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“Meta Platforms, AI, and Democracy: A Case Study of the Influence of Large Language Models on Misinformation in São Paulo's 2024 Elections”

Abstract

In the past three years, Brazil has entered a new chapter in its political landscape. The rise of artificial intelligence, a formidable source of insights, prompts, and solutions, has taken the country by storm. This has not only engaged the civil populace seeking fresh answers to everyday challenges but has also influenced the dynamic and tumultuous realm of politics. This study investigates how AI and Large Language Models influenced political propaganda and misinformation during São Paulo's 2024 mayoral election and the impact of this tool on voter behavior and electoral results. Using political specialists' interviews and social media analysis, it examines content spread via Meta platforms over Facebook, Instagram, and WhatsApp databases, comparing AI outputs and the influence on voter behavior. This analysis includes content classification, frequency mapping, and evaluation of content types associated with politically sensitive terms that influenced voter pools and hate speech. To contextualize findings, the study integrates electoral performance data and voter behavior trends from the Harvard DRCLAS and major Brazilian news sources.

Results Summary:

This study demonstrates the influence of Meta platforms, such as Facebook, Instagram, and WhatsApp, on shifting voter behavior, serving as a key factor in determining the outcome of the municipal elections in São Paulo. Over the six-month electoral period, candidates were consistently targeted by manipulated images, deepfakes, and fake posts. These attacks were facilitated by access to various content creation and dissemination tools powered by large language models (LLMs) and artificial intelligence platforms such as Sora, DeepSeek, and ChatGPT. Candidates who invested more heavily in digital outreach, such as Guilherme Boulos, achieved higher success rates and advanced to the runoff election. The highest concentration of voter support aligned with candidates who had stronger digital visibility. Pablo Marçal, for instance, despite lacking a formal political background, emerged as the third most-voted candidate in the São Paulo mayoral race, underscoring the power of digital platforms in shaping electoral outcomes and the capability of politicians on digital platforms.

Introduction

During the 2024 mayoral election in São Paulo, Brazil's largest metropolis, misinformation proliferated extensively via Meta platforms, notably affecting electoral

perceptions and voter behavior, while the use of AI and LLMs on Meta platforms such as Facebook, Instagram, and WhatsApp seemed to not have significant engagement on the spread of political propaganda and fake news during the Sao Paulo City election in 2024, during the elections, 6 journalistic agencies received more than 2,360 solicitations [1] from the public to verify potential misinformation related to candidates. However, the bitter side of the LLMs in the Global South looks more real than ever. Even with new regulations prohibiting deepfakes related to candidates and politicians, an uncountable number of deepfakes, sexual images made by AI, and hand-edited posts were made to affect and influence voting behavior and the political sides of the elections[2]. In this context, the use of AI poses risks not only to the candidate as a civic individual but also to a broader network of connections that includes family members, the legacy of political parties, and the societal impact of policy implementation on Congress and legislative processes. For the first time in a background highlighted by technological attacks and overuse of LLMs' resources by politicians, Brazil's Superior Electoral Court (TSE) implemented specific regulations addressing the use of AI in elections. These rules banned the spread of deepfakes and required clear labeling of AI-generated content used in political campaigns. This proactive approach by the TSE emphasizes the need for legal frameworks to evolve alongside technological advancements in the electoral field. At least, it was what we thought[3]. Over 2024 and the flow of the mayoral election, Guilherme Boulos (Socialism and Liberty Party), Tabara Amaral (Brazilian Socialist Party), Ricardo Nunes (Brazilian Democratic Movement), Pablo Marçal (Brazilian Labour Renewal Party), and Datena (Brazilian Social Democracy Party) spent more than 91 million of Brazilian reais, around (\$15.71 million of dollars in the October Exchange Rate) in the mayoral campaign, where the main target of this budget was digital tools and ad divulgation.

