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Framing the evolution of the “environmental strategy” concept: Exploring a key construct for the environmental policy agenda

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Abstract

In this paper, we develop a quantitative review of the evolution of the concept of environmental strategy. We show how it has formed the backbone of the development of firm strategy and the natural environment as a research tradition and how consensus regarding it has evolved in the academic community during the stages of its historical evolution. We use co-word analyses to address changes in the structure of its definitional landscape and how it has evolved through the analysis of centrality of its core and periphery keywords. Furthermore, we develop, by the first time, a cluster analysis to identify the main definitional factors behind definitions along the two periods analyzed. Finally, four propositions for future development and a consensual definition of environmental strategy are proposed.

KEYWORDS

bibliometric analysis, co-word analysis, historical evolution, sustainable development, sustainable strategy

1 | INTRODUCTION

The perception of the world and our ways of thinking about it are deeply influenced by the structure of the language we use. In fact, language supplies the foundations for the construction of a common identity shared by the members of a scientific community (Whorf, 1956). This way, academic fields are social constructed entities (Kuhn, 1962) that—using the language as the fundamental medium—provide the basis for a distinctive identity shared by its members. They exist with a certain boundary only if a critical mass of scholars believes that and adopts a shared conception of its essential meaning (Nag et al., 2007). Thus, theory development and consolidation rely on a careful systematic analysis of constructs and concepts,

considering their main features, nature, operationalization, and context. Constructs, as building blocks of theory development, are conceptual abstractions of difficult-to-observe and complex phenomena, such as the field of strategic management.

Although there have been significant advances in the analysis and understanding of the strategy concept and there exist a certain tradition in the field of strategic management carrying out both qualitative descriptive comparative analyses of the strategy term (Barney, 1997; Bracker, 1980; Evered, 1983; Grant, 2008), and quantitative and bibliometric analyses (Ramos-Rodríguez & Ruiz-Navarro, 2004; Ronda-Pupo & Guerras-Martín, 2012), this degree of conceptual development has not reached the organizations and natural environment field, which although is strongly based on the theoretical foundations of strategic management still lacks its theoretical consistency and construct clarity thus hindering its future advancement and development. This lack of conceptual clarity reaches the concept of

List of abbreviations: NRBV, Natural Resource-Based View; SSCI, Social Science Citation Index; UN, United Nations.

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environmental strategy and compromises the strategic decisions and choices that firms make to address the environmental challenge, fragmenting the knowledge and undermining the nature and scope of companies' environmental decisions, as we describe in Section 3. In order to fill this research gap, in this paper, we carry out for the first time a quantitative review of the historical evolution of environmental strategy term. This way, a better understanding and development of a common shared language for corporate environmentalism through one of its core concepts—environmental strategy—will facilitate the development of this growing field of research (Durand et al., 2017). Thus, taking as a reference the general objective of avoiding the fragmentation of existing knowledge in this matter, the specific objectives of this paper are (i) to analyze the evolution of scholarly consensus as regards the environmental strategy concept; (ii) to study the evolution of the term “environmental strategy” within the field of corporate environmentalism and the changes that have taken place in its structure throughout the different stages of its historical development and distinguishing core and periphery key terms; (iii) by the first time, to carry out a cluster analysis identifying the existence of different clusters of environmental strategy definitional landscapes over time; and (iv) to offer an integrative definition of environmental strategy that, based on previous analyses, serves to address current and future debates on corporate environmentalism. To reach these objectives, we have carried out a quantitative analysis of a broad set of 95 definitions of environmental strategy over a long period of time (1992–2020) divided into two stages: 1992–2010 and 2011–2020.

Our work contributes to unravel the nuances behind the concept of environmental strategy, and by deepening its theoretical foundations, clarify its meaning. It also contributes to integrate existing knowledge on the subject and to provide a solid basis for its future development.

In doing so, our paper is structured as follows. Thus, firstly, after showing the importance of the research problem that this paper addresses, methodological issues and tools are presented. Secondly, we have deconstructed environmental strategy definitions in order to identify the keywords and families of keywords. Then, using co-word analysis, we have identified the key concepts both for the whole period and for each of the two stages 1992–2010 and 2011–2020. This analysis allows us to extract the essential keywords of the concept of environmental strategy, to measure existing consensus in the scientific community, and its evolution over time. Then, a cluster analysis is carried out to identify several conceptualizations of environmental strategies, each of them with different definitional landscapes and purposes. Finally, in the conclusion section, we offer an integrative definition of environmental strategy and its implications for theory and practice.

2 | ENVIRONMENTAL STRATEGY: SOME IMPORTANT REMARKS

Construct and concept clarity (Editors' comments AMR, 2010) requires the examination of the context in which it has been created,

used, and evolved, to a full understanding of its nature and organizational consequences.

The term environmental strategy reflects the eclectic character of the strategic management field to which it is closely linked. This one derives from its sources and overlaps with other relevant fields, such as economics, sociology, marketing, finance, psychology, and environmental studies (Nag et al., 2007), the field around which our analysis revolves. In this sense, for the environmental concern to be able to respond to some of the main problems of strategic management is necessary a great effort of integration (Durand et al., 2017), definitional consensus (Markides, 2004; Nag et al., 2007), theoretical analysis (Hoskinson et al., 1999; Ramos-Rodríguez & Ruiz-Navarro, 2004) and a deep understanding of the dynamics of the evolution of the environmental strategy concept.

More specifically, the cross-fertilization of environmental studies and strategic management fields of inquiry is decisive for the development of the environmental strategy concept. It derives from the more general studies on corporate social responsibility during the seventies (Carroll, 1979) and eighties of the XX century (Wartick & Cochran, 1985) and gets continuity during the 1990s, with the creation of the Organizations & Natural Environment and Business Strategy and the Environment journals, the Academy of Management's “Organizations and Natural Environment” interest group in 1994, and the publication of two special issues in 1995 and 2000 in leading academic journals about “Ecologically Sustainable Organizations” and “Management of Organizations on the Natural Environment,” respectively. This initial impetus of the organizations and natural environmental field was consolidated with the creation of the Group for Organizations and the Natural Environment (GRONEN) in 2003 and the Alliance for Research on Corporate Sustainability (ARCS) in 2009 and is gaining more and more importance the effects of climate change become more visible and the role of business becomes increasingly necessary (Alvarez et al., 2020).

Thus, from the pioneering contributions pertaining to the new environmental management literature in the early nineties (Hunt & Auster, 1990; Roome, 1992) to the more recent works that emerged in the first and second decades of the XXI century (Murillo-Luna et al., 2008; Nidimoulu et al., 2009), significant contributions have analyzed and developed the concept of environmental strategy, sharing common features but showing also different conceptions of the term over time.

As a result of the above, the environmental strategy of the firm can take different meanings and have different implications. It can be designed to integrate the environmental concern into firms' operations and management decisions, placing the environmental protection at the heart of the company (Judge & Douglas, 1998). It can be also related to the efficient management of firms' environmental resources and capabilities, the deployment of environmental practices aimed to improve the environmental performance of the firm, and the achievement of competitive advantages through innovation (Amores-Salvadó et al., 2014). Literature also suggests that the environmental strategy must be part of the strategy process articulating the environmental response of the firm and improving its environmental

performance (Delmas & Toffel, 2004) and also a significant number of contributions link the environmental strategy of the firm to the concept of environmental proactivity as a means to achieve better performance and to exert its influence in the institutional setting establishing barriers that do not jeopardize its competitive position (Bansal & Roth, 2000; Buysse & Verbeke, 2003).

In addition, the use of the term is closely related to the theoretical framework on which it is developed. In this sense, environmental strategies have been analyzed primarily from two different perspectives or logic, resource based, and institutional (Bansal, 2005). Drawing on the Resource-Based View of the firm (Barney, 1991; Newbert, 2008), the seminal contribution by Hart (1995) is particularly relevant in the previously mentioned cross-fertilization of environmental studies and strategic management fields and in the definition of the environmental strategy concept. He develops the Natural Resource-Based View (NRBV) of the firm that can be considered as the trigger for a fruitful research tradition of new environmental strategies and corporate environmentalism, where companies developing environmental capabilities can discover and take advantage of new green business opportunities and reinvent and reinforce their competitiveness in a sustained way. Also, he points out the development of proactive environmental strategies showing four different stages in the environmental proactive stance, going from end-of-pipe, pollution prevention, product stewardship, to sustainable development.

In parallel with the NRBV, the term environmental strategy has been framed under the Stakeholder and Institutional Theories. Effectively, as Bansal and Roth (2000) or Delmas and Toffel (2004) study, stakeholders, institutional, and regulatory pressures have a significant impact on corporate environmentalism adoption. This way, companies develop environmental strategies in order to fit stakeholders, law, and social-environmental demands to obtain legitimacy and the necessary "license to operate" or to exert their influence in their respective institutional settings (Etzion, 2007).

As Bansal and Gao (2006) remark, both from the NRBV and the Institutional Theory, the deployment of environmental strategies can be aimed to improve the environmental performance of the firm, the realization of specific organizational outcomes, or both, and firms can give priority to one or the other type of outcome. In this sense, the environmental performance can be considered as a by-product of the environmental strategy that leads to competitive advantages or the main aim of the firm, circumstances that will condition in one direction or the other, and the way in which the environmental concern is integrated into the organization (Berchicci & King, 2007).

Therefore, the different meanings, theoretical frameworks and intended outcomes that underlie the term environmental strategy suggest that knowledge of this subject is unclear and highly fragmented and much more effort is needed in order to gain a better understanding of it (Potrich et al., 2019). A quantitative approach based on bibliometric data permits a detailed analysis of the environmental strategy concept and its evolution (Ronda-Pupo & Guerras-Martín, 2012). In this sense, this is the first study in the field of strategic management and the natural environment which reviews the

concept and meaning of environmental strategy from a quantitative perspective, its concept evolution during its historical development, and its consensus level.

3 | TOWARDS THE ADVANCEMENT OF DISCIPLINES: NEW METHODOLOGIES FOR LITERATURE REVIEW IN THE MANAGEMENT AGENDA

The increasing number of works published in the field of strategy and management poses difficulties in keeping a clear track of their evolution and development, keeping research fragmented and far from conclusive (Durand et al., 2017). This has been corroborated in the evaluation of key topics in Management, such as dynamic capabilities (Schilke et al., 2018), trust (Castaldo et al., 2010), or strategy (Ronda-Pupo & Guerras-Martín, 2012). Its current degree of development as an emerging management discipline, jointly with its multidisciplinary approach, and the heterogeneous nature of the topics included, implies a lack of theoretical consistency and construct clarity around them, which impedes its adequate advancement and consolidation (Ronda-Pupo & Guerras-Martín, 2012). In the growing field of strategic management, two techniques can be useful to analyze the essence of key terms and the evolutionary dynamics of the field as a scientific discipline: systematic reviews and bibliometric analyses (Nag et al., 2007).

