Ronaldo Ferreira Araújo
Federal University of Alagoas, Brazil
ronaldo.araujo@ichca.ufal.br
Ariadne Chloë Mary Furnival
Federal University of São Carlos
chloe@ufscar.br

Information science journals in Brazil: Comparative analysis between quality indices and indices of academic and social impact

Abstract: This paper aims to profile Brazilian Information Science journals and compare their quality and impact indicators, be these traditional or altmetrics indicators. It is an exploratory and descriptive research, with quantitative analysis of 23 journals, analysed in accordance with their Qualis (2013-6) assessment, their h and g indices from Google Scholar Metrics and their altmetrics data from Facebook for the period 2011 to 2016. The Qualis assessment was obtained from the Sucupira Platform, the indices from Harzing's Publish or Perish, and the altmetrics through the Facebook Application Programming Interface (API). The results show that the journals were created between 1972 and 2011, that they are edited by universities and that the most adopted frequency of publication is biannual (52%), followed by quarterly (39%). Regarding the national quality indicator Qualis, 73% of the journals fall within the higher stratum of B1 to A1. Regarding impact, 30.4% of the journals have an h-index greater than 10, and only 13% have a g-index greater than 20. Regarding their altmetrics, 34.7% have a Facebook altmetric value greater than 1,000 interactions. It can be concluded that the position of the journals vary if applied to the Qualis assessment system, the h and g indices and Facebook altmetrics. The journal that displays the greatest coincidence between the national index, and those of Google Scholar Metrics and the Facebook altmetrics was *Encontros Bibli* which is classed as Qualis A2, h-index 11 and g-index 17, and 2,261 interactions on Facebook.

Keywords: scientific communication, bibliometrics, altmetrics, information science journals, impact indicators,

Introduction

Knowledge construction arises from a wide and solid base of knowledge inherited from past generations so that it might be verified, discussed, revised and broadened. Even though this "communitarian" aspect of knowledge production is evident, it is fundamental that it is expressed with clarity and precision which intellectual sources were consulted for the formulation of that which is discussed and corroborated. Recognition of the scientific thought, formulation and production of other people is of extreme importance in this sense, and in the scientific literature, that is, in the set of publications resulting

from the scientific communication, such recognition is materialized in the list of consulted works.

According to Meadows (1999), communication is perceived as the vital stage for science, as much as the actual research, since it falls to science to vindicate its name with legitimacy, when the results of its investigations have been communicated, analyzed and accepted by the peer community. In this system of communication, scientific journals take centre stage, and in the Brazilian context, they have a double role: at the same time that they are evaluated for concentrating Brazilian scientific output, they also act as a mechanism for the assessment of scientific productivity in the Brazilian post-graduate system.

Post-graduation in Brazil acquired great importance in the Higher Education system there, having notably grown in the 1990s (Velloso, 2004). In the 1950s, Agreements were signed between Brazil and other countries, such as the United Sates, which gave rise to a series of covenants between North American and Brazilian faculty and universities mainly via the exchange of students, researchers and professors. (Santos, 2003).

The great push for growth in post-graduate courses in Brazil occurred in the 1960s. According to Población and Noronha (2002, p. 98): "Postgraduate courses were institutionalized in Brazil with the promulgation of Law number 5.540/68. As the years passed, the postgraduate programmes became the greatest generating pole of scientific productivity in Brazil". Moreover, Urbizagastegui-Alvarado (1984) noted that Information Science, as a scientific Field, creates its first postgraduate course in the country in the 1970s, linked to the Brazilian Institute of Bibliography and Documentation (IBBD), today the Brazilian Institute of Science and Technology Information (IBICT), which inaugurated, in 1972, the first scientific journal of the field, *Ciência da Informação.*

Just as the creation of journals in LIS (library and information science) was linked to the emergence of postgraduate courses in the area, the growth and consolidation of research and post-graduation and the activities of the librarian and information scientist profession marked the creation of new journals under the aegis of universities and librarianship associations, totaling six journals until the 1990s (*Ciência da Informação; Perspectivas em Ciência da Informação; RBBD – Rev. Bras. Bibliotec. e Doc.; Transinformação; Informação & Sociedade. Estudos; Encontros Bibli*) (Ohira; Sombrio; Prado, 2000). According to the National Association of Research and Postgraduation in Information Science (ANCIB), which is a non-profit organization that was founded in June 1989, Brazil currently has 16 postgraduate programmes in Information Science made up of Continuing Education courses, scientific and professional Master´s programmes and Doctor programmes and 39 scientific journals.

