

A New Scientometric Database of Scientific Publications in Brazilian International Relations Journals (1997–2021)

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Abstract: In this article, we present a new dataset covering metadata on 14 Brazilian International Relations (BIR) journals and more than 5000 articles published between 1997 and 2021. We collected the data by harvesting the journals' public web pages via web scraping and later cleaned and structured the information in a rectangular format. A complete understanding of the International Relations field in Brazil requires a deep analysis of the ecosystem of IR academic journals and engaging explicitly and exclusively with scientific articles published in such venues. But, as of today, scientometric analysis covering BIR is rare and limited, as primary indexing sources and popular databases do not fully cover Brazilian International Relations journals. By presenting and publishing the dataset we aim to overcome such a barrier and encourage further scientometric studies in the country.

Keywords: International Relations; Brazil; metadata; web scraping; bibliometrics.

Introduction

Research on International Relations (IR) as an academic discipline in Brazil has been pumping in the last 20 years (Miyamoto 1999, 2003, 2010; Herz 2002; Lessa 2005a, 2005b; Vizentini 2005; Santos and Fonseca 2009; Julião 2012; Jatobá 2013; Salomón and Pinheiro 2013; Barasuol and Silva 2016; Ferreira 2016; Vigevani, Thomaz and Leite 2016; Pecequilo 2017; Tostes and Silva 2017; Ramos and Scotelaro 2018; Fonseca Júnior and Uziel 2019; Scotelaro 2019; Pfrimer and Okado 2019; Milani 2021). They are mainly historiographical studies concerned with discovering prevailing traditions, perspectives, themes, and early contributors to Brazilian IR (Vizentini 2005; Salomón and Pinheiro 2013; Barasuol and Silva 2016; Milani 2021), unveiling the institutionalization of IR in Brazilian universities in the second half of the 20th century (Herz 2002; Lessa 2005a, 2005b; Julião 2012; Jatobá 2013; Fonseca Júnior and Uziel 2019; Milani 2021), and exploring the acceleration and state

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of this process in the 21st century (Herz 2002; Miyamoto 2003, 2010; Lessa 2005a, 2005b; Vizontini 2005; Santos and Fonseca 2009; Jatobá 2013; Ferreira 2016; Vigevani, Thomaz and Leite 2016; Tostes and Silva 2017; Pecequilo 2017; Fonseca Júnior and Uziel 2019; Pfrimer and Okado 2019; Milani 2021). However, bibliometric and scientometric analyses¹ are rare and limited, focusing on analysing research published in *Revista Brasileira de Política Internacional* (RBPI) and *Contexto Internacional*, or in multidisciplinary social and political science journals, as until now large-scale or properly structured metadata was not available (Medeiros et al. 2016; Ramos and Scotelaro 2018; Scotelaro 2019; Carvalho, Gabriel and Lopes 2021).

Despite the substantial contribution of earlier works for better understanding the field of International Relations in Brazil, not directly engaging with data and content published in major IR journals in the country hampered a complete and systematic account of the field (Ramos and Scotelaro 2018). Nevertheless, there is a relatively solid and growing ecosystem of International Relations journals in Brazil today. At least ten² were founded in the last decade following the consolidation of both undergraduate and graduate IR programs (Vigevani, Thomaz and Leite 2016), the increasing demand for new academic articles slots, and the popularization of the Open Journal System (OJS) and the Electronic Journal Publishing System (SEER) (Lessa 2014).

This growth, however, did not happen seamlessly, as lack of financing for editorial production and lack of professionalization of editorial processes often resulted in journals not meeting sound practices of academic publishing and having trouble in achieving international visibility. In addition, the prevalence of Portuguese as a publishing language can also account for the latter problem. As a result, Brazilian IR journals are not fully covered in primary indexing sources or popular databases, such as Web of Science and Scopus, which would ease data collection (Lessa 2014; Vigevani, Thomaz and Leite 2016). For example, currently, only journals such as *Austral*, *Estudos Internacionais*, and RBPI are present in Scopus, and from those, only *Austral* has all its numbers covered.

The scarcity and limited scope of bibliometric and scientometric analyses can be explained by the intricacies of gathering, cleaning, and structuring data from Brazilian IR Journals. Previous works did not fail to account for IR articles by a lack of interest in its content (Vigevani, Thomaz, and Leite 2016), but because large-scale and properly structured metadata was not available, and researchers did not have the technical skills for collecting it. For instance, to compile data, Ramos and Scotelaro (2018) read the abstract and introduction of articles published from 2000 to 2015 in 11 journals, three IR journals, and eight multidisciplinary social science journals, and filtered those concerning International Political Economy. Scotelaro (2019) did the same in her thesis, where she analysed data from *Contexto Internacional*, RBPI, and *Carta Internacional*. Similarly, Medeiros et al. (2016) worked only with journals from the Scientific Electronic Library Online (SciELO), resulting in including only two Brazilian International Relations journals, *Contexto Internacional* and RBPI, from the 16 analysed.

We aim to present a new dataset covering metadata on 14 Brazilian International Relations journals, totalling more than 5000 articles published between 1997 and 2021.³ In the future, we should expand the dataset, including further publications that compose the

great area of IR in Brazil. Due to parsimony and intricacies of data collection, we initially limited the scope for journals edited by Brazilian undergraduate and graduate programs in International Relations and IR Brazilian associations⁴ that achieved at least level A4 in the provisory Qualis-Sucupira ranking.⁵ However, we recognise that the ecosystem of IR journals in Brazil is more extensive than what the dataset currently covers and in the future we will work to expand the scope.

In sum, we present an initial study that intends to help overcome research barriers that limited the extent and made bibliometric analysis a rare endeavour in Brazil. We do not provide a historiographical account of the field of International Relations, as this is already the focus of many papers published in the last twenty years. Similarly, we do not implement an exhaustive or comprehensive scientometric analysis. Our primary goal is limited to presenting the dataset and the data collection process and conducting a short exploratory data analysis through descriptive statistics. This article should be the point of departure for a larger research project promoting engagement with data and content published in major Brazilian International Relations journals.

The article follows in three sections, apart from this introduction and the final remarks. The first section is a narrative bibliographical review (Paré et al. 2015) designed to explore, synthesise, and summarise previous research on IR as a field of study in Brazil. Such account on previous work sets to present a comprehensive, but not exhaustive, state-of-the-art of debates. The second section introduces the methods and processes of data collection and the dataset. Finally, the third section is an exploratory data analysis. It is not designed as a far-reaching scientometric analysis but should summarise the main characteristics of the dataset via descriptive statistics and data visualization methods.

The field of International Relations in Brazil: a literature review

In the last twenty years, a large body of literature has analysed the status and shape of the field of International Relations in Brazil. The literature and phenomenon are closely tied, as the need to understand the roots, traditions, and pathways of IR in the country are a consequence and evidence of its entrenchment as a discipline in the Brazilian academic community. As historiographic studies, such body of work focused on three main areas of interest: the prevailing traditions, perspectives, themes, and contributors of Brazilian IR; the institutionalization of the field in Brazilian universities in the second half of the 20th century; and the acceleration and expansion of this process, followed by a period of stagnation in the 21st century.

Prevailing traditions, perspectives, themes, and contributors

The early development of International Relations in Brazil can be defined by interdisciplinarity, as the field benefited from contributions from multiple areas of study, like Political Science, International Law, History, Sociology, and Economy (Barasuol and Silva 2016). At that time, contributors were academics, members of a bourgeois elite, and top decision-makers (Jatobá 2016). The necessity of developing practical and autonomous

guidelines for foreign policy making informs scholarly work in a process similar to other countries in Latin America (Tickner 2008). In Brazil, three main traditions emerged: History of Brazilian Foreign Policy (Diplomatic History), Geopolitics, and International Political Economy. The three traditions share a common concern about Brazil and the International System, but early contributions were not part of the same core of scholarly work and practice, and, in general, authors did not recognise themselves as International Relations scholars.

