

Technical-scientific production of São Paulo federal institute librarians: a neo-bibliometric study

Produção técnico-científica dos bibliotecários do instituto Federal de São Paulo:
um estudo neobibliométrico

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ABSTRACT: Libraries and librarians-documentalists of São Paulo Federal Institute of Education, Science and Technology (IFSP) have been studied in scientific researches, but no identified that would raise and map scientific production of such professionals has been conducted yet. The present study aimed to map and analyze the technical-scientific production of librarians-documentalists of the referred institution. The methodological course consisted of conducting theoretical and empirical research, in which the neo-bibliometric approach was prioritized. Then, the tools of Bibliometrics were associated with the application of questionnaire to the professionals of the institution. The results pointed out that most of IFSP professionals: are female; have higher qualification to the one required for the performance of their duties; have some technical-scientific publications; consider important the development of technical-scientific publications, as well as the creation of media and events. However, the authors suggest some ways to strengthen the visibility of the professional area: incentive to increase technical-scientific publications; incentive to the creation and updating of the curriculum lattes; incentive to publications in tandem, since some professionals research similar themes; stimulus to the participation in events and technical-scientific publications. The conclusion of this paper points out that IFSP librarians-documentalists produce technical-scientific publications, but they may produce them more as it contributes to the development and improvement of their professional area. It also draws closer institutional relations among campuses, favors the search for solutions to the problems faced by professionals, as well as highlights their campuses and libraries in national and international technical-scientific scenario.

KEYWORDS: Scientific Publications. Librarians. São Paulo Federal Institute. Bibliometrics.

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RESUMO: As bibliotecas e os bibliotecários-documentalistas do Instituto Federal de Educação, Ciência e Tecnologia de São Paulo (IFSP) têm sido objeto de estudo de pesquisas científicas, porém, ainda não foi identificada nenhuma investigação que levantasse e mapeasse a produção científica desses profissionais. Este estudo objetivou mapear e analisar a produção técnico-científica dos bibliotecários-documentalistas da referida instituição. O percurso metodológico compreendeu a realização de pesquisa teórico-empírica, na qual foi priorizada a abordagem neobibliométrica; nesse sentido, o ferramental da bibliometria foi associado à aplicação de questionário aos profissionais da instituição. Os resultados apontaram que a maioria dos profissionais do IFSP: é do gênero feminino; possui qualificação superior à exigida para o desempenho de suas funções; possui alguma publicação técnico-científica; considera importante a elaboração de publicações técnico-científicas, assim como a criação de veículos de comunicação e eventos. Todavia, as autoras sugerem alguns caminhos para o fortalecimento da visibilidade da categoria: incentivo ao aumento das publicações técnico-científicas; incentivo à criação e atualização do currículo lattes; incentivo à realização de publicações em parcerias, visto que alguns profissionais pesquisam temáticas similares; estímulo à participação em eventos e publicações técnico-científicas. As considerações apontam que os bibliotecários-documentalistas do IFSP produzem publicações técnico-científicas, mas poderão produzir mais, visto que tal feito contribui para o desenvolvimento e aperfeiçoamento da categoria, aproxima relações institucionais entre os campi, favorece a busca de soluções para os problemas enfrentados pelos profissionais, além de evidenciar seus campi e suas bibliotecas no cenário técnico-científico nacional e internacional.

PALAVRAS-CHAVE: Produção Científica. Bibliotecários. Instituto Federal de São Paulo. Bibliometria.



JITA: BB. Bibliometric methods.

1 INTRODUCTION

It is possible to realize the increase in scientific productions directed to contributing the labor development of diverse areas in educational institutions. This initiative occurs through the valorization of this kind of participation and professionals' interest in reaching science in the sense of improving their own work field, achieving beneficially the public they attend. Folding the arms and waiting for someone to develop researches for their own professional and social benefit is not the profile of the current knowledge society. The latter has already been defended by Bell (1978) – although the author has not used such nomenclature – through discussions about a society based on technologies and sustainable knowledge.

According to Nehmy and Paim (2002), Bell developed a thought to this new society; to Dziekaniak and Rover (2011), Bell based the knowledge society on criteria like the alteration in the services sector. Since the jobs tied to knowledge would increase, knowledge would serve as mainspring for competition among companies, so that technological research, development, and innovations would become the center of attention of countries that search for development. There would be the creation of a “knowledge elite” that would be the dominant class in this society, in other words, who detained knowledge would detain power.

Foucault corroborates it with the statement when claiming that “the exercise of power perpetually creates knowledge, and on the contrary, knowledge constantly generates effects of power” (FOUCAULT, 1988)¹.

That said, Davenport and Prusak in the nineties already discussed in conferences and articles the interest of the society in knowledge, for it is fundamental for the success of organizations, or the best for human survival (DAVENPORT; PRUSAK, 1999).

Due to diverse areas professionals' need of adapting to new demands of the job market before the search for innovation and its application in the work field, many of them dived into the world of science and knowledge. In this reality, some of the indicators have been composed to evaluate the level of scientific production and the capacity of these new professionals of taking part in this new era designated Knowledge Society.

