



CONTROVERSIES OF THE INTELLECTUAL PROPERTY CONCESSION PROCESS AND THE SOCIAL FUNCTION OF PROPERTY: A SYSTEMATIC ANALYSIS OF STUDIES ON THE TOPIC

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ABSTRACT

The objective of this article is to identify and analyze the studies about the controversies existing in the process of granting Intellectual Property considering the social function of the property. The procedure used was to survey the quantitative publications in five study platforms: Academic Google, Science Direct, Scientific Electronic Library Online (SciELO), J-STAGE and Oxford Scholarship, using as keywords “função social propriedade intelectual” (in portuguese) and “social function intellectual property”. The period considered for the information gathering was from 1996 to 2018. The search strategy for the identification of the articles was based on criteria established by the Guide Preferred Reporting Items for Systematic Reviews and Meta-Analyzes (PRISMA). At the stage of the identification of studies, 24 (twenty-four) studies were carried out on the proposed theme. Of the selected studies, most are from national publications and periodicals and presented an exposition of national legislation. From the total of selected articles, they presented as thematic the difficulty of access to medicines by the population and exposed an evaluation on the break of patents. One of the articles, of Japanese origin, presented a proposal of method of analysis of patents considering its social interest. Thus, it was possible to perceive that the publications present, in their majority, a critique of the regulation that gives exclusivity to the creation of innovations of public interest and present as a predominant follow up the difficulty of access to medicines.

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INTRODUCTION

Property, according to the WIPO Convention (2015), boils down to the rights that an author or inventor has in relation to what is produced. This is to confer a title of exclusive rights to use, sell and control the exploitation of a new invention involving an inventive and industrially applicable activity, and the right to prevent third parties, without the consent of the owner, from exploiting something without the authorization of the breeder (Batur, Dedeurwaerdere, 2014). Despite the evident importance of the acquisition of intellectual property mainly in relation to quality registered products (OHIM Report, 2015), one of the existing questions about the right to property focuses on its social function. Once the exclusive right is granted, unfair behavior on the part of the creator may occur (Viswanath, 2016) and, consequently, generate costs for society (Burk, 2012).

It is clear that the relation between private intellectual property and the social function is a great divergence of ideas (Rosina, 2011). But, however relevant the issue, how has the studies related to the controversies of the process of granting intellectual property considering the social function of property evolving? In this sense, the objective of this article is to identify and analyze the studies on the controversies existing in the process of granting Intellectual Property considering the social function of the property. In order to reach the proposed objective, an explanation was first made about the right of property, as a fundamental right, but attending to the social function. Next, some controversies are presented in the process of granting intellectual property to the detriment of the social function. Soon after, the methodological proposal was exposed using as a tool the PRISMA methodology of selection of studies on the proposed theme. After the presentation of the methodological proposal, the results of the survey are presented. Finally, the final considerations are set out.

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The Right to property and social function: The Right of Property is considered one of the fundamental rights conquered by humanity. They are about the first generation rights and are related to the struggle for freedom and security of the individual with respect to the state (Alexy, 2017). However, the right to property is a right that has great difficulty in being established, since limits need to be drawn so that there is no misuse of this right (Dutra, 2017). Thus, there are restrictions imposed by the Federal Constitution of 1988 with respect to property rights, such as the care of the social function, contained in sections XXII to XXIV in Article 5 (Brazil, 1988). The concept of the social function of property refers to the middle ages and acquires prominence from the nineteenth century as a consequence of the growth and diversity of economic activity, and the need for the right of private property to have a connection with contributions to society. This means that ownership of a good, which meets the needs of the owner, must also serve the interest of the collectivity (Chalhub, 2003). As presented, the Federal Constitution of 1988 in Article 5, paragraphs XXII to XXIV, the right to property of the individual provided that it serves its social function and guarantees indemnification in cases of expropriation in case of public utility. In Brazil, the social function of property is described in article 170 of the Federal Constitution of 1988, related to the guarantee of existence worthy of the human being and social justice (Brazil, 1988). In this sense, it is up to the state to assess whether the concession of the right to private property is in agreement with the service of the collective interest (Melo, 2013).

