

Campaign Media Strategy: Clicks and Reposts vs Cable and Radio

Junue Jang^{1*}, ChaiHee Lee²

¹South Torrance High School, 4801 Pacific Coast Hwy, Torrance, CA 90505, United States of America

²Bakersfield Christian High School, 12775 Stockdale Hwy, Bakersfield, CA 93314, United States of America

* Corresponding author email: mrjj6000@gmail.com

Abstract

This paper examines how candidates in an election allocate campaign resources between traditional and social media using a game-theoretic framework. The dynamic between an incumbent and challenger is modeled as a strictly competitive game where the mixed-strategy Nash equilibrium is derived for a series of electoral scenarios. These scenarios touch on budget disparities, outsider and populist candidacies, and corruption scandals, stemming from a baseline model that captures incumbency bias. Results indicate that challengers consistently and stably favor social media; meanwhile, incumbents adapt their media allocation strategy in favor of social media in response to challenger benefits and harms across the two platforms. Social media's repeated presence as the decisive arena suggests that political campaigns can no longer afford to ignore digital media in the modern era.

Keywords: Politics; Political Media; Campaign Strategy; Social Media; Mixed Strategy Nash Equilibrium; Game Theory

1. Introduction

Over the past 20 years, social media and political campaigns have grown in tandem. Social media, for one, is integral to the lives of many: as of February 2025, there are 5.24 billion social media users, which accounts for nearly 64% of the world's population (Statista, 2025). This has consequently spilled over into politics, where platforms such as Facebook and Instagram are increasingly responsible for the dissemination of modern politics, and thereby political campaigns. Strikingly, digital ad spending in 2024 reached \$3.46 billion in the U.S. alone, accounting for 28.1% of total political spending — double its share from 2020 (14.1%) (eMarketer, 2024).

Social media's rise to prevalence implies a dip in traditional media, which includes but is not limited to radio, television, and press/newspapers. As consumers increasingly shift toward algorithmically curated spaces, the same can be said for those who had once relied on cable news and similar means for political input. Social media's potential benefits over traditional media for political advertising include greater engagement, lower barriers of entry (financial, social, etc.), and perceived transparency amongst other factors (Enikolopov et al., 2020; Petrova et al., 2020).

An inherent benefit of social media is increased accessibility to information, with systemic gaps of media consumption within age, gender, and education being counteracted by such during times of high political stakes (i.e., elections) (Esser and Steppat, 2017; Haugsgjerd & Karlsen, 2022). A study looking at the young people of Jordan suggest the same; a study modeling (Partial Least Squares) the surveys of hundreds of young Jordanians claimed that their findings “ensure the value of SM [social media] in engaging young people into Jordanian politics” (Al-Qora'n et al., 2023). Also unlike traditional media, social media offers users the ability to publicly express themselves through reposts, shares, or their creation of original content, a far cry from the one-way communication of cable news. The two-way nature of social media has therefore unlocked a user-generated multiplier effect on campaign advertisements for politicians and party platforms.

In an age of rising institutional distrust, legacy media outlets have also fallen victim to greater public skepticism. Social media assuages those concerns, providing a decentralized platform that “enabled politicians to connect directly with voters, bypassing traditional media gatekeepers” (Kumar et al., 2025). The nature of social media as a tool for social justice and liberation against oppressive regimes furthers this perception as a platform of transparency (Ghonim, 2012). On the other hand, lack of established editorial standards and verification processes pose harm by leaving social networking platforms vulnerable to misinformation. The 2013 Italian general elections and the ensuing activity on Facebook revealed that out of a sample of 2.3 million individuals, those reliant on alternative sources for political information (i.e., social media) were more susceptible to misinformation (Karsai et al., 2015).

At the very least, social media allows its creators to be more personable and responsive, a growing trend in political communication (Enli, 2017). Nonetheless, this trait is more desirable within small-scale elections, where algorithms are more capable of directly reaching constituents of a local city than legacy media. In a 2021 study within the *American Political Science Review*, researchers collected half a year’s worth of Facebook ad data intended for the 2018 U.S. midterms. Employing regression models with candidate fixed effects, they found that there was a significantly greater proportion of candidates running for smaller positions (e.g., State House, State Senate) than that of larger positions (e.g., U.S. Senate, Governor) that spent more on Facebook advertisements than TV ads (Fowler et al., 2021). This demonstrates that small-scale politicians with limited resources found the low financial barrier and connectivity of social media to be preferable over legacy media outlets.

