Does Social Media Level the Political Field or Reinforce Existing Inequalities? Cartographies of the 2022 Brazilian Election

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ABSTRACT

If representation furnishes the stage where political struggles play out, this stage can be alarmingly small. In this study, we examine whether social media campaigns in the 2022 Brazil elections are inclusive. Based on the triangulation of data provided by Brazil's Electoral Supreme Court, national census, and approximately 80,000 Facebook posts and ads, our findings reveal that candidates who lacked resources were either absent from this platform or received significantly less engagement. Those who already belonged to Brazil's political class and invested more on content promotion online were more successful in boosting their social media metrics. We also find that campaigns were highly concentrated on populous and rich municipalities, thereby neglecting hundreds of cities in these communication efforts. Overall, our results suggest that social media will reproduce, rather than subvert, existing forms of inequality and exclusion in Brazilian representative politics.

Introduction

In this paper, we examine representative politics on social media, as digital platforms have been credited with extending public discourse and allowing new actors to compete in electoral cycles. These platforms may lower the barriers of access to the media, raising hopes that voters may find an ever more plural and diverse body of candidates online (Aggio, 2010; Howard, 2006). These hopes resonate with the work of early Latin American democratic theorists, who anticipated that media technologies would enable connections among citizens and foster a new democratic consciousness (Carvalho, 1954). Our results suggest that we are still a long way from fulfilling these goals, as there are persistent asymmetries among candidates' abilities to promote their social media campaigns, which still neglect large sections of the electorate.

The study of political representation today must account for social media, as these platforms provide fundamental resources citizens use to learn about their representatives. For many voters, it is within media's screens and frames that politics become visible, as candidates strive for media attention and support (Gomes, 2004; Kreiss et al., 2020). If representation, "furnishes the stage on which struggles over distribution and recognition are played out" (Fraser, 2007, p. 313), we must examine the capacity for social media to provide that stage. This inquiry is especially important in Brazil, where the success of newly

elected politicians has been partly attributed to their social media use (Brito & Adeodato, 2022). Established political leaders described the renewal in Congress as a, "crucifixion of the political class" (Boghossian, 2018), raising questions about their ability to fence off against newcomers during political turmoil.

Brazil's parliamentary election is an important case study for several reasons. Its proportional open-list electoral system affords candidates flexibility when designing their campaigns (Ames, 2001). Unmoored by partisan constraints, congressional candidates may use social media as they see fit, targeting specific municipalities and developing strategies to invest their campaign resources. Our findings can, therefore, inform future research in contexts where campaign personalism prevails.[1] Moreover, the majority of the Brazilian electorate has Internet access (of the 184 million people aged ten years and over, 85% were connected), allowing for comparisons between campaigns in urban *versus* rural areas, in sparsely *versus* densely populated municipalities, and in affluent *versus* poor cities.[2] Finally, thousands of candidates ran for the Chamber of Deputies, amounting to a rich production of social media data to examine whether these platforms can level the playing field for a plural and diverse body of contenders.

Our empirical analysis centers on 1,018 congressional candidates who campaigned in one of Brazil's largest electoral districts, Minas Gerais, of whom 349 had a public Facebook account and 248 ran ads on that platform. We combine a social media-derived dataset (including advertising and organizing content) with information provided by the Electoral Supreme Court and the census, enabling us to account for candidates' demographics and districts' socioeconomic characteristics. We found that "outsiders" – candidates from minority backgrounds who previously had no state job and received less party resources – were largely absent from Facebook. Focusing on those who campaigned on this platform, our study reveals that candidates who belonged to Brazil's political class and invested more on content promotion online succeeded in boosting their engagement metrics. Finally, we mapped the constituencies targeted by candidates. We show that their campaigns were highly concentrated on populous and rich municipalities, neglecting hundreds of cities in their political communication efforts. Our results suggest that social media reproduce, rather than subvert, existing forms of exclusion in Brazilian representative politics.

Literature Review

Studying Representation in Digital Media

Political representation consists of giving presence to those who are absent from spaces of decision-making (Pitkin, 1967). Democratic politics relies on this institution because politicians justify their decisions based on claims to represent the people, the working class, or other discursively constructed constituencies. We say "discursively constructed" because none of these referents can be defined as an objective transcription of reality (Laclau, 2014). Instead, representatives are bound to single out segments of the electorate when campaigning. Not only must a constituency be carved out from the electorate, it must also be framed as having specific interests and demands (Saward, 2010). Therefore, representation involves a performance that enacts and sustains political identities.

This constructivist (Disch, 2012) understanding of representation focuses less on how collectivities authorize and voice demands in policy arenas, and invites us instead to

consider how these collectivities are discursively formed. It confers a primary position to the political (Laclau, 2014) as the instituting moment when decisions are made about who is included, or excluded, in political discourses. Understood this way, the study of representation entails an epistemic shift: to problematize the division of the social into bounded political identities, we conceive representative politics as a discursive arena where representatives compete (Fraser, 2007; Saward, 2010) and citizens encounter opportunities for evaluating candidates' appeals (Maia, 2012). It is at the level of this discursive confrontation that we study political representation.

The media have long been invested in improving representation. Early Latin American scholars suggested that one reason for the persistence of relations of political domination was that citizens were seldom presented with credible electoral choices. Without information about competing political projects, citizens could not withdraw from parochial political networks (Carvalho, 1954). Brazilian scholars had good reasons to believe so, as a common practice of representatives was to transport and provide entertainment to citizens who traveled from rural areas to the polls. In Minas Gerais, politicians provided accommodation called *quartéis*,[3] where voters could not interact or communicate with competing candidates (Porto, 1995). In fact, most electoral expenses of that time operated similarly, as political parties hoped to prevent electoral competition by keeping sections of the electorate isolated (Limongi, 2015). Hence why Carvalho (1954) wrote about the importance of the state to "shorten distances and intensify[ing] communications between various population centers" (p.277).

The rise of digital media established new conditions for political competition. Geographic distances appeared more surmountable than ever as computer-mediated networks promoted forms of political cooperation without a spatially-bounded membership (Benkler, 2006). Social media corporations were inspired by, and profited from, the ideal of providing spaces where like-minded people could connect (Gillespie, 2018). In addition to overcoming geographical barriers, social media platforms provided low-entry-cost spaces where participation could flourish (Lev-On & Haleva-Amir, 2018). Online political communication, therefore, may afford the formation of voting coalitions without geographical and economic constraints, moving us closer to Carvalho's democratic ideals.

