

“PUBLIC OPINION”: bibliometric analysis for the systematization of trends (1945-2016)

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1 Introduction

The concept of public opinion has provoked controversy (Bourdieu, 1980; Mateus, 2008). There are even those who claim that public opinion does not exist (Bourdieu, 1980). The controversy is due to the fact that “[...] the centrality of public opinion in social and political thinking renders it a fundamental symbolic value for societies. It effectively served as the basis for revolutions, democratic movements or to support totalitarian regimes” (Mateus, 2008, p. 59). It is still common to encounter the assertion that “[...] there can be no democracy without the democratic formation of public opinion” (Guimarães & Amorim, 2013, p. 53). From this perspective, public opinion is fundamental in shaping political will, as Jürgen Habermas, and before him, Jean-Jacques Rousseau both argued – despite the limitations of both propositions (Guimarães & Amorim, 2013).

The literature on public opinion in the 20th century makes expressive reference to the works: *Public Opinion*, by Walter Lippmann, 1922, and *Kritik der Öffentlichen Meinung* (translated as *On Public Opinion*), by Ferdinand Tönnies, also in 1922. Non-systematic evidence shows that there has been discussion on the theme by authors from different strands and epistemologies, as well as from different areas of knowledge and with various research themes. In the light of this, it becomes important to discover the trends in academic production involving the concepts of “public opinion”.

We sought to answer this question through a bibliometric analysis, which aims to organize scientific output trends and comprehend how a certain area of knowledge has been developing (Prado *et al.*, 2016). Investigations such as these also propose an analysis of the dynamics associated with the formation, maintenance and decline of some scientific communities (Hagstrom, 1965) or scientific fields (Bourdieu, 1994). As such, **the goal of this paper was to systematize trends in the field of “public opinion” surveys**. To this end, we used *Web of Science* as base for the gathering of bibliographical material.

Following this introduction, there are another four sections: (i) brief theoretical presentation of the debates on public opinion; (ii) presentation of methodological research procedures; (iii) results and discussion and, finally, (iv) conclusions.

2 Origins of the expression “public opinion”

It is worth noting that due to the bibliometric analysis character of the article, this segment of text aims to merely identify some elements of the field.

To begin our reflection of the studies that deal with public opinion, we need to remember that although modern historical definitions of the expression “public opinion” date back to the 18th century and start of the 19th century, they are still related to the two isolated terms that form the expression – “opinion” and “public” – which have older origins (Borges, 2014; Mateus, 2008). It is important to note that the terms are initially in antithetic domains, since the former alludes to the individual, subjective and unstable world, while the latter refers to something objective, universal and common to various subjects (Borges, 2014; Mateus, 2008). The referral to the terms separately in order to understand the concept is emphasized by Price (2008, p. 11): “The concept of public opinion emerged during the Enlightenment, but the separate concepts of the public and opinion have much older histories, each with a range of meanings that continue to inform their use to the present day”.

The origin of each term is in the political-philosophical thinking of Classical Antiquity. For Plato, opinion (*doxa*) was something ephemeral, unstable, based on popular belief, becoming something of less value in his estimation. In opposition was *episteme* with immutable ideas (Borges, 2014). A similar concept held sway among the Romans. Another meaning related to the term ‘opinion’ was proposed by John Locke – that of moral judgment, which is associated with social control, since it is through it that individuals are judged, attributing them with credit and reputation, or not (Borges, 2014).

The term ‘public’, according to Borges (2014), had a Roman definition that distinguished it in relation to the private, with a separation between private and common matters (also as per Hannah Arendt and Jürgen Habermas). These definitions underwent changes over the course of history. In the Middle Ages, for example, public was associated with the apparatus that was in the domain of the public (Habermas, 2003).

Through the junction of these terms (to a certain extent, antagonistic), between the end of the 18th century and the beginning of the 19th century, we had the emergence of the expression *public opinion*, in contexts involving attempts to implant and legitimize democratic models (Habermas, 2003). According to Borges (2014), public opinion was initially conceived as the “court” that legitimizes and monitors the exercise of political power (Habermas, 2003; Borges, 2014), in expressing the voice of the “enlightened public” (Borges 2014, p. 92). It consolidates itself as an offshoot of the Illuminist philosophies and revolutions at the start of modern times, securing its place in a context of a liberal economy and society dominated by the bourgeois, as an abstract authority that mediates between government and those governed. This debate was central in the work *The Structural Transformation of the Public Sphere* de Habermas and also in *The Human Condition* de Arendt.

It was, therefore, a concept rooted in critical publicity and important in overthrowing the Old Regime and the emergence of a new authority to which the governing leaders were accountable – the public. The process of elevating the public to a social category was slow and it is considered to have begun in the era of feudalism, after which, in the course of history, it was subject to the influence of events such as the development of capitalism, the creation of cities, new means of communication, the emergence of the press and the Protestant Reformation movement. All this contributed to the onset of a reading public who gathered in cafes and halls in European countries to inform themselves and converse about art, politics, religion, science and business – that is, the public illuminist sphere of the 18th century (Habermas, 2003). In these spaces, the conversations emerged from critical judgment.

However, according to Mateus (2008), the bourgeois operationalization of the expression is merely one among other possibilities, given that in other times and contexts, similar terms were used to designate comparable objectives. Since the 17th century, in England, precursors of “public opinion” such as “*the sense of the people*”, “*the common voice*”, “*the general cry of the people*” and “*the public spirit*” were used (Borges, 2014; Price, 2008; Habermas, 2003).

3 Research methodology

Bibliometric studies are used, for example, to identify the trends and growth of knowledge in a certain area over time; evaluate the productivity of individual authors, organizations and countries; identify the journals that publish most on a given theme; identify reference authors for specific subjects, among many other possibilities (Prado *et al.*, 2016). Therefore, this approach entails a broad perspective on trends and patterns through networks of co-citations (Chen, 2006; Prado *et al.*, 2016).

