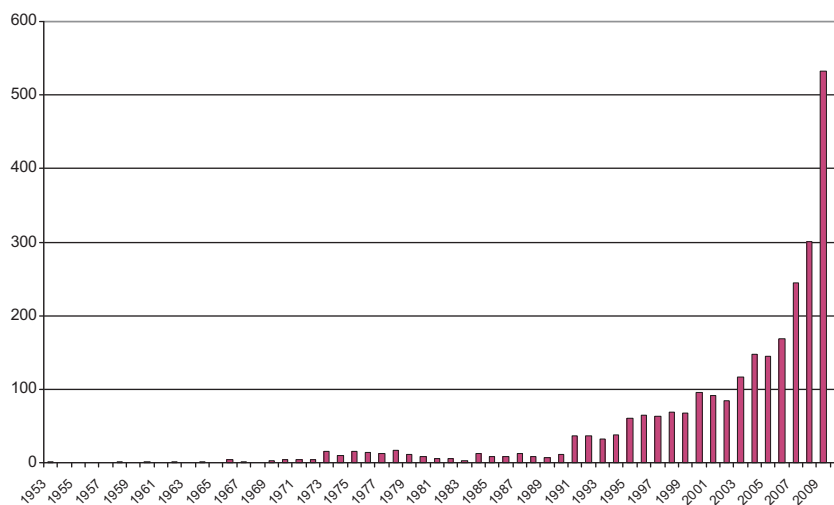
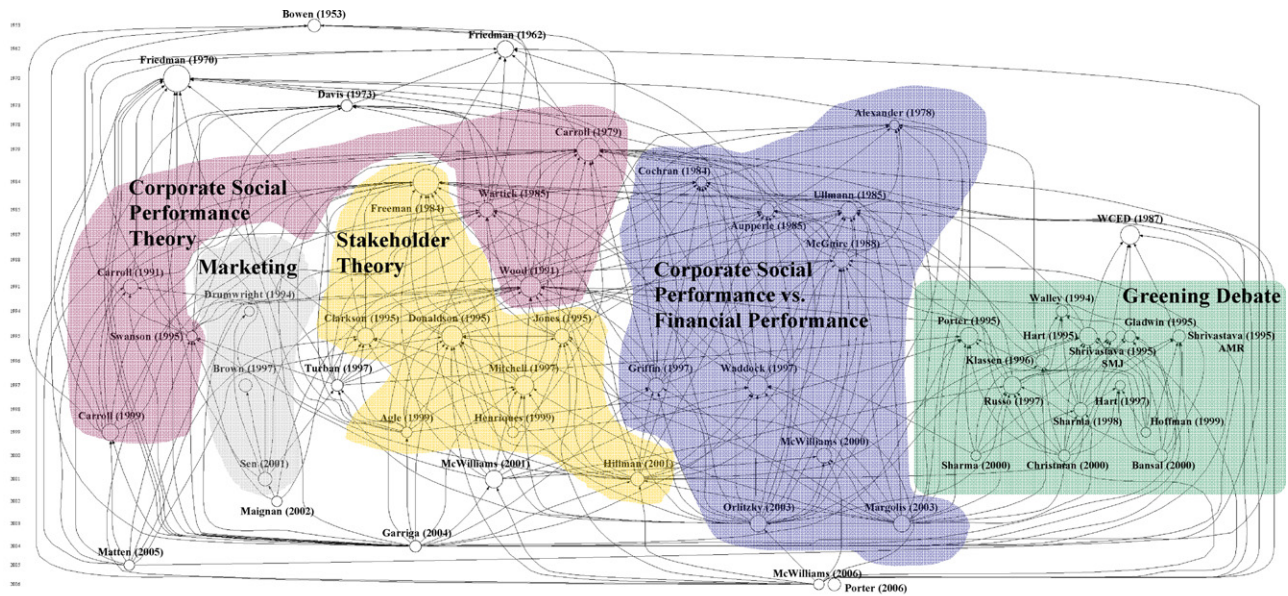


Fig. 1. Number of publications on corporate sustainability per year 1953–2010.



Nodes: 53 top publications, Links between publications: 292.
For purposes of clarity, only the first author on each publication is listed. See text for further explanation of coloring.

Fig. 2. Paper citation network. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

scholarship on the relationship between firms, environment and society. The coloring of the map is intended to aid with visual interpretation. There is significant overlap between different streams of research which has not been captured by the color coding for purposes of visual clarity.