The need to measure and analyse scientific output, in turn, increases as the amount of research and journals grows, making necessary the on-going evaluation of the journals, so that they can be assessed and measured according to criteria accepted by the scientific communities of each knowledge area (Oliveira et al., 2015). In the context of metric studies of scientific information, we have, for example, the traditional studies of citation analysis and bibliometrics to gauge the academic impact of a given scientific output, and more recently, alternative metrics – Altmetrics – for understanding the social impact of

online attention and public interest that such output awakens within and beyond the scientific community. Both have their aims, focus and scope of analysis and are seen as complementary for obtaining a more precise picture of the assessment of scientific communication.

Bibliometrics serves as a methodological support for the analysis of the scientific productivity of a country, institution, department or researcher and the resulting indicators can also outline the development of a given area of knowledge (Araújo; Alvarengua, 2011) and citation analysis is a good instrument for gauging the impact of research published in journals that will result in indices for measuring productivity and impact, such as the Science Citation Index Expanded (SCI), Impact Factor (IF) and the h and g indices from Google Scholar Metrics. Altmetrics can be seen as more democratic metrics that are quicker and more responsive, by means of tracking the circulation of scientific information on the social web, in blogposts, interactions on social media, recommendations, collaborative filtering systems and conversations (Priem et al, 2010).

In the same way that the h and g indices - used to calculate the number of citations that each scientific journal obtains - vary according to the visibility of the journals, the alternative metrics of a publication vary according to the online attention that it receives when shared, commented or assessed on social media or posted on a blog, or on news outlet sites.

Alongside these types of alternative metrics and indices of international standards (h, g and IF indices), in Brazil, the Coordination of Improvement of Higher Education Personnel (CAPES), created the Qualis/CAPES system which classifies journals in which Brazilian researchers publish articles and attributes a classification letter that goes from the C stratum (minimum number of points) up until A1 (maximum number of points attributed to the journal). Each knowledge area adopts their own criteria for the classification: some, for example, consider the Web of Science impact factor, others, the h and g index, as they also each consider criteria like normalization, endogeny (when authors of a given university publish in their own journals) and indexing in databases (Oliveira et al., 2015).

Given this scenario of more than 48 years of Brazilian research in Information Science with the increase in the number of its postgraduate programmes and the significant growth of the number of journals, and the metrics and existing indicators for gauging the quality and impact of this output, we ask: what is the journal production scenario in Information Science in Brazil and what is its reflection related to attending to the national quality index? What is its academic and social impact, keeping in mind its assessment by traditional and alternative metrics?

The main aim of this research was thus to analyse Brazilian scientific journals in the field of Information Science, focussing respectively on their h and g impact indices, their social web impact shown in the alternative metrics, and their Qualis/CAPES classification.

Scientific journals: indices of quality, academic and social impact

Scientific journals can be evaluated in several ways, following certain criteria that attend quantitative or qualitative aspects that are capable of inferring indices of quality and the performance of their academic and social impact. In Brazil, the assessment system used for journals is called Qualis, and was developed and fomented by the Coordination for the Improvement of Higher Education Personnel (CAPES), which annually assesses the journals by area. The Qualis system provides an index of journal and scientific research quality of postgraduate programs in Brazil, influencing the quantity and quality of manuscript submissions to each journal, since publication in a journal that has a better Qualis classification translates into a higher assessment for the postgraduate programs, as well as into greater potential for career promotion for the authors. (Oliveira et al., 2015).

