

**MARKETING AND SUSTAINABILITY ACADEMIC PRODUCTION IN BRAZIL:
An analysis in leading management journals during the period of 1994-2012.**

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ABSTRACT

The convergence between Marketing and Sustainability is little studied in Brazil. The objective of this research is to evaluate the construction of scientific knowledge in these areas. Analyzed were 471 articles published in 39 journals classified as A2, B1 and B2 Qualis in the field of Management, Accounting and Tourism, version 2013, for the period 1994-2012. The results, by means of bibliometric and network analysis, revealed that the field is steady, without significant progress, looking to highlight the reproduction of ideas. References complied with the parameters proposed by Lotka's Law and emphasized the influence of the largest universities in the formation of institutional networks. Two vectors with different conceptual bases, Marketing and Sustainability, divide the field, suggesting, for now, little interdisciplinarity. Organized groups were not found in the networks of authors, although a multidisciplinary approach to the subject gives rise to the production of knowledge in different research fields.

Keywords: *Marketing. Sustainability. Research Field. Bibliometrics. Network Analysis.*

1. INTRODUCTION

The advancement of the frontiers in any field of knowledge stems from the spread of ideas through publications in peer vehicles and scientific congresses. The flow of this production on other social networks is established between researchers and institutions. In both cases, the scientific production expresses both the analysis of the state of the art academic production and the generation of new research proposals (Campos & Costa, 2007; Ribeiro & Costa, 2013). This activity can be measured and its results provide pointers as the field evolves. Thus, the knowledge map of a search field appears as the representation of the interrelationships between disciplines, research topics or production of researchers, enabling outline influence and productivity of networks (Guarido Filho, Machado-da-Silva, & Rossoni, 2010).

Machado-da-Silva, Guarido Filho & Rossoni (2006, p. 162) understand the search field as *all the relevant actors sharing meanings in an institutional area*. Bourdieu (1983) interprets it as an activity space, which operates in a structured manner in which the actors plead positions based on established rules and enjoying relative autonomy compared to other fields, giving it a peculiar dynamic.

Based on the above will be considered, for purposes of this paper, the research field as the area of knowledge formed by relevant actors operating in a structured network of relationships (Bastos & Borges-Andrade, 2004; Guarido Filho et al., 2010). It is understood, therefore, that, by mapping the relationships between actors and institutions, indicators are obtained of how the construction of knowledge evolves both at the micro level and at the macro (Rossoni & Machado-da-Silva, 2008). Cruz, Espejo, Gassner, & Walter (2010, p. 101) argue that the mapping allows to identify its dynamics by *the matrix of inter-institutional relationships, the structure of co-authoring relationships as well as the association that each researcher make between its socially constructed reality and meanings presented in the knowledge under construction*. This resort is a must, as argue, respectively, Bertero, Caldas, & Wood (1999), about scientific production in general, Bulgacov & Verdu (2001), on networks of researchers and Vieira & Carvalho (2003) on the organizational fields.

In this context, a new field formed by the convergence of topics Marketing and Sustainability emerges as a research problem. The aim of the paper is to evaluate the construction of scientific knowledge in this field in

Brazil. For this, we sought to analyze the Brazilian literature on the subject, adopting the bibliometric and network analysis procedure (Araújo, 2006; Polonski, 2008; Nascimento & Beuren, 2011) to identify its consistency as a research field.

The paper is structured as follows: it initially proceeds to a review of the literature concerning the issues Marketing and Sustainability, which enhance its relevance as a research field, followed by the description of the methodological procedures used, the presentation of results, analysis and closing remarks.

2. LITERATURE REVIEW

2.1 *Marketing and Sustainability*

The convergence of Marketing and Sustainability has its origin in Social Marketing, which suggested expanding the scope of Marketing with the use of their traditional tools for other types of "exchanges": causes, ideas or social behavior (Kotler & Levi, 1969). Soon after, a social function for Marketing was proposed through its commitment to change habits or behaviors of society (Kotler & Zaltman, 1971; El-Ansary, 1974; Toledo & Santos, 1979). Some developments have taken place since then, including the Cause Related Marketing - CRM, association of a brand or company to a social cause (Farache, Perks, Wanderley, & Sousa Filho, 2008; Pereira & Cabral, 2011), Green Marketing, both to meet the consumer of sustainable products (Motta & Mattar, 2011; Ribeiro & Correia, 2012) and to strengthen the company's image (Lopes & Pacagnan, 2014) and Societal Marketing, or responsibility for what is sold (Kotler & Roberto, 1992; Silva, Minciotti, & Romeiro, 2011). Social and environmental activity reports have become common practice in companies attempting to show adherence to the new times (Gomes & Moretti, 2007; Calixto, 2013).

Many authors sought to define this new role of business (Crane, McWilliams, Matten, Moon, & Siegel, 2008). However, terms like Corporate Citizenship, Business Ethics and Sustainability (Coelho & Godoi, 2010; Moretti, 2010) have often been used with the same meaning (Dahlsrud, 2008; Kraus & Brtitzelmaier, 2012).

The analytical model proposed by Toledo (1994) makes possible to understand more precisely some elements that permeate the convergence of Marketing and Sustainability. When looking to provide a more clearly defined concept of marketing, Toledo (1994) specifies three components or dimensions:

- (1) **Functional dimension** or marketing function: object and purpose or marketing purposes;
- (2) **Management dimension** or marketing management process: management or marketing management;
- (3) **Philosophical dimension** or guidance for administrative action marketing: what will support the business model and actions involved in the administrative functions as planning, organizing, directing and controlling.

The orientation or philosophy adopted by the company (philosophical dimension) is the foundation upon which will be built in breadth and depth the management process of marketing (management dimension) to service its essential function: to promote, encourage and facilitate exchange (Pereira, Toledo, & Toledo, 2009). The type of orientation is therefore the driver of the marketing process. Among the different options of marketing guidelines - product, production, sales, marketing, societal and holistic, two fit more appropriately the relevant issues to the interface between Marketing and Sustainability: societal orientation and holistic orientation.

In accordance with the holistic orientation is the diversification of marketing scope, embracing in its management practice the company as a whole and considering a multiplicity of stakeholders (Harrison, 2005). According to the vision and holistic orientation, several theories were incorporated into the decision-making marketing universe: stakeholder theory, resource-based view, institutional theory and political-economic paradigm.

Companies that adopt the philosophy underlying societal orientation seek to associate corporate brands and / or products and services to their sustained efforts in a process that came to be called Social Corporate Marketing - SCM (Moretti, 2010; Freitas & Rezende, 2010; Vieira, Higuchi, Schneider, & Correa, 2013).