Amid this society that contemporaneously evidences the importance of information and knowledge, the Federal Institutes of Education, Science, and Technology, or popularly known as Federal Institutes, are inserted in it, which are part of the Federal Network of Professional, Scientific, and Technological Education. Each Brazilian state has at least one Federal Institute. These institutes aim to offer educational, technical, scientific, and professional qualification in the territory in which they are placed (INSTITUTO FEDERAL DE SÃO PAULO, 2015).

¹ In the consulted translation: “o exercício do poder cria perpetuamente conhecimento, e ao contrário, o conhecimento constantemente gera efeitos de poder”.

Libraries and librarians-documentalists of São Paulo Federal Institutes of Education, Science, and Technology (IFSP) have been the object of study of some technical-scientific researches, but no investigation that would raise and map the scientific production of such professionals has been identified yet.

In this sense, this study presents itself with the objective of beginning the filling of such gap, in order to trigger discussions for future in-depth investigations.

The problematics that surrounded the research are installed in the authors' interest in mapping and analyzing IFSP librarians-documentalists' technical-scientific production. There is also interest of identifying if the practice of technical-scientific productions by these professionals contributes for the professional and scientific development and for the solution of problems concerning the improvement of their labor practices.

The methodological course consisted in conducting theoretical-empirical research, in which it was prioritized the neo-bibliometric approach allied to the application of questionnaire to IFSP librarians. The data collection was made in two ways: firstly it was applied a questionnaire to the professionals, and afterwards the information of the bibliographical productions in the curriculum *lattes* of these professionals was verified.

The results pointed out that the librarians-documentalists produce technical-scientific materials, and departing from the study it was possible to trace a summary profile of such professionals; this information is presented in the fourth section of the present article.

The considerations indicate that IFSP librarians-documentalists produce technical-scientific publications, but they can produce an even larger quantity; they can also perform institutional partnership among professionals of different IFSP campuses, in order to improve their work routines, as well as increase the technical-scientific publications, inducing visibility for their institutions and collaborative jobs.

The study is distributed as follows: the first section presents the Introduction of the Research; the second section refers to the Theoretical Referential that was utilized about the thematics of the librarian's scientific production and professional performance. In the third section it is presented the Methodological Course, which comprehends the subsections: Analysis Field, Collection Instrument and Data Analysis, and the theories that surround Neo-Bibliometrics. Results and Mains Analysis are discussed in the fourth section; in the fifth section, Final Considerations are presented and, subsequently, the References utilized in the elaboration of the research.

2 THEORETICAL REFERENTIAL

2.1 Scientific Production

In the last decades, the scientific production became an important indicator of a nation's development, so much that Brazilian universities and national scientific development poles began to stimulate researchers to produce and publish in international journals as a way to make their researches internationally known and, thus, valorize the institution in which the researcher is inserted, as well as their country (SILVA, 2013).

Ferreira (2011) defends that the primordial purpose of universities and research institutes is to produce knowledge, since the quality of teaching and the acknowledgement of the university are related to the quantity of researches developed and directed to the problems of the society in which it is inserted. All this departing from a scientific production that answers to the needs of such society.

As knowledge generator institution, the universities, Federal Institutes also are presenting themselves as collaborators in research activities developed by professionals who work in diverse sectors. Such collaboration occurs beyond the interest in self-promoting in the scientific field, it is rather a way to spread knowledge in society. In this sense, Schwartzman and Castro (1986) consider scientific production something tangible that can be evaluated and counted. Otherwise, the meaning of scientific activity is lost, its developments and results, then, are not described and communicated.

That said, techniques and tools which make possible the verification of the origin and credibility of the scientific production are necessary. It is in this context that Bibliometrics is inserted, for it consists in the use of mathematical and statistical techniques to conduct the measure of indices of production and dissemination of scientific production, using quantitative methods to make possible objective evaluations, as highlighted by Guedes; Borschiver (2005) and Vanz; Stumpf (2010).

It is seen that the advance of scientific production expands to an advance of society. Therefore, it is conceivable to highlight the authors Bordons and Zulueta-Garcia (1999), who claim, in some premises, that the number of publications of a research group may represent an indicator of its productivity.

The authors valorize the context of the research, since it is not just an amount of information, but a set of produced knowledge, socializing in this way knowledge and relevant discoveries for history and advance of the society.

Schwartzman and Castro (1986) warn that, by raising publications of a specific area of knowledge, it is possible to measure its scientific production in a previous period. This bases the decisions of searching points of relevance between a research and another one, evaluating the scientific degree of publications, and verifying if all this is associated. Thus, there must be, in terms of level of quality, a previous triage of the approached material. In this case, Bibliometrics would fail if it had to create its own external criteria of evaluation. What is made, then, is to judge the quality criteria of the journals.

Scientific production has been intensified in quali-quantitative aspects since the second half of the twentieth century. It occurred, according to Souza and Oliveira (2007), by the exponential increase of production and consumption of information, which characterized the known “bibliographical boom” or “bibliographical explosion”.

Yet, as stated by Souza and Oliveira (2007), it is possible to say that the informational phenomenon became discussion theme in many knowledge areas, mainly in the ones directly connected to production and communication, like Library Science and Information Science.

