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BRAZILIAN GEOGRAPHICAL INDICATIONS: A MAP OF SCIENTIFIC PRODUCTION FROM 1996 TO 2020

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INTRODUCTION

The concept of Geographical Indications (GIs) was conceived centuries ago, in a world where different peoples have found the need to tie certain products to certain places, so they could label their reputational quality, traditions and know-how (Medeiros et al., 2016).

Nowadays, they are defined as non-transferable collective instruments that can connect people and products with their cultural and historical heritage, where a single brand can be established for two or more organizations as means to preserve their exclusivity, and foster local economic development, collective marketing, and social and environmental sustainability (Tregear & Gorton, 2009; Bowen & Zapata, 2009).

Most literature on this theme is compounded by the dissemination of the assumptions that GIs can add even value to these unique products, contributing: i) economically, through greater reach in the domestic market and expansion to the foreign market, ii) socially and culturally, referring to the insertion of less favored regions in a macro scenario; iii) environmentally, preserving local genetic resources (Artêncio et. al., 2019; Garcia et al., 2019; Brasil, 2014).

In a global market with increasingly fierce competition, these regions emerge in several countries as means to promote self-sustainable products from historical, cultural, and environmentally friendly origins, as being of a peculiar nature identity with inimitable characteristics. The United Nations (UN) recognizes their relevance for sustainable development and has therefore guided and encouraged, through its Food and Agriculture Organization (FAO), farmers and others involved in food manufacturing in local communities to certify their products through GIs (FAO, 2019).

Whether in the most recent studies (such as Vecchio et al., 2020) or in slightly less up-to-date ones (as in Wirth, 2016 Bowen & Zapata, 2009), geographical indications are perceived as strategic tools to build resilient, socioeconomically and ecologically sustainable communities.

In Brazil, however, this history is more recent. Only regulated through Law 9,279 of 14th May 1996, the country is in a process of learning and development, applied to various regions, organizations, and products in the country.

Today, the Brazilian National Institute of Industrial Property (INPI) recognizes GIs in two levels. The Indication of Origin (IP) is related to proof of reputation, while the Denomination of Origin (DO) also needs the influence of the environment as climatic conditions, *terroir* (Tregear & Gorton, 2009; Rubini et al., 2010; Zamparini et al., 2010; Medeiros et al., 2016; Castro & Giraldi, 2018).

At present, there are 70 of them (53 IPs and 13 DOs). An increase that mainly happened in the last ten years, considering that in 2010 there were only seven IPs and only one DO (Castro & Giraldi, 2018; INPI, 2020).

Forasmuch as geographical indications have an evident role in the sustainable development of a place, it seems more than relevant to understand their scientific-academic sphere over time, based on the premise that education and research institutions are great partners in the development of these regions.

No study (to our knowledge) has considered outlining the scientific production on the theme throughout the vast territory of Brazil. This being the case, our research maps the publications in the scientific milieu from 1996 to 2020, looking at each Brazilian GI individually. To do so, we adopt the *Methodi Ordinatio* for systematic literature review (Pagani et al., 2015) and map the results using the software VOSViewer, developed by van Eck & Waltman (2010).

By analyzing this advance of knowledge, we present an overview of the publications on Brazilian Geographical Indications. This article ultimately identifies the singularities and scientific needs of each one of them, shedding light on future researches more accurately.

LITERATURE REVIEW

The term "Geographical Indication" was coined during the Uruguay Round, a multilateral trade negotiation embracing 123 countries, lasting from 1986 to 1993, in an agreement named Trade-Related Aspects of Intellectual Property Rights, or TRIPS (TRIPS, 1994).

A clear-cut definition can be found at Article 22 Section 3 of the document, which defines a them as "indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin." (WTO, 2020, p. 328).

The Uruguay Round was a moment in time that Brazil was looking for a more advantageous global insertion as part of the Cairns Group, seeing that, for the first time, the agenda presented an area where the possibility of liberalization in agricultural products was envisaged (Batista, 1992).

Considered the largest trade negotiation in our history, there is no doubt that this agreement represents a considerable advance in achieving the objective of providing greater protection of intellectual property (Lampreia, 1995).

Today, GIs are present in several countries and refer to a variety of products. There is the Parma ham in Italy, the Canastra cheese in Brazil, the sparkling wine from the Champagne region in France, among others. The competitive advantages of Champagne, for example, are the territory, with unique climate and subsoil; the way of preparing the sparkling wine, which has traditionally been produced in the same way for 200 years; and the denomination of origin that legally determines the grape production areas (Sharp & Smith, 2007; Charter & Spielmann, 2014; Aranda et al., 2015; Castro, 2019).

