

Online Support on YouTube Trends for Brazilian Congresswomen Facing Ethics Inquiry

Analysis by



- *The debate regarding the disciplinary proceedings initiated against six Brazilian congresswomen is predominantly polarised. On one side, messages of support prevail. The messages vary between content favourable to Congresswoman Sâmia Bomfim individually and to the group of referred legislators as a whole. On the other side, messages containing hate speech perpetuating stereotypes prevail, including questioning women's presence in politics, and attacking their cognitive abilities, appearance, and resilience to the process.*
- *Among the channels that posted videos related to the disciplinary proceedings, Bomfim's channel received the highest number of comments on the case. In channels categorised as 'Alternative Media', her confrontation with the Chamber of Deputies President, Congressman Arthur Lira (PL), also received a high number of responses.*
- *While over half of the analysed comments were classified as supportive of the congresswomen, less than a third were classified as opposing, with the latter primarily concentrated in channels aligned with far-right content.*
- *Within the opposing comments, many heavily rely on gender, race, and appearance stereotypes, highlighting a sexist and misogynistic tone towards the female legislators.*
- *Across all analysed channels in this report, researchers found toxic comments on YouTube. Highly toxic comments in the analysed sample were predominantly against the referred congresswomen.*

Between May 30 and July 7, 2023, at least 2,600 comments posted on YouTube videos are related to the [disciplinary proceedings](#) initiated on June 14 against the congresswomen Célia Xakriabá (PSOL-MG), Sâmia Bomfim (PSOL-SP), Talíria Petrone (PSOL-RJ), Erika Kokay (PT-DF), Fernanda Melchionna (PSOL-RS), and Juliana Cardoso (PT-SP) by the Ethics Committee of the Chamber of Deputies. The motivation behind these proceedings is a supposed breach of decorum by these six parliamentarians. Allegedly, they damaged the integrity of another group of legislators who voted in favour of bill PL 490/7, which aims to delimit indigenous lands, only giving natives the right to own lands they occupied before 5 October 1988 (in the Brazilian context, this bill is known as “Temporal Framework Bill”). During the discussion of this [highly controversial bill](#) in Congress on May 24, 2023, the six congresswomen referred to those voting in favour as “murderers”.

In this report, we identified a significantly polarised discussion on YouTube. Comments in favour of the deputies outnumbered those opposing them in regard to the proceedings, with an overall prevalence of mentions of Congresswoman Sâmia Bomfim (PSOL-SP). Regarding the relationship between the sentiment expressed in the comments, their toxicity, and the stance they convey, we observed that comments classified by the linguistic model as positive tend to support the parliamentarians and are less toxic than those classified as negative and against them. This analysis was performed by Democracy Reporting International and Programa de Diversidade e Inclusão da FGV Direito Rio (Diversity and Inclusion Program at FGV Direito Rio).

Methodology

This report analyses YouTube comments from videos related to the disciplinary proceedings against the six legislators, identifying what users discuss about these congresswomen, the sentiment associated with these comments, as well as their toxicity¹ and stance (opposing or supporting them). To achieve this, we conducted a survey and collected all potential videos and comments related to the episode. We considered videos posted between May 30 — 3 days before the processes were submitted to the Ethics Committee and 16 days before their actual initiation — and July 7 of this year.

To identify the videos, we used a linguistic rule² on YouTube guided by: (1) the name of the six congresswomen; (2) terms related to the episode; (3) the approval of

¹The Detoxify model is a text analysis tool developed by Unitary AI. Designed to detect toxic attributes in textual data, Detoxify is a highly accurate pre-trained model that assigns toxicity scores to different parts of the text. These scores range from 0 to 1, indicating the degree of toxicity for each analysed segment. Based on a wide range of data, Detoxify can distinguish between toxic and non-toxic content, assisting content moderators, platform administrators, and researchers in identifying and dealing with harmful or offensive comments, messages, and posts in online environments. Its source code is available in the Unitary AI GitHub repository (<https://github.com/unitaryai/detoxify>).

² A linguistic filtering rule is a set of criteria or parameters defined to select and filter specific types of data or content based on specific linguistic characteristics. For this report, we would like to thank the team from the School of Communication, Media, and Information at FGV for developing the set of keywords that guided the search for the videos.

the “Temporal Framework Bill”; (4) the lexicon of gender and race-based political violence³; and (5) the hashtag #ElasFicam (#TheyStay)⁴.

We began by performing a qualitative evaluation of 3,538 videos on YouTube. In this phase, we considered video titles or descriptions related to: i) the case (representation by the Ethics Committee); ii) the legislative process of bill 490/07 (voting and approval); and iii) comments made by the represented deputies regarding the same bill. That led to a sample of 103 videos.

From the sample of 103 videos, we filtered them according to the following additional criteria: i) mentions (whether explicit or implicit) to the congresswomen; ii) a minimum of 50 comments in total per channel. **This resulted in a final set of 29 videos from 10 different channels and a total of 2,262 comments related to the represented deputies to be analysed.**

For the quantitative analysis, we employed three primary models for interpreting the comments: (i) topic modelling, a model that allows us to calculate the probability of terms found in the comments being associated with broader topics; (ii) sentiment analysis, a natural language processing technique aimed at identifying emotional polarity in a text, categorising it as positive, negative, or neutral; and (iii) toxicity analysis, using a pre-trained model capable of detecting toxic attributes in textual data.

This report has three sections: (I) "Repercussions of the Episode", which addresses the types of content about the disciplinary proceedings against the deputies that circulated on YouTube, the characteristics of the channels that published them, and the impact of the debate; (II) "What is Said", which analyses the main topics conveyed on YouTube comments regarding the representation proceedings of the parliamentarians; and (III) "How the Deputies are Referenced", which explores the results obtained through the sentiment and toxicity analyses of the comments left on the videos, as well as the analysis conducted by the authors of the report to identify whether the comments were in favour of or against the deputies.

I. *Repercussions of the Episode*

To guide the analysis, we classified the selected YouTube channels into five categories. To do so, the researchers used [Nina Santos' methodology \(2020\)](#), as her categorisation allows us to understand the different communication language adopted by the mapped channels, and also to compare them and their publications, enabling a better understanding of their respective audiences and how they interact with the analysed episode. In this way, we were able to: i) identify the profiles of channels that posted videos related to the six deputies; ii) determine possible associations between these profiles and the comments left on these videos; and iii)

³ This lexicon was developed for the reports of this project, comprising a set of terms and expressions used to attack, offend, and discriminate against individuals based on their gender and race.