As a relatively new field of study, literature surrounding the role of social media in influencing the outcome of elections is limited. A recent study investigating over 20,000 advertisements across 1,000 candidates in the 2021 German federal election sought to measure the quantifiable impact of social media presence on a candidate’s odds. Utilizing regression-based discrete choice models, they found a statistically significant relationship between the amount of times a political advertisement was rendered and the votes over abstention for that particular candidate (Bär et al., 2025). Specifically, they found that approximately 200,000 social media impressions (or renderings) translated to a 2.1% increase in votes, which was an average of 500 votes within the dataset.

Along with some preliminary numbers, existing literature briefly touches on the effects of social media on different archetypes of political candidates. For one, political outsiders typically benefit more than their insider counterparts when using social media. This aligns with how the medium is more adept at highlighting authenticity and personableness, rid of the bureaucratise and implicit norms that often define establishment politics (Enli, 2017). Further down that train of thought are candidates with more populist beliefs or extreme positions. Similarly, a 2020 paper evaluated survey data of both broadband coverage and voting behaviors at the local level of European states to find that there existed a positive causal relationship between broadband coverage and populist support via votes (Morisi & Schaub, 2020).

On the flip side is the subduing of said populist and extremist candidates within traditional media. Although he argues against the working definition of the “media hegemony,” even David L. Altheide acknowledges that mass media and its corporations ensure the maintenance of the status quo by the promotion of more moderate politics (Altheide, 1984). This results in populist and extremist candidates being either neglected or criticized within mass media institutions, which further reinforces their trust in social media. Also worth mentioning within any election featuring the incumbent-challenger dichotomy is incumbency bias. This is when the incumbent candidate faces an inherent advantage due to name recognition, a proven track record (and consequent perception of competence), media bias, and other factors, even when controlling for party and candidate quality (Erikson & Titunik, 2015).

With social media playing an increased role within politics and the media ecosystem, new asymmetries in outreach, cost, and character pose novel questions in regards to campaign strategy. This paper is therefore motivated by an overarching interest to investigate how political candidates may adapt campaigning tactics in response to the evolving state of the political media environment. The topic of electoral campaigns points this study towards strategic games, where “players” of a game must revise their behavior based on the perceived traits of their opponents to maximize their payoffs, or in this case, their odds of winning the election. An incumbent-challenger dynamic is utilized, as it is unrealistic to assume that two candidates entering an election are comparably similar.

The aforementioned lack of literature surrounding social media in political campaigning is reinforced by related papers that also advocate for more theoretical models surrounding the subject (Dimitrova & Matthes,

2018). Amongst existing political models, a 2009 paper evaluating the payoffs of utilizing various forms of media (e.g., radio, internet) between two skewed candidates served as the primary inspiration behind this paper (Bodražić & Dukić, 2009). They frame the “game” at hand as a strictly competitive (“zero-sum”) optimization problem; in other words, one candidate’s exact gain in votes is the other candidate’s exact loss in votes.

Typically, simple games as such are solved through discovery of the Nash equilibrium, or an outcome where neither player can make a profitable unilateral deviation from their original action. However, our paper differentiates itself due to each candidate’s ability to allocate a specific quantity of funds towards either traditional or social media campaigning. Because of this wrinkle, we intend to pursue the mixed strategy Nash equilibrium for each scenario, reflecting realistic decision-making and the variable allocation of resources across multiple platforms.

In the following section, we provide a model and various scenarios to explore the incumbent-challenger dynamic and how media strategies shift in response to modifying characteristics within the two players. Understanding these underlying forces is crucial to evaluating whether social media truly lives up to its name as a democratizing force. By building off existing literature touching on the rudimentary benefits of social media, this study intends to better capture the evolving strategies used within an increasingly competitive political arena. In addition to being a theory, this model offers valuable insights into the strategic decisions that campaigns and politicians must make in real-world situations, such as voter engagement, message synchronization, and resource allocation.