The citation map in Fig. 2 shows that Bowen's (1953) book "Social Responsibilities of the Businessman" was highly influential in shaping the emerging academic debate on corporate sustainability. Bowen posed the question to what extent the interests of businesses and society would merge in the long run and suggested that corporations should pursue social goals, even if doing so lowered their profits. The book was identified by a number of authors (e.g., Carroll, 1979, 1999; Lockett et al., 2006; Wilson, 2003) as an influential contribution in shaping thought on social responsibilities of businesses and was the first publication to introduce the notion of 'corporate social responsibility' into the public debate (Brooks, 2005).

Bowen's book sparked a discussion on the role of business in society. Bowen's position on the role of business in society was contested by Friedman (1962, 1970) who argued that the main contribution of business to society should occur through the production of goods and services and that the main responsibility of the businessman should be for the maximization of shareholder returns (while conforming to basic rules of the society such as those embodied in law and ethical custom). According to the latter view, also referred to as 'shareholder approach', firms voluntarily pursuing additional social goals would face extra costs not experienced by competitors not undertaking such voluntary action, would substitute private corporate judgments with public policy, and would restrict free and independent choices.

The diverging views on the responsibilities of businesses toward society were subsequently imported into the scholarly debate by Davis (1973) who provided a summary of the opposing views and presented a discussion of arguments for and against the assumption of social responsibilities by business. These debates laid the foundation for different streams of research, or genealogies, on corporate sustainability which we outline below.

Corporate social performance theory (shaded in red). This genealogy of research is influenced by an ethical underpinning that firms, as they are embedded in society, have a social obligation

to undertake a broader range of activities other than those associated with economic factors. Carroll (1979) introduced a conceptual definition of corporate social performance to the literature, suggesting that corporate social performance consists of three different aspects and their three-dimensional integration, namely (1) the specification of the nature of social responsibilities (*economic*: to produce goods and service the society wants and to sell them at a profit, *legal*: to act within laws and regulations, *ethical*: to fulfill social expectations beyond its economic and legal responsibility, *discretionary*: to pursue further voluntary social roles and philanthropic activities), (2) the specification of social issues (consumerism, environment, discrimination, product safety, occupational safety, shareholders) and (3) the specification of the nature of corporate social responsiveness (ranging from reaction to proaction). As one of the early papers on this topic, the paper has been highly cited and provided the foundations for research on the social performance and responsibilities of firms.

Publications within this genealogy have mainly been focused on developing the corporate social performance concept as a global concept encompassing corporate social responsibilities, business responsiveness, and other business activities oriented toward society and socially beneficial outcomes (Carroll, 1979). The literature comprises a theoretical development of definitions of corporate social performance as well as of a corporate social performance model focused upon the link between corporate social performance and corporate strategy (Carroll, 1979; Wartick and Cochrane, 1985; Wood, 1991). Some of the later publications (e.g., Carroll, 1991, 1999) provided reviews of the corporate social responsibility concept that was introduced as one of the dimensions of corporate social performance by Carroll (1979). This genealogy of research led to various discussions and definitions of corporate social responsibilities and corporate social performance, and to the introduction of concepts such as corporate social responsibility (CSR) and corporate social performance (CSP). It provides a conceptualization of corporate social performance and corporate social responsibilities intended as a basis for further measurement initiatives as well as theoretical advances.

Stakeholder theory (shaded in yellow). Stakeholder theory and stakeholder approaches to firm strategy were introduced by Freeman (1984) through his book *Strategic Management – A*

Table 3

List with highly cited papers in the paper citation network.