The commitment of the company to the environmental issue from the 1990s was strong incentive for business engagement, mainly because it incorporates a new consumer ecologically conscious in its purchases (Straughan & Roberts, 1999; Kotler, 2011; Huang & Rust, 2011; Motta & Mattar, 2011; Ribeiro & Correia, 2012). The management process of marketing (management dimension) was directly affected and involved by the changes, emerging the need for the organization to adjust to the new reality (Gomes & Moretti, 2007; Leonidou & Leonidou, 2011; Lopes & Pacagnan, 2014). During this transition period, still in force, the lack of consensus on the term has led to the proliferation of definitions that incorporate the philosophy behind societal and holistic

marketing guidelines in addition to Societal Marketing, mentioned earlier: Ecological Marketing, Eco-Marketing, Environmental Marketing, Green Marketing and Sustainable Marketing (Polonsky, 2011).

In short, the involvement of Marketing with issues relating to Sustainability covers many fields of research, such as: macromarketing (Kilbourne & Carlson, 2008), public policies (Press & Arnould, 2009), strategic marketing (Menon & Menon, 1997; Cronin, Smith, Gleim, Ramirez, & Martinez, 2011), consumer behavior (Diamantopoulos, Schlegelmilch, Sinkovics, & Bohlen, 2003; Huang & Rust, 2011), societal aspects (Sheth & Sisodia, 2006), greenwashing and superficiality in the declarations, social and environmental reports companies (Polonsky et al., 1998; Porthero, Peattie, & McDonagh, 1997; Calixto, 2013), government regulation (Leonidou & Leonidou, 2011) and stakeholders (Harrison, 2005; Hult, Mena, Ferrell, & Ferrell, 2011).

Recent studies show the positive relationship between strategic investment in sustainability and resilience of the company to face times of economic crisis, as shown by Claro and Claro (2014). However, despite the numerous contributions in the literature, the field of study has not yet advanced to a consistent integrated approach (Polonsky et al., 1998; Carroll, 1999; Chamorro, Rubio, & Miranda, 2009; Polonski, 2011).

2.2 Bibliometrics and Network Analysis

For White and McCain (1989, p. 119), *bibliometrics is the quantitative study of literature the way they are reflect on bibliographies. It task, somewhat immodestly, is to provide evolutionary models of science, technology and academia.* As a scientific discipline, bibliometrics developed a group of "laws" that reference the studies systematically, highlighting Bradford's Law, which measures the degree of attraction of journals about a subject, showing how the articles focus on a specialized core, around which orbit other journals (Araújo, 2006). Zipf's Law, in turn, measures the frequency of words in a given text; it is used to estimate the scientific or technological subject matter. And lastly, Lotka's Law - LL, its a tool on the productivity of the authors of a particular scientific field, which is considered the core of contemporary bibliometric research (Moretti & Campanário, 2009; Ensslin, Ensslin, Lacerda, & Tasca, 2010). The law states that the number of authors who do n contributions in a scientific field is about $1/n^2$, and that those who make a unique contribution is about 60% (Alvarado, 2002, p.14) of the total authors.

Network analysis is a technique that evolved from sociometry (originated in psychology) in order to measure the relationships between individuals and social trainers, which, by simple observation, are not presented to the researcher (Moreno, 1992). A social network is formed by people and institutions connected by similar values and goals, which facilitates the discovery of how knowledge is socially constructed (Berger & Luckmann, 1996). Theoretically, the relationships are more important than demographic attributes, and the bonds we form and the relations between them and densities indicate weaker or stronger central position (Granovetter, 1973), or the need for mediations (Burt, 1995). This is not a new idea, since networks are as old as humanity, but it experienced a major boost from new communication technologies.

For Rosa Mendes, Teixeira & Martins (2010, p. 200), *when applied to scientific research, the analysis of social networks can be of great value in identifying the relational position between authors ... it becomes even more relevant when used in line with other quantitative methods such as bibliometric studies, combining their results.* Rossoni & Hocayen-da-Silva (2008, p. 139) *postulate that this line of reasoning, becomes relevant the assumption that relations between authors correlate with the production of scientific knowledge in a field of knowledge.*

Analysis networks operate in two dimensions to establish its existence: the structure of relationships and their type (Vieira & Moura, 2010); they allow quantitative analysis (network structure) and qualitative (relations between events), as pointed out by Farias, Farias & Guimarães (2010). In turn, the analysis of co-authorship between researchers and institutions (Ribeiro & Costa, 2013) leads to the understanding of both the field as a whole (Guarido Son, Machado-da-Silva, & Rossoni, 2010) as the small world formed by its sub-networks (Rossoni & Hocayen-da-Silva, 2008). The more the area is consolidated, the greater is the likelihood of their authors producing a greater number of articles in a time interval (Rosa, Mendes, Teixeira, & Martins, 2010).

When searching the scientific literature in conference proceedings and reviewed journals, to meet the objectives of this research, we found a lack of initiatives dedicated to map this field. Predominantly, the work focused on the analysis of international production or carrying out a limited review to a small sample of publications (Melo & Rosany, 2012). In the survey items using bibliometrics and / or network analysis, conducted at Qualis (system A2, B1 and B2, the area of Administration, Accounting and Tourism), there were 23 marketing studies and 38 studies on social responsibility and environmental enterprises, totaling 51 works, and of these only one directed the study to the topic of Green Marketing (Ribeiro & Correia, 2012).

3. RESEARCH METHODS

This is a longitudinal and exploratory research study, aiming at the Brazilian production on Marketing and Sustainability, and in which it used the tools of bibliometrics and network analysis. It was considered all articles, authors and references on the subject, present in publications in national journals that publish online publications. The criteria and methodological procedures adopted were: 1) choice of the Qualis system 2013 version (national list of journals classified from A1 (better) to C (not scored) in the field of Management, Accounting and Tourism (hereinafter called only Qualis) as a database given its recognition as production indicator in this area; 2) selection of only the publications made in journals classified A2, B1 and B2, assuming that the criterion be a more rigorous selection and allow to deal with a number of smaller publications, but more consistent (from the perspective of the Qualis, it is a sample of publications, selected for convenience); 3) the chosen strata it was decided to consider only those whose editorial scope contemplated the possibility of publication in the Marketing and Sustainability field.

Were selected 471 articles published in 39 journals of Management and classified as A2 (7), B1 (12) and B2 (20) in the Qualis. The period begins in 1994, the year in which we located the first online publication, and continued until 2012. However, the first item collected dates from 1996, and there was no previous production to it.

In addition to the publications on the subject were also classified bibliometrics work and network analysis, as they are the tools used to analyze the field procedures. It was observed that this type of approach has spread in recent years, which can be demonstrated by the following results, selected by area of knowledge or research: Accounting, with 34 papers; Organizations, with 34; Marketing, with 18; Strategy, with 15; Innovation, with 14; Intellectual Capital, with 10; other topics, with 29 papers. The total of bibliometric studies or networks amounts to 154 jobs, showing the high incidence of these tools.

Operationally, the collection was done directly on the websites of the journals in which were found issues since the beginning of their activities. This procedure was necessary, given that the research required copies of references used by the authors of the articles. Publications related to other areas such as Accounting, Information Systems, Psychology, among others, were excluded for not meeting strictly research purposes.