The first tradition, History of Brazilian Foreign Policy, is characterised by a close link between diplomacy and intellectual production, the search for ‘recognition, prestige, and autonomy’ for Brazil (Milani 2021: 2) in the International System, and studies on how the country should relate and behave towards it. Vizontini (2005) stresses the work of Pandiá Calógeras, Helio Vianna, and Delgado de Carvalho as early contributions influencing research conducted years later by authors such as José Honório Rodrigues and Hélio Jaguaribe. For Sá Guimarães and Estre (2021), most studies were fundamentally descriptive, problem-driven, focused exclusively on Brazil, and had difficulties extending their conclusions beyond case-specific dynamics. Though this tradition still prevails in Brazilian IR, Salomón and Pinheiro (2013) argue that its character has been changing over time, detaching itself from diplomatic history, and embracing practices and methods that resemble those of Foreign Policy Analysis. More recently, this trend is also explored by Sá Guimarães and Estre (2021).

The second tradition, Geopolitics, developed in Brazil as a science of the state practiced and thought by military officials usually associated with the Brazilian War College (*Escola Superior de Guerra*, ESG). Major early contributors are Everardo Backheuser and Mario Travassos, followed in the second half of the 20th century by authors such as Carlos de Meira Mattos, Lyra Tavares, and Golbery do Couto e Silva (Herz 2002). According to Milani (2021), they shared a view of anarchy, the prevalence of the state in international affairs and politics as a struggle of power, and highly influenced development models and the way Brazilian high bureaucracy conceived, understood, and acted to preserve Brazilian territoriality and sovereignty and to build and maintain national identity and unity (Miyamoto 1981). Also, it is worth noticing that in the late 20th century scholars such as Therezinha de Castro (1982, 1985) and Wanderley Messias da Costa (1992) started developing critical geopolitical thought in the country. Today this tradition is still a significant presence in IR thought in Brazil but is being remodelled by the diffusion of strategic studies, defence studies, and international security in the country, and the attempt to train and graduate civilian specialists, severing the early military monopoly over the field.

The third tradition, International Political Economy (IPE), arose in the 1970s as a rich and well-established source of political thought by the emergence of Dependency Theory and studies on world hierarchical systems. In contrast to the early work on foreign policy and geopolitics, publications on IPE by authors such as Fernando Henrique Cardoso, Enzo Falleto, Theotônio dos Santos, Wilma Figueiredo, and Celso Furtado impacted the field of IR and development studies beyond the Brazilian context (Herz 2002). They focused mainly on the roots of the economic crisis, the structure of the international monetary and commercial order, market concentration, industrialization, and the

internationalization of the economy (Herz 2002). Ironically, despite the importance and strength of early contributions, the central themes, variables, and procedures became, in general, subordinate to other fields of study in Brazilian International Relations (Ramos and Scotelaro 2018; Scotelaro 2019).

Early institutionalization of IR in the second half of the 20th century

There is consensus in the literature pointing to the second half of the 20th century as the first step in institutionalizing IR in the Brazilian academic community. Though at a low pace, the first research facilities, research groups, specialised academic journals, and undergraduate and graduate programs were created in this period. Fonseca Junior and Uziel (2019), for example, mention the founding of the Brazilian Institute of International Relations (IBRI) in 1954, and the *Revista Brasileira de Relações Internacionais* (RBPI) in 1958, as a first inflection point, followed by the creation of the first IR undergraduate program at the University of Brasília (UnB) in 1974 (Lessa 2005a; Vigevani, Thomas and Leite 2016).

UnB and the Pontifical Catholic University of Rio de Janeiro (PUC-Rio) established the first two graduate programs in 1984 and 1987, respectively. As a result, both institutions consolidated as the two most significant hubs of research and teaching of International Relations in Brazil (Lessa 2005a; Santos and Fonseca 2009; Milani 2021). Beyond these crucial developments, Herz (2002) and Santos and Fonseca (2009) identify other minor initiatives scattered throughout the country, such as the creation of the Centre for Afro-Asian Studies (CEAA) at the Cândido Mendes University in 1973 and the Centre of Strategic Studies at the University of Campinas in 1985.

In the 1990s, driven by global interdependence, the expansion of international commerce and finance, and the deepening of regional integration in South America (Jatobá 2013; Vigevani, Thomas and Leite 2016; Tostes and Silva 2017; Milani 2021), the first wave of undergraduate programs emerged mainly at pontifical and private universities and research centres (Miyamoto 2003; Pecequilo 2017). In such context, the Pontifical Catholic University of São Paulo (PUC-SP), the Pontifical Catholic University of Minas Gerais (PUC Minas), and the Catholic University of Brasília (UCB) created their IR undergraduate programs. For Lessa (2005b), an unordered and unregulated expansion in curriculum and quality and a teaching staff not specialised in International Relations characterises this first wave (Scotelaro 2019). In any case, it could fill the immediate market demand for IR professionals and pave the way for further institutional growth in decades to come (Miyamoto 2003; Lessa 2005b; Scotelaro 2019).

The 21st-century scenario: from expansion to stagnation

The first decade of the 21st century was a golden age for Brazilian international affairs. A boom in commodity prices and an open and welcoming international arena helped then President Lula da Silva implement an active and assertive foreign policy (Jatobá 2013). This more proactive role in international politics, in turn, resulted in a need for developing

indigenous IR knowledge and training specialists that would help foster Brazilian interests abroad. As a result, a new wave of expansion began with governmental support for opening new International Relations programs in Brazilian top public universities (Miyamoto 2010; Jatobá 2013; Pecequillo 2017). In such context, for example, the University of São Paulo (USP), the State University of São Paulo (UNESP), and the Federal University of Rio Grande do Sul (UFRGS) created undergraduate IR programs, and by 2005 the country already had over 100 active undergraduate IR programs (Lessa 2005b; Santos and Fonseca 2009; Miyamoto 2010; Ferreira 2015; Tostes and Silva 2017).

Similarly, there was also an expansion of graduate programs. They quadruplicated in absolute terms in the period, 'from two, in the 1980s, to eight, in 2008' (Santos and Fonseca 2009: 355). This growth was also state-led and boosted by two grant programs from the Coordination for the Improvement of Higher Education Personnel (CAPES) and the Brazilian Ministry of Education: San Tiago Dantas, in 2000, and Renato Archer, in 2006 (Lessa 2005b; Santos and Fonseca 2009; Vigevani, Thomas and Leite 2016). From this stimulus, three important Brazilian IR graduate programs were founded at the Fluminense Federal University (UFF), UFRGS, and at PUC-SP, UNESP, and the University of Campinas (UNICAMP)⁶ (Lessa 2005b; Santos and Fonseca 2009). As a result of this solid and growing ecosystem of IR built in Brazilian Universities, a community of scholars, researchers, and practitioners emerged and founded two associations in 2005, the Brazilian Association of International Relations (ABRI) and the Brazilian Association of Defence Studies (ABED).