With the aim of ensuring precision and transparency in the collection and analysis of information we chose to adopt the framework of biometric analysis produced by Prado *et al.* (2016). The instrument establishes stages to be followed by the researcher in planning the study,

data mining, selection, organization and analysis of the material that will constitute the *corpus* of the research (Figure 1).

Stages	Procedures	Description
1	Operationalization and search procedures	1.1 Choice of scientific bases or journals
		1.2 Demarcation of the terms that represent the field
		1.3 Operationalization of the search and filtering of articles
2	Procedures for selection and organization	2.1 Download of references – <i>EndNote software</i>
		2.2 Download of references in electronic spreadsheet format
		2.3 Download of references for use in <i>CiteSpace</i>
		2.4 Organization of references in <i>EndNote</i>
		2.5 Organization of analysis matrix in electronic spreadsheet
		2.6 Importing data to analysis <i>software</i>
3	Research front (articles from <i>Web of Science</i>)	3.1 Analysis of the volume of publications and time trends
		3.2 Analysis of article authorship (authors who publish most)
		3.3 Analysis of most cited articles
		3.4 Analysis of authors' country
		3.5 Analysis of journals
		3.6 Analysis of categories
		3.7 Analysis of keywords
		3.8 Description, study of relations and trends
4	Intellectual base for the field (co-citation networks)	4.1 Analysis of journal co-citation network
		4.2 Analysis of author co-citation network
		4.3 Analysis of reference co-citation network
		4.4 Description, study of relations and trends

Figure 1. Organization framework of bibliometric analysis. Source: Adapted from Prado *et al.* (2016).

According to the framework of bibliometric analysis presented, the first procedure for the operationalization of research was the choice of *Web of Science* by *Thomson Reuters (Principal Collection of the Web of Science)*, since it is among the most complete and reliable sources for organizing scientific production in accordance with rigid standards of selection, being used by different scholars as a reference (Pinto, Serra, & Ferreira, 2014). In the search, we used the expression “*public opinion*” or “*public opinions*” in brackets in the “title” field, that is, the term had to be in the title of the article – whereby the article would follow the central theme in its content. We only considered documents in the form of scientific article and in all the years available in the database –1945 to 2016. Moreover, no specific area was demarcated. At the end of the filtering, we found 2,536 articles.

Next, the other steps detailed in Figure 1 were followed. It is worth highlighting that by using specific software, bibliometric studies allow the researcher to deal with a large volume of information, which would be difficult implementing other analysis procedures (Pinto *et al.*, 2014). To organize the references, we used *EndNote (Free EndNote Trial)*. Nevertheless, in this article, we mainly used *CiteSpace software* for network presentations (Chen, 2006). In the analysis, we adopted the procedures described by Chen (2004, 2006) regarding the use of *CiteSpace* to view *intellectual turning points* (Chen, 2004) and understand *emerging trends* and *transient patterns* (Chen, 2004) in a general manner.

Important characteristics of *CiteSpace* use refer to the concepts of *research front* and *intellectual base*. *Research front* is the “emerging thematic trends and surges of new topics” (Chen, 2006, p. 362) and the *intellectual base* is represented in *CiteSpace* by the *co-citation networks*. *CiteSpace* also allows for the presentation of *clusters* as the figure illustrates. Chen (2006) demonstrates that through citations and co-citations we can discover the research trends on public opinion, the *research front* and the intellectual base of the field. In this way, the researcher may view the existing relations in his/her research field.

4 Results and discussion

4.1 Research front (sample of articles from *Web of Science*)

Considering the period from 1945 to 2016, we found an initial phase with few publications: two articles were published in 1945, one in 1946 and another two in 1947. A progressive and continuous growth in publications with focus on the term “public opinion” only began in 1956, as shown in Figure 2. In the Figure, we also include a graph in which the total of years was divided into 4 intervals of 17 years each – other analyses are shown later considering these timeframes. Despite some oscillations from one year to another, with increases followed by reductions and new increases, the overall trend was of growth, particularly from 2011 onwards. We noted that at the end of the 1990s there was a slight tendency towards fewer articles, going from 67 in 1998 to 45 in 1999, 42 in 2000 and 35 in 2001 – with growth returning in 2002 (43 articles) and 2003 (48 articles). We noticed that 2015 was the year with the most articles, totaling 175. In 2016 (research was carried out on September 19, 2016) 114 articles have already been published, exceeding the total number of articles published in 2014 and 2013. These numbers reveal that research on the theme of “public opinion” is on the increase, and is therefore of interest to various researchers.

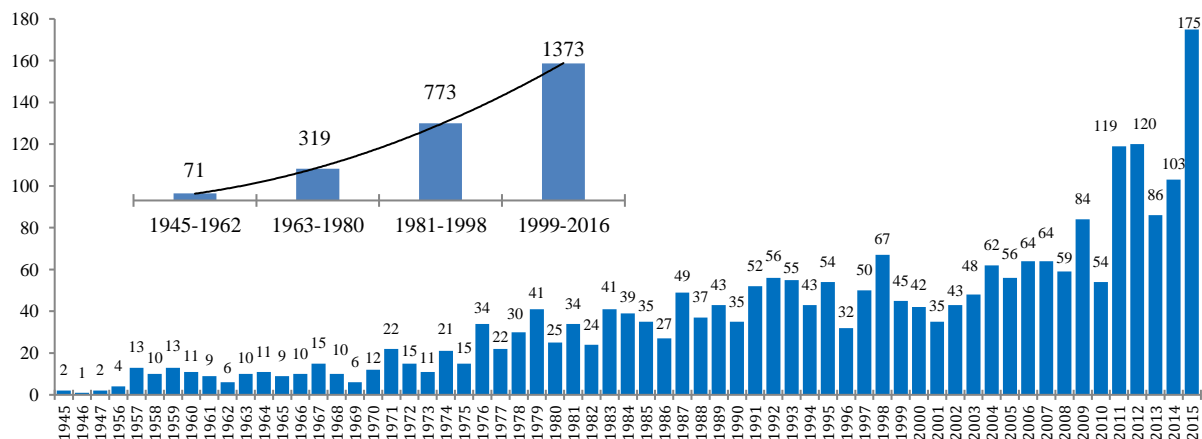


Figure 2. Evolution and trend of publications per year (1945-2016).