2. Methods

This study looks at a series of 2x2 game-theoretical models surrounding media strategy selection in election campaigns. The game features competition between two players: an incumbent and a challenger. The intent of the game for each player is to maximize their own payoff, or in the context of the election, ensure their respective greatest odds of victory. By finding the mixed strategy Nash equilibria, we can identify optimal shifts in each candidate’s allocation of campaign resources between social and traditional media under various electoral conditions.

2.1 Game Structure

- **Players:**
 - Incumbent (P_1)
 - Challenger (P_2)
- **Media Types:**
 - Traditional Media: T
 - Social Media: S
- **Proportions:**
 - **Incumbent:**
 - * Proportion of funds spent on social media: p
 - * Proportion of funds spent on traditional media: $1 - p$
 - **Challenger:**
 - * Proportion of funds spent on S : q
 - * Proportion of funds spent on T : $1 - q$
- **Payoffs:** Utility functions depend on candidate type, media choice, public perception, political stance, and outcome.
 - **Incumbent:**
 - * Expected utility function given Challenger chooses social media: $U_1(; S)$
 - * Expected utility function given Challenger chooses traditional media: $U_1(; T)$

– Challenger:

- * Expected utility function given Incumbent chooses social media: $-U_1(S, \cdot)$
- * Expected utility function given Incumbent chooses traditional media: $-U_1(T, \cdot)$

Each player chooses to allocate their set campaign funds between traditional media (T) or social media (S). While we then proceed with assigning probabilities to each action, we consider them proportional allocations of each candidate’s budget, as they functionally read the same. For instance, a probability of p is attributed to Player 1 (the incumbent)’s choice of S , but within the context of our problem, it refers to the proportion of campaign media funds spent on social media.

Respectively, $1 - p$ is assigned to Player 1’s choice of T and refers to the proportion of campaign media funds spent on traditional media. Similarly, let q represent the proportion of Player 2’s spending on S , and $1 - q$ represent the proportion of Player 2’s spending on T .

We denote utilities as $U_1(a, b)$ where a is the incumbent’s strategy and b is the challenger’s strategy. When one player’s action is unspecified, we use the placeholder ‘ \cdot ’. For instance, $U_1(T, \cdot)$ denotes the challenger’s payoff solely conditional on the incumbent playing traditional media. Also note that when utility functions measure that of Player 1; because the game is strictly competitive, Player 2’s utility is therefore defined as the negative of Player 1’s utility, or $-U_1(\cdot)$.

2.2 Baseline

The baseline interaction between the incumbent and challenger is simulated as such:

		Challenger	
		$T (1 - q)$	$S (q)$
Incumbent	$T (1 - p)$	4	2
	$S (p)$	0	3

In all four possible action profiles, the incumbent never faces a disadvantage due to incumbency bias. This especially rings true when both players utilize the same form of media: if both select T , the incumbent’s payoff is 4, while if both players select S , the incumbent’s payoff is 3. This aligns with generally observed incumbency bias as well as traditional media’s greater adherence to the status quo and the incumbent’s perceived competence (Erikson & Titunik, 2015).

On the other hand, different payoffs emerge when the two players diverge in strategy. When the incumbent selects T and the challenger selects S , the payoff is 2. On the other hand, when the incumbent selects S and the challenger selects T , the payoff is 0, effectively wiping the incumbent’s inherent advantage. This is due to the incumbent’s failure to properly utilize their institutional access and influence in traditional media, allowing the challenger to then dominate in their presence within legacy media outlets. In the former scenario, despite the challenger’s domination of social media, the incumbent still retains access to traditional media as an area of strength (Fowler et al., 2021).