No.	Year	Author (first)	Journal/publication details	LCS	GCS
1	1953	Bowen HR	Social Responsibilities of the Businessman	97	N/A
2	1962	Friedman M	Capitalism and Freedom	158	N/A
3	1970	Friedman M	New York Times	379	N/A
4	1973	Davis K	Academy of Management Journal	81	113
5	1978	Alexander GJ	Academy of Management Journal	55	87
6	1979	Carroll AB	Academy of Management Review	287	N/A
7	1984	Cochran PL	Academy of Management Journal	66	114
8	1984	Freeman RE	Strategic Management	349	N/A
9	1985	Aupperle KE	Academy of Management Journal	129	199
10	1985	Ullmann AA	Academy of Management Review	105	163
11	1985	Wartick SL	Academy of Management Review	116	175
12	1987	WCED	Our Common Future	186	N/A
13	1988	McGuire JB	Academy of Management Journal	141	229
14	1991	Carroll AB	Business Horizons	123	N/A
15	1991	Wood DJ	Academy of Management Review	243	367
16	1994	Walley N	Harvard Business Review	79	180
17	1994	Drumwright ME	Journal of Marketing	59	112
18	1995	Swanson DL	Academy of Management Review	63	80
19	1995	Donaldson T	Academy of Management Review	237	668
20	1995	Clarkson MBE	Academy of Management Review	148	359
21	1995	Jones TM	Academy of Management Review	120	295
22	1995	Shrivastava P	Strategic Management Journal	55	112
23	1995	Porter ME	Harvard Business Review	165	448
24	1995	Gladwin TN	Academy of Management Review	82	157
25	1995	Shrivastava P	Academy of Management Review	90	167
26	1995	Hart SL	Academy of Management Review	175	337
27	1996	Klassen RD	Management Science	92	228
28	1997	Griffin JJ	Business & Society	123	N/A
29	1997	Hart SL	Harvard Business Review	55	136
30	1997	Brown TJ	Journal of Marketing	98	237
31	1997	Waddock SA	Strategic Management Journal	204	295
32	1997	Russo MV	Academy of Management Journal	170	347
33	1997	Turban DB	Academy of Management Journal	84	161
34	1997	Mitchell RK	Academy of Management Review	194	624
35	1998	Sharma S	Strategic Management Journal	104	186
36	1999	Carroll AB	Business & Society	147	N/A
37	1999	Henriques I	Academy of Management Journal	61	112
38	1999	Hoffman AJ	Academy of Management Journal	58	225
39	1999	Agle BR	Academy of Management Journal	68	161
40	2000	McWilliams A	Academy of Management Journal	120	158
41	2000	Christman P	Academy of Management Journal	82	162
42	2000	Sharma S	Academy of Management Journal	55	142
43	2000	Bansal P	Academy of Management Journal	89	161
44	2001	McWilliams A	Academy of Management Review	170	246
45	2001	Hillman AJ	Strategic Management Journal	113	184
46	2001	Sen S	Journal of Marketing Research	111	193
47	2002	Maignan I	Journal of International Business Studies	68	93
48	2003	Orlitzky M	Organization Studies	158	259
49	2003	Margolis JD	Administrative Science Quarterly	150	243
50	2004	Garriga E	Journal of Business Ethics	82	110
51	2005	Matten D	Academy of Management Review	64	94
52	2006	McWilliams A	Journal of Management Studies	67	84
53	2006	Porter ME	Harvard Business Review	87	141

Records are sorted by year of publication.

For purposes of clarity, only the first author on each publication is listed.

Local Citation Score (LCS): shows the count of citations to each publication within the collection.

Global Citation Score (GCS): shows the count of citations to each publication within the *Web of Science*.For publications not indexed by the *Web of Science*, a GCS count is not available.

Stakeholder Approach. Freeman traced the emergence of the actual word “stakeholder” within the management literature further back to an internal memorandum from the Stanford Research Institute in 1963. The book advanced the notion that firms need to consider their stakeholders as an instrumental part of their strategic decision-making, including any group or individual who can affect, or is affected by, the achievement of firm objectives. Freeman argued that companies needed to understand their relationships to non-traditional groups such as government departments, foreign competition, environmental and consumer advocates and special interest groups in order to develop theories and strategies on how to deal with these groups. Subsequent

publications expanded on the work by Freeman (1984) and gave rise to a stream of research on stakeholder theory, considering the role which stakeholders play for firms, their different demands, and impacts of stakeholder management on firm financial performance. Publications within this genealogy sought to devise methods to systematically identify, evaluate and assess stakeholders, and to strategically manage relationships with them.

In contrast to the shareholder approach (Friedman, 1970) which emphasized the need for organizations to produce financial returns for shareholders, the stakeholder approach sought to broaden the concept of strategic management beyond its traditional economic roots (see also Freeman and McVea, 2001). The stakeholder

Table 4

Top 10 highly cited references by papers in the citation network outside or peripheral to the corporate sustainability field.