On one hand, systematic review methodology carries out a replicable approach for collecting, analyzing, and synthesizing the existing literature with clear audit trails about what is and what is not known regarding a research question or set of questions (Rojon et al., 2021). In the field of management research, this methodology is less established, and being applied since the early 2000s. According to these authors, systematic review permits assemble, analyzing, and interpret available discipline knowledge through its comprehensive review, avoiding traditional researcher's bias and subjectivity. Based on their empirical results on this methodology, they conclude that systematic review allows researchers the following advantages: (i) to represent a rigorous, systematic, transparent, and comprehensive approach to literature review; (ii) they synthesized better disparate, fragmented, and complex literature; (iii) future predictions on the field research are most appropriate, and (iv) all in all, the quality of literature review is enhanced. As Le et al. (2020) highlight, this methodology provides effective criticism of the work done and gives support to propose key avenues for empirical and theoretical development of the field.

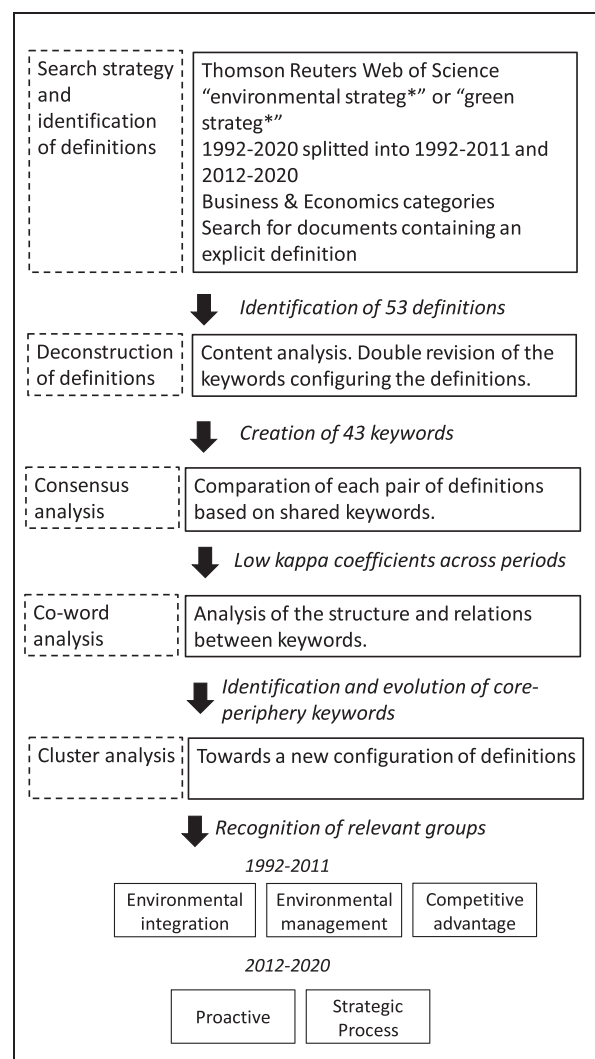
Systematic reviews collect theoretical and/or empirical evidence fitting previously identified eligibility criteria, to answer specific research questions, and analyze data to provide reliable results (Dangelico, 2016). This way, systematic reviews represent instruments for analyzing huge amounts of data regarding the research streams of a specific field of study by mapping all pertinent contributions and elaborating spatial distributions able to highlight the relations between them (Pellegrini et al., 2020).

On the other hand, although the utilization of bibliometric reviews in management is relatively new (Garfield, 1964; Kessler, 1963), the usefulness and relevance of these types of studies have grown because most academic disciplines have evolved rapidly and have generated huge amounts of research outputs and publications. As Vogel and Güttel (2013) highlighted, bibliometric reviews overcome some of the drawbacks of other literature review methods in scientific disciplines wherein a large variety of topics, methods, evidence, and theoretical frameworks come into play. Although in-depth qualitative reviews have clear advantages, they tend to reflect the idiosyncrasies of the reviewers, who usually focus on a very specific topic. Also, the great quantity of literature that currently exists makes bibliometric analyses helpful to delimit the scope, evolution, and trends of an academic discipline, by aggregating a large amount of bibliographic data to provide unbiased analyses and results (Kumar et al., 2021).

This way, we use bibliometric analysis in our research due to it is a scientific approach to studying science, which includes analysis techniques, such as bibliographic coupling, co-citation analysis, and keyword analysis (Wu et al., 2021). It uses quantitative methods to examine the patterns of publication within the field, allowing us to carry out a systematic, transparent, and replicable review on which to conduct an analysis of extant research and to provide a comprehensive knowledge map of the research field (Maseda et al., 2022). Bibliometric analyses are suitable for a better and complementary understanding of emerging research fields than traditional literature review offers, providing a solid foundation for identifying the main aspects of the topic and speculating on new perspectives or directions for future research. According to Tranfield et al. (2003) and Paul and Criado (2020), bibliometric reviews, which rely on big data analytics in the form of bibliometric analysis, are arguably one of the most scientific and sophisticated methods for reviewing the literature. In essence, bibliometric reviews analyze bibliographic data of a scientific corpus (Broadus, 1987), wherein the trends (e.g., patterns and linkages) of constituents and themes in a research domain are established and scrutinized (Cobo et al., 2011; Ramos-Rodríguez & Ruiz-Navarro, 2004). Following Ronda-Pupo and Guerras-Martín (2012), we carry out different bibliometric analyses to identify a consensual definition of the “environmental strategy” concept, as well as to analyze the evolution of the concept over time, identifying different definitional landscapes and prospects for future research in the field.

4 | METHODOLOGY

To achieve the proposed research objectives, we adopted a systematic research methodology that seeks for the differences in the conceptualization of environmental strategies incorporated in the literature between 1992 and 2020. As it has been summarized in Figure 1, we have developed the following steps (Ronda-Pupo & Guerras-Martín, 2012): (1) search strategy to identify the documents and definitions; (2) deconstruction of definitions into keywords by



Source: Own-elaboration

FIGURE 1 Methodological approach schema. Source: Own elaboration

content analysis; (3) consensus analysis; (4) co-word analysis of the surrounding structure of relations between these keywords; and (5) identification of clusters that configure significantly different conceptualizations of environmental strategy. This way, in the conclusion section we can offer an integrative definition of environmental strategy based on our analyses.

4.1 | Search strategy and identification of definitions

As previously stated, our initial unit of analysis is the definition of “environmental strategy” that is explicitly included in previous research. We decided to focus on papers published in recognized

academic journals included in the Thomson-Reuters Social Science Citation Index (SSCI), since it implies a referee process and that the journal has been broadly cited (Annex 3). The SSCI is a reasonable data source broadly used in bibliometric studies that covers academic journals in the social science.

Thus, we used the following terms as search strategy: “environmental strateg*” or “green strateg*”. Regarding the temporal scope, we have restricted the search period to 1992 until 2020. Although previous research in the general field of strategic management used different choice of time frame in their studies, going from 20 years (1980–2000) for Ramos-Rodríguez and Ruiz-Navarro (2004), Nag et al. (2007), or Nerur et al. (2008) to 47 years (1962–2008) in the case of Ronda-Pupo and Guerras-Martín (2012), before 1992 the concept of green strategies was hardly considered. We have split the time frame into two periods of analysis: 1992–2010 and 2011–2020. We have chosen the year 2011 as a turning point for the partition into two periods. In fact, the beginning of the second decade of the XXI century remarks some environmental achievements and claims for more research and business practitioner efforts towards sustainable development. From an academic point of view, in 2011, one of the leading academic journals in the field *Journal of Management* published a special issue on the future of the Resource-Based View, after 20 years of intense research of the strategic management's paradigm, including a key contribution made on the future of NRBV (Hart & Dowell, 2011). Additionally, in 2012, the U.N. Conference on Sustainable Development Rio+20 Earth Summit commemorates the historic advancement of 1992 Rio Earth Summit, the first time in history that head of States and Prime Ministers from 173 nations adhered to the sustainable development agenda. By considering two periods of time, we can take into account differences in the definition between periods (Ramos-Rodríguez & Ruiz-Navarro, 2004; Ronda-Pupo & Guerras-Martín, 2012; Rotolo et al., 2015), while also evaluate the dynamics of the definition across time (Cobo et al., 2011).

Finally, we refined the sample to those publications in the web of science related to Business & Economics categories. These categories were chosen based on the perspective we undertake since we aim to map the evolution and cross-fertilization of the environmental strategy concept in the strategic management field. Papers including “environmental strateg*” or “green strateg*” in their abstract, title, or subject were extracted and included on April 8, 2020. Finally, definitions were selected from articles explicitly including a definition of environmental or green strategy. As a result of the criteria applied, we initially obtained 140 articles.

With this initial sample of papers, we revisited paper by paper in search for an explicit definition of environmental or green strategy. In particular, co-authors searched for the formal definition in two independent rounds, sharing the results and excluding those documents that had no definition. The final sample is 95 articles, each one considered as an independent definition of green strategies. Thus, as Annex 1 shows, the final sample is composed by 42 definitions in the first period (1992–2010), and 53 definitions in the second (2011–2020).

4.2 | Deconstruction of definitions: Content analysis

The second step implies the deconstruction of definitions into terms used by the authors, under the assumption that differences in the conceptualization of environmental strategy are the results of different combinations of keywords. That is, we consider that not only the term but also the specific combination of them into one definition are key aspects for understanding the relationship between the different definitions across time (Schilke et al., 2018).

Thus, we identify significant aspects underlying the definition of environmental strategies, through a systematic content analysis, in which we coded each definition of environmental strategy. In constructing a coding scheme, we followed an iterative approach of moving back and forth between following previous studies (Schilke et al., 2018). First, definitions chosen were allocated independently by different co-authors that coded them into terms. The conversion of definitions into terms allows to identify those elements most relevant in the definitions and to evaluate the degree of similarity between definitions (see Annex 2). Each author independently coded the definitions establishing a list of terms that best fit with the definition. Since this is explorative research, and due to the lack of previous conceptualization revision papers in this topic, there were no predefined words (Carley, 1993). Then, two of the co-authors acting as coders discussed the words identified to reach a consensus (Schilke et al., 2018). Given the large number of terms found and their wide dispersion, and in order to avoid repetition of similar terms and optimize data processing and analyses, we then proceeded to group the terms around a series of keywords. Once the list of terms and their respective keywords were identified, authors revisited all the definitions again separately and, again, meet for a discussion of the words assigned to each keyword and definition. The final number of keywords used in the analysis is 43.

4.3 | Consensus analysis between definitions

The aim of the third stage is to determine the level of consensus between each pair of definitions of environmental strategy in order to evaluate the evolution of its agreement through these 28 years (Ronda-Pupo & Guerras-Martín, 2012). As long as there is a low consensus between existing definitions, further research would be necessary to decompose them into more basic elements or keywords, so the main underlying ideas and meanings would materialize.

To develop consensus analysis, we firstly build a matrix $m \times n$ where m ($m = 1 \dots i$) are the definitions that appear in rows and n ($n = 1 \dots j$) are the keywords that are in the columns. The matrix is dichotomously coded, so cell ij would take value 1 if keyword j is present in the definition i , 0 otherwise. Second, we create a contingency table for each pair of definitions as input for Kappa index calculation (Cohen, 1960). With this matrix, we compared each pair of definitions, in terms of keywords; that is, we measure the degree of consensus between each pair of definitions by the similarity in the keywords that

they use. While there can be used multiple consensus measures, we have followed Ronda-Pupo and Guerras-Martín (2012) and we have employed the Kappa index in Ucinet software (Borgatti et al., 2018).

