# Citation politics: The Gender Gap in Internet Governance

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### **Abstract**

This article aims at promoting an informed debate on the politics of citation in Internet Governance (IG), focusing on gender. In this study, we present the Bibliographic Reference Index (BRI), developed since 2017, to examine to what extent female and male names have been cited in the papers published in the Proceedings of the Internet Governance Research Network (REDE) in Brazil. Differently from general databases that code articles based on gender, the BRI is based on an action research process ("pesquisa-ação"), in which authors are asked to fill out their information about their citation practices to promote greater reflection on their bibliographic references. We analyzed 1113 citations from 35 papers published in four REDE proceedings throughout 2017-2021. Our results show that male names were cited more than double the number of times of female names. To contextualize these results, we discuss how this gender gap can be visualized not only in the disciplines that IG is intrinsically related to, but also in the curriculum of Internet Governance Schools and IG courses. Based on the structural gender inequalities that we have found in IG, we recommend interventions on two fronts: 1) institutionally, we recommend revisions of the IG curricula to reduce the gender gap; and 2) individually, we provide a citation diversity statement and suggest it to be added to articles in order to ignite these discussions and to be transparent about the politics of citation in our field.

Keywords: politics of citation; citation bias; gender gap; internet governance

## Introduction<sup>5</sup>

The overall goal of this article is to promote an informed debate on the politics of citation in Internet Governance (IG), focusing on gender. In this study, we present the Bibliographic Reference Index (BRI), developed since 2017, to examine to what extent female and male names have been cited in the papers published in the Proceedings of the Internet Governance Research Network (REDE) in Brazil. This index also aims to promote greater reflection by authors on their bibliographic references, shaping an action research process ("pesquisa-ação") (Franco, 2005).

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As a research area, IG builds on the beginnings of the commercial Internet in the late 1990s and early 2000s in the global North (Abbate, 1999; Kahin and Keller, 1997; Mueller, 2004; Paré, 2002). However, it was only in the second half of the 2000s, with the growing number of authors in the area, that historically central themes in the field, such as the governance of names and domains on the Internet, began to be permeated by gender issues, approaching implications of the performance of the ICANN (The Internet Corporation for Assigned Names and Numbers) for the rights of LGBTQ+ populations (DeNardis and Hackl, 2016). In the same period, feminist studies joined the discussions of governance in media and communication studies (Mayer, 2018; Padovani, 2018); notably, in Brazil and Latin America feminist critics have sought to focus on the design and governance of technologies, with strong criticism of their antidemocratic values (Da Hora, 2022), and of understandings imposed by the industry, such as consent standards and artificial intelligence, and have proposed new paths based on feminist values (Varon and Peña, 2021).

As the dialogues between IG and feminist literature expand, so does the diversity of gender in IG scholarship. Female—and non-binary—scholarship production is so prominent in themes encompassed by the field that no list will be exhaustive; the one presented here, for example, is marked by the references and self-references of the authors of this article in Brazil, where such production starts from works in different disciplines, such as communication, political science, law, studies of science and technology, geography, international relations, among others. The productions of Brazilian women are diverse and include topics such as cybersecurity (Hurel and Lobato, 2018), disinformation (Lobo, De Morais, and Nemer, 2020; Recuero, Soares, and Vinhas, 2021), spectrum and mobile networks (Foditsch, 2017; Santoyo, 2014), study of platforms (Venturini et al., 2016; Mielli and Romanini, 2021), surveillance studies (Bruno et al., 2018; Souza, Avelino, and Silveira, 2018), gender (Kremer, 2019; Barbosa, Tresca, and Lauschner, 2021), data governance (Reia and Cruz, 2022), global governance (Maciel, 2014; Pigatto, 2020), physical and Internet Protocols (Oliveira, 2017; Rosa, 2022), domain names (Holmes and Anastácio, 2020), access policies (Alimonti, 2016; Lefévre, 2016), sovereignty and territory (Israel, 2020; Pinto, 2018; Córdova, 2018), community networks (Oliveira, Araújo, and Kanashiro, 2020), and extensive contributions in the fields of digital activism and cyberfeminism (Bülow and Dias, 2019; Lobato and Gonzales, 2020; Segurado and Silveira, 2021; Valente and Neris, 2018), and law and internet regulation (Melo, 2016; Dahlmann et al., 2015; Rossini, Cross, and Doneda, 2015; Santos, 2021; Keller, 2019).

In line with this development, in 2017 a group of researchers started an autonomous, multi and transdisciplinary academic collective: the Internet Governance Research Network (REDE). Our objective is "to discuss the techno-political dimensions of the network [Internet] and its technical, social, economic and public policy consequences" (REDE, S. d.). The initial group consisted of five women and three cis men: a female professor, a female doctor, three female doctoral students, two male doctoral students, and a male post-doctoral student. Three members identified themselves as black and, with the exception of two people from the Northeast and the South, all were from the state of São Paulo<sup>6</sup>. Since its first year, the REDE has promoted annual meetings—except for 2020<sup>7</sup>—, publishing a total of 35 articles in four editions of the conference proceedings.

In the present work, we want to contribute to the discussion of politics of citation with focus on gender in the context of IG. Academia suffers from a lack of diversity in terms of gender, ethnicity, racial origin, class, people with disabilities, etc.; therefore, ways of measuring such inequalities are necessary to contribute not only to a better understanding of the problem, but also to promote structural changes. We will use citations

<sup>&</sup>lt;sup>6</sup> Currently, REDE's organizing committee, responsible for organizing the conferences, is made up of five women and four cis men, three LGBTQIAP+, a female professor, a male professor, a female post-doctoral student, a female doctoral student and a male doctoral student, two male masters, one male master's student, and a female graduate student. It is a horizontal structure and open to the participation of any interested party. Affiliations currently extend to São Paulo, Rio de Janeiro, Minas Gerais, Paraná, Brazil, in addition to Germany and the United States. Two members are originally from the North, one from the Midwest, one from the South and four from the Southeast. The REDE is also composed of a scientific committee made up of PhDs invited annually to evaluate the works received, and a mailing list that is also open and horizontal.