If the 2000s were a fortuitous period for Brazilian international affairs, in the early 2010s the country's experience abroad shrank, and it lost influence and prestige worldwide. At the same time, domestically, Brazil faced a severe political and economic crisis that affected acutely the government's capacity and willingness to support higher education. Because of global and domestic problems, Pfrimer and Okado (2019) identify the beginning of a new phase for the IR field in Brazil, where it can't expand at the 2000s pace and might be at risk of stagnation or retreat. They synthesise four traits that characterise this new period: the shutdown of IR undergraduate programs in private and non-profit universities, a less active labour market for IR specialists in the centre-west, north, and northeast of Brazil, a decrease in demand for positions in private universities in small and medium-sized cities and a lower quality of programs offered by private universities not located in Brazilian political and economic centres (Pfrimer and Okado 2019: 238-239).

Much of an improvement, but what is missing?

As Milani (2021: 12) reminds, the development of 'scientific journals in different regions of the country' is a 'main contribution to the institutionalization of IR in Brazil.' In the early 2000s, there were few journals specialised in International Relations,⁷ and scholars usually published their work in significant social and political science multidisciplinary publications such as *Lua Nova*, *Dados*, *Sociologia & Política*, *Economia & Sociedade*, among others (Lessa 2005b; Vigevani, Thomaz and Leite 2016). This scenario changed

a decade later, with exponential quantitative growth in the number of journals devoted exclusively to International Relations and connected to the newly created IR undergraduate and graduate programs and the recently founded scholarly associations (Lessa 2014; Vigevani, Thomaz and Leite 2016; Scotelaro 2019). In any case, there are insufficient contributions in the literature aiming to understand historically how the ecosystem of IR academic publications developed and evolved over time and in what ways its development and evolution are related to and derive from the institutionalization of the IR field in the country, or engaging explicitly and exclusively with articles published in Brazilian IR Journals, measuring and analysing such content by conducting large-scale bibliometric and scientometric analysis.

By collecting metadata on Brazilian journals devoted exclusively to International Relations, this article aims to contribute to this quest of doing large-scale bibliometric and scientometric analysis based on content published in such venues and, as a result, to the understanding of the shape and form of the IR field in Brazil (Ramos and Scotelaro 2018). Given the intricacies of collecting data on Brazilian publications, previous efforts were rare and limited. For example, they limited the number of journals included in their analyses, as in Barasuol and Silva (2016) and Scotelaro (2019), or included some that were not specialised exclusively in International Relations, as in Medeiros et al. (2016) and Ramos and Scotelaro (2018). With this in mind, we proceed by presenting the process and methods of data collection, the dataset, its merits, and shortcomings and conducting an exploratory data analysis using descriptive statistics and data visualization techniques.

Dataset construction

To construct the dataset, we mapped the greater ecosystem of International Relations journals in Brazil and, applying the principle of parsimony, selected publications to be initially included based on four main criteria. First, journals should be directly related to undergraduate or graduate International Relations programs or the leading IR associations in the country, ABRI and ABED. Second, journals should openly mention international relations and correlated themes in their aims and scope section. Third, journals should be at least level A4 in the Brazilian provisory Qualis-Sucupira ranking from 2019. Finally, journals needed to have a website adequately structured containing web pages for each article. This last point is a significant reason for not including *Política Externa* and *Cena Internacional*, two critical publications from the 1990s and 2000s. We collected metadata via web scraping, and not possessing working websites made their insertion unfeasible.

Parsimony was a significant concern at the practical level of data collection. Brazilian IR journals are not generally present in popular international indexing services, databases or directories, and repositories, and we built individual scraping scripts for each journal. Even though there were similarities in most websites since they are created via SciELO or OJS/SEER systems, particularities from each journal made coding harder and non-scalable from publication to publication. This is the hands-on reason we decided not to include relevant Brazilian social and political science multidisciplinary journals such

as *Dados, Lua Nova, Economia & Sociedade*, among others. We acknowledge their contribution to early IR academic development as, until the 2010s, there were few places where International Relations scholars could publish their work in Brazil. Such context changed dramatically in the last decade. As the field expanded, more than ten new IR journals emerged and grew in importance. This is the empirical reason we decided to reduce the scope of the dataset for publications directly related to International Relations (under) graduate programs and scholarly associations.

Table 1. Journals included in the dataset

Journal	Qualis	Coverage	# Articles
Contexto Internacional	A1	v. 24 n. 1 (2002) - v. 43 n. 3 (2021)	423
Revista Brasileira de Política Internacional	A1	v. 40 n. 1 (1997) - v. 64 n. 2 (2021)	663
Conjuntura Austral	A2	v. 1 n. 1 (2010) - v. 12 n. 60 (2021)	398
Meridiano 47	A2	v. 1 n. 1 (2000) - v.22 (2021)	1169
Revista Brasileira de Estudos de Defesa	A2	v.1, n. 1 (2014) - v.8, n.1 (2021)	166
Carta Internacional	A3	v. 1 n. 1 (2006) - v. 16 n. 3 (2021)	387
Estudos Internacionais	A3	v. 1 n. 1 (2013) - v. 9 n. 4 (2021)	210
Mural Internacional	A3	v. 1 n. 1 (2010) - v. 12 (2021)	261
Oikos	A3	v.5, n.1 (2006) - v.20, n.3 (2021)	215
Austral	A4	v. 1 n. 1 (2012) - v. 10 n. 20 (2021)	228
Brazilian Journal of International Relations	A4	v. 1 n. 1 (2012) - v. 10, n.3 (2021)	279
Conjuntura Global	A4	v. 1 n. 1 (2012) - v. 10 n. 2 (2021)	254
Conjuntura Internacional	A4	v. 9 n. 5 (2012) - v. 18 n. 1 (2021)	187
Monções	A4	v. 1 n. 1 (2012) - v. 10 n. 20 (2021)	350
Total			5190

Source: Author.

The dataset currently covers 14 journals and more than 5000 articles (see Table 1). We recognise that the ecosystem of IR journals in Brazil is more comprehensive, and we will expand the coverage in the future. The dataset's creation is the first part of a larger research project aimed to promote explicit and direct engagement with data and content of IR articles published in Brazil, tackling what until now was a lost opportunity in literature. Although *Revista Brasileira de Política Internacional* started in 1958 and *Contexto Internacional* in 1985, we only have data from articles published from 1997 and 2002 onwards, respectively, as early editions are not available on SciELO. We had the same problem collecting metadata from *Oikos*, which began in 2002, but only has editions available from 2006. Concerning *Conjuntura Internacional*, the first edition included was the v.9 n.5 (2012). Earlier, the publication was not a properly structured journal, but a bulletin mainly focused on scientific dissemination. Finally, data for *Conjuntura Internacional* and

Revista Brasileira de Estudos de Defesa (RBED) is incomplete for 2021, as not all editions for the year were published at the time of writing.

There were many challenges harvesting metadata. Several of them are related to editorial teams' lack of experience and expertise on technical issues, the inexistence of policy for indexing in major databases, and an overall lack of interest in producing and making available high-quality information about articles and publishing processes. These problems are partially due to a relatively young ecosystem and the low level of investment in technology and state-of-the-art publication systems that would make it easier for editors to look after how content is published online and made discoverable on the internet. From the fourteen journals, only RBPI and *Contexto Internacional* publish articles' raw text online in both HTML (or HyperText Markup Language) and XML (or eXtensible Markup Language) formats, besides PDF (or Portable Document Format), as both have incentives from SciELO, its Journal Article Tag Suite (JATS) Publishing Schema and all the web services and support available for editorial teams.