For data collection, the procedure was reading the summaries of issues and paper abstracts, designed to evaluate their suitability for the three-dimensional design scheme (functional, philosophical and managerial) Marketing, proposed by Toledo (1994) and Pereira, Toledo and Toledo (2009), and Sustainability issues. The three thematic areas of the publications were insufficient because numerous articles were ranked in Business Administration or any socio-environmental category and not in Marketing. This fact led to the need to read all the abstract titles of each of the editions of the selected publications. It was found that not always did the title, keywords and / or summary reveal clearly the thematic coverage of the article; thus, in the event of questions about the topic covered by the article, the whole text was analyzed. In the same vein, the "Search or Search" option, after some tests, has not proved able to list all potential articles.

Initially, 471 works were selected, which later suffered a specific cut, resulting in 244 articles processed and analyzed. We considered only the work related to Marketing and Sustainability at the discretion / three-dimensional approach of Toledo (1994), having abandoned those dealing with specific issues of environmental management and logistics, clean production, controls and other aspects related to internal operations.

The treatment of the collected data was done using the Excel application, and the results are subsequently exported to the Vantage Point software, version 7.1, which allowed the division of the articles in analytical fields. We proceeded to the network analysis with the use of Ucinet software (Borgatti, Everett & Freeman, 2002). Data such as title, author, keywords, abstract, year of publication, journal of publication and references have been copied in a notepad and inserted separation operators (semicolons, for example), a necessary condition for the Vantage Point software could do the specific reading of each field. A small amount of protected or scanned articles had to be converted to be compatible with the analytical techniques adopted.

To simplify the understanding of the analysis of relevant results in every field of study of articles, now the following names are used: authors (authors of the articles); references (including articles used by the authors to elaborate the article); IES (the institutions to which belong the authors of articles).

4. FINDINGS

Among the 39 surveyed journals, the journal RGSA (B2) had the most presented publications, totaling 40 works, a predictable fact due to its editorial focus, fully framed in the search parameters. The ALCANCE magazine appears in second place, with 22 jobs, almost half of the first periodical's publications. The following four

classified, RAUSP (11) REGE (11), FACES (10) GESTÃO and PRODUÇÃO (10), add up to the same amount as the first one. Thus, the first six places represent 42.6% of all members' research articles (104).

The average number of articles published in the strata indicates that B2 journals (152 articles) are more open to publication of the subject, with an average of 1.75 publications, compared to strata A2 (39 articles) and B1 (53 articles), with an average equal to one. The layer A2, although it accounts for 18% of all newspapers, contributes 15.98% of the articles. The same applies to the layer B1, which, accounting for 31% of all journals, accounts for only 21.72% of the articles. Standing out from the stage, B2, representing 51% of the journals, contributed 62.3% of the articles. The production was increasing since 1995 with some fluctuations. In the years 1994, 1995, 1997 and 1998, no articles were found that met the criteria for analysis of the research.

4.1 Networking Between Higher Education Institutions (*Instituições de Ensino Superior - IES*)

Another finding of the research refers to the IES, i.e., affiliations declared by authors. IES of each author and co-author were considered, even if they were different in each article. Figure 1 shows the network formed by the selection of the highest ranked IES between 519 and declared numbers for each.

[Figure 1: IES networking]
[Source: Authors]

Figure 1 was adjusted to obtain a clearer view of the main nodes (links), since, in the figure, they are positioned in the center of the network, making it difficult to view. Note that the presence of many connections, although the density of the network is small, achieves a rate of only 8.5%. We obtained the density by calculating the percentage of the relationships and the possible relations.

4.2 Authors' Networks

The authors and co-authors of publications totaled 648 researchers, with an average of 2.65 authors per work; of these, 37 articles had an author (15.1%), 72 had two authors (29.5%), 105 had three authors (43%) and 30 had four or more authors (12.4%). On the other hand, in the case of a longitudinal study, it is emblematic that there are few researchers devoted to the subject: in the period considered (19 years), only 17% of authors (107) published three or more items; 69%, corresponding to 449 authors, published only once; 14% produced two publications.

The network formed by co-authorships suggests a wide dispersion when compared to the network of institutional relations of IES. The main nodes are formed by three groups of different sizes and are highlighted in red in Figure 2.

[Figure 2: Authors' networks]
[Source: Authors]

The largest group is formed by two other groups of authors associated with the author 1 (Alessandra Gallon); the further to the left is the main group we formed by the authors 11 (Bruno Cals), 49 (Marcelle Oliveira) and 51 (Marcia de Luca); the rightmost group consists of 75 authors (Suliani Rover) and 24 (Flavia Souza). The average group, posted to the right of the network, is formed by 21 authors (Dirceu da Silva) and 27 (George Rossi). The author 71 (Sergio Moretti), which offers the highest production among those who were studied, is inserted in this group. Finally, the smallest group in the center of the network is formed by 45 authors (Luciana Rosa) and 37 (Jordana Knipp). Analysis of the network reveals there is no predominant group corresponding to one of the organized research networks. It is observed that the personal ties have lagged institutional links presented in Figure 1.

4.3 References Used by Publications

8082 references were used by the articles, of which 665 (8.2%) were of institutional sites, 3337 (41.2%) of periodicals and 4080 (50.6%) of books. The proportions are unfavorable to the research field, since the high participation of books indicates the use of older research to the detriment of articles that are more recent. This result allows us to infer that the field is a steady stage, setting up an area of intellectual comfort.

[Chart 1: Number of citations]
[Source: Authors]

Figure 2 shows the 26 major authors and works that reached up to 12 citations. It links author and work and their examination provides a more accurate picture of the theoretical and conceptual foundations used by researchers studied.

[Chart 2: References most cited]
[Source: Authors]

It is noticed that there is a limited number of references with a high rate of citations; usually the texts are considered classics. Kotler, with the book *Marketing Management*, was the most cited author, with 47 incidents, following Ashley, with the book *Ethics and Social Responsibility in Business*, with 43 incidents and Bardin, author of *Content Analysis* with 31 incidents.

It should be noted that these authors have also produced other works less used, as in the case of Kotler, with seven works and leader of the quotes, with 102 references, followed by Porter, with eight books and 100 citations and, third, Carroll, with four works and 89 citations. To achieve this result, we considered the authorship and co-authorships. Most of the works have a direct link with the issues of Marketing and Sustainability and their conceptual vectors. The relationship of the cited references is shown in Figure 3.

[Figure 3: The 24 most cited authors (up to 20 incidences)]
[Source: Authors]

The listing of these works confirms what was expected, since the selection was made on Qualis of Directors, and most authors / works belong to this area or, more particularly, Strategy / Marketing / Accounting (Porter, Kotler, Mintzberg Gray, File). Following are the authors dealing with social / environmental responsibility (Carroll, Ashley, Melo Neto, Barbieri, Donaire, Motta, Mohr) and then the methods (Hair, Bardin, Malhotra, Yin). The presence of Bardin and Yin, authors associated with qualitative methods, reinforces the previously made observation about the predominance of qualitative studies, which may explain the low participation in periodicals A2 and B1.