In the 2024 São Paulo municipal elections, leading mayoral candidates made significant investments in social media ad boosting, highlighting the growing importance of digital platforms in political campaigns. Guilherme Boulos (PSOL) topped the list, spending R\$8.8 million to promote his content online, according to data from Brazil's Superior Electoral Court (TSE). Ricardo Nunes (MDB), the incumbent mayor seeking re-election, invested R\$6.5 million in paid digital advertisements. The following cited people were the main candidates running for the chair to be the new São Paulo mayor: Pablo Marçal (PRTB) reported R\$2.7 million in ad spending, despite having his accounts suspended for irregularities. Other candidates, such as Marina Helena (NOVO) and Tabata Amaral (PSB), spent R\$393,000 and R\$249,600, respectively, on social media promotions[4]. On the other hand, this budget deeply affects the society, mainly the Paulistana one, as a great field to explore, sponsor, and invest in digital platforms and technological resources, like AI and ChatBots: Brazil is a great user of Meta platforms. The country highlights itself by having 65 million users of WhatsApp[5], 111.3 million Facebook users[6], and 140.7 million Instagram users[7]. São Paulo, the most populous city in Brazil, is home to more than 12 million people, where around 80% of the population has internet access[8]. In the most populous city in Brazil and the fourth in the world, access to information occurred within a context of significant polarization, mainly between candidates, in a scenario of civil attack on the Electoral system [9].

Background

How was the effectiveness of Artificial Intelligence (AI) and Large Language Models (LLMs) used to promote candidates, express political views, and harm political rivals, even with

a law that was supposed to protect the mayoral candidates? The rise of fake news was a game-changer in this process. While candidates without a political background, as Pablo Marçal, ran on equal footing with Ricardo Nunes, an important political figure in São Paulo politics. The AI and LLMS were not only essential to approach political perspective into electoral decisions, but to create "hero figures", like Pablo Marçal, as a unique solution for the biggest Brazilian city.

Elections of 2020 vs 2024: An Important Recap

In 2020, Brazil's electoral landscape was already struggling with the spread of fake news, particularly on social media and messaging apps like WhatsApp. At that time, the use of advanced AI technologies, such as deepfakes, was still emerging. Most disinformation campaigns relied on manipulated texts and images, lacking the sophistication that generative AI tools provide today. The Superior Electoral Court (TSE) and other institutions began taking steps to combat misinformation, but there were no specific regulations governing the use of AI in political campaigns. Things escalated in 2022 with the widespread publicity of AI tools like ChatGPT, which advanced rapidly every month. The 2024 municipal elections marked a turning point in Brazil's electoral process, as digital technologies were increasingly utilized. The rise and widespread adoption of generative AI tools, including language models and image generators, introduced new challenges, particularly regarding the creation and dissemination of false content.

In the following years, advancements in AI and changes in social behavior resulted in a surge of interest in AI testing and exploration. People eagerly experimented with various inquiries directed at AI, which increasingly intersected with politics. The 2024 municipal elections highlighted how digital technologies transformed Brazil's electoral landscape, presenting new obstacles in the fight against misinformation.

Methods

Overview

This study aimed to explore various perspectives on the role of Artificial Intelligence within the political landscape of São Paulo during 2024. To this end, I conducted interviews with key figures who were candidates for the position of São Paulo City mayor. Throughout this research, I intended to examine three distinct viewpoints on the utilization of AI and Large Language Models that influenced the electoral process of the "política paulistana"¹. The goal across the methods was to investigate the role of artificial intelligence (AI) and Large Language Models (LLMs) in shaping political propaganda and misinformation during the 2024 mayoral election in São Paulo, Brazil, separating them into three main stages of research.

Stage 1: Compiling information with local expertise to understand voter behavior changes; conducted interviews with:

- Tabata Amaral, a 2024 Sao Paulo Elections candidate;

¹ Política Paulistana: refers to an expressions related to the politics in the state of São Paulo. If we directed translated from english, this would sound something like "Politics Paulistana."