For the journal assessment in Qualis, strata that indicate quality, denoted by the letters A, B and C followed by numbers (between 1 and 5) are attributed to each journal. There are thus 8 strata, in ascending order: C, B5, B4, B3, B2, B1, A2 e A1. The strata are classified according to a points system, so that C = 0.0, used for journals considered non-scientific or inaccessible for assessment, and those journals with a points value of greater or equal to 3.800 will be classified as A1, the highest stratum, which is assigned to journals of high international reputation. (CAPES, 2016). On assessing the journals, the Qualis system has the double aim of improving the process of evaluating Masters and Doctorate postgraduate programs in Brazil, while evaluating the quality of intellectual productivity of teaching staff and researchers (Carvalho, 2017). To be included in the four highest strata (A1, A2, B1, B2), the journal should have an impact factor assigned by the Institute for Scientific Information (ISI) and indexed in databases like Web of Science; JCR; Scopus; SciELO - Scientific Electronic Library Online; LATINDEX - Regional Online Information System of Scientific Journals from Latin America, the Caribbean, Spain and Portugal; REDALYC – Network of Scientific Journals from Latin America, the Caribbean, Spain and Portugal and DOAJ - Directory of Open Access Journals. The indicator to classify the B3, B4 and B5 journals (that do not have an impact factor) is the database in which these journals are indexed. Finally, the journals deemed irrelevant to the area and are classified in the C stratum and will not receive points.

In the context of metric studies on scientific information, the traditional citation analyses in the bibliometric approach have been used to gauge the academic impact of a given paper, and alternative metrics (altmetrics) used for determining the social impact of online attention and public interest that the paper incites within and beyond academia. Both approaches have their specific aims, focus and scope of analysis but can be regarded as complementary in order to obtain a more precise picture of the assessment of scientific communication. Bibliometrics offers a way to analyse scientific productivity of a country, institution, department or researcher and the Bibliometric indicators produced can also depict the development of a given knowledge area (Araújo; Alvarenga, 2011) and citation analysis is a good instrument to gauge the impact of research published in journals that will result in indices for measuring productivity and impact such as the Science Citation Index Expanded (SCI), Impact Factor (IF) and the h and g indices of Google Scholar

Metrics, these last two being freely available to anyone who has access to the internet (Harzing, 2012).

The h-index was introduced in 2005 by Jorge Hirsh and its calculation is made by the classification of the articles of a journal in decreasing order according to the number of citations they received, being possible to verify the visibility that authors and articles have from the citations they have received (Egghe, 2010). In turn, the g-index is a useful complement to the h-index because it measures the performance of citations of a set of articles, thereby attributing allowing more weight to the highly cited articles (EGGHE, 2006). The two indices in combination can be used to better assess and quantify the production and impact of scientific research (Oliveira et al, 2015).

As well as the relevance of a given journal measured by its quality index and social impact gauged by the number of citations it receives, scholars of science communication and diffusion have drawn attention to the need to measure social impact of scientific research. Altmetrics can be seen as metrics that are more democratic, quicker and more responsive because they track the circulation of scientific information on the social web, be it in blog posts, interactions on social media, recommendations, collaborative filter systems and conversations (Priem et al, 2010), and in indicating public interest in research results, they can reflect the social impact of the research in question. Just as the h and g indices vary according to journal visibility, alternative metrics of a given publication vary according to online attention that it receives when shared, commented or evaluated on social media or posted on blogs or current affairs and news sites.

Altmetrics belongs to a subfield of cybermetrics, and has a direct affinity with scientometrics and bibliometrics, sometimes using webmetric data. Scientific communities, scientific issues and debates, and the products of science (papers, books, journals), as seen and circulated on the social web, are the focus of analysis for altmetrics studies (Torres; Cabezas; Jiménez, 2013; Gouveia; Lang, 2013; Araújo, 2015a). Altmetrics seeks to assess the dissemination by social instruments of the web of scientific documents, and in so doing, it complements traditional metrics studies like those of bibliometrics, allowing the impact of a given scientific study to be gauged beyond the number of citations received, and even for beyond scientific (Souza, 2014; Araújo, 2015b). For Priem et al. (2010), some of the advantages of altmetrics are: the ability to assess impacts in diverse types of audiences, including not only researchers, but also professionals, educators and the general public; a wider understanding of the impact of the products of research, considering not only citations but also readings, debates and recommendations; and finally, the ability to obtain more quickly data on impact. Thus, in a distinct and complementary way to the quality indices and to the bibliometric studies of citations, altmetrics can be used to assess the production of scientific journals keeping in mind their social impact, serving as a filter for current research (Barros, 2015) or for public interest. In Brazil, as discussed above, these alternative metrics and international standard indices (h, g and IF) are used alongside the Qualis/CAPES system.