Year	Author (first)	Journal/publication details	# referenced
1991	Barney J	Journal of Management	147
1983	Dimaggio PJ	American Sociological Review	110
1996	Suchman MC	Academy of Management Review	96
1978	Pfeffer J	The External Control of Organizations	95
1989	Eisenhardt KM	Academy of Management Review	90
1977	Meyer JW	American Journal of Sociology	86
1990	Fombrun C	Academy of Management Journal	83
1980	Porter ME	Competitive Strategy	83
1976	Jensen MC	Journal of Financial Economics	74
1991	Oliver C	Strategic Responses to Institutional Processes	71

approach has been based on idea that businesses are actors in the social environment and should respond to pressures and demands from their stakeholders in order to attain their overall strategic objectives. The impetus behind the approach was an attempt to provide a framework in response to concerns of managers who faced unprecedented environmental change and turbulence and had to create new opportunities and new strategic directions in the midst of such change. Stakeholder management has therefore been defined as a means to systematically identify, evaluate, assess and manage relationships with stakeholders (Freeman and McVea, 2001).

The importance of the stakeholder concept was revisited in the 1995 Academy of Management Review Special Topic Forum on “Shifting Paradigms: Societal Expectations and Corporate Performance” (Clarkson, 1995; Donaldson and Preston, 1995; Jones, 1995). Some researchers began to criticize Freeman’s (1984) initial stakeholder definition for being too broad and argued that tools are required to determine relevant shareholders (see Mitchell et al., 1997). In an effort to address such shortcomings, Mitchell et al. (1997) suggest that power, legitimacy, and urgency should be used as attributes to measure shareholder importance. Seminal papers that followed empirically investigated various aspects of stakeholder theory, such as stakeholder attributes and salience (Agle et al., 1999); managerial perceptions of stakeholder importance (Henriques and Sadorsky, 1999); and the relationship between stakeholder management and shareholder value (Hillman and Keim, 2001). In other words, this field has moved from providing conceptual underpinnings for stakeholder theory toward examining a set of contingent relationships between key stakeholders and firm.

Corporate social performance versus financial performance (shaded in blue). Another major stream of research (colored in blue) has focused on empirically establishing a link between corporate social performance and economic/financial performance. It can be argued that the early article by Friedman spawned this reaction from the academic community that led to an ongoing interest in finding evidence whether the pursuit of voluntary social action has any positive or negative impacts on stakeholder returns. Early influential contributions in this field of research were made by Alexander and Buchholz (1978) who found no significant relationship between social responsibility (measured by the rankings of businessmen and students) and stock market performance as well as Cochran and Wood (1984) who found a positive association between social and financial performance.

However, numerous other articles were published in this stream from the 1970s onwards, leading to a significant debate on whether or not there are generalizable conclusions on the relationship between corporate social and financial performance (Balabanis et al., 1998; Orlitzky et al., 2003). Margolis and Walsh (2003), in their seminal review paper, summarize developments in this research stream as follows “The now 30-year search for an

association between CSP [corporate social performance] and CFP [corporate financial performance] reflects the enduring quest to find a persuasive business case for social initiatives” (pg. 273). The debates in this genealogy have been shifting to the notion of a contingent-based approach to social performance whereby the argument is put forward that firms are not always benefiting society, but are increasingly pursuing a corporate social responsibility agenda for a broad set of reasons – which may or may not be financially driven.

Greening of management debate (shaded in green). In the mid 1990s, after the publication of the report by the World Commission on Environment and Development (WCED, 1987), an additional research genealogy emerged on corporate greening. Publications belonging to this genealogy (clustered together on the right side of Fig. 2) responded to the environmental movement of the 1970s and early 1980s and suggested that firms need to address highly visible ecological problems and public outcry over negative health and environmental effects of their activities. These publications broadened the sustainability debate by specifically addressing the relationship between firms and the natural environment, and by stressing the importance of interplay not only between economy and society, but between economy, society and the natural environment as a third pillar.