According to Ondetti (2015), the principle of social function has played an important role, for example, in agrarian reform initiatives throughout Latin America, although there is little academic research outside the legal field. However, the principle of the social function of property in the Constitution is unclear (Dantas, 2017). For Dantas (2017), the only point of the Federal Constitution that specifically addresses the social function of property is that of rural property, which determines compliance with the following requirements: I - rational and adequate use, II - adequate use of natural resources III - compliance with the provisions that regulate labor relations, IV - exploitation that favors the well-being of owners and workers (BRAZIL, 1988). However, despite the jurists' knowledge of the issue and the recognition that it is a fundamental principle for social order, the social function of property has not been adequately applied (Cunha, 2011). One of the examples of granting private property from the state is intellectual property (WIPO, 2015). In this sense, it is necessary to discuss some aspects related to the right of intellectual property.

The controversies of the intellectual property concession and the social function of the property: Intellectual Property, according to the WIPO Convention (2015), boils down to the rights that an author or inventor has in relation to what is produced. This is to confer a title of exclusive rights to use, sell and control the exploitation of a new invention involving an inventive and industrially applicable activity, and the right to prevent third parties, without the consent of the owner, from exploiting something without the authorization of the breeder (Batur, Dedeurwaerdere, 2014). According to Burhan and Jain (2015), patents are increasingly used as currency in markets driven by innovation and technology. In this sense, the granting of patents, with the purpose of generating income by people and organizations, has gained recognition in several studies.

There are several types of property protection of the author (Burk, 2012), which extends from the protection of products, processes, trademarks, industrial segredo, among others. However, despite the theoretical and empirical development surrounding the acquisition process of property protection, several gaps still remain (Reiffenstein, Nguyen, 2011). In Brazil, Law 9,279/1996 regulates the rights and obligations related to industrial property, and establishes guidelines for the process of granting patents, as well as promoting technological and economic development. In order to achieve this objective, this law deals with the granting of patents for invention and utility model, registration of industrial design, and trademark registration, as well as repression of false geographical indications and unfair competition (Brazil, 1996). As seen, there are several types of intellectual property protection (Burk, 2012), which extends from the protection of products, processes, trademarks, industrial secret, among others. However, despite the theoretical and empirical development surrounding the acquisition process of property protection, several gaps still remain (Reiffenstein, Nguyen, 2011).

Concern about patent acquisition has been growing in recent years as intellectual property is extended to previously ineligible processes and things (Wright, 2008). In this sense, protecting an invention through the acquisition of patents, despite being a valuable tool, can be a daunting challenge (Bressler, Bressler, 2014), because there are different ways of protecting intellectual creation (Rodrigues, Lage and Vasconcellos, 2011). It is important to note that some authors attribute the difficulty in transmission of a particular technology to the existing complexity in protection processes to intellectual property, beyond the understanding of the courts in several countries (Rai, Schultz and Funkhouser, 2014, Pathak, 2015). Another factor that contributes to the great concern of patent protection was due to the advancement of the innovative capacity of each country (Burhan and Jain, 2015). In 2014, for example, China surpassed the United States and Japan and already has more patent applications than the two countries added. Despite the growth, China registered a substantial growth in the registration of brands (18.2%), but a decrease in the number of industrial project patents (14.4%). Brazil, for example, has grown latently in the last 15 years. According to information from INPI (2015), the growth rate between 2002 and 2011 was 6.1%. This represents an increase of patent applications by 1.6%, above the world rate (4.5%). In 2014, the country ranked as the second country with the highest number of patent applications with more than 7,400 applications, only behind the United States with more than 9,600 applications (ERWP, 2014).