- Caio Machado, Oxford University PhD and political analyst, and Nathalie Milbradt, candidate for AB in Government and research assistant at Berkman Klein Center at Harvard Law School;

Step 1.1: The interview with Tabata Amaral was conducted during the Harvard Brazilian Association at the Harvard Kennedy School, complemented by her assistant and other interviewees' answers. The second interview was conducted with Nathalie Milbradt, researcher assistant of Caio Machado, exploring the following questions:

1. How do you see the use of Artificial Intelligence in national elections in general? As someone deeply involved in Brazilian politics, how do you view the use of these AIs and LLMs to target individuals who advocate for social issues within Brazilian politics?
2. How do you view the use of these tools as a variable influencing the electoral outcomes in the São Paulo mayoral race?
3. How do you perceive the use of these technologies in upcoming elections and in the future of Brazilian politics?
4. Do you believe stronger regulation by the Senate is possible in the coming years? Lastly, could you share your thoughts on how you view the use of Meta platforms—such as Facebook, Instagram, and WhatsApp—as a key factor in the spread of fake news and misinformation, especially those generated by AI, during the 2024 São Paulo elections?

Step 2: Amplified the data set with manual tagging and compiled it in a digital database. Also, to narrow down the findings, I targeted the following key terms: “São Paulo elections”, “Tabata Amaral”, “Guilherme Bolus”, “Pablo Marçal”, “fake news”, and “deepfake” were essential to increase the database of this research, while, at the same time, to contextualize the findings, the study incorporates electoral performance data and voter behavior trends from the Harvard DRCLAS database, based on Brazil’s specialist analysis Brazilian Electoral system, supplemented by journalistic sources from CNN, Globo G1, and the Regional Electoral Court (TRE). Also, I use manual tagging and AI-Deep Research as a filter tool.

Stage 3: Analysis and AI-input: Assembled AI-inputs based on questions related to the 2024 election and national politics and arranged possible biases across three different AIs: ChatGPT 4o/Sora, MetaAI, and DeepSeek. With these different LLMs, I input different questions related to the 2024 elections, focusing on electoral performance, personal background of the candidates, results, and comparable questions to male and female candidates to analyze possible biases between the AIs and the outputs.

Each of these stages has been expanded and elaborated to address the various impacts that digital tools have had on Brazilian elections and policy. Furthermore, these stages are crucial for providing a broader perspective regarding both the 2020 and 2024 elections, providing comparative analyses between these four years' gap. Concurrently, future analyses are vital for understanding the significance of these stages as methodologies for researching the role of AI in the politics of the Global South.

Results

Misinformation Beyond the Algorithm

The number of social media users has seen a steady increase year after year. From 2020 to 2022, Brazil experienced a consistent rise in social media engagement, with a significant growth of 14.3% between 2021 and 2022[10]. This surge has a profound impact on user behavior, as individuals are frequently exposed to a variety of materials, data, and information that different parties and political groups can leverage. Despite Meta platforms incorporating various filters and tools to mitigate misinformation and the spread of harmful content, the use of AI was criticized during the 2024 elections for propagating inaccurate information, particularly regarding the second round of elections in São Paulo. In testing our methodologies, we observed how easily it was to generate misleading information about various candidates. For example, when we queried the Meta AI with "Who is Ricardo Nunes?", the response inaccurately suggested that he was affiliated with the Republican Party and characterized his role as the mayor as that of a federal deputy and a government leader in Congress during President Jair Bolsonaro's administration[11]. Neither of these statements is true.

Nonetheless, the use of AI showed the weakness of these tools in providing accurate information about candidates where political groups and individuals used deepfake tools and generative AI platforms to create deep-nude images of female candidates, resulting to face federal legal action. Our results also display the fragility of these LLMs to approach political information besides a specific candidate. Again, prompting Deepseek, a recent AI tool that has around 70,000 users in Brazil, about the performance of Pablo Marçal and Tabata Amaral, two different candidates, in the São Paulo City elections, the LLM will output: "Tabata Amaral received around 3–5% of the votes." [Pablo] Marçal received less than 1% of the votes, finishing far behind the top candidates like Ricardo Nunes (MDB) and Guilherme Boulos (PSOL)."