4.4 | Co-word analysis between keywords

Once the definitions have been coded into keywords, and evaluated the level of consensus between them, we take the keywords as unit of analysis to disentangle the underlying relationships between them. That is, we aim to evaluate the connections between definitions by analyzing the structure and intensity of the relations between the keywords previously identified (Zupic & Čater, 2015). Abundant research in management has undertaken co-word bibliometric analysis, but most of them take the keywords of the paper that provide the authors (Cobo et al., 2011; Ravikumar et al., 2015). In this research we focus just on the keyword of the definitions explicitly included in the journal (Castaldo et al., 2010; Furrer et al., 2008; Ramos-Rodríguez & Ruiz-Navarro, 2004; Ronda-Pupo & Guerras-Martín, 2012; Schilke et al., 2018).

For undertaking this co-word analysis, as previously exposed, we part from the two-mode matrix $m \times n$ where m are the definitions that appear in rows and n are the keywords that are in the columns. We convert this matrix into a one-mode symmetric matrix $n \times n$ where both columns and rows are the keywords and the cells have a different meaning: cell ij would measure the number of times that the keyword i appears in the same definition as the keyword j . This co-occurrence matrix is the basis for the co-word analysis. Nevertheless, we need to undertake a normalization of this co-occurrence between keywords so as to compensate for different occurrence levels among items. That is, we need to consider not only the number of times that two keywords co-occur but also the number of times each keyword appears in the sample. We have used the Jaccard measure of similarity between keywords (Sternitzke & Bergmann, 2009):

$$\text{Jaccard Index} = \frac{\text{Items}_{ij}}{\text{Items}_i + \text{Items}_j - \text{Items}_{ij}},$$

where Items_{ij} represents the co-occurrence of keywords i and j , Items_i is the number of times that the keyword i appears in the database, and Items_j is the number of times that the keyword j appears in the database.

4.5 | Cluster analysis: Towards a new conceptualization

Finally, by the first time in strategic management, and organizations and the environment literature, we go a step further and try to identify statistically significant relationships between the keywords as a way to build statistically different conceptualizations of environmental strategy. Continuing with the normalized matrix $n \times n$ that represents the co-occurrence of the keywords, we test for statistically significant

groups of keywords. In this section, we use Scimat software (Cobo et al., 2011) to facilitate the bibliometric analysis of the keywords, as this software is especially suitable for co-word analysis. As other bibliometric software, Scimat performs calculations based on similarity of the keywords analyzed in the previous section. In particular, and considering the exploratory character of this research (Nag et al., 2007; Zupic & Čater, 2015), we have taken only keywords that appear a minimum of two times since only keywords that appear twice can be considered belonging to a network. In this sense and in consonance with previous exploratory studies on strategic management, we consider reasonable to incorporate as many key words as possible. Based on the normalized matrix $n \times n$, we have statistically search for groups of keywords that tend to appear together in the same definition to create clusters of keywords.

5 | RESULTS AND DISCUSSIONS

5.1 | Deconstruction of definitions

Focusing on the keywords finally grouped according to Annex 2, we have identified a total of 43, appearing 37 in the first period (1992–2010) and 31 in the second one (2011–2020), as Table 1 shows, which represents the frequency distribution of these keywords considering the number of definitions in which each one appears.

Table 1 shows frequency distribution of the 43 keywords created according to the two periods, where 54% of them appear in two to 10 definitions. Also, Table 2 presents the distribution of most popular keywords. For each definition, there were no limits in the number of key words associated, as it can be seen in Table 1.

Descriptive analysis of Table 2 presents the most popular keywords, being the most cited “environmental integration,” followed by “proactive” and “strategy process.” It is interesting to note that these three keywords clearly outperform the rest under analysis showing also a clear upward trend over the time. Effectively, the “environmental integration” in the business strategy formulation and implementation has been the predominant logic of organizations and the natural environment during the last 25 years of research.

The term “proactive” is the second one more frequently mentioned in the environmental strategy definitions over time. The issue of whether the environmental proactiveness is linked to superior firm performance is also a common theme in the environmental management literature (Orsato, 2006; Ortiz-de-Mandojana & Bansal, 2016), and this fact is reflected in the environmental strategy definitions that consistently show this instrumental vision (Ergene et al., 2021).

In addition, the third most frequently mentioned is “strategy process” and its upward trend in the two periods under consideration in the environmental strategy definitions is also an aspect to be highlighted and show scholars' concern about the way in which environmental strategies are articulated within the strategic management processes of the firm (Porter & van der Linde, 1995).

Jointly with that, preliminary descriptive statistics show us two additional sets of keywords that are characterized by having lost or

TABLE 1 Frequency distribution of the keywords

	Total	1992–2010	2011–2020
Appear in one definition	7 (16%)	6 (16%)	3 (10%)
Appears in two definitions	6 (14%)	7 (19%)	10 (32%)
From three to five definitions	11 (26%)	10 (27%)	8 (26%)
From six to 10 definitions	6 (14%)	9 (24%)	3 (10%)
From 11 to 20 definitions	6 (14%)	5 (14%)	6 (19%)
Appears in more than 20 definitions	7 (16%)	0 (0%)	1 (3%)
Total different keywords	43 (100%)	37 (100%)	31 (100%)

TABLE 2 Distribution of most popular keywords

Keyword	Total	%total of existing keywords	1992–2010	% total different keywords (37)	%total of existing keywords	2011–2020	%total of existing keywords
Environmental integration	45	12%	17	46%	9%	28	15%
Proactive	33	9%	14	38%	7%	19	10%
Strategy process	28	7%	9	24%	5%	19	10%
Environmental practices	24	6%	13	35%	7%	11	6%
Environmental protection	24	6%	13	35%	7%	11	6%
Environmental management	23	6%	16	43%	8%	7	4%
Beyond law	21	5%	9	24%	5%	12	6%
Pollution prevention	19	5%	7	19%	4%	12	6%
Competitive advantage	14	4%	9	24%	5%	5	3%
Resources capabilities	14	4%	8	22%	4%	6	3%
Corporate level	13	3%	6	16%	3%	7	4%
Environmental compliance	12	3%	8	22%	4%	4	2%
Green innovation	11	3%	6	16%	3%	5	3%
Stakeholders	10	3%	8	22%	4%	2	1%
Change	8	2%	4	11%	2%	4	2%
Environmental performance	8	2%	3	8%	2%	5	3%
Knowledge management	7	2%	5	14%	3%	2	1%
Performance	7	2%	4	11%	2%	3	2%
Dynamic capabilities	6	2%	2	5%	1%	4	2%
Green product	5	1%	3	8%	2%	2	1%
Total	387		198			189	

gained relevance in the definitional landscape of “environmental strategy.” This way, the first set of keywords gaining importance are, jointly with the three previously mentioned, pollution prevention, dynamic capabilities, environmental performance, beyond the law, and corporate level. On the contrary, the set of keywords with a

decreasing role are environmental management, environmental compliance, stakeholders, environmental practices, environmental protection, performance, and green product. Discussion of these trends will be held jointly with co-word and cluster analyses in the following subsections.

			1992–2010	2011–2020	Total
Global	<0.00–0.40	Low consensus	853 (94%)	1100 (83%)	4021 (90%)
	<0.00	Poor	369 (41%)	566 (43%)	1853 (42%)
	0.00–0.20	Slight	302 (33%)	272 (21%)	1115 (25%)
	0.21–0.40	Fair	182 (20%)	262 (20%)	1053 (24%)
Global	0.41–1.00	High consensus	50 (6%)	226 (17%)	444 (10%)
	0.41–0.60	Moderate	36 (4%)	121 (9%)	287 (6%)
	0.61–0.80	Substantial	14 (2%)	76 (6%)	120 (3%)
	0.81–1.00	Almost perfect	0 (0%)	29 (2%)	37 (1%)
		Total	903 (100%)	1326 (100%)	4465 (100%)

TABLE 3 Results of the calculation of the consensus coefficient (kappa) between each pair of definitions

5.2 | Consensus analysis

Along with keywords' figures that underlies in the definitions, we also consider relevant to evaluate the consensus that exist between the definitions included. Following Cohen (1960), the Kappa coefficient can take values between -1 , very low consensus, and 1 , perfect consensus between each pair of definitions. Table 3 presents the results obtained and the evolution of the level of consensus regarding the concept of environmental strategy, being the results distributed according to different ranges of consensus (Landis & Koch, 1977; Ronda-Pupo & Guerras-Martín, 2012).

As can be appreciated, the level of consensus of environmental strategy definitions is low in global terms in the two stages under analysis. In this sense, the low consensus percentage ranges between 94% (in the first period) and 83% (in the second period). This global low consensus trend is consistent with the fact that the organizations and natural environment research field cannot be considered as mature, and therefore, we can find a weak level of consensus among researchers (Boyd et al., 2005; Ronda-Pupo & Guerras-Martín, 2012). In fact, it shows a common problem in the more general field of strategic management (Durand et al., 2017) as its excessive fragmentation, the lack of rigorous theory building, and the preference of novelty over incremental advancement.

This low consensus trend at global level can be corroborated if we take a closer view at Table 3 and analyze the different layers that compose it. In particular, it is interesting to note that the “poor” layer within the low consensus category is even growing between the two periods analyzed going from 41% in the first stage to 43% in the second while the “slight” level of consensus declines from 33% to 21%. This pattern seems to indicate that the organizations and natural environment research field has not yet found stability around its key terms and concepts. As new perspectives open up the level of consensus declines and confirms the previously noted necessity of undertaking further research to identify the main elements that configure the conceptualization of environmental strategy. Accordingly, the high consensus percentage, although it shows a growing trend over time is still very low in relative terms. Anyway, it could be a sign of richness and vitality of the emerging field of environmental strategy (Durand et al., 2017).

If we compare these results with the consensus level of strategy concept for the period 1962–2008 analyzed by Ronda-Pupo and Guerras-Martín (2012)—low consensus ranges from 97.36% to 99.47% and high consensus from 2.64% to 0.53%—we can assert that a higher level of consensus exist in the field research of “environmental strategy” compared with the most general and inclusive term of “strategy.” Nevertheless, our shorter time period covered (24 vs. 46 years) and the narrower scope of environmental strategy could explain such disparity.

5.3 | Co-word analysis between keywords

Figures 2a,b and 3a,b graphically represent the relationships between the keywords for both periods considered. Each dot represents a keyword and the strength of the connections measure the normalized number of times these keywords appear together in the same definition. One particular aspect to take into consideration is the density, defined as the sum of the ties divided by the number of possible ties—that is, the ratio of all tie strength that is actually present to the number of possible ties (Borgatti et al., 2018). The density tends to be higher if there is a strong internal cohesion between the keywords (Borgatti et al., 2018). Consistent with the results obtained by consensus analysis, Period 1 (1992–2010) and Period 2 (2011–2020) show similar density values of 0.35 and 0.38, respectively (please see the bottom of Figures 2 and 3) showing that the environmental strategy concept is so far not gaining great internal consistency.