In order to find the p and q at which the candidates allocate resources to social media as a campaign tool, we solve for the mixed strategy Nash equilibrium, which is a point at where neither player can take a profitable unilateral deviation. In this case, the deviation takes form in either the increase or decrease of p or q for the respective candidate, indicating an increase or decrease in social media spending. Each player finds their p or q by equating the expected payoff of their opponent choosing T to the expected payoff of their opponent choosing S . For instance, the expected payoff of the challenger given the incumbent selects

T is $U_1(T, \cdot) = 4(1 - q) + 2(q)$, which we then equate to the expected payoff of the challenger given the incumbent selects S , which is $U_1(S, \cdot) = 0(1 - q) + 3(q)$. The ensuing calculations are as follows:

$$\begin{aligned}
 U_1(T, \cdot) &= U_1(S, \cdot) & -U_1(\cdot, T) &= -U_1(\cdot, S) \\
 4(1 - q) + 2(q) &= 0(1 - q) + 3(q) & 4(1 - p) + 0(p) &= 2(1 - p) + 3(p) \\
 q &= \frac{4}{5} & p &= \frac{2}{5} \\
 1 - q &= \frac{1}{5} & 1 - p &= \frac{3}{5}
 \end{aligned}$$

$$P_1 = \left(\frac{3}{5}, \frac{2}{5}\right), \quad P_2 = \left(\frac{1}{5}, \frac{4}{5}\right)$$

If we take the assumptions of the game to be precise, the incumbent's optimal strategy is to allocate 40% of their budget towards S while the challenger's optimal strategy is to allocate 80% of their budget towards S . However, these values should be treated less as definitive and more as a benchmark for how these values shift when presented with different electoral conditions. Ultimately, it is evident through this scenario and others that the challenger prefers social media to traditional media.

3. Results and Discussion

Extending on the baseline game, we provide four scenarios that mirror electoral conditions that are often present in an electoral setting between an incumbent and challenger. The purpose of these distinct cases is to demonstrate how each candidate's equilibrium strategies shift when they are presented with said conditions. In particular, we look at: (1) budget disparities between an incumbent and challenger, (2) contests involving a political outsider, (3) contests involving a challenger with populist or extreme positions, and (4) incumbents facing scandal against challengers with anti-corruption platforms. Together, these four unique games demonstrate how strategic political media allocation is reliant on the political context in which the campaigns of the incumbent and challenger unfold.

3.1 Scenario 1: Budget Asymmetry

Suppose the challenger enters the election with significantly less funds than their incumbent counterpart. With not enough resources to buy advertisements on television or radio, the underfunded challenger is effectively disqualified from accessing traditional media outlets (Petrova et al., 2020). This makes the challenger's only option to advertise on social media, where the barrier to entry is significantly lower than that of traditional media. The constraint placed on the challenger ($q = 1$) then simplifies the incumbent's strategy, which is represented below:

		Challenger	
		$S (q)$	
Incumbent	$T (1 - p)$	2	
	$S (p)$	3	

The payoffs reveal that social media dominates traditional media ($3 > 2$), which results in both candidates converging in their decisions to allocate their entire budget to social media. Although it was previously mentioned that the incumbent should access their access and influence within legacy media outlets, their optimal strategy would be to saturate the digital space.

Although simplistic, this game reveals that despite the incumbent’s inherent advantage through traditional media, their primary interest is to disallow the challenger from going unopposed within a media type (in this case, social media). Furthermore, this case emphasizes the importance of effective fundraising for smaller candidates, as being denied from traditional media outlets poses a substantial disadvantage to one’s campaign.

3.2 Scenario 2: Political Outsider

Suppose the challenger is a political outsider with nontraditional ideas and an innate reputation for authenticity (Enli, 2017). Unlike establishment incumbent candidates, outsiders typically resonate more with voters on social media rather than traditional media.

A key benefit of social media is that it bypasses the gatekeeping function of traditional media, allowing constituents to access more novel and unique candidates. The comparative advantage that the challenger receives when utilizing social media is defined as x ; in this strictly competitive setting, this poses a disadvantage to the utility function of the incumbent (P_1), hence the $-x$.