It was noted that 5095 references cited appeared only once (63.4%) and 506 references cited only twice (12.52%), both representing 75.56%. Being a longitudinal study, this evidence seems to point to the non-use of publications produced in previous years. Moreover, four references were mentioned 44 times, three references 48 times, and nine referenvces 72 times, indicating the aforementioned concentration.

4.4 Most Used Journals and Sources

From the total of 8082 references used by publications investigated, 2117 were classified as arising from international journals, representing only 27% of the total number of the recommended minimum of around 40%, necessary for the work to be positioned on the border of knowledge. This result corroborates the previous comments.

The top 25 ranked international journals (the five year impact factor based on 2012 shown in parentheses) are responsible for 1263 incidences (58%) as follows: Academy of Management Review (11.57), with 166 entries, followed by the Journal of Business Ethics (1.62), with 126 entries, and the Journal of Marketing (5.71), covered with 106 mentions. The journal Business Ethics Quarterly (2.55) takes the twenty-fifth position, boasting 18 mentions.

Regarding national journals, there was little participation, proven by 1160 mentions (14%), corresponding to about half of the international journals. It is assumed that the brazilian researchers in this field have no interest in national publication in journals, conferences, theses and dissertations. The neglect of domestic production is reflected in Chart 3, which shows the distribution of issues of national periodicals for the first 27 ranked starting with EnANPAD (287 incidents) and ending with the Ministry of Environment (8 effects).

[Chart 3: National sources used by the sample]
[Source: Authors]

To prepare this chart was not applied deliberately filter of periodic, institutions or associations, so that one can see more clearly what was argued previously. Of the top five, only the revised RAE (85), RAC (40) and RAUSP (39) are journals that comply with the criteria used in the survey; Ethos (38) is a site with publications and its own research and is not indexed.

5. DISCUSSION

The small adherence of Qualis A2 and B1 to publications on the field of research seems to reveal low level of interest in the subject, or even predominant adoption of qualitative methods by the authors of publications. Whereas Qualis A2 and B1 met the average of 12.8 articles per year, the theme is not located among their highest production.

Regarding the authors and co-authors, the data remain in the average of previous studies (Moretti & Campanário, 2009). The relationship between the authors reveals much about a search field and therefore the results so far have proved unpromising. On the other hand, the theme provides opportunities for its originality and social appeal, and the multidisciplinary characteristic can be approached by several knowledge areas.

The density of the network IES (8.5%), although small, is larger than that of the authors. The IES network suggests that the inter connection is reinforced by top-rated IES, radiators centers and researchers' providers for the others. However, the authors network links are restricted to a few small groups and there is not nodes giving density to it. For consistency in the search field, the two networks should converge. However, its configuration approaches the *small worlds* mentioned by Rossoni and Machado-da-Silva (2008) since such networks are not structured as a communicating whole, instead they reproduce isolated blocks, often linked by a single author. This situation may mean truncated or nonexistent communication between researchers who share different ideas of all kinds (Guarido Filho, Machado-da-Silva, & Rossoni, 2010, p. 144), as the case found in this study.

The analysis of the keywords (KWs) and titles showed lack of judgment in these two important items of indexing and therefore an absence of taxonomy. We have found 873 KWs (average of 3.57 per article), to which the words of the 244 titles have been added. The analysis showed evidence of two variants of articles: those texts focused on the marketing theme, as well as on issues concerning conscious consumption (134) and primarily focused on sustainability and issues relating to strategy and organizational management (110). The KWs Social Responsibility, Environmental and similar were present in most of the articles and were considered for both cases. It was decided to use Wordle for faster viewing of groups, which can be seen in Figure 4.

[Figure 4: KWs and Titles groups]
[Source: Authors]

The same division has been applied to the authorship networks, searching for proving relationships of these embodiments, as shown in Figure 5.

[Figure 5: Variants of Marketing and Sustainability authorship networks]
[Source: Authors]

The apparent density of the Marketing network is illusory, since it proved so dispersed that the scale had to be amended so that the pictorial representation could be included. There is only one network, formed by the authors 33, 10 and 12. The others are binary or tertiary. However, the situation of Network Marketing is more consistent than that found in the network of Sustainability, less dense and more dispersed, forming only one network, represented by the authors 20, 5 and 24. It can be concluded that there is not a research network organized around the authors, but only on themes, in accordance with the suggested by Andrade-Bastos Borges (2004) and Guarido Filho, Machado-da-Silva & Rossoni (2010) whose considered a research field as the area of knowledge formed by relevant actors operating in a structured network of relationships. However, the results did not show such a framework.

The investigation in the field of the references enabled us to distinguish a specific meaningful author choice for each of the variants. The 17 most cited authors in respect of Marketing and Sustainability were selected, as shown in Figure 6. There was a significant difference: Kotler, the most cited in general, will not appear on the Sustainability variant; Hair Jr, Anderson, Tatham and Black and Malhotra, authors of quantitative methods, are among the most cited in Marketing and absent in Sustainability, and Engel, Blackwell and Miniard are consumer behavior authors.

With respect to sustainability, among the most referenced are Bardin and Yin, authors of qualitative methods, which are absent in quotes in Marketing. Carroll, a representative of this school, is the most cited, with 48 references, but also appears in Marketing, but with half of the implications. Ashley is present in a very balanced way on both tracks, totaling 22 quotes in Marketing and 21 in Sustainability. Thus, there is convergence of the cited references that make up the conceptual body of each of the embodiments, although the situation does not occur in the same authors networks.

[Figure 6: The 17 most cited references for the two variants]
[Source: Authors]

Further evidence reinforces the impression that the subject Sustainability is seen as a window of opportunity for publication, mainly due to its multidisciplinary character. A survey conducted in the top 20 authors of the articles showed that they are linked to 50 research groups, 42 different and eight equal. Of the research groups, only 19 (38%) are nominally dedicated to Marketing studies (5), Consumer Behavior (6) and Sustainability (8). This fact seems to reinforce the argument that the dynamics of a field postulated by Cruz, Espejo, Gassner & Walter (2010) is given not only by the matrix of inter-institutional relationships as also by the network of authorship and co-authorships.

As for the references, the results were along the lines envisioned by Lotka's Law. During the 19 years studied, 5095 of the authors, or 63.04% of the total, were mentioned only once, and 1012, or 12.52%, only twice. It appears from these figures that 75.52% of the authors were not recovered or were considered only twice. The result is in accordance with the provisions of Lotka's Law; it is not different from that in other fields: publications with a unique contribution correspond to about 60% of the total.