The co-word analysis permits to evaluate those keywords that occupy central positions, measured by their degree. The degree of a keyword measures the number of nodes (i.e., keywords) adjacent to each one, so in this case means the number of other keywords in which the node coincides in the definitions (Borgatti et al., 2018). Degree is considered a measure of centrality as it refers to a keyword position in the entire pattern of ties and indicates from a more qualitative perspective the extent to which the keyword is proximate to the center of action, being involved in many significant ties (Díez-Vial & Montoro-Sánchez, 2017; Freeman, 1979).

In order to identify those keywords that are more central in each period, we calculated the core-periphery structure of the keyword network for each period (Borgatti et al., 2018). In particular, we have

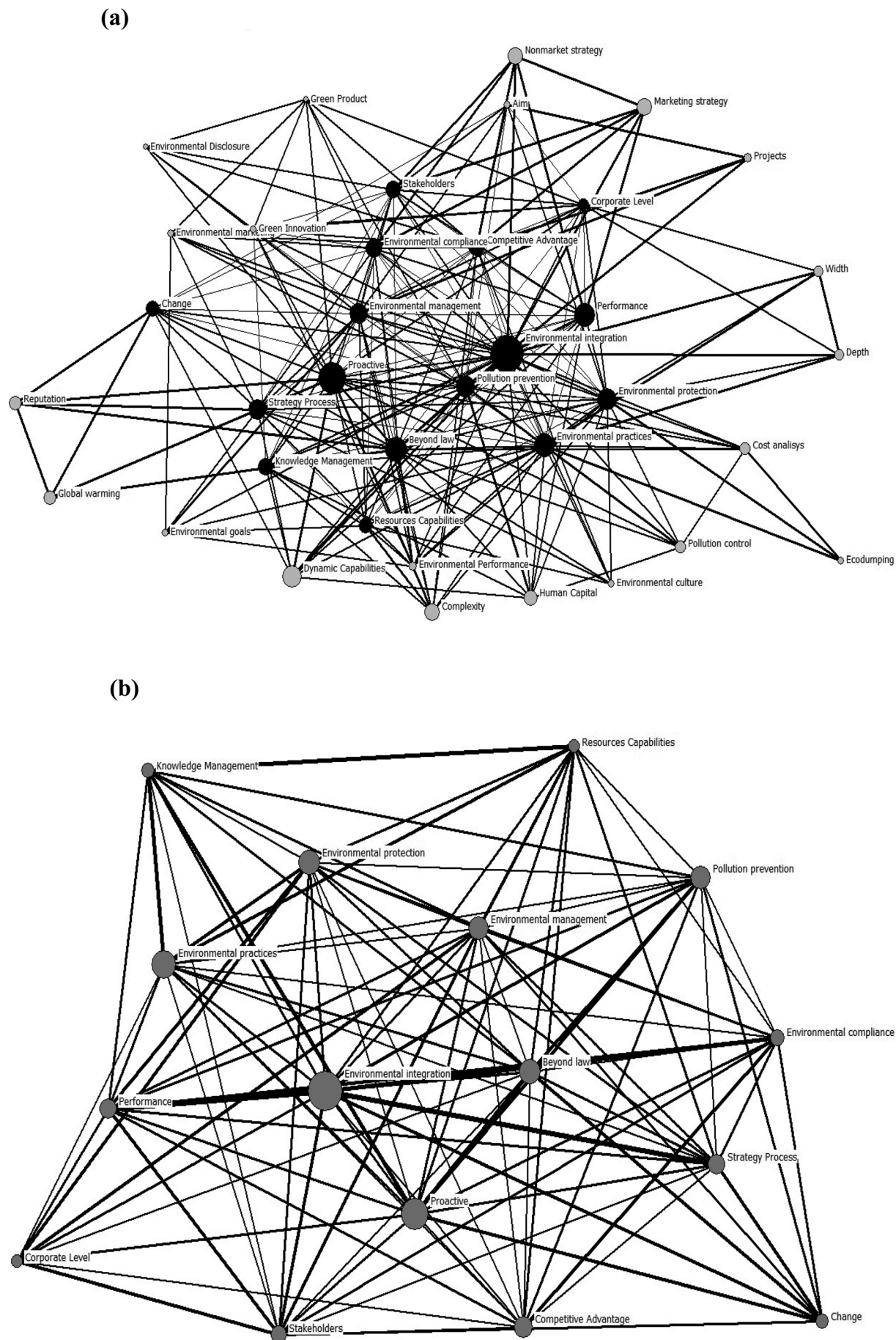


FIGURE 2 (a) Relationships between keywords 1992–2010. (b) Relationships between core keywords: 1999–2010

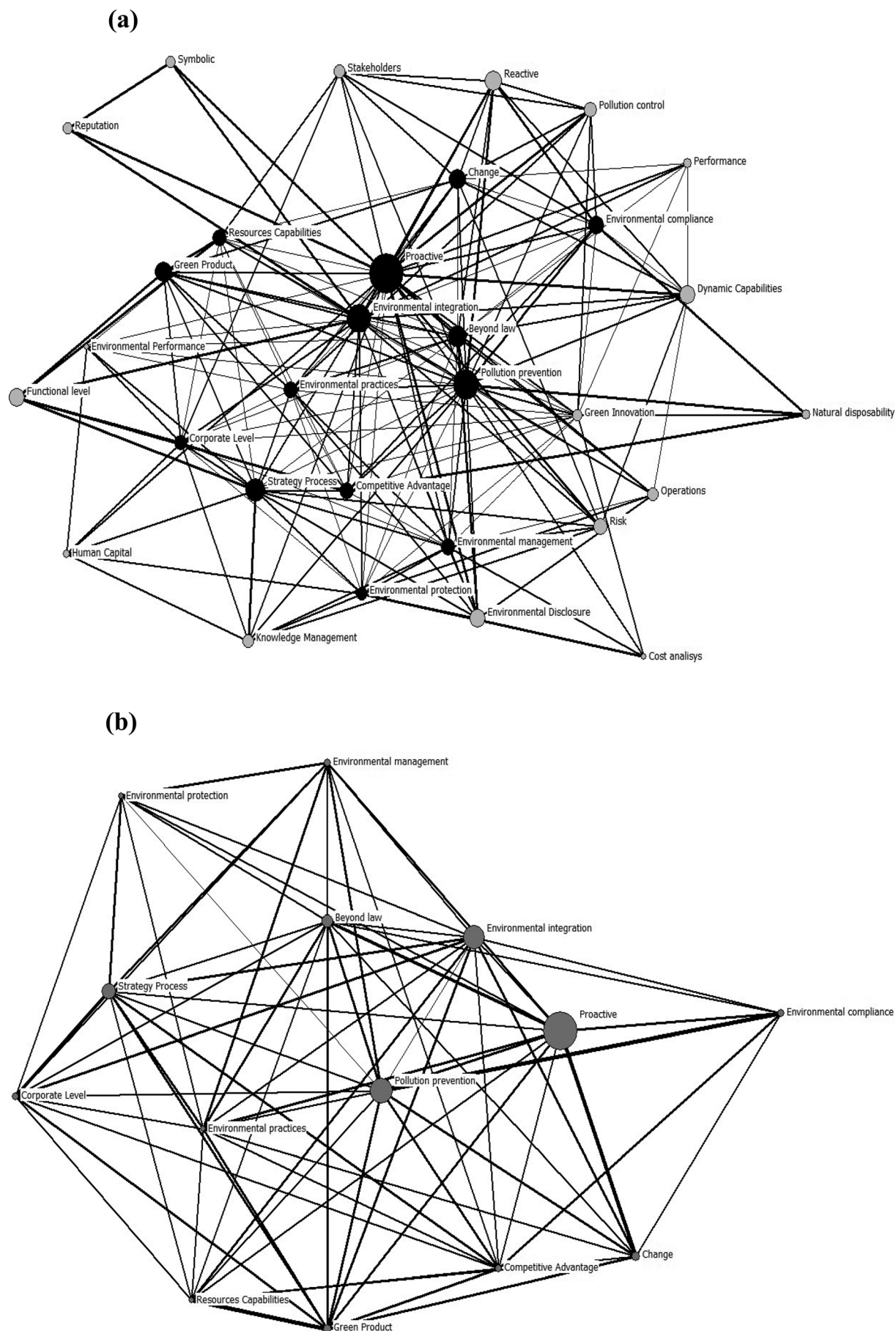


FIGURE 3 (a) Relationships between keywords 2011–2020. (b) Relationships between core keywords: 2011–2020

used Ucinet software to identify core-periphery structures between the keywords. Core-periphery analysis allows the identification of a cohesive subgroup of core terms and a set of peripheral terms that are loosely interconnected with the core.

Figures 2a and 3a represents co-word results: The size of the node represents these core-periphery structures. The closeness to the core has been normalized so that the sum of squares of all the key-word is one. This way, black dots represent the core and gray ones belong to the periphery, and the strength of the lines represents the number of times that each pair of keywords appear in the same definition, normalized with the inclusion index. Also, Figures 2b and 3b include the detail of the core structure.

This core-periphery analysis during the first period (1992–2010) shows the following core key words: environmental integration as the most central keyword, followed by proactive, environmental management, environmental practices, environmental protection, beyond law, strategy process, recourses and capabilities, change, environmental compliance, competitive advantage, stakeholders, corporate level, and performance. Jointly with them, main periphery key words are the following ones: dynamic capabilities, nonmarket strategy, marketing strategy, reputation, environmental performance, global warming, complexity, human capital, pollution control, environmental disclosure, and environmental goals.

In this vein, it is worth mentioning several specific issues. First, the recent work of Nyberg and Wright (2021) claims for a climate proofed management research to leave the different forms of climate change denial commonly practiced in the field research of management and the natural environment. As they point out, in our research, climate change/emergency only appears as a periphery concept of “global warming,” which denotes a lack of “emergency” in considering the effect and consequences of climate change. Second, it is remarkable that according to core-periphery analyses carried out, the general concept of performance, focused on economic and financial implications of environmental strategy is considered core, while environmental performance is marginal. This shows the above-mentioned importance of the business case over the environmental concerns, or the business logic of profit maximization (Sharma, 2021) in the field of organizations and the environment in the early stages. Nevertheless, descriptive analysis from Table 2 shows the decreasing frequency appearance of performance as opposed to the increasing frequency of environmental performance in environmental strategy definition. Both issues fit with the main criticism that Ergene et al. (2021) highlight, showing the (un)sustainability of organization studies, through the “greening the business” logic where “business and the natural environment” and “business sustainability” research traditions continuing with the “business-as-usual” logic: profit-motives, short-term returns of environmental investments (Ortiz-de-Mandojana & Bansal, 2016), and the prioritization of shareholder and manager interests—for instance, the well-known Porter’s hypothesis “does it pay to be green?”—failing in paying attention to the root issues of climate emergency that the current Anthropocene era requires.