Despite the evident importance of the acquisition of intellectual property mainly in relation to quality registered products (OHIM Report, 2015), one of the existing questions about the right to property focuses on its social function. In this case, the relation between private intellectual property and the public function configures itself as a great divergence of ideas, especially regarding the protection of individuals' lives (Rosina, 2011). According to Burk (2012), once the intellectual property is granted to the inventor, social costs are added to the invention. The social costs may be associated with the limitation of population access to the invention that may be of interest to society. This means that the proprietor of a particular patent, because he has exclusive rights over creation, can engage in unfair practices ranging from "stacking" the patent to extract royalties from over-creation

(Viswanath, 2016) consequently, generate the social cost. State action to grant a patent may result in monopoly behavior on the part of the breeder. Monopoly behavior can result in gaining benefits from production control and price that will be established with the aim of maximizing profits (Coase, 1960, 1965, Pindyck, 2013). In a study by EUIPO (2017), European citizens are almost unanimous in associating the quality of what is produced with the intellectual property of products. However, a large part also believes that the right to property guarantees benefits more relevant to large companies and famous artists, as opposed to what society needs. In a study by Kanwar (2009), for example, it was possible to perceive that in developing countries, such as Brazil, technology transfer can occur without major difficulties in processes that involve the intellectual property of products and processes.

The revocation of the right to intellectual property in the case of the existence of public interest in relation to what is produced is evidenced in the Federal Constitution (1988) and, mainly, article 71, of Law 9.279 / 96, which reports on cases of national emergency and / or public interest (Brazil, 1988, 1996). According to Geiger (2014), when intellectual property is related to its social function, the mere threat of use of an intellectual property right may be enough to discourage a competitor from launching an innovative activity in relation to the protected object. On the other hand, the author also emphasizes that the protection granted can discourage the development of an innovation, because there will be no competition. Geiger (2014, 2015) stated that: "Balancing is the key concept that underlies social function. Law is a matter of balancing. There cannot be an absolute right that can be exercised as self-reflexive without regard to the consequences that this exercise entails. "Briefly, there must be a balance between private and public interest. Considering the complexity of the topic up to the moment presented, it is possible to consider the following question: how has the studies that have addressed the theme of the social function of intellectual property evolved over the years? In order to answer the presented question, it was proposed to follow a survey of information in periodicals.

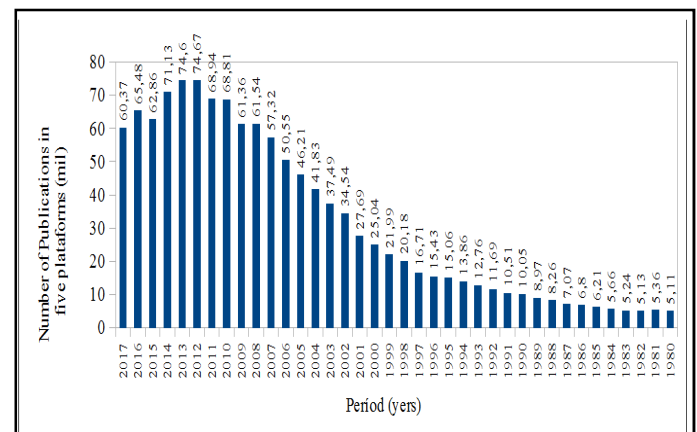
MATERIALS AND METHODS

The study in question can be classified as qualitative because it is fundamentally interpretive and allows the researcher to have a holistic view of the phenomenon (Creswell, 2002). Besides qualitative, it uses non-numeric data (Saunders, Lewis and Thornill, 2007). We can classify the study in question still as exploratory and descriptive. Exploratory, as it seeks information on legislation governing the social function of property and intellectual property, as well as descriptive, as it seeks to describe quantitatively the evolution of the discussion on this subject in recent years. The strategy adopted is that of case studies which, according to Yin (2001), represents the preferred strategy when questions such as "how" and "why" are posed, in which the researcher has little control and when the focus is finds in contemporary phenomena inserted in some context of real life. Saunders, Lewis and Thornill (2007), show that the advantages of using different methods allow them to be used for different purposes in a study, as well as to allow the triangulation of data collected by other means. In this context, the researcher can adopt different strategies that allow a clearer result in the research in question. Each strategy can be used for exploratory, descriptive, and explanatory research (Yin, 2001). The procedure used was the survey of the number