<sup>&</sup>lt;sup>7</sup> Year in which the meeting was not held due to the Covid-19 pandemic.

in articles published in the annals of the REDE as a way of measuring gender diversity in IG production in Brazil.

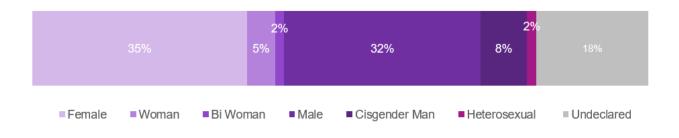
Citations are not just the basis of knowledge construction or a form of dialogue with authors who precede us in the field; they are also "technologies" and, as such, can be anti-racist, feminist, etc. For Carrie Mott and Daniel Cockayne (2017), there must be "a conscientious engagement with the politics of citation that is mindful of how citational practices can be a tool for either the reification of, or resistance to, unethical hierarchies of knowledge production" (956). For example, in the field of anthropology, Smith and Garrett-Scott (2021) state, "[We black anthropologists] are symbolically included but epistemologically erased..." (19). In a study that analyzed the number of citations by black authors, they concluded that black authors, males and females, wrote only 3 of the 61 articles analyzed in the research, while they were responsible for 57% of citations to black scholars in the sample (Smith and Garrett-Scott, 2021, 29). Clearly, inclusion and diversity in academia are related to a more ethical and representative politics of citation and point to ways to face structural epistemic erasure. Citations are, therefore, a form of resistance, of creating bonds and of strengthening the cited sources. When we quote in text, we empower certain people and not others, echoing their voices (Mott and Cockayne, 2017).

In this study, an initial challenge to the results to be presented is the impossibility of pointing out, in a context of gender imbalance in the citations, how many more female names could be cited in order to achieve balance, since there is not an established number of all universe of names available, as in the study by Smith and Garrett-Scott (2021).<sup>8</sup> As it is an interdisciplinary area, with researchers distributed in several departments, IG does not have educational statistics that allow for measuring the field according to the number of graduates, as is the case with more disciplinary areas. At the same time, many researchers working on IG topics do not identify themselves as IG researchers.

While we lack a more general numeric reference from the field, at the 2021 REDE Meeting, which took place virtually on October 4th and 5th, we collected some demographic information at the time of registration for the purpose of understanding the audience reached by the event. We share below such data as a way to fill this void, with the specific reference of a meeting dedicated exclusively to research in IG in Brazil. Of a total of 66 people enrolled, there is a balance between female and male participants (42% x 40%), and a predominance of white people (58%), with a doctorate completed or in progress (34%) and from the Southeast region (48%). People of mixed color (18%) or blacks (9%), from the Northeast (20%) and with a master's degree completed or in progress (30%) were the groups with the highest presence. We draw attention to the lack of indigenous and black representation in IG.

GRAPH 1

REGISTRATIONS IN THE 2021 REDE MEETING BY SELF-DECLARED GENDER<sup>9</sup>

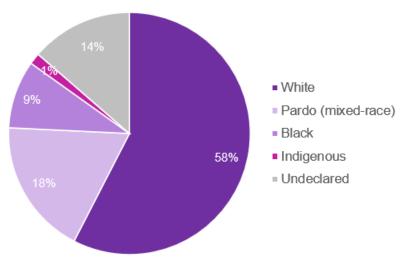


<sup>&</sup>lt;sup>8</sup> The authors drew a parallel between the racial classification of doctoral graduates in anthropology in the United States with the numbers of black people cited in well-ranked journals, pointing out, in the end, an underrepresentation of black people.

<sup>&</sup>lt;sup>9</sup> The option for the open gender question aimed to understand the fluidity of self-identification in the field. The answers present gender identity and sexual orientation. Percentages (%) totaling above 100% are due to rounding. In all graphs, registered participants are indicated as a percentage of a total of 66.

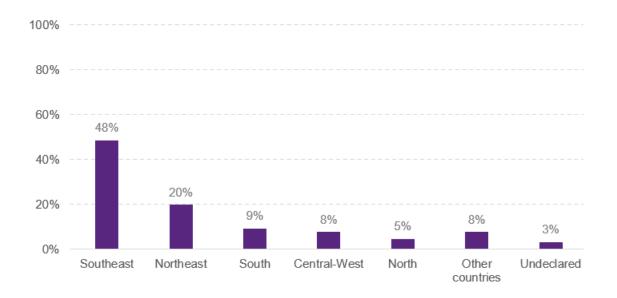
Source: Authors' elaboration.

GRAPH 2
REGISTRATIONS IN THE 2021 REDE MEETING BY RACE



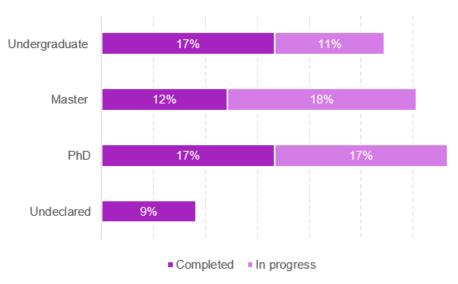
Source: Authors' elaboration.

GRAPH 3
REGISTRATIONS IN THE 2021 REDE MEETING BY REGION OF RESIDENCE



Source: Authors' elaboration.

GRAPH 4
ENROLLMENT IN THE 2021 REDE MEETING BY EDUCATION



Source: Authors' elaboration.

### **Methods**

Since 2017, the REDE has been collecting data for its Bibliographic Reference Index (BRI), with the aim of monitoring the development and number of citations of female and male authors in the field of IG from articles published in the annals of REDE meetings. The BRI intends to contribute to the expansion of discussions regarding the presence of gender diversity in the field and to the reflection of the authors on their own bibliographies.