The predominant share of EnANPAD (principal brazilian management congress) references strengthens the review of the lack of publications in journals on the search field. But even this production was not well used, as it obtained an average of only 1.21 references per article. Thus, we arrive at the following conclusion, as pointed out earlier by Moretti and Campanário (2009, p. 81): *the fact that many authors come being introduced within a long period [...] and not used in later works seems to mean accommodation*. Notwithstanding EnANPAD being an international conference of high level and their works reveal good quality the papers are characterized as works in progress which is consistent with the nature of the event. The submitted and accepted journal articles are more mature works, both indexed plus review occur more thoroughly.

A research done in Google Scholar (April 2013), considering the same period of the study, investigated the most cited works using the keywords derived from green marketing listed by the EBSCO thesaurus. By applying the filter Marketing and adopting the order by relevance, 10563 works were found, of which only two are present in the national sample: 1) *Towards Sustainability: The Third Age of Green Marketing* - K. Peattie - The Marketing Review, 2001, which received three quotes, against 123 on Google; 2) *Green Marketing, Public Policy and Managerial Strategies* - A. Prakash - Business Strategy and the Environment, 2002, with two quotes, against 165 on Google.

One final evidence of the lack of consistency of the researched field comes from KWs, which reflect the lack of a thesaurus, an instrument which establishes standards and hierarchical relationships between terms, avoiding information that is not relevant to the subject (Rejowski & Kobashi, 2011). The lack of rigorous criteria in the choice of KWs prevents precise indexing of scientific works.

6. CONCLUSION AND RECOMMENDATIONS

The aim of this paper was to evaluate the construction of scientific knowledge in the field of Marketing and Sustainability in Brazil. Were raised 471 articles published in 39 journals of Directors, classified as A2 (7), B1 (12) and B2 (20) in the Qualis System of CAPES. The investigation period covered the years 1994-2012.

Given the characteristics and scope of data collection, the study can be considered a census because all the works of journals produced in the previously defined period were raised. The approaches adopted were bibliometrics and network analysis, which allowed us to analyze not only the works and authors that support the theoretical and conceptual corpus of the Marketing and Sustainability field, but also the relationship between the authors of articles that integrated the survey and between IES to which they belong.

The results showed that the research field still lacks a consistent structure. Its conceptual and theoretical bases are dispersed among a broad spectrum of authors, most of whom deal with general questions or reflect and reproduce theories and concepts already established.

The lack of consistency of the field is evidenced by the fact that researchers with higher production in most of the cases are linked to the topics covered in this study. However, the field is appealing media, with the friendliness and positive reception of society. In addition, its multidisciplinary profile offers the possibility of being investigated by several vectors and approaches: consumer behavior, theory of stakeholders (stakeholders), clean management, solid waste, green products, social and environmental management, sustainable agriculture, consumerism, responsible consumption.

The analysis of networks showed a little cooperation between researchers and low density. On the other hand, the configuration of IES networks clarified that the major universities appear as network nodes, presumably due to their greater ability to train researchers.

With respect to the results obtained by bibliometric analysis, it was found that there is a steady state or comfort zone in the search field, with the results indicating strong asymmetry among the most referenced works in international databases and used by national publications. Many of the authors located on the Google Scholar site were also found on the national list, but their most recent works did not come. To break this inertia, we must dare more and test new ideas. In the field of Marketing and Sustainability as it is noted in the survey, this should not be the case.

The variants called Marketing and Sustainability found in this study are based only on the basis of the conceptual *corpus*, but do not find resonance in other analysis vectors. Therefore, the field is revealed with little differentiation, even when the issues are distinct, between consumer awareness and environmental management in the company. To build and consolidate this field of research is necessary to go further, seeking symbiosis between these two dimensions, through an interdisciplinary approach.

The central academic contribution of this work was to emphasize and illustrate by means of a specific case the importance of bibliometric studies and networks to analyze the conceptual and institutional foundations of a search field. This procedure contributes to the mapping of their level of development and density, allowing the identification of power lines and the relevance of this research. It is noteworthy that the sample is representative of the Brazilian production, as were investigated its main journals in the management area. The adequacy of the references to the parameters proposed by Lotka's Law was found. On the other hand, it was evident that the keywords most used in the search did not match international standards as well as the references used by the authors of the articles. Also, the laws of Zipf were applied in part, using the same keywords as well as the Law of Bradford, as the journals were considered based on its impact factor.

The study results show Marketing and Sustainability as topics covering a broad research field, providing the opportunity for development of studies and publications, mainly due to the possibility of transition from a multidisciplinary approach to an interdisciplinary approach.

REFERENCES

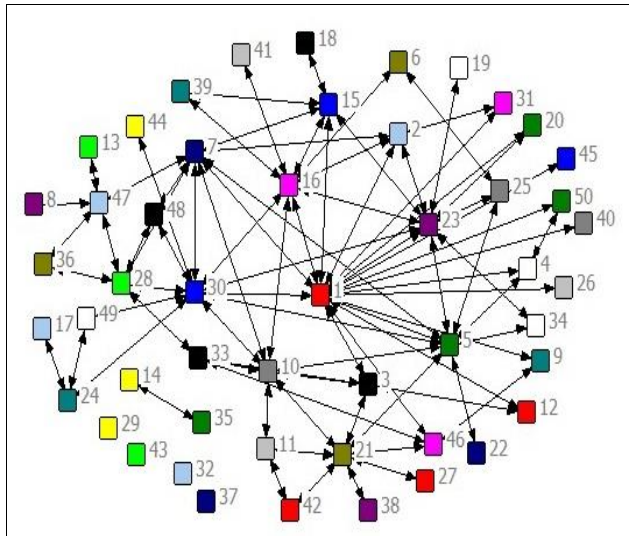
- Alvarado, R. U. (2002). A Lei de Lotka na bibliometria brasileira. *Ci. Inf.*, 31(2), 14-20.
- Araújo, C. A. (2006). Bibliometria: Evolução histórica e questões atuais. *Em Questão*, 12(1), 11-32.
- Bastos, A. V., & Borges-Andrade, J. E. (2004). Nota técnica. Cognição e ação: O ator ocupa a cena nos estudos organizacionais. In Caldas, M.; Fachin, R.; Fischer, T. (Eds). *Handbook de estudos organizacionais: ação e análise organizacionais*. São Paulo: Atlas, 69-76.
- Berger, P. L., & Luckmann, T. (1996). *A construção social da realidade*. Petrópolis: Vozes.
- Bertero, C. O., Caldas, M. P., & Wood Jr, T. (1999). Produção científica em administração de empresas: Provocações, insinuações e contribuições para um debate local. *RAC – Revista de Administração Contemporânea*, 3(1), 147-178.
- Borgatti, S. P., Everett, M. G., & Freeman, L.C. (2002). *Ucinet 6 for Windows: Software for social network analysis*. Harvard, MA: Analytic Technologies.
- Bourdieu, P. (1983). *O campo científico*. In Ortiz, R. (Ed.). *Pierre Bourdieu: Sociologia* (122-155). São Paulo: Ática.
- Bulgacov, S., & Verdu, F. C. (2001). Redes de pesquisadores da área de administração: Um estudo exploratório. *Revista de Administração Contemporânea*, 5(SPE), 163-182.
- Burt, R. S. (1995). *Structural holes: The social structure of competition*. Cambridge: Harvard University Press.
- Calixto, L. (2013). A divulgação de relatórios de sustentabilidade na América Latina: Um estudo comparativo. *Revista de Administração*, 48(4), 828-842. doi: 10.5700/rausp1124
- Campos, A. M. D. S. M., & Costa, I. D. S. A. D. (2007). Espaços e caminhos para a pesquisa em administração: Estimulando a prática da reflexividade. *Revista de Administração Pública*, 41(SPE), 37-48.
- Carroll, A. B. (1999). Corporate social responsibility: Evolution of a definitional construct. *Business and Society*, 3(38), 268-295.
- Chamorro, A., Rubio S., & Miranda, F. J. (2009). Characteristics of research on green marketing. *Business Strategy Environment*, 18(1), 11-24.
- Coelho, A. L., Godoi, C. K. (2010). Coerência entre o discurso institucional e o discurso midiático sobre a sustentabilidade. *RGSA - Revista de Gestão Social e Ambiental*, 4(3), 70-89.
- Claro, P. B. O., & Claro, D. P. (2014) Sustentabilidade estratégica: Existe retorno no longo prazo? *Revista de Administração*, 49(2), 291-306. doi: 10.5700/rausp1147