In this sense, the librarian professional ends up acquiring familiarity with the investigative universe, for the essence of their performance points to learning, in other words, the act of investigating, searching for knowledge (CBO, [s.d.]).

2.2 Librarian's Professional Performance: The Importance of the Practice of Technical-Scientific Research

In contemporaneity, the librarian professional must be creative, reflexive, and judicious. There is urgent need of learning how to learn, as pointed out by Silva, Silva and Santos-Rocha (2013, p. 104).

Araújo states that learning how to learn is possible only through scientific research, which must be comprehended as a pedagogical principle able to proportionate action and reflection of the involved ones before the acquired knowledge (ARAÚJO, 1996).

In the national scenario, the profession of librarian, regularized by Law nº 4.084 of June 30, 1962, exclusive to Bachelors in Library Science, according to Ferreira and Veiga (2013), is still highlighted as a profession with predominance of female gender, for approximately 80% of the librarian posts in institutions are occupied by women.

As stated by Article 6 of the referred Law, the duties of Bachelors in Library Science are organization, direction, and execution of technical services of federal, state, municipal, and autarchical public offices and private companies, regarding the following subjects and activities:

1. Library Science Teaching;
2. Inspection of known Library Science teaching establishments, equalized or in the process of equalization;
3. Management and direction of libraries;
4. Organization and direction of documentation services;
5. Execution of classification and cataloging services of manuscripts and rare and precious books, map libraries, official and serial publication, bibliography, and references (BRASIL, 1962).

The Brazilian Classification of Occupation (CBO) describes the summary activities of the professional of information, as it is presented:

They make available information in any support; manage units like libraries, documentation centers, information centers and correlatives, besides information networks and systems; treat technically and develop informational resources; disseminate information with the objective of facilitating access and generation of knowledge; develop studies and researches; perform cultural diffusion; develop educative actions; can give advisory and consultancy services (CBO, [s.d.])².

Such activities run since management and organization of environments that deal with information, in the most varied supports, until the conduction of studies and researches. Rezende (2002) discourses that information professionals can work as creative agents, interpreters, intermediaries, and knowledge managers, because they can use information in solution of problems or as an input that generates ideas, which may base new technologies and concepts.

Demo (1998) says that education and research must walk together and in conformity. In this way, the practice of scientific research, as well as technique, is relevant to librarians, insofar as they can generate new information, solve problems, fortify labor processes, and also contribute for the advance of the knowledge area through technical and scientific researches.

In daily routines, particularly in libraries, the activities of librarians are centered on researches and information localization, for both the development of their attributions and diminishing informational questions and problems of users. In this sense, publishing the results and details of their routines is as important as researching, for it records and makes possible ways of sharing vivid experiences, details, advances, and innovations that can be used and adapted in different realities.

The librarian professional that emerges from scientific researches will be before anything a researcher librarian, who will become a professional with different faces, gifted with proficiency and creativity to propose and solve problems, besides contributing to advances in Library Science and Information Science, as Silva, Silva e Santos-Rocha (2013) highlights.

In the context of IFSP, the inherent attributions to the post of librarian-documentalist also deal with question related to the conduction of studies and researches, since the referred professional must be constantly up-to-date to develop the libraries in which they work, assist in the preservation of the institutional memory, as well as supply the informational needs of

² In the original: “Disponibilizam informação em qualquer suporte; gerenciam unidades como bibliotecas, centros de documentação, centros de informação e correlatos, além de redes e sistemas de informação; tratam tecnicamente e desenvolvem recursos informacionais; disseminam informação com o objetivo de facilitar o acesso e geração do conhecimento; desenvolvem estudos e pesquisas; realizam difusão cultural; desenvolvem ações educativas; podem prestar serviços de assessoria e consultoria”.

their community (BRASIL. DIÁRIO OFICIAL DA UNIÃO, 2015).

Specifically regarding the development of studies and researches, the typical descriptions of the post are:

Develop studies and researches; collect information for institutional memory; elaborate information dossiers, thematic researches, bibliographical survey, and technical-scientific essays; access databases and other sources in electronic supports; perform scientometric, bibliometric, and informetric studies; analyze and collect statistic data; develop quality control criteria and content of information sources; analyze community information flows (BRASIL. DIÁRIO OFICIAL DA UNIÃO, 2015)³.

Therefore, it is verified that being a professional, especially a researcher, is the responsibility of IFSP librarians-documentalists professionals.

3 METHODOLOGICAL COURSE

The methodological course consisted in conducting theoretical-empirical research, in which it was prioritized a neo-bibliometric approach. In this sense, the concept and the tools of Bibliometrics were associated to the application of the sociocultural questionnaire.

It is stressed out that it is imbued in this context the bibliographical research, which is necessary in every investigation, for it offers theoretical subsidy that supports the study. Thus, surveys in books and journals were conducted (RAMPAZZO, 2005, p. 53).

The theoretical-empirical research proportionated greater familiarity with the research problem (GIL, 2008), which consisted in identifying if IFSP librarians produce and publish technical and scientific researches and if such productions contribute to the professional development and problem solution concerning the improvement of labor practices.