From an economic point of view, GIs can be understood as strategies that drive local development by adding value to products, highlighting characteristics and attributes that make them unique, especially in the case of agri-food goods (Pellin & Vieira, 2015). The main economic benefits to the value added to the products are translated into an increase in sales, as observed by Cerdan et al. (2010).

The transformative capacity in producing communities as collective products can stimulate the dynamism of tourism, agriculture, sustainability, and ultimately articulate competitiveness for better market conditions. Groups of local actors, linked to codes of practices designed to protect local environmental resources and cultural habits, make it possible to develop activities in disadvantaged rural areas, valuing local skills, promoting income distribution and socioeconomic harmonization (Artêncio et. al., 2019; Valente et al., 2012; Bowen, 2010).

Garcia et al. (2019) complement that GIs appear as an economic development strategy, also promoting local territorial strengthening, especially in territories considered economically vulnerable. Cei et al. (2018) point out that they are drivers for local economic development, especially in cases where consumer markets are distant and do not have direct contact with the producer and/or the territory.

In fact, it is for these reasons that the products are labeled, as means to transmit information to a consumer as a guarantee of uniqueness and quality. The labels are tools for strategic commercial promotion of the products and must endorse their historical and cultural heritage. Generally, they follow specificities such as the defined production area, typicality and authenticity, communicating quality standard and the notoriety that the indication represents to products or services from that region (Sebrae & INPI, 2011; Barbosa & Regalado, 2013).

In Brazil, similarly to most other countries, these standardization processes were incorporated as the prerogative of a body that has its expertise historically built around the registration of trademarks and patents (Niederle et al., 2017). The Brazilian National Institute of Industrial Property (INPI) is therefore the official governmental institution responsible for the concessions of geographical indications.

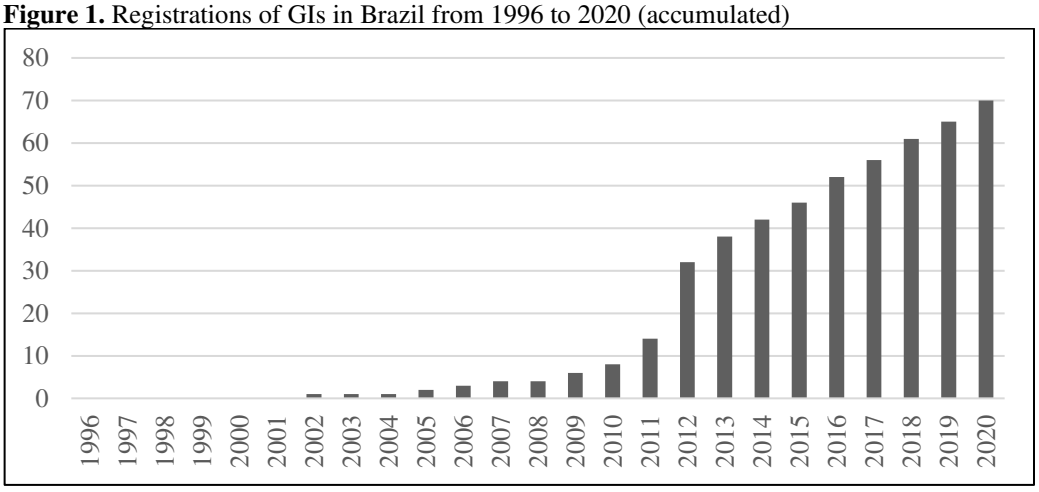
Pursuant to Industrial Property Law (Law No. 9,279, 1996), there are two possible classifications, namely the Indication of Origin (IP) and Denomination of Origin (DO), also referred in some studies as Appellation of Origin (AO).

IPs are considered the geographical name of a country, city, region, or locality of its territory which has become known as a center of extraction, production or manufacture of a given product or for providing a given service. In like manner, DOs are geographical names of places recognized by a product or service, but they also encompass the qualities or characteristics of which are exclusively or essentially due to the geographical environment, including natural and human factors.

In this sense, before the enactment of Law 9,279/96, it is possible to notice the disassociation of qualitative aspects that touch any relationship in this sense between production and locality. This concept was incorporated by this law as a consequence of the TRIPS Agreement, consolidating the concept of origin into Geographical Indications – rather a kind of GI based on the qualitative question (Melo, 2018).

Even though the TRIPS Agreement and the Industrial Property Law date from mid-1990s, the first GI in Brazilian territory (Vale dos Vinhedos) was only cataloged in 2002. In 2010, INPI still accounted for almost literally a handful of registrations. Today, there are 58 IPs and 13 DOs (INPI, 2020), totaling 71 certifications, although 70 regions: Cerrado Mineiro, in Minas Gerais State, holds both an IP and a DO. Figure 1 shows the accumulated records of Brazilian GIs from 1996 to 2020.