The increase in the number of articles opens space for the diversity of areas, interests and correlated research themes, stressing the plurality of sense attributed to “public opinion”, as mentioned by Figueiredo and Cervellini (1995) when addressing the concepts of the term. These are the first indications that the *research front* of publications on public opinion is quite diversified in theoretical and methodological terms. Nevertheless, the fact the theme is of interest to various areas is not new, having been strengthened by articles that deal with elections (Campbell, 1960; Mueller, 1973), the effects of public opinion on public policies (Page & Shapiro, 1983; Burstein, 2003) and mass media (Lippmann, 1922; Zaller, 1992). The first two articles found in this search address the issue of the statistical and mathematical measurement of public opinion – text Mann (1945) is indexed in the category of *Statistics & Probability* and *Mathematics*, in *Web of Science*, and Hyman (1945) is indexed in *Psychology*.

In the researched samples, the pioneering works were *On a problem of estimation occurring in public opinion polls*, by Mann (1945), published in the journal *Annals of Mathematical Statistics*, and *Community background in public opinion research*, by Hyman (1945), published in the *Journal of Abnormal and Social Psychology*. Both are from 1945 (the first year available for searching *Web of Science*). Mann (1945) discusses properties of voter number estimation, considering a survey performed in the molds of simple random or stratified sampling. Also along the lines of quantitative studies on public opinion, Hyman (1945) identifies advances and shortfalls in the field of research on public opinion at that time.

Next, we sought to identify, among the 2,536 sample articles (*citing articles*), which authors had published the most, especially the existence of authors who have published more than one article from those selected in the sample – these authors are important to demarcate the *research front* of the field. As such, Table 1 highlights the authors who have published seven or more articles, regardless of the authorship order, also presenting the article most cited in *Web of Science* (WoS) for each of the authors and the journal in which it was published. The N° column denotes the total of articles published per author, and the number of citations is also indicated under Cit., including the most cited article. It is worth noting that the 11 authors shown in Table 1 have articles they co-authored amongst themselves. In this sense, the sum of their publications is 86 articles.

Table 1 Most prolific authors and their respective most cited articles (*Web of Science*)

Author	N°	Author's most cited articles (<i>Web of Science</i>)		
		Article	Title	Cit.
Shapiro, R. Y.	12	Page and Shapiro - 1983	<i>Effects of public-opinion on policy</i>	499
Jacobs, L. R.	10	Jacobs - 1992	<i>The recoil effect: public opinion and policymaking in the U.S. and Britain</i>	29
Brewer, P. R.	9	Brewer - 2003	<i>Values, political knowledge, and public opinion about gay rights: A framing-based account</i>	79
Druckman, J. N.	9	Chong and Druckman - 2007	<i>Framing public opinion in competitive democracies</i>	180
Jacoby, W. G.	9	Jacoby - 2000	<i>Issue framing and public opinion on government spending</i>	152
Glynn, C. J.	7	Glynn and Mcleod - 1984	<i>Public opinion du jour: an examination of the spiral of silence</i>	48
Herbst, S.	7	Herbst - 1993	<i>The meaning of public opinion: citizens' constructions of political reality</i>	20
Kincaid, J.	7	Cole and Kincaid - 2000	<i>Public opinion and American federalism: Perspectives on taxes, spending, and trust: An ACIR update</i>	20
Lang, K.	7	Lang and Lang - 1978	<i>Immediate and delayed responses to a carter-ford debate: assessing public opinion</i>	18
Page, B. I.	7	Page and Shapiro - 1983	<i>Effects of public-opinion on policy</i>	499
Price, V.	7	Price - 1989	<i>Social identification and public opinion: effects of communicating group conflict</i>	63

Note: The table shows the authors who have published seven or more articles. "Most cited article" refers to the author's most cited article, either authored or co-authored, in the WoS. "Cit." refers to the sum of the article's citations in the WoS database.

Given a sample of 2,536 articles, the result suggests a fragmentation in the scenario of authors being published on this issue, that is, there are many researchers interested in the theme and reflecting on it, albeit without a central author in the field's *research front*. However, it is worth mentioning that the authors shown could have other articles and texts on the theme not considered because they are not indexed in *Web of Science*– Main Collection.

Even without authors who comprise a divergent volume of publications, we can highlight, from Table 1, the authors Robert Y. Shapiro (12 articles) and Lawrence R. Jacobs (10 articles), who have co-authored articles. Shapiro is a professor and researcher linked to the Department of Political Science at Columbia University. He is a specialist in American Politics, working on the themes of: interests of public opinion, policy formulation, political leadership, and means of communication and application of statistical methods. He is also co-author and co-editor of several books and articles published on these themes, such as the *Oxford Handbook of American Public Opinion and the Media* (edited with Lawrence R. Jacobs, Oxford University Press 2011). It should be stressed that Shapiro has been published on this subject for many years, as author and co-author, with articles spanning from 1983 (Page & Shapiro, 1983) to 2011 (Shapiro, 2011) and 2013 (Newport *et al.*, 2013). Jacobs also has many years of experience in researching the theme, with special mention for his work in the 1980s (Jacobs & Shapiro, 1989) and after 2010 (Jacobs & Mettle, 2011).

In the above list of authors that have published the most, it is important to stress that they are all linked to North American institutions. Of the ten institutions of learning that most publish, all are North American, with special mention for *University of California, University*

of Michigan, University of North Carolina, University of Wisconsin, Columbia University and Florida State University. In the light of this, we also sought to analyze the countries with the highest number of publications (this analysis only considers the country of the first author). As shown in Figure 3, the United States is far ahead in terms of the number of publications on “public opinion”.