Also, it is worth seeing the evolution of keywords environmental management and stakeholders. Descriptive results from Table 2 show that these two terms have lost quantitative importance in environmental strategy definitions over the years. Thus, the term environmental management was among the most frequently cited terms in the first period under analysis (1992–2010) before losing some of its initial momenta. This seems to reflect that in the early stages when the environmental concern began to gain visibility, the academic literature and so the definitions of environmental strategies were focused on how to manage the “tactic” aspects of the environmental concern of the firm (Christmann, 2000) as well as voluntary environmental management certifications (Bansal & Hunter, 2003; Martín-de Castro et al., 2016). Subsequently, in a later stage of development, the initial interest in these tactic aspects shifted to give way to the strategic aspects of the environmental concern which caused the term “environmental management” to lose some of its initial impetus. Nonetheless, core-periphery analysis from Figure 2 shows that environmental management is maintained as a core concept.

A more marked decline path is shown by the keyword stakeholders. Descriptive statistics show a decreasing frequency that is corroborated by the core-periphery analysis, where the term loses its core character as time pass. Indeed, the keyword stakeholders played an important role in defining the concept of environmental strategy in the early days of the organizations, and natural environmental literature subsequently lose much of its initial strength. As the Institutional Theory postulates, in the early stages of corporate environmentalism, environmental strategies constituted an effective way to canalize and provide an appropriate environmental response to regulatory and stakeholders’ pressures (Delmas & Toffel, 2004; Sharma & Vredenburg, 1998) and as the discipline has advanced, the concept of environmental proactivity—and not so much the concept of environmental response—has been gaining prominence in environmental strategy definitions (Potrich et al., 2019). Nevertheless, as Barney (2018) or Shah and Soomro (2021) point out, future strategic management research agenda should be benefited from incorporating an enriched stakeholders’ perspective, but in a new way. He proposes, in line with Ergene et al. (2021) the redefinition of firm performance and firm’s incentives beyond the shareholders’ ones. In this sense, beyond market stakeholders, such as NGOs, governments, communities, or the natural environment (Martín-de Castro et al., 2020), should be considered to delineate proactive corporate environmentalism, a firm’s incentives, and behavior. New proposals, such as Gibson et al. (2021), call for giving a voice in business to quiet stakeholders such as the natural environment and future generations.

In the core-periphery analysis carried out for the second period (2011–2020), as Figure 3a,b and Table 4 show, we find several core keywords, such as proactive, pollution prevention, environmental integration, resources and capabilities, green product, beyond law, environmental compliance, environmental management, change, corporate level, and environmental protection. Main periphery key words are the following ones: knowledge management, dynamic

TABLE 4 Evolution of the position of the key terms comprising the definition of environmental strategy

	Period	
	1992–2010 Keyword (centrality density)	2011–2020 Keyword (centrality density)
Core	Beyond law (9.65;0.22)	Beyond law (7.47;0.24)
	Change (5.75;0.34)	Change (6.33;0.32)
	Competitive Advantage (8.79;0.21)	Competitive Advantage (5.8;0.32)
	Corporate Level (5.17;0.24)	Corporate Level (5.99;0.24)
	Environmental compliance (6.93;0.24)	Environmental compliance (6.25;0.38)
	Environmental integration (15.2;0.18)	Environmental integration (11.51;0.34)
	Environmental management (9.15;0.2)	Environmental management (5.79;0.2)
	Environmental practices (10.63;0.2)	Environmental practices (5.44;0.27)
	Environmental protection (9.87;0.2)	Environmental protection (5.66;0.29)
	Knowledge Management (5.92;0.32)	Green Product (6.5;0.36)
	Performance (8.08;0.28)	Pollution prevention (11.79;0.2)
	Pollution prevention (9.22;0.22)	Proactive (16.29;0.17)
	Proactive (12.4;0.2)	Resources Capabilities (5.48;0.32)
	Resources Capabilities (5.74;0.27)	Strategy Process (8.93;0.25)
	Stakeholders (6.99;0.25)	
	Strategy Process (7.92;0.23)	
Periphery	Aim (3.75;0.27)	Cost analysis (2.5;0.32)
	Complexity (5.67;0.33)	Dynamic Capabilities (5.08;0.41)
	Cost analysis (4.5;0.38)	Environmental Disclosure (5.5;0.31)
	Depth (4;0.52)	Environmental Performance (2.5;0.28)
	Dynamic Capabilities (6.5;0.37)	Functional level (6;0.49)
	Ecodumping (3;0.49)	Green Innovation (4.48;0.25)
	Environmental culture (3;0.31)	Human Capital (3;0.35)
	Environmental Disclosure (3;0.28)	Knowledge Management (4.5;0.34)
	Environmental goals (3;0.31)	Natural disposability (3.5;0.49)
	Environmental marketing (3.67;0.25)	Operations (4;0.44)
	Environmental Performance (3.67;0.28)	Performance (2.67;0.45)
	Global warming (5;0.69)	Pollution control (4.5;0.44)
	Green Innovation (4.03;0.24)	Reactive (6;0.43)
	Green Product (3.5;0.25)	Reputation (3;0.79)
	Human Capital (5;0.42)	Risk (4.5;0.4)
	Marketing strategy (6;0.64)	Stakeholders (4;0.42)
	Nonmarket strategy (6;0.64)	Symbolic (3;0.79)
	Pollution control (4;0.43)	
	Projects (4;0.3)	
	Reputation (5;0.69)	
	Width (4;0.52)	

capabilities, performance, green innovation, human capital, reactive, environmental disclosure, stakeholders, symbolic, reputation, pollution control, and so on.

Taking into account the evolution of the centrality of keywords across periods, we can highlight four main trends:

1. Core terms whose degree of centrality was maintained during the two stages: environmental integration, proactive, resources and capabilities, beyond law, environmental management and compliance, or competitive advantage, among others. This way, centrality analysis corroborates current critics on the “business-as-usual”

(Alvarez et al., 2020; Barney, 2018; Ergene et al., 2021; Nyberg & Wright, 2021) research tradition which has dominated the field research of environmental strategies during the last 25 years: predominance of economic-competitive purposes of corporate environmentalism, integration of environmental concerns in the traditional business logic, and the primacy of shareholders and management incentives.

This first trend highlights the relevance of the natural environment over time and the increasing need for more consideration in the definition of corporate and business strategy. The traditional business strategy concept, containing terms such as competitive advantage and resources and capabilities, has been separated from environmental strategy, highlighting the necessity of a real environmental integration (Shah & Soomro, 2021) that goes beyond just law compliance to embrace a proactive strategic positioning of the firm. As our results suggest, these two visions are increasingly converging, and the environmental strategy is much more embedded in the business strategy.

Core terms in the first period that were considered periphery in the second: performance, knowledge management, or stakeholders. As previously mentioned, once the well-known Porter's hypothesis was accepted by this community, the relative importance of performance decreased. In the same way, the course of the term stakeholders—their pressures for greening the business—is in accordance with the evolution of this field research and the relative decrease of importance of regulatory and stakeholders' pressures towards proactive corporate environmentalism. Nevertheless, as Barney (2018) claim, Resource-Based View, as main theoretical framework of strategy should integrate a wider perspective of stakeholders in designing firm's incentives, behavior, and profit-generation logic.

2. Periphery terms in the first period that move towards core ones in the second. This is the case of green product. Effectively, environmental strategies based on green product and product stewardship that were theoretically conceived in the early stages of corporate environmentalism (Hart, 1995; Rennings et al., 2006) have been gaining predominance (Albino et al., 2009; Nidimoulu et al., 2009) boosted by current ongoing debates on circular economy, value chain, or industrial symbiosis (Bansal & McKnight, 2009; Chertow & Ehrenfeld, 2012).
3. New emerging concepts in the last period analyzed. This is the case of symbolic and risk. Thus, during the last years, we have assisted to many environmental scandals and different forms of greenwashing (Bowen & Aragón-Correa, 2014; Ramus & Montiel, 2005) which has increased customers, investors, and general stakeholders' skepticism (Delmas & Burbano, 2011) towards corporate environmentalism. In parallel, one of the more promising areas of future research points to the environmental and reputational risk associated with environmental issues (Martín-de Castro et al., 2020; Sharfman & Fernando, 2008; Truong et al., 2021) as key factors to be taken into account in defining companies' environmental strategies.

5.4 | Cluster analysis: In search for relevant groups of keywords

The capacity to group together the keywords of the network is also an additional aspect to take into consideration since it allows the identification of definitional landscapes clusters through statistically significant relationships between the keywords. By the first time in the strategic management and organizations and the natural environment literature we have carried out a cluster analysis of the environmental strategy concept throughout the periods 1992–2010 (Figure 4) and 2011–2020 (Figure 5), respectively.

Our results show significant differences between the periods under analysis. These differences reveal how the term environmental strategy is evolving and creating different theoretical ecosystems or areas of influence over time. While co-word analysis allowed us to identify the role that each term has in the conceptualization of environmental strategies, the cluster analysis splits them into internally related groups. By undertaking this sequence of analyses, we can integrate the relevance of each term across time but also considering how they tend to appear with the same alter terms in the definitions.

This way, for the first period, 1992–2010, we have identified three clusters, represented in Figure 4. The size of each circle is proportional to the number of definitions in which the keyword appears, and the strength of the relationship between each pair of definitions. In this period, the first cluster, named “Environmental Integration” is composed by eight keywords. The second cluster of the same period is called “Environmental Management,” configured by nine keywords, and the third cluster called “Competitive Advantage” is configured by three keywords.