Figure 1. Registrations of GIs in Brazil from 1996 to 2020 (accumulated)



Adapted from INPI (2020)

The significant increase in orders and registrations in 2012 is justified by Gonçalves et al. (2018), who relates it to the promotion of public development policies by government agencies and institutions.

The interest by various sectors of the economy for registrations of origin with the INPI enables to observe the potentiality of obtaining competitive and sustainable advantages after labeling a GI on the product. The coffee and wine sectors were the pioneers in requesting IPs and are today those with the highest number of IP/sector (Castro & Giraldi, 2018).

Much as these numbers may sound, Brazil is still a good way from other countries. Germany, for instance, has recognized 135 regions and their products. In Greece, 147 records are placed for wines, in a total of 272 registers (European Commission, 2020). Besides, there are several unprotected areas in Latin America, as well as in Africa and Asia, existent based on tacit codifications, relying on the skills of producers, traders, and consumers (Sautier et al., 2011).

Additional data from INPI (Table 1) evidences a concentration of Brazilian GIs in the states of Rio Grande do Sul (RS), Minas Gerais (MG) and Paraná (PR).

Table 1. How Geographic Indications are distributed throughout Brazilian states

Alta Mogiana	SP	Paraíba	PB
Altos Montes	RS	Paraty	RJ
Cachoeiro de Itapemirim	ES	Pedro II	PI
Caicó	RN	Pelotas	RS
Campanha Gaúcha	RS	Piauí	PI
Campos de Cima da Serra	SC/RS	Pinto Bandeira	RS
Canastra	MG	Pirenópolis	GO
Capanema	PR	Porto Digital	PE
Cariri Paraibano	PB	Porto Ferreira	SP
Carlópolis	PR	Região de Corupá	SC
Colônia Witmarsum	PR	Região da Serra da Mantiqueira	MG
Costa Negra	CE	Região das Lagoas Mundaú-Manguaba	AL
Cruzeiro do Sul	AC	Região de Pinhal	SP
Divina Pastora	SE	Região da Própolis Verde de Minas Gerais	MG
Farroupilha	RS	Região de Salinas	MG
Franca	SP	Região do Cerrado Mineiro (IP/DO)	MG
Goiabeiras	ES	Região do Jalapão	TO
Linhares	ES	Região Pedra Carijó	RJ
Litoral Norte Gaúcho	RS	Região Pedra Cinza	RJ
Manguezais de Alagoas	AL	Região Pedra Madeira	RJ
Mantiqueira de Minas	MG	Região São Bento de Urânia	ES
Maracaju	MS	Rio Negro	AM
Mara Rosa	GO	Sabará	MG
Marialva	PR	São João del Rei	MG
Maués	AM	São Matheus	PR
Microrregião Abaíra	BA	São Tiago	MG
Monte Belo	RS	Serro	MG
Mossoró	RN	Sul da Bahia	BA
Norte Pioneiro do Paraná	PR	Tomé-Açu	PA
Novo Remanso	AM	Uarini	AM
Oeste da Bahia	BA	Vales da Uva Goethe	SC
Oeste do Paraná	PR	Vale do Submédio São Francisco	BA/PE
Ortigueira	PR	Vale do Sinos	RS
Pampa Gaúcho da Campanha Meridional	RS	Vale dos Vinhedos	RS
Pantanal	MS/MT	Venda Nova do Imigrante	ES

Adapted from INPI (2020)

Nevertheless, it is reasonable to state that both academic community and governmental institutions have been making progress towards the topic over the last years. Whereas graduate scholars had submitted 20 theses or dissertations about GIs by 2010, there is a portfolio of 119 documents listed in a national Theses and Dissertations Catalog in mid-May 2020 (CAPES, 2020). Annually, from 2015 onwards, Brazilian Institute of Geography and Statistics (IBGE) has been mapping the newest GIs in the country, and the Brazilian Micro and Small Business Support Service (Sebrae) maintains updated a database with detailed information about each one of them.