⁴ This hashtag (in Portuguese #ElasFicam) was used during the online debate in favour of the six congresswomen

determine to which types of channels the repercussions of the episode are most evidently related. The five categories are:


- **Traditional Media:** Channels of media outlets with significant reach in Brazil, directly linked to large communication companies. They are controlled by companies widely recognised by the public for being spread across major mass media outlets.
- **Alternative Media:** Channels whose main focus is engaging with their audience and strengthening popular participation — in this case, generating engagement. This can be seen as the main difference between alternative media and traditional media, particularly present in digital information platforms, as described by [Ana Cristina Suzina \(2019\)](#). These channels often employ strategies of both digital content creators and more traditional journalistic formats. Generally, they do not receive investment from mass media conglomerates and receive the majority of their financial support from their audience.
- **Content Creator:** Independent channels without direct affiliation with communication companies, whose primary goal is to interact with their online audience through close communication and the expression of their personal opinions.
- **Government:** Official channels of the Brazilian government's communication and transparency structure. The content generally covers events in which lawmakers participate, such as plenary sessions, bill votes, and press communications that take place within the Chamber of Deputies.
- **Parliamentarian:** Official channels of current political officeholders⁵.

Chart 1: Categorisation of YouTube channels that posted videos whose comments were selected for analysis.

Channel	Category	About	Videos posted	Average interactive rate ⁶

⁵ In these channels, there is a significant utilisation of video clips taken from the official government channels as well as from traditional media. In this regard, a substantial portion of the content on these channels consists of curated material by press offices and/or communication teams of the parliamentarians. In the case of the mentioned parliamentarians, they also function as content producers for their supporters on their channels. PSOL representatives Sâmia Bomfim, Talíria Petrone, Fernanda Melchionna, and PT representative Juliana Cardoso have dedicated playlists for communicating with internet users as a form of accountability and political marketing. For instance, materials are identified where they showcase their parliamentary activities and related topics, such as live streams, podcasts, and/or videos.

⁶ The average engagement was calculated by summing the number of comments, likes, and views of the channel's videos and then dividing it by the number of videos posted by the same channel

Jovem Pan News ⁷	Traditional Media	"You can agree or disagree. For Jovem Pan, the most important thing is the freedom to express opinions, the freedom to discuss facts, it's independent journalism."	"Marco Temporal" Bill (or Time Limit Trick proposal) to be Voted on by the Chamber of Deputies Learn How Indigenous Protested Against Temporal Lands Bill on São Paulo Highway Alexandre Borges Analyzes Approval of Indigenous Temporal Lands Bill PSOL and PT Congresswomen to be Held Accountable for Lack of Decorum Ethics Committee Initiates Proceedings Against Six Congresswomen	8.071
UOL	Traditional Media	"UOL features daily live hours with programming that informs, entertains, and analyses."	"Marco Temporal" Bill (or Time Limit Trick proposal): "We are fighting to exist." says indigenous leader about protests against Bill  "Marco Temporal" Bill (or Time Limit Trick proposal): "Sonia Guadalajara speaks live at the CCJ about indigenous land demarcation" "Sâmia criticizes Lira and labels process against female deputies as 'gender-based political violence'"	19.594
Brasil de Fato	Alternative Media	"A popular view of Brazil and the world."	"You don't have indigenous blood in your veins. you have indigenous blood on your hands." - Célia Xakriabá Célia Xakriabá e Sonia Guadalajara speak against Marco Temporal Bill: "'Legislated	16.719

⁷ In terms of content production, it is noticeable that the channel bears more resemblance to independent creators or right-wing alternative media. However, despite the pronounced partisan bias, the channel receives funding from major media groups with a strong presence in television, newspapers, magazines, and radio. Due to this fact, even with a clearly identified partisan alignment profile as found in other reports of the Media and Democracy project, we classify Jovem Pan as "Traditional Media."

			genocide" "What they are trying to do to us is similar to a witch hunt." - Fernanda Melchionna National Congress or Colonial Congress? Sâmia Bomfim counters right wing extremist deputy: "Won't intimidate us"	
MyNews	Alternative Media	"MyNews is an innovative and independent journalism channel on YouTube."	What "Maduro" Means in Brazil CPIs and Ministries Marco Temporal Bill Vote "Why Does the President of the Chamber Hate You So Much?" Mara Asks Sâmia Bomfim; See the Response	100.933
TV Fórum	Alternative Media	"The Fórum Magazine is an online publication with a different worldview from that found in mainstream media..."	"Sâmia: 'Lira says in the corridors that we will be punished; he's not even part of the Ethics Committee!'" Has violence against women parliamentarians increased during the Bolsonaro government?	49.310
Meteoro Brasil	Alternative Media	"Meteoro is a channel about pop culture, science, and philosophy..."	CPI DOES NOT LET DEPUTY SPEAK, with Sâmia Bomfim ALL INDIGENOUS PEOPLE ARE THREATENED, Célia Xakriabá DEPUTY SPEAKS ON PERSECUTION ON DEPUTY CHAMBERS, with Fernanda Melchionna	19.935
ANTÔNIO LOPES DA SILVA	Content Creator	"Welcome to my channel! Here I post videos daily. Videos about politics, interviews, and other	LEFTISTS ARE REPRESENTED ON THE ETHICAL COUNCIL AND GET DESPAIRED	24.195