In such context, structured metadata for Brazilian articles did not exist before, and, despite absence problems we will discuss later, what we had was non-structured information scattered across every article HTML page from each journal on the list. As it would be excessively time-consuming and costly to use traditional copy-and-paste methods for accessing and gathering data on more than 5000 articles, we opted for applying web scraping techniques that are low-cost, less labour-intensive, and faster (Bradley and James 2019). As Dogucu and Çetinkaya-Rundel (2020: 1) state, 'web scraping is the process of extracting data off the web programmatically and transforming it into a structured dataset.' Thus, we harvested unstructured information from every article HTML page by applying web scraping and, later, we processed, cleaned, converted, and appended it into a structured-rectangular format. All this process was done using the R programming language and mainly the 'rvest' package developed by Hadley Wickham (2021). The code for harvesting metadata is available through the R package 'irjournalsbr' that is already on Github but still in development and, thus, not yet submitted to the CRAN (or the Comprehensive R Archive Network).

We acknowledge the debates on the legal status and ethical dimensions of web scraping (Din 2015; Sellars 2018). This was a concern while coding, and we conducted the data collection process openly and in a non-malicious fashion (Black 2016). None of the included journals neither explicitly supports nor forbids automated data retrieval. They are also under a Creative Commons Attribution License⁸ (from CC BY to CC BY-NC-SA) that permits copying and redistributing content in any medium or format, and adapting, remixing, transforming, and building upon the material, conditional on giving appropriate credit, indicating if any changes were made, and not using for commercial purposes. Further, we did not interfere in any of the data source's commercial value or misrepresented content and information ownership, and programmed the scripts to behave nicely and efficiently while harvesting the journals web sites (Black 2016).

Main variables and absence

The dataset comprises fifteen variables mostly named based on the Web of Science Core Collection Field Tags (Clarivate 2020) (see Table 2) and the unit of analysis is that of an article. The variables represent general metadata extracted from each article's raw HTML or XML, providing descriptive information about it. We decided not to include variables related to authors' country of origin since nearly all journals do not have this information stored explicitly on specific tags or fields that would permit parsing the data programmatically. Only RBPI and *Contexto Internacional* do that, as the SciELO data infrastructure correctly places this info into a unique XML tag. Overall, country of origin is grouped with other types of author information, such as institutional affiliation, as in *Conjuntura Austral*, or it is not available online at all, as in *Estudos Internacionais*.

Table 2. Dataset main variables and tag names

Tags	Variables
AU	Authors
OG	Organization
TI	Title
AB	Abstract
DE	Keywords
CR	Cited References
BP_EP	Beginning and Ending Page
PY	Year Published
IS	Issue
LA	Language
DI	Digital Object Identifier (DOI)
SO	Source
SN	ISSN
URL	Article's URL
PDFURL	Article's PDF URL

Source: Author, based on Clarivate (2020).

In addition to the fifteen metadata variables, we created in R two extra variables, GND and LA2. GND represents the gender of authors, identified by using the package 'genderBR' from Fernando Meireles (2017). genderBR helps predict gender from a person's first name based on the 2010s IBGE (or Brazilian Institute of Geography and Statistics) census. In its turn, LA2 contains the language of each article identified from the text of the abstract using the package 'textcat' developed by Hornik et al. (2020). The package computes the n-gram profile of a given text and categorises its language based on the European Corpus Initiative/Multilingual Corpus I (ECI/MCI). We decided to include an

extra language variable on the dataset to directly compare and check the information officially provided by the journals, as we identified minor inconsistencies⁹ while harvesting the data, and a low-cost and non-time-consuming alternative was available.

Empirical data collected via web scraping may suffer from absence problems as they were not officially structured, and sources may not be aware of this issue. This obstacle is especially true in a scenario where editors and editorial teams do not have experience in technical matters, and there is no policy for producing and publishing high-quality metadata for articles. Being aware and addressing absence (see Table 3) is paramount for both researchers working with the dataset, as it is to any empirical data analysis in the social sciences (see King et al. 2001), and, at the practical level, for editors and editorial teams, as high-quality metadata is critical for making articles discoverable in search engines such as Google Scholar.

Table 3. General absence by variable

Variable	#	%
CR	3328	64.10
DI	1803	34.70
BP_EP	1763	34.00
DE	1252	24.10
GND ¹	1395	21.80
OG ²	971	19.60
AB	457	8.81

Source: Author.

Notes: ¹The unit of analysis for GND is the author, and not the article.

²Absence is computed for articles that have at least one author with OG missing.

In terms of variables (see Table 3), lack of data on cited references (CR) is a concern because it makes it unfeasible to work on citation analysis, such as bibliographic coupling, co-citation, and citation networks that could unveil research impact, knowledge flows and knowledge networks on Brazilian IR. We also noticed the absence of keywords (DE) and institutional affiliation (OG). Information related to the institutional affiliation of authors is one of the most important pieces of metadata, as they can be a crucial indicator of representativeness, diversity, and internationalisation of a journal. Unfortunately, we have only partial data that doesn't permit complete analysis on the issue, but just basic and limited descriptive statistics. For its part, the absence of keywords may be a problem because it can harm both journal indexing on search engines and scholarly monitoring of the evolution of themes and discussions in the field. Finally, missing gender (GND) data is not related to editorial processes but a concern for the future as we develop more robust methods for identifying an author's gender.

Concerning journals (see Table 4), each usually has problems with specific variables. For example, *Estudos Internacionais*, *Austral*, and *Oikos* do not add cited references to the web pages, and *Oikos* has all its authors' affiliation missing. Also, *Carta Internacional*

Table 4. General absence by journal and variable

	CR		BPEP		DE		AB		DI		GND ¹		OG ²	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Meridiano 47	1134	97.01	86	7.36	62	5.30	42	3.59	1107	94.7	338	28.43	155	13
RBPI	120	18.10	461	69.53	151	22.78	152	22.93	0	0.00	214	27.44	142	21
Estudos Internacionais	210	100.00	9	4.29	82	39.05	7	3.33	70	33.30	62	22.88	36	17
Carta Internacional	242	62.53	87	22.48	260	67.18	2	0.52	177	45.7	85	16.35	78	20
Monções	194	55.43	0	0.00	58	16.57	1	0.29	151	43.14	94	19.14	46	13
Mural Internacional	207	79.31	82	31.42	14	5.36	0	0.00	0	0.00	58	17.47	10	4
Austral	228	100.00	201	88.16	19	8.33	5	2.19	0	0.00	79	28.01	43	19
BJIR	151	54.12	0	0.00	158	56.63	27	9.68	4	1.43	52	13.72	90	32
Conjuntura Global	170	66.93	254	100.00	254	100.00	2	0.79	0	0.00	44	15.02	22	9
Conjuntura Internacional	40	21.39	0	0.00	58	31.02	1	0.53	77	41.18	48	21.24	43	23
Conjuntura Austral	344	86.43	0	0.00	15	3.77	166	41.71	1	0.25	99	16.39	46	12
Oikos	215	100.00	215	100.00	44	20.47	0	0.00	215	100.00	36	12.59	215	100
RBED	58	34.94	166	100.00	25	15.06	0	0.00	1	0.60	49	22.58	20	12
Contexto Internacional	15	3.55	202	47.75	52	12.29	52	12.29	0	0.00	137	26.5	25	6

Source: Author. Notes: ¹The unit of analysis for GND is the author, and not the article. ² Absence is computed for articles that have at least one author with OG missing.