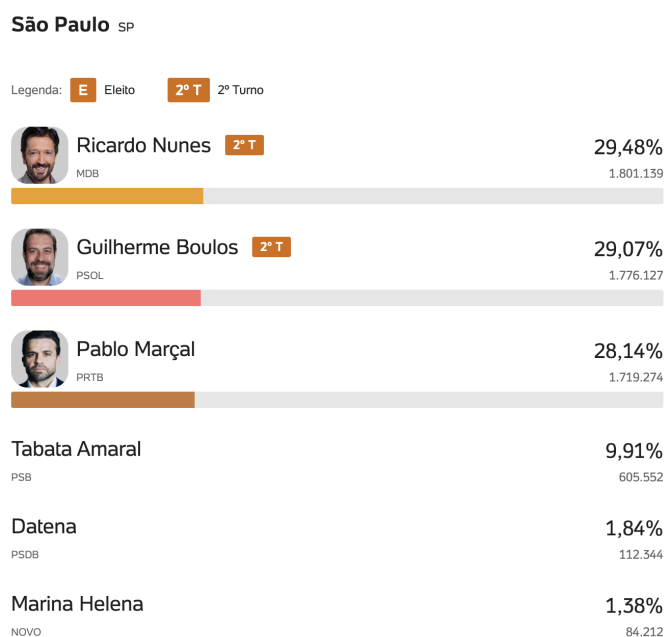


Figure 1. Table of candidates' vote counts for the first and second rounds.
<https://noticias.uol.com.br/eleicoes/2024/apuracao/1turno/sp/sao-paulo/>

This table shows that part of the unreliable information that some AIs, one of the most advanced in the world, can provide to us when asked simple questions about politics. In countries like Brazil, AIs are creating a new possibility for research. While Google Search was part of the daily life of the Brazilian worker, now ChatGPT and DeepSeek are the new methods of research. According to the Hispanic Executive Journal[12], in 2024, AI adoption in Latin America increased by 18%, reaching a 40% adoption rate. Brazil stands out with a high public trust in AI at 84%, facilitating its integration into various sectors. When faced with false and entirely unrealistic information, Brazilian voters find themselves caught in a double-edged sword. In a country where inequality reached 0.506 points in 2024[13], a significant portion of the population lacks access to direct digital communication resources such as newspapers, cable television, or even the internet to verify information. As discussed earlier in this research, São Paulo is known for its relatively broad access to such resources. However, in a city of over twenty million inhabitants, obtaining information through AI tools, WhatsApp groups, and Facebook posts becomes a significantly more efficient alternative, particularly in an environment where saving time is essential for day-to-day survival. More than this, in a city that involves different realities of Brazilian politics, two alternatives look faster and more attractive to the normal citizen: AI or WhatsApp. However, if AIs are providing wrong information about the candidates of the largest Brazilian city, appealing to WhatsApp groups looks like the best second option. While trusting in family groups and friendly messages can look reliable, WhatsApp groups are the main vector of fake news and the spread of misinformation [13]. At the end, all the alternatives to a daily life citizen in São Paulo will be enclosed by the risk of accessing inaccurate information, and then the shifts in voting behavior start.

Biases and AI

Following part of stage 2, I inquired for more input from the AIs, approaching different results over similar questions. Researching suitable questions for ChatGPT 4o, Meta AI, and DeepSeek revealed varying information generated by these language models. On this second approach, I made use of the same AIs: ChatGPT, Meta AI, and DeepSeek. During the 2024 municipal elections, Tabata Amaral was one of the most frequently targeted figures in the political process. Throughout this research, the analysis will go beyond identifying deepfakes attributed to Tabata; it will also examine content that threatens her well-being, dignity, and integrity through sexualized imagery, distorted photos, and false posts misrepresenting her speeches and political positions. In order to understand how artificial intelligence systems process honor-related attacks in electoral contexts, I queried AI platforms about the connection between deepfakes and Tabata Amaral, a candidate from the Brazilian Socialist Party (PSB). When asked about Tabata Amaral, DeepSeek noted that no verified deepfake of her has gone viral. This is a fake statement [14]. Tabata Amaral had more than ten different deepfakes published on the internet, freely accessible to people. The main source of publication was Facebook.

AI Used	Prompt	Review of the Answer
Chat-GPT 4o	Who is Tabata Amaral?	The answer was devied into "Early Life and Education", Activism and Political Career"and "Recent Endeavors". Explore the Cahmber of Deputies and the last elecitons with pointed sources.
Meta AI	Who is Tabata Amaral?	5 lines asnwer, describing her a she is a federal deputy for the state of São Paulo and a prominent figure in Brazilian politics. Does not provide any more further information.
DeepSeek	Who is Tabata Amaral?	Divides into four categories, similar with what Chat-GPT did but with bullet points. A curious thing is that DeepSeek pointed Controversies and say that "No verified deepfakes of Tabata have gone viral yet."
AI Used	Prompt 2	Review of the Answer
Chat-GPT 4o	How was her performance during the 2024 São Paulo Elections?	Brought, in three small paragraphs, the main results. Also, the answer ended with the main agenda that Tabata fights for.
Meta AI	How was her performance during the 2024 São Paulo Elections?	Meta AI brought the information that ": She ranked fifth among the candidates, behind Ricardo Nunes, Guilherme Boulos, Pablo Marçal, and Datena". This is not true. She ranked in forth.
DeepSeek	How was her performance during the 2024 São Paulo Elections?	"Tabata Amaral did not run as a candidate in the 2024 São Paulo municipal elections..." However, if we ask about Pablo Marçal, other election candidate, it says that he ran the election.

Figure 2. Inputs and Outputs of ChatGPT 4o, Meta AI, and DeepSeek

Bias can be another great factor when it comes to politicians in Brazil. The Legislative Assembly of the State of São Paulo (Alesp) is composed of 94 state deputies. In the 2023 elections, 25 women were elected as state deputies, representing approximately 25.5% of the total seats[15]. In a city where only one-fourth of the seats in ALESP are held by women. Having this thought in mind, AIs appear to provide more straightforward answers when discussing male candidates. Biased answer. When prompted to DeepSeek states that Tabata did not run in the São Paulo Mayoral Election, which is a fake statement. At the same time, DeepSeek explores Pablo Marçal's performance in the same election. The same points happen when we asked who Tabata Amaral and Pablo Marçal are. When the LLMs are prompted who each candidate is, DeepSeek explores Pablo Marçal as a controversial businessman who exponentially grew on social media. When the AI is asked about Tabata Amaral, the output is based on educational achievements in the past, as a Harvard College alumnus, and her background, not her achievements as a politician.

how was her performance during the 2024 Sao Paulo elections?



As of my latest knowledge (June 2024), **Tabata Amaral** did **not** run as a candidate in the **2024 São Paulo municipal elections**. However, she was actively involved in the political debate, supporting allies and influencing discussions on key issues like education, public security, and governance. Here's an overview of her role and performance during the election cycle:

Figure 3. DeepSeek's reply when we asked about Tabata Amaral's performance.

who is pablo marçal and how was his performance during the 2024 sao paulo elections?



Who is Pablo Marçal?

Pablo Marçal is a **Brazilian entrepreneur, motivational speaker, and political figure**, known for his controversial rhetoric, self-help courses, and far-right populist messaging. He gained national attention in 2023-2024 as a **vocal supporter of former President Jair Bolsonaro** and an outspoken critic of the Lula administration.

Pablo Marçal in the 2024 São Paulo Elections

Marçal ran for **mayor of São Paulo** in 2024 as a last-minute candidate under the **Republican Party** (Partido Republicano, the same party as former mayor **Celso Russomanno**). His campaign was marked by **high-energy rallies, social media virality, and controversy**.

Figure 4. DeepSeek's reply when asked about Pablo Marçal's performance.

Over the analysis of male and female candidates, DeepSeek presented a performance based on gender biases. This is reinforced by the Berkeley Hass Center for Equity, where a system of analysis of 133 AIs, 44% of them showed a type of gender bias [16], backing biases that are constantly part of Brazilian politics, now digitally posted and disclosed by a male politician: analyzing different social media profiles of each candidate, I highlighted an important finding on Pablo Marçal's profile. The candidate himself posted a deepfake of himself and Tabata Amaral with a caption, *"Tabata forgave Marçal and look at what happened."* The comments are tagged with expressions like "I like this couple"; "They look like a nice couple". Tabata Amaral has a relationship with Joao Campos, deputy, since 2019.