- Crane, A., McWilliams, A., Matten, D., Moon, J., & Siegel, D. S. (Eds.). (2008). *The Oxford Handbook of Corporate Social Responsibility*. Oxford: Oxford University Press.
- Cruz, A. P. C., Espejo, M. M. S. B., Gassner, F. P., & Walter, S.A (2010). Uma análise do desenvolvimento do campo de pesquisa em contabilidade gerencial sob a perspectiva colaborativa mapeada em redes sociais. *Revista Contabilidade Vista & Revista*, 21(2), 95-120.
- Diamantopoulos, A., Schlegelmilch, B. B., Sinkovics, R. R., & Bohlen, G. M. (2003). Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation. *Journal of Business Research*, 56(6), 465-480.
- El-Ansary, A. I. (1974). Towards a definition of social and societal marketing. *Journal of the Academy of Marketing Science*, 2(2), 316-321.
- Ensslin, L., Ensslin, S. R., Lacerda, R. T. O., & Tasca, J. E. (2010). Processo de análise bibliométrica. *Processo técnico com patente de registro pendente junto ao INPI*. Brasil.
- Farache, F., Perks, K. J., Wanderley, L. S. O., & Sousa Filho, J. M. (2008). Cause related marketing: Consumers' perceptions and benefits for profit and non-profit organisations. *BAR - Brazilian Administrative Review*, 5(3), 210-224.
- Farias, J. S., Farias, M. N., & Guimarães, T. A. (2010). Análise sociométrica de uma rede de transferência de conhecimentos. *Revista de Administração-FACES*, 9(1), 11-31.
- Freitas, A. G. G., & Rezende, D. C. (2010). Marketing social corporativo - MSC e consumo consciente. *REMark - Revista Brasileira de Marketing*, 9(3), 27-48.
- Gomes, A., & Moretti, S. L. A. (2007). *A responsabilidade e o social: Uma discussão sobre o papel das empresas*. São Paulo: Saraiva.
- Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360-1380.
- Guarido Filho, E. R., Machado-da-Silva, C. L., & Rossoni, L. (2010). The social and intellectual dimensions in the construction of scientific knowledge: The institutional theory in organization studies in Brazil. *Brazilian Administration Review*, 7(2), 136-154.
- Harrison, J. S. (2005). *Administração estratégica de recursos e relacionamentos*. Porto Alegre: Bookman.
- Huang, M. H., & Rust, R. T. (2011). Sustainability and consumption. *Journal of the Academy of Marketing Science*, 39(1), 40-54.
- Hult, G. T. M., Mena, J. A., Ferrell, O. C., & Ferrell, L. (2011). Stakeholder marketing: A definition and conceptual model. *Academy of Marketing Science Review*, 1(1), 44-65.
- Kilbourne, W. E., & Carlson, L. (2008). The dominant social paradigm, consumption, and environmental attitudes: Can macromarketing education help? *Journal of Macromarketing*, 28(2), 109-111.
- Kotler, P. (2011). Reinventing marketing to manage the environmental imperative. *The Journal of Marketing*, 75(4), 132-135.
- Kotler, P., & Levi, S. (1969). Broadening the concept of marketing. *Journal of Marketing*, 33(1), 10-15.
- Kotler, P., & Roberto, E. L. (1992). *Marketing social: Estratégias para alterar o comportamento do público*. Rio de Janeiro: Campus.
- Kotler, P., & Zaltman, G. (1971). Social marketing: An approach to planned social change. *Journal of Marketing*, 35(3), 3-12.
- Kraus, P., & Britzelmaier, B. (2012). A literature review on corporate social responsibility: Definitions, theories and recent empirical research. *International Journal of Management Cases*, 14(4), 282-296.
- Leonidou, C. N., & Leonidou, L. C. (2011). Research into environmental marketing/management: A bibliographic analysis. *European Journal of Marketing*, 45(1/2), 68-103.
- Lopes, V. N., & Pacagnan, M. N. (2014). Marketing verde e práticas socioambientais nas indústrias do Paraná. *Revista de Administração da USP*, 49(1), 116-128. doi: 10.5700/rausp1135
- Machado-da-Silva, C. L., Guarido Filho, E. R., & Rossoni, L. (2006). Campos organizacionais: Seis diferentes leituras e a perspectiva de estruturação. *Revista de Administração Contemporânea*, 159-196.
- Melo, H. C., & Rosany, R. (2012). Marketing verde: Uma análise bibliométrica e sociométrica dos últimos 20 anos. *Anais do XV Simpósio de Administração da Produção, Logística e Operações Internacionais SIMPOI*, São Paulo.
- Menon A., & Menon A. (1997). Enviropreneurial marketing strategy: The emergence of corporate environmentalism as market strategy. *Journal of Marketing*, 6(1).
- Moreno, J. L. (1992). *Quem sobreviverá? Fundamentos da sociometria, psicoterapia de grupo e sociodrama*. Goiânia: Dimensão Editora.
- Moretti, S. L. A. (2010). O marketing e o social nos bancos brasileiros: Evidências de relações assimétricas. *REMark - Revista Brasileira de Marketing*, 9(1), 124-150.
- Moretti, S. L. A., & Campanario, M. A. (2009). A produção intelectual brasileira em responsabilidade social empresarial – RSE sob a ótica da bibliometria. *RAC - Revista de Administração Contemporânea*, 13(Edição Especial), 68-86.