Materials and Methods

Given the proposed aims of the research, the methodological approach and procedures adopted can be classified as exploratory and descriptive, with a predominantly quantitative analysis. We used the journal list of the National Association of Research and Postgraduation in Information Science (Associação Nacional de Pesquisa e Pós-Graduação em Ciência da Informação - ANCIB) that uses the criteria that the journal is active and has uninterrupted between 2011 and 2016 and has obtained a Qualis/CAPES classification over the last four years for the 2013-1016 period. A total of 23 journals met these criteria.

Data collection for metrics studies of S&T is generally carried out in databases, information systems, discovery services and platforms that require predetermined production standards to be analyzed. The Qualis/CAPES classification index was obtained from the Sucupira Platform[i], for the item "Qualis", along with selecting "Classificação de Periódicos Quadriênio 2013-2016" and using the "ISSN number" search field in which the ISSN for each journal were inserted to obtain their classification. The h and g indices were collected using the "ISSN number" and "years = 2011 to 2016" queries in Harzing's Publish or Perish software, version 6.2.

For collection of the alternative metrics – since 76% of the journals do not have a Digital Object Identifier (DOI) – the advice of Araújo, Murakami and Andrade (2015) was followed, namely collection using the Facebook Application Programming Interface (API): < https://developers.facebook.com/tools/explorer/ >. The query of the Facebook API (2.9 version) is done at the moment of the display of the search results and is done in each of the URLs of the articles published between 2011 and 2016 for each journal. The Facebook API differentiates the results of the URLs using the http and https prefixes, and due to this characteristic, for each URL, two searches were conducted with the API, one with each prefix. The system adds up/totals the results for all the URLs and stores the results obtained in the non-relational database, Elasticsearch.

The searches took place in the first week of April 2016 and were parametrized by the main and secondary URL for all the articles of the 23 journals, with their quantitative representation of online attention obtained in terms of "likes" (reaction_count), "shares" (share_count) and "comments" (comment_count). The general and specific data of the research are presented according to the quantitative volume for the journals, to subsequently focus on the articles with the greatest online attention. The 23 journals are described and analyzed according to their frequency of publication, year of creation, Qualis classification, h and g indices, and online attention metrics on Facebook.

Results

Among the characteristics of a periodic scientific publication are planned publication, that is, the time period previously defined and planned for publication, as well as continuity for an undetermined amount of time from its creation (Blattmann, 2012). The journals here analyzed were launched between 1972 and 2011 and display

distinct frequencies, which can be observed in the data shown in Table 1, that also indicates the institution responsible for its publication.

In Brazil, universities function as essential editorial institutions to guarantee the existence of quality titles in open access, since they guarantee the technical and operational conditions for the functioning of the titles (Oliveira et al., 2015). All of the 23 journals are published in open access and most of them (20) are published by universities.