However, academic scholarship became concerned with the role of digital media in facilitating political contests. This inquiry gained traction in the 2000s, giving rise to debates that contemplated the political communication experiences of non-Anglophone countries (Aggio, 2010). We are interested here in the strand of research exploring, specifically, whether new media disrupted asymmetries in visibility between political actors with unequal levels of resources (c.f. Bene, 2023). Indeed, Honneth and Fraser (2003) also called for scholars to examine whether conditions of parity are ensured among competing representatives, precluding "levels of economic dependence and inequality that impede parity of participation" (p.35). Ultimately, the importance of these debates is derived from social media's potential to revitalize representative politics – or, contrarily, the need to understand their failure to do so.

Because non-dominant political actors can leverage digital media to bypass media gatekeepers and communicate with audiences, digital media may level the playing field, or *equalize* electoral competition. For example, Tkach-Kawasaki (2003) discussed how the Internet offered a decentralized space for Japanese politicians to circumvent controls on mass media campaigns and compete for popular support, promoting the visibility of fringe

politicians. The rise of social media infused equalization claims with new vigor, as politicians can easily create an account on these platforms (Gibson & McAllister, 2015), and smaller parties do not lag behind their larger counterparts in terms of social media activity (Bene, 2023).

The hypothesis that digital media equalize political contests has been criticized, as scholars demonstrated that dominant politicians outperform their rivals in attracting audiences, thereby *normalizing* electoral competition. Because political elites' campaigns are better financed, existing imbalances are replicated online. And while smaller parties were initially quicker to harness new media compared to their more established rivals, longitudinal analyses have shown that these differences diminished over time (Gibson & McAllister, 2015). Where differences persisted, they frequently favored the latter. Schweitzer (2011) noted that major German parties' websites became more sophisticated than their rivals,' a finding that was verified in a subsequent cross-national European study (Koc-Michalska et al., 2016). Studies on social media strengthened the normalization hypothesis, as dominant politicians outperform their rivals in engagement and followership metrics (Bene, 2023; Lev-On & Haleva-Amir, 2018; Strandberg, 2013). Therefore, the normalization hypothesis appears to hold in digital media environments, as politicians with more resources at their disposal are better equipped to maintain websites and, over time, their reach and engagement metrics tend to outpace their rivals.'

Considering the overwhelming evidence for the normalization hypothesis, we expect that established political actors continue to dominate electoral competition. To the best of our knowledge, however, there is no evidence that this is true for congressional campaigns in Brazil. Although scholars have discussed how candidates present themselves to the public online (e.g., Veiga & Nicolás, 2023), that performance has yet to be linked to engagement measurements. We contribute to this normalization-equalization debate by exploring variations in media visibility in an understudied context. Moreover, as scholars have been primarily concerned with inter-party differences in majoritarian electoral systems, there remains unanswered questions about the ability of social media to disrupt electoral competition where campaign personalism prevails (Vanden Eynde & Maddens, 2023) or, relatedly, the role intersectional identities may play in these disputes. The next section explains why this scope of analysis is important in the Brazilian context.

Absences, Inequalities, and Exclusions in Representative Politics

Latin American representative politics has historically been faulted for not being inclusive enough, as parliaments in the region are riven with inequalities along class, gender, and racial lines (Carnes & Lupu, 2015; Htun, 2016). Brazil's Congress, specifically, has more multimillionaire parliamentarians than representatives of working-class background (Rodrigues, 2014). Although the presence of women has increased,[4] women candidates tend to receive less support from political parties (Htun, 2016). Furthermore, even if the majority of Brazil's population is nonwhite, the failure of its political elite to attain representation commensurate with the racial distribution of the electorate persists (Bueno & Dunning, 2017).

These inequalities in representative politics are exacerbated if we consider the intersectionality of politicians' identities. For example, of the 513 seats, 77 were occupied by women in the last legislature, out of which 13 were Black women. Although women of color who are

politicians can play an important role in challenging the status quo, serving as role models (de Jong & Mügge, 2024), intersectional identities continue to be under-represented (Hughes, 2011), not because those with intersectional identities are apolitical, but because they are not prioritized within their political party (Tolley, 2023) and because there are compounding systems of oppression that affect intersectional identities and their under-representation (Collins, 1990). This point is underscored by Carneiro, who contended that "the relationship between Black women and power is almost nonexistent. To speak about this matter, hence, is to speak about the absent" (Carneiro, 2009, p. 50).

These absences present important limitations to representative politics as a discursive arena. A political class that does not mirror the composition of the electorate is more likely to fail to advocate for the same policy stances as their constituents' (Boas & Smith, 2019). Moreover, underrepresentation undermines the venues for marginalized constituents to connect with democratic institutions (Maia, 2012). For these reasons, studies on political representation should investigate the presences and absences of underrepresented groups in sites of confrontation, foregrounding the question of how representatives' campaigns and boundary-making operations can serve as a vehicle for exclusion. However, few scholars have accounted for these absences, though established political actors may be disproportionately represented in the media during elections (Lev-On & Haleva-Amir, 2018). To verify if that is the case with congressional candidates in Brazil, we ask (**RQ1**) what candidates were absent from social media in the last electoral cycle.

The media have historically played a crucial role in sustaining inequalities and exclusions in Brazilian representative politics. Party officials have been accused of providing Black candidates less radio and television airtime than their white counterparts, maintaining racial disparities in the distribution of media resources during elections (Janusz & Campos, 2021). Disparities in campaign resources persisted in the last electoral cycle: Brazil's political class was effective in directing most resources to incumbents, leaving Black and woman candidates with less party funding (Pitombo et al., 2022). This is why media access has been described not only as a means to communicate with the electorate, but also as a barrier to competition (Ames, 2001). Yet the rise of social media, as discussed, allegedly transformed these competitive dynamics, leading some to suggest that these platforms ensure greater parity of participation. It is still an open empirical question whether social media disrupt the balance of power, particularly by providing a space where campaigners with different backgrounds can compete on equal footing. To investigate normalization-equalization claims, accounting for Brazil's long history of disparity in campaign resource allocation, we postulate that an inclusive platform-mediated discursive arena precludes that social and economic inequalities impede parity of participation in it, leading some candidates to attain media visibility to the exclusion of others. Therefore, we ask (**RQ2**) whether the distribution of social media metrics of engagement among congressional candidates is consistent with the normalization hypothesis.