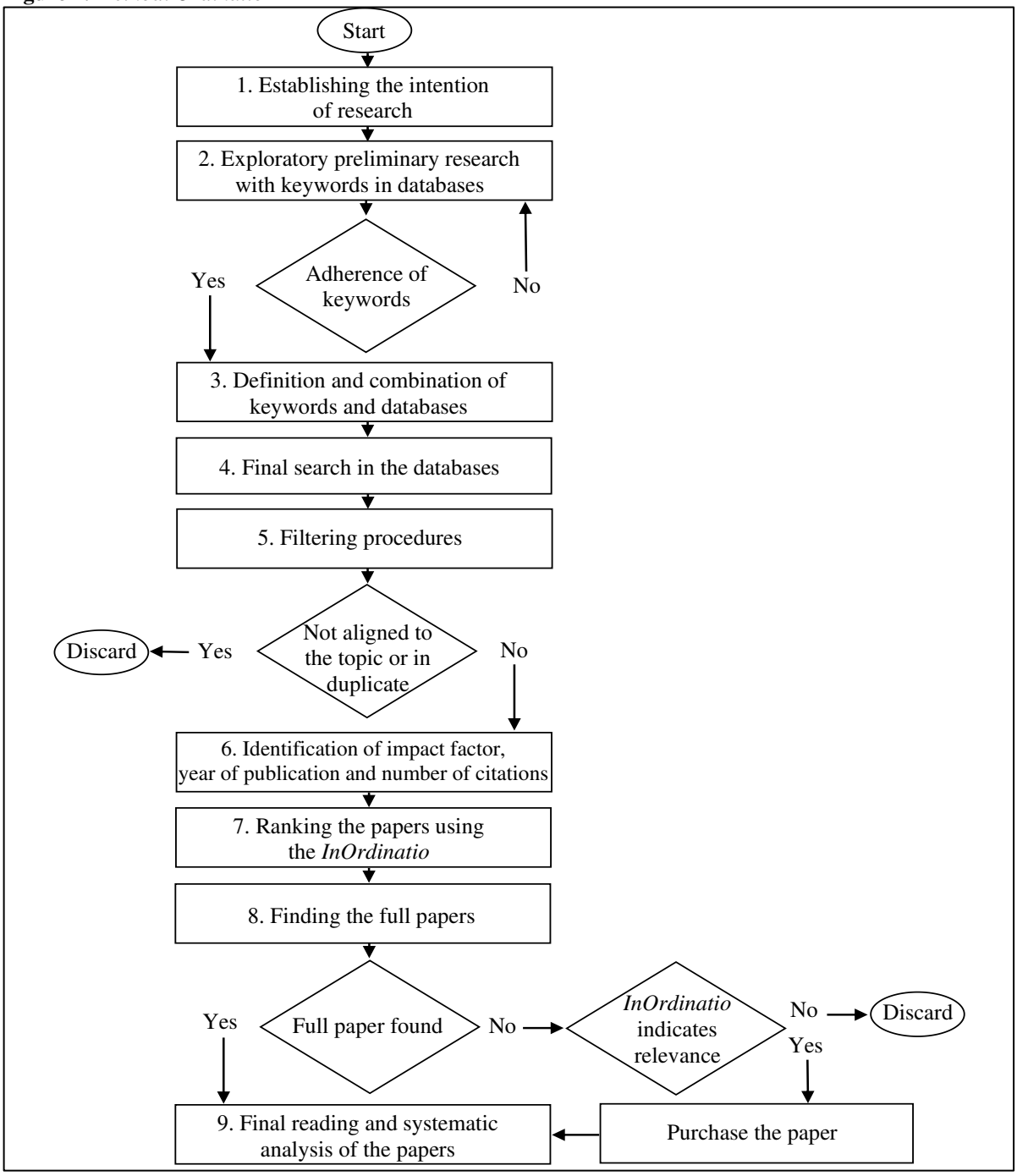
Although the illustration shows an increase of thesis and dissertations in Brazil, it is of interest to know whether this holds true for other scientific publications, such as original articles, case reports, technical notes, etc.

METHODOLOGY

To find publications of this kind, we have adopted the systematic approach for literature review proposed by Pagani et al. (2015). In a nutshell, *Methodi Ordinatio* is a 9-step methodology (Figure 2) for searching, selecting, and organizing scientific studies, based on three criteria: impact factor, year of publication and number of citations.

As for search engine, Scopus was chosen for being an omnibus database, used more than 5,000 academic, government and corporate institutions as an unquestionable source of scientific works. Moreover, it has already been adopted in other review papers about GIs in Brazil, as in Artêncio et al. (2019) and Medeiros et al. (2016).

Figure 2. *Methodi Ordinatio*



Source: Pagani et al. (2015)

All searches throughout our study were made both in English and Portuguese, using Scopus' TITLE-ABS-KEY default search field. According to Scopus itself, these three fields provide the best starting point for they contain the most relevant information of a study.

Phase 1 – Intention of Research: Essentially, the intention of this study is to map the scientific production in Brazil on Geographical Indications. Therefore, we considered two main axes for searching in Scopus database: [*"geographical indications"*] and [*"brazil"*].

Phase 2 – Preliminary research with keywords: Alone, the keyword [*"geographical indications"*] has resulted in 1,227 documents. Combined with ["*brazil*"], the search has been radically reduced to 50 studies, where there were 44 articles, three book chapters, two reviews

and one conference paper. These studies are classified in several different subject areas, sometimes with occurrences in more than one field.