The BRI contains six questions referring to the bibliography of each paper and two referring to information on the authors of the papers (See Annex I). About authorship, we asked how many authors wrote the paper and what their gender is: female, male, or other. For the collection of bibliographic references, we ask the authors to inform us the number of bibliographic entries in total, that is, how many works were cited in their paper, in addition to the number of female name authorship or co-authorship, of male name authorship or co-authorship, of female and male name co-authorship, and of institutional origin, such as documents, laws and decrees, reports with institutional authorship, etc. The female name *versus* male name distinction is rendered from the first name of the cited authors.

Data were collected between 2017 and 2022. In a form sent by email to all authors who presented paper at the REDE conferences, we obtained 25 responses to the BRI. Two of the 25 registered responses were excluded for the purposes of this analysis: one due to inconsistent numbers and another because the article was not included in the annals of the REDE of that year—a case that occurs when, for example, authors decide not to send the full article to be published after the conference. We then filled in the form for the rest of the articles published or in press in the annals of 2017-2021 that were not completed by the authors or that had inconsistent answers (N=12), totaling 35 articles analyzed in this work.

For the purposes of this filling, with the list of articles whose authors did not respond to the BRI form, we quantified the female and male names. Additionally, we used Google Scholar searches, especially in cases where the abbreviation of the first name made it difficult to identify the cited author. It should be noted that, in view of the self-completion technique, each author that presented at REDE conferences used their own judgment to classify their citations as female-male.

The self-completion form in this survey has a pedagogical content. By interacting with their own list of bibliographic references, authors are expected to broaden their perception of their own theoretical production, their dialogues and positionality. In this sense, even if data do not lose in quality if filled in by

us (and not by the authors of the articles in question), from the point of view of action research, they have different political contours, since part of the conscious engagement is compromised. At the same time, reflecting on the pedagogical content of the survey, we realized that the BRI did not originally contain any open-ended questions that would allow us to understand the engagement generated by self-completion. We then added two questions to the form during the writing of this work and sent them to the authors who completed the BRI after the 2021 REDE meeting, in order to receive their reflections on the process (see Annex I). We received five responses, including two from people who currently make up the organizing committee of the REDE.

The analysis of the 35 articles resulted in 1,113 citations. As shown in Table 1, the total number of citations varies from year to year, with the highest number in 2017, with 369 bibliographic entries, and an average of 41 citations per article.

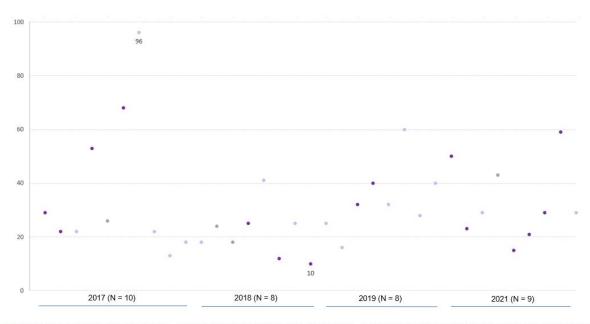
TABLE 1
NUMBER OF CITATIONS PER YEAR AND AVERAGE OF CITATIONS PER ARTICLE

Year	Number of articles	Citations			
		Number	Average per year		
2017	10	369	41.0		
2018	8	173	21.6		
2019	8	273	34.1		
2021	9	298	29.8		
Total	35	1,113	-		

Source: Authors' elaboration.

In Graph 5, each point is equivalent to one of the 35 articles analyzed, distributed by the number of citations contained in their bibliographic references and by year. We observe that, mainly in 2017 but also in 2021, there were *outlier* articles, those with much more citations than the others, which influenced more on total citations (e.g. in 2017, an article alone, by one author, cited 96 authors). To counterbalance the weight of these cases, we will present the percentage of citations analyzed by female-male and, in certain analyses, also the absolute numbers.

GRAPH 5
TOTAL CITATIONS PER ARTICLE



• Male (or co-authorship between male names) Female (or co-authorship between female names) Female and Male (co-authorship between female and male names)

Source: Authors' elaboration.

### **Gender Issues and Method Limits**

It is important to address the limits of our method, which are intrinsically related to the complexity of gender discussions that urge new ways of classifying and understanding the world. Gender is a social, historical and cultural construction (Lins, Machado. and Escoura, 2016; Moutinho, 2014) and, as such, has increasingly destabilized fixed and binary categorizations, such as female and male. In this scenario, it is called "compulsory cisgenderness" speeches in which

[...] gender is characterized by the biological data of the materiality of the body, expressed in the presence of certain sexual characteristics such as genitals, gonads, certain body shapes, certain hormonal levels, certain genomic configurations, etc. These discourses also have in common the belief that there would only be two possible configurations based on this biological data: either you are a man or you are a woman. And, finally, they start from the premise that the gender you were assigned at birth will define you for as long as you live. (Ferreira, 2021, 361, authors' translation)

This naturalized correspondence of gender determination, also referred as the correspondence to the "sex assigned at birth" (Anderson et al., 2021), is called cisgenderness by Ferreira (2021). In fact, adding to the female-male classification the understanding that gender identity is fluid and socially constructed, people who conform to the sex and, consequently, the gender they were assigned at birth are considered cisgender, while people who do not self-identify with such a classification are considered transgender. Thus, a cis male is someone registered as male at birth and who identifies with that gender; a trans man is one who identifies as a man and who at birth was classified differently. Although cis men, trans men, cis women and trans women make the female and male categories more complex, patterns of identity imposed by national states persist. <sup>10</sup> In a continuous dynamic, other classifications and ways of being in the world are