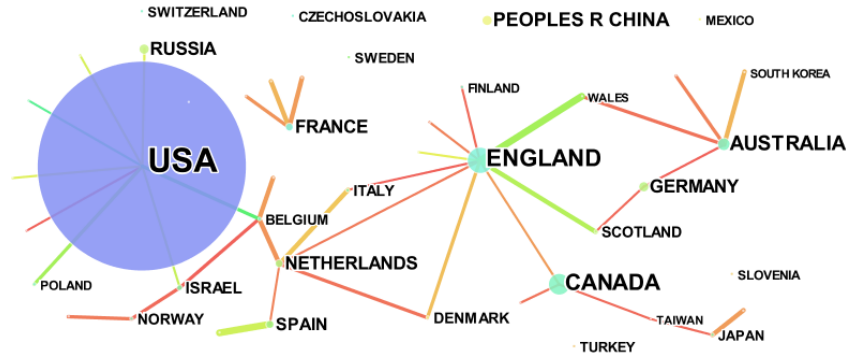


Figure 3. Network of co-authors’ countries (country of first author).

Although other countries have published on the theme, such as England (116 articles), Canada (92 articles), Australia (59 articles), China (44 articles), Germany (42 articles), Russia (4 articles), Holland (36 articles), France (35 articles) and Spain (32 articles), the number of North American articles is far superior to the other countries (914 articles), which is illustrated by the size of the blue sphere in Figure 3. This result corroborates the assertion by Figueiredo and Cervellini (1995) on the prominence of North American research on the theme of public opinion, especially in its study and measurement. Therefore, results prove the predominance of the United States on the public opinion *research front*.

From the United States (the country with the highest number of articles), the most cited works were by the authors, Gamson, Page and Nowak, with their respective articles: Gamson and Modigliani (1989), with 1,108 citations; Page and Shapiro (1983), with 499 citations; and Nowak, Szamrej and Latane (1990), with 320 citations. As per the analysis that will be described later, these articles appear among the 10 most cited from the sample (citations in *Web of Science*). Also in relation to the United States, the first article found in the search was published in 1947: *Public opinion measurement as an instrument in public health practice* (Calver & Wingo, 1947), in the *American Journal of Public Health and the Nations’ Health*.

Continuing the analyses of the articles from the sample, in Table 2, we highlight the 10 most cited articles (number of citations informed through *Web of Science*). Apart from the title of the articles, Table 2 shows the authors (Citation), the journal in which the article was published and the number of citations (Cit.).

Table 2 The 10 most cited articles (1945-2016) from the sample of 2,536 articles (citations in *Web of Science*)

Title of article	Citation	Cit.
<i>Media discourse and public-opinion on nuclear-power: a constructionist approach</i>	Gamson and Modigliani - 1989	1108
<i>Effects of public-opinion on policy</i>	Page and Shapiro - 1983	499
<i>Spiral of silence - theory of public opinion</i>	Noelle-Neumann - 1974	327
<i>From private attitude to public-opinion: a dynamic theory of social impact</i>	Nowak, Szamrej and Latane - 1990	320
<i>Structure and consistency in public-opinion: the role of core beliefs and values</i>	Feldman - 1988	281
<i>Public opinion toward immigration reform: The role of economic motivations</i>	Citrin, Green, Muste and Wong - 1997	262
<i>Gender gaps in public opinion about lesbians and gay men</i>	Herek - 2002	229
<i>Issue frames and group-centrism in American public opinion</i>	Nelson and Kinder - 1996	211
<i>What moves public-opinion</i>	Page, Shapiro and Dempsey - 1987	211
<i>The impact of public opinion on public policy: A review and an agenda</i>	Burstein - 2003	207

Among the results, it is worth noting that 4 of the 10 most cited articles are from the 1980s and focus on themes such as the effects of public opinion (Page & Shapiro, 1983; Page *et al.*, 1987), media and public opinion (Gamson & Modigliani, 1989) and the relation between beliefs, values and public opinion (Feldman, 1988). The oldest article is the *Spiral of silence: theory of public opinion*, by Noelle-Neumann (1974), published in the *Journal of Communication*. In it, the German political scientist puts forward an often cited theory on public opinion and mass communication, in which he argues that people are afraid of isolation (of being excluded) and therefore prefer not to express their opinions when they are contrary to the majority's (particularly on controversial themes).

The most cited article by far is *Media discourse and public-opinion on nuclear-power: a constructionist approach*, by Gamson and Modigliani (1989) published in the *American Journal of Sociology*. This article studies the relation between media and public opinion through an analysis of the discourse on nuclear energy over more than three decades. The intention is to understand the formation of public opinion on nuclear energy (Gamson & Modigliani, 1989). Regarding the journals in which the 10 articles were published, we noted that the majority came from areas related to political science; the themes are also linked to these areas – it is the case of those that deal with influence of public opinion on political decisions (Burstein, 2003; Page & Shapiro, 1983), on the relation between media and public opinion, the impacts of public opinion, the relation of public opinion to beliefs and values, as well as looking at themes such as immigration and homosexuality, among others. Therefore, we reiterate that our analysis of the *research front* showed the existence of a plurality of themes, approaches and empirical research on public opinion, with a strong presence of themes related to the area of political science. In addition, on the *research front*, the article by Gamson and Modigliani (1989), on media and public opinion in the case of nuclear energy, stands out.

Next, we list the most frequent journals in the 2,536 published articles from the sample. This assessment was aimed at identifying any journal that was notable for the publication of articles on public opinion. In the list, we found a very high number of journals – more than 960 – demonstrating that the publications are disperse, being distributed between different journals, focused on wide-ranging areas (including political science, communication, economics, history, environmental sciences, health sciences, technology, engineering, literature, international relations, public policy, demography, public administration, business and others). Considering the journals from Table 3, the following published more than 30 articles: *Public Opinion Quarterly* (128 articles), *Sotsiologicheskie Issledovaniya* (73 articles), *International Journal of Public Opinion Research* (56 articles) and *American Journal of Political Science* (40 articles).