Nearly all of them (42 papers) are published in journals from Brazil. Publications in Argentina, Colombia, France, Indonesia, Portugal, Spain, Switzerland, United Kingdom and United States were also found. Considering the intention of our study, this preliminary research with keywords has revealed a limited quantity of studies, leading us to Phase 3.

Phase 3 — Final decision on keywords combinations and databases: Combinations of [*origin*] AND [*product*] seemed to be most conducive to a wider range of results, and therefore established as the final decision, as in [*"alta mogiana"*] AND [*coffee*]; [*canastra*] AND [*cheese*]; [*"cruzeiro do sul"*] AND [*"cassava flour"*]. These search strings were then employed in Scopus database.

Phase 4 — Final search on databases using a reference manager: Using these combinations, new searches were conducted. 553 studies were found, and duplicates were not excluded.

Phase 5 — Filtering procedures: The results were then organized (Table 2) using the reference managers Mendeley and JabRef, as suggested by Pagani et al. (2015). Articles, book chapters and conference papers were not included in the results.

Table 2. Volume of studies in Scopus database after filtering procedures

Alta Mogiana	4	Paraíba	24
Altos Montes	0	Paraty	0
Cachoeiro de Itapemirim	4	Pedro II	1
Caicó	0	Pelotas	7
Campanha Gaúcha	8	Piauí	13
Campos de Cima da Serra	0	Pinto Bandeira	4
Canastra	28	Pirenópolis	0
Capanema	0	Porto Digital	3
Cariri Paraibano	1	Porto Ferreira	3
Carlópolis	0	Região de Corupá	1
Colônia Witmarsum	1	Região da Serra da Mantiqueira	4
Costa Negra	0	Região das Lagoas Mundaú-Manguaba	0
Cruzeiro do Sul	5	Região de Pinhal	2
Divina Pastora	0	Região da Própolis Verde de Minas Gerais	18
Farroupilha	0	Região de Salinas	2
Franca	11	Região do Cerrado Mineiro (IP/DO)	23
Goiabeiras	1	Região do Jalapão	10
Linhares	3	Região Pedra Carijó	0
Litoral Norte Gaúcho	1	Região Pedra Cinza	0
Manguezais de Alagoas	18	Região Pedra Madeira	0
Mantiqueira de Minas	0	Região São Bento de Urânia	0
Maracaju	0	Rio Negro	21
Mara Rosa	0	Sabará	14
Marialva	24	São João del Rei	0
Maués	13	São Matheus	9
Microrregião Abaíra	0	São Tiago	0
Monte Belo	2	Serro	21
Mossoró	67	Sul da Bahia	7
Norte Pioneiro do Paraná	5	Tomé-Açu	0
Novo Remanso	0	Uarini	0
Oeste da Bahia	2	Vales da Uva Goethe	2
Oeste do Paraná	0	Vale do Submédio São Francisco	134
Ortigueira	1	Vale do Sinos	2
Pampa Gaúcho da Campanha Meridional	18	Vale dos Vinhedos	9
Pantanal	2	Venda Nova do Imigrante	0

Source: elaborated by the authors

Phase 6 — Identification of impact factor, year of publication and number of citations: These criteria were gathered from different sources. The impact factor was collected from the SCImago Journal & Country Rank; the years of publication were extracted from the resulting studies in Phase 4 and 5; the number of citations was retrieved from Google Scholar platform.

Phase 7 — Ranking the papers using the InOrdinatio: The equation *InOrdinatio* is applied to rank the scientific works according to their relevance: the higher the value obtained, the more relevant the paper is.

$$InOrdinatio = \left(\frac{IF}{1000}\right) + \alpha * [10 - (ResearchYear - PublishYear] + (\sum Ci)$$

IF is the *impact factor*, and it is divided by 1000 to normalize its value respecting the other criteria. α is a *weighting factor*, which might vary from 1 to 10 and represent the researcher's opinion on the relevance of the criterion year (considering the growing number of new publications over the years, we have established α as 10 for this research). *Ci* is the number of times the paper has been cited. A sample of the first 20 articles, with the highest results in *InOrdinatio* equation, is shown in Table 3.