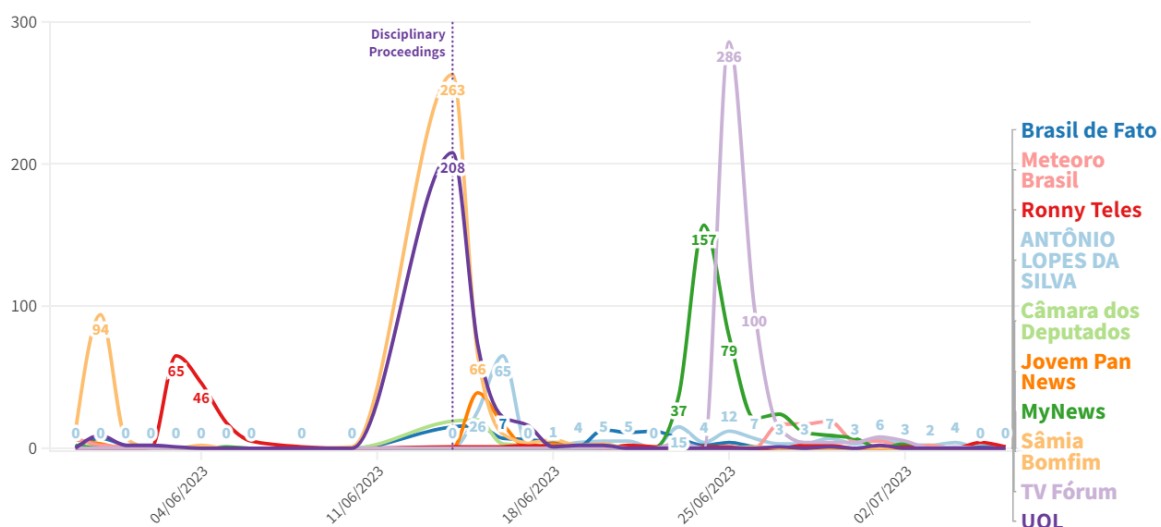
		topics. (...) I am conservative, evangelical, and this channel is my main professional activity. MAY THE LORD BLESS US AND MAKE US BETTER EACH DAY!"		
Ronny Teles	Content Creator	"Channel dedicated to combating political misinformation, scientific denial, irrationality, and conspiracy theories that have taken over the country in recent years... "	Desperate Bolsonaroists seek to revoke the mandate of Deputy Sâmia Bomfim.	35.452
Câmara dos Deputados	Government	"On the YouTube channel of the Chamber of Deputies, you can watch live, uncut, and unedited public hearings in committees and votes in the Chamber of the House... "	Indigenous leaders call for the rejection of the Marco Temporal Bill – May 30, 2023 Ethics Committee initiates proceedings and draws a shortlist for the selection of rapporteurs – June 14, 2023 Press conference on the initiation of proceedings against female deputies at the Ethics Committee – June 14, 2023 Proceedings against PT and PSOL female deputies are initiated – June 14, 2023	5.118
Sâmia Bomfim	Parliamentarian	"Mother of Hugo Feminista, Reelected federal deputy from São Paulo, Leader of the PSOL in the National Congress. Visit samiabomfim.com.br ."	The approval of the Temporal Framework will shame Brazil in front of the world. The PSOL's vote is NO! The Bolsonaroists have taken us to the ethics committee, but they do not scare or intimidate us. LIVE: Press conference about the ethics committee process against Sâmia and 5 female deputies.	29.139

- content shared by the channel "Jovem Pan" was more favourable to conservative ideas, indicating a political alignment with figures of the far-right.
- Among the channels classified as "Content Creators," political alignment and positioning are diverse. The channel "Antônio Lopes da Silva" is an example of a profile that identifies as conservative and Christian, with right-leaning positions. On the other hand, "Rony Teles" takes a stance against political misinformation and scientific denialism, being critical of political figures and parliamentarians from the Liberal Party (PL) aligned with former President Jair Bolsonaro, and operating under a clearly defined left-leaning position.
- Regarding "Alternative Media," it's important to note that channels like "Brasil de Fato," "My News," "TV Fórum," and "Meteoro Brasil" tend to base their content on a well-established left-leaning political tradition. However, their productions are not necessarily aligned with a specific political party.
- Sâmia Bomfim's channel, the only parliamentarian whose YouTube videos were included in the final analysis, has nearly 50,000 subscribers and stands out by having garnered over 400 comments related to her and/or other women parliamentarians.

Temporal Evolution of Comments Associated with Analysed Videos

The graph below presents the evolution of the number of comments received per channel during the analysis period. To create it, we mapped the distribution of comments per day for each channel. Additionally, we added an indicative line for June 14, 2023, as it corresponds to the date when the disciplinary proceedings were initiated by the Ethics Committee.

Graph 1: Temporal Evolution of Comments Related to the Deputies Between May 30 and July 7



The chart shows the distribution of comments related to female deputies between May 30th and July 7th, 2023. Note the highlight on June 14th, 2023, which is the date when the proceedings were initiated.

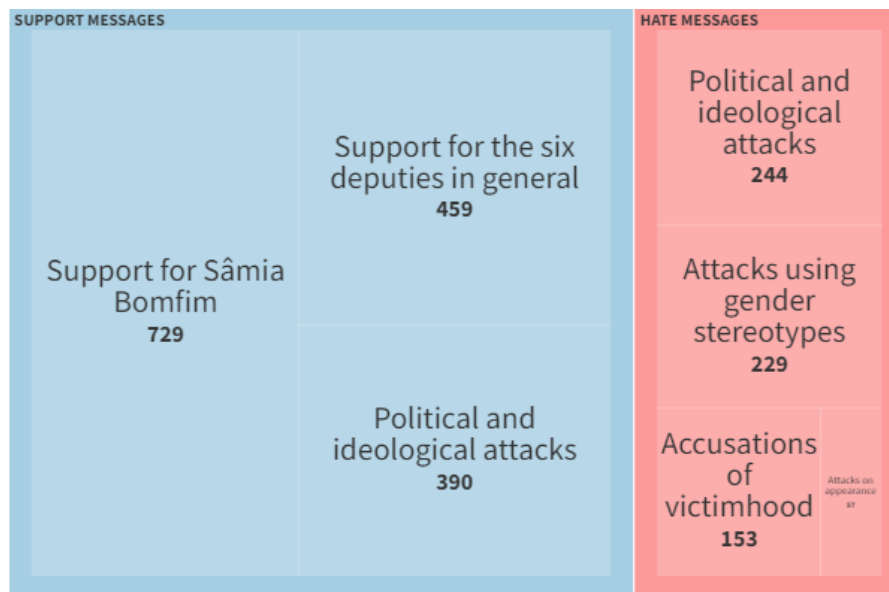
Source: YouTube | Elaboration: Democracy Reporting International (DRI)

- The peak in comments observed on the channel of parliamentarian Sâmia Bomfim (PSOL-SP) on May 30 records users' reactions to the final vote on the "Temporal Framework Bill". The related video features highlights of the PSOL representative's opposition to the delimiting of indigenous lands.
- The second peak representing the increase in comments between June 3, 4, and 5, is correlated to content creator "Ronny Teles"'s channel reposting a video from Sâmia Bomfim's social media accounts. In the video, the deputy informs her support base for the first time about the processes filed against her and other left-wing deputies. She asks her supporters to participate in a petition against the proceedings, which had not yet been properly initiated.
- On June 14, the day when the proceedings against the 6 deputies from the PT and PSOL began, there was a peak in the number of comments on the channels of parliamentarian Sâmia Bomfim and the UOL channel. The highest numbers of comments come from two different videos in which Sâmia questions the legitimacy of the proceedings and accuses the representatives of attempted intimidation.
- Throughout the proceedings against the deputies, Bomfim was invited by alternative media channels to comment on her clash with the current President of the Chamber of Deputies, Arthur Lira (PP). [*"Why does the President of the Chamber of Deputies hate you so much?"*](#) is the title of the video with the most comments on the "My News" channel regarding the peak on June 23. Another peak was on June 25, with the video on "TV Fórum" channel titled [*"Sâmia: Lira says that we will be punished: he's not even from the Ethics Committee!"*](#). This video generated the highest number of comments observed on the case.