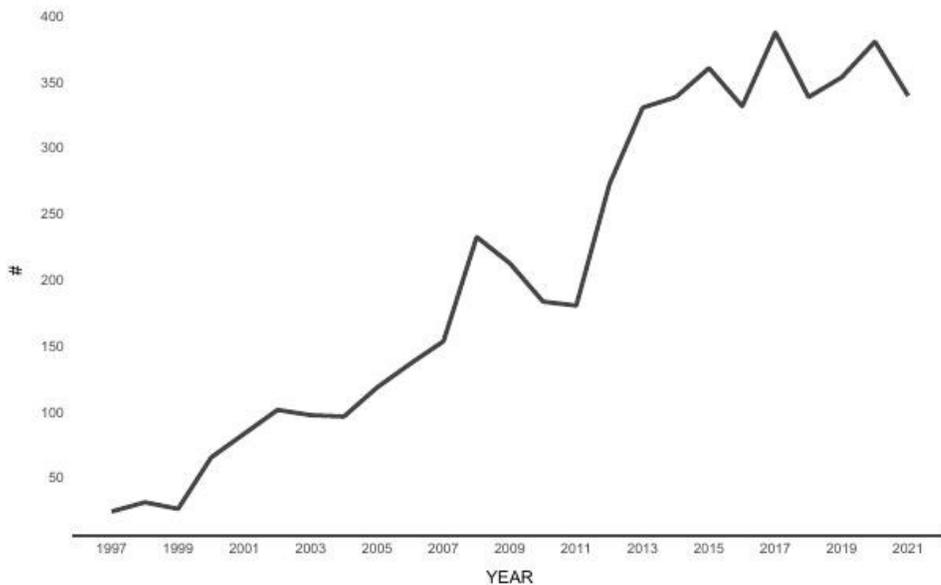
and BJIR do not have keywords available for around 60% of their articles, and *Conjuntura Global* does not have them available at all. Finally, it is interesting to note that sometimes journals have essential metadata information at the raw HTML or inside the PDFs but do not place it in tags visible for the public in the browser. This problem is the case of author affiliation for *Conjuntura Global* and keywords for *Oikos*. We hypothesise that journals frequently do have this data as authors fill in forms containing questions asking for the information when submitting articles. But, as editors do not fully control the web development infrastructure available for them at the journal's university and do not have the technical expertise, data and information are often lost in the editorial process.

Descriptive statistics

The first significant trend the data unveils is the exponential growth in the raw number of articles published in Brazilian International Relations journals from 2010 to 2015¹⁰ (see Figure 1). Lessa (2014) already noticed this tendency while writing on the challenges for open access publications in Brazil. The increasing demand for new academic articles slots and the popularization of the Open Journal System (OJS) and the Electronic Journal Publishing System (SEER) may account for this growth. On the one hand, the demand for new academic articles' slots is itself a result of the institutionalization of the IR field in Brazil (Milani 2021). As students started obtaining their master's and Ph.D. degrees at the newly established graduate programs (Vigevani, Thomaz, and Leite 2016), they needed venues for publishing their research. On the other hand, the popularization of OJS/SEER made it feasible for universities to create new journals and accommodate the higher demand for slots, as the system is freely available and easy to use (Sandes-Guimarães and Costa 2012).

Concerning total articles by journal, Figure 2 shows that *Meridiano 47* is the journal with more papers published, 1169 from the 5190 articles computed, or 22.52% of the whole dataset, and has the more significant average number of articles per year, 53.14. The high numbers from *Meridiano 47* may be explained because until 2015 the journal published solely short papers and not fully structured research articles, as this was the focus of two other publications from UnB: RBPI, and *Cena Internacional* (active from 2001 to 2008). This process changed dramatically in 2016, when *Meridiano 47* underwent a considerable transformation, changing its focus and scope, and submission guidelines (see Lessa 2016). The change substantially impacted the number of publications per year from the journal: from 2000 to 2015, *Meridiano 47* published 1084 articles averaging 67.8 articles/year, and from 2016 to 2021, they published only 85 articles averaging 14.2 articles/year. Other journals do not present numbers as high as *Meridiano 47*, and their publication rate is usually within what is expected from an International Relations journal in indexing sources such as Redalyc (2020), at least 16 articles/year, and SciELO (2020), from 25 to 35 articles/year.

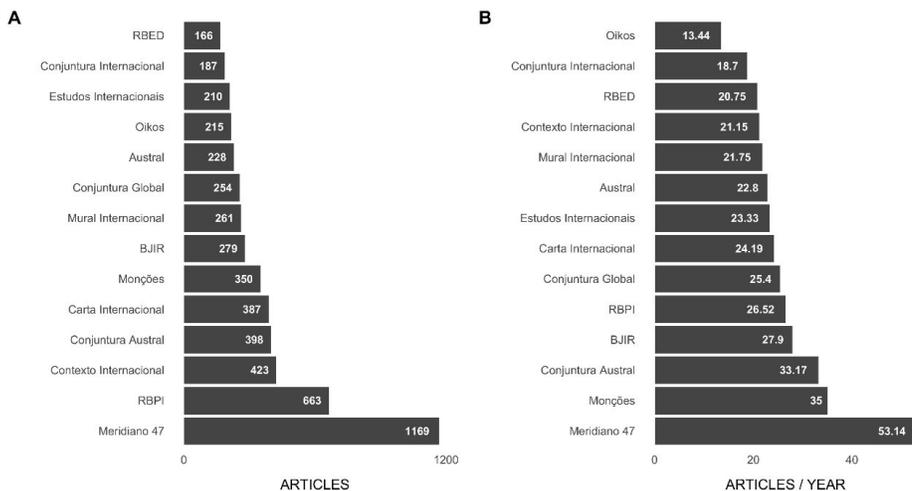
Figure 1. Evolution in the raw number (#) of articles published by year (1997–2021)



Source: Author.

Note: Data for 2021 is incomplete for *Conjuntura Global* and *RBED* as not all articles were published at the time of writing.

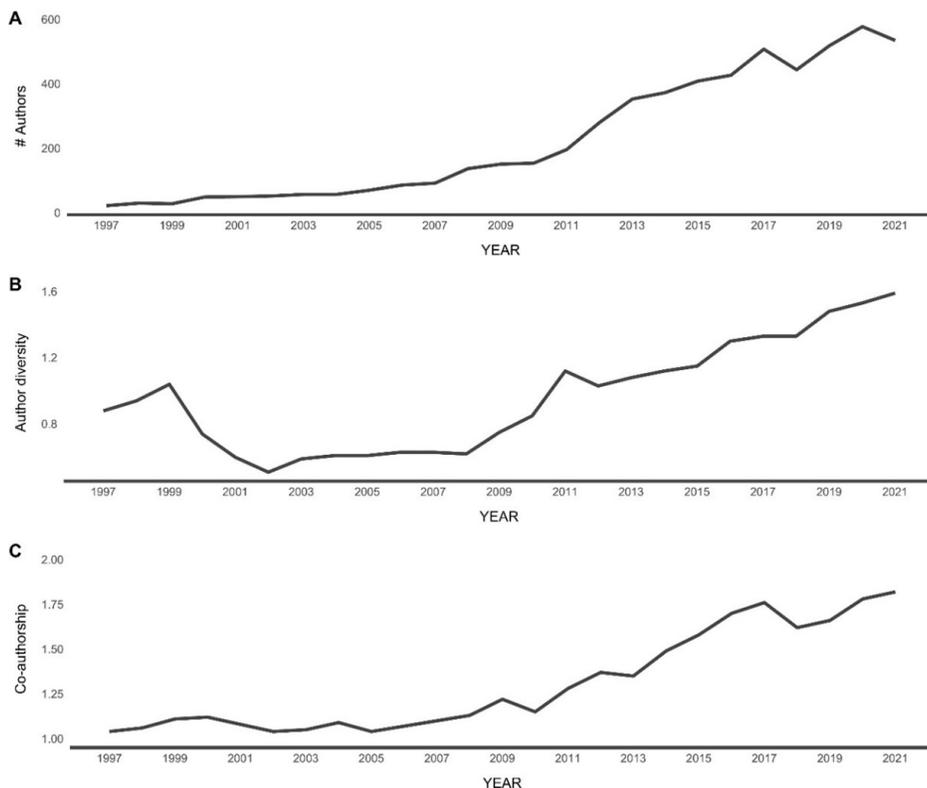
Figure 2. Total number of articles by journal (A) and average articles per year by journal (B)



Source: Author.