The study comprehended bibliographical survey and use of collection instruments and data analysis, configuring a neo-bibliometric analysis, in other words, there was the possibility of raising indicators of the bibliographical production allied to the application of questionnaires to the professionals.

According to Smit, Dias and Souza (2002, p. 4), bibliographical production is “one of the most visible products of postgraduate education”, because it is possible, through the latter, to raise quantitative indicators of such production and it is in this scenario that Bibliometrics is inserted.

³ In the original: “Desenvolver estudos e pesquisas: coletar informações para memória institucional; elaborar dossiês de informações, pesquisas temáticas, levantamento bibliográfico e trabalhos técnico-científicos; acessar bases de dados e outras fontes em meios eletrônicos; realizar estudos cientométricos, bibliométricos e infométricos; analisar, coletar dados estatísticos; desenvolver critérios de controle de qualidade e conteúdo de fontes de informação; analisar fluxos de informações comunidade”.

Therefore, it is ratified the importance of bibliographical productions in the scientific life of every researcher. Departing from the assumption that the librarian may also work as a researcher, it is significant to map and analyze their bibliographical productions.

3.1 Analysis Field

The research field analysis comprehends IFSP librarians-documentalists. The institution is a federal educational autarchy, founded in 1909 as School for Apprentices and Craftsmen, which nowadays is an institution recognized by São Paulo society for its excellence in quality free public education (INSTITUTO FEDERAL DE SÃO PAULO, 2015).

During its trajectory, it passed by many changes and received the names São Paulo Federal Technical School and São Paulo Federal Center of Technological Education. With the transformation to Institute, in December of 2008, it began to have relevance of university, being highlighted by autonomy (INSTITUTO FEDERAL DE SÃO PAULO, 2015).

With the change, São Paulo Federal Institute destined 50% of its vacancies to technical courses and, at least 20 % of them to courses with teaching diplomas, especially in the areas of Science and Mathematics. Complementarily, it will continue to offer courses of initial and continuous formation, technology, engineering, and postgraduate education (INSTITUTO FEDERAL DE SÃO PAULO, 2015).

Besides in attendance courses, IFSP offers the courses Administration Technician and Informatics for Internet and, from 2012 on, the academic education course Formation of Teachers in the modality Distantly Teaching (INSTITUTO FEDERAL DE SÃO PAULO, 2015)

IFSP is organized in a structure of multicampuses and has approximately 24 thousand students enrolled in 31 campuses and more 4 thousand students in 19 distantly education poles distributed in São Paulo state (INSTITUTO FEDERAL DE SÃO PAULO, 2015). Figure 1 presents the localization of each campus:

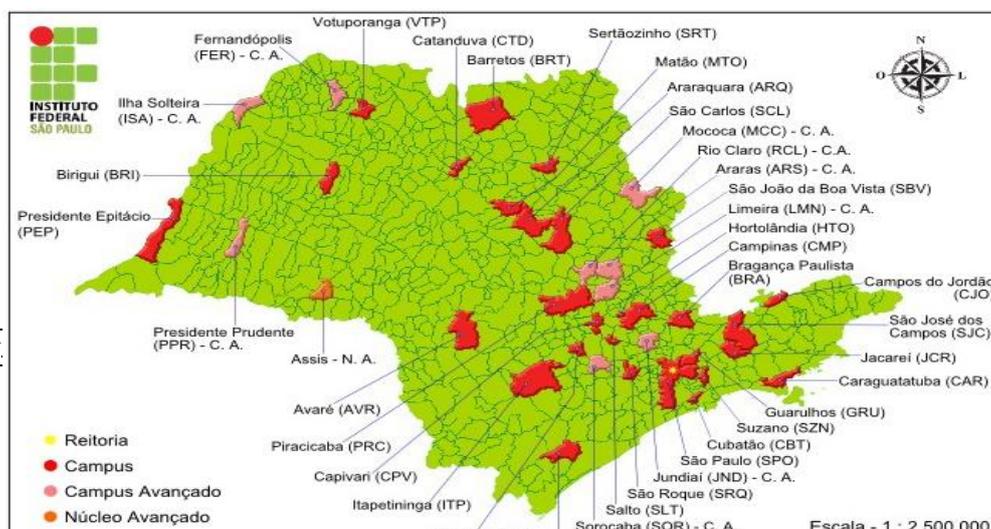


FIGURE 1- São Paulo Federal Institute of Education, Science, and Technology, 2016 campuses map.
Source: SIMEC (2016).

Presidency
Campus
Advanced Campus
Advanced Core
Scale – 1: 2 500 000

IFSP contextualization was necessary to highlight the multitopology function that surrounds its libraries. Some studies discuss about the thematics of IFSP libraries that still does not have a coined concept.

The identity of Federal Institutes libraries in general is being built, for it congregates different user profiles and, consequently, different needs in the same environment. In this way, it is valid to investigate the profile of the professionals that work in such places, as well as the profiles of the users that frequent these libraries.

Santos defines IFSP libraries like informative systems that must give advisory to learning-teaching processes and scientific and extension processes of their respective campuses, so that they can satisfy the informational needs of their users (SANTOS, 2012, p. 80).

In IFSP, each campus counts on at least two librarians-documentalists. According to telephonic contact with Personnel Administration Management (GAP), the staff of librarians-documentalists in March of 2016 was 59 professionals.