Table 1. Journals by year of creation and frequency of publication

ISSN	Year	Journal	Institution	Frequency
0103-3557	1985	*Agora* (Florianopolis)	APSC/UFSC	Biannual
2237-826X	2011	*Atoz: nov. Práticas em Inf. e Conhec.*	UFPR	Biannual
1809-4775	2005	*Biblionline* (João Pessoa)	UBPB	Biannual
2236-7594	1985	*Biblos* (Rio Grande)	FURG	Biannual
1981-1640	2006	*Brazilian Journal of Information Science*	UNESP	Biannual
1518-8353	1972	*Ciência da Informação*	IBICT	Quarterly
2317-675X	1998	*Comunicação & Informação*	UFG	Biannual
1807-8893	2003	*Em Questão* (UFRGS)	UFRGS	Quarterly
1518-2924	1996	*Encontros Bibli*	UFSC	Quarterly
2178-2075	2010	*InCID: Rev. Ci. Inf. e documentação*	USP	Biannual
1414-2139	1996	*Informação & Informação*	UEL	Quarterly
0104-0146	1991	*Informação & Sociedade. Estudos*	UFPB	Quarterly
1808-3536	2005	*Liinc em Revista*	IBICT	Biannual
2237-6658	2011	*Múltiplos Olhares em Ci. Inf.*	UFMG	Biannual
1981-5344	1996*	*Perspectivas em Ciência da Informação*	UFMG	Quarterly
2236-417X	2011	*Perspectivas em Gestão & Conhecimento*	UFPB	Quarterly
1981-6766	2007	*PontodeAcesso* (UFBA)	UFBA	Quarterly
1980-6949	1973	*RBBD. Rev. Bras. Bibliotec. e Doc*.	FEBAB	Biannual
1981-6278	2003	*RECIIS. Rev. Elet. Com. Inf. & Inov. Saúde*	FIOCRUZ	Quarterly
1983-5213	2008	*Rev. Ibero-Americana de Ci. Inf.*	UnB	Biannual
1414-0594	1996	*Revista ACB* (Florianópolis)	ACB-SC	Quarterly
1983-5116	2008	*Tendências da Pesq. Bras. Ci. Inf.*	ANCIB	Biannual
2318-0889	1989	*Transinformação*	UNICAMP	Quarterly

* previous *Revista da Escola de Biblioteconomia da Universidade Federal de Minas Gerais*, created in 1973.

According to the data in Table 1, the 1970s and the 1980s have the fewest journals. In the 1970s/In the former decade, there are just two journals, *Ciência da Informação* and *RBBD. Rev. Bras. Bibliotec. e Doc*., which are the oldest journals of the area, and are still active. If we add to these two the journal *Perspectivas em Ciência da Informação*, from the former Librarianship School of the Federal University of Minas Gerais, created in 1973, we can consider that the 1970s had three journals in the area. The 1980s also had three journals: *Agora* (published in Florianopolis); *Biblos* (from Rio Grande), and *Transinformação*.

In the 1990s, the change from the printed to electronic format allowed greater ease of access to new information and also gave rise to the growth in production of electronic

scientific journals (Silva; Santos; Prazeres, 2011). In the present decade, five journals in Information Science have been launched: *Comunicação & Informação*, *Encontros Bibli*, *Informação & Informação*, *Informação & Sociedade. Estudos* and *Revista ACB*.

Most of the journals analyzed here were created in the 2000s – 8 in all: *Biblionline*, *Brazilian Journal of Information Science*, *Em Questão* (UFRGS), *Liinc em Revista*, *Pontode Acesso* (UFBA), *RECIIS. Rev. Elet. Com. Inf. & Inov. Saúde*, *Rev. Ibero-Americana de Ci. Inf.* and *Tendências da Pesq. Bras. Ci. Inf.* This period is marked by an increase in the growth of new Information Science journals in Brazil that are "born digital" and open access (Blattmann; Santos, 2014). This scenario continues into the following decade, when 4 new journals were launched: *Atoz: nov. Práticas em Inf. e Conhec.*, *InCID: Rev. Ci. Inf. e Documentação*, *Múltiplos Olhares em Ci. Inf.* and *Perspectivas em Gestão & Conhecimento*. In fact, the list shows two generations of journals, half of them created in the 1970s, 80s and 90s, and the other half in the last two decades from the year 2000 to the present.

Table 2 shows the distribution of the journals by their Qualis classification (A1 to C), the number of journals and corresponding percentage.