A more detailed analysis of the different clusters in the first period reveals the following core definitional issues about environmental strategy:

1. Environmental Integration cluster: In line with Judge and Douglas (1998), the idea of environmental integration is central to the definition of environmental strategy and is fundamental to face the environmental change. The integration of multi-stakeholder perceptions can be catalogued as a strategic attribute (Etzion, 2007) and how and at what level the environmental factor must be integrated into firm strategy is a recurring theme in the environmental integration cluster. Environmental strategy definitions in this cluster take into consideration that the level of integration of the environmental factor into the firm influences its environmental proactivity and also its performance (Russo & Fouts, 1997). Additionally, and considering Institutional Theory postulates (Bansal & Clelland, 2004), regulatory and stakeholders' pressures have been one of the main drivers of environmental proactivity in firms (Delmas & Toffel, 2004) and also key criteria for determining the level of integration of the environmental factor within the company. Jointly with them, environmental proactivity (Aragón-Correa, 1998; Aragón-Correa & Sharma, 2003) and pollution prevention strategic

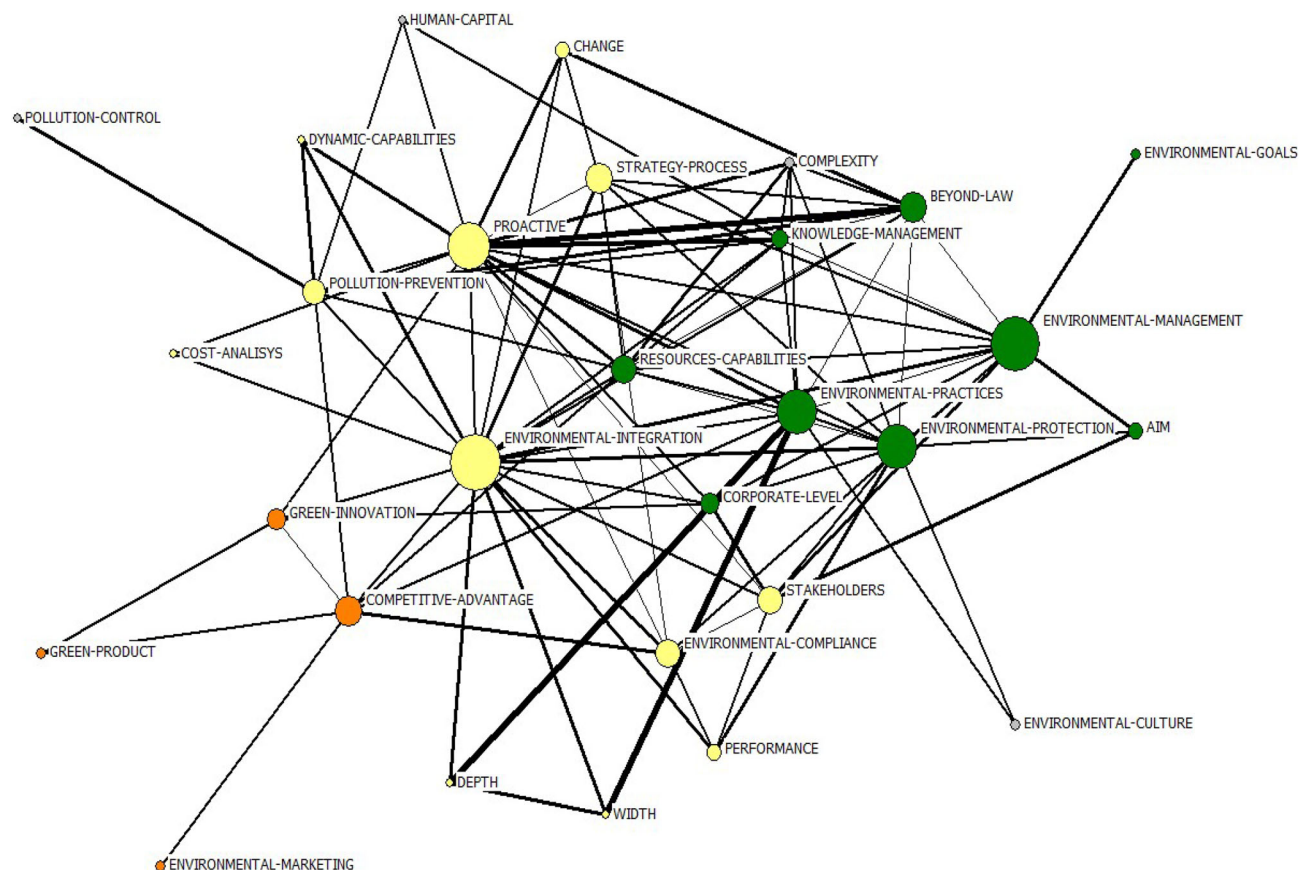


FIGURE 4 Cluster analysis for “environmental strategy,” period 1992–2010

positioning (Hart, 1995) gained momentum during this period due to customers and citizens environmental awareness and the development of more advanced environmental technology.

2. Environmental Management Cluster: In turn, other key argument frequently used in the environmental strategy definitions during this period refers to the corporate environmental management of firms' resources and capabilities, knowledge (Sharma & Vredenburg, 1998), and environmental practices (Christmann, 2000) to go beyond the law with the main aim of improving the environmental protection and reach environmental goals.
3. Competitive Advantage Cluster: And finally, the competitive advantage cluster encompasses those definitions of environmental strategy in which the strategic attribute of environmental innovation linked to the development of environmentally sustainable products (Etzion, 2007) is made more explicit as a mean to achieve firms' competitive advantage (Christmann, 2000). This cluster has been greatly influenced by the seminal paper of Porter and van der Linde (1995) on green and competitive.

For the second period, 2011–2020, we have identified two clusters, represented in Figure 5. The first cluster, named “Environmental integration,” is composed by 11 keywords while the second cluster called “Proactive” is configured by nine keywords. A more detailed

analysis of the different clusters in the second period reveals the following:

1. Environmental Integration Cluster: Environmental strategy definitions in this cluster have the environmental integration and the strategy process as their key points. The scholars that have tried to define the concept of environmental strategy from this perspective seek to improve corporate environmental performance and frame the environmental integration and the environmental management of resources and capabilities (for instance Knowledge and innovation) within the strategic management process (Judge & Douglas, 1998).
2. Proactive Cluster: In turn, the definitions of environmental strategy included in the proactive cluster do not pay as much attention to the environmental performance and are instead more focused on improving firm performance through proactive environmental management (Guilley et al., 2000; Shah & Soomro, 2021). With this purpose, environmental practices aimed to pollution prevention that go beyond environmental compliance and pollution control are frequently cited in environmental strategy definitions.

As Figure 6 shows, by way of summary and from a global point of view it can be appreciated that the cluster landscape has evolved and that some concepts that in the first period used to be complementary

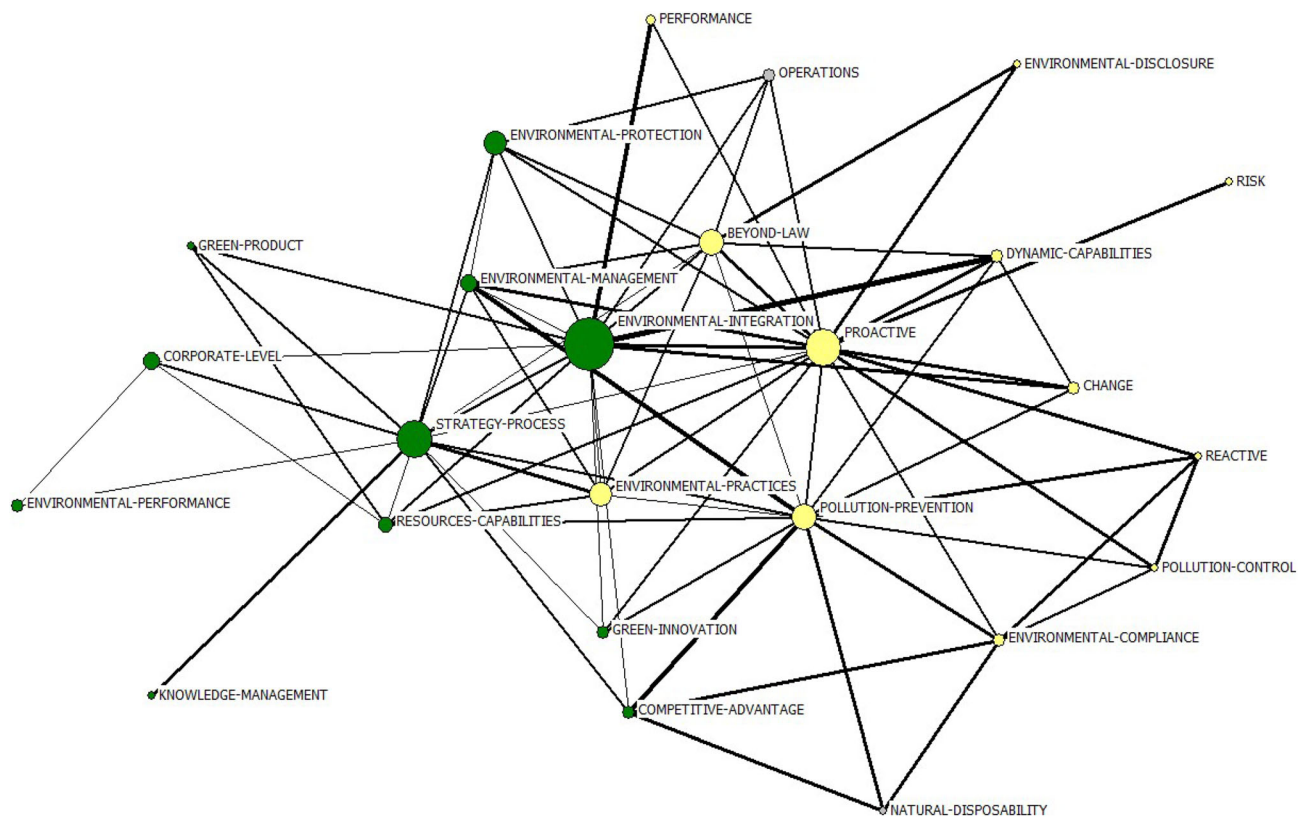


FIGURE 5 Cluster analysis for “environmental strategy,” period 2011–2020

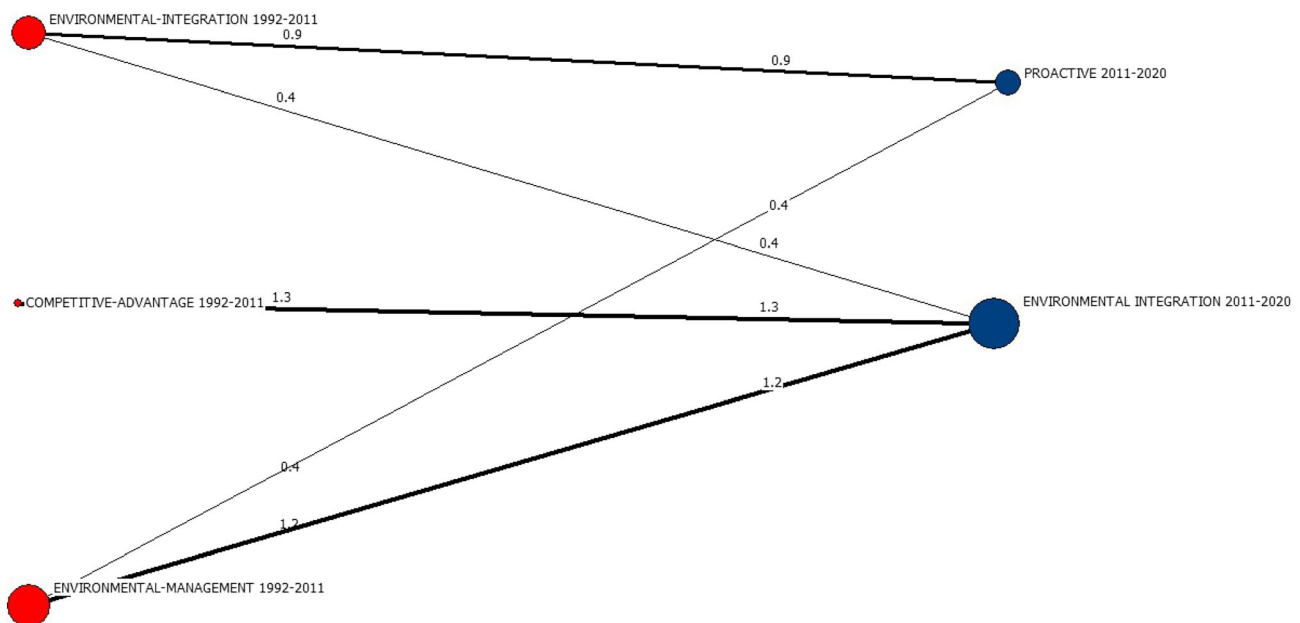


FIGURE 6 Evolution of the clusters considering the number of definitions

in the definitions of environmental strategy, in the second period become different ways of understanding environmental strategies with different implications. This is the case of the concepts of environmental integration and proactiveness. While in the first period these two concepts were used concurrently in the environmental

strategy definitions and linked to firm performance, in the second period, they take separate paths with the environmental integration term constituting its own cluster connected to the environmental performance and the proactive concept more closely linked to firm performance. This suggests that while the proactive cluster represents a

more instrumental view of the environmental strategy, where the environmental factor is considered as a by-product (Berchicci & King, 2007) and firm performance is the supreme value, in the environmental integration cluster, the environmental performance is an end in itself with its own entity. A similar analysis can be made of the concept of innovation, which in the first period showed a great capacity for grouping within the competitive advantage cluster, while in the second period, it is linked to the cluster strategy process.