Studying Social Media Campaigns Through Geographical Targeting

Brazil's President of the Senate, Rodrigo Pacheco, justified the importance of Congress by saying: "we must acknowledge that parliamentarians have better conditions of gauging the necessities of the people who live in the most secluded regions of the country." He compared his elected colleagues' ability to represent "the people" against appointed

members of the Executive branch, many of whom, "have never received a single vote" (RodaViva, 2022). Elections, based on this logic, force politicians to reach out to a multiplicity of constituents and align with their interests; this is what Anthony Downs described as an effort to "scatter in the corners of the nation" (Downs, 1957, p. 89) as candidates travel around the country to learn about the electorate. This line of reasoning has a long history. But our ability to test this perspective has been out of reach until recently. Contemporary election campaigns produce an array of data about candidates' social media profiles and messaging patterns, from their organic posts to the ads that they circulate in these platforms, which can be used in assessing how inclusive representative politics in Brazil actually are. By analyzing these data, we can map all the municipalities that were targeted in their political communications.

The study of online campaign strategies has shaped our understanding of audience segmentation and targeting practices, wherein campaigns deliver messages to voters based on targeted information (Kreiss, 2016). Social media promote these "dividing practices" (Gandy, 2001) to the extreme, as candidates can court constituencies of different locations, demographics, and interests through online advertising. In a stark illustration of this, Facebook reportedly employs a classification scheme of some 52,000 attributes to categorize two billion monthly active users (Nadler et al., 2018). Considering that, Tufekci (2014) contended that targeting contributes to the transformation of political communication into a personalized, private transaction, as it enables candidates to bypass arenas of discursive confrontation and directly reach out to voters of interest. It remains unclear, however, whether this reinforces or pushes against existing political inequalities for under-represented minorities. For example, Tufekci argues that candidates engage with opaque targeting techniques whereby propagandistic messages are only seen by the targeted audience. However, social media can also empower intersectional identities and political participation, as noted by the political social movement literature (e.g., Jackson, 2016).

While the literature teaches important lessons about online campaign targeting, its algorithmic infrastructure (Papakyriakopoulos et al., 2022), and its impact on issue and identity ownership (Baviera et al., 2022; Kreiss et al., 2020), this body of work is centered on the Global North. It remains to be seen whether Brazilian politicians experience similar practices, though they use the same platforms (Barros et al., 2022). Conscious that, when expanding the study of political communication to Latin America, scholars cannot analyze it, "through the lens of cognitive frameworks that ignore the idiosyncrasies marking the region" (Marques & Miola, 2021, p. 96), we note that a key feature of Brazil's political system is that parliamentarians ground their representative claims on their visits to, and knowledge of, a multiplicity of municipalities that constitute their electoral bases (Bezerra, 1999). Because the electoral system affords candidates the opportunity to campaign across any given state, we propose to study political advertising vis-à-vis geographic targeting. While some studies suggest that micro-targeting can help politicians reach previously-ignored demographics (Bennett & Gordon, 2021), geography is often only implicitly considered in the literature.

The digital turn in political advertising requires rethinking how geographical phenomena is inflected by new media technology. While it is true that the rise of online advertising does create new spatialities that shape electioneering, "digital geographies" do not occur in a vacuum (Temple, 2023). Rather, they exist in relation to physical spaces. This is especially true for electoral campaigns, where voters are counted based on where they live, not what

digital geographies they engage within. Corroborating with that insight, Luna et al. (2022) documented that Chilean congressional campaign strategies vary according to a district's socioeconomic characteristics: candidates prioritized investments on social media primarily when campaigning in wealthier districts. Thus, we defend the importance of examining the extent to which physical and digital geographies may overlap, or not, as a productive line of inquiry.

We study Facebook as a critical digital geography in Brazil because its parent company, Meta, dominates the country's digital media landscape. The three platforms offered by the company – Facebook, Instagram, and WhatsApp – are the most popular, with approximately 70% of the population being active Facebook users.[5] This percentage may rise in the future, as X (formerly Twitter) was banned (and later reinstated) in the country after the company announced it would not comply with orders from the Supreme Court. Moreover, Brazilian politicians have invested heavily in leveraging the opportunities provided by Facebook (Bessone et al., 2022), which is their preferred platform for disseminating information and interacting with voters (Braga & Carlomagno, 2018). While YouTube is more frequently used by parliamentarians, they tend to use it for broadcasting legislative activities (Barros et al., 2022), which is not our primary focus. Another reason for our focus on Facebook is that it allowed campaigners to promote ads during the last electoral cycle, whereas other platforms did not.

We postulate that an inclusive election derives this quality not only from the state of the competition among candidates (RQ1 and RQ2), but also from their effort to scatter in the corners of the nation (*rincões*, to use a common term in Brazilian politics) to communicate with voters. To verify to what extent they do so, our study maps the division of the social space into bounded constituencies, asking what municipalities figured most commonly in candidates' social media campaigns, and what municipalities did not.

To study the inclusivity of the 2022 Brazilian congressional election, we ask the following:

RQ1: What congressional candidates were absent from social media?

RQ2: Is the distribution of social media metrics of engagement among congressional candidates consistent with the normalization hypothesis?

RQ3: Do congressional candidates target municipalities in a way that is consistent with their claims to scatter in the corners of the nation?

Methods

To investigate which candidates succeeded in promoting their social media campaigns, and what constituencies were targeted by candidates' communicative efforts, we conducted a case study of the 2022 Brazilian elections. The analysis focused on contenders for a seat at the Federal Chamber of Deputies, specifically, those who ran their campaigns in the state of Minas Gerais ($n = 1,018$). This state is one of the largest electoral colleges in the country, and because of its electorate's socioeconomic diversity, it has historically mirrored the voting patterns of Brazil (Cruz, 2022). We focus

on the Chamber because parliamentary candidates can construct flexible coalitions of voters from all municipalities of any given state, rendering all geographical pockets as *potential*, but not *necessary*, campaign targets. Brazil's open-list proportional system affords numerous candidates to compete for these pockets, establishing advantageous conditions to thematize how social media campaigns are run by congressional candidates.