Table 2. Information Science Journals by Qualis index

Qualis stratum/CAPES	**Total Journals**	**(%)**
A1 to A2	06	26.1
B1 to B2	14	60.8
B3 to B5	03	13.1
C	0	0.0
Total	**23**	**100**

According to Carvalho (2017), the more consolidated the technical-scientific, institutional, historical and political-editorial aspects of a journal, the greater the possibilities of being classified in the higher strata, given that they value the journal´s activity on national and international levels. The strata B1 to B2 concentrates most of the journals – 60.8% – indicating that most of them are already indexed in the main national and international databases. The higher strata, A1 to A2 have 26.1%, followed by B3 to B5 with 13.1% of Information Science journals.

The academic impact of the journals in the accumulation (set) of citations calculated in the h and g indices can be seen in Tables 3 and 4 respectively, by impact range.

Table 3. h-index of Information Science journals by range

h-index	**Total Journals**	**(%)**
Up to 5	06	26.6
From 6 to 10	10	43.2
From 11 to 15	06	26.6
From 16 to 20	0	0.0
Above 20	01	4.3
Total	**23**	**100**

Table 4. g-index of Information Science journals by range

g-index	**Total Journals**	**(%)**
Up to 10	09	39.1
From 11 to 15	07	30.4
From 15 to 20	04	17.3
From 21 to 25	02	8.6
Above 25	01	4.3
Total	**23**	**100**

What determines the increase in the indices is the quantity of citations that the journals receive. The journals that are reliable and trustworthy and have been indexed in the databases, are able to publish a considerable number of articles. And the more relevant the articles, the more chance there is to obtain good visibility and as a consequence, increase citation rates for the journals (Oliveira et al., 2015). Regarding the h-index, the second band, from 6 to 10, agglomerates most of the journals – 43.2%. The bands up to 5, and from 11 to 15 each have 26.6% of the journals. Regarding the g-index, the first band, which goes up to 10, has/agglomerates 39.1% of the journals, followed by the band from 11 to 15, with 30.4% and then the 15 to 20 band, with 17.3%. The social impact of the journals measured by online attention received for their articles, according to Facebook interactions, can be seen in Table 5, which shows the distribution of the absolute amount and percentage value per range of interactions.

Table 5. Online attention for Information Science journals per interaction range

Online attention on Facebook*	**Total no. of journals**	**(%)**
Up to 500 interactions	11	47.8
From 501 to 1,000 interactions	04	17.3
From 1,001 to 1,500 interactions	04	17.3
From 1,501 to 2,000 interactions	03	13.1
More than 2,000 interactions	01	4.3
Total	**23**	**100**

*reactios, shares and comments

Although social media like Facebook allow a more fluid and interactive communication of ideas and make possible greater interaction between authors who can post comments on what they have published in a given journals and can answer reader comments (Amir et al., 2014), most journals, 47.8%, obtained low performance with up to 500 interactions. The range between 501 to 1,000 interactions and from 1,001 to 1,500 each had 17.3% of the journals. Table 6 shows the distribution of the journals regarding their Qualis classification, academic impact according to the h and g indices, and social impact gauged by online attention and public interest in terms of interactions around dissemination on Facebook.

Table 6. Performance of Information Science journals according to Qualis, h-index, g-index and online attention on Facebook

Revista	Qualis/ CAPES	h-index	g-index	Facebook Altmetric
Agora (Florianopolis)	B1	4	5	1042
Atoz: nov. Práticas em inf. e conhec.	B2	4	5	61
Biblionline (João Pessoa)	B5	5	6	1081
Biblos (Rio Grande)	B3	4	6	417
Brazilian Journal of Information Science	B1	9	16	506
Ciência da Informação	B1	12	23	80
Comunicação & Informação	B2	4	5	33
Em Questão (UFRGS)	A2	7	8	9
Encontros Bibli	A2	11	17	2261
InCID: Rev. Ci. Inf. e Documentação	B1	9	15	730
Informação & Informação	A2	7	10	1104
Informação & Sociedade. Estudos	A1	12	21	562
Liinc em Revista	B1	11	13	22
Múltiplos Olhares em Ci. Inf.	B5	1	1	199
Perspectivas em Ciência da Informação	A1	9	12	1599
Perspectivas em Gestão & Conhecimento	B1	11	16	446
PontodeAcesso (UFBA)	B1	8	12	3
RBBD. Rev. Bras. Bibliotec. e Doc. (online)	B1	7	11	1626
RECIIS. Rev. Elet. Com. Inf. & Inov. Saúde	B1	11	18	1977
Rev. Ibero-americana de Ci. Inf.	B1	6	11	1126
Revista ACB (Florianópolis)	B2	6	8	847
Tendências da Pesq. Bras. Ci. Inf.	B1	8	13	245
Transinformação	A1	22	33	430