6 | CONCLUDING REMARKS

6.1 | Conclusions and prospects for future research

The perception of the world and our ways of thinking about it are deeply influenced by the structure of language we use. The organization and natural environment field, which is strongly based on the theoretical foundations of strategic management still lacks its theoretical consistency and construct clarity, thus hindering its future development. In this research, and from a general perspective focused on avoiding the fragmentation of existing knowledge in this matter, we have explored the definitional landscape of the concept “environmental strategy,” by developing, by the first time, a quantitative review of the historical evolution of the term, which, in turn, has allowed us to achieve the specific objectives proposed at the beginning of the work as we shall now describe. This way, a better understanding and development of environmental strategy will facilitate the development of this growing field of research (Durand et al., 2017).

First, we have analyzed the evolution of the scholarly consensus around the environmental strategy term, indicating that although low consensus is predominant (90% versus 10% of high consensus), we appreciate a clear improving pathway, showing that high consensus has increased from 6% in 1992–2010 to 17% in 2011–2020, while low consensus decreased from 94% to 83% along periods considered. In comparison to more general studies consensus on strategy (Rondapupo & Guerras-Martín, 2012), we obtained better results, although the narrower scope of environmental strategy, jointly with a shorter period of analysis could explain this higher consensus outputs.

Second, through a co-word analysis, we have studied the evolution of the term “environmental strategy” and the changes that have taken place in its structure throughout the different stages of its historical development. Figures 2a and 3a show centrality analysis and core and periphery keywords in each period. This way, analyzing its historical evolution, we have detected several tendencies: (a) core terms whose centrality has been maintained, such as those coming from the strategy tradition as the RBV (Aragón-Correa, 1998): resources and capabilities and competitive advantage (Christmann, 2000); Institutional Theory (Bansal & Roth, 2000): beyond law or environmental compliance; with those more specific from environmental studies, such as environmental integration or environmental management, among others; (b) terms that were core ones in the first period, but lost their relevance in the second, such as

performance, knowledge management, or stakeholders, in coherence with the reduced significance of stakeholders' pressures to adopt environmental commitment in the early stages of corporate environmentalism (Delmas & Toffel, 2004), or the tested question “does it pay to be green?” (Albertini, 2013); (c) emerging core terms such as green product that reflects the growing importance given to green and eco-innovations in the field (Albino et al., 2009; Nidimoulu et al., 2009) and the ongoing debates on circular economy, value chain, and industrial symbiosis (Bansal & McKnight, 2009; Chertow & Ehrenfeld, 2012). And finally, (d) two significant core terms such as symbolic and risk that appear in the last period considered showing how the relevance of the environmental scandals and the generalized phenomenon of greenwashing (Bowen & Aragón-Correa, 2014; Delmas & Burbano, 2011) have increased stakeholders' skepticism, not only customers but also investors, suppliers, institutions, and so on, about corporate environmentalism and the necessity of environmental risk assessment.

Third, we have carried out by the first time a cluster analysis identifying the existence of different definitional clusters of environmental strategy over time. As Figures 4–6 show, in a more fine-grained analysis, definitional clusters found in both periods reveal some interesting definitional landscapes. This way, during the first period (1992–2011), three main ideas conditioned the definition of environmental strategies: environmental integration, environmental management, and competitive advantage, revealing the first steps of change from a many times residual and/or far from the company's strategy heart and mission concept of corporate social responsibility towards the inclusion of environmental concern inside core's company strategy concept, under the continuous logic of “greening the business” (Ergene et al., 2021). Indeed, first steps in corporate environmentalism meant important changes in management styles and systems, many times through the implementation of voluntary environmental systems (Darnall & Edwards, 2006) and certifications (Bansal & Hunter, 2003). This logic of “greening the business” typical of this first period included the core question “does it pay to be green?” or “under what conditions does it pay?” trying to test the economic benefits associated to corporate environmentalism (Albertini, 2013; Christmann, 2000; Porter & van der Linde, 1995).

The cluster analysis carried out during the second period (2011–2020) sheds light in the following two definitional aspects: environmental integration and environmental proactivity. The first one highlights the importance of the environmental issues integration and the environmental management of resources and capabilities, as well as the definition of environmental performance in the strategy process as a whole. Effectively, as Sharma (2021) highlights, future studies on the firm and the natural environment should pass from environmental strategies to more concrete environmental performance metrics to design and implement the most advanced environmental strategies to manage the current climate emergency (Independent Group of Scientists appointed by the Secretary-General, 2019).

The second cluster of the second period is focused on the concept of proactivity and reveals the existence of a vigorous instrumental view of corporate environmentalism where the environmental and

pollution prevention practices that go beyond law requirements and deal with the unavoidable environmental change are primarily aimed at improving firm performance.

From the three main analyses carried out, we can develop some propositions for future research on environmental strategy. These are a new stakeholder logic, a real integration of environmental and business strategy, and a new environmental-rent logic generation. Finally, emerging keywords from the co-word analysis, such as symbolic or risk can be considered emerging issues for future research on environmental strategy.

Thus, the first proposition claims for a new role of stakeholders in environmental strategy. As we have highlighted, the keyword stakeholder has lost its importance as time passed, showing the initial emphasis given to regulatory and stakeholders' pressures to adopt corporate environmental postulates (Bansal & Roth, 2000; Delmas & Toffel, 2004). Nevertheless, a new role of the firm's stakeholders through their active engagement in formulating and implementing environmental strategy is needed, as Barney (2018), Sharma (2021), Bansal (2019), or Shah and Soomro (2021) call for. In this sense, the postulates of a "New Stakeholder Theory" (McGahan, 2021) with their active role in defining and implementing a firm's environmental strategy, its rent-generation logic (Barney, 2018), including all types of internal and external stakeholders, both market and beyond the market, such as communities (Gibson et al., 2021), the natural environment, and even the future generations, fit with sustainable development and environmental strategy concepts. This way, we formulate the first proposition:

P1. Environmental strategy should incorporate a new and wider stakeholder perspective, passing from stakeholders' pressures to stakeholders' engagement, avoiding the primacy of shareholders and managers, and taking into consideration jointly with traditional market stakeholders the fringe ones, such as local communities, the natural environment, and future generations.

The second proposition derived from our bibliometric analyses highlights the necessity of merging environmental and business strategy concepts. Descriptive statistics from Table 2 showed the increasing role of keywords environmental integration, proactivity, and strategy process in defining environmental strategy. Also, although the growing momentum of the latest contributions in the environmental arena suggest that nowadays the environmental strategy is much more embedded in the business strategy, the core-periphery results from co-word analysis remarks on the necessity of real environmental integration in the strategy of the firm, going beyond just law compliance to a proactive strategic positioning of the firm facing environmental challenges. Finally, cluster analysis reinforces this necessity, showing that the cluster "environmental integration" appears as the most relevant for both periods of analysis. In this sense, we develop the second proposal:

P2. Future efforts trying to understand the dynamics of the firm and the natural environment should analyze the strategy process at all levels—corporate, competitive, and functional—by merging environmental and business strategies and collating the more traditional firm competitiveness, its competitive advantage, and the management of its resources and capabilities, with a proactive environmental posture beyond compliance.

The third proposition responds to recent calls for the redefinition of the firm purpose. In that sense, the World Economic Forum (2020) called for the redefinition of the firm purpose going beyond just profit-logit and shareholder primacy, by reconciling economic, environmental, and social aims. From an academic point of view, Bansal (2019) and Sharma (2021) claim the same sense. Thus, for Bansal (2019), this is the most critical moment in history to take seriously environmental challenges, transform disruptively business models, avoid economic aim primacy, developing a longer-term firm orientation, and a wider concept of the firm's purpose, such as organizational resilience (Ortiz-de Mandojana & Bansal, 2016). For Sharma (2021), the time has come to change the firm's priorities and to pass from environmental strategy to environmental performance, not merely for instrumental purposes, but as an end in itself. Environmental performance requires the development of valid and reliable environmental metrics helped by scientists and engineers. According to this reasoning, we present the following proposition:

P3. Environmental strategy should emphasize long-term orientation, going beyond just profit-generation logic, and highlighting environmental performance and organizational resilience.

Finally, co-word analysis has shown a very interesting fourth path with two emerging keywords in the co-word analysis: symbolic, and risk. Thus, during the last years, we have witnessed too many environmental scandals and different forms of greenwashing (Bowen & Aragón-Correa, 2014; Ramus & Montiel, 2005) which have increased customers, investors, and general stakeholders' skepticism (Delmas & Burbano, 2011) towards corporate environmentalism. This general skepticism has boosted the importance of the concept of risk in the environmental arena to the point that today, among the promising areas are of future research are the environmental and reputational risks associated with environmental issues (Martín-de Castro et al., 2020; Sharfman & Fernando, 2008; Truong et al., 2021) or the investors' and analysts' estimation risk concerning the environmental impact of companies (Liesen et al., 2017) linked to the cost of the environmental assurance policy of the firm (Gerwanski et al., 2022) as key factors to be taken into account in defining companies' environmental strategies.

P4. A whole understanding of environmental strategy implies the consideration of its risk management and

symbolic environmentalism, to inform the firm's key constituencies as well as other stakeholders.

6.2 | Towards a definition of “environmental strategy”

In sum, and responding to the last objective of this research, after this quantitative analysis, we develop an integrative definition of environmental strategy based on co-word and cluster analyses and the four propositions previously stated.

Thus, and based on the primacy of keyword frequency and their maintenance during the period time analyzed, three keywords outperform others—environmental integration, proactivity, and strategy process. They, jointly with the traditional terms from strategy: resources and capabilities, competitive advantage, and the environmental management maintain their core character, as co-word analysis showed.

The relevance of the mentioned keywords has been corroborated with the main clusters obtained from the two sub-periods analyses. Thus, the most important one—environmental integration—appears in both sub-periods. Environmental management and competitive advantage are the other ones identified in the first period, whereas proactivity is the second one obtained in the second period.