II. **What is said: Common Topics in the Comments Left on YouTube Videos about the Representations of the Deputies**

The graph below presents the main topics found in the analysed comments. The [topic modelling](#) used in this section is a technique that allows for the identification and extraction of significant topics from a large set of unstructured data, such as social media posts.

Graph 2: Main topics found among the comments related to the congresswomen



The tree map displays the main topics and subtopics found in the comments related to the female deputies. The proportion shown refers to the number of comments per topic.

Source: YouTube | Elaboration: Democracy Reporting International

- Among the analysed comments, two major topics were identified: messages of support and messages of hate towards the parliamentarians. These two major topics outline the polarisation of the debate surrounding the disciplinary proceedings initiated against the deputies.
- Out of the 2,262 comments analysed, nearly 70% (1,578) are messages of support for the deputies. Within this set, three main subtopics were identified: direct support for Federal Deputy Sâmia Bomfim (729; 46%); support for the six deputies in general (459; 29%); and political and ideological attacks (390; 24%).
- The high number of messages supporting Congresswoman Sâmia reflects the prominence of her YouTube channel, mentioned earlier. Additionally, her participation in a video on the Meteoro Brasil channel generated high engagement and contributed to her visibility. The videos featuring the parliamentarian generated a high number of comments directly mentioning and supporting her.
- Regarding messages with attacks of a political and ideological nature, around 30% mention the President of the Chamber of Deputies, Federal Deputy Arthur Lira (PP-AL). These messages contained criticisms of Lira, often referring to the allegations of sexual violence made against him by his ex-wife. The rest of the comments target opposition parties, with a narrative that the process is driven by sexism and misogyny.

- As for the messages with hate speech (683), these were divided into four subtopics: i) attacks on the appearance of the deputies (totalling 57 and representing 8.3% of the total); ii) attacks using gender stereotypes (229; 33.5%); iii) attacks with political and ideological undertones (244; 35.7%); and iv) accusations of victimhood (153; 22.4%). Despite this classification, many comments could fit into more than one topic. For example, there were comments with degrading adjectives about appearance alongside attacks on the parliamentarians' political and party affiliation.
- Comments using gender stereotypes are the most frequent in the analysed set. These refer to the outdated notion that women shouldn't participate in political life and that women who assert themselves are "troublemakers" and "rude." There were also comments associating the parliamentarians with madness and hysteria, views also derived from socio-historical stereotypes about how women are supposed to behave in social interactions. Other comments suggest that the deputies should be at home taking care of their husbands or doing the dishes.
- Attacks of political and ideological nature in this group of comments include messages that deprecate the more left-leaning profiles of the six deputies. These comments associate attributes of "incompetence" and "mediocrity" to left-wing female parliamentarians and express that they therefore deserve the initiated process. There were also comments that disparaged the congresswomen by accusing them of drug use, calling them "stoners" and "drunks." Such stereotypes have historically⁸ been wielded by conservatives to criticise the left. The attacks take on a tone of misogyny by discrediting these female parliamentarians and reinforcing conservative gender roles.
- The subtopic "accusations of victimhood" serves to classify comments that questioned the deputies' resistance to the initiated process. Many of these comments asserted that "if the parliamentarians were truly feminists, they wouldn't have a problem being judged" and that "they are playing the victim card, but if they were men, this wouldn't happen." These perceptions reflect a fundamental misunderstanding of the nature of feminism, which seeks equality of rights and justice, not favouritism. The argument that the same situation wouldn't be criticised if it involved men ignores the historical and social context of gender inequality in politics and society as a whole.
- Finally, although in smaller quantities, there are several messages that solely discuss the appearance of these parliamentarians. Numerous comments use degrading adjectives about the body and face of the deputies as an attempt to delegitimise their political positions. These comments seek to question their

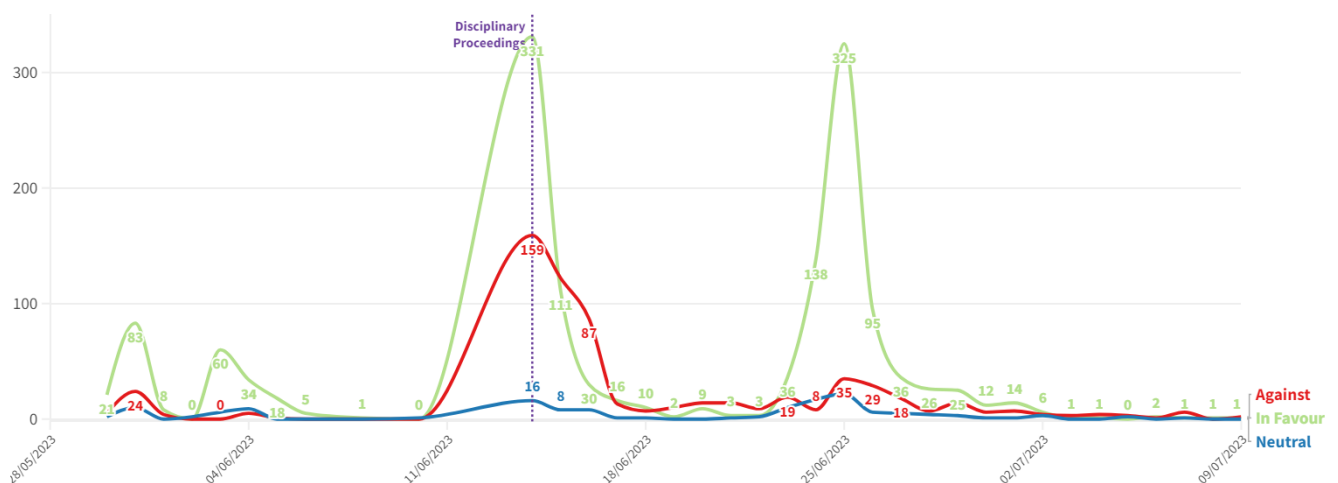
⁸ As authors of this report chose not to reproduce the entire content of certain comments that use critical and/or highly discriminatory words, particularly messages involving physical violence and sexual content. Whenever possible, specific examples were used to provide context for the analysis.

presence in those spaces based on physical aspects, reinforcing the objectification of women parliamentarians.