Table 3 Journals that published the most articles from the sample (1945-2016)

Journal	Frequency (articles)	Proportion (partial)	Proportion (total)
<i>Public Opinion Quarterly</i>	128	30.12%	5.05%
<i>Sotsiologicheskie Issledovaniya</i>	73	17.18%	2.88%
<i>International Journal of Public Opinion Research</i>	56	13.18%	2.21%
<i>American Journal of Political Science</i>	40	9.41%	1.58%
<i>Journal of Politics</i>	28	6.59%	1.10%
<i>Sociologicky Casopis</i>	22	5.18%	0.87%
<i>American Political Science Review</i>	21	4.94%	0.83%
<i>Political Research Quarterly</i>	20	4.71%	0.79%
<i>Journalism Quarterly</i>	19	4.47%	0.75%
<i>Political Science Quarterly</i>	18	4.24%	0.71%
Partial sum of the articles	425	100.00%	16.76%
Other articles	2111		83.24%
Total of articles	2536		100.00%

Table 3 shows that the first 10 journals represent just 16.76% of publications, showing that the articles from the sample came from a very large number of journals. Nevertheless, the

journals with the highest number of articles demonstrate a relative concentration of research on public opinion in areas linked to political sciences (*American Journal of Political Science*, *Journal of Politics*, *American Political Science Review and Political Research Quarterly*), or are journals specialized in public opinion, such as *Public Opinion Quarterly* and the *International Journal of Public Opinion Research*. As such, these are the characteristics of the *research front* in terms of journals.

In terms of the sheer number of articles, the *Public Opinion Quarterly* stands out. It has a high impact factor, was created in 1937 and is part of the *Oxford University* publications. The journal's publications deal with theoretical contributions to communication research, public opinion analysis and the investigation of methodological questions (Public Opinion Quarterly, 2016). In this journal, the most cited article was *Gender gaps in public opinion about lesbians and gay men* by Herek (2002), with 229 citations, and the oldest article was *Public-opinion and national-security policy* by Almond (1956). Herek (2002) analyzed the disparity in attitudes among heterosexuals in relation to homosexuals. The results showed that heterosexual men had less favorable attitudes towards homosexuals in terms of gender issues. The author's research fits the orientation of opinion surveys. Almond's research (1956) concerned public opinion and national security.

In Figure 4, we show the distribution of articles by categories in *Web of Science* (only areas of frequency equal to or greater than 44 appear in the figure). Indexation by categories shows that the theme of public opinion is multidisciplinary, even though it is mostly associated with *Government and Law* (844 articles), followed by studies in the areas of *Political Science* (780) and *Communication* (353). It is noteworthy that apart from the areas of knowledge cited, there are publications in various other areas of the sciences, such as medicine, art, cultural studies, international relations, education, environmental sciences, statistics, mathematics, business, demography, geography and ethics.



Figure 4. Co-occurring subject (*Web of Science* Category).

The *co-occurring subject* above is presented in the *time zone* format (Chen, 2006), showing, apart from frequency of articles (marked by the size of the circles), the trend for field expansion (marking the positions in which the first article from each area was published). It demonstrates that the *research front* has expanded and today forms a multidisciplinary field (exact and earth sciences; human sciences; agrarian science engineering and applied social sciences), as Figueiredo and Cervellini (1995) also point out.

In general, we noticed that the texts already presented also stand out in this aspect, such as the article by Page and Shapiro (1983), which is indexed both in the *Government & Law* category, and also in *Political Science*. The article (*Communication*) by Gamson and

Modigliani (1989), the most cited from our sample, also appears, as well as the classic article by Noelle-Neumann (1974). It is worth mentioning that the articles indexed in the category of *History* are little cited – the most cited article in this category was referenced only 32 times. Next, we will analyze the keywords used (*co-occurring keywords*), shown in Figure 5.

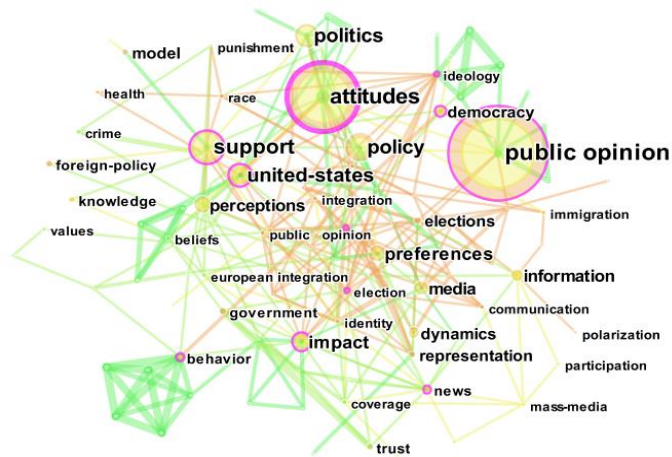


Figure 5. Co-occurring keywords (Years per slice = 10).

The most frequent keyword was *public opinion*, used 333 times (which was expected given the field demarcation). After it came *attitudes* (235), *support* (126), *policy* (118), among others, as per Figure 5 and Table 4. The highlighted words comprise the subject areas of the *research front* and, therefore, indicate focuses and trends in public opinion research (in the network those with frequency of at least 20 times were highlighted). Table 4 shows the frequency of keywords and the most cited article that used the respective keyword. We noted that the words and articles again demonstrate the plurality of the field and the multiplicity of research carried out from different study perspectives.