of publications on the theme "social function of intellectual property". The survey was carried out on three research publication platforms: Academic Google, Science Direct, Scientific Electronic Library Online (SciELO), J-STAGE and Oxford Scholarship, using as keywords "social function intellectual property" and "social function intellectual property". The period considered for the collection of information was from 1996 to 2018. It is important to highlight that the data were considered until May 05, 2018. The search strategy for the identification of the articles was based on the criteria established by the Guide Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). According to Moher *et al.* (2015), the PRISMA method is widely recommended by several researchers as a way of systematically reviewing information collection on articles. To achieve the expected result of the systematic review of information collection in publications, the PRISMA method follows the following steps: identification, selection, eligibility and inclusion. The identification stage consisted of the wide selection of articles in the five platforms chosen for this research considering only texts with free access. At the same stage duplications were identified and excluded. After the exclusion of duplicities, the articles that effectively addressed the social function of intellectual property were selected. At this stage, the texts were selected from the analysis of the titles for later analysis of the abstracts. After the analysis of the abstracts, the articles were selected for complete analysis. At this stage, the complete literature was read for the selection of the texts that address the proposed discussion related to the controversies regarding the granting of intellectual property and the social function.

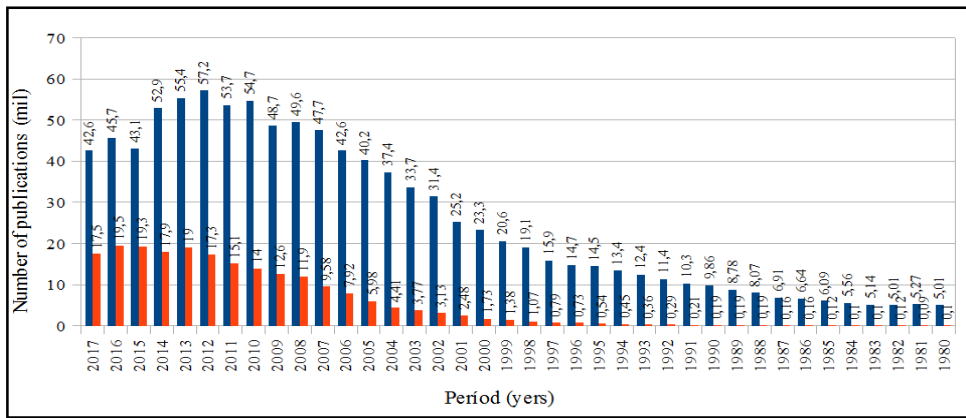
RESULTS AND DISCUSSION

In the first stage, 1,202,518 contents were collected in the five databases considered in this research, and 99.8% of the articles identified belong to the Google Scholar database, totaling 1,200,149 records. The second database with the largest volume of content was Science Direct, with 2,071 contents. It was identified on the J-STAGE platform 242 records followed by the Oxford Scholarship with 51 records and the SciELO with four records. Graph 1 shows the evolution of the records from 1980 to 2017 from the use of the terms "social function intellectual property" and "social function intellectual property". The next step consisted in separating the records according to the language.



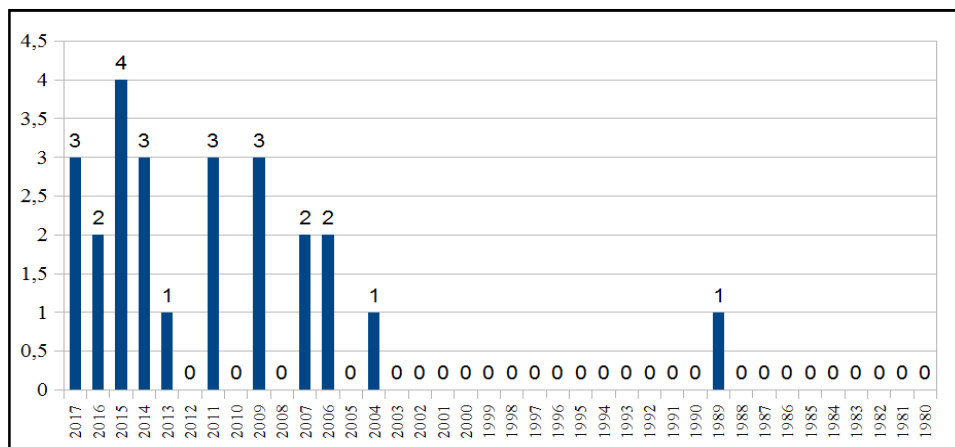
Source: Prepared by the authors (2018).