Note: Data for 2021 is incomplete for *Conjuntura Global* and *RBED* as not all articles were published at the time of writing.

Figure 3. Evolution in the raw number of authors (A), author diversity (B), and average co-authorship (C) by year (1997-2021)



Source: Author.

Note: Data for 2021 is incomplete for *Conjuntura Global* and RBED as not all articles were published at the time of writing. Author diversity = Total number of authors per total number of articles (tot. authors/tot. articles). Co-authorship = mean number of authors per article (mean authors/article).

As for the growth in the raw number of articles published in Brazilian IR journals, since 2010, there was a steady expansion in the raw number of publishing authors, in author diversity, and in the average article co-authorship (see Figure 3). As new undergraduate and graduate programs strengthened, new International Relations scholars were trained and started researching in Brazil. The increase in author diversity is evidence of the democratization of knowledge production in the country. The author diversity ratio marking <1 throughout the 2000s means that a few authors published several papers in the period and were responsible for producing IR research. This situation was reversed in the 2010s when the ratio rose above 1, a trend that deserves specific attention from the literature in the future. We hypothesise that it may result from the early intent in developing indigenous IR knowledge and educating specialists that would help foster Brazilian interests abroad.

As for the rise in author diversity, the period also saw an expansion in co-authorship. If in the early 2000s, researchers usually worked and published alone, in the 2010s, they

started to collaborate and work jointly with other scholars more frequently (see Figure 3). It is important to highlight that this tendency is not exclusive to the International Relations field in Brazil, as research collaboration has been growing heavily across disciplines and countries. Though the trend is more easily perceived within the natural sciences (see Cronin 2001), Henriksen (2016) points out the growth in co-authorship in the social sciences, but on a smaller scale. Henriksen (2018) stresses a turn from theoretical to empirical research, the predominance of quantitative studies, growing incentives for international and interinstitutional collaboration, and demands for interdisciplinarity as factors usually mentioned in the literature for explaining the tendency, but further research is needed to understand if they do apply and explain the phenomena in Brazil.

Table 5. Total number of authors, co-authorship, and author diversity by journal

	Tot. authors	Co-authorship ¹	Author diversity ²
Meridiano 47 (2016-2021)	133	1.68	1.56
Estudos Internacionais	293	1.53	1.40
RBED	227	1.57	1.37
Monções	472	1.67	1.35
Austral	303	1.57	1.33
Mural Internacional	336	1.40	1.29
Conjuntura Internacional	231	1.40	1.24
Oikos	261	1.47	1.21
Contexto Internacional	503	1.43	1.19
Carta Internacional	456	1.51	1.19
Conjuntura Austral	461	1.50	1.16
BJIR	313	2.85	1.12
Conjuntura Global	262	1.24	1.03
RBPI	554	1.31	0.84
Meridiano 47 (full)	479	1.12	0.41

Source: Author.

Notes: ¹ Mean number of authors per article (mean authors/article).

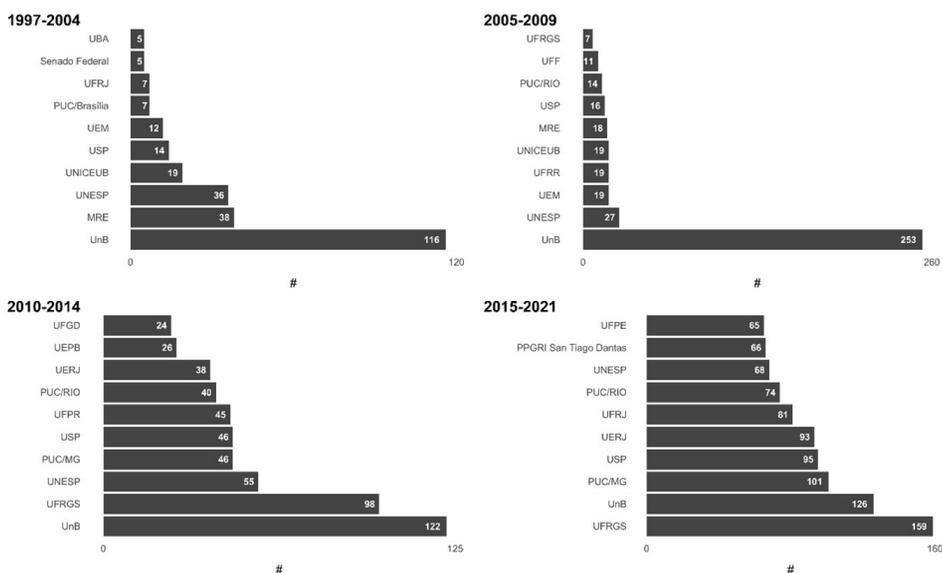
² Total number of authors per total number of articles (tot. authors/ tot. articles)

By comparing the total number of publishing authors, co-authorship, and author diversity, we notice that levels vary slightly across Brazilian Journals (see Table 5). BJIR is an outlier in terms of co-authorship and has an average of almost 3 (2.85) authors per article. The reason for this is not clear at the moment and a deeper qualitative analysis should be pursued in the future in order to shed light to this finding. Apart from BJIR, *Meridiano 47* (2016-2021), *Monções*, *Austral* and RBED also have comparatively high rates of co-authorship. It is interesting to note how the numbers from *Meridiano 47* changed while comparing the entire catalogue (2001-2021), 1.12 in co-authorship and 0.41 in author

diversity, with editions published from 2016 onwards after transformation in its aims and scope and submission rules (Lessa 2016), 1.68 in co-authorship and 1.56 in author diversity. Despite differences in current levels, as research collaboration expands in the following years, clear authorship guidelines would be necessary at the editorial level for task-tracking, controlling author activity in the research output, and preventing authorship-related problems. This is especially relevant and urgent for BJIR (see Brand et al. 2015).

We do not have complete and high-quality metadata on institutional affiliations from the dataset, which partially undermines the extent of our conclusions. In any case, from what we do have, we can draw some initial notes that may be interesting for further investigation. First, the preponderance of UnB if compared to other institutions, even towards PUC-Rio, also a historical centre of academic research in International Relations in Brazil. Over the period of analysis (1997-2001), UnB is by far the most frequent institutional home of authors publishing in BIR journals, 643, followed by UFRGS, 268, and UNESP, 192. This trend may be explained by the fact that the university is the institution of origin for both RBPI and *Meridiano 47*, the two journals with the greatest number of articles in the dataset, comprising 35% of all entries, and because both *Meridiano 47* and RBPI have a high endogeneity rate, 0.38 and 0.25, respectively (see Table 6). For the future, the field would benefit from a regional analysis of scientific production in the country by a scientometric perspective, complementing the analysis of the spatial dispersion (or the lack of) of BIR conducted by Pfrimer and Okado (2019).

Figure 4. Most frequent institutional affiliations in Brazilian IR journals (1997-2021) by period



Source: Author.

Notes: Data for 2021 is incomplete for *Conjuntura Global* and RBED as not all articles were published at the time of writing.