On observing the indices and indicators shown in Table 6, from a comparative analysis of the journals, it can be noted that there are quantitative differences between a) the Qualis strata, b) the h- and g- indices and c) the Facebook altmetrics, in that the values for a) and b) are closer, while for c) there is, in general, less discrepancy between journals when compared to the other two indices.

Starting with a comparison of the journals with the highest Qualis stratum, A1, we have *Informação & Sociedade: Estudos* with h-index 12 and g-index 21, alongside 562 interactions; *Perspectivas em Ciência da Informação* with h-index 9 and g-index 12, and 1,599 interactions; and *Transinformação* with h-index 22 and g-index 33, and just 430 interactions.

Regarding the journals of the second highest stratum, A2, we find *Em Questão* (UFRGS), with h-index 7 and g-index 8, and just 9 interactions; *Encontros Bibli* with h-index 11 and g-index 17 along with 2,261 interactions; and *Informação & Informação* with h-index 7 and g-index 10, and 1,104 interactions. Of the 23 journals, 14 are classified in the strata B1 and B2, which is considered a good index, but when considering the h and g indices of these same journals, just 4 have an h-index about 10, while only 3 have a g-index above 20. With this, it can be seen that the great majority of journals have good classification in Qualis, but when compared to the h and g indices, it becomes evident

that the criteria used for the national assessment are not quantitative or do not consider the citation indices of the journals. The journal that shows the most coherence between the national index, the Google Scholar metrics and the Facebook altmetrics was *Encontros Bibli*, which is Qualis A2, h-index 11 and g-index 17, along with 2,261 interactions on Facebook.

Extremely low altimetric values for academic journals with a high-quality score as *Em Questão* and *PontodeAcesso* (UFBA) need to be checked more closely to find out if there is any distortion or error in the coverage of the URLs of the journals on the Facebook APIs.

Conclusion

The Qualis/CAPES index, the academic impact measured by the number of citations expressed in the h- and g- indices, and the social impact seen in the Facebook interactions in an isolated way, are not necessarily related to the quality of scientific publications in Information Science in Brazil, but their analysis together can offer some insights into the scientific assessment of this field in that country.

The results indicated here – from on-going research – that the journals were created between 1972 and 2011, are published by universities and that the most adopted frequency of publication is biannual (52%), followed by quarterly (39%). In relation to the national quality indicator Qualis, 73% of journals are highly classified, between B1 and A1. Regarding impact, 30.4% of the journals have h-index greater than 10 and just 13% of the total have g-index greater than 20.

Regarding the alternative metrics, 47.8% of the journals have low altmetrics value on Facebook with up to 500 interactions. It can be concluded that the positions of the journals vary when using the national Qualis assessment system, the h and g indices and the altmetrics for Facebook. The journal that evidences the greatest consistency between the national index, Google Scholar Metrics and the Facebook altmetrics was the journal *Encontros Bibli*, Qualis A2, h-index 11, g-index 17 and 2,261 interactions on Facebook.