Figure 5. Deepfake of Pablo Marçal and Tabata Amaral posted on Pablo Marçal's Instagram profile.

The discussion takes on new dimensions when analyzing deepfakes involving Tabata Amaral. In Figure 6, we observe a deepfake that was publicly debunked by a major Brazilian journalistic outlet. Despite being proven false, the post garnered thousands of views on platforms such as Facebook and Instagram. Other similar images, depicting even more obscene acts and positions, exist; however, in order to preserve the deputy's dignity, such content will not be displayed in this study. When searching for sexual deepfakes targeting male deputies, the results are unequivocally null. There were no known cases of male politicians being targeted with sexualized deepfakes during the 2024 São Paulo municipal elections. The same pattern applies to Deputy Marina Helena [17], whose manipulated images and fake nudes were reportedly sold for R\$20 in WhatsApp and Telegram groups.

This asymmetry reinforces the gender bias embedded in voter behavior. While male candidates largely escaped such digital violence, female candidates were disproportionately targeted. Marina Helena, for instance, received only 1.38% of the overall vote in the first round. According to political analyst Nathalie Milbradt, these fabricated sexual videos reinforce the stereotype of women as unfit for political engagement. Seriousness, in this context, becomes a tool for public ridicule rather than a motivating factor for electoral support in the polls.

Ms. Milbrat presents a fresh perspective on the impact of Meta on Brazilian politics. When discussing the role of AI in political campaigns, she highlights that the automation of processes and the reduction of costs are essential factors for candidates leveraging digital resources in their campaigns. Even with substantial budgets, expenses can reach unprecedented levels due to the use of marketing and advertising strategies. Also, when asked about the strategies of, for instance, the right-wing parties and AI, she explores the idea that these groups and ideologies tend to use AI to attack the integrity of candidates with progressive agendas rather than the agendas themselves: *"For example, all the deepfakes and the fakenews about Tabata is more focused on attacking Tabata Amaral's personal image to discredit her candidacy rather than debating her policies"*. The goal, in this case, is to undermine the candidate's image, often

resorting to tactics that provoke ridicule and chacota. This strategy recognizes that a large portion of the Brazilian electorate votes based on persona rather than policy platforms.

An important approach was understanding how straightforward it was to create fake news and deepfakes on digital platforms to provoke chacota. When accessing OpenAI Sora's platforms, I prompted “Pablo Marçal hugging Guilherme Boulos in the 2024 Sao Paulo Elections.” Guilherme Boulos (PSOL) is a staunch opponent of Pablo Marçal[18]. While generative AI tools are available, any individual can create and disseminate an alleged meeting wherein the image can be “enhanced” in the way the user desires.



Figure 6. On the right, Guilherme Boulos, a left-wing party candidate. On the left, Pablo Marçal, a supporter of Jair Bolsonaro and a right-wing party candidate. This image was generated by Sora for educational purposes.



Figure 7. “Indications of image manipulation by AI”. Evidence of manipulation by AI of Tabata Amaral's images - Photo: Reproduction/g1

Figures 6 and 7 depict the reliability of these images and how well-edited they are. Nathalie reinforces this statement based on the accessibility of the platforms—the widespread use of WhatsApp in Brazil for certain activities, compared to platforms like GroupMe, isn't solely about how the platform itself functions. It's more about adoption rates. She brings up the perspective that there is a large Brazilian presence on Facebook, but not so much on Snapchat. If Brazilians used Snapchat as much, we might see similar trends there. This adoption happened early on.

“While WhatsApp use in Brazil has grown exponentially in recent years, even before 2022, a significant portion of the country with access to mobile phones and 5G was already using WhatsApp. This makes it a primary platform, like Telegram.”

Some literature discusses platform specifics, but adoption plays a larger role.