Table 6. Institutional Endogeneity by Journal

	Institution of Origin	Most frequent institution	Endogeneity ¹
Meridiano 47 (full)	UnB	UnB	0.38
Conjuntura Global	UFPR	UFPR	0.32
Conjuntura Austral	UFRGS	UFRGS	0.26
RBPI	UnB	UnB	0.25
Conjuntura Internacional	PUC/MG	PUC/MG	0.24
Mural Internacional	UERJ	UERJ	0.24
BJIR	UNESP	UNESP	0.22
Meridiano 47 (2016–2021)	UnB	UnB	0.19
Austral	UFRGS	UFRGS	0.17
Contexto Internacional	PUC/RIO	PUC/RIO	0.14
Monções	UFGD	UFGD	0.14
Carta Internacional	ABRI	UnB	0.10
RBED	ABED	ECEME	0.08
Estudos Internacionais	PUC/MG	UFRGS & PUC/MG ³	0.06

Source: Author.

Notes: Data for 2021 is incomplete for *Conjuntura Global* and RBED as not all articles were published at the time of writing. ¹Was calculated based on the institution of origin for all journals, but *Carta Internacional* and RBED. Endogeneity = tot. most frequent institution / tot. articles filtered for OG missingness. ³ Both institutions had 11 articles published after we filtered for OG missingness.

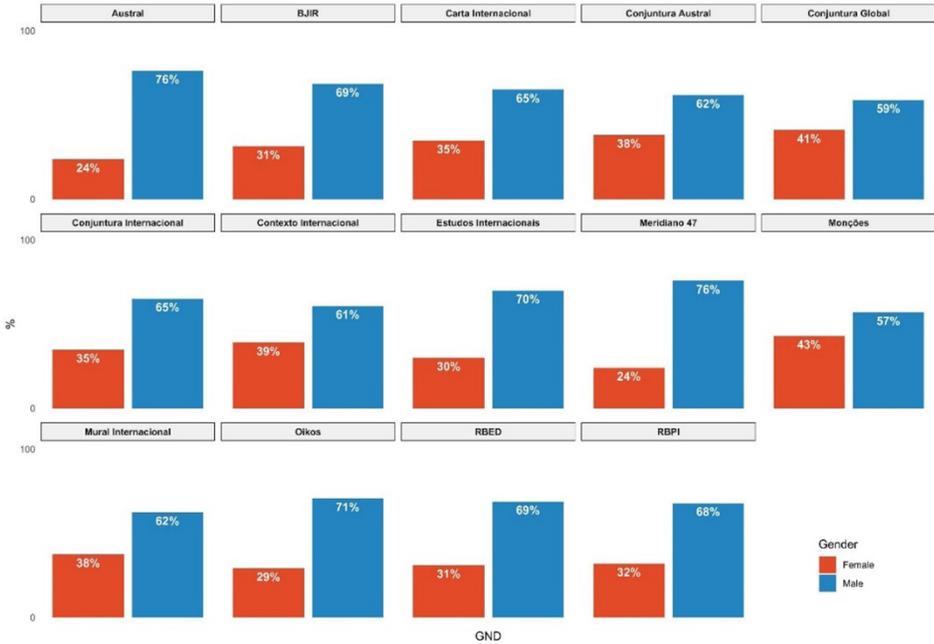
Second, how the preponderance of UnB shrank over time (see Figure 4), accompanied by both the founding of new graduate International Relations programs in Brazil and the creation of new journals spread across different institutions. Of particular interest is the case of UFRGS that, for the first time, surpassed UnB in the period from 2015 to 2021, following both the consolidation of its graduate program in International Strategic Studies and the creation of *Conjuntura Austral* in 2010 and *Austral* in 2012. Finally, *Estudos Internacionais* is not endogenic compared to other journals in the dataset. It is the sole journal whose institution of origin is not the most frequent¹¹ and has the lowest rate of endogeneity, 0.05, surpassing both *Carta Internacional* and RBED. In general, journals should be aware of high endogeneity rates (> 0.20), as this is a sign of a journal not being able to expand its portfolio of authors. As the portfolio of authors doesn't expand, the consequence could be a shortage of articles and difficulties in publishing new editions.

Concerning gender, recent studies have been pointing out and raising the issue of a gender gap and a gendered division of labour in scientific production and work in Brazilian Political Science and International Relations (see Carpiuc 2016; Mendes and Figueira 2019; Candido, Campos and Feres 2021). The present data confirms and restates this problem as, from the 14 journals, female authors represent only 32.8% of the total. There is, of course, some variability in women's presence among journals (see Figure 5). For example, for *Austral* and *Meridiano 47*, only 24% of the authors are female, while for

Monções and *Conjuntura Global*, female authors correspond to 43% and 41% of the total, respectively. Also, over the years, the raw figures seem to be improving (see Figure 6). For example, if in 1997 only 5% of authors were female, in 2021 women authorship was 42%. However, despite the recent overall improvement, the gender gap still exists and is a problem that needs to be handled at the editorial level. In such context, we should mention initiatives such as the 2021 dossier *The Global South thought by women from the Global South: research agendas and analysis approaches* (see Selis and Gonçalves 2021) from *Conjuntura Austral*.

Finally, Table 7 shows a frequency analysis of article keywords concerning the main topics covered in Brazilian IR articles. The analysis shows a tendency of research to focus on Brazil, 315, and the United States, 215. The BRICS also received considerable attention, both as a group, 50, and as individual countries, with the prevalence of China, 187, and a minor presence of Russia, 59, India, 39, and South Africa, 23. Regionally, Argentina has more representation, 58, followed by Venezuela, 31, and Colombia, 25. Following a historical trend (Milani 2021), the data shows that foreign policy studies are the central theme for Brazilian IR research, in general, 194, or specific to Brazil, 285, and the US, 68, and works on foreign policy analysis are still comparatively scarce, 40, though the field is developing in the country (see Salomón and Pinheiro 2013; Sá Guimarães and Estre 2021).

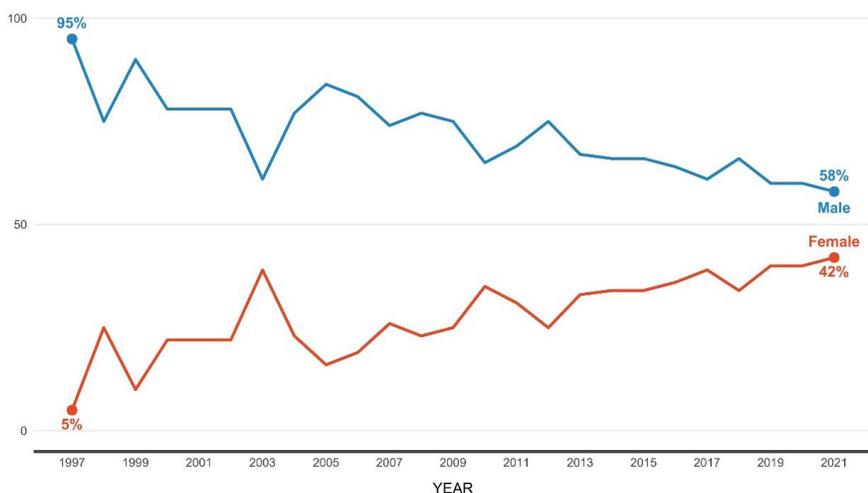
Figure 5. Gender authorship of scientific articles in Brazilian International Relations journals



Source: Author.