Figure 1. Number of publications identified on the five platforms (from 1980 to 2017)



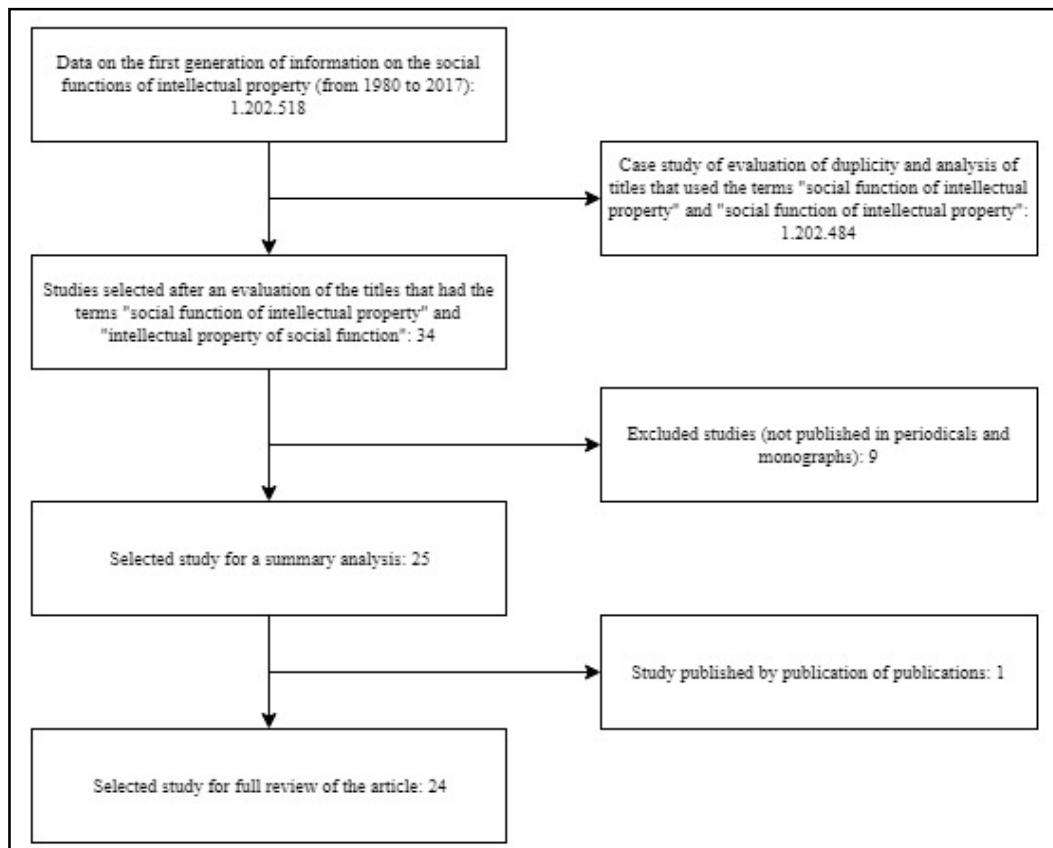
Source: Prepared by the authors (2018).

Figure 1. Number of publications identified on the five platforms divided by language of origin (from 1980 to 2017)



Source: Prepared by the authors (2018).

Figure 3. Publications selected from the year of publication in the title using the keywords "social function intellectual property" and "social function intellectual property".



Source: Prepared by the authors (2018).