3.2 Collection Instruments and Data Analysis

Data analysis was made in two ways. Firstly, it was applied a questionnaire and, subsequently, it was verified the information regarding the bibliographical productions in the professionals' curriculum *lattes*.

The identification of the professionals was made accordingly to the available information in the official sites of each campus. Such identification served for routing the researches in Platform *Lattes*.

Concerning the use of questionnaire, the latter was composed by 17 semistructured questions, 14 of them multiple choices and 3 of them dissertation. The questionnaire was sent to the group of professionals in February 24, 2016, by institutional e-mail. It was used the *Google Forms* tool for shared elaboration of the instrument. The source of research used to consult the technical-scientific productions and posterior bibliometric analyses was Platform

Lattes.

The answers could be sent until March 31, 2016. To analyze the investigative *corpus* of the research, the neo-bibliometric analysis was chosen, in which it was allied the indicators from the questionnaire application and the ones from the mapping that was made in the Bibliographical Production section of the professionals' curriculum *lattes*.

It was used in the data collection of the curriculum *lattes* a protocol elaborated in *LibreOffice* with the following fields: Author, Title, Keywords, Publication Source, Documental Typology, Language, and Year.

3.2.1 *Bibliometrics and Neo-Bibliometrics*

Bibliometrics emerged in the context of creation and expansion of data banks, amid the process of redemocratization of the country, as stressed out by Mostafa e Máximo (2003), Sacardo and Hayashi (2010). For Vanti (2002, p. 155)

The use of bibliometric techniques contributed in a decisive way in times of scarce resources, when a librarian must decide which titles or periodical publications can or cannot be suppressed from a library. Indicators of use are acquired, then, to define a list of priority periodical publications and predict a future demand. They are also used to evaluate productivity and quality of scientists' research through the measure based on numbers of publications and citations of diverse researchers⁴.

As mentioned in section 2.1, Bibliometrics, which consists in the use of mathematical and statistical techniques to conduct the measure of indices of production and dissemination of scientific production, using quantitative methods, was used for the first time in 1922, by Hulme (GUEDES, BORSCHIVER, 2005; VANZ, STUMPF, 2010).

It is also comprehended as a set of contributing laws of the theoretical foundations of Information Science. The mains laws that surround Bibliometrics are: Bradford Law, which refers to the productivity of periodicals; Lotka Law, which correlates the scientific productivity of authors, and Zipf Laws, which are associated to the frequency of words.

According to Quintaña Pena (2006), it is possible to understand Bibliometrics as "foremost a methodological strategy initially centered on the structural analysis and

⁴ In the original: "O uso de técnicas bibliométricas contribuiu de forma decisiva em épocas de recursos escassos, quando um bibliotecário deve resolver que títulos ou publicações periódicas podem ou não ser suprimidas de uma biblioteca. Indicadores de uso são obtidos, assim, para definir uma lista de publicações periódicas prioritárias e para prever a demanda futura, também são utilizados para avaliar a produtividade e a qualidade da pesquisa dos cientistas, por meio da medição com base nos números de publicações e citações dos diversos pesquisadores".

prognosis of information included, mainly, in scientific publications of investigation”⁵.

That said, Bibliometrics as a way of measure of information flow represents some subdisciplines, for instance, Scientometrics, Informetrics, and Webometrics. Although they present some similarities or points of convergence, they have different characteristics, foci, and functions, but all of them are inserted in the bibliometric context (VANTI, 2002).

In this sense, the acceptance of Bibliometrics as a quantitative and qualitative method, as well as the view of bibliographical references as a network of know-can, contributed to researchers associating Bibliometrics to other approaches for scientific production analysis. Such use of other methods associated to Bibliometrics made the term Neo-Bibliometrics to arise.

Neo-Bibliometrics, a recent term, can be understood as a neologism of Bibliometrics. The term was used pioneeringly by Peruvian researcher Alberto Quinaña Pena (1996, 2006 *apud* SILVA, 2012), who congregates other methods for the data analysis and does not only present them in a brute state (SILVA, 2012).

Neo-Bibliometrics makes possible contributions in the theoretical and methodological delineation of a field, for it runs through the quantitative bias of Bibliometrics, as pointed out by Silva Hayashi (2011), since there is an increase in contemporaneous studies. These studies indicate the broadening of investigations that use Bibliometrics allied to qualitative-descriptive approaches, causing the proposal of a new term for the area, “Neo-Bibliometrics” (SILVA, HAYASHI, HAYASHI, 2011; SILVA, MOSTAFA, 2013).

Lima, Hayashi, and Martinez (2014) reinforces that such approach has produced a significant set of researches known as “states of art”, known for the descriptive character of its methodology, which recurs to the analysis of categories to discuss an academic production in different areas of knowledge

Thus, it is observed a crescent demand in bibliometric studies. It is also observed that Bibliometrics increasingly allies itself with sociocognitive subsidy and it presents itself in a more contextualized way, so that the association network implicates not only quantitative and numerical aspects, but also political, cultural, social, and philosophical aspects in the constitution of knowledge. Such network today is perceived in a richer way than it was in the seventies or eighties, according to Silva (2012).