<sup>&</sup>lt;sup>10</sup> For example, author Sasha Costanza-Chock explains how her trans identity is intelligible when passing through airport security entrances, where machines identify anomalies every time her body is scanned. Since machines are

added and include self-identification as a non-binary person, as a person without gender, among other classifications that destabilize binarism and also the use of language, with the defense of inclusive words in Portuguese ending in "e," "x," etc. (e.g. obrigade, obrigadx—words for thank you).<sup>11</sup>

Trans people struggle to be recognized for the way they self-identify in legal disputes to change documents (Ferreira, 2021; Lima, 2017). This discussion intersects with Internet governance when one of the layers of gender transition is mediated by social networks and faces the barriers of platform policies, for example the rules of legal names (Haimson et al., 2016). The scope of this discussion is also related to and imposes limits on the methods of this article, since names or first names—the data unit analyzed in our study of gender in bibliographic citations—are not neutral classifications. In the same way that data are never "raw" (Gitelman, 2013) and, because they are imbricated in cultural values, names themselves are data. In the United States, the discussion about the politics of first and last names, and the way they are racialized. allow us to understand them as markers that lead to social discrimination (Benjamin, 2019; Sweeney, 2013).<sup>12</sup> In Brazil, for example, discrimination happens with names more common in the northern regions of the country, which generate judgments of being "made-up," and, therefore, of corresponding to a certain social class, ignoring the fact that all names are made-up (Benjamin, 2019). In our analysis of bibliographic references and gender relations, we know that the first names may reflect cis people, therefore corresponding to the gender defined at birth, or may reflect trans people, if social names have been adopted: at the same time they can overshadow gender, as in cases of genderless or non-binary people. Therefore, we understand that female and male names correspond not only to women and men, but also to other genders.

In this way, when we use the authors' first names to raise the proportion of female names and male names citations in the articles in the annals of the REDE, we recognize that we operate within the limits of a binary analysis that does not capture the nuances described above. Even so, we believe that the results presented may contribute to engender a discussion of citation policies in the field, moving towards greater diversity in the area and conscious engagement with the bibliography.

A second limit of our method concerns the impossibility of capturing gender overlaps with racial, ethnic, class, origin, disability and other markers that characterize our life experience and what is called intersectionality (Crenshaw, 2002). With this concept, American black feminism changed the understanding of women as a homogeneous category, making explicit the need to think about the experience of black women as distinct from that of white women, given that the intersection of gender, race, and other markers put them at different positions in power structures. In the Brazilian context, an indigenous, northeastern, domestic woman, for example, has a different social position and way of being in the world than a southern black woman.

#### As María Lugones (2008) explains:

At the intersection between 'woman' and 'black' there is an absence where the black woman should be precisely because neither 'woman' nor 'black' includes her. The intersection shows us a void. Therefore, once intersectionality shows us what is missing, we are left with the task of reconceptualizing the logic of intersection, thereby avoiding the separability of given categories and categorical thinking. (82, authors' translation).

With regard to our method, the female-male names analysis, evidently, does not allow access to this complexity: we do not intersect with racial issues, origins in the global South or North, and a multitude of

programmed with female and male functions, her body has markers that destabilize these categories, leading her to recurrent invasive searching that disrespect her gender identity (Costanza-Chock, 2020). In terms of national statistics, it should be noted that the census in the United States has collected, since 2021, the "assigned sex at birth" and then the respondent's current self-classification, whether "female," "male," "trans" or "none of these" (Anderson et al., 2021). In Brazil, the IBGE (Brazilian Institute of Geography and Statistics) rejected including gender identity and sexual orientation in the 2022 census (Carneiro, 2021).

<sup>&</sup>lt;sup>11</sup> It is worth mentioning that gender identity is not to be confused with sexual orientation (e.g. a cis man (gender identity) can self-identify as gay (sexual orientation).

<sup>&</sup>lt;sup>12</sup> For example, in an experiment with AdSense ads, when searching using names associated with black people on a website, Latanya Sweeney found 25% more ads related to arrest and incarceration issues than when using names associated with white people (2013).

aspects that, in their encounters, evidence hierarchies of power. It is known that, in Brazil, for example, the IG literature is marked by male authors and with extensive reference to the global North (Montenegro and Freitas, 2021). Acknowledging this context, we move on to the results of the study.

# **Analysis**

We present below the results of the BRI, comprising the analysis of 1,113 bibliographic entries distributed in 35 articles published, or in press, in the annals of the REDE of 2017-2021. As indicated in Table 2, of the total, 16 articles are by female authors, 15 by male authors and 4 with co-authorship between female and male authors, independently from the order in which the names appear. The average number of citations per article is similar, especially when the authorship is exclusively female (32.1) or male (32.5), showing that, on average, female authors and male authors have bibliographic lists of similar sizes.

TABLE 2
TOTAL AND AVERAGE NUMBER OF CITATIONS BY GENRE OF THE AUTHORS

	Articles	Citations		
Genre of the authors	Articles	Total	Average	
Female (or co-authorship between female names)	16	514	32.1	
Female and male (co-authorship between female and male names)	4	111	27.8	
Male (or co-authorship between names)	15	488	32.5	

Source: Author's elaboration.

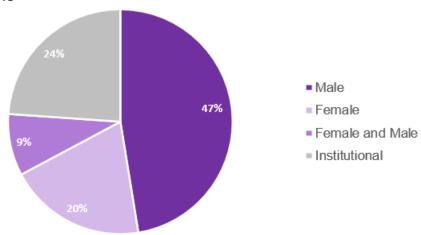
Total

Next, we analyzed the distribution of total citations in Graph 6 (1,113 citations). 47% of the bibliographic entries in the proceedings are by male names, while only 20% are by female names – a lower number than citations to institutional sources, at 24%.