References

1. Araújo, R. F., Alvarenga, L., 2011, *A bibliometria na pesquisa científica da pós-graduação brasileira de 1987 a 2007*. Encontros Bibli: Revista Eletrônica de Biblioteconomia e Ciência da Informação, Florianópolis, v. 16, n. 31, p. 51-70, http://dx.doi.org/10.5007/1518-2924.2011v16n31p51.
2. Araújo, R. F., 2015a, *Mídias sociais e comunicação científica: análise altmétrica em artigos de periódicos da ciência da informação*. Em Questão, v. 21, p. 96-109, http://dx.doi.org/10.19132/1808-5245211.96-109 .
3. Araújo, R. F., 2015b, *Marketing científico digital e métricas alternativas para periódicos: da visibilidade ao engajamento*. Perspectivas em Ciência da Informação, v. 20, n.3, p. 67-84, http://dx.doi.org/10.1590/1981-5344/2402.
4. Barros, M. A., 2015, *Altmetrics: métricas alternativas de impacto científico com base em redes sociais*. Perspectivas em Ciência da Informação, v. 20, n. 2, p. 19-

37, abr./jun. http://portaldeperiodicos.eci.ufmg.br/index.php/pci/article/view/1782.

5. Blattmann, U., 2012, *Periodicidade das revistas científicas*. Biblos: Revista do Instituto de Ciências Humanas e da Informação, v. 26, n. 1, p. 91-95, jan./jun., https://www.seer.furg.br/biblos/article/view/3541.
6. Blattmann, U.; Santos, R. N. M., 2014, *Revistas científicas brasileiras e sua visibilidade no acesso aberto*. Informação & Sociedade: Estudos, v. 24, n. 3, p. 99-116, set./dez., http://www.ies.ufpb.br/ojs/index.php/ies/article/view/21807.
7. Meadows, A. J., 1999, *Mudança e crescimento*. In: A comunicação científica. Tradução de Antônio Agenor Briquet de Lemos. Brasília, DF: Briquet de Lemos, p. 1-38. Título original: Communicating research.
8. Mueller, S. P. M.; Campello, B. S.; Dias, E. J. W., 1996, *Disseminação da pesquisa em ciência da informação e biblioteconomia no Brasil*. Ciência da Informação, Brasília, v. 25, n. 3, p. 1-23, set./dez.
9. Ohira, M. L. B.; Sombrio, M. L. L. N.; Prado, N. S., 2000, *Periódicos brasileiros especializados em biblioteconomia e ciência da informação: evolução*. Encontros Bibli: Revista Eletrônica de Biblioteconomia e Ciência da Informação, Florianópolis, v. 5, n. 10, p. 26-40, out.
10. Oliveira, A. B.; Rodrigues, R. S.; Blattmann, U.; Pinto, A. L.., 2015, *Comparação entre o QUALIS/CAPES e os Índices h e g: o caso do Portal de Periódicos UFSC*. Inf. Inf., Londrina, v. 20, n. 1, p. 70 - 91, jan./abr. DOI: 10.5433/1981-8920.2015v20n1p70.
11. Orduña-Malea, E.; Martín-Martín, A.; Delgado López-Cózar, E., 2017, *Google Scholar as a source for scholarly evaluation: A bibliographic review of database errors*. Revista Española de Documentación Científica, 40(4): e185, http://hdl.handle.net/10481/48295.
12. Poblacion, D. A.; Noronha, D. P., 2002, *Produção da literatura "branca" e "cinzenta" pelos docentes/doutores dos programas de pós-graduação em ciência da informação no Brasil*. Ciência da Informação, Brasília, v. 31, n. 2, p. 98-106, maio/ago.
13. Priem, J.; Taraborelli, D.; Groth, P.; Neylon, C., 2010, *Altmetrics: Um manifesto, 26 de outubro de 2010*, http://altmetrics.org/manifesto.
14. Santos, R. N. M., 2003, *Indicadores estratégicos em ciência e tecnologia: refletindo a sua prática como dispositivo de inclusão/exclusão*. Transinformação, Campinas, v. 129-140, set./dez. (Edição Especial).
15. Urbizagastegui-Alvarado, R., 1984, *A bibliometria no Brasil*. Ciência da Informação, Brasília, DF, v. 13, n. 2, p. 91-105, jul./dez.
16. Velloso, Jacques., 2004, *A pós-graduação no Brasil: formação e trabalho de mestres e doutores no país*. Cadernos de Pesquisas, São Paulo, v. 34, n. 122, p.157, ago.