Therefore, it is verified that most of the scientific productions, in its methodology, end up allying quantitative and qualitative practices, and it is in this sense that Neo-Bibliometrics works, congregating institutionally quali-quantitative practices (SILVA, MOSTAFA, 2013).

Thereby, it is possible to evoke the reflection that Neo-Bibliometrics becomes an

⁵ In the original: "ante todo una estrategia metodológica inicialmente centrada en el análisis estructural y prognosis de la información contenida, principalmente, en publicaciones científicas de investigación".

expanded form of Bibliometrics, since the sociocognitive context gains evidence.

4 RESULTS

Given that data collection was made in two ways, it is presented the indicators raised with the obtained results, as well as the discussion aligned with the bibliographical referential and the research methods and techniques.

4.1 Questionnaire Application

Regarding the questionnaire, 31 answers were received, that is to say, 53% of the professionals answered the research. That said, the analyses conducted relative to the sample are presented.

In the first question, which refers to the gender, it was verified, as in the area of Library Science, the predominance of professionals of female gender, what configures a reflex of such field. Ferreira and Veiga (2013) highlight that circa 80% of the librarian posts in institutions are occupied by women.

In the second question, it was sought to identify the age range of the professionals. The predominant range is from 31 to 35 years with 41,4%; followed by 36 to 40 with 31%, and 26 to 30 years with 24,1%. In other words, IFSP mostly counts on young professionals who will have to remain in the institution for a considerable period.

Concerning how long they have been working, third question, 65,5% of the professionals work in the institution from 2 to 5 years; 20,7% of them from 6 to 10 years, and 13,8% of them work for one year.

The fourth question refers to titles. In this case, 62,1% of them have specialization; 31% of them have master's degree; 3,4% of them have doctor's degree, and 3,4% of them have bachelor's degree. It is noted that most professionals sought superior qualification to the one demanded in the moment of hire.

The objective of the fifth question is to verify if the professionals currently study. Data revealed that 65,5% of them does not study and 34,5% of them are studying.

The sixth question asked information referring to the courses that the professionals currently attend. Data revealed a comprehensive line of insertion, with courses like: specialization, teaching diploma, master's degree, and doctor's degree in correlative areas, for example, Information Science, Geography, Education, Pedagogy, among others.

Most professionals consider important to conduct researches related to work routines and then publish them: 92,2% of them favorable and only 7,1% of them not favorable, indices that represent the percentage of the seventh question. The eleventh question highlights that,

among conducted publications, 66,7% of them had as objective the contribution of labor practices and 33,3% of them did not aim to contributions in this sense.

Questioned if they had technical-scientific publications, 37% of them did not have any; 33,3% of them do have 1 to 5 publications; 18,5% of them have 6 to 10 publications; 7,4% of them have more than 16 publications, and 3,7% of them have 11 to 15 publications; this was what revealed eighth question.

In the ninth question, on sources of publication, 50% of them consider interesting to publish productions in periodicals; 35% of them in events; 14,3% of them in books, and 10,7% of them in specialized blogs and sites. Such question allowed the selection of more than one alternative.

The eleventh question asked the participants about the list of keywords that describe the approached thematics in the published productions. Thereby, the words were counted and listed in two columns in *Table 1 – Research Thematics of IFSP Librarians*, in which the keywords that presented more than one recurrence are highlighted in bold:

TABLE 1- Research Thematics of IFSP Librarians

| Keywords | Recurrence | Keywords | Recurrence |
|--------------------------------------|-------------------|---|-------------------|
| Reading | 3 | Mixed Library | 1 |
| School Libraries | 3 | Incentive to Reading | 1 |
| Informational Competence | 2 | Cultural Activities | 1 |
| Libraries | 2 | Health Based on Evidences | 1 |
| Informational Behaviour Marketing | 1 | Search Strategy | 1 |
| Search Behaviour | 1 | Databases | 1 |
| Scientific Research | 1 | Indexation | 1 |
| Scientific Publicity | 1 | Literature | 1 |
| Bibliometrics | 1 | Informational Prospecting and Monitoring | 1 |
| Marketing | 1 | Sources of Information | 1 |
| Knowledge Management | 1 | Descriptive Cataloging | 1 |
| Information Management | 1 | Information Recovery | 1 |
| Typologies of Libraries | 1 | Thematic Representation | 1 |

| | | | |
|----------------------------------|---|----------------------------------|---|
| Comics | 1 | Collective Inteligence | 1 |
| Document Analysis | 1 | Collaborative Web | 1 |
| Subject Analysis | 1 | Information and Technology | 1 |
| Users Study | 1 | Internet | 1 |
| Paradigms of Information Science | 1 | Times of Information Science | 1 |
| Information Architecture | 1 | Philosophy of Information | 1 |
| Privacy | 1 | Science, Technology, and Society | 1 |
| Knowledge Appropriation | 1 | Science Public Communication | 1 |

Source: Table elaborated by the authors.

We realize that the professionals research thematics close to each other that, departing from the current study, they can result in collective investigations and publications. According to the indicators of the twelfth question, 78,9% of the publications are not in co-authorship with professionals of the institution and just 21,1% of them are fruit of publications in co-authorship with co-workers.