Notes: Data for 2021 is incomplete for *Conjuntura Global* and RBED as not all articles were published at the time of writing

Figure 6. Evolution of gender authorship of scientific articles in Brazilian International Relations journals (1997-2021)



Source: Author.

Notes: Data for 2021 is incomplete for *Conjuntura Global* and RBED as not all articles were published at the time of writing.

Table 7. Most frequent keywords in Brazilian International Relations journals (1997-2021)

Word	Count	Word	Count
Brazil	315	Africa	67
Brazilian Foreign Policy	285	International Cooperation	67
United States	215	Development	65
Foreign Policy	194	International Relations Theory	64
China	187	Terrorism	63
Regional Integration	153	South-South Cooperation	60
International Relations	142	Democracy	59
South America	140	Russia	59
Mercosur	137	Argentina	58
Latin America	128	World Trade Organization	54
European Union	112	BRICS	50
International Security	94	Defense	50
Geopolitics	72	Globalization	48
United Nations	69	Security	47
US Foreign Policy	68	Regionalism	46

Source: Author.

Note: A manual effort was made to normalize terms in Portuguese, English and Spanish. Data for *Conjuntura Global* is not included, as currently there is not keywords metadata available for the journal. After filtering for articles with missing metadata on keywords the analysis was conducted for 3953 articles.

Regional integration, 153, and regionalism, 46, are also main areas of research in Brazil (see Carvalho and Cimini 2019), with works focusing mainly on South America – Mercosur, 137, and Unasur, 35 – and Europe – the European Union, 112. Though some articles focus on Africa, 67, research on the African Union has been scarce, 6. Following historical patterns (see Miyamoto 1981; Herz 2002; Milani 2021), studies on international security, 94, and geopolitics, 72, are also frequent in Brazilian IR articles, followed by work on International Relations Theory, 64, International Cooperation, 67, in general, and South-South Cooperation, 60, in particular. Lastly, regarding International Political Economy, data seems to confirm Ramos and Scotelaro's (2018) and Scotelaro's (2019) claim that the field is overlooked in Brazil. Though studies on development, 65, international trade, 42, and the World Trade Organization (WTO), 54, have a relative high frequency, specific work on IPE is rare, 27.

Final remarks

A complete understanding of the International Relations field in Brazil requires deep analysis of the ecosystem of IR academic journals and engaging explicitly and exclusively with scientific articles published in such venues. The dataset provides a resource to help scholars explore, measure, and analyse such literature by conducting bibliometric and scientometric analysis, contributing to a more complete and systematic account of International Relations in Brazil. In addition, it may also help editorial teams identify gaps and shortcomings in current publishing practices and systems, fostering and strengthening the Brazilian ecosystem of IR journals *per se*.

The preliminary analysis via descriptive statistics conducted in this article and the current dataset is only one step toward a broader research agenda. Three extensions would be helpful in the future. First, we should extract an article language from the full text, not relying exclusively on the information publicly available on the website or the raw HTML. This addition should be possible in the short term, as 'textcat' (Hornik et al. 2020) could efficiently be used for such purpose. Second, developing a parser able to extract references from a PDF file. This goal should be part of a medium to a long-term plan and would need highly specialised software such as GROBID, which uses machine learning to extract, parse, and restructure content from technical and scientific publications into XML/TEI encoded documents (Lopez 2021). Third, developing a parser able to extract and clean affiliation and address blocks from a PDF file. This long-term goal could also be done via GROBID, though it is a somewhat more complex undertaking. In sum, extracting references and institutional affiliation data from the raw PDF file is a goal that can highly impact research. Pulling references would permit conducting citation analysis such as bibliographic coupling, co-citation, and citation networks. In addition, complete and clean data on institutional affiliation would allow studies of co-authorship and co-authorship networks using country of origin and institution as the unit of analysis and research exploring internationalization measures for the journals.

In conclusion, the dataset potential is somewhat dictated by the fact that it allows researchers to engage with large-scale and properly structured metadata that was not available before. Even basic analysis via descriptive statistics as done in this overview could reveal new insights about the IR field in Brazil and help develop research questions. Therefore, we sincerely encourage scholars to use the dataset in their studies, reflecting on the state of Brazilian International Relations at both structural-institutional and article-content or bibliometric levels.

Notes

- 1 Bibliometrics is defined as an area of research focused on the use of statistical methods to analyse and explore bibliographical content. Scientometrics, by its turn, is a subfield of bibliometrics which concerns in analysing scientific publications specifically.
- 2 *Conjuntura Austral* (2010), *Mural Internacional* (2010), *Revista de Estudos Internacionais* (2010), *Austral* (2012), *Brazilian Journal of International Relations* (2012), *Conjuntura Global* (2012), *Conjuntura Internacional* (2012), *Monções* (2012), *Estudos Internacionais* (2013) and *Revista Brasileira de Estudos de Defesa* (2014).
- 3 The dataset and the replication package for this article can be found at Harvard Dataverse at: <https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/XSLB7N>
- 4 Brazilian International Studies Association (ABRI) and Brazilian Defence Studies Association (ABED).
- 5 Qualis-Sucupira ranking is developed by CAPES in Brazil and is responsible for classifying Brazilian Journals across major areas of scientific production. The ranking is (or was planned to be) published quadrennially, but the latest ranking (2016-2020) was not published yet. The most updated document is an unofficial list made available in 2019 with partial results for 2016-2020.
- 6 This program is an interinstitutional program originated from a cooperation between the three universities.
- 7 Over the years there were several attempts to create and maintain area-specific journals, such as *Política Externa Independente* (1965), *Estudos Afro-Asiáticos* (1978), *Política e Estratégia* (1983), *Política Externa* (1992), *Premissas* (1992), *Parcerias Estratégicas* (1996) and *Cena Internacional* (1999). However, apart from the RBPI (1958) and *Contexto Internacional* (1985) experiences, all those efforts were characterised by discontinuity and fragmentation.
- 8 Only *Contexto Internacional* and RBPI adopt a specific license for metadata, the CC0 (or Creative Commons Zero), as they follow the SciELO standard. Adopting the CC0 means that metadata from the two journals are in public domain.
- 9 Inconsistencies are usually due to publishing systems not using the full-text language as standard for building language meta-tags, a problem that have practical consequences, as it may jeopardise an article ranking in search results in engines such as Google Scholar.
- 10 Of course, we're not computing articles from *Cena Internacional* and *Política Externa*, that, if computed, would increase figures for the 2010s.
- 11 *Carta Internacional* and RBED, which are from scholarly associations, are not considered..

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Uma nova base cientiométrica de publicações científicas em Revistas Brasileiras de Relações Internacionais (1997–2021)

Resumo: Neste artigo, apresentamos um novo conjunto de dados que abrange metadados de 14 periódicos de Relações Internacionais do Brasil (BIR) e mais de 5.000 artigos publicados entre 1997 e 2021. Coletamos os dados coletando as páginas públicas da revista via web scraping e posteriormente limpas e estruturou as informações em formato retangular. A compreensão completa da área de Relações Internacionais no Brasil exige uma análise profunda do ecossistema de periódicos acadêmicos de RI e engajamento explícita e exclusiva com artigos científicos publicados nesses locais. Mas, atualmente, a análise cientiométrica cobrindo BIR é rara e limitada, pois as fontes primárias de indexação e as bases de dados populares não cobrem integralmente os periódicos brasileiros de Relações Internacionais. Ao apresentar e publicar o conjunto de dados, pretendemos superar essa barreira e incentivar mais estudos cientiométricos no país.

Palavras-chave: Relações Internacionais; Brasil; metadados; raspagem da web; bibliometria.

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