We collected data from four sources: Brazil's Electoral Supreme Court (Tribunal Superior Eleitoral, henceforth "TSE"), the national census, and Facebook (CrowdTangle and the Library Ads APIs). First, we collected demographic and campaign information from TSE. The Court provides open access to candidates' campaign expenditures, party donations, and an array of demographic information. Based on that, we created a variable for campaign expenditures, which consisted of investments on social media content promotion (using regular expressions, see Wickham, 2022). To better understand the municipalities targeted in during the election, we collected census data from the Brazilian Institute of Geography and Statistics (IBGE). The census took place in 2022, and it provides comprehensive information about municipalities' population, demographic density, GINI coefficient, and other relevant variables.

The use of TSE data is not without limitations, because it relies on candidates' self-declarations. Some of them failed to provide complete information about their personal wealth and campaign expenses. Nevertheless, considering the rich information about candidacies overall, we employ MICE's classification and regression trees as an imputation method instead of dropping information about them altogether (maintaining the respective mean, median, and standard deviation of the sample distribution, see van Buuren & Groothuis-Oudshoorn, 2011). Moreover, we acknowledge that TSE's racial classifications may be controversial. Since 2014, the Court requires candidates to provide information about their race, yet these self-classifications tend to differ from voters' (Bueno & Dunning, 2017), and electoral quotas create incentives for widening that difference (Rodrigues et al., 2022).[6] These classifications, therefore, do not amount to a neutral description of the racial composition of Brazil's legislative bodies (Bailey et al., 2013). We recognize the limitations of this operationalization, but we maintain the importance of using these classifications to consider intersectional analyzes[7] in political communication studies.

Next, we collected social media content from Facebook. As most candidates failed to provide their Facebook account handles to TSE, we manually identified these accounts by searching for each candidate's Facebook page on Google or through Facebook's search function. We identified 349 active public accounts. To collect ads from the Library API, we used Fraser's RadLibrary package (Fraser & Shank, 2023). Our query procedure consisted of using four keywords ("*vote*," "*Minas Gerais*," "*deputado federal*," "*eleições*") and setting the ad delivery region to Minas Gerais. This process yielded 30,657 ads. We then removed those not created by candidates in our sample, resulting in a final corpus of 9,431 ads from 248 accounts.[8] Through string matching and applying Levenshtein measures (van der Loo, 2014), we identified 56 candidate accounts that ran ads but did not have a public Facebook profile. Overall, 34% of Minas Gerais candidates had a public profile on Facebook, and 24% of them distributed ads on the platform. Combining the ads with the posts created by candidates' public profiles, our dataset consisted of 82,585 posts, created between January 1, 2022, and October 2, the day of the election.

Once we collected data about the candidates and their social media content, our analysis consisted of the following procedures. To answer our first RQ, we examined the absences of parliamentarian candidates from Facebook. If representation studies should reveal both who are rendered visible or absent, it follows that we need to take seriously the challenge of studying the cracks in big data: Actors and social phenomena that are not rendered legible through datafication (Boyd & Crawford, 2012). In this study, we leverage the data collected from TSE and census to examine the "cracks" in our social media dataset. Concretely, we conducted intersectional, descriptive statistical operations in order to identify typical cases (Bauer et al., 2021).

Next, we focus on those candidates who had a public account on the platform. To investigate the distribution of their engagement metrics in light of the equalization-normalization debate (RQ2), we created a metric that adds a candidate's total number of social media post views, interactions, and comments, and divides that sum by their number of posts (henceforth "relative engagement").[9] We define relative engagement as our dependent variable and test what demographic and campaign predictors were related to it. As this count variable has an over-dispersed distribution, the most appropriate statistical test was a negative binomial regression. Finally, we use a simulation-based approach to residual diagnosis using DHARMa, testing for the reliability, outliers, and deviations in the model (Hartig, 2022).

To answer RQ3, we conducted a linear regression using IBGE's census data and TSE's information about the candidates' city of origin as independent variables. Our dependent variable was the number of times each municipality was mentioned in our corpus. To count the latter, we tokenized all Facebook posts and ads and employed regular expressions for text pattern matching. We then used the spatial data sets from the GeoBR package (Pereira & Goncalves, 2023) to visually represent our findings. This also meant dealing with municipalities that had ambiguous names. "Conquista" can refer both to a touristic city in the west of Minas Gerais as well as to a political achievement, which no candidate would refrain from mentioning during an electoral cycle. "Bandeira," another municipality, can also mean flag. We identified 13 ambiguous names. While scholars have suggested using contextual pattern recognition to determine its fit, this approach is limited for brief messages like social media posts. Instead, we used UDPipe, a natural language processing tool, to identify proper nouns using universal dependencies (Wijffels, 2023). To validate this approach, we also cross-verified all posts to confirm the counts.

Results

Accounting for the Absences

To answer RQ1, our study documented what kind of candidates were absent from Facebook. We consider an intersection of identities in our analysis to understand the typical case of candidates who were absent from this platform were men of color with lower levels of education, who previously had no state job, and whose campaign dispensed few party resources – this candidate's campaign expenses were less than half the average of the entire sample. Of 675 candidates who are men, 403 are not on Facebook. Put differently, this typical case can be personified in a nonwhite businessman who never graduated from college.

A significant proportion of women candidates did not have an active Facebook account (256 out of 343). Moreover, we found that women candidates received fewer party resources compared to their male counterparts – specifically, women of color without a college degree ranked the lowest in campaign expenses and last in declared wealth, so they could not rely as much as others on personal funds. Strikingly, members of this group spent on average only R$58.000 on their campaigns (for comparison, a white male candidate with higher education spent 11 times more). Considering these findings, we determine that candidates who were not on Facebook were typically outsiders who were not well financially supported by their political parties.

Which type of candidate succeeded in boosting their metrics of engagement?