- Motta, S. L. S., & Mattar, F. N. (2011). Atitude em relação a atributos ecológicos de produtos como base de segmentação de mercado consumidor. *Revista de Administração*, 46(1), 32-44.
- Nascimento, S. & Beuren, I. M. (2011). Redes sociais na produção científica dos programas de pós-graduação de ciências contábeis do Brasil. *RAC- Revista de Administração Contemporânea*, 15(1), 47-66.
- Pereira, C. B., Toledo, G. L., & Toledo, L. A. (2009). Considerações sobre o conceito de marketing: Teoria e prática gerencial. *Organização & Sociedade*, 16(50), 519-544.
- Pereira, M. S., & Cabral, J. E. O. (2011). Determinantes de sucesso na implementação de programas de marketing relacionado a causas. *REGE - Revista de Gestão*, 18(1), 111-127.
- Polonsky, M. J. (2011). Transformative green marketing: Impediments and opportunities. *Journal of Business Research*, 64(12), 1311-1319.
- Polonsky, M. J., Bailey, J., Baker, H., Basche, C., Jepson, C., & Neath, L. (1998). Communicating environmental information: Are marketing claims on packaging misleading? *Journal of Business Ethics*, 17(3), 281-294.
- Porthero, A., Peattie, K., & McDonagh, P. (1997). Communicating greener strategies: A study of on-pack communication. *Business Strategy and the Environment*, 6(2), 74-82.
- Press, M., & Arnould, E. J. (2009). Constraints on sustainable energy consumption: Market system and public policy challenges and opportunities. *Journal of Public Policy & Marketing*, 28(1), 102-113.
- Rejowski, M., & Kobashi, N. Y. (2011). Subsídios para elaboração de um tesouro Brasileiro de turismo. *Turismo em Análise*, 22(3), 579-598.
- Ribeiro, H. C. M., & Corrêa, R. (2012). *Marketing verde: Uma análise bibliométrica e sociométrica dos últimos 20 anos*. Anais do XV SIMPOI, São Paulo.
- Ribeiro, H. C. M., & Costa, B. K. (2013). Brazilian administration review: Uma análise do perfil da produção acadêmica científica no período de 2004 a 2012 sob a ótica da rede social e da bibliometria. *Revista de Ciências da Administração*, 15(37), 3-28.
- Rosa, A. F., Mendes, A. C. A., Teixeira, G. M. A., & Martins, S. (2010). Earnings management no Brasil: Uma análise sob a perspectiva sociométrica e bibliométrica. *Revista Contabilidade Vista & Revista*, Universidade Federal de Minas Gerais, Belo Horizonte, 21(4), 189-218 .
- Rossoni, L., & Hocayen-da-Silva, A. J. (2008). Cooperação entre pesquisadores da área de administração da informação: Evidências estruturais de fragmentação das relações no campo científico. *Revista de Administração da USP*, 43(2), 138-151.
- Rossoni, L., & Machado-da-Silva, C. L. (2008). Análise institucional da construção do conhecimento científico em mundos pequenos. *Revista de Administração-FACES*. Belo Horizonte, 7(1), 25-43.
- Sheth, J. N., & Sisodia, R. S., (Eds.). (2006). *Does marketing need reform? Fresh perspectives on the future*. New York: M.E. Sharpe.
- Silva, E. C., Minciotti, S. A., & Romeiro, M. C. (2011). Marketing societal: Uma contribuição para o crescimento sustentável das organizações. *Revista de Administração da UFSM*, 4(1), 19-38.
- Straughan, R. D., & Roberts, J. A. (1999). Environmental segmentation alternatives: A look at green consumer behavior in the new millennium. *Journal of Consumer Marketing*, 16(6), 558-575.
- Toledo, G. L., & Santos, D. G. (1979). A responsabilidade social do marketing. *Revista de Administração*, 14(1), 45-60.
- Toledo, G. L. (1994). Relações públicas e marketing: Um conceito tridimensional. *Anais do XVIII EnANPAD*, p.145-157, Curitiba.
- Vieira, F. G. D., Higuchi, A. K., Schneider, R., & Correa, P. S. A. (2013). Marketing social corporativo: Estado da arte e proposição de um esquema conceitual. *Revista de Ciências da Administração*, 15(37), 37-51.
- Vieira, M. M. F., & Carvalho, C. A. (2003). Campos organizacionais: De wallpaper à construção histórica do contexto de organizações culturais em Porto Alegre e em Recife. *Anais do XXVII EnANPAD*, Atibaia.
- Vieira, L. A., & Moura, M. A. (2010). Ciência da informação brasileira e redes de colaboração acadêmica: Diálogos, constituição e perspectivas. *Revista Brasileira de Pós-Graduação*, 7(14), 609-630.
- White, H. D., & McCain, K. W. (1989), Bibliometrics. In: M. E. Williams, (Ed.), *Annual Review of Information Science and Technology*, (24), 119-186.

[Figure 1: IES network]

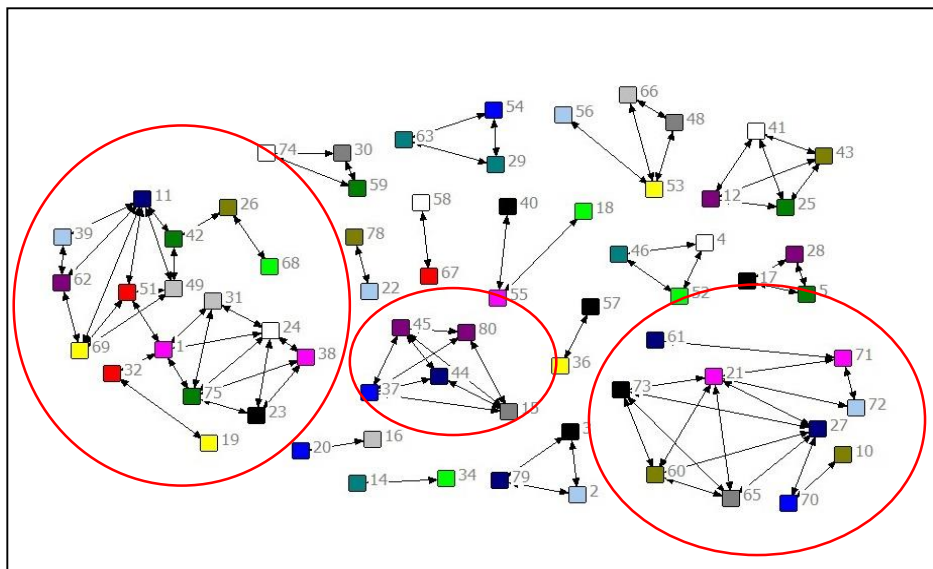
[Source: Authors]



USP (1) 62 had declared affiliations and 19 relationships in the network. Its centrality is clear. Other IES stand out as main nodes: UFSM (2), UFSC (3), UFMG (5), UFRGS (7), WSCF (16), PUC-RJ (21), EMU (23), UFRRJ (28). The network shows large IES as trainers of research centers.