Table 4 Top 10 co-occurring key-words

Key-word	Freq.	Most cited article that used the respective keyword	
		Author	Article
<i>public opinion</i>	333	Firestone and Kempton - 2007	<i>Public opinion about large offshore wind power: underlying factors</i>
<i>attitudes</i>	235	Citrin, Green, Muste and Wong - 1997	<i>Public opinion toward immigration reform: the role of economic motivations</i>
<i>support</i>	126	Hooghe and Marks - 2005	<i>Calculation, community and cues public opinion on European integration</i>
<i>policy</i>	118	Jacoby - 2000	<i>Issue framing and public opinion on government spending</i>
<i>United-States</i>	103	Burstein - 2003	<i>The impact of public opinion on public policy: a review and an agenda</i>
<i>politics</i>	96	Citrin, Green, Muste and Wong - 1997	<i>Public opinion toward immigration reform: the role of economic motivations</i>
<i>impact</i>	73	Chong and Druckman - 2007	<i>Framing public opinion in competitive democracies</i>
<i>preferences</i>	72	Jacoby - 2000	<i>Issue framing and public opinion on government spending</i>
<i>perceptions</i>	62	Brulle, Carmichael and Jenkins - 2012	<i>Shifting public opinion on climate change: an empirical assessment of factors influencing concern over climate change in the U.S., 2002–2010</i>
<i>media</i>	62	Cobb - 2005	<i>Framing effects on public opinion about nanotechnology</i>

In the selection of the articles published, besides the natural predominance of the term ‘public opinion’ (333 times) – the theme of this paper – we observed a network of words that could be connected to more frequent categories of the articles. *Information, news and media*, for example, are strongly related to the area of *Communication*. And *policy, election, representation, democracy and politics* are common terms in *Political Science* studies, as well as *Government and Law*. *Attitude* is one of the most used expressions among the keywords (235

times) and may be linked to studies from different areas and categories. Perhaps it is used so much due to its relation to the term *opinion*, taken to mean a personal attitude involving choices (Borges, 2014; Mateus, 2008). Other keywords indicate conceptual studies on public opinion, its impacts (measurement) or “public opinion survey”, such as *support, knowledge, model, dynamics, behavior, impact and perception*. Other keywords suggest more specific empirical research contexts, such as *war, immigration and foreign policy*. It is worth noting that the term *United States* is the fifth most used keyword, linked to the fact that it is the country with the highest number of studies on public opinion, has a tradition of carrying out *surveys* in this area and is where the authors publish the most.

It is important to stress that there are different uses of the public opinion concept. According to Mateus (2008) and Figueiredo and Cervellini (1995), the confusion at the concept of the expression ‘public opinion’ is also tied to the association it has with opinion surveys. Figueiredo and Cervellini (1995), Habermas (1996) and Borges (2014) claimed that simplistic associations hinder the conceptual understanding of public opinion, since the emergence of opinion poll institutes was guided by an empiricist paradigm, leading to an abandonment of the fundamental concepts of the philosophical-political thinking that founded the concept of public opinion at the beginning of the 19th century. In the context of this debate, Perrin and McFarland (2011) argue that both public opinion researchers and their critics are correct in some aspects. Therefore, discussion of this impasse should entail a revision of the nature of public opinion in order to use research techniques suited to the purpose and to adopt processes for the critical assessment of results.

4.2 Intellectual Base for the Research into Public Opinion Field

Continuing with our analysis, we will now evaluate the co-citation networks of journals, authors and references (documents). To broaden our understanding of the journals, through *CiteSpace*, the *journal co-citation network* was created— in this case, journals in which articles from the sample were published are not shown, but rather the journals co-cited by the 2,536 articles analyzed (Figure 6).

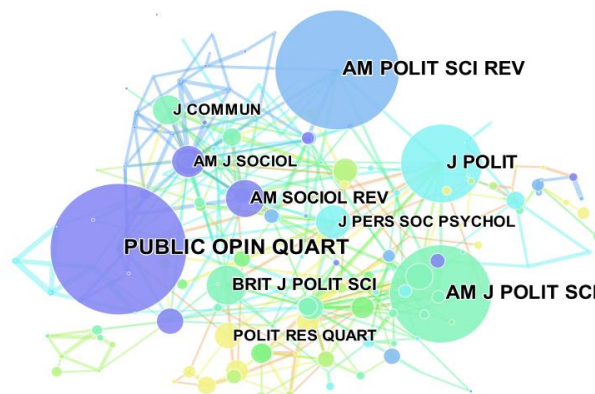


Figure 6. Journal Co-Citation Network (10-yers per slice).

The network highlights the journals *Public Opinion Quarterly* and *American Political Science Review*. Even though it is the journal with the second highest frequency of published articles from the sample, *Sotsiologicheskie Issledovaniya* does appear prominently in the *journal co-citation network*. Despite having a high number of published articles, the texts are not cited often (in this journal, the most cited article had only 1 citation). The journals with greatest frequency in the co-citation network are *Public Opinion Quarterly* (674), *American Political Science Review* (611), *American Journal of Political Science* (501), *Journal of Politics* (405) and *British Journal of Political Science* (203). Therefore, with the exception of the first, the following three are focused on the area of political science. Other prominent journals in the

network are from the area of sociology (*American Sociological Review*, 194 and *American Journal of Sociology*, 160), social psychology (*Journal of Personality and Social Psychology*, 173) and communication (*Journal of Communications*, 155).

Among the most prolific journals, the oldest reference to the theme is from the *American Journal of Sociology*, with a citation dating back to 1945. The most recent reference is from *Political Research Quarterly*, 133, whose first citation was from 1996. In Figure 6, the dark blue colors indicate articles with the oldest references (before 1960) - *American Journal of Sociology* and *Public Opinion Quarterly*. Articles referenced predominantly at the end of the 1990s are in yellow (*Political Research Quarterly*).

Of the journals that feature the most, it is important to remember that *Public Opinion Quarterly* was already mentioned in this article. *American Political Science Review* is also a significant journal for research on political science, including publications in the areas of political theory, American politics, public policy, public administration, comparative politics and international relations (*American Political Science Review*, 2016). It is a publication from the *American Political Science Association* (APSA) and has been continually edited for 110 years (since 1906).

With regard to the *journal co-citation network*, the intellectual base of the field is marked by the journals *Public Opinion Quarterly*, *American Political Science Review*, *American Journal of Political Science* and *Journal of Politics*. Despite the presence of journals on different themes and areas of knowledge, the categories of *Government and Law* and *Political Science* are those that feature in the magazines with the highest number of articles on public opinion.

In relation to *author co-citation networking*, we identified the authors who comprise the intellectual base of the field. As shown in Figure 7, through the wide circumference of knots for the theme of public opinion, the highest number of references in the co-citation network comes from the authors, Benjamim I. Page (227) and John R. Zaller (205).