The Future of Regulations and Laws

The future of the use of AI looks promising. Nathalie says that in Brazil, the public sector, particularly its technical branches, has shown growing interest in adopting artificial intelligence to improve operational efficiency, with institutions such as the Supreme Federal Court (STF) already incorporating AI into their routines. However, legislative efforts to regulate AI technologies have advanced slowly, largely hindered by clientelism and populist dynamics within Brazilian politics. As a result, meaningful regulatory progress is more likely to emerge from non-elected institutions like the STF and the Superior Electoral Court (TSE). Simultaneously, the widespread use of Meta platforms—especially WhatsApp, Facebook, and

Instagram—has facilitated the rapid dissemination of disinformation, driven by Brazil’s high rate of user engagement with these digital communication tools.

TSE (Supreme Electoral Court) prohibited the use of AI and fake materials made by AI and LLMs[19]. While TSE created policies involving the use of these technological tools in the spread of political propaganda, solutions have been made related to prohibiting deepfakes, where violations may result in the revocation of candidacy registration or elected mandates [20]. The mandatory disclosure of AI usage was a key focus for the TSE during the national municipal elections in 2024, particularly in São Paulo city. Any campaign material created or edited with AI tools must contain a clear and explicit notice indicating the use of such technology. This requirement aims to promote transparency and inform voters about the nature of the content they are engaging with. Similarly, there are restrictions on the use of chatbots and avatars; the deployment of AI-driven chatbots and avatars to simulate interactions with candidates or real individuals is prohibited. Campaigns were not allowed to use these tools to impersonate or replicate human communication, thus preventing misleading interactions with the electorate[21].

Looking ahead to the 2026 elections, the notion of banning fake news increasingly resembles a naive aspiration. Despite restrictions imposed by Brazil’s highest electoral authorities, over 3,221 legal actions [22] were filed in connection with candidate registrations, the dissemination of false information by candidates, and attacks on the honor of political opponents. Although Facebook and Meta formally adopted measures to safeguard electoral integrity, such as the establishment of the Integrated Center for Countering Disinformation and Defending Democracy and the creation of a reporting channel across WhatsApp and Instagram[23], any ordinary user can still easily access sexualized deepfakes and manipulated images on regular Facebook profiles. By searching the tag “CháTabata”—a derogatory nickname combining Tabata Amaral’s first name with the Portuguese word *chata* (meaning “boring”), users can find numerous sexualized posts, often accompanied by distorted quotations and misogynistic commentary targeting the candidate. A similar pattern can be observed with Ricardo Nunes, whose face was replaced with that of a Ken doll in a digitally altered deepfake circulated online. While access to such content remains widely unimpeded, Brazilian law once again reveals itself to be malleable and easily circumvented.



Figure 8. Ricardo Nunes's deepfake with the Barbie character, Barbie.

Discussion

The findings of this research highlight and underscore the vulnerability of the Brazilian electoral system in the face of rapid technological advancements within the political sphere. As artificial intelligence continues to grow in computational power and large language models (LLMs) become increasingly integrated into everyday life, this study exemplifies how easily political candidates can be targeted, discredited, and harmed. Meanwhile, policies aimed at regulating the creation and dissemination of digitally produced content remain outdated and largely unaddressed. Part of the next steps of the study that can be better addressed in the future is exploring how other AI companies besides Meta approached content moderation during the months of the election, which is a hard mission since Meta does not disclose this information publicly. Also, explore more inputs for the AI's tests, and correlating the results with digital posts and WhatsApp trends is fundamental to new findings, while the message exchange flow on WhatsApp is massive and hard to quantify.

Then, some limitations of this study are involved:

- Targeted on unpredictable solutions that Congress can have made in the last months related to content moderation;
- The enormous size of samples that could be implemented over Meta platforms; the incapacity to explore more use of AI during the elections due to extremely sensitive information contained (e.g. fake sexual and criminal activity).
- Lastly, a crucial approach is updating the information of the AIs and inputs over time. The AIs update their database daily; therefore, new approaches to the same inputs can be effective for new analyses about the 2024 São Paulo Elections.

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Appendix

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