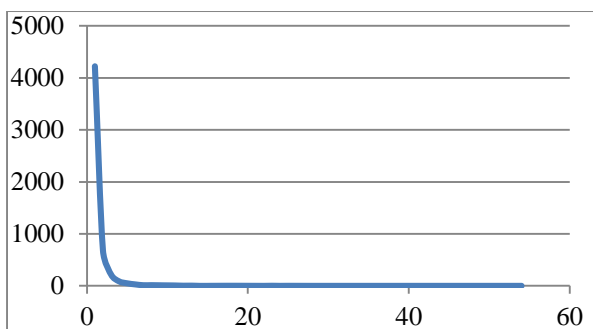
[Figure 2: Authors network]

[Source: Authors]



[Chart 1: Number of citations]

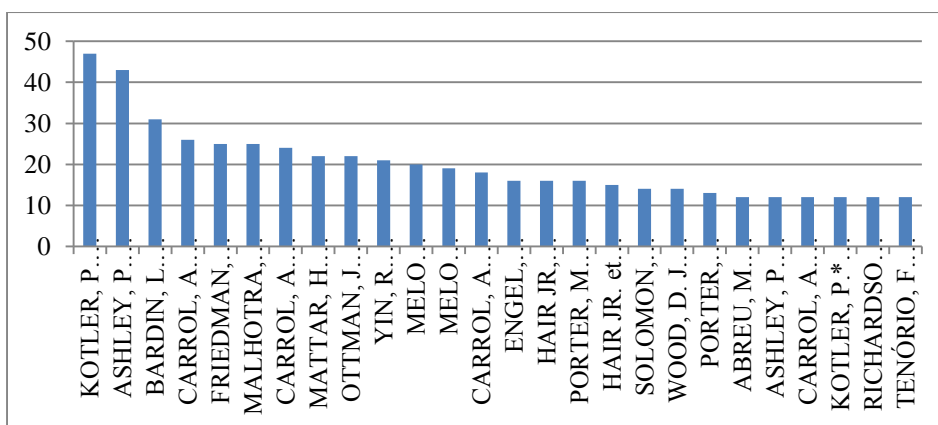
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The inverse square relationship (Lotka's Law) was proven in the matter of the works used, as shown in Figure 1, and reveals strong focus on established works among researchers.

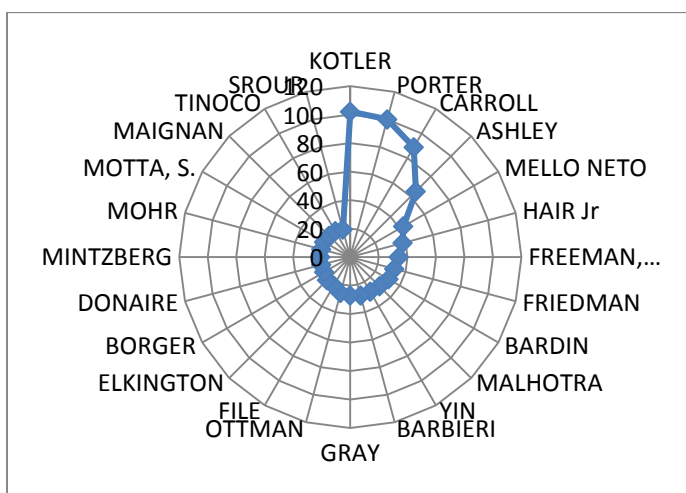
[Chart 2: Most cited references]

[Source: Authors]



[Figure 3: The 24 most cited authors (up to 20 incidences)]

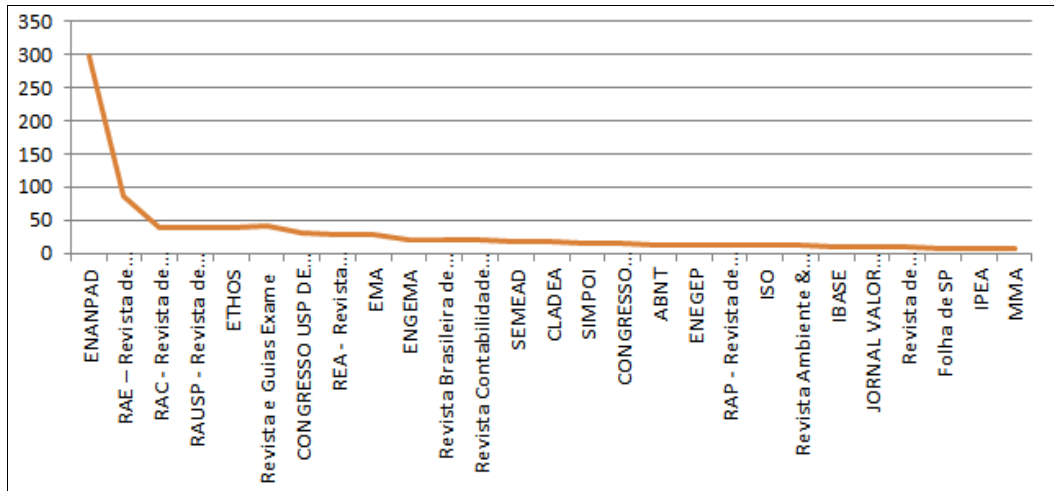
[Source: Authors]



It should be borne in mind that this relationship differs from the previous one which showed up most cited authors, in the latter the authors are consider apart from works. The lists are not equal due to the different number of works of each author. Because of space limitations, preference was given to the highlight of the first author.

[Chart 3: National sources used by the sample]

[Source: Authors]



[Figure 4: KW's and Titles groups]

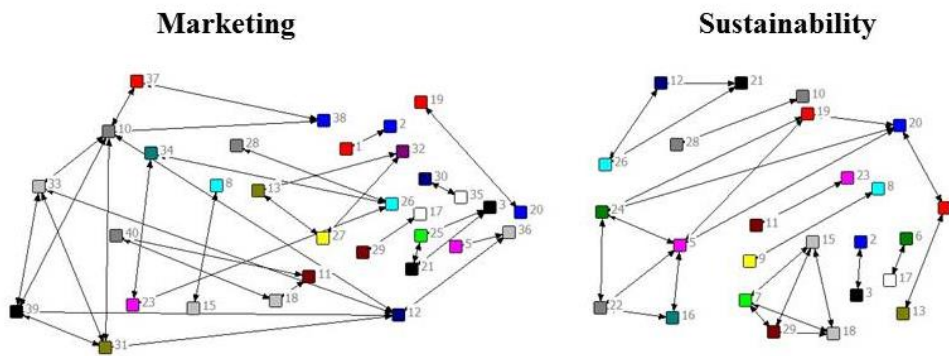
[Source: Authors]



For groups organized around the titles and KWs of articles, there is, in the Marketing group, the highlight of: consumption, consumer behavior, products. In turn, in the Sustainability group, the following predominate: management companies, business development, strategy and corporate responsibility.

[Figure 5: Variants of Marketing and Sustainability authorship networks]

[Source: Authors]



[Figure 6: The 17 most cited references for the two variants]

[Source: Authors]