Table 3. The 20 most relevant articles on the order of *InOrdinatio* equation

Reviewing SEBAL input parameters for assessing evapotranspiration and water productivity for the Low-Middle São Francisco River basin, Brazil. Part B: Application to the regional scale	244,002
The source of ochratoxin A in Brazilian coffee and its formation in relation to processing methods	235,001
Chemical composition and botanical origin of red propolis, a new type of Brazilian propolis	171,001
Chemical composition and biological activity of extracts obtained by supercritical extraction and ethanolic extraction of brown, green and red propolis derived from different geographic regions in Brazil	169,001
Brazilian red propolis: Unreported substances, antioxidant and antimicrobial activities	161,001
Phenolic compounds, organic acids and antioxidant activity of grape juices produced from new Brazilian varieties planted in the Northeast Region of Brazil	159,002
Microbial safety status of Serro artisanal cheese produced in Brazil	157,001
The relation between family socioeconomic trajectories from childhood to adolescence and dental caries and associated oral behaviours	155,002
Evaluation of bioactive compounds potential and antioxidant activity of brown, green and red propolis from Brazilian northeast region	137,001
A classification of the major habitats of Amazonian black-water river floodplains and a comparison with their white-water counterparts	129,001
The effect of seasons on Brazilian red propolis and its botanical source: chemical composition and antibacterial activity	127,000
Composição fenólica, atividade antibacteriana e antioxidante da própolis vermelha brasileira	125,000
Using the theory of planned behavior to identify key beliefs underlying Brazilian cattle farmers' intention to use improved natural grassland: A MIMIC modelling approach	119,001
Agricultural land use change in the Brazilian Pampa Biome: The reduction of natural grasslands	119,001
Flavonols and ellagic acid derivatives in peels of different species of jabuticaba (Plinia spp.) identified by HPLC-DAD-ESI/MSn	115,002
Determining regional actual evapotranspiration of irrigated crops and natural vegetation in the São Francisco river basin (Brazil) using remote sensing and Penman-Monteith equation	110,001
Comparative chemistry of propolis from eight brazilian localities	110,001
Simultaneous analysis of 25 phenolic compounds in grape juice for HPLC: Method validation and characterization of São Francisco Valley samples	108,001
Relationship between anthocyanins and skin color of table grapes treated with abscisic acid at different stages of berry ripening	106,001
Phytochemical screening and in vitro antibacterial, antifungal, antioxidant and antitumor activities of the red propolis Alagoas	106,001

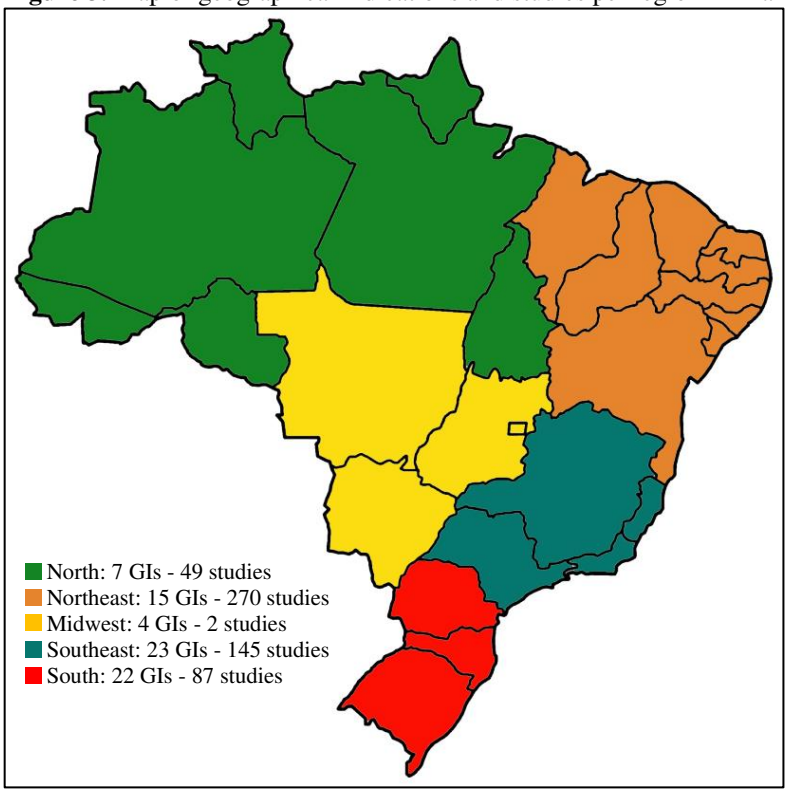
Source: elaborated by the authors

ANALYSIS AND DISCUSSION

Methodi Ordinatio's final Phase 8 (Purchase the papers) and Phase 9 (Final reading and systematic analysis of the papers) are quite straightforward and presented here. In fact, Phase 8 was not necessary since Scopus can be accessed via institutional login. Phase 9 was readily carried out to write this chapter.

Our first results are presented in Figure 3. It is a map containing the number of GIs and studies for each of the five regions in Brazil.

Figure 3. Map of geographical indications and studies per region in Brazil



Source elaborated by the authors

Our findings reveal that the studies are mostly published in Brazilian journals (308 papers). There are also significant numbers of publications in Netherlands (54), in the United Kingdom (51), and in the United States (48), and smaller amounts of articles can be found in journals from Australia, Austria, Canada, Chile, Colombia, Egypt, France, Germany, India, Italy, Poland, Portugal, Serbia, Spain, Switzerland, United Arab Emirates and Venezuela.