35

1,113

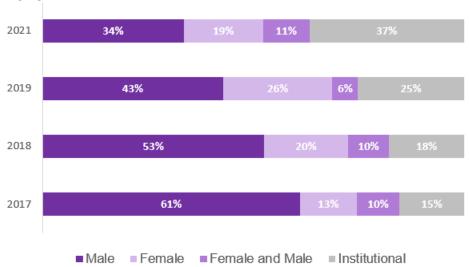
GRAPH 6
TOTAL CITATIONS



Source: Author's elaboration.

When examining the data longitudinally in Graph 7, there is a preponderance of citations to men and male names in all years, with greater emphasis in 2017 (61%), when the total number of citations was 369, and there were only 13% citations to women and female names. In any case, differences are visible over the years, with slight increases in female and institutional citations. In 2018, we had a total of 173 citations and, although the number of citations to men and male names was still higher, we noticed a 7 percentage point increase in citations to women and female names. The year 2019 had a total of 273 citations and a further considerable increase in the number of citations to women and female names of 6 percentage points and also to organizations, of 7 percentage points. In 2021, citations to men and male names dropped to 34%, a number lower than institutional citations (37%), but still much higher than female citations, of only 19%.

GRAPH 7
TOTAL CITATIONS



Source: Author's elaboration.

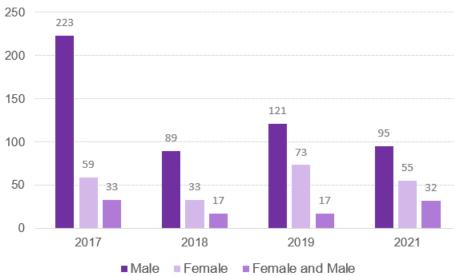
Next, we present the same distribution without institutional citations, to facilitate a female-male comparison (Graph 8). In this case, the number of citations analyzed below in 2017 was 315, in 2018, 139, in 2019, 211, and in 2021, 182. In 2017, the citations to men and male names were more than four times higher than that to women and female names (71% vs. 17%). Over the years, there has been an increase in female citations, with a better result achieved proportionally in 2019, in the pre-COVID-19 pandemic period (55% x 35%). In 2021, attention is drawn to the higher proportion of citations to female-male co-authorships.

GRAPH 8
TOTAL CITATIONS FEMALE-MALE ONLY



In Graph 9, when analyzing the data above in absolute numbers, we notice that, despite the positive variations shown, the number of cited texts by women and female names remained at the same levels in 2017 and four years later (59 x 55). The absolute number of texts by men and male names reached 223 in 2017, also due to *outliers*, as shown in Graph 5. In any case, it is noteworthy that the highest number of cited male sources (223), which occurred in 2017, is equivalent to more than three times the highest number of cited texts by women and female names (73), which occurred in 2019.

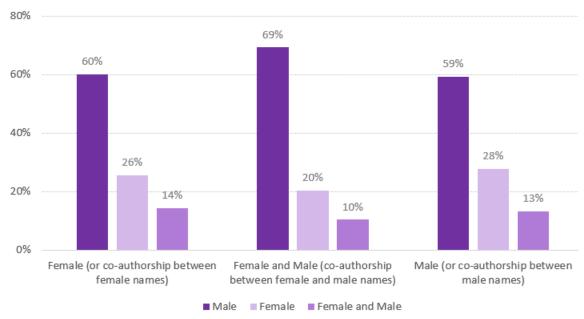
GRAPH 9
TOTAL CITATIONS FEMALE-MALE ONLY



Source: Author's elaboration.

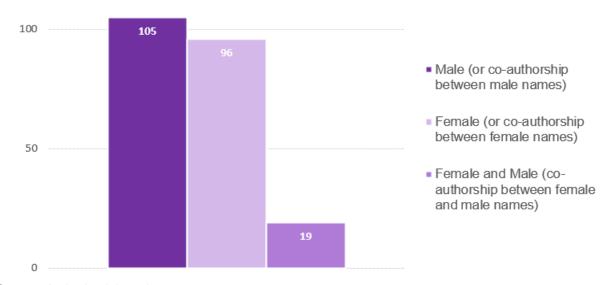
Finally, considering the total number of citations in the four years analyzed (1,113), we examined whether there are differences in the female-male distribution, based on the gender of the authors. In Graph 10, there is no sharp differences. In fact, there is a preponderance of citations to men and male names, regardless of whether the gender of the authors of the articles is female (60%), male (59%), or whether the articles have female-male co-authorship (69%). Furthermore, if the literature on politics of citation in the racial context is taken into account, it would be possible to assume that female authorship would generate more citations of the same gender. However, as can be seen in Graph 11, this did not happen: counter-intuitively, considering all citations to female names, in a total of 220 citations, female authors cited numerically fewer women and female names. Considering that the average number of citations by female authors and male authors is similar, as shown in Table 2 (32.1 vs. 32.5 citations per article, respectively), the difference found does not seem to be because male authors build larger bibliographic references. Some reasons for this result may be the lack of knowledge of female bibliographic sources also among female authors, the absence of this bibliography in certain areas of Internet governance, the reproduction of citation patterns from the past, following algorithms that highlight the most cited sources when selecting the bibliography, and also the lack of conscious engagement with bibliographic construction.

GRAPH 10 TOTAL CITATIONS FEMALE-MALE ONLY BY GENDER OF THE AUTHOR N=1,113



Source: Author's elaboration.

GRAPH 11 TOTAL CITATIONS TO FEMALE NAMES BY GENDER OF THE AUTHOR  $N\!=\!220$ 



Source: Author's elaboration.

As the testimonies of the authors show, ways of increasing conscious engagement with bibliographies such as the BRI generate a promising dynamic of self-perception and reflection on the field of IG during and after the completion process. Below are excerpts from some responses we received of authors who filled the IRB after presenting at REDE conferences:

"After filling it out, my first reaction was one of astonishment, considering the difference between the number of male and female authors in the article. Despite being aware of this gender issue in science, seeing this issue in the form of quantifiable data shocked me. At the same time, as soon as I saw this data, I was thinking about the problem and how it would be possible to remedy it, but I came across an issue that precedes the difference in the number of citations in the article: I don't know enough female authors so that, in the future, there is a balance in the number of citations (...)."