In the thirteenth question, regarding the participation in events related to the area in which they work, 77,8% of the professionals attend at least one event per year; 18,5% of them do not attend events, and 3,7% of them frequently attend events.

Considering the percentage (aforementioned) of the ones that attend events, 60% of them have IFSP scholarship and 40% of them do not have it; such data refers to the fourteenth question.

When the professionals were questioned, in the fifteenth question, if they consider themselves researchers, 53,6% of them answered positively and 46,4% of them answered negatively.

For 71,4% of the interviewees it is interesting the articulation of the professional class related to production and publication of scientific-technical materials, while 71,4% of them are favorable to the organization of events and 28,8% of them favorable to the creation of specialized periodical, as pointed out in sixteenth question.

The seventeenth question, the last one, was a free space for the collaborators to manifest their critics about the research. Here are some excerpts of the accounts:

“Great research, for it will trace a profile of IFSP researcher librarians, as well as their productions and interests regarding personal and professional improvement”.

“I suggest the creation of a periodical at SEER base, formed by highly regarded

partnerships in the area”.

“I would like to understand the objective of the present research. But right now, congratulations; it is great to know that our class is united, enhancing the library services and products”.

“Great research, cool initiative!”

“Due to work flow and frequent lack of incentive and/or assistance by the Institution, we feel unmotivated to conduct any kind of production. I hope we can, over the years, articulate ourselves to produce relevant contents to our development and other co-workers”.

The results of the questionnaires, allied to the analysis conducted in the field Bibliographical Production of the Curricula *Lattes*, offered subsidy to some indicators that will be presented in the subsection 4.3 of this study.

4.2 Platform and Curriculum *Lattes*: Bibliographical Productions

It is known that in the academic universe the Platform *Lattes* offers a series of resources and possibilities of qualitative points about the researchers’ trajectory, specifically their bibliographical productions. The field Bibliographical Productions of the curricula *lattes* was verified through the professionals’ names listed in a document ceded by the Libraries Coordination Center (CBI) of IFSP Presidency.

It was structured a protocol in the application *Microsoft Word* to list the following points in the act of verification:

1. Firstly, if the professionals had or did not have curriculum *lattes*;
2. Quantitative index of bibliographical productions;
3. Kinds of publications.

According to the verification made, it was elaborated *Table 2 – Bibliographical Research in Platform Lattes*:

TABLE 2 - Bibliographical Research in Platform Lattes.

| | Total of publications | Average by librarian | Percentage |
|--|-----------------------|----------------------|--------------|
| Total of Librarians in IFSP | 59 | | |
| Total of Curricula <i>Lattes</i> Localized | 44 | | 74,6% |
| Published Articles (average among all) | 27 | 0,45 | |
| Published Articles (average among the ones who have curriculum <i>lattes</i>) | 27 | 0,61 | |
| Abstracts in Annals (average among all) | 44 | 0,74 | |
| Abstracts in Annals (average among the ones | 44 | 1,00 | |

| | | | |
|--|----|------|--|
| who have curriculum <i>lattes</i>) | | | |
| Books or Part of Books (average among the ones who have curriculum <i>lattes</i>) | 13 | 0,29 | |

Source: Table elaborated by the authors.

As a different way of demonstration, it was elaborated the graphic exposed in Figure 2, which refers to the typology of publications of IFSP librarians.



FIGURE 2 - Typology of Publications of IFSP Librarians.

Source: Graphic elaborated by the authors.

Título: Kinds of Publications

Article

Annals Abstracts

Annals Essays

Books or Part of Books

Through the survey of bibliographical productions it is possible to verify, according to *Table 2*, that 74,6% of the interviewees have curriculum in Platform *Lattes*, a relevant percentage, although it is beneficial the stimulus to the other professionals to register in the platform.

Concerning the quantitative index identified in the listed productions, it was possible to extract some data: abstracts in event annals occupy the first place of the bibliographical production of these professionals, representing 72% of all the bibliographical production found in the platform. Articles occupy the second place, representing 53%. Next, there are essays in annals with 39%, in third place, and books or part of books in fourth place with 23%. The period in which the productions were verified was the interval from 2008 to 2015.

4.3 Main Analyses

Based on the theoretical referential, the adopted methodology, and the instruments of

data collection used, it was possible to identify:

- relating to the theoretical referential:

- there is a vast material related to the thematics of the study (scientific production, Bibliometrics, librarian professional), except Neo-Bibliometrics thematics, in this sense, we suggest amplitude of investigations and discussions about Neo-Bibliometrics and its approaches;
- the formation of the librarian professional also as researcher deserves to be more explored, as pointed out by Araújo (1996) and Demo (1998), given that education and research must be seen as indissociable processes in the formation of a participative society;
- we live Knowledge Society, so that information and knowledge, intangible attributes with aggregated value, get relevance in economy and in education (FOUCAUT, 1988; DAVENPORT, PRUSAK, 1999; DZIEKANIAK, ROVER, 2011);
- in contemporaneity, scientific production is a product of relevance to the scenario of teaching organizations, for it becomes an evaluation instrument of performance and institutional visibility, in a way that, independently of formation, professionals who produce have possibilities of improving their theoretical-labor practices, as well as offering visibility to the institutions where they work (FERREIRA, 2011; SILVA, 2013).