		Challenger	
		$T (1 - q)$	$S (q)$
Incumbent	$T (1 - p)$	4	$2 - x$
	$S (p)$	0	$3 - x$

$$U_1(T, \cdot) = U_1(S, \cdot)$$

$$-U_1(\cdot, T) = -U_1(\cdot, S)$$

$$4(1-q) + (2-x)(q) = 0(1-q) + (3-x)(q)$$

$$4(1-p) + 0(p) = (2-x)(1-p) + (3-x)(p)$$

$$q = \frac{4}{5}$$

$$p = \frac{2+x}{5}$$

$$1-q = \frac{1}{5}$$

$$1-p = \frac{3-x}{5}$$

$$P_1 = \left(\frac{3-x}{5}, \frac{2+x}{5}\right), \quad P_2 = \left(\frac{1}{5}, \frac{4}{5}\right)$$

Almost counterintuitively, the equilibrium analysis fails to demonstrate the challenger's strategy shifting with respect to the outsider advantage increasing or decreasing. The value of q remains at $\frac{4}{5}$, indicating that it is not dependent on the value x . However, the incumbent's strategy shifts more towards social media as the challenger's advantage, x , grows larger. The value of p is $\frac{2+x}{5}$, meaning that an increase in x will consequently result in an increase in p .

With the rising prominence of outsider challengers and candidates, incumbent candidates should not neglect the medium digital advertising in favor of relying on traditional media outlets. Thus, the takeaway remains that the more an outsider challenger uniquely benefits from social media campaigning, the greater proportion of funds the incumbent should allocate towards that same medium.

3.3 Scenario 3: Populist/Extremist

Suppose the challenger distances themselves from the political mainstream again, but instead embraces populist or extreme positions with polarizing rhetoric. What makes this different from the previous scenario is that traditional media tends to criticize and stifle these populist candidates, making it a disadvantage for such challengers to campaign through traditional media.

Populist appeals are aided by social media, and the two conjoin to spark greater political support for more extreme candidates (Morisi & Schaub, 2020). On the other hand, traditional media outlets tend to reinforce the status quo in a practice Altheide (1984) referred to as "media hegemony". Legacy media outlets are therefore likely to ignore or oppose the extreme stances of a populist challenger. Along with the parameter x representing the benefit of social media for the challenger, the y value represents the disadvantage that challengers face within their advertisements on traditional media.

		Challenger	
		$T (1-q)$	$S (q)$
Incumbent	$T (1-p)$	4 + y	2 - x
	$S (p)$	y	3 - x

$$U_1(T, \cdot) = U_1(S, \cdot)$$

$$-U_1(\cdot, T) = -U_1(\cdot, S)$$

$$(4 + y)(1 - q) + (2 - x)(q) = y(1 - q) + (3 - x)(q)$$

$$(4 + y)(1 - p) + y(p) = (2 - x)(1 - p) + (3 - x)(p)$$

$$q = \frac{4}{5}$$

$$p = \frac{2 + x + y}{5}$$

$$1 - q = \frac{1}{5}$$

$$1 - p = \frac{3 - x - y}{5}$$

$$P_1 = \left(\frac{3 - x - y}{5}, \frac{2 + x + y}{5}\right), \quad P_2 = \left(\frac{1}{5}, \frac{4}{5}\right)$$

Again, the challenger's strategy remains indifferent to the size of x or y , demonstrating that their reliance on social media in forging a path to victory persists. The incumbent's strategy, however, adjusts depending on both x and y , with the value of p at $\frac{2+x+y}{5}$. Notably, as the challenger's traditional media disadvantage deepens, the incumbent is less inclined to allocate as much of their budget to traditional media likewise.

Ironically, the more a challenger is criticized and subdued in traditional media, the less significant traditional outlets become for incumbents. This is for the incumbent to allocate the least possible quantity of resources towards traditional media as to seize an advantage over the medium; simultaneously, they seek to pour as much money into social media to contest the challenger's digital presence.

3.4 Scenario 4: Corrupt Incumbent

Suppose the incumbent candidate faces a corruption scandal prior to the election. Coverage of the scandal is highly dependent on the medium: while both outlets may speak of the incident, social media amplifies narratives of corruption to a further extent, especially with a challenger candidate that directly mobilizes public outrage through digital media platforms. Meanwhile, legacy media outlets tend to protect the status quo, which may include covering up such misconduct.