Figure 2. Stages of selection of the publications of the social function and intellectual property theme

Table 1. Summary of publications submitted

Publication Title	Reference	Type of Publication	Platform	Proposal Submitted
The social function and industrial property	Page 1	Article	Academic Google	It shows that the social function radiates effects on industrial property.
Social Role of Intellectual Property: File Sharing and Copyright in CF / 88.	Mizukami (2007)	Dissertation	Academic Google	It investigates the ways that the Federal Constitution of 1988 indicates for the sharing of files by Internet.
Fundamental Rights, Intellectual Property and its Social Function: The Compulsory Licensing of Medicines	Full cast and crew for Zanin Neto (2009)	Article	Academic Google	Investigates the treatment by the larger law to intellectual property, their social function, stand up against the instrument of compulsory licensing, used for the breaking of the patent in benefit of the public interest.
Social function of intellectual property: the authoritarian patrimonialism in contrast to the right of access to culture	Advertisement ad feedback	Dissertation	Academic Google	Discussion regarding access to culture
Intellectual property and its social function: the breaking of pharmaceutical patents	Zanin Neto and Velasquez (2009)	Article	Academic Google	Discussion of legislation
The social function of intellectual property	Mendes (2014)	Dissertation	Academic Google	Discussion of legislation
Social and Socioeconomic Role of Intellectual Property in Brazil	Chagas and Luiz Silva (2014)	Article	Academic Google	Discussion of legislation
The Social Function of Intellectual Property Rights, Or how Ethics can Influence the Shape and Use of IP law	Geiger (2014)	Article	Academic Google	Critique of existing legislation on the Social Function of Intellectual Property
Brazilian social property rights according to an economic sociological perspective	Carvalho and Thomé (2015)	Article	Academic Google	Theoretical discussion of legislation associated with economic theory
Technological innovation and universities: New possibilities for the social function of intellectual property in a post-industrial society	Bento (2015)	Dissertation	Academic Google	Discussion of legislation
The dental records as a legal category of intellectual property and the fulfillment of the social function provided for in the Federal Constitution of Brazil	Page 1	Thesis	Academic Google	Access to information on dental records
Social Function of Intellectual Property: General aspects and perspectives.	Lima (2016)	Dissertation	Academic Google	Perspective analysis using respondents' perception of a broad survey.
The sharing of files on the Internet as a way of realizing the social function of intellectual property	Mendes, Santos and Vitória (2016)	Article	Academic Google	Article sharing on the internet.
The social function of intellectual property: a look from traditional knowledge	Tybusch and Irigaray (2017)	Article	Academic Google	Access to medicines and patenting of medicines resulting from traditional knowledge.
On Public Nature and Public Domain Nature of the Intellectual Property	Toyoda (1989)	Article	J-STAGE	Establishment of a new regulatory model for intellectual property and social purpose.
Current Situation and Problems of Patent Licensing in the Biomedical Industry	Morioka (2004)	Article	J-STAGE	Proposition of a collective system of patents management to access the population to medicines.
Analysis of Disputed Cases of Intellectual Property Rights as a Supply Risk of Generic Medicines	Katsuno (2012)	Article	J-STAGE	Problems in access to generic drugs.
Establishment of the Evaluation Process for Intellectual Property Created by Research Results in the Medical Field	Ohia et al. (2014)	Article	J-STAGE	Evaluation for intellectual property the field of medicine under the social bias.
Intellectual Property Management for Research Results of Universities to Prevent Themselves from Being Used by PAE	Kanai (2017)	Article	J-STAGE	Patent Management by Universities.
TRIPS and the Right to Health	Joseph (2011)	Book chapter	Oxford Scholarship	It examines the impact of TRIPS on the right to health, especially on the impact of global patent rules on drug prices.
Introducing the WTO and international human rights regimes	Joseph (2011)	Book chapter	Oxford Scholarship	It explains the WTO regime and the international human rights regime.
Relationship between the WTO and International Human Rights Law	Joseph (2011)	Book chapter	Oxford Scholarship	It examines the philosophical and normative relationship between the WTO and international human rights regimes.
Intellectual Property Rights: An Economic Approach	Ilie (2014)	Article	Science Direct	It analyzes the positive and negative impacts of intellectual property systems.
A proposal for the application of multicriteria analysis to rank countries according to innovation using the indicators provided by the World Intellectual Property Organization	Carmo Silva et al. (2017)	Article	Science Direct	It analyzes the position of Latin American and Caribbean countries in the ranking proposed by WIPO in relation to the Innovation Index.