Publications within this body of work were concerned with reconciling environmental and economic performance of firms (Klassen and McLaughlin, 1996; Shrivastava, 1995a; Porter and Van Der Linde, 1995; Walley and Whitehead, 1994). The main aim of this body of work was to provide a new approach to environmental management. In response to the growing public pressure, a number of environmental regulations were introduced. Companies did in most cases little more than to comply with regulations, and often fought or hindered them (Walley and Whitehead, 1994). Firms suddenly faced the need to internally create and finance environmental compliance capabilities, and often simply added ‘the environment’ to existing compliance functions such as health and safety, thus increasing their cost of doing business. Following from this debate, scholars sought to classify companies’ environmental behavior and evaluate their performance. This led to the development of classifications and typologies of environmental strategies and environmental management programs. Researchers conducted various studies which focused on ‘proactive’ environmental strategies and their impact on firm capabilities (e.g., Sharma and Vredenburg, 1998), firm performance (e.g., Russo and Fouts, 1997) and competitive advantage (e.g., Shrivastava, 1995b).

Among the influential publications within greening debate are papers originating from the 1995 Academy of Management Review Special Issue on “Ecologically Sustainable Organizations”. Mapped in Fig. 2 are three of the most highly cited papers in this special issue (Gladwin et al., 1995; Shrivastava, 1995a; Hart, 1995). These papers challenged assumptions about the

firm-environment interrelationship in the traditional strategy and management literature which largely tended to ignore or exclude the natural environment. Shrivastava (1995a) examined the role of firms in achieving ecological (versus financial or economic) sustainability. Gladwin et al. (1995: 891) suggested the adoption of a sustaincentric management paradigm as a way for firms to “actively embrace the full conceptualization of political, civil, social, economic, and cultural human rights”. Hart (1995) challenged the traditional resource-based view of the firm by introducing a natural-resource based view which considers constraints imposed by the biophysical (natural) environment (see also Hart, 1997).

The subsequent 2000 AMJ Special Issue on “Management of Organizations in the Natural Environment” added empirical studies that sought to refine and test models on the uptake of environmental initiatives by firms as well as impacts on cost advantages due to environmental initiatives. Among the most highly cited papers in this Special Issue are Bansal and Roth (2000), Christmann (2000), and Sharma (2000).

Marketing debate (shaded in grey). We identified an additional research stream concerned with marketing aspects which we do not further discuss in this paper as it is primarily focused on customers and buying decisions rather than on the relationship between firms, environment and society. It is addressed here for purposes of completeness. This research stream assesses issues such as socially responsible buying decisions as well as consumer perceptions and responses to the adoption of social or environmental initiatives by firms.

3.2. Recent influential publications

Recent highly cited publications in the corporate sustainability field have attempted to shed new light on the corporate social responsibility debate by revisiting and (re)conceptualizing the corporate social responsibility concept. For instance, McWilliams et al. (2006) outlined different perspectives on corporate social responsibility and proposed an agenda for further theoretical and empirical research on the construct. Garriga and Melé (2004) reviewed the corporate social responsibility field and argued for the development of a new theory on the business and society relationship. Matten and Crane (2005) revisited the corporate social responsibility debate by discussing the concept of corporate citizenship. Overall, these papers argue for even further theoretical clarification and advances of the corporate social responsibility concept.

3.3. Citations to publications outside the main corporate sustainability field

In addition to the citation map, we also identified the most cited references by the publications included in our reference collection, which themselves do not form part of our reference collection and which do not (or not directly) address the topic of corporate sustainability. We conducted this analysis to analyze which literature outside of or peripheral to the core corporate sustainability domain had a significant influence in shaping the corporate sustainability field. These publications are summarized in Table 4 below. Not surprisingly, those publications that were highly cited were associated with dominant theoretical strands in the business and management area, such as institutional theory and the resource based view of the firm. This indicates that one of the core strengths of these four genealogies is their embeddedness in existing theoretical schools of thought. However, this embeddedness points to very little interdisciplinary debate, and might also create difficulties for the absorption of new ideas, problems and perspectives into the management studies field, as we discuss below.

4. Discussion and conclusion

The results of our analysis suggest four key findings. First, the four genealogies which we identified only comprise a relatively narrowly focused research scope. Much of the research in the corporate sustainability field has focused on stakeholder management and debates on the impacts of the uptake of sustainability practices on firm financial performance. The corporate sustainability field is currently largely disconnected from the wider debate of pressing issues such as climate change and resource depletion. For instance, our analysis shows that no article on the topic of climate change is listed among the highly cited or influential publications in the corporate sustainability field. This reflects findings by Patenaude (2011), who analyzed the diffusion of climate change knowledge in the business domain. She concluded that from 1992 to 2008, only seven articles with titles containing climate change or global warming were published in the top-30 peer-reviewed management journals. Similarly, Goodall (2008) concluded that top management journals have failed to respond to the topic of climate change.