Next, our analysis explored the significance of inter-group differences in which types of candidates received more engagement on Facebook. We began by plotting the average campaign expenditures at the intersection of gender, race, and education, then paired these results with the mean relative engagement for the same groups for our entire sample (see Figure 1). This descriptive analysis indicates the fruitfulness of our intersectional approach, as our variables reveal stark group differences. In both analyses, highly educated, white men ranked highest, while women of all races without a college degree ranked lowest. In terms of expenditures, education divided the sample into two groups: campaigns for candidates without a college degree typically used fewer resources. In terms of social media engagement, gender divided the sample similarly, with women candidates generally receiving less online engagement. Race appeared mostly interspersed across both graphs.

The limitation with the analysis above is that it does take into consideration the skewed composition of the sample. To account for that, our first negative binomial regression explored the relationship between engagement and our demographic variables, namely: gender, race, education, and we also control for personal assets (we interpret education and wealth as class indications). To facilitate interpretation, minority demographic categories received the same value (in contrast, white = 1, man = 1, with college degree = 1). As reported in Table A1 (Appendix), this statistical test revealed a statistically significant relationship ($p < .001$) between gender and our social media metrics.
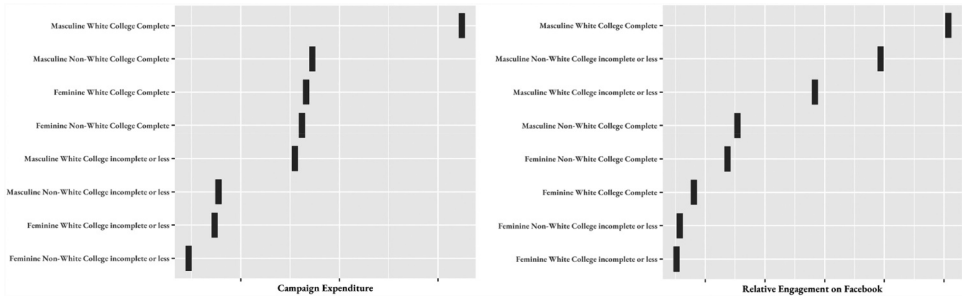

Figure 1. Intersectional analysis of campaign expenditure and relative engagement on Facebook by group of candidates. Note: The analysis contains all candidates of our sample and the results are presented in ascendant order in both cases

Table 1. Coefficients for Negative Binomial Regression Model Examining Relationships Between Z-Transformed Demographic and political variables and engagement on Facebook.

	estimate	std. error	z value	p. value
(Intercept)	7.17	0.29	24.93	0.00 ***
Man	0.64	0.24	2.74	0.01 **
White	− 0.44	0.21	− 2.07	0.04 *
College degree	− 0.43	0.22	− 1.91	0.06
Declared wealth	0.05	0.10	0.54	0.59
Belong to Brazil's political class	1.30	0.29	4.45	0.00 ***
Received funds	0.37	0.10	3.57	0.00 ***
Expenses on ads	0.74	0.11	6.48	0.00 ***
Campaign expenses	− 0.12	0.13	− 0.93	0.35

Signif. codes: *** $p < .001$. ** $p < .01$. Null deviance: 614.57 on 348 degrees of freedom. AIC: 5233.9. Number of Fisher Scoring iterations: 1. Theta: 0.2896. Std. Err.: 0.0176.

Next, we controlled for a second set of political and campaign variables. Whereas the former indicated whether a candidate already exercised a representative mandate[10] (being part of Brazil's political class = 1), the latter consisted of party funding measures. We also controlled for overall campaign expenditure and expenditure on social media content promotion. Table 1 reports full results for this test. Once we included the new set of predictors, the intercept for the gender variable is reduced, but remains significant ($p < .01$). A consideration of these variables also yielded a significant relationship between race and relative engagement on Facebook, though the coefficient was inverted and only significant at the 0.05 level. Crucially, this test reveals that already belonging to Brazil's political class ($\beta = 1.30$, $p < .001$), expenses on content promotion ($\beta = 0.74$, $p < .001$) and campaign funding ($\beta = 0.37$, $p < .001$) had a significant relationship with social media engagement. These variables are interrelated, as experienced politicians tend to have more access to party resources and campaign personnel.

Which Type of Constituency was Targeted by Congressional Candidates?

To answer RQ3, we examined whether these candidates' campaigns were equitably distributed across the state. There were 29,536 posts that referenced Minas Gerais municipalities during the last election. The analysis reveals that candidates referenced 30 municipalities on average (out of 853). However, this average is highly skewed: The median is 16 municipalities, and the standard deviation is 38. A similar pattern was found when analyzing the number of times municipalities were mentioned: on average, candidates referenced municipalities 151 times, yet these results were also highly skewed (the median was 54, the standard deviation was 252).

What explains this pattern? A close look at the data reveals that few candidates invested in far-reaching campaigns. Twenty of them referenced more than 100 municipalities. Padre João, who ranked highest in this analysis, mentioned 293 municipalities. His social media posts frequently used a similar textual structure: *"the people of _____ have already decided! It is Lula for president and Padre João for federal deputy,"* with more than 40 cities replacing the blank space. Candidates who

employed this strategy varied significantly: Some produced hundreds of posts with nearly identical content, while others used catchphrases but created more diverse posts, such as documenting visits to a variety of cities. Therefore, we must consider that social media content referencing municipalities sustains the performance of candidates visiting the country's *rincões*, be those registries veracious or not.

Next, we focused on the Facebook ads. We identified 4,192 ads with references to municipalities. Compared to social media posts, the average number of unique mentions in ads was significantly lower (11, $Mdn = 3$, $SD = 26$), and so was the average number of times municipalities were mentioned ($M = 37$, $Mdn = 12$, and $SD = 92$). Only four accounts referred to more than one hundred cities in their ads, and the rank produced in this analysis does not overlap with the previous one. These results attest to the heterogeneity of our sample's communicative strategies: only a few candidates were interested in, or had the resources for, using Facebook's advertising capabilities. Moreover, the strategies behind the production of social media posts and ads were not identical: few candidates used ads to target specific municipalities, and those who had did not necessarily reproduce the same communicative pattern in their organic social media posts. These findings indicate that Brazilian congressional candidates are not as invested in microtargeting as suggested in the North American literature, and their targeting patterns differ greatly across the candidate pool.

