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From tweets to power: an integrative thematic review of political communication and platform governance on Twitter/X (2009–2024)

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Introduction: This integrative thematic review synthesizes the body of peer-reviewed studies on political communication via Twitter/X, aiming to map the conceptual and methodological landscape of the field as indexed in major databases from the platform's inception in 2009 through 2024.

Methods: The review followed a PRISMA-style workflow for search, de-duplication, and screening, resulting in a final corpus of 52 articles from the Web of Science Core Collection and Scopus. Included studies were analyzed using a hybrid deductive-inductive thematic analysis.

Results: Findings are organized around five central themes: (1) actor strategy (personalization, timing, campaign orchestration), (2) audience behavior (engagement patