Social Networks in the scientific production on public health administration in Brazil

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The Brazilian administrative reform was included in the 1988 Constitution, and it has promoted decentralized policies, including the municipalization of health and popular participation. The objective of this article is to understand how the implementation of these democratic changes were studied in the international literature. The scientific production on Brazilian public health administration was analyzed by studying social networks. The search was conducted in the Web of Science database, using administration terms, delimited by "Brazil" and "health," and using BibExcel and Ucinet software. The network of publications in administration was cohesive, containing practices of deliberative democracy and social participation. By including the term "health," more variations were found, particularly on the Brazilian Health Reform and on the decentralization of the National Health System, with a more critical and reflexive focus, albeit with a clear gap on social accountability.

Keywords: public administration; health; social network analysis.

Redes sociais na produção científica em administração pública da saúde no Brasil

A reforma administrativa no Brasil, iniciada com a Constituição de 1988, permitiu a efetivação de políticas públicas descentralizadas, incluindo a municipalização do setor saúde e participação popular. Objetivando apreender como essas mudanças democráticas ecoaram na literatura internacional, o artigo analisou a produção científica da administração pública da saúde no Brasil, adotando o estudo de redes sociais. A pesquisa foi feita na base do Web of Science, utilizando termos relacionados com administração, delimitada por "Brazil" e "health", e *softwares* auxiliares BibExcel e Ucinet. A rede de publicações da administração se mostrou coesa, com práticas de democracia deliberativa e participação social. Ao incluir o termo "saúde", houve maior variação de temas, com destaque para a Reforma Sanitária e descentralização do Sistema Único de Saúde, de forma crítica e reflexiva, e notada ausência do controle social.

Palavras-chave: administração pública; saúde; análise de redes sociais.

Redes sociales en la producción científica en administración pública de la salud en Brasil

La reforma administrativa en Brasil, iniciada con la Constitución de 1988, permitió la efectuación de políticas públicas descentralizadas, tales como la municipalización del área de salud previendo mayor abertura para la participación popular. Objetivando aprehender como la efectuación de esos cambios tuvo eco en la literatura internacional, el presente artículo analizó la producción científica a respecto de la administración pública de la salud en Brasil, adoptando el estudio de redes sociales. La investigación se realizó con base en la Web of Science, utilizando los términos relacionados a la administración, delimitada por *Brazil* y *health*", y los programas BibExcel e Ucinet. La red de publicaciones de la administración se mostró coherente, conteniendo prácticas de democracia deliberativa y participación social. Al incluir el término "salud", hubo una mayor variación de temas, con destaque para la Reforma Sanitaria Brasileña y la descentralización del Sistema Único de Salud, con enfoque más crítico y reflexivo, e importante laguna relativa al control social.

Palabras clave: administración pública; salud; análisis de las redes sociales.

1. INTRODUCTION

The field of study of this bibliometric analysis article addresses the science of public administration (particularly in healthcare). The problematization of bibliometric indicators is relevant, especially by the methodological approach adopted in this work. The starting point is the theoretical presupposition that authors form social networks, analogously to the current concept of a group of social contacts or ties between individuals, in which there are interactions among them. The analysis of social networks in bibliometry is a methodological tool that allows researchers to graphically formalize, in a quantitative manner, concepts abstracted from properties and processes characteristic of the social reality (Souza and Quandt, 2008). This makes it possible to identify groupings of authors, their relationships and connections, patterns and changes that occur in a given time period. Scientific collaboration can be measured from the links between researchers, institutions or countries that share authorship in academic projects. Thus, social network analysis presents advantages compared to traditional methodologies which evaluate only the individual attributes of authors (Scott, 2000).

The study of social networks is based on sociology and organizational theory. It allows the understanding of how ties are established between individuals in a given context, defining relationship patterns and interaction dynamics, and visualizing social relationships circumscribed between institutions. The actors (authors, in this case) in a network have interdependent connections, with direct and indirect influences, generating opportunities or restrictions in terms of preponderance of individual and collaborative action (Ullrich, Oliveira and Scheffer, 2012). This allows one to uncover and discuss, among other aspects, the contribution and influence of authors in a given thematic field, as well as their eventual connections, the institutions to which they are affiliated, the themes they prioritize, their theoretical focus, and the methodologies adopted.

As emphasized in the beginning, the thematic field of interest here is public administration and health administration. The field comprises, among other subjects, the study of institutions which should have as main objectives the responsible and transparent management of public interests and the satisfaction of collective needs. Such objectives are reachable by formulating and implementing democratically agreed upon public policies and using available resources effectively and efficiently (Carvalho, 2013). Based on this premise, the "action of governing" is seen as a historical, multidisciplinary "territory", filled with interests, disputes and conflicts. Through this territory traverse many schools or currents of thought, which seek to describe or interpret their ontological presuppositions, their teleological approaches, and their temporal and cultural nexus (Marques and Faria, 2013).

It is, actually, a field of human action which has "multiple personalities", for it originates in many places and has various destinations, being crossed by power relations (Pollitt, 2010). The political forces that can grant rationality and directionality to the public administration have their center of gravity in the apparatus of the State and its tentacular unfolding — the public sector in its relation to society — and not only from their internal foundations, such as operative models, theories, or organizational methods.

Since at least the 1970s, important transformations in the thematic field of public policy have occurred, directly affecting the action of governing in distinct nations, altering state structures and the governmental process itself, such as the relationship between the State and civil society (Hochman, Arretche and Marques, 2008). Public policies can be understood, in modern Western societies, as the translation of the electoral purposes and platforms of democratic governments into programs and

actions, offering concrete results to people's lives. They seek, simultaneously, to "put the government into action" as well as to propose changes in the course of these actions when necessary (Souza, 2006). The transformations, in subsequent decades, affected countries and their respective social segments in different ways, and also in distinct moments and forms, however the discussion has happened mostly in the context of the new "managerialism" which has penetrated the public sphere (Peters, 2008). Starting from the 1980s, a change of approach to some studies on public administration becomes noticeable, with a more "managerial" language spanning several texts, reflecting the introduction of economic rationalism, which began to characterize the organizational design of public services (Carneiro and Menicucci, 2011).

In the Brazilian context, the administrative reform of the State began with the end of the military period. Admittedly, the Federal Constitution of 1988 brought important elements to the Nation: the democratization of the State, with the strengthening of external control by the Public Prosecutor's Office; the decentralization of many policies, including that of healthcare, which created opportunities for greater participation of actors of the local/regional level; and initiatives of professionalization of state bureaucracy, consolidated by civil service entrance examinations, which would be progressively submitted to the principle of meritocratic and universal selection in a Neo-Weberian perspective (Abrúcio, 2007). The government of president Fernando Henrique Cardoso (FHC), inspired by administrative reforms also made in Europe, opted for the implementation of the so-called "New Public Management" — a managerial model conformed to the intended reconstruction of the State (Bresser-Pereira, 1997). The proposal of the FHC era defended institutional changes relative to the flexibilization of the civil service labor force and the creation of non-State public spaces.

The political succession represented by the Workers' Party, in 2003, awakened a post-election expectation that would supposedly be against the ideas of the extant managerial model. However, it is also correct to analyze the period of government headed by Luiz Inácio Lula da Silva as a path marked by setbacks and contradictions, resulting in the adoption (many times tensioned and diffused) of "management by results", instead of the pure and simple rejection of the ideas of the previous administration. The change occurred in a more incremental manner and especially in the processes, instead of changing the organizational logic as a whole (Abrúcio, 2011). The reforms proposed in the Lula era included a group of actions that vocalized the rhetoric of a State which promoted social inclusion, in which the federal government would highlight its role of planning and guidance, having as intermediaries the federative states, and as local executors the municipalities (Klering, Porsse and Guadagnin, 2010). Scrutinizing the Pluriannual Plans (PPA), of the Lula and Dilma governments, it is possible to notice a very particular conception of the concept of "modernization" of the administration model, by means of the revaluing of State planning and mobilizing force, as a strategy to rehabilitate State activities and improve public services. Thus, the channels of formal participation and governmental planning were valued as fundamental means to make an alternative power project feasible (Lima and Papi, 2015).

In the field of healthcare, the movement denominated Brazilian Sanitary Reform gained impetus simultaneously to the process of re-democratization of the country, especially throughout the 1980s. The 1988 Constitution incorporated healthcare as a right of the citizen and a duty of the State, instituting the Unified Health System (Sistema Único de Saúde — SUS), which represents a broad movement of subjectivation, constitutionalization and institutionalization that breaks with the previous

conceptual model of State and citizenship (Fleury, 2009). Thus, the bases were established for a new healthcare management model, correlated to the deliberative public administration (Paim et al., 2011).

Law n. 8.080/1990, which regulates SUS, comprises dimensions related to the promotion, protection, and recovery of health, which systematize the desired model of health care, which should be structured under the doctrinal principles of universality, integrity and equity; and under the organizational guidelines of decentralization with single command, regionalization and hierarchization of services, and community participation (Brazil, 1990).

The postulates of SUS highlighted a political-organizational and administrative logic that was contrary to the practices that had been in force until then in the healthcare field, which were centralized and strongly influenced by private service providers (Escorel, 2012; Mendes, 2013). They represented a great challenge to the implementation of technical, administrative, political and cultural changes, which have not yet been completed, being part of a broad unfinished social agenda (Alonso, Hedler and Castilho, 2010; Barros, Piola and Vianna, 1996).

The good operation (which implies good management) of SUS has been a legal obligation for more than 25 years; although it has its origin in the sanitary reform movement, through the struggle of a diverse militancy, its implementation has been marked by constant obstacles. There are problems related to federal underfinancing, aggravated by tax waivers and federal subsidies to the private health plan market; resistance to the reform of the state administrative structure for the provision of services; and public-private partnerships still immersed in disputes of rather un-republican interests (Santos, 2013b).

On the other hand, there are considerable advances in the international conceptualization of healthcare, which is considered to be, personally and collectively, an indispensible immaterial good to the lives of people and a crucial resource for social reproduction. Health services, on their part, have characteristics that generate specific demands in regards to organization and management. They are complex and diverse structures (Tanaka and Tamaki, 2012), with different approaches and needs, involving psychosocial variables, services defined by social questions, be it through determination or representativity of heath/illness, or by the type of problem (acute/chronic), among others (Dussalt, 1992).

The public administration of healthcare, even with the reform attempts, among them the one of 1998, was not able to reach the agility and resoluteness needed to effect the social rights postponed for so long. In fact, it is lost in a collection of norms, regulations, and controls of the public manager, without, however, being able to avoid endemic corruption and guarantee a better systemic quality, with a performance compatible with the anxieties of the Brazilian society, which clamors for high quality public services (Santos, 2013a).

Therefore, in order to better understand the context of the effectiveness of the constitutional directives of the public healthcare system of Brazil, it is necessary — in addition to recognizing the knowledge accumulated about the subject over the long term — to identify people, publications, and institutions that promote their discussion and formation of opinions. Furthermore, to identify if the advances and problems of the public administration, dealing with a health system with the continental span of SUS, resonate in international scientific forums, particularly through specialized publications. In terms of academic contribution, the present study does not seek to give definitive answers or to make an in-depth theoretical revision, but to "map" social networks of authors who connect themselves to produce knowledge about public administration and healthcare administration, in terms of the listed conceptions and concretely adopted actions.

Thus, this article proposes to map the scientific production on public and healthcare administration in Brazil, with the objective of evaluating possible influences of authors and publications, by means of a study of bibliometric nature, focusing on the analysis of the eventual constitution of social networks of authors.

2. METHOD

A methodological detailing about the tools used for the present bibliographic study will be helpful. The bibliographic details are downloaded from the Web of Science and migrated to the BibExcel application, which recognizes from this database the fields of each bibliographic register recovered (delimiters and tags, for AUTHOR, COAUTHOR, TITLE, among others). It does this in a simple text format and the data is restructured by the application in DIALOG format, more specifically in the Science Citation Index® format, from Web of Science. Hence, bibliographic field data are transformed into univocal metadata fields. Following this, a network sociomatrix is generated in which algorithms control, for example, undesirable duplications of bibliographic fields. The "Analyze" menu in the application allows for specialized analytical functions on author networks and citations, bibliographical coupling and co-occurrence of pairs of citations, or even conjunctions of words used in the indexing of bibliographic material. It allows even the use of the algorithm that allows the clustering of selected bibliographic fields, vectors or partitions of citations (most cited references or thematic aggregations), or the construction of square, symmetrical matrices, with the visualization of network maps and their level of cohesion (connectivity, density, closeness centrality and degree). BibExcel has an interface that allows for easy interaction with the Pajek or Ucinet applications, which produce network visualizations, in graphical form; and Excel, which allows one to work with data spreadsheets (Persson, Danell and Schneider, 2009).

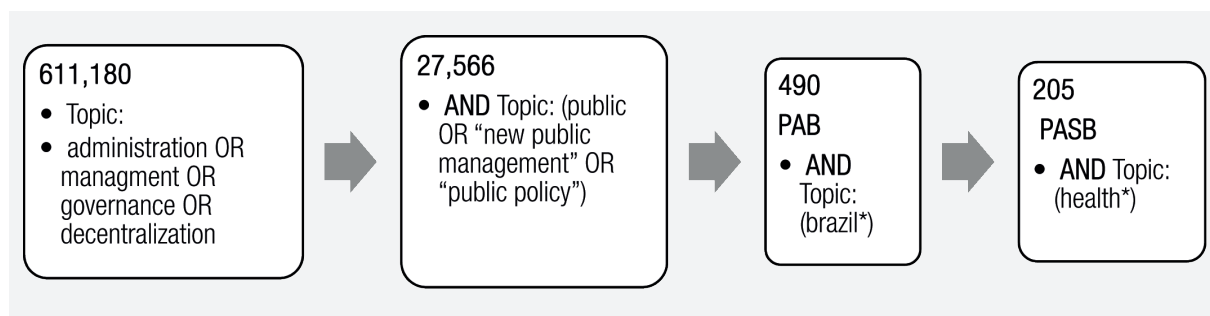For this research the following steps were followed:

1. Research on the Web of Science, with searches realized in the period from the 20th to 25th of June 2015, covering all of the literature indexed in this base relative to the search terms. In the first field the terms "*administration*", "*management*", "*governance*", "*decentralization*" were inserted, added to the terms "*public*", "*new public management*", "*public policy*". The search was then delimited by the terms "Brazil*" and "health*", which then generated two groups of publications: the first associated with public administration in Brazil *(PUBLICATIONS_ADMINISTRATION_BRAZIL → PAB)*, and a subgroup of these related to healthcare *(PUBLICATIONS_ADMINISTRATION_HEALTH_ BRASIL→ PASB);*
   a. Descriptions: they were selected from the MeSH and Health Science Descriptors (DeCS) (http://decs.bvs.br/), utilizing the Boolean expressions "AND" and "OR" and the search field "Topic"
   b. Timeframe stipulated: All of the years
   c. Indexes: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH
2. Obtainment of the database tables of Web of Science for descriptive/bibliometric analysis;
3. Cleaning and consistency procedures for the bibliographic data, utilizing the BibExcel software, generating a sociomatrix for analysis (Persson, Danell and Schneider, 2009). The software allows the isolation of a variable or a combination of them from the delimitation of the bibliographic record fields. After being isolated, many specific procedures are necessary to generate the sociomatrix or co-authorship matrix (Ruas and Pereira, 2014);

4. Generation of network graphs of relational social systems to evidence the patterns of relationships between the actors (nodes), with the aid of Ucinet software (Borgatti, Everett and Freman, 2002);

5. Analysis of the characteristics and properties of the networks: connectivity, density, centrality and degree of closeness (Scott, 2000; Soares, 2012);

6. Verification of the most relevant authors/publications, from the network characteristics.

3. RESULTS AND DISCUSSION

The bibliographic processing resulted in two groups of references (authors, subjects): PAB items, and Pasb, with 205 items, presented in figure 1. With regards to the distribution of the publications over time, an expressive growth in publications is observed, especially starting from 2007 (figures 2 and 3). The increase in the number of graduate programs in Brazil in the last 10 years can explain the increase in the number of publications, since one of the criteria for the evaluation of the institutionalized programs is the number of articles published per year (Falavigna et al., 2012).

FIGURE 1   DESCRIPTORS AND RESEARCH REFINEMENTS, WITH THEIR RESPECTIVE NUMBER OF ITEMS, 2015

611,180
- Topic:
- administration OR managment OR governance OR decentralization

27,566
- AND Topic: (public OR "new public management" OR "public policy")

490
PAB
- AND Topic: (brazil*)

205
PASB
- AND Topic: (health*)

Source: Research data (2015).

In fact, the majority of the publications were in the form of original articles (PAB — 83.53% and Pasb — 89.75%); the other modalities were: reviews, editorials, books, and conference proceedings. As for language, English was found in 68.7% of the publications in the PAB group, followed by Portuguese (24.4%) and the other languages, Spanish and French, which added up to 6.1%. In the Pasb group the distribution was similar, with the following frequencies: 55.6% English, 40% Portuguese, and 4.3% Spanish. The matter of the English language being predominant has to do with the dominance of this language on the Web of Science and with more recent guidelines, such as that of SciELo, which have established minimum shares of English-language publications to publishers of national scientific journals (Scielo, 2014).

Regarding the institutions to which the authors are affiliated, *Fundação Oswaldo Cruz* and *Universidade de São Paulo* were the ones that generated the greatest amount of publications in both groups: PAB (17.9%) and Pasb (31.2%). Among the top 25 organizations in the PAB group, seven are foreign and 18

are Brazilian; in the Pasb group there are five foreign organizations and 20 Brazilian. In both groups, among the national institutions, there is only one private institution for each group; all the rest are public. This information can suggest that the institutions (or the authors) are seeking to expand the horizons of internationalization, with foreign partnerships, beyond the traditional mobility for graduate studies.

FIGURE 2 ITEMS PUBLISHED BY YEAR PAB, 2015
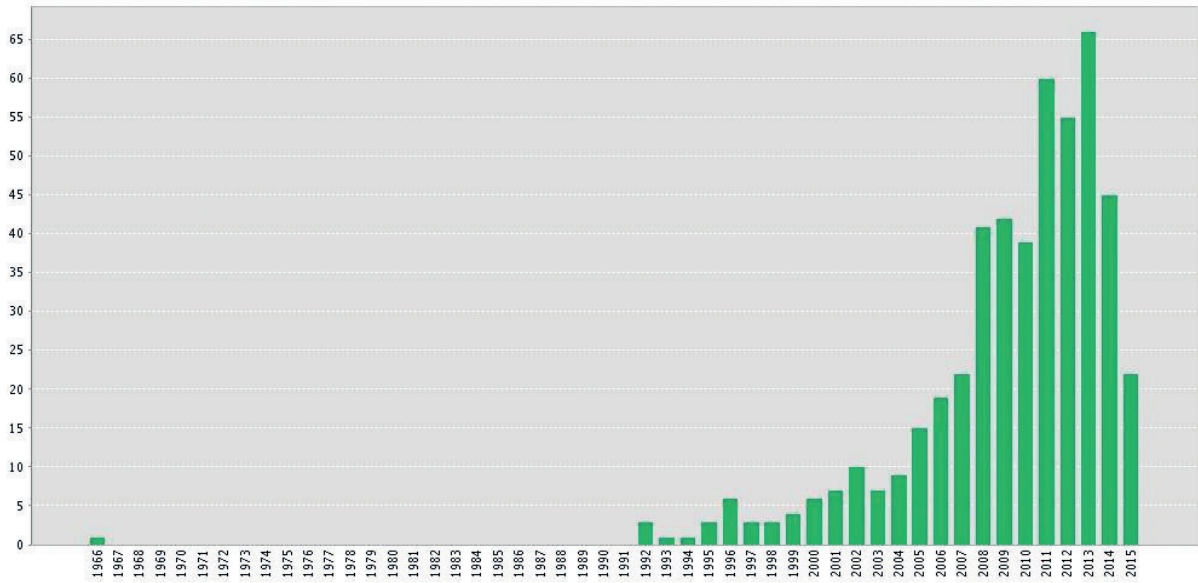

Source: Web of Science Research (2015).

FIGURE 3 ITEMS PUBLISHED BY YEAR PASB, 2015
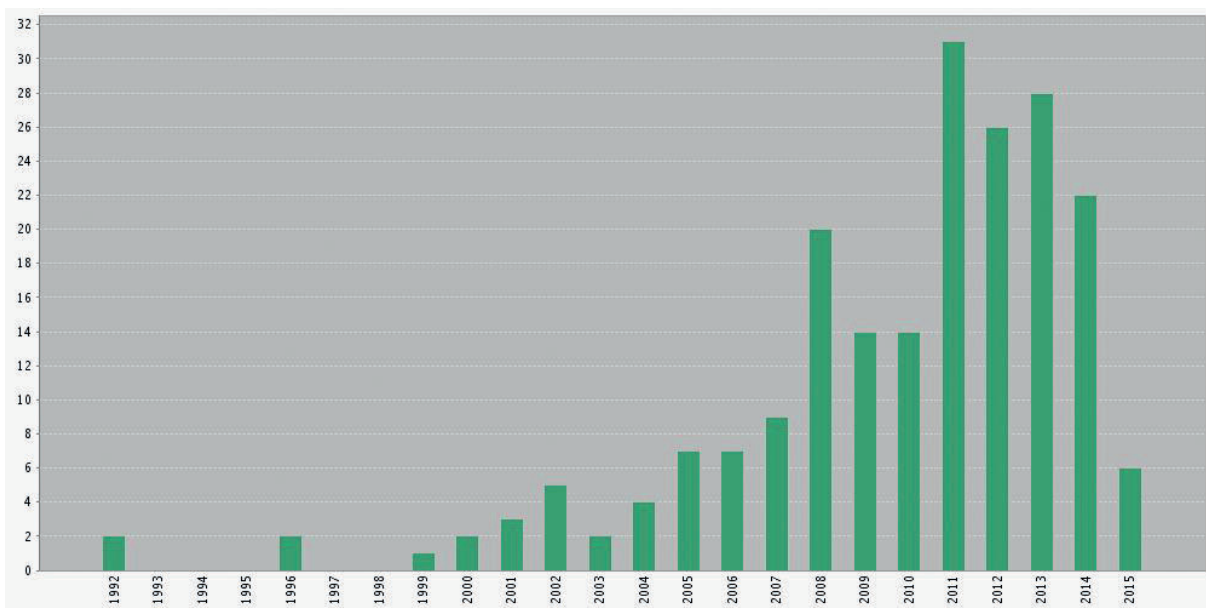
Source: Web of Science Research (2015).

Categorizing the first 25 institutions according to the geographical location and excluding the foreign ones, their distribution among the regions of Brazil is shown in graph 1. The Southeast Region holds the majority of the publications in both groups (more than two thirds), and the second position is held by the South Region (in the PAB group) and the Northeast Region (in the Pasb group), followed by the Mid-West Region; and the absence of publications from the North Region. In another research, it was observed that the States of São Paulo, Rio Grande do Sul and Rio de Janeiro have a rate of CNPq researchers per million inhabitants above the national average, (Martelli Junior et al., 2010), which could contribute to the clarification of these distributions.

GRAPH 1   DISTRIBUTION OF THE INSTITUTIONS IN THE PAB AND PASB GROUPS BY BRAZILIAN REGION, 2015

Distribution of Institutions by Brazilian Region
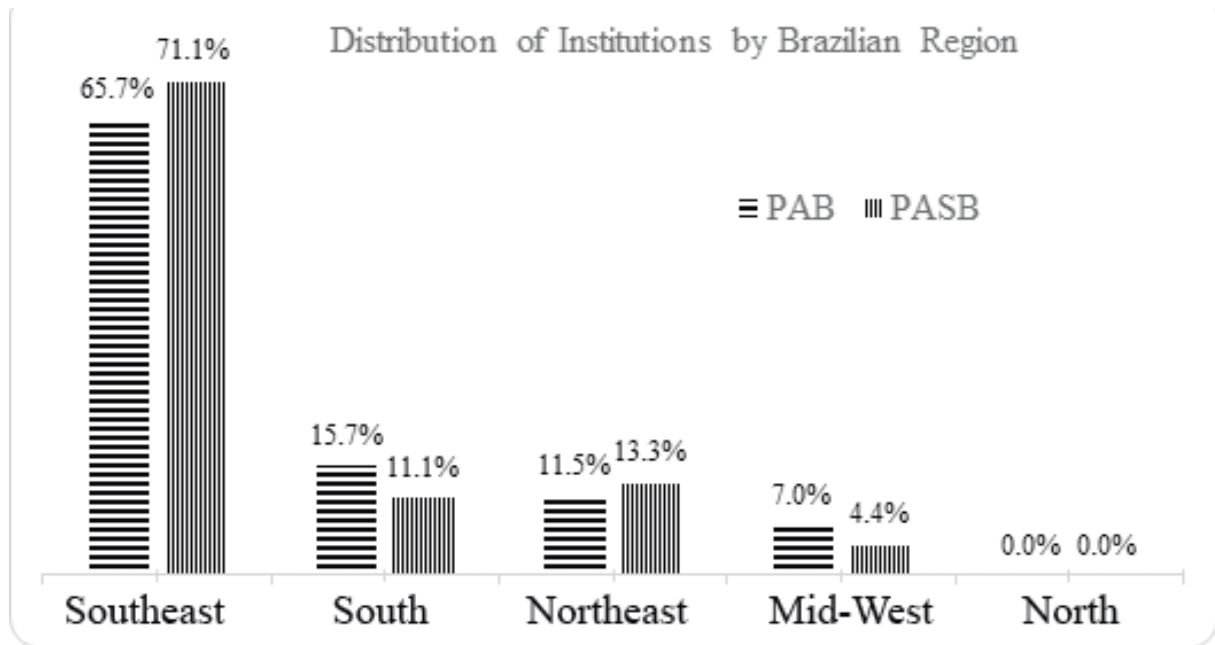
Source: Research data (2015).

After the application of the tools described in the methods section, two networks became apparent, PAB and Pasb, composed of 29 and 46 nodes, respectively (figures 4 and 6).

Box 1 shows comparative details from both networks, according to their characteristics, which are shown to be connected and reciprocal. It is observed that the algorithm generated a "cut point" in the PAB network — which is identified by the author "Hunter 2007",[1] but its presence does not represent great fragility to the network, because this author communicates between the entire group of nodes with only one other author who is "Arretche 2000".

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[1] Surnames of authors which appear in the Results section between quotation marks do not follow ABNT citation norms, because they are treated as metadata "objects" or "items" obtained with search tool algorithms.

Comparing the proportion of authorial connections present, in relation to the possible total, the PAB network is denser than the Pasb network, which could signify a great cohesion between the publications/authors in the first network, in which there is a subgroup of 17 nodes with a minimum *k core* of 12 (great interaction between them). On the other hand, it could be argued that more open networks, with less cohesion, allow the introduction of new ideas or opportunities to their members, so that the weaker ties (nodes) also become advantageous to the future expansion and strength of the network, because it becomes permeable to innovation and disruptive ideas, capable of breaking paradigms and rupturing the consensus formed by established authors (Vanz, 2013).

BOX 1   **CHARACTERISTICS OF THE PAB AND PASB NETWORKS, 2015**

Network Characteristic	PAB	Pasb
CONNECTIVITY **(Cut point — the only one responsible for the communication between certain nodes**	Connected networks (all pairs of nodes are reachable) — 29 nodes and 380 links Presence of a *cut point* (Hunter 2007)	Connected network (all pairs of nodes are reachable) — 46 nodes and 292 links Absence of a *cut point*
K CORE — number of minimum links that "hold" the node in the network	Subgroup formed by 17 nodes with a minimum *k core* of 12	*k core* with lesser variation (2 to 5) and more balance
DENSITY — proportion of lines present in relation to the total of possible lines, considering the total number of nodes	82.7% of the nodes have a density equal to or greater than 0.70	28.2% of the nodes have a density equal to or greater than 0.70
CLOSENESS CENTRALITY — most "visible" position measured from the most central actor (author); it will be zero when all nodes have the same centrality	Variation of 35 to 77	Variation of 95 to 122
DEGREE CENTRALITY — number of connections that pass through the node	Variation of 1 to 22 Average degree — 13.1	Variation of 2 to 12 Average degree — 6.3

Source: Research data (2015).

After the clustering of the networks using the Ucinet program, with two groupings, two subgroups were observed in the PAB network with different themes (content of the published works) — according to figure 4.

Cluster 1, with 23 nodes, reveals publications mostly related to sociopolitical studies on a program of participatory budgeting (PB), implemented in Porto Alegre in 1989, which reappears in other

articles and books of the same cluster, showing examples of participative democracy, deliberative democracy, and government, always within the Brazilian and Latin-American perspective; besides this, there are other works that include subjects such as social capital, the Workers' Party, and the presidential elections of 2006.

Cluster 2, with only 6 nodes, shows subjects related to the deforesting of the Amazon, as well as two works with divergent ideas: the well-known "Hardin" theory ("The Tragedy of the Commons"), which deals with the free access to common resources, inevitably generating the excessive exploitation of such resources, and the book by "Ostrom" ("Governing the Commons"), which opposes itself to this theory, proposing that in most cases people make balanced use of common resources.

To illustrate the dominant contents in the clusters of the PAB network, the titles of the respective publications were inserted into a freely accessible application, creating a "word cloud" (www.tagxedo.com) — figure 5.

FIGURE 4   GRAPHICAL REPRESENTATION OF THE PAB NETWORK, 2015
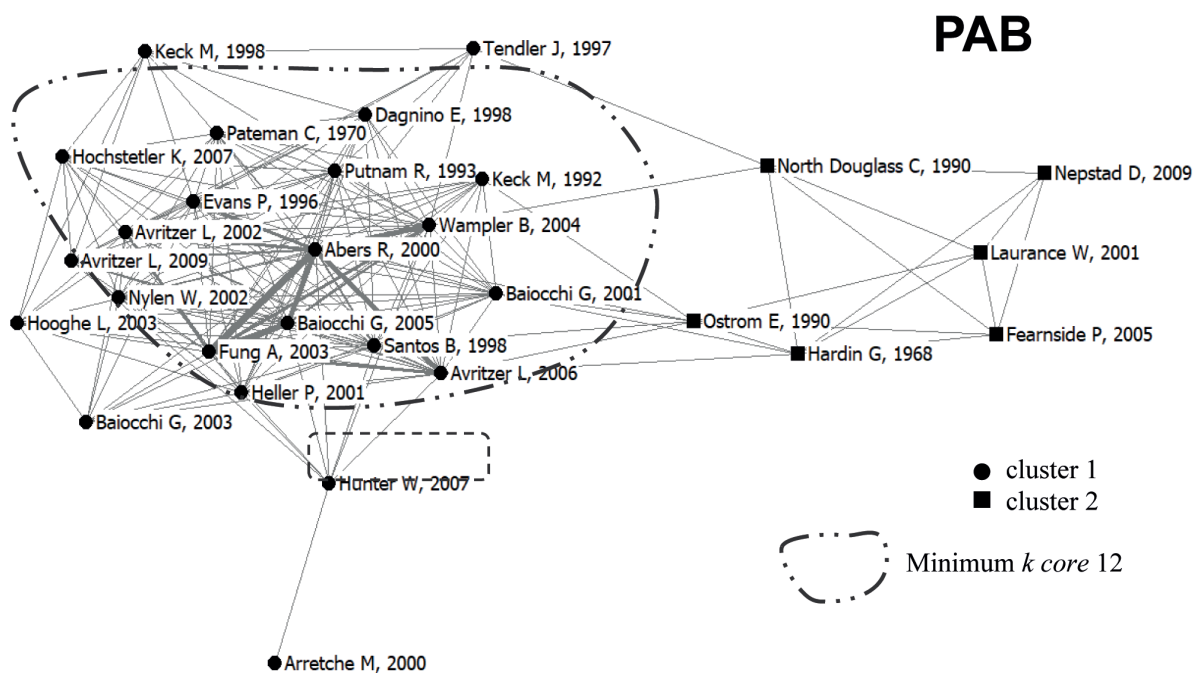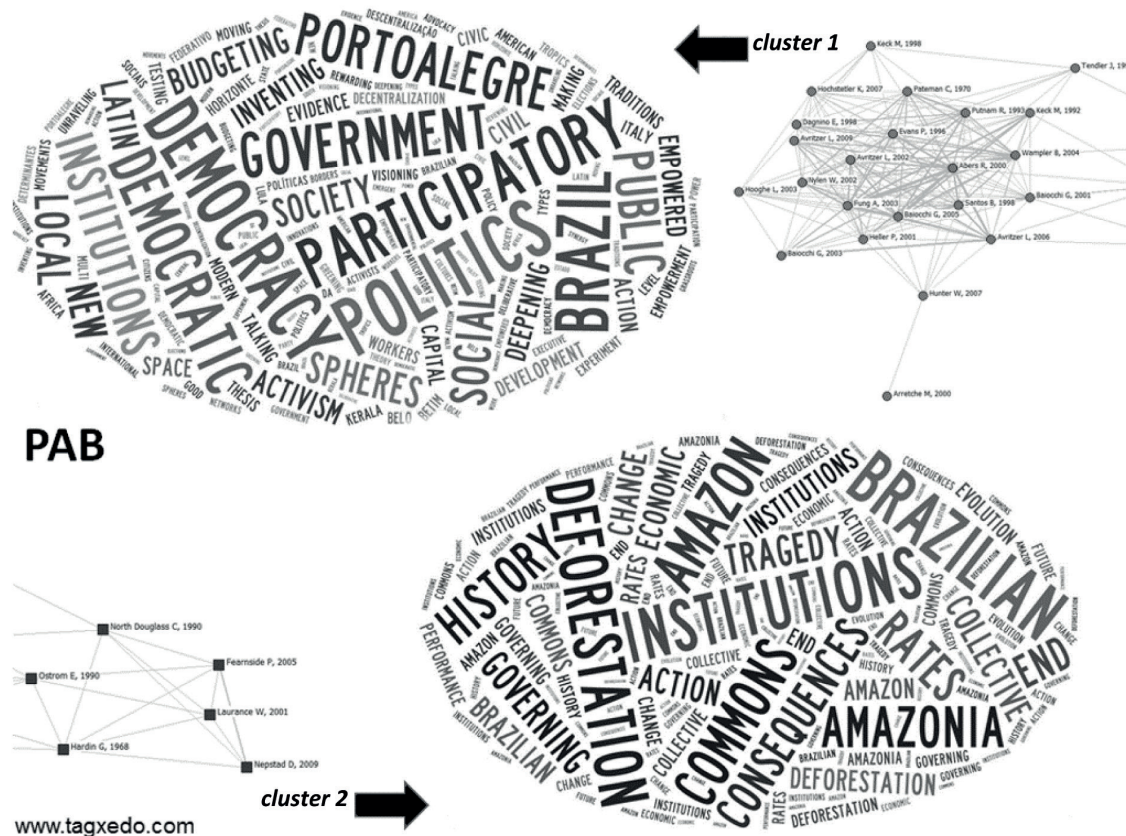

Source: Research data (2015).

Both clusters formed in the Pasb network are represented in figure 6, denominated 3 and 4. Cluster 3, with 21 nodes, contains important texts on Health Care Models, published with respect to SUS (historical contextualization, advances, financing, and decentralized management practices); two documents related to methods: "Triola" — Statistics, and "Yin" — Case Study; besides the classic approach of Situational Strategic Planning by "Carlos Matus", from 1993. The authors related to the health care models are: "Hartz" (integrity of health care), "Mendes" (networks of care), "Starfield"

(primary care), "Campos" (Paidea), "Schimidt", (context of non-transmissible chronic diseases), and "Fonseca" (model of public healthcare service provisions from the Vargas era). Cluster 4 contains the Federal Constitution of 1988, along with various publications more related to management models: implementation of the sanitary reforms, impacts of the decentralization on public administration, management practices and matters of SUS financing (regulation mechanisms and relationship with the private sector). There remains the experience of the participatory budget of Porto Alegre and the articles on participatory democracy. This cluster also reveals two articles related to health care models, with the theme of health surveillance.
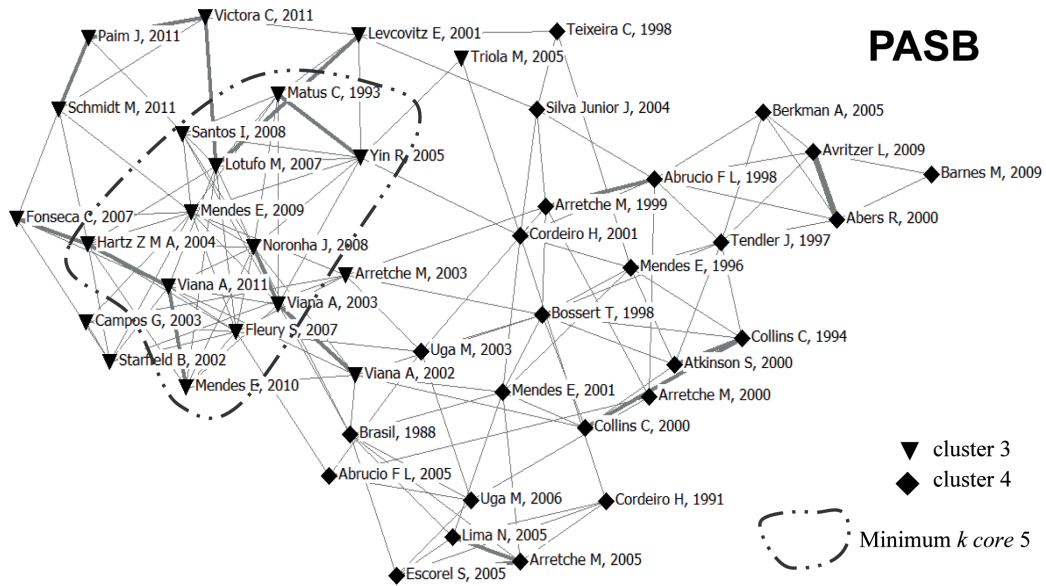
FIGURE 5   **WORD CLOUD FORMED BY THE TITLES OF PUBLICATIONS OF CLUSTERS 1 AND 2 OF THE PAB NETWORK, 2015**

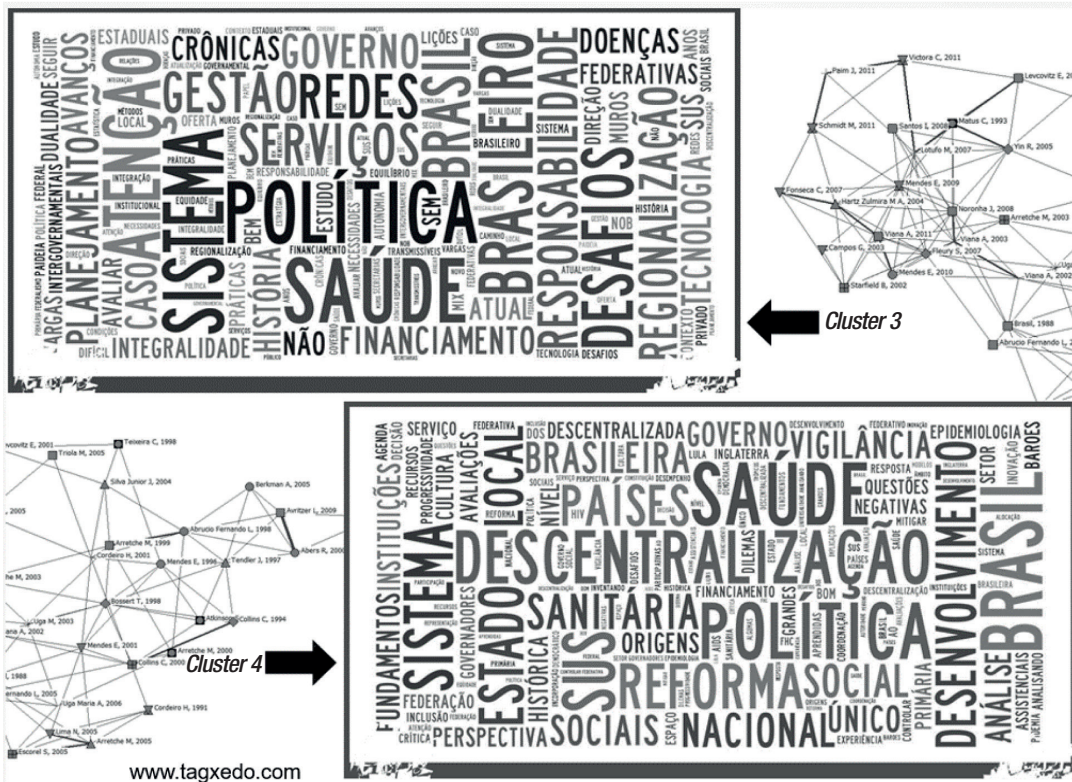**Source:** Research data (2015).

The titles of these publications (Pasb network) were also inserted into a freely accessible website, creating "word clouds" (www.tagxedo.com), however, in this case, the words in English were translated into Portuguese, so that there would be no loss of word strength due to being in different languages (figure 7).

FIGURE 6   GRAPHICAL REPRESENTATION OF THE PASB NETWORK, 2015

Source: Research data (2015).

FIGURE 7   WORD CLOUD FORMED FROM THE TITLES OF THE PUBLICATIONS OF CLUSTERS 3 AND 4 OF THE PASB NETWORK, 2015
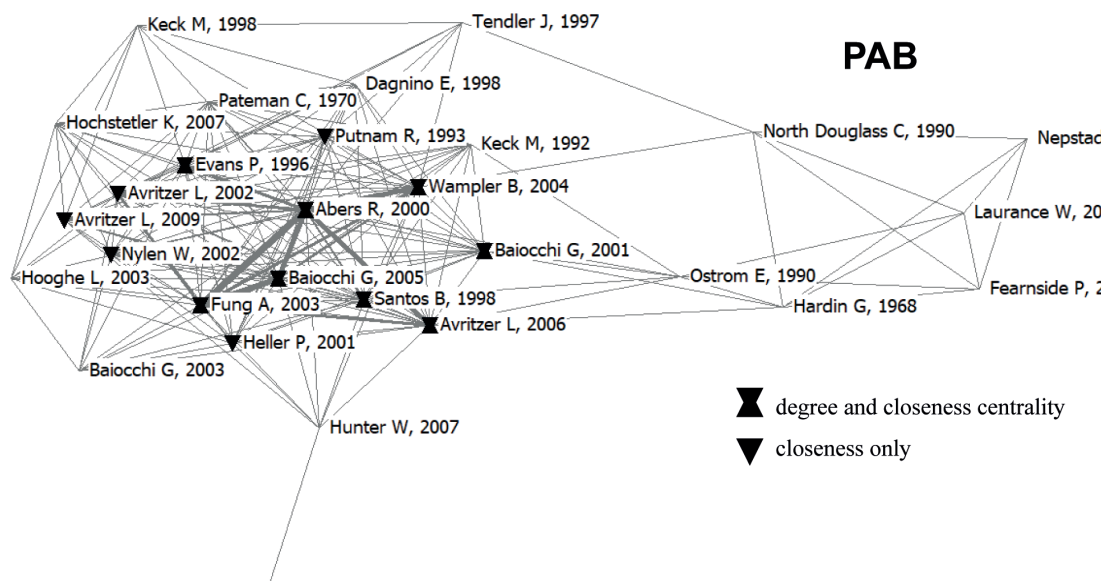

Source: Research data. (2015)

From the attributes of "closeness centrality" and "degree centrality", it was possible to identify, in the PAB and Pasb networks, the most influential publications (and authors) to each network, represented in figures 8 and 9 and boxes 2 and 3.

The reconfigured PAB network (figure 8 and box 2) contains 10 authors and 13 publications, being that six are in book form and seven in article form, in the period between 1993 and 2009.

FIGURE 8   PAB NETWORK WITH IDENTIFICATION OF THE "CLOSENESS" AND "DEGREE" CENTRALITY ATTRIBUTES (FIRST FIVE LEVELS) — RECONFIGURED PAB NETWORK, 2015

Source: Research data (2015).

Since the nodes identified were part of cluster 1, the recurring thematic content is what has been already mentioned: experience of participatory budget in Porto Alegre (and other places), deliberative democracy, democracy in Latin America and social capital.

BOX 2   ROSTER (IN ALPHABETICAL ORDER) OF AUTHORS AND PUBLICATIONS RELATED TO THE RECONFIGURED PAB NETWORK, 2015

Author, year	Type of publication	Title	Main focus
Abers R, 2000	Book	*Inventing local democracy: grassroots politics in Brazil*	Sociopolitical trajectory and impact of the PB program (1989), Porto Alegre
Avritzer L, 2002	Book	*Democracy and the public space in Latin America*	Study on democracy in Latin America, distinguishing restricted, elitist, European democracy.

Continue

Author, year	Type of publication	Title	Main focus
Avritzer L, 2006	Article	*New public spheres in Brazil: local democracy and deliberative politics*	Expansion of the PB and reflection on the deliberative and distributive characteristics
Avritzer L, 2009	Book	*Participatory institutions in democratic Brazil*	Participatory democracy — case of Porto Alegre, São Paulo, Salvador. Analysis of the PB health councils and pilot plans
Baiocchi G, 2001	Article	*Participation, activism, and politics: the Porto Alegre experiment and deliberative democratic theory*	Experience of Porto Alegre — analysis of populational participation according to income, gender and education, and relationship to deliberative democracy
Baiocchi G, 2005	Book	*Militants and citizens: the politics of participatory democracy in Porto Alegre*	Experience of Porto Alegre — politico-cultural study of government and participatory democracy
Evans P, 1996	Article	*Government action, social capital and development: reviewing the evidence on synergy*	Explores forms and resources of State-society synergy
Fung A, 2003	Book	*Deepening democracy: institutional Innovations in empowered participatory Governance*	Study about deliberative democracy, showing the cases of Porto Alegre, Chicago, environmental management, and Kerala
Heler P, 2001	Article	*Moving the State: the politics of democratic decentralization in Kerala, South Africa, and Porto Alegre*	Study of democracy based on the experiences of Porto Alegre and Kerala
Nylen W, 2002	Article	*Testing the empowerment thesis: the participatory budget in Belo Horizonte and Betim, Brazil*	OP in Belo Horizonte and Betim as examples of empowerment of citizens
Putnam R, 1993	Book	*Making democracy work: civic traditions in modern Italy*	Relation of social capital in the civic community and successful institutions
Santos B, 1998	Article	*Participatory budgeting in Porto Alegre: toward a redistributive democracy*	Analysis of the Porto Alegre case in the perspective of institutions, processes and criteria of resource distribution
Wampler B, 2004	Article	*Participatory publics: civil society and new institutions in democratic Brazil*	PB in Porto Alegre, Belo Horizonte, Recife highlighting the organizations of civil society and political reformers to implement new systems of policy formulation

Source: Research data (2015).

The experience in Porto Alegre on PB was considered important years ago, and used to exemplify the possibility of active policies of democratic reform, by means of a favorable interactive environment

in order to strengthen local groups of civil society (Frey, 2007). The PB and the community councils were examples of the effort to implement participatory public policies promoted by multilateral organisms, constitutional commandments, and commitments assumed by some political parties and these practices diverge from the model of "new public managerialism" (Souza, 2006). Despite this, there is mention of the PB as an interesting creation, relating it to a non-state public space, inside the perspective of delimitation of the area of State action (Bresser-Pereira, 1997). In another review, the PB is cited as an example of a deliberative democracy mechanism, as well as the strengthening the community in participatory management and planning, under the perspective of the participative governance model (Secchi, 2009).

In a study about the cultural and social aspects of the participatory budget in Porto Alegre and Belo Horizonte and their expansion in Brazil, the author considers specific facts about some cities such as the tradition of organizing in associations and community participation, favoring negotiation between community associations and the public administration. It also refers to cities that do not have a participating society and in these cases the PB is realized in a more simplified form. Furthermore, it refers this policy to the Workers' Party (or popular left-wing parties) (Avritzer, 2005).

According to another author (Abrúcio, 2011), the choice to strengthen participative mechanisms is, evidently, a credit of the Lula administration; however, there were difficulties in dealing with the intensification of deliberative democracy instead of the traditional game of coalition for governability, under the presidentialism of Brazilian representative democracy, which is apparent in the relationship models of the National Congress, mainly based in the exchange of government positions and funding for support.

Participatory deliberative management intends to incorporate into the functioning of public administration elements of political nature such as dialogue and negotiation. Its modernization should not aim at instrumental efficiency, such as is the case of the new public management, but rather to respond to the demands of a new social order; in other words, the answers do not need to be technically better or faster, but they should represent a balancing point, a commitment between various views of a same problem (Brugué, 2004).

Two authors, "Putnam" and "Evans", refer to the concept of social capital, a set of rules of reciprocity, trust and sense of belonging, enabling greater civic engagement and community participation. The generation of social capital, as well as the creation of public values, the coordination of public and private actors, social inclusion and sharing of responsibilities must make part of a list of innovative actions that are essential for the State to face the great changes of the last decades (Matias Pereira, 2010).

From a deliberative rationality approach, it is possible to look at public questions under different points of view, to deal with complex problems, through dialogue and in a democratic way. Thus, for a public policy to succeed, it is necessary to include the opinions of all parts through the policy of dialogue, creating intelligence in its content, without disassociating from its form. By means of participative processes, enough synergy and social capital are created in order to realize policies, overcoming the problems of disagreement between some parties and private interests (Tarragó, Brugué and Cardoso Júnior, 2015).

Now, the reconfigured Pasb network (figure 9 and box 3) contains 12 authors and 16 publications, eight being in the form of books, seven in article form and one in law form, comprising the period between 1988 and 2011.
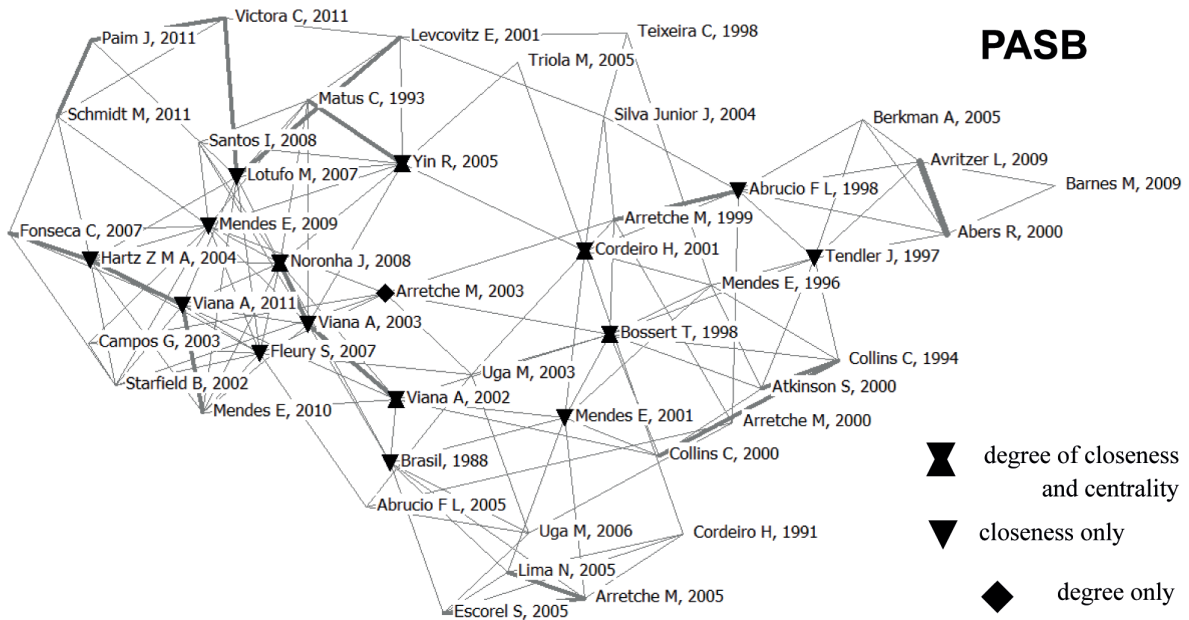
Source: Research data (2015).

The nodes identified originate in both clusters and the content of the publications includes, primarily, texts related to the decentralization of the healthcare system, as well as the verification of local or regional management practices, formulation or evaluation of models of attention, the Federal Constitution, and Yin's research method.

Besides being a SUS directive, the logic of decentralization refers, in part, to the intent to improve effectiveness, considering that in units closer to the reality of the users will provide better services. Justifications are also found in the democratic bases, with better opportunities for people to involve themselves in local administration levels (Peters, 2008).