Finally, we investigated which types of municipalities were most frequently targeted. Using the number of mentions as our dependent variable, we regressed for population, GINI coefficient (higher values indicate higher inequality), medium salary, demographic density, and whether a municipality had a candidate born there. Based on the social media content posted by our sample, we found that candidates focused more on municipalities that were populous ($\beta = 56.34$, $p < .001$), affluent ($\beta = 42.34$, $p < .001$) which had a local candidate ($\beta = 58.87$, $p < .001$), as shown in Table 2. Given the high intercepts, these results suggest that candidates' social media campaigns were highly concentrated. A second regression analysis tested whether these results would hold for social media ads (Table A2 in the Appendix), revealing that population ($\beta = 0.44$, $p < .001$) and inequality ($\beta = 2.82$, $p < .001$) were significant predictors of municipality mentions.

Table 2. Coefficients for linear regression Model examining relationships between municipalities' characteristics (log transformed) and the number of times they were mentioned on Facebook.

	estimate	std. error	t value	p. value
(Intercept)	− 709.03	70.25	− 10.09	0.00 ***
Population	56.34	6.00	9.38	0.00 ***
GINI	215.49	112.10	1.92	0.1
Medium salary	42.34	13.56	3.12	0.00 ***
Demographic density	6.11	5.36	1.14	0.25
Local candidate	58.87	15.43	3.82	0.00 ***

Signif. codes: *** $p < .001$. ** $p < .01$. Residual standard error: 130.1 on 847 degrees of freedom. Multiple R-squared: 0.3236, Adjusted R-squared: 0.3196, F-statistic: 81.05 on 5 and 847 DF, p-value: < 0.00000000000000022.
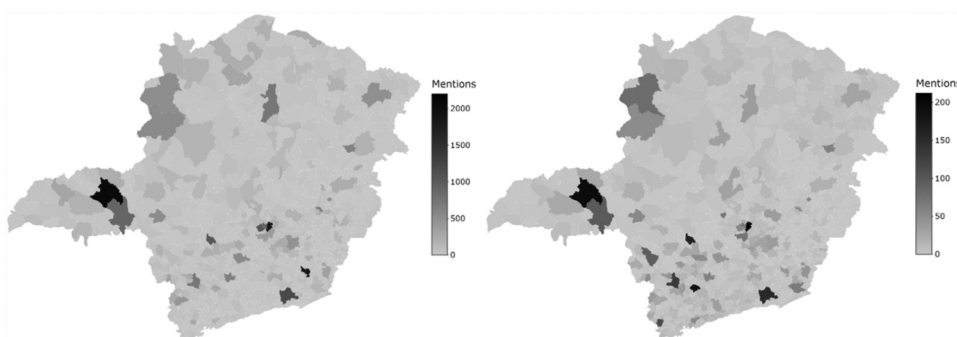
Figure 2. Municipalities in Minas Gerais mentioned in social media posts (left) and ads (right) by candidates during the 2022 Brazilian election.

To facilitate the examination of what municipalities were targeted, we plotted two choropleth maps (see Figure 2). The first map represents the number of mentions of Minas Gerais municipalities in social media posts, while the second does the same for ads, albeit on a smaller scale due to the smaller dataset. This mapping exercise helps identify inequalities and exclusions in social media campaigns – and in representative politics more broadly. Minas Gerais consists of 853 municipalities. Of these, 30 were mentioned 100 times or more by candidates. Strikingly, 260 municipalities were mentioned fewer than 10 times in candidate posts, and 711 municipalities were mentioned 10 times or fewer in ads. The municipalities mentioned the least were often located in the poorest regions of the state, particularly in the northeast (see the Appendix for detailed findings by population and mesoregion). Almost no candidates were born in those cities.[11] Although candidates may employ different strategies in the creation of social media posts and ads, the maps show a similar distribution of mentions overall. Therefore, the sample's communication output was comparable for both their posts and ads.

Discussion and Conclusion

In this study, we examined how representative politics played out on social media during the 2022 Brazilian Congressional Election. We documented what kinds of candidates were not on Facebook. Studies on political representation traditionally foreground what candidates succeed in promoting their campaigns and what constituencies are evoked through it, without focusing enough on the limitations of the evidence, or the absence of groups. Our study demonstrates that many outsider candidates were absent from Facebook, particularly those from minority backgrounds, such as candidates of color without a college degree. The same pattern held true for candidates who received fewer party resources. This finding enriches our understanding of the inequalities and exclusions perpetuated through electoral cycles, as it indicates that, without party support, non-established candidates may be less likely to campaign on social media.

We then turned our attention to those who campaigned on Facebook, asking what type of candidate succeeded in boosting their engagement metrics. We argued that social media campaigns would be inclusive if variables such as class, gender, race, and party resources did

not successfully predict online engagement. The last congressional elections failed that test, however. Our results showed that already being part of Brazil's political class, investment on content promotion, gender, and party funding (particularly the first two) are significantly related with social media metrics. Campaigns with more engagement were created by male candidates, those who were running for office for a second time or more, and those who relied on more economic resources. The way these candidates dispensed these resources matters: Investment on social media was a stronger predictor than party funding. Therefore, qualifying our claim that candidates who lack party support tend not to campaign on social media, we add that candidates who effectively invested on Facebook were the ones whose campaigns attained more engagement in it.

These findings extend the normalization hypothesis to Brazilian representative politics, as established political elites outperformed their rivals in attracting media audiences, thereby replicating existing imbalances in electoral competition. Instead of leveling the playing field for candidates, our results suggest that these platforms digitally reinscribe existing inequalities in representative politics, benefiting politicians who already hold office and have more resources to design their campaigns. Indeed, it is important to note that incumbency, party resources, and campaign expenditure are variables which can only be understood in connection with each other: Candidates who already exercise a mandate have easier access to campaign resources and personnel, who increasingly bring into politics expertise with online content promotion (Carlomagno et al., 2019; Gomes, 2004). Because this normalization occurs by virtue of how party resources were unevenly distributed among candidates, favoring those who already exercised a mandate before the election, it aligns with Bueno and Dunning's (2017) description of elite closure: that is, investment on social media platforms helps to sustain the existing political class. In other words, if minority communities have historically failed to achieve proportional representation in Brazil's legislative bodies, social media may further entrench these disparities, adding another layer to the structural inequities in the political system.