- relating to IFSP librarians-documentalists it is possible to delineate that:

- Most professionals of female gender;
- Most professionals are young;
- Most professionals with the average of 5 years of activity at IFSP;
- Most of them have qualification beyond the demanded one for the performance of the functions;
- They produce and publish technical-scientific materials, especially abstracts in event annals;
- They have interest in the organization of institutional events, among other information;
- 74,6% of them have curriculum *lattes*, but it is interesting to stimulate the other ones (25,4%) to register in the platform.

That said, it is worthy to stress out the viability of other investigations to corroborate with this first study, so that it is possible to amplify reflections and detailing.

It is necessary to stimulate productions and publications in co-authorship among professionals, foment the increase of their participation in events of the area, and stimulate the creation and organization of institutional events.

Thereby, it must be highlighted that initiatives are being developed by CBI and the professionals themselves. In April of 2014, it was conducted the I Encounter of IFSP

Libraries, an event that will have its second edition in the second semester of 2016, as stated by IFSP CBI.

In sum, it was possible to map and analyze, though summarily, the technical-scientific production of IFSP librarians-documentalists. The results pointed out that IFSP librarians-documentalists produce technical material, for instance, experience accounts, products of scientific events, and scientific materials, like articles, dissertations, and theses.

Such productions contribute to the development and improvement of the professional class, favor the search of solutions for problems faced in work environments, as well as assist in the evolution of the areas of Library Science and Information Science.

5 FINAL CONSIDERATIONS

The adopted methodology was satisfactory for the study. We stress out that Neo-Bibliometrics makes possible greater amplitude to the sociocognitive interpretation and analysis, as stated by Silva. It is valid to ratify that there is need for broadening the investigative repertoire about Neo-Bibliometrics and its approaches, for it amplifies the network of epistemological investigations (SILVA, 2012).

The pioneering aspect of the investigation is highlighted, given that, through this study, it was possible, though summarily, to trace a profile of IFSP librarians-documentalists, most of them of female gender, young, with formation superior to the one demanded for the performance of the functions and who demonstrate themselves open to technical-scientific productions and publications. It is up to the institution to stimulate the advance of these professionals, assisting them in the participation of technical-scientific and corporative events.

It is proposed that professionals dialogue more among them about possibilities of investigations and publications in thematic groups, since some professionals have similar interests and research related themes.

The considerations indicate that IFSP librarians-documentalists produce technical-scientific publications. However, they can produce more of them, given that such effect contributes to the development and improvement of the professional class, draws closer institutional relations among campuses, and favors the search of solutions for problems faced in their labor practices, besides it evidences their respective campuses and libraries in the national and international technical-scientific scenarios.

It was also verified that isolated actions are conducted, but, if these actions reached a collaborative level, they will present a greater and broader potential.

PRODUCCIÓN TÉCNICO-CIENTÍFICA DE LOS BIBLIOTECARIOS DEL INSTITUTO FEDERAL DE SÃO PAULO: UN ESTUDIO NEO-BIBLIOMÉTRICO

RESUMEN: Las bibliotecas y los bibliotecarios-documentalistas del Instituto Federal de Educación, Ciencia y Tecnología de São Paulo (IFSP) han sido estudiados en investigaciones científicas, pero aún no ha sido identificado ninguna investigación que levantara y mapeara la producción científica de estos profesionales. Este estudio tuvo como objetivo mapear y analizar la producción técnico-científica de los bibliotecarios-documentalistas de la institución referida. El enfoque metodológico consistió en la realización de investigación teórica y empírica, en la cual fue priorizado el abordaje neo-bibliométrico. Por consiguiente, las herramientas de la Bibliometría se asociaron a la aplicación del cuestionario a los profesionales de la institución. Los resultados indicaron que la mayoría de los profesionales del IFSP: es del género femenino; tiene una calificación más alta que la requerida para el ejercicio de sus funciones; tiene alguna publicación técnico-científica; considera importante el desarrollo de publicaciones técnico-científicas, así como la creación de medios de comunicación y eventos. Sin embargo, las autoras sugieren algunas formas de fortalecer la visibilidad de la categoría: incentivo para aumentar las publicaciones técnico-científicas; incentivo a la creación y actualización del currículum lattes; incentivo a la producción de publicaciones con otros pesquisadores, pues algunos profesionales investigan temas similares; estímulo a la participación en eventos y publicaciones técnico-científicas. La conclusión de este estudio indica que los bibliotecarios-documentalistas del IFSP producen publicaciones técnico-científicas, pero pueden producir más, ya que este hecho contribuye al desarrollo y mejora de la categoría, estrecha los vínculos institucionales entre los campus, favorece la búsqueda de soluciones a los problemas que los profesionales enfrentan, además de destacar sus campus y sus bibliotecas en el escenario técnico-científico nacional e internacional.

PALABRAS CLAVE: Producción Técnico-Científica. Bibliotecarios-Documentalistas. Instituto Federal de São Paulo. Neo-Bibliometría.

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