While societal concerns about the environment (e.g., the environmental movement) have been reflected – at least to some extent – in the corporate sustainability literature, the topic of firms’ contributions to climate change due to greenhouse gas emissions has received very little attention to date. One possible explanation for this finding could be a slow uptake of the more recent scientific and policy debates within the corporate sustainability field and management field in general. While the current work on corporate sustainability is strongly embedded in existing theoretical perspectives – for instance, in institutional theory, the resource-based view of the firm, and debates on corporate strategy more generally – these existing theoretical domains might pose constraints in studying ‘problem based’ phenomena such as climate change, impacts of firm activity on socio-ecological resilience, or the depletion of ecosystem services. However, this is only one potential explanation. Given that issues of climate change and resource depletion are key issues in the major scientific and international policy arenas, we suggest that the question of why these recent debates have not been incorporated into the corporate sustainability literature warrants further research.

Second, there is very little integration and citation of work in other disciplinary areas. Our analysis demonstrates that the literature mainly refers back to key theories and concepts within the management field. There is little evidence of incorporation or referencing of works from other disciplines, for instance of works in ecology and the natural sciences in general. For instance, concepts such as vulnerability or resilience – defined as the capacity to buffer change, learn and develop – are key concepts in areas such as ecology and environmental research (e.g., Janssen, 2007), but have received little attention in the corporate sustainability field. We suggest that the review process of business and management journals, by focusing on theoretical rigor, shapes the field to examine issues or problems from established and familiar theoretical domains and perspectives. Consequently, it takes time for problem based issues – such as climate change – to become incorporated in the literature. For instance, climate change is currently framed as a strategic issue of business response in the business literature (e.g., Hoffman, 2005), rather than an environmental problem that requires firm-level actions in terms of adaptation and mitigation.

Third, the existing literature has a strong focus on empirically examining the relationship between a firm’s environmental and/or social performance and its financial performance. In this case, issues to do with the impact of climate change on firms and the trade-off between firm-level adaptation and mitigation strategies are slow to emerge. We suggest that there are a number of

interesting questions for further research which could contribute fruitfully to the corporate sustainability field. For example, how do companies go about valuing eco-system services? Are companies that value their eco-systems services delivering financial returns? Addressing these questions places these issues at the cutting edge of management and scientific debates.

It also has to be noted that the corporate sustainability field was significantly shaped by a small number of publications which appeared across two issues of the 1995 *Academy of Management Review* (AMR) and a later issue of the *Academy of Management Journal* (AMJ). These issues include the 1995 AMR Special Topic Forum on “Shifting Paradigms: Societal Expectations and Corporate Performance”, the 1995 AMR Special Issue on “Ecologically Sustainable Organizations”, and the 2000 AMJ Special Issue on “Management of Organizations in the Natural Environment”. The influence of special issue articles can be seen in the citation map in Fig. 2. This finding suggests that the role of special issues in shaping a field needs to be carefully evaluated – while they can encourage studies on new and innovative topics, they might also redirect research efforts to fit a special issue topic and therefore influence the progress of a field (Mowday, 2006).

Finally, there is little consideration of broader scientific literature and issues – particularly around climate change – in the corporate sustainability literature. The main focus in the corporate sustainability field rests on understanding variables and issues that can be subjected to managerial control, such as the uptake of environmental programs or the identification of stakeholder groups. However, we suggest that the corporate sustainability literature and management studies in general have a lot to contribute to interdisciplinary research on topics such as environmental change and uncertainty. New insights could be gleaned from looking at the work on adaptation and resilience to climate impacts. Furthermore, strategic management concepts such as ‘adaptation’ and ‘fit’ may pose new and significant challenges when factored into a climate changing world. We can imagine that debates over financial performance and corporate social responsibility might shift in the near future to look at metrics of carbon intensity and financial performance.

Overall, while our analysis has provided an insight into the emergence of a field and has outlined four distinct genealogies of that field, we believe that there is great potential for the field to innovate. However, in order to do so, the study of corporate sustainability requires a broader consideration of emerging scientific problems, perspectives and theoretical insights. We argue that problem based social science might provide opportunities for new theoretical insights.

Acknowledgement

The authors would like to thank Ms Ann Wallin for her research assistance.

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