Source: prepared by the authors (2018).

In this case, it was possible to perceive that most of the records found are of foreign language. The records in Portuguese correspond to 17.53% of the total registrations. Next, it is possible to visualize in graphic 2 the difference of the quantitative of registries in the searched languages: In the

selection stage, the records were chosen according to the content of the titles. In this stage, 34 publications were identified. It is important to emphasize that, unlike the first survey of data that showed a greater volume of publications in other languages, most identified in this stage were texts in the

Portuguese language. Subsequent evaluation focused on themes and abstracts. At this stage, records of unpublished articles in journals, undergraduate articles and monographs were discarded, resulting in 25 (twenty-five) records. Below is a chart indicating the selected publications: The 25 (twenty five) publications identified, after the evaluation of titles and abstracts, are predominantly texts in Portuguese. Only one of the publications is in English. Most of the publications identified, 15 (fifteen), are from the Google Scholar platform, 5 (five) from J-STAGE, 3 (three) from the Oxford Scholarship, and 2) by Science Direct. No records were found on the SciELO platform. Below is a flowchart of the selection stages of the publications: The publications identified were divided according to the type of publication. It was possible to perceive in this division that, predominantly, the records found are articles published, being 15 (fifteen) records, followed by dissertations (five), books (four) and theses (one). After analyzing the publications, one of the articles was discarded, because the official publication platform was not found. In this sense, there remain 24 (twenty-four) publications. The following is a flow chart of the selection stages of the publications: After the identification of the publications regarding the type, and the analysis of the titles and abstracts, the final stage focused on the complete reading of the publications. At this stage, the intention was to evaluate whether the publications present a discussion about the controversies in the process of granting intellectual property and the social function of the property, according to the study proposal. To contribute to the analysis of each of the identified publications, the following is a table that presents a summary of the proposal of the selected publications. In this stage, one of the publications was discarded because it did not present the source of its publication.

Conclusion and Final Considerations

The objective of the present study was to identify and analyze the studies on the controversies of the process of granting Intellectual Property considering the social function of the property. In order to reach the proposed objective, a survey of publications on the subject was carried out in five platforms: Google Scholar, J-STAGE, Oxford Scholarship, Science Direct and SciELO. The only platform in which no studies on the chosen topic were identified was the SciELO platform. After the exclusion and analysis of the publications, 24 (twenty four) studies, predominantly articles, were selected. Most publications, which are predominantly national and selected from the Google Scholar platform (14), present a discussion of legislation on the social function of intellectual property and the existing controversies. One of the texts that addresses the discussion of the legislation presents the circumstances in which there may be compulsory licensing in case of abuse of power by the owner of intellectual property for something of interest to society. It can be highlighted in one of the publications if it proposes a new regulatory model for intellectual property considering the social purpose of what is patented. In three publications selected on the Oxford Scholarship platform the texts presented an evaluation of TRIPS and the WTO.

One of the texts presented an evaluation of TRIPS in relation to the right to health and the other two an analysis of the international human rights regime. In four publications, analyzes were presented on the impact of the granting of intellectual property in relation to access to culture, file sharing

over the internet, patent management by universities and the presentation of the ranking proposed by WIPO of the position of Latin American countries and the Caribbean in relation to the Innovation Index. In six publications, the impacts of granting intellectual property in relation to access to medicines were analyzed. Of the six publications that refer to access to medicines, two can be highlighted: One refers to the impact of intellectual property on the price of medicines and one presents the proposition of a collective system of patents management for the population's access to medicines. It was possible to notice that in one of the publications a specific method or way of evaluating an intellectual property according to its social function was approached specifically. In general, it can be emphasized that most of the publications on the subject are national and occurred from the year 2000, being the subject little discussed if compared to the total of publications identified in the first selection stage. Thus, it can be considered that the theme social function of intellectual property has been little discussed and of the publications identified, few present in a specific way a new approach to the theme or a way of evaluating intellectual property considering the social function.

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