Regarding our final research question, our findings do not corroborate concerns that politicians take advantage of social media's advertising infrastructure to target some voters and hide messages from others. Moreover, considering that rich municipalities were targeted the most, results are also in contrast to the literature suggesting that candidates use digital media to engage with underrepresented populations (e.g., Bennett & Gordon, 2021). The implication, however, is not that Brazilian politicians do not engage in "dividing practices" (Gandy, 2001), but that we need to consider different theoretical frameworks to identify them. We believe one way to do so is to account for physical geographic representation online.

In pursuing this scholarship, we explored whether candidates scattered in Brazil's most secluded regions, its *rincões*, as we postulated that inclusive social media campaigns would attest to the effort of politicians to scatter in the corners of the nation to communicate with voters. However, our results suggest otherwise. Campaigns were highly concentrated on populous and rich municipalities. Candidates neglected hundreds of cities in their political communication efforts, potentially creating regions of representative scarcity in the country. That is, our study suggests that large numbers of municipalities had few or no candidates claiming to speak on their behalf. We say "potentially" because our study considers only one platform, and the lack of social media campaigns cannot be equated with the lack of electoral campaigns altogether. Yet, considering the importance of

Facebook for Brazilian politics, particularly following the decline in Twitter usage since Elon Musk's takeover, we believe that more studies could substantiate this claim.

Our results provide strong indication that, if representation can be understood as a discursive arena of competing political projects, this arena does not map onto the electorate, as poor regions of the country were largely neglected in the 2022 electoral cycle. These findings corroborate O'Donnell's (1993) contention that Latin American democracies are characterized by a critical disjuncture between the state and the social order it supports, as the former fails to assert its presence onto so-called "brown regions" of the country. Yet, even O'Donnel believed that these regions would not lack operating parties and contenders. Our study demonstrates that representation on social media exists within historical forms of inequality and exclusion, and scholars cannot assume that media technologies will produce a virtuous effect of solving these issues.

In addition to our focus on a single platform, there are other limitations worth acknowledging, which we hope future scholars will explore. After identifying the municipalities that were rarely mentioned in social media campaigns, important questions arise regarding how constituents in these areas cast their votes or engaged with representatives online, if at all. Moreover, scholars may qualitatively examine the reasoning behind targeting practices, asking what factors appear to be most important to campaigners' strategies. Methodologically, while we accounted for demographic variables in our candidate pool, studies with larger samples could move beyond binary categories and regress for their intersection.

In conclusion, our results attest to the critical role of party support for minority candidates, without which their social media campaigns may be limited or nonexistent. Our study is particularly important as Brazil experiences democratic backsliding, and parliamentarians have altered electoral rules to further entrench the existing political elite. elections are primarily publicly funded, and parties have discretion in resource allocation. While legislation mandates a quota system to benefit minority candidates, political parties failed to comply during the 2022 electoral cycle, disproportionately underfunding the campaigns of women and candidates of color. In 2024, the same political parties that violated this legislation granted themselves amnesty. In this context, we hope our research contributes to ongoing debates in the country, demonstrating that economic resources continue to be a barrier to equitable election campaigns on social media.

Notes

1. Campaign personalism refers to electoral conditions which allow candidates to strategize their campaigns largely independently from their political parties. Typically, personalistic campaigners conceive their party as a vehicle to win elections and exercise power rather than a provider of a consistent ideology (Metz et al., 2020).
2. All municipalities studied in this paper have 3 G coverage. The data about Internet access were retrieved from: https://www.gov.br/en/government-of-brazil/latest-news/the-number-of-households-with-internet-access-in-brazil-has-increased. Access on 10/07/2023.
3. In other regions of the country, *quartéis* were also referred to as *currais* (Porto, 1995). *Quartéis* referred to buildings used by campaign organizers to provide housing, food, and entertainment to voters who had to travel from rural regions of the country (Limongi, 2015).
4. This increase was not pronounced, however. Htun (2016) explains that, although Latin America has led the world in the adoption of gender quota laws, Brazil is still one of the countries with the

highest degree of female underrepresentation in the region: the average female composition in Latin American legislative chambers approximately 24%, but in Brazil it is 8%.

5. Retrieved from: https://www.statista.com/statistics/244934/facebook-penetration-in-brazil/. Access on 05/01/2023.

6. Rules of electoral competition established incentives for parties to promote candidates from minority backgrounds, yet many incumbents changed their self-identification from white to black to gain from these incentives. Retrieved from: https://g1.globo.com/politica/eleicoes/2022/noticia/2022/10/11/19-deputados-reeleitos-que-se-autodeclararam-brancos-nas-eleicoes-de-2018-mudaram-registro-para-pardos-em-2022.ghtml

7. Candidacies are riven with inequalities, hence our intersectional consideration. However, a possible point of contention is that we dichotomized our independent variables. Specifically, we used dichotomies for race, being part of Brazil's political class (more on this later), education (college degree or less), and gender (all candidates identified as either man or woman). A limitation may be that it neglects differences concerning the social background of these candidates. For example, the "nonwhite" variable groups together those who self-identified as "black," "brown," "yellow," or "indigenous." However, given the sample size, our statistical tests would not have enough power to account for all inter-group variations.

8. We identified 248 accounts involved in the creation of political ads, although only 228 had unique names. This discrepancy suggests that some campaigns operated multiple accounts under the same name.

9. The grouping of social media metrics offers a parsimonious way of measuring the visibility these candidates received online, and it is in line with existing studies discussing the normalization of electoral competition (Koc-Michalska et al., 2016), but we recognize that this methodological decision prevents us from fully analyzing what kind of engagement these candidates received. Not all forms of engagement are the same, and future studies may investigate how campaigners value these metrics and which ones are more significantly related with voting behaviors. We thank one of the reviewers for pointing that out.

10. We controlled for candidates who already exercised a legislative mandate at the time of the election (variable = belonging to Brazil's political class) rather than running for reelection for the Federal Chamber of Deputies. Considering that scholars have previously noted that Brazilian parliamentarians often have a transient presence in the Chamber, and yet they may leverage party resources to regress to it at different career stages (Ames, 2001), we grouped together candidates who exercised any kind of elected mandate in 2022. This methodological decision comes at the cost of recognizing differences derived from a candidate's political background. However, our regression analysis would not have been possible if we had not transformed our political and demographic variables into binaries.