"(...) the reference to the index itself leads those who had not yet stopped to reflect on this to do so. I say this from personal experience. I had not stopped to think about the male-female composition of the bibliographic references that I used in the proposed work and in the other works that I am doing and that I have done."

"As a gay black man, I found the reflection on gender quite interesting. While it is an additional layer of complexity in the research process, I believe it is necessary to establish this effort as a standard."

"After completing the form, (...) I remember asking myself how or what we could do to ensure equity. "Where are we or what position have we been placed in so that men are the majority in the field of IG as well?"

### **Discussion**

In this section, our intention is to put the results presented in context, considering discussions on citation and gender policy in academic production, including in IG and related areas. We also seek answers to think about how we got here and how we can change this trajectory.

In Brazil and Latin America, research in the areas of Social Sciences, Political Science, Communication and International Relations (IR) is beginning to awaken to the scenario of gender inequality in academic and scientific production. In International Relations, inspired by Maliniak et al. (2013), who used a database with nearly 3,000 articles published between the years 1980-2006 in the twelve largest journals in the field of IR, and concluded that "articles written by women are consistently cited less than articles written by men," a work published in 2019 analyzed the authorship of articles published between 1997 and 2018 in two main journals in the field of Political Science and International Relations in Brazil. According to the study, men are 2.6 times more likely to be the first author in the articles analyzed (Souza, Elias and Santos, 2019). The research also points out that the gender disparity found can vary in different subareas of the discipline, an extremely relevant fact for the field of IG that adds, from technical issues related to critical resources and infrastructure, to debates in the field of law and human rights, as we will see next.

In the area of Communication, a study that analyzed the bibliography of articles published by Argentine female authors in five journals between 1996 and 2019, and which selected the most frequently cited authors, identified that, of the 130 most cited in the works, only 32 are women, which is equivalent to approximately 24% of the total number of citations (Sampaio, 2020) considered for the analysis. In addition, among the 10 most cited authors, only one is a woman and she occupies the last position (Sampaio, 2020) in the general ranking, which includes Argentine and international authors.

Another clipping that elucidates the context analyzed here is data on citations made in scientific journals dedicated to the topic of gender in Brazil. In a recent study on two editions of Revista de Estudos Feministas, an important journal for gender studies in Latin America, 1207 references from 35 articles published in the journal were analyzed (Medeiros and Vanz, 2018). Despite not comparing the numbers of female authors and male authors cited, Medeiros and Vanz point out that the most cited, after institutional sources, are Michel Foucault, referenced 15 times, and Pierre Bourdieu, referenced 12 times, both ahead of important female authors such as Judith Butler and Michelle Perrot, referenced 10 times each in the evaluated articles.

The study of the participation of women from a quantitative bibliometric analysis, this time in the engineering area, was that by Machado and Machado (2021, 3), based on the Web of Science database, an international online platform for scientific publications. The authors analyzed the number of female authors

in the 10 articles with the highest citation rate in three different time periods. Overall, female participation accounted for only 12.5% in articles from 1999-2000, rose to 17.6% between 2009-2010, but dropped to 14.7% in 2019-2020. The analysis also indicated that from the first to the second biennium the number of publications increased 2.4 times, and from the second to the third it increased 2.5 times. When analyzing these data together, the authors conclude that "(...) it is possible to observe that even with the increase in publications, the proportion of women did not show a significant growth, never presenting 20% of participation" (Machado and Machado, 2021, 7).

These results align with a large international study that concatenated papers from 83 countries, focusing on more than 1.5 million authors, equivalent to 33% of papers published between 1955 and 2010 in 13 disciplines, including political science and computing science (Huang et al., 2020). According to this study, men receive 30% more citations than women, a number driven mainly by authors ranked as the top 20% in productivity, among which the gap reaches 36% favoring male citations. Furthermore, the higher the university ranking, the higher the gender gap between scientists with female and male names (Huang et al., 2020). These values disregard self-citation, which is also higher among men.

Although we are dealing with structural inequalities, which require an understanding of many factors that help shape this situation, we would like to address the one that seems to us to be more accessible to changes, and this concerns the bibliography taught during training in a given discipline. As an example of the gender gap found in educational institutions, a bibliometric analysis of the mandatory curricula of the anthropology course at the Federal University of Minas Gerais (UFMG), a model institution in Brazil, reveals an asymmetry in the amount of texts by male and female authors in the syllabi (Passos, 2017). Among other data obtained from the analysis, 430 texts were used as references in 23 mandatory subjects of the course, of which women were the main authors in only 95 texts, about 22%, For the author, "In a course where there is an equal number of women and men, having less than a quarter of the required reading being produced by women as the main author is, at the very least, worrying and symptomatic" (Passos, 2017, 8).

When considering the field of IG specifically, recent research in Brazil shows that among 22 doctoral theses and master's dissertations on internet governance defended between 2005-2020 in the country, eight of the ten most cited authors are men (Montenegro and Freitas, 2021). Although we do not have studies on the distribution of gender in the bibliography used in the teaching of IG in the country, there is a recent document formulated by the Internet Governance Forum (IGF) that compiled syllabi from some Internet Governance Schools around the world, that will serve as the basis for the analysis with which we will end this section.

The IGF is an annual event promoted by the United Nations that brings together representatives from different stakeholder groups to discuss issues and policies related to the Internet. In 2022, the IGF Secretariat published a document with the ambitious objective, listed in the foreword section, of developing an "international syllabus framework that can be adjusted to the particular requirements and needs of any local community" (IGF Secretariat, 2022, 6). The document was written from the syllabi and educational programs of 22 members of the Dynamic Coalition on Schools on Internet Governance (DC-SIG), a group that brings together initiatives spread across several countries that aim to train students in subjects related to IG. According to the document, in addition to the references of the 22 IG Schools, the document was created using data from the syllabi of eight professors who teach in specialized IG programs, as well as online teaching platforms from two institutions, interviews with people from DC-SIG who expressed interest, emails exchanged with academic networks, and an open consultation session on teaching IG.