Finally, as we have remarked in several parts of our analysis, and as Ergene et al. (2021) and Nyberg and Wright (2021) claim, the research tradition in the firm strategy and the natural environment, under the logic of “business-as-usual” and as a certain form of environmental “denial” does not emphasize the emergency character of climate change and the need for radical action, as Bansal (2019, p. 11) remarked: “at no other time in history has research in sustainable development been more important.” This way, we have decided to include in our definition of “environmental strategy” a new keyword “climate emergency.” A lot of scientific evidence shows us that we are approaching a cascade of interconnected tipping points in the current climate emergency (Lenton et al., 2019).

Based on the previous reasoning, we define environmental strategy as follows:

The corporate proactive behavior by which the firm integrates environmental protection into their strategy process through stakeholders' engagement and the appropriate environmental management of its resources and capabilities with the main aim of responding to the climate emergency by minimizing its environmental risks and improving its environmental performance and competitive advantage.

This integrative definition of environmental strategy has a number of important implications: From a theoretical point of view, it accommodates not only the traditional corporate environmentalism theories but also new corporate sustainability frameworks (Montiel et al., 2020) that serve to address current and future debates on

corporate environmentalism. In this sense, the Sustainability Paradox (Hahn et al., 2014) and the concepts of Planetary Boundaries (Röckstrom et al., 2009) and Grand Challenges (George et al., 2016) are implicit in the definition when we refer to the accommodation of the interrelated and sometimes conflicting relationships between environmental and corporate performance and when we include the “climate emergency” mention, respectively.

Resulting from the climate emergency evidence, the implications for business practice arising from the proposed definition of environmental strategy have to do with the consideration by managers of a concept of environmental strategy where the environmental concern is an end in itself and not just a mean to the end of corporate performance (Hahn et al., 2018) and where the stakeholders are conceived from a broad point of view (Barney, 2018). That is, the implementation of a new environmental paradigm that integrates multidisciplinary research (Bansal, 2019), coming both from natural science and management studies, proposing disruptive climate-proof business models capable of reverting the current climate emergency going beyond zero emissions to more proactive environmental postures creating positive environmental externalities (Nyberg & Wright, 2021).

As stated above, our work contributes to unraveling the nuances behind the concept of environmental strategy, to deepening its theoretical foundations, and to clarifying its meaning. It also contributes to integrating existing knowledge on the subject providing a higher degree of consensus in the near future, necessary to the advancement and consolidation of this fruitful and growing field of scientific study (Durand et al., 2017; Markides, 2004; Nag et al., 2007; Ronda-Pupo & Guerras-Martín, 2012).

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CONFLICT OF INTEREST

The authors manifest that they do not have any conflict of interest.

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ANNEX 1: LIST OF PAPERS INCLUDING DEFINITIONS ABOUT ENVIRONMENTAL STRATEGY

Brown, M	1996
Maxwell, J; Rothenberg, S; Briscoe, F; Marcus, A	1997
Hart, SL	1997
Sharma, S; Vredenburg, H	1998
Reinhardt, FL	1998
Sharma, S	2000
Parker, L	2000
Strannegard, L	2000
Banerjee, SB	2001
Banerjee, SB	2002
Rhee, S-K; Lee, S-Y	2003
Fernandez, E; Junquera, B; Ordiz, M	2003
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Fraj, E; Matute, J; Melero, I	2015
Chan, RYK; Ma, KHY	2016
Journeault, M; De Ronge, Y; Henri, JF	2016
Calza, F; Profumo, G; Tutore, I	2016
Fiorino, DJ; Bhan, M	2016
Martin-de Castro, G; Amores-Salvado, J; Navas-Lopez, JE	2016
Del Rio, P; Carrillo-Hermosilla, J; Konnola, T; Bleda, M	2016
Martensson, K; Westerberg, K	2016
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Czerny, A; Letmathe, P	2017
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Ko, WW; Liu, G	2017
Tsai, KH; Liao, YC	2017
Leonidou, LC; Christodoulides, P; Kyrgidou, LP; Palihawadana, D	2017
Yang, X; Wang, YD; Hu, D; Gao, YQ	2018
Cater, B; Cater, T; Prasnikar, J; Ivaskovic, I	2018
Yang, DF; Jiang, W; Zhao, WH	2019
Yang, DF; Wang, AX; Zhou, KZ; Jiang, W	2019
Garcés-Ayerbe, C; Rivera-Torres, P; Suárez-Perales, I	2019
Albertini, E	2019
Keshminder, JS; del Rio, P	2019
Mak, AHN; Chang, RCY	2019
Cadez, S; Czerny, A; Letmathe, P	2019
De Mendonca, T; Zhou, Y	2020
Majid, A; Yasir, M; Javed, A	2020
Duque-Grisales, E; Aguilera-Caracuel, J; Guerrero-Villegas, J; Garcia-Sanchez, E	2020

ANNEX 2: IDENTIFICATION OF KEYWORDS

Keywords	Examples of terms included in environmental strategy definitions
Proactive	Proactive, Proactivity, Anticipation to changes, Prospector Posture, Anticipation, Proactively, Leader, Regulatory proactivity, Leading edge, Environmental excellence, etc.
Beyond law	Beyond law requirement, exceed regulatory requirements, Beyond imposed compliance, Beyond government rules, Beyond regulatory compliance, Beyond legal requirements, Beyond organization's legal obligations, Not required by law, Exceed Regulatory requirement, Not required by government, Voluntary in nature, Voluntary, Voluntariness, Voluntary approach, etc.
Environmental integration	Incorporation environmental issues, Interface business environment, Natural environment, Environmental aspects, Manage interface business environment, Environmental issues, High priority environmental criteria, integration environmental issues, Integrate Environmental considerations, Incorporation environmental elements, Aligning, Integration environmental ambitions, Managing Interface business nature, Environmental concerns Involvement, etc.
Strategy process	Strategy development, Strategic planning process, Planning, Strategic plans, Systematic patterns, Strategic functional areas, Strategic intentions, Firms' Strategic Planning, Action plan, Implementation, Strategic orientation, etc.
Environmental practices	Environmental initiatives, Environmental actions, Practices, Adopt practices, Actions, Environmental activities, Operational practices, Environmental best practices, Green initiatives, etc.
Green innovation	Green Innovation, environmental technologies, Environmental Investments, Innovation, Technological dimension, Environmental friendly technologies, Investments, Environmental sound technology, etc.
Pollution control	Emission control, End-of-pipe, Controlling polluting
Environmental protection	Environmental friendly, Environmental protection, Avoiding harm natural environment, Reduce environmental impact, Protecting natural environment, Reduction environmental impact, Reduction of pollutants and emissions, Impact reduction, etc.
Environmental management	Environmental TQM, Managerial integration, Management practices, Management, Continuous Improvement, EMS, ISO 14001, Written values and policies, Environmental Standards setting, Environmental management, Environmental Plan, Formal environmental plans, Environmental impact audits, etc.
Cost analysis	Costs and benefits, Minimal cost, Costly investments, Marginal cost, Additional cost
Pollution prevention	Prevention, Process prevention, Preventively, Prevention negative environmental impacts, Prevent Negative Environmental Impact, Reduction undesirable outputs, Cleaner technologies, Prevention of pollution, etc.
Knowledge management	continuous learning, Knowledge, Knowledge-based advantages, Environmental knowledge, Integrate external Knowledge, Higher order learning, Tacit skills, Tacit capabilities
Risk	Risk-taking, Uncertainty
Reputation	Reputation enhancement, Corporate image
Symbolic	Symbolic
Green product	Product development, Product prevention, Green portfolio development, New products, Environmentally sound products, Environmental product differentiation, Product environmental attributes.
Operations	Operations, Process design, operational improvement, Alter operations
Corporate level	Corporate Level, Greening corporate strategy, Multicorp pledges, Synergistic
Human capital	Employee's awareness, Employee's stakeholder integration, Expertise or Skills, Workers involvement, Employee involvement
Resources capabilities	Operational routines, Organizational factors, Competitive Capabilities, Resource Allocation, Compromising resources, Fewer resources, Routines, Organizational capabilities, Capabilities, Organizational competences, Allocating resources, Internal capabilities, etc.
Dynamic capabilities	Dynamic capabilities, Dynamic Capability
Performance	Performance enhancement, Economically sustainable, Value creation, Value creating strategies, Outcomes, organizational improvement, Overall performance
Change	Changes, Responses to changes, Become transformed, Cause changes, Follows pace change
Competitive advantage	Competitive Level, Competitive position, Competitive advantage, Beyond industry and competition, Business Opportunity, Competitive position, Business Level, Business Opportunities, Take advantage, New business opportunities, Build the future, etc.
Environmental disclosure	Environmental reporting, Communication practices, Communication, Credible information
Environmental performance	Environmental results, Environmental performance, More value, Environmental Shareholder value
Functional level	Functional level

Keywords	Examples of terms included in environmental strategy definitions
Reactive	Reactive
Environmental compliance	Environmental regulation, Regulation change, Compliance, Regulatory Compliance, Response Environmental Regulation, Compliance, Environmental obligations, Fulfillment environmental regulations, React to pressures, etc.
Stakeholders	Stakeholder pressure, Organizational Stakeholders, Local community, Institutional investors, Stakeholders, Local concerns, Constituents, Stakeholder expectations, Isomorphic Pressures, Stakeholders' interactions
Natural disposability	Natural disposability
Aim	Objectives, Goals, Core objectives, Vision
Complexity	Socially complex, Social Complexity, Complex
Environmental marketing	Environmental marketing, Environmentally conscious consumers
Environmental culture	Environmental values, Belief, Attitudes
Environmental goals	Environmental objectives and targets, Environmental Goals, Environmental objectives
Global warming	Global warming
Ecodumping	Ecodumping
Width	Width
Depth	Depth
Marketing strategy	Marketing strategy
Nonmarket strategy	Nonmarket strategy
Projects	Piecemeal projects

ANNEX 3: LIST OF JOURNALS INCLUDED IN THE SAMPLE

Abacus-A Journal Of Accounting Finance And Business Studies

Australian Accounting Review

Academy Of Management Journal

Academy Of Management Review

British Accounting Review

British Journal Of Management

Business Ethics Quarterly

Business & Society

Business Strategy And The Environment

California Management Review

Canadian Journal Of Administrative Sciences-Revue Canadienne Des Sciences De L Administration

Corporate Social Responsibility And Environmental Management

Ecological Economics

E & M Ekonomie A Management

Energy Economics

European Management Journal

Harvard Business Review

Human Resource Management

International Business Review

International Journal Of Contemporary Hospitality Management

International Journal Of Human Resource Management

Journal For East European Management Studies

Journal Of Business Ethics

Journal Of Business Research

Journal Of Environmental Economics And Management

Journal Of Management Studies

Journal Of Organizational Behavior

Journal Of World Business

Long Range Planning

Management Accounting Research

Management Decision

Management International Review

Organization & Environment

Organization Studies

Review Of Environmental Economics And Policy

Service Industries Journal

Strategic Management Journal

Technological And Economic Development Of Economy

Technovation

Tourism Management