Even before the creation of the SUS, some municipalities already had decisive roles in many states, such as in the eradication policies of poliomyelitis (infantile paralysis) and measles (Santos, 2013b). Despite this, there may not be an intrinsic guarantee in the relationship between the autonomy of local governments and the commitment with the needs of citizens, nor with administrative efficiency (Arretche, 2003). In the same way, decentralization processes can cause coordination problems and the need to focus on the interactions that occur in the provision of services (Carneiro and Menicucci, 2011). It is argued that their mechanisms of operation are institutionalized, however the directive should not be an end in of itself (Viana, Lima and Oliveira, 2002). On one hand, local management is limited by the expressive power of induction of the central government; on the other, citizens have tools to control and inspect the action of local governments, but they do not explore these completely (Arretche, 2003).

The publications in the reconfigured Pasb network, in box 3, raise some questions about decentralization, linked to financing, system complexity and regional inequalities.

BOX 3   **ROSTER (IN ALPHABETICAL ORDER) OF AUTHORS AND PUBLICATIONS RELATED TO THE RECONFIGURED PASB NETWORK, 2015**

Author, year	Type of publication	Title	Main focus
Abrucio F, 1998	Book	*The Barons of the Federation: Governors and the Brazilian Re-democratization*	Understanding the relationships between Union, states and municipalities in the Brazilian political system and repercussions
Arretche M, 2003	Article	*Federal financing and local management of social policies: the difficult balance between regulation, responsibility and autonomy*	Analysis of institutional mechanisms and their relationship to the quality of healthcare
Bossert T, 1998	Article	*Analyzing the decentralization of health systems in developing countries: decision space, innovation and performance*	Critical evaluation of the decentralization of healthcare systems in Latin America, in terms of equity, efficiency, performance, as well as exploring the space of local decision
Brasil, 1988	Group of laws	*Federal Constitution of Brazil*	Official and current document, prepared by deputies and senators, containing norms, rights and duties of citizens and State
Cordeiro H, 2001	Article	*Decentralization, universality and equity in healthcare reforms*	Contextualization of public health in the 1990s decade, from constitutional principles and the neoliberal wave that influenced reforms in Latin America
Fleury S, 2007	Book	*Network management: the strategy of healthcare policy regionalization*	Discussion of the subject of networks under the perspective of management and public policy, regionalization of SUS and the norm for operationalization of healthcare (Noas)
Hartz Z, 2004	Article	*Integrality of healthcare services integration: challenges in evaluating the implementation of a "system without walls"*	Sharing of experiences, "lessons learned" about the integration of services, common interest to researchers and managers
Lotufo M, 2007	Article	*Direction systems and governmental management practices of state health departments*	Case study of 12 state health departments, presenting policy formulation, decision-making, and program implementation processes
Mendes E, 2001	Book	*The great dilemmas of SUS*	Deals with the sanitary reform in Brazil, the objectives and complexities of healthcare service systems

Continue

Author, year	Type of publication	Title	Main focus
Mendes E, 2009	Book	*Healthcare Networks*	Proposal of implementation of healthcare networks, acute and chronic conditions, clinic management, integrality, action on social determinants and alternative forms of financing
Noronha J, 2008	Book (chapter)	*The Unified Health System (SUS)*	Analysis of the main aspects that oriented the implementation of SUS until the end of the decade of 2000, presenting advances and challenges
Tendler J, 1997	Book	*Good government in the tropics*	Covers four projects from the government of Ceará, raising questions about the sector's organization and provision of public services, decentralization and interaction between government and civil society
Viana A, 2002	Article	*Decentralization and federalism: healthcare policy in a new context — lessons from the Brazilian case*	Analysis of the decentralization processes and implications to the recent healthcare policy reforms: limits and risks, in the context of inequalities
Viana A, 2003	Article	*Healthcare Policy and Equity*	Analysis of the supply and use of health services, allocation of municipal resources, from the perspective of equity
Viana A, 2011	Book	*Regionalization and federative relations in Heathcare Policy in Brazil*	Analysis of regionalization in health in the states, verifying the conditions of the process and the dynamics of functioning of the collegial bodies
Yin R, 2005	Book	*Case study, planning and methods*	Classic researh method

Source: Research data (2015).

Another publication that stands out in the reconfigured Pasb network is the Constitution of 1988. This defined a conception of democracy and social security as an expression of social rights inherent to citizenship, integrating health, welfare, and assistance. It recognized the right to health and the duty of the State, by guaranteeing a set of economic and social policies, with the creation of the Unified Health System (SUS), which is universal, public, participatory, decentralized and integral (Paim, 2013).

The subject of SUS is found in other publications on the network, seeing that perhaps it is the most concrete result related to health in the Constitution. The arguments vary, from a broader perspective, presenting system objectives and complexity such as in "Mendes, 2001", implementation mechanisms, in "Arretche", and analyses of the processes of formulation and implementation of programs, in "Lotufo" and "Noronha". Among the models of care present in the Pasb network, there remains in the reconfigured network those related to the principle of integrality: integration of the services and health care networks — "Hartz", "Fleury" and "Mendes, 2009".

In 2010, 85% of Brazilian municipalities already had Primary Care support programs, such as the Program of Community Health Agents and the Family Health Strategy (ESF). This large expansion, driven by decentralization of management and strategies of resource transfers from the federal

government, have stimulated municipalities to invest in regulatory systems and to create strategies for the integration of primary care with the network of specialized services (Paim et al., 2011).

4. FINAL CONSIDERATIONS

The objective of this paper was to identify the international publications indexed in the WoS, on the theme of public administration in Brazil, with a focus on health. In the analysis, no isolated author or publication stood out; thus, the interpretation was based on the relationships between the nodes (publications) in the networks.

From the analysis of the social networks of public administration, it was possible to identify a very coherent network associated with successful practices of participatory budgets, related to deliberative democracy and social participation. On one hand, the strength of these publications highlights the constitutional achievements and records innovative management models; on the other, it could be argued that the strong cohesion between these publications could restrict the insertion of innovative ideas or new practices in the constituted networks.

In the networks, documents about the "new public management" were not identified. Considering that this model is part of Brazilian history, it is necessary to question if there are no studies on this subject (which is very improbable), or if they simply were not published internationally and indexed in the WoS, and, therefore, do not appear in the analyzed networks.

According to a study conducted with editors of scientific periodicals, there is a relationship between scientific production and publishing. The journals are responsible for the circulation of academic and scientific debate; they are also, in a way, inductors of the editorial definition of themes, theories and methods relevant to a certain era and audience, which can become hegemonic to determine the "spirit of the times" (Valmore, 2015).

In the analysis of the public healthcare administration network, in which the connections were less dense, there was a greater variation of subjects, with emphasis on the Brazilian Sanitary Reform and the decentralization of SUS. In addition, there are various articles with a more reflexive focus, questioning the efficiency of healthcare services and control mechanisms of SUS, as well as equity in the de-concentration of the services. There are publications about local practices, as well as productions contextualizing the situation of the country, theoretical models, and the relationship between the management levels. The subject of community participation, so present in the PAB network, did not appear in the Pasb network. This fact is intriguing when considering that SUS possesses its own law for social control, which helps to make decisions about public health. In this case, it is also necessary to investigate what is the meaning of the absence of publications about this subject. This is probably due to the main limitation of the study, which is to adhere only to the exploration of the bibliographical database of the WoS and to utilize algorithms to obtain the metadata analyzed. On the other hand, what seems to be a limitation could also be seen through another perspective, as a possibility for methodological innovation and exploration of how much this subject achieves international insertion.

Considering the fact that the large reforms, in administration as well as in the Brazilian public healthcare system, originate in the Constitution and, therefore, are relatively recent, it is verified that their understanding has evolved in a technical and political way, with criticality present, but which still opens gaps and allows the exploration of new paths.

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