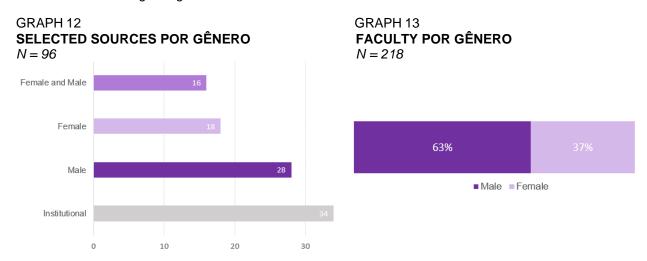
Perhaps as a result of the extensive work of synthesizing the collected materials, and due to the limits of consolidating a framework from such different geographic and geopolitical realities around the world, we read further on that document that it proposes to offer "a sample to give you an idea of expertise and topics that are taught in academia and at schools" (IGF Secretariat, 2022, 14). The result is a compilation that presents suggestions for content and activities, including a list of selected sources, such as articles and

<sup>&</sup>lt;sup>13</sup> In order of citations, Milton Mueller, Manuel Castells, Laura DeNardis, Carlos Alberto Afonso, Diego Canabarro, Myriam Dunn Cavelty, William Drake, Ronald Deibert, Wolfgang Kleinwächter and Jovan Kurbalija appear (Montenegro and Freitas, 2021).

videos that can be used in the teaching of IG, and a list of faculty, which portray a sample of experts in areas related to IG. Both faculty and selected sources are divided into 17 thematic modules, which appear in the document as core or elective modules, referring to modules that most schools cover in their programs, or that not all cover or cover reduced versions.

Considering that the teaching of IG is interdisciplinary, dispersed, and takes place in several languages and institutions, the document validated by the IGF is an interesting source to visualize what has been taught by the Schools of Internet Governance that are members of the DC-SIG and the faculty networks associated with them.

We quantified the female and male names in the lists of selected sources and faculty, as we did in the analysis of the REDE annals described in the methods section, also resorting to Google Images searches in cases of doubts regarding the classification of names.



Source: Authors' elaboration with IGF data (2022).

When considering all the selected sources pointed out by the IGF Secretariat, the results seen in Graph 12 indicate a predominance of institutional citations, that is, to articles and studies prepared by organizations such as, for example, the Internet Society (ISOC). Among the citations to sources of personal authorship, there is still a predominance of male names (29%), followed by female names (19%), and by female and male co-authorship (17%). The male predominance is even more visible when we consider the list of faculty presented in the document, as seen on Graph 13. When we combine all the thematic modules and exclude duplicates of specialists suggested in more than one area, the total is 137 faculty members of male names compared to 80 faculty of female names. The indication of experts with male names, therefore, corresponds to a value 71% higher than that of experts with female names. <sup>14</sup>

When analyzing the list of faculty and selected sources by thematic modules, we see that certain themes have more gender parity than others<sup>1516</sup>. As mentioned, the IGF Secretariat document points out selected

<sup>&</sup>lt;sup>14</sup> 38 people were cited as experts more than once in different subfields. If we consider these duplications, the gender gap is even greater, since among the 38 people mentioned twice or more, 27 of them correspond to male names (71%). There was only 1 out of 218 faculty names that corresponded to an institutional reference, "Internet Society – Tutors."

<sup>&</sup>lt;sup>15</sup> For the analysis of the modules, the duplicates in the faculty names were kept, since the exclusion of names in some modules would be arbitrary and affect the analysis. Furthermore, we disregard faculty names mentioned in the final section of the IGF document entitled "How to find lecturers?". This section is not a thematic module, but a series of centers and universities that have programs in GI, with the name of a representative for each location. For reference, of the 10 representatives listed, 9 are male names.

<sup>&</sup>lt;sup>16</sup> To facilitate data visualization, we have grouped the modules described in the IGF document into broad areas. In the table, under "Area" you can see the thematic modules listed by the IGF. For an understanding of what content is covered by each module, refer to the original IGF document.

sources and faculty names according to thematic modules that could potentially make up an IG curriculum. To facilitate our analysis, we grouped the 17 modules into 7 areas following the internet governance taxonomy by Raymond and DeNardis (2015) when possible. The table below is ordered according to modules from lowest to highest gender equality.

TABLE 3 CITATIONS TO SELECTED SOURCES AND FACULTY BY MODULES  ${\cal N}=348$ 

_	Selected sources			Faculty				
Area	Female	Male	Female/ Male	Institutional	Female	Male	Institutional	•
Critical Internet Resources  - Domain Name Registries and Registrars Governance - Internet Protocols and Regional Internet Registries	1	2	1	5	1	10	-	
Introduction to IG  - Introduction to IG  - Models and Approaches to IG and the Technical Community - Regional/Global Organizations and IG	1	13	2	11	23	60	-	
Cybersecurity governance  - Cybersecurity and cybercrime - Domain Name System Abuse and Security	1	1	3	1	12	28	-	
Emerging issues  - Emerging Technologies (Artificial Intelligence, Blockchain, etc.) - Digital Technologies and Environment	2	1	1	3	5	8	-	
Information Intermediation  - Online Platform Governance - Privacy and Data Protection - Digital Footprint - Digital Trade and the Internet - Intellectual Property Rights and IG	7	6	4	8	17	24	1	
Internet access and Human Rights  - Digital Divide and Digital Inclusion - IG and Human Rights - Country and Region-Specific Issues	6	5	5	6	33	30	-	

Source: Authors' elaboration with data from IGF Secretariat (2022).