Social media's title as a "liberation technology" applies broadly to protests, revolutions, and other political action (Enikolopov et al., 2020). Nonetheless, this sentiment can be captured within the context of the election game with two parameters. First, the value a represents the incumbent's disadvantage when the challenger utilizes social media to target the incumbent's negative reputation. Second, the value b represents the additional amplification of scandal impact that the incumbent faces when campaigning on social media in contrast to traditional media.

		Challenger	
		$T (1 - q)$	$S (q)$
Incumbent	$T (1 - p)$	4	$2 - a$
	$S (p)$	0	$3 - a - b$

$$U_1(T, \cdot) = U_1(S, \cdot)$$

$$4(1 - q) + (2 - a)(q) = 0(1 - q) + (3 - a - b)(q)$$

$$q = \frac{4}{5 - b}$$

$$1 - q = \frac{1 - b}{5 - b}$$

$$-U_1(\cdot, T) = -U_1(\cdot, S)$$

$$4(1 - p) + 0(p) = (2 - a)(1 - p) + (3 - a - b)(p)$$

$$p = \frac{2 + a}{5 - b}$$

$$1 - p = \frac{3 - (a + b)}{5 - b}$$

$$P_1 = \left(\frac{3 - (a + b)}{5}, \frac{2 + a}{5} \right), \quad P_2 = \left(\frac{1 - b}{5 - b}, \frac{4}{5 - b} \right)$$

The equilibrium analysis shows that when $b > 0$, both candidates are strategically inclined to shift their media allocation strategies. For the incumbent, both an increase in a and b indicates an increase of p , which is equivalent to $\frac{2+a}{5-b}$. For the challenger, an increase in b indicates an increase of q , which is equivalent to $\frac{4}{5-b}$.

An interesting takeaway was that an increase of the scandal amplification that the incumbent faces when campaigning on social media relative to traditional media actually increased the optimal proportion of their funds towards social media. This means that the more negatively the incumbent is perceived on social media, the more they should allocate towards that same platform. However, it is not to "win back the trust" of digital constituents, but rather to ensure that the challenger does not seize control of the digital campaigning space. It is therefore the primary objective of the incumbent to ensure that the strategies of both players do not diverge significantly, even if it leads to decisions that seem counterintuitive.

4. Conclusion

This paper demonstrated how strategic decision-making in political media allocation shifts when candidates are presented with electoral asymmetries in a strictly competitive game. Beyond the prevalence of incumbency bias, the four scenarios — budget disparities, outsider candidates, populist candidates, corrupt incumbents — pose questions that reveal campaign dynamics when conducting equilibrium analysis. Ultimately, as candidates are presented with scenarios that deviate from the norm, both incumbents and challengers are drawn away from legacy media and closer towards social media outlets. This is indicative of a greater shift within political communication and emphasizes social media's role as a democratizing force within politics; increased use of a media platform with lower barriers of entry and greater accessibility allows for a more diverse crowd within political discourse.

From a purely theoretical perspective, the equilibria underscore the stability of the challenger's strategies despite their political stances that deviated from the status quo. On the other hand, incumbents frequently adjusted, allocating more resources towards social media to combat the challenger's comparative advantage on the platform relative to traditional media. Incumbents are therefore encouraged not to rely on incumbency bias to claim electoral victory, but to rather optimize their political strategy to satisfy their constituents, whether that be inside or outside of media.

This model assumes perfectly rational actors, full information, and fixed voter responsiveness among other factors. No two campaigns may have similar conditions (to the model and each other), and so the external validity of this study lies in directional tendencies rather than predictions. While the model necessarily simplifies complex electoral realities into straightforward game-theory tables, further theoretical research towards more precise models accounting for a plenitude of variables is encouraged. Moreover, examining the relationship between real-life voter data and visible campaign spending would further refine our understanding of what dynamics persist beyond the model's controlled parameters. Through further empirical research surrounding electoral strategies within an incumbent-challenger dynamic and electoral outcomes, we are able to gain a more refined understanding of media allocation strategy within politics.