Per contra, out of the 20 most relevant papers from *InOrdinatio* equation (in Table 3), 08 are published in journals from Netherlands, 04 in the United States, 03 in the United Kingdom, 02 in Egypt, 02 in Brazil and 01 in Switzerland.

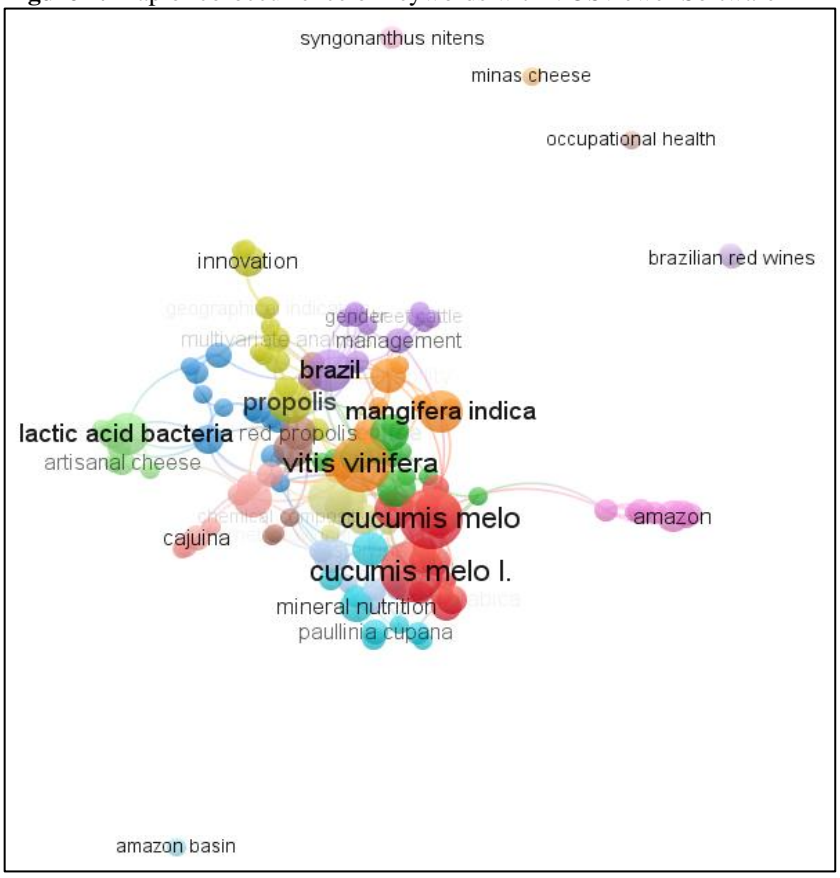
On this subject, there are 84 studies (from different geographical indications) that presented negative values for the *InOrdinatio* equation. According to Pagani et al. (2015), besides of not being current (older than 10 years), these papers neither were published in high impact journals nor were they cited as much, resulting in negative or even very low values.

As for the publishing journals, 144 different SJR subject categories have been found, where the sizable majority of the studies are contained in the area of Natural Sciences, more necessarily in the categories of Agronomy and Crop Science, Food Science, Plant Science, Soil Science, and Agricultural and Biological Science.

In a superficial content analysis, it is possible to observe that the publications are predominantly product-oriented and do not necessarily hash over the concept of geographical indications itself, mainly focusing on manufacturing and quality issues of its products. In Rio Negro, for instance, most publications about ornamental fishes can be found in health-related journals, such as the *Journal of Applied Ichthyology* and *Acta Tropica*. In Serro, there are several articles about the IG's certified cheese on food and health journals, such as the *Food Research International* and *Food Microbiology*.

Inasmuch as these articles explore different products and regions, analyzing the co-occurrence of keywords seemed plausible in pursuance of finding possible bibliometric networks, which is shown in Figure 4.

Figure 4. Map of co-occurrence of keywords with VOSviewer Software



Source elaborated by the authors

Figure 4 was built using VOSviewer (van Eck & Waltman, 2010), an open-source software for creating maps based on bibliographic data. The keywords in bold, evident in Figure 4, are either scientific names or common terms for the products with the largest number of studies in Scopus database. [“Vitis vinifera”] for grapes, [“Mangifera indica”] for mangoes (both for Vale do Submédio São Francisco) and [“Cucumis melo”] for melon (Mossoró). There is also [“lactic acid bacteria"] referring to cheese, a product from four different Brazilian GIs, and [propolis] for red and green propolis (from Manguezais de Alagoas and Região da Própolis Verde de Minas Gerais, respectively).