As seen on Table 3, when we consider only references to female or male selected sources and faculty, in the module related to "Critical Internet Resources," for every 6 references to male names there is only 1

reference to female names. In the modules with more gender parity, grouped in the "Internet access and Human Rights" area, the proportion is 11 female names for every 10 male names. Therefore, the area with more gender parity presents only a relative balance between male and female references. In fact, there are no areas where female names significantly outnumber male names, although the opposite is true for "Critical Internet Resources," "Introduction to IG," and "Cybersecurity Governance." In addition, technical modules, involving domain names and Internet protocols, as well as cybersecurity, had more recommendations on male names. On the other hand, female names appeared more on issues related to digital inclusion and human rights, including gender-related issues. At the same time that these results point to a large gender discrepancy in the teaching of IG, which helps us to understand the gender gap that we find in citations from the field, as observed in the annals of the Internet Governance Research Network in Brazil, they indicate the need of more comprehensive studies to understand the possible biases portrayed in the document, considering that women, non-binary people and other groups may not be featured because they are outside the DC-SIG circles portrayed. In any case, considering all literature discussed above, what this analysis on the IGF document demonstrates is a structural gender imbalance in IG and related areas, which indicates the urgent need for actions that reverse this reality.

## Conclusion

From the analysis of the annals of the Internet Governance Research Network with the BRI, we see that there is a predominance of male name citations in IG, a fact that has decreased over the years, but without an increase in the number of female citations at the same level, despite a huge number of women and authors with female names publishing articles in IG in Brazil. At the same time, by increasing the conscious engagement of authors with their bibliographies, there are reflections that, we hope, can translate into substantive changes in citation policies, as more authors are exposed to the BRI as an action research method. With this objective in mind, starting in 2022, we are suggesting in the template of the articles in the proceedings of the REDE conferences an optional paragraph containing the results of the BRI, which until then were only shared with the coordination of the conference via a form. Below we exemplify the model with the data from our own article, naming the section "citation diversity statement" as suggested by Zurn et al. (2020).

As gender diversity in academic production on IG expands, as seen at the beginning of this article, we show the persistent predominance of male name references in the spaces of formation of the field. Internet Governance Schools and IG disciplines are fundamental spaces for intervention to change the current gender gap in the field, and we hope that the results presented here will contribute to that direction.

Beyond IG syllabus and the ways of searching for references via algorithms that rank papers by number of citations, it is worth asking when we create our bibliographies: are we reproducing historical power hierarchies? At the same time, certain bibliographic norms such as the APA (*American Psychological Association*), that abbreviate the first name of authors, silently contribute to the erasure of gender and perceptions about gender in citations. At ABNT (Brazilian Association of Technical Standards), on the other hand, there is the option of keeping the first name. When reflecting on these established standards, an author interviewed in our study suggests that bibliographic norms contain other fields, such as race. We agree that it is indeed necessary to consider how such norms can become more intersectional.

Finally, future investigations of politics of citation in IG, focusing on qualitative analysis of authorship and the understanding of institutional authorship, which is quite salient in the field, can contribute to shed light on other dynamics of gender and other social markers in politics of citation.

## **Citation Diversity Statement**

Through this declaration, we join a collective effort to undo the structural epistemological erasure in academia against women, non-binary people, black people, people from the global South, and other social groups, whose voices are less heard due to bias in citations. We believe that transparency in relation to our bibliographies is essential to understand the present, and to change this structural condition in a joint and

consistent way. In this paper, citations are distributed as follows: female names (42; 61%), male names (4; 6%), female-male names (21; 30%), and institutional sources (2; 3%).

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# Annex I<sup>17</sup>

#### INDEX OF BIBLIOGRAPHIC REFERENCES

#### **FILLING FORM**

QA. Inform the gender identity of the author(s) of the article to which this filling ref	ers:
( ) Female (or co-authorship only between female authors)	
( ) Male (or co-authorship only between male authors)	
( ) Female and male [co-authorship between male author(s) and female author(s	;)]
( ) Others:	
QB. How many author(s) does the article to which this filling refers have?	
( )1	
( ) 2	
( ) 3	
( ) 4 or more	

- Q1. In total, how many items are there in the Bibliographic References section of your article? Please add up all existing bibliographic entries, including those with institutional authorship. Enter a numeric value.
- Q2. Of the total number of bibliographic entries for your article, how many have EXCLUSIVE male names? Please add up all bibliography items that contain only male names as authors or co-authors. Enter a numeric value and make sure it is a number equal to or less than that entered in Q1.
- Q3. Of the total number of bibliographic entries for your article, how many have EXCLUSIVE female names? Please add up all items in the bibliography that contain only female names as authors or co-authors. Enter a numeric value and make sure it is a number equal to or less than that entered in Q1.
- Q4. Of the total number of bibliographic entries for your article, how many are co-authored with male AND female names? These items, which indicate a partnership between male authors and female authors, must not have been considered in the answers to Q2 or Q3. Enter a numeric value and make sure it is a number equal to or less than that entered in Q1.
- Q5. How many of the bibliographic entries have institutional authorship? These items are common in citations of laws, government documents, organization reports, etc. Enter a numeric value and make sure it is a number equal to or less than that entered in Q1.
- Q6. Finally, what is the sum of the values reported in Q2 (male authors) + Q3 (female authors) + Q4 (co-authorship between male authors and female authors) + Q5 (institutional authorship)? This number must be EQUAL to the one entered in Q1. If it is different, please check and correct your answers. We appreciate the care and validation!
- Q7. After filling out the form, would you like to share some thoughts with us?
- Q8. Is there anything else you would like to share?

<sup>&</sup>lt;sup>17</sup> We used to use the term "sex" in QA, now replaced by "gender identity." We used to ask, "how many have exclusive men as authors?" in Q2 and "how many have exclusive women as authors?" Now men and women were replaced by "male names" and "female names," respectively.