III. How the Deputies are Referenced: Sentiment and Toxicity Analysis of YouTube Video Comments

The graph below presents the distribution of comments against, in favour of, or neutral towards the referred congresswomen over the analysed period. The classification was carried out by the authors of this report, considering the stance expressed by users on YouTube through messages of support or criticism. Out of the 2,262 comments, 1,467 (63.8%) were classified as in favour of the deputies, 653 (29.7%) against, and 142 (6.5%) as neutral. This initial classification refers only to the stance regarding the analysed case and not to the level of toxicity and sentiment found in the comments.

Graph 3: Evolution of comments classified as neutral, against or in favour of the referred congresswomen

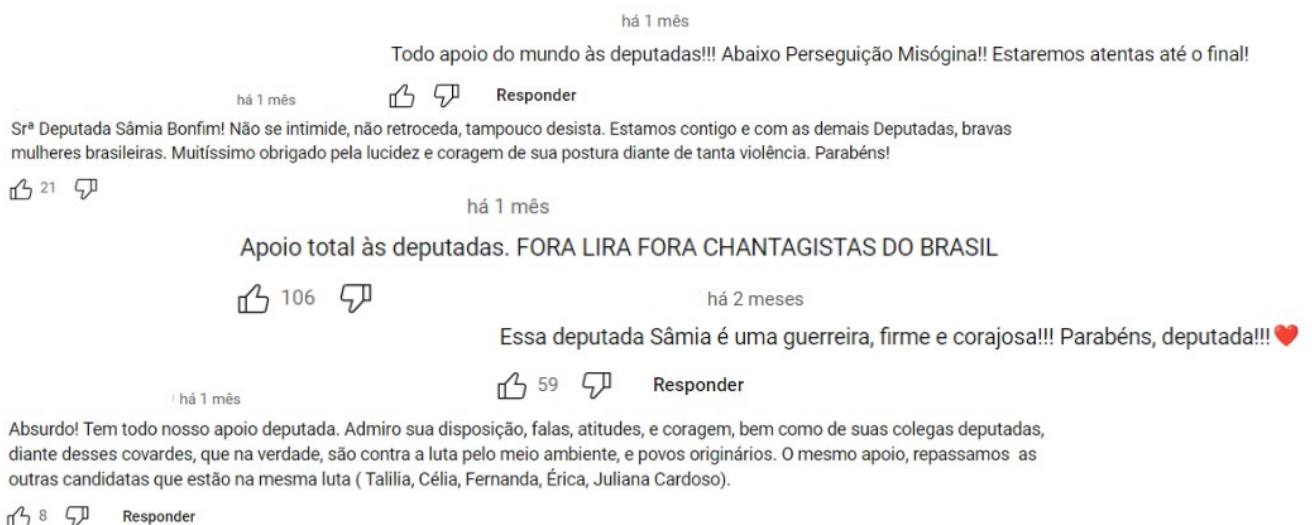


The chart shows the distribution of comments classified as against or in favour of the referred congresswomen between May 30th and July 7th, 2023. Note the highlight on June 14th, 2023, which is the date when the proceedings were initiated.

Source: YouTube | Elaboration: Democracy Reporting International

- Proportionally, the comments are mostly distributed between those classified as in favour of the deputies (totaling 1,467 and representing 63.8% of the total) or against (amounting to only 653, i.e., 29.7%). The concentration in these two extremes and the low number of neutral comments, which do not reflect defence or attack of the deputies, confirm the polarisation of the debate.
- The two peaks identified in the graph above coincide with those in Graph 1. In this case, one can observe when the disciplinary proceedings were most discussed on YouTube. On both dates (June 14th and 25th), the majority of comments express support for the deputies, congratulating them for their stance against “intimidation” (referring to the processes).

- On June 14th – the date with the highest number of mentions – the concentration of supportive comments appeared on Sâmia Bomfim's channel (accounting for 73% of the total). On June 25th, however, when the videos were more specifically related to Arthur Lira's actions regarding the case, Alternative Media channels garnered more comments (mostly showing support for Bomfim and criticising Lira)
- The comments in favour of the deputies have a similar tone, stating that they should have "strength," that they are "warriors," and that they can't give up the fight. They also emphasise the importance of their participation in the Chamber of Deputies and that they won't be silenced. While many of the posts refer to the deputies collectively, there is a notable predominance of those specifically directed at Bomfim, named at least 670 times in this set of comments. Beyond Bomfim, only the names of Fernanda Melchionna, Célia Xakriabá, and Érika Kokay are individually mentioned in supportive comments.
- In addition to expressing their support, users also positioned themselves against what they identify as sexism and misogyny, often associated broadly with Bolsonarism and more specifically with the President of the Chamber of Deputies, Arthur Lira. In these cases, the rivalry between Sâmia and Lira arose frequently, alongside mentions of "corrupt Bolsonarists" and a "sexist Congress."



Comment 1: "Full support to the congresswomen!!! Stop Misogynistic Persecution!! We will be vigilant until the end!"

Comment 2: "Deputy Sâmia Bomfim! Don't be intimidated, don't step back, and don't give up. We stand with you and the other strong Brazilian congresswomen. Thank you very much for the clarity and courage of your stance in the face of so much violence! Congratulations"

Comment 3: "Total support for the deputies; Out with Lira, out with the blackmailers of Brazil"

Comment 4: "This Deputy Sâmia is a warrior, strong and courageous! Congratulations!"

Comment 5: "Absurd! You have our full support, congresswoman. I admire your determination, words, actions, and courage, as well as that of your fellow deputies in the face of these cowards, who are

actually against the fight for the environment and indigenous peoples. The same support, we extend to the other deputies who are in the same struggle (Talíria, Célia, Fernanda, Érica, and Juliana)."

Source: YouTube | Elaboration: Programa de Diversidade e Inclusão (FGV Direito Rio)

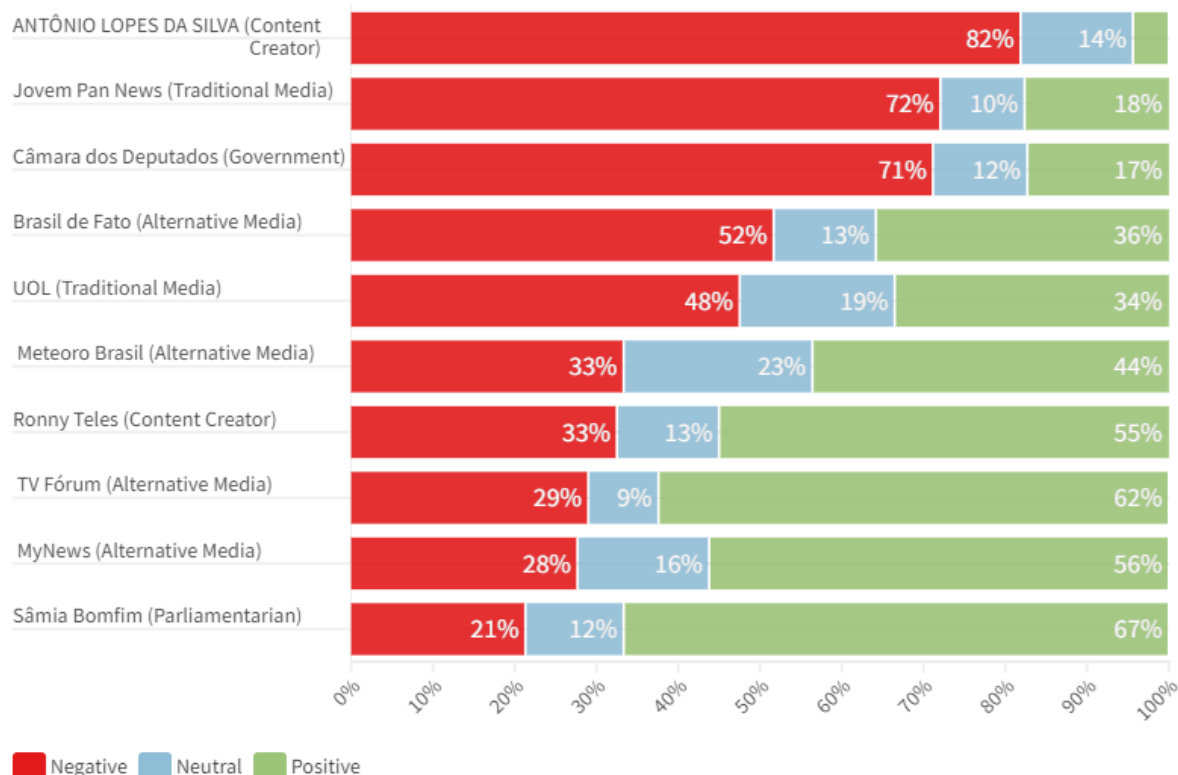
- The comments classified as "against" the deputies adopted a more offensive tone and were used to personally attack them. General terms disparaging the left were identified (e.g. "leftists fanatics," and "communists"), as well as more aggressive accusations against the congresswomen – such as "filthy," "useless," and "whores."
- When mentioning the deputies individually, the posts were more centred on their (supposed) personal traits and on asserting that they would not be fit for their public positions: *"Sâmia, you look like an ingrown hair"; "Give a hamburger 🍔 to this girl. Give some cachaça to another PSOL leftist. Congratulations to Lula's thief ladies 😂😂😂"; "Faliria, Melquiona, Sâmia should be somewhere else, not in Congress. None of them have any class."*
- By invoking gender stereotypes (and also race and class stereotypes) that women should "have class," "calm down," and that they are incompatible with the political environment, the comments reinforce the idea that the deputies should be impeached and that they are only victimising themselves by protesting against the disciplinary proceedings. Thus, their statements are perceived as "drama," and the episode is used to question their own parliamentary activities, as explored in more detail in the next section.

Sentiment Analysis of Comments Referring to the Deputies

Sentiment analysis is a natural language processing technique aimed at identifying the emotional polarity in a text, classifying it as positive, negative, or neutral. Using a pre-trained sentiment analysis model, we analysed the posts that comprise our corpus to understand the sentiment associated with them. As the goal is to identify emotional polarity, sentiment analysis alone does not indicate whether the messages are opposed or favourable, but rather the sentiment associated with them. A supportive message may convey negative sentiments (e.g., invoking suffered violence), and a disapproving message may contain positive sentiments (e.g., conveying hope for a better future). The graph below presents the percentage of comments classified as negative, positive, or neutral from the 10 channels whose videos were included in our sample.

When we cross-referenced the sentiment analysis with that performed by the authors of this report to identify whether the comments were against or in favour of the deputies, we observed the following pattern: of the total comments classified as positive, 90.9% are in favour of the deputies, whereas in the case of negative comments, 57.03% are against them. Thus, on one hand, there is a significant correspondence between positive sentiment and support for the parliamentarians, and on the other hand, negative sentiment in the comments and opposition to them.

Graph 4: Sentiment analysis of comments in reference to the six congresswomen



The graph shows the percentage of comments considered negative, positive or neutral for the 10 YouTube channels with the highest number of comments in our analysis sample.

Source: YouTube | Elaboration: Democracy Reporting International (DRI)

- Proportionally, the number of comments classified as positive is the highest in the sample (representing 48.3% of the total), followed by negative comments (38.1%), and finally, neutral comments (13.6%). Similar to the case of those in favour of the deputies, approximately one-third of the positive comments are concentrated in the videos of Sâmia Bomfim's channel, with the rest distributed mainly among Alternative Media channels.
- The content of comments classified as positive does not substantially differ from those in favour of the parliamentarians, presented in the previous section, with the majority expressing support for them, praising their stance, and emphasising the importance of their presence in Congress. There are also those indicating a willingness to mobilise beyond the virtual environment: *"let's organise a nationwide protest in support of the congresswomen, this cannot go unnoticed by our eyes, let's unite and take to the streets with signs in their support, especially women, who they represent so well!!!"*
- The same spirited tone is identified in comments from people who indicate they are on the side of the deputies: *"Let's go, warrior women, we are together"; "Proud of all of you! We are with you, women!"; "WE ARE*

TOGETHER, DEPUTIES, LET'S GO AGAINST THESE FASCISTS"; "Dear Sâmia, don't give up, we are together against this scum."

- Comments in favour but classified as negative indicate the use of words perceived by the model as negative, even though they may not necessarily be related to criticisms of the deputies. This is the case with the comments mentioned earlier, which, while defending the congresswomen, also attack the group they identify as opposition: *"Deputy Sâmia, don't be intimidated by the fascists. Go ahead"; "They are so stupid with women that I can't even watch the proceedings."*
- The name of Lira is mentioned at least 90 times (out of 320 comments classified as negative and in favor of the deputies), with the Chamber of Deputies' president being called "sexist," "corrupt," "Bolsonarist," and "women abuser," the latter in reference to the allegations by his ex-wife of sexual violence. In this sense, there is an association between the violence he is accused of and his "hatred" towards the deputies.
- On the other hand, the channels leading in terms of comments classified as negative are those of Antônio Lopes da Silva, Jovem Pan News, and Chamber of Deputies. The first two have a partisan bias aligned with the far-right, while the latter serves as a media for the government.
- In general, comments made on videos from these three channels accuse the female deputies of playing as victims and insinuate that they are not handling the punishment required by the bill in a professional manner. They claim that the deputies lack the competence to hold their positions and express support for their impeachment. The parliamentarians' claim that the referral occurred because they are women is portrayed by such comments as if they are unable to deal with the "consequences" of their actions.

Vc foi denunciada no conselho de ética não e pq vc e mulher, deputada Sâmia!!!

há 1 mês

Responder

há 1 mês

Elas atacam e depois vem com vitimismo do "machismo" .

há 1 mês

Responder

RIDÍCULO ESSAS MULHERES SE VITIMIZAR AFFFF O TEMPO ELAS SE VITIMIZAM .

há 1 mês

Responder

há 1 mês

Eu não sabia, que ser mulher dá direito a ser hipócritas!

há 1 mês

Responder

há 1 mês

1 resposta

há 1 mês

Não é por serem mulheres, mais sim por serem hipócritas nas atitudes tomadas por elas. Agora se fazem de vítimas.

há 1 mês

Responder

Comment 1: "You were reported to the ethics committee not because you are a woman, Deputy Sâmia."

Comment 2: "They attack and then come with victimization, claiming sexism"

Comment 3: "It's ridiculous how these women play the victim, ugh."

Comment 4: "I didn't know that being a woman gives you the right to be hypocrites!"

Comment 5: "It's not because they are women, but because they are hypocritical in their actions. Now they act like victims."

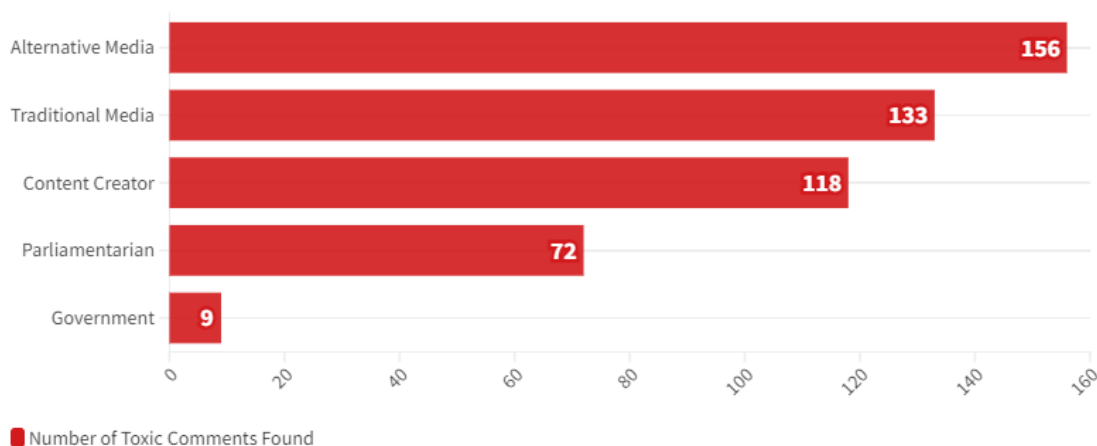
Source: YouTube | Elaboration: Programa de Diversidade e Inclusão (FGV Direito Rio)

- We identified yet another common type of attack directed at women who hold positions of power in the political field: repeated derogatory comments about their appearances and their bodies. Additionally, we observed the dissemination of negative stereotypes related to how they allegedly carry out their activities.
- In the analysed sample, offensive comments related to appearance were directed both at the deputies as a whole, referring to them as "ugly women," "ogres," and "fugly," as well as at specific deputies such as Sâmia Bomfim, Fernanda Melchionna, and Talíria Petrone. Bomfim was primarily attacked with comments related to her body and alleged eating habits, being derogatorily nicknamed in reference to these aspects in some of the posts.
- Some of the adjectives based on stereotypes used to discredit the deputies included: "troublemakers", "crazy", "hysterical", "rude", "insane", "disturbed", and "mad". Most of these terms imply that the deputies lack "emotional control" to participate in debates in the Congress (implicitly comparing them to their male counterparts).
- Similarly, they were also associated with drug use—specifically, marijuana—to question their cognitive ability and demonised in comments that propagate religious racism (e.g. *"These deputies here are rude, hysterical, shout, rave, it seems like they are embodying the spirit of the 'pomba gira' all for their boss, the devil president"* and *"these demonised leftists have to get out of there and go live in North Korea. Far away from here. Leave, Satan"*).
- Additionally, it is noteworthy that Congresswoman Célia Xakriabá, an indigenous woman, was individually attacked with racist comments that questioned her ethnic-racial identity—stating, for example, that she is a "fake indigenous woman" or that she is "dressed up as an indigenous". Additionally, in one of the comments referring to all the represented deputies as "trash," Xakriabá is identified as a "trans indigenous," with the user claiming to be "more Indigenous than her" (suggesting supposed inauthenticity with a potentially transphobic connotation).
- In these cases, it is evident that the intersection of gender and race-based violence is primarily used to imply that the deputy does not meet the expectations of the stereotype of an indigenous woman.

Toxicity analysis of comments that reference the women deputy

The graph below illustrates the total number of comments with toxic content, categorised by channel type. For this analysis, the Detoxify⁹ model was employed. This pre-trained model is specifically designed to detect toxic attributes within text data. Toxicity levels range from 0 to 1, with 0 indicating non-toxic comments and 1 indicating highly toxic comments. For the purpose of this report, we define ‘toxic’ as comments with a toxicity rating above 0.6.

Graph 5: Number of toxic comments by group of channels analysed



The graph shows the total sum of comments considered toxic in our analysis sample by YouTube channel category.