The literature review chapter of this work, albeit briefly, demonstrates that geographical indications are tools for strategic and sustainable development. On the other hand, our results demonstrate that there are few studies that individually explore these aspects in Brazil.

There are numerous examples from throughout the world, such as Bowen & Zapata (2009), who study the case of Mexican tequila, Vecchio et al. (2020), who present a case study on the possible market development of shea butter in Ghana, and Millet et al. (2020), studying grapefruits from the French island of Corsica.

The keyword [brazil] is apparently usual among authors, but not central, as it can be seen on its purple color in Figure 4. Following this thought, there is the absence of the keyword [*"geographical indications"*], revealing that although these researches refer to the products and locations that characterize a GI, its concept may be little or not at all debated on them.

Ultimately, our research presents that 26 GIs have not been directly studied either in articles, book chapters or conference papers.

CONCLUSIONS, LIMITATIONS, AND FUTURE STUDIES

This article has mapped the scientific production on geographical indications in Brazil, from 1996 (enactment of the Industrial Property Law 9,279) to 2020. To our knowledge, this is the first report of this kind.

The literature review chapter illustrates how strategic geographical indications may be for achieving sustainable competitive advantages (Castro & Giraldi, 2018), being able to meet some of the United Nations' Sustainable Development Goals (SDGs), such as objective 8 (Decent Work and Economic Growth) through entrepreneurship, creativity, innovation, employment and local development. In this SDG, GIs can contribute mainly to sustainable tourism practices, job creation for the local population and the promotion of culture and differentiated products.

For objective 9 (Industry, Innovation and Infrastructure), GIs are capable of supporting a country's economic development (Nações Unidas Brasil, 2020) through innovative, sustainable and lucrative practices. Consequently, for objective 10 and 11 (Reduced Inequalities and Sustainable Cities and Communities), their products can propel local development and foster resilient and valuable areas.

Our methodological approach for finding studies throughout Brazil results in the apparent implication that there has been a growing interest on the topic, although there still is a considerable number of GIs that are, not metaphorically, off the map.

There is a super abundance of occurrence in two GIs from the northeast region of the country: Vale do Submédio São Francisco (134 studies) and Mossoró (67 studies). Finding explanations may be an interesting topic for future work, although we strongly suspect that it may be related to both market aspects, such as the formation of clusters and local productive arrangements, as well as regional innovation systems and universities nurturing good practices and knowledge management among local producers and their communities.

As previously stated, no studies were found for 26 GIs. This number requires deeper analyses, considering that 11 of them were certified by INPI in the last two years (2019 and 2020).

When we analyze the content of these publications, our findings mainly indicate that even though multiple authors acknowledge geographical indications as strong tools for strategic sustainable development, there is a minimal amount of papers dedicated to casting light on these issues when they refer to specific regions in Brazil.

The combination of keywords [*origin*] AND [*product*], as explained in the methodology chapter, leads to a vast array of studies, most often on Agricultural, Environmental and Health sciences. We understand that these keywords would probably lead to studies with product-oriented proposals. The greatest part of them, however, are surprisingly disconnected from the elementary apperception of geographical indications, as if their authors were studying any other product, perhaps even unaware of the existence of a GI in that region.

In this sense, our study indicates the need for integrated research in the field, presenting favorable and sustainable strategic results in the economic (generation of jobs and income), environmental (preservation of the environment and biodiversity) and social (incentive to tourism, and preservation of traditions and know-how). It is important to note that these practices are not mandatory when registering the GI in INPI. It is up to each GI to structure these practices in the use regulations implemented by each one of them.

When all is said and done, the main conclusion that can be drawn is that studies on geographical indications tend to be narrowly focused, but not factually immature. It is evident that the absence of a common term as keyword might lead one to understand that the theme has evolved little since the enactment of the Law 9,279 in 1996, which is not necessarily true.

We can safely say that the main contribution of this paper is the verification of the virtual absence of a central term as means to accommodate this extensive sample of studies in a

common body of knowledge about geographical indications. Fact which, we conjecture, is likely to interfere in the development of new studies.

In view of the fact that geographical indications have been studied all over the world as strategic tools for sustainable development, there are interesting gaps in the literature on the Brazilian ones, and consequent room for scholars develop more empiric work, with market-driven approaches.

For what it is worth, we suggest that authors poring over these products and regions consider including the term “geographical indication” either in the title, abstract or keywords from this point forward. The benefit using of this locution is expected to help scholars from other fields better identify the universe that has been researched on the topic, which might promote the construction of an increasingly multidisciplinary, cohesive, and robust body of research.

Ultimately, our study is not without limitations. The major ones are due to its construction on a single scientific database, and the fact that only articles were considered as publications. Conference papers and books may provide insightful notes and different numbers.

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