11. By focusing on the municipalities which were mentioned fewer than ten times by candidates in their posts, we identified only 12 candidates who were born in any of these cities.

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Data Availability Statement

The data that support the findings of this study are available from the corresponding author, A.K. Rodarte, upon reasonable request. Codes and supplementary information linked to this work are available at the open science framework platform: https://osf.io/6x2me/?view_only= 34a821761a8140cbb30a54528ccdba45.

Open scholarship

This article has earned the Center for Open Science badges for Open Data and Open Materials through Open Practices Disclosure. The data and materials are openly accessible at https:// osf.io/6x2me/?view_only=34a821761a8140cbb30a54528ccdba45

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Appendices

Table A1. Coefficients for Negative Binomial Regression Model Examining Relationships Between Z-Transformed Demographic Variables and engagement on Facebook.
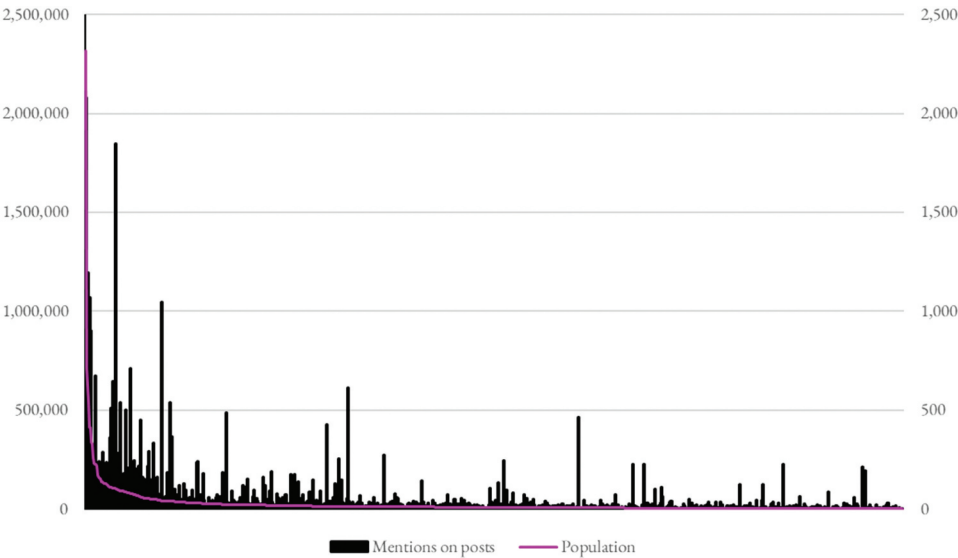
	estimate	std. error	z value	p. value
(Intercept)	6.62	0.30	22.10	0.00 ***
Man	1.36	0.26	5.28	0.00 ***
White	0.21	0.23	0.96	0.01 **
College degree	0.17	0.24	0.71	0.00 ***
Declared wealth	− 0.10	0.11	− 0.89	0.41

Signif. codes: *** $p < .001$. ** $p < .01$. Null deviance: 511.63 on 348 degrees of freedom. AIC: 5327.5. Number of Fisher Scoring iterations: 1. Theta: 0.2406. Std. Err.:0.0144.
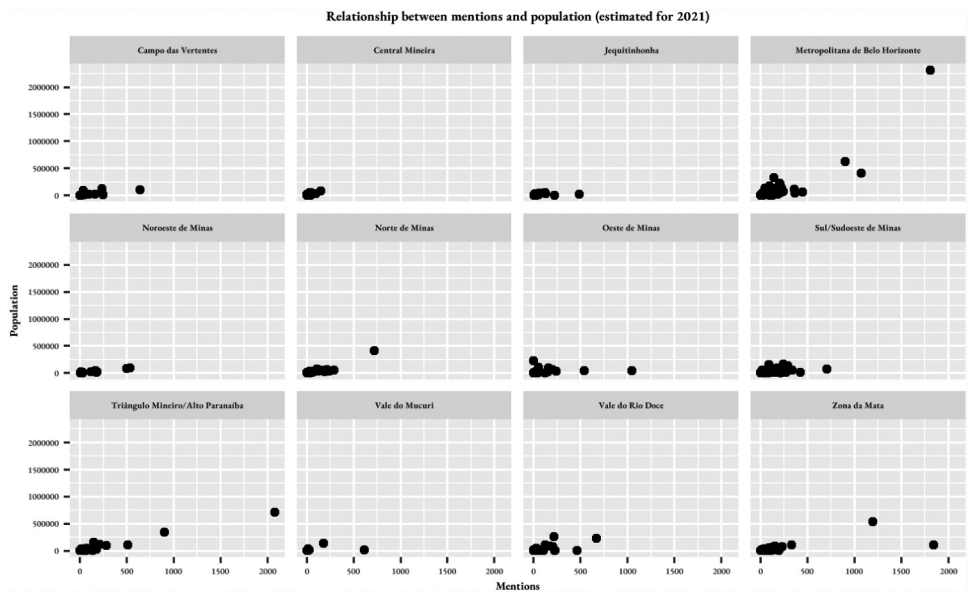
Table A2. Coefficients for linear regression Model examining relationships between municipalities' characteristics (log transformed) and the number of times they were mentioned in facebook ads.

	estimate	std. error	t value	p. value
(Intercept)	− 5.03	0.49	− 10.19	0.00 ***
Population	0.44	0.04	10.38	0.00 ***
GINI	2.82	0.79	3.57	0.00 ***
Medium salary	0.46	0.30	1.55	0.12
Demographic density	− 0.02	0.04	− 060	0.55
Local candidate	0.13	0.09	1.54	0.13

Signif. codes: *** $p < .001$. ** $p < .01$. Residual standard error: 133.2 on 847 degrees of freedom. Multiple R-squared: 0.2964, Adjusted R-squared: 0.2923. F-statistic: 71.37 on 5 and 847 DF, p-value: < 0.00000000000000022.

Relationship between municipality mentions and population.

Relationship between municipality mentions and population according to mesoregion. The analysis is based on all Facebook posts created by our sample. The capital of Minas Gerais is in the *Metropolitana de Belo Horizonte* mesoregion. The other cities that ranked highest in our textual analysis are located in *Triângulo Mineiro/Alto Paranaíba* and in the *Zona da Mata*.