Source: YouTube | Elaboration: Democracy Reporting International (DRI)

- Out of the five groups of analysed channels, three account for the majority of messages considered toxic (407 out of 488), namely: Alternative Media with 156 messages; Traditional Media with 133; and Content Creator with 118. Though in smaller numbers, toxic comments were also found in the categories of Parliamentarian (72) and Government (9).
- When observing the distribution of comments by toxicity level, 210 comments were classified with a value equal to or greater than 0.9, 135 comments between 0.8 and 0.89, 68 comments between 0.7 and 0.79, and 75 comments between 0.6 and 0.69. Thus, there is a significant prevalence of highly toxic messages in the sample (345 comments with a value equal to or above 0.8), which contain explicitly violent content, especially directed towards the represented deputies, as explained above.
- Consistent with what was indicated earlier, the content of the comments involves insults, accusations of victimisation, criticism of the parliamentary role,

⁹ The Detoxify model is a text analysis tool developed by Unitary AI. Designed to detect toxic attributes in textual data, Detoxify is a highly accurate pre-trained model that assigns toxicity scores to different parts of the text. These scores range from 0 to 1, indicating the degree of toxicity for each analyzed segment. Based on a large dataset, Detoxify can distinguish between toxic and non-toxic content, assisting content moderators, platform administrators, and researchers in identifying and addressing harmful or offensive comments, messages, and posts in online environments. Its source code is available on the Unitary AI GitHub repository (<https://github.com/unitaryai/detoxify>).

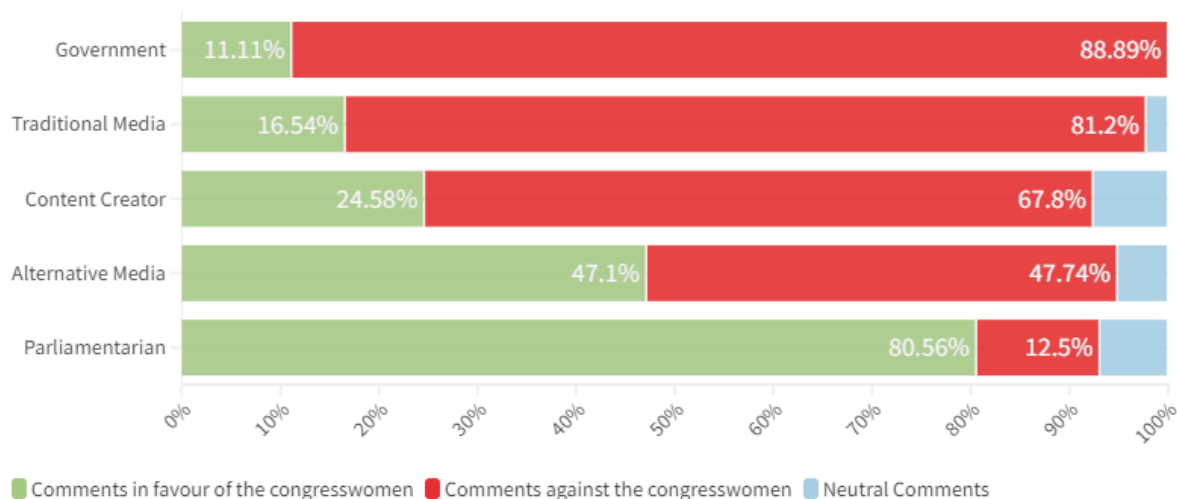
and offensive comments about the image and honour of the deputies. Due to the sensitivity and violence of certain words used in the comments, the authors of this report chose not to reproduce the explicit content.

- The toxic language used in the comments, as identified by the model, is primarily characterised by the use of negative adjectives regarding the political-ideological spectrum, the ability of the parliamentarians to carry out their activities, offensive language, and direct attacks on their physical characteristics and their manner of expression during parliamentary sessions.

Relation between toxicity and expressed stance in the comments.

The graph below presents the percentage of comments classified as against, in favour, or neutral regarding the represented deputies in the process within the set of toxic comments (488) per channel category.

Graph 6: Percentage (%) of comments against, in favour and neutral in the sample of toxic comments



The graph shows in percentages the distribution of comments against, in favour of and neutral within the sample of toxic comments about the six congresswomen

Source YouTube | Elaboration: Democracy Reporting International (DRI)

- In channels associated with the Government (88.89%), Traditional Media (81.2%), and Content Creator (67.8%) categories, the majority of toxic comments are aligned with a stance against the congresswomen.
- When observing the opposing, favourable, or neutral positions conveyed in the comments considered toxic, we identify that toxic language is predominantly associated with messages against the female parliamentarians in four out of the five analysed channel groups. This reinforces the correspondence previously found in this report between positive sentiment and support for the

parliamentarians on one hand, and negative sentiment and opposition to them on the other.

- In the following channels: the Government, Content Creator, and Traditional Media groups, the toxicity identified in the analysed comments is explicitly directed towards the six congresswomen. For example, out of the set of 345 highly toxic messages (equal to or greater than 0.8), 211 directly encourage some form of violence against them.

About the **Media and Democracy Project**

The School of Communication, Media, and Information of the Getúlio Vargas Foundation (FGV ECMI) and the European Union (EU) have established a partnership to collaborate on strengthening Brazilian democracy and the integrity of digital spaces. The initiative, known as the Media and Democracy Project, will be conducted in collaboration with the fact-checking platform Lupa, the German center for public debate analysis Democracy Reporting International (DRI), the Diversity and Inclusion Program, and the Center for Technology and Society, both from FGV Law Rio. The project focuses on debates concerning gender issues, racial inequality, minority rights, hate speech, and other important agendas in Brazilian politics. The project encompasses monitoring and analysis of digital media, fact-checking, and the establishment of a Council as a public space for promoting positive dialogue, involving researchers, civil society, representatives from the government, and platform stakeholders.

Authorship:

This report was written by the Diversity and Inclusion Program and the Center for Technology and Society at FGV Law Rio, in collaboration with Democracy Reporting International (DRI). Data analysis was conducted by both institutions, while data collection and visualization were developed by Democracy Reporting International (DRI).

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Founded in 1944, the Getúlio Vargas Foundation (Fundação Getúlio Vargas, FGV) was established with the goal of promoting Brazil's socioeconomic development through the education of qualified administrators in both the public and private sectors. Over time, FGV expanded its scope to encompass other fields of knowledge such as Social Sciences, Law, Economics, History, Applied Mathematics, International Relations, and Communication, becoming a benchmark for quality and excellence with its ten schools.

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Established in 2022, the School of Communication, Media, and Information (FGV ECMI) is a pioneer in educating the new profile of professionals who will work in strategic sectors of Communication, Media, and Information within public institutions, private companies, and Third Sector organizations. The School combines FGV's tradition and FGV DAPP's extensive experience in applying Technology and Data Science to innovate and propose solutions in the field of Communication. FGV ECMI brings together highly qualified professors from Brazil and abroad, an internationally recognized teaching methodology, an innovative curriculum, state-of-the-art laboratories, and networking and professional placement experiences for students.

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