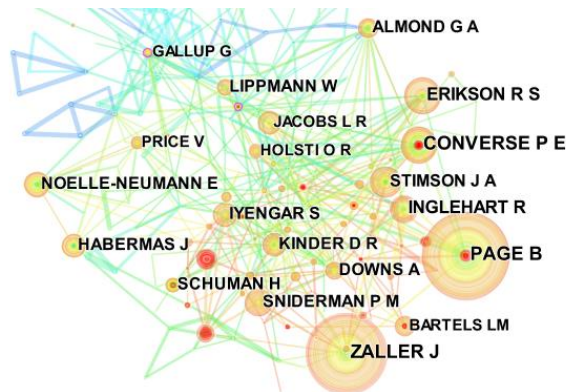


Figure 7. Author co-citation network (Years per slice = 7).

Colors also denote the authors who were referenced in different periods of time – blue for networks of co-citations from the 1940s and 1950s, with special mention for G. Gallup and W. Lippmann – classic authors in the field who maintain a high number of citations for their work till this day. Phillip. E. Converse is shown in the green part of the network, with work dating back to 1960s, as is Robert S. Erikson, in the 1970s. The authors Page and Zaller are more recent, marked by their work in the 1980s and 1990s respectively – the fact they are more cited could be interpreted based on Chen (2004, 2006), who points out that recent texts tend to be cited more and therefore contribute to the increased number of citations.

To bring the intellectual base to life, we prepared a brief profile of two of the main authors. Benjamin I. Page is a professor in the Department of Political Science at Northwestern University (USA). Apart from themes related to public opinion, their research is focused on

American politics, internal and external policy and economic and political inequality. Among their best known works are: *The rational public: Fifty years of trends in Americans' policy preferences*, *Effects of public opinion on policy* and *What moves public opinion?* – all three in co-authorship with Shapiro. John Zaller is a professor in the Department of Political Science at University of California, Los Angeles (USA). His work covers politics and public opinion. He is best known for his book published in 1992 – *The Nature and Origins of Mass Opinion*. Other works worth mentioning include: *Journalists and Citizens Shape the News*; *The American Ethos*, *Public Attitudes Toward Capitalism and Democracy* (in co-authorship with Herbert McCloskey).

To better understand the evolution of the field, we evaluated the co-citation networks dividing the period analyzed into 4 intervals of 17 years, as per Figure 8.

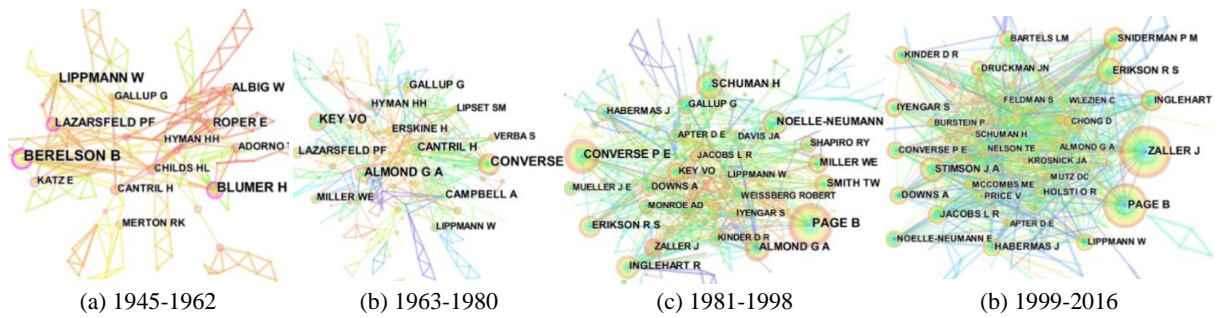


Figure 8. Author co-citation network in 4 periods.

Here we visually represent the expansion of the field in terms of knots and links, demonstrating the growth of the intellectual base in research into public opinion. We noted that authors such as Lippmann and Lazarsfeld, who were significant in the field in the periods from 1945-1962 and 1963-1980, were no longer prominent in the following periods. On the other hand, Converse, for example, emerged as an important author in the period from 1963-1980 and remained prominent until the end of the time period covered by the sample. Zaller appears prominently only in the period from 1981-1998, being the most cited author in the co-citation period, at the start of the period spanning 1999-2016. Page, meanwhile, already features in the period from 1981-1998, and continues to do so in the following period. As such, in an overall analysis of all the years, Page is the author with the greatest frequency, with Zaller in second place.

Finally, we use another central network to help comprehend the field: *document (reference) co-citation network* – that appear in the *cited references* from our sample (2,536).

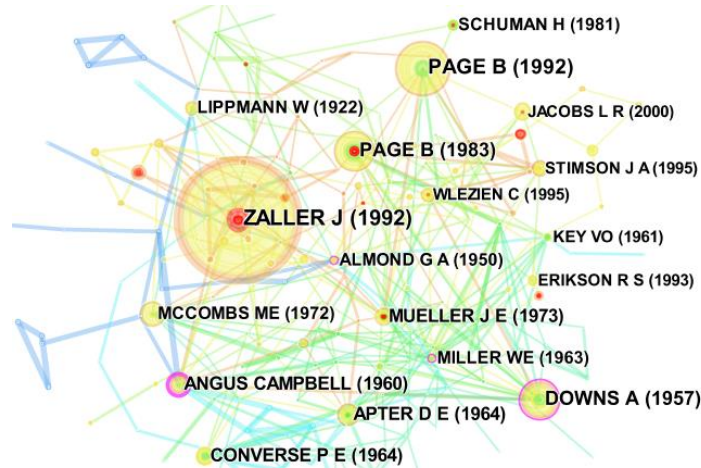


Figure 9. Document (reference) co-citation network (Year per slice = 10).

Note: only the name of the article's first author appears and the year of publication – full authorship is shown in Table 5.

In Figure 9, we can see that there are various sub-fields of publications on public opinion, carefully demarcated by the predominant literature in each decade: 1950s and 1960s (in blue), 1980s (in green), 1990s (in brown) and 2000s onwards (in yellow).