5. References

- [1] Altheide, D. L. (1984). Media hegemony: A failure of perspective. <https://doi.org/10.1086/268844>
- [2] Al-Qora'n, N., et al. (2023). Social media platforms and political participation: A study of Jordanian youth engagement. *Social Sciences*, 12(7), 0402. <https://doi.org/10.3390/socsci12070402>
- [3] Bär, H., et al. (2025). The role of social media ads for election outcomes: Evidence from the 2021 German election. <https://doi.org/10.1093/pnasnexus/pgaf073>
- [4] Boulianne, S. (2024). Perceptions and concerns about misinformation on Facebook in Canada, France, the US, and the UK. *International Journal of Public Opinion Research*. <https://doi.org/10.1093/ijpor/edae048>
- [5] Boulianne, S., & Oser, J. (2020). Reinforcement effects between digital media use and political participation: A meta-analysis of repeated-wave panel data. <https://doi.org/10.1093/poq/nfaa017>
- [6] Bodražić, V., & Dukić, D. (2009). Improvement of political campaigning by a computer simulation model based on game theory. <https://www.croris.hr/crosbi/publikacija/prilog-skup/555539>
- [7] Dimitrova, D. V., & Matthes, J. (2018). Social media in political campaigning around the world: Theoretical and methodological challenges. <https://doi.org/10.1177/1077699018770437>
- [8] eMarketer. (2024, January 17). 2024 political ad spending will jump nearly 30% vs. 2020. Retrieved from <https://www.emarketer.com/press-releases/2024-political-ad-spending-will-jump-nearly-30-vs-2020/>
- [9] Enikolopov, R., et al. (2020). Social media and protest participation: Evidence from Russia. *Econometrica*. <https://doi.org/10.3982/ECTA14281>
- [10] Enli, G. (2017). Twitter as arena for the authentic outsider: Exploring the social media campaigns of Trump and Clinton in the 2016 US presidential election. <https://doi.org/10.1177/0267323116682802>
- [11] Erikson, R. S., & Titunik, R. (2015). Using regression discontinuity to uncover the personal incumbency advantage. <https://doi.org/10.1561/100.00013137>
- [12] Esser, F., & Steppat, S. (2017). News media use: International comparative research. <https://doi.org/10.1002/9781118783764.wbieme0015>
- [13] Fowler, E. F., et al. (2021). The influence of goals and timing: How campaigns deploy ads on Facebook. <https://doi.org/10.1080/19331681.2021.1874585>
- [14] Ghonim, W. (2012, February 19). How an Egyptian revolution began on Facebook. *The New York Times*. <https://www.nytimes.com/2012/02/19/books/review/how-an-egyptian-revolution-began-on-facebook.html>
- [15] Haugsgjerd, F., & Karlsen, R. (2022). Election campaigns, news consumption gaps, and social media: Equalizing political news use when it matters? *Political Communication*. <https://doi.org/10.1177/19401612221112014>
- [16] Karsai, M., et al. (2015). Collective attention in the age of (mis)information. *Computers in Human Behavior*. <https://doi.org/10.1016/j.chb.2015.01.024>
- [17] Kumar, A., et al. (2025). Impact of biochar amendment on soil microbial biomass carbon enhancement under field experiments: A meta-analysis. *Applied Biological Chemistry*. <https://doi.org/10.1007/s42773-024-00391-6>
- [18] Mellon, J., & Prosser, C. (2017). Twitter and Facebook are not representative of the general population: Political attitudes and demographics of British social media users. <https://doi.org/10.1177/2053168017720008>
- [19] Morisi, D., & Schaub, M. (2020). Voter mobilisation in the echo chamber: Broadband internet and the rise of populism in Europe. <https://doi.org/10.1111/1475-6765.12373>
- [20] Petrova, V., et al. (2020). Rift valley fever: Diagnostic challenges and investment needs for vaccine development. *BMJ Global Health*. <https://doi.org/10.1136/bmjgh-2020-002694>
- [21] Statista. (2025). Number of internet and social media users worldwide as of February 2025. Retrieved from <https://www.statista.com/statistics/617136/digital-population-worldwide/>