Through the network from Figure 9, along with Table 5, we can see that the most cited text in the field's intellectual base is the book *The Nature and Origins of Mass Opinion*, by Zaller (1992). In second place is *The Rational Public: Fifty Years of Trends in Americans' Policy Preferences*, by Page and Shapiro (1992). The texts by Page and Shapiro (1983), Apter (1964), Campbell (1960) and Converse (1964) are also among the most relevant. Table 5 gives emphasis to the most cited documents in the network, in the book or article format and the total number of citations (Cit.).

Table 5 Reference co-citation network summary

Title	Reference	Journal/Publisher	Cit.
<i>The nature and origins of mass opinion</i>	Zaller - 1992	Cambridge University press	158
<i>The rational public: fifty years of trends in Americans' policy preferences.</i>	Page and Shapiro - 1992	Chicago: University of Chicago Press	93
<i>Effects of public opinion on policy</i>	Page and Shapiro - 1983	American Political Science Review	80
<i>An economic theory of political action in a democracy</i>	Downs - 1957	The Journal of Political Economy	73
<i>Ideology and discontent</i>	Apter - 1964	Collier-Macmillan	69
<i>Surge and decline: A study of electoral change.</i>	Campbell - 1960	Public Opinion Quarterly,	61
<i>The nature of belief systems in mass publics</i>	Converse - 1964	In: <i>Ideology and Discontent</i> , ed. David Apter. New York: Free Press.	61
<i>War, presidents, and public opinion.</i>	Mueller - 1973	New York: Wiley.	59
<i>Public opinion</i>	Lippmann - 1922	New York, NY, US: MacMillan	54
<i>The agenda-setting function of mass media</i>	Mccombs and Shaw - 1972	Public Opinion Quarterly	53

Zaller (1992) seeks to construct “a theory of the dynamics of public opinion, formalized in a statistical model to study the effects of media on behavior and political attitudes” (Mundim, 2009, p. 2) and this work – *The nature and origins of mass opinion* – became a reference in debates on political communication, particularly studies on “the media's effects during elections – although it may also be broadly applied in any study of the Effects of the Media”.

Among the most relevant works, there is also the text by Lippmann (1922), which critically discusses the legitimacy of public opinion, taking it to mean “the images from our heads”. It puts forward the various limitations of public opinion, which, in fact, amounts to the opinion of few and not of a true “public”. This position contrasts, for example, with that of the German philosopher Jürgen Habermas, who also appears in the *author co-citation network*. Habermas (1996) argues that the legitimacy of political decisions needs to go through the formation of rational public opinion. He claims that this opinion, which is formed through open and equal debate, in the mix of the public arena, is capable of influencing the political system – therefore, it is also an idea of popular sovereignty in democracy. The contextualization of these authors' positions shows the range of differing and even opposing positions in the field of studies on public opinion. Finally, the other texts, apart from revealing different concepts of public opinion, also highlight two notable themes from the field - “mass” and politics.

5 Conclusion

Public opinion is a controversial concept associated with discussions on manipulation, surveys of opinion, potential for mobilization, influence over public policies, and other topics. Authors with different perspectives and from various areas of knowledge have debated the matter. In the light of this, this paper aimed at systematizing the trends in the field of research on “public opinion”. To this end, we carried out a bibliometric analysis of 2,536 articles selected

from the *Web of Science* by Thomson Reuters. Using the *CiteSpace* software (Chen, 2006), we sought to describe the *research front* and *intellectual base* of this research field.

In relation to the *research front*, we noted the evolution and growth of publications over a period from 1945 to 2016. In our sample, we identified Robert Y. Shapiro (12 articles) and Lawrence R. Jacobs (10 articles) as the most prolific authors. The most referenced articles were those by Gamson and Modigliani (1989), with 1,108 citations, and by Page and Shapiro (1983), with 499 citations. Besides this, the majority of articles were by North American authors (914 articles). The highest number of publications on the theme came from the journals *Public Opinion Quarterly* (128) and *Sotsiologicheskie Issledovaniya* (73 articles). The categories with the largest indexation of articles are *Government & Law* (844 articles) and *Political Science* (780 articles). The keywords that appear the most are *public opinion* (333), *attitudes* (235), *support* (126), *policy* (118), *united-states* (103) and *politics* (96).

It is important to consider that it was in the United States that research on public opinion was concentrated at the beginning of the 20th century (Figueiredo & Cervellini, 1995), and it has maintained this prolonged tradition of studies in the area, given that the majority of the most cited authors and journals are North American. We also confirmed the multidisciplinary nature of interest in the concept, with a variety of authors, journals, categories, and keywords that indicate studies in different areas of knowledge.

In relation to the *intellectual base*, in the *journal co-citation network* the journals *Public Opinion Quarterly* (674), *American Political Science Review* (611) and *American Journal of Political Science* (501) stood out. The *author co-citation network* showed Page and Zaller as the most prominent authors, while it is important to note that there were significant changes in the central authors from the field over the period from 1945 to 2016. Finally, in the analysis of the *references co-citation*, the most frequently occurring texts in the network were Zaller (1992) (158) and Page and Shapiro (1992). Based on the *intellectual base*, we observed that a large number of journals, authors and articles can be a factor that contributes to difficulties in formulating a single, all-encompassing concept for the term public opinion, since, as discussed, the concept is multidisciplinary (Figueiredo & Cervellini, 1995).

Results show that scientific output on public opinion is on the increase and that the theme is plural (multidisciplinary) in its approaches, research areas and study subjects. The concept was defined at the end of the 19th century and beginning of the 20th century, when the expression started to be used with its contemporary connotation (Borges, 2014), before developing and adapting to historical social, economic and transnational contexts, while also being the subject of debate, challenges, redimensioning and reverence for diverse research. It is also noted, as per Figueiredo and Cervellini (1995), that the most appropriate term would be “public opinions”, given that there is no sole understanding that may be singularized for this expression. Finally, based on this bibliometric analysis, new theoretical and empirical research may be performed bearing in mind the continuous and dynamic expansion of the *research front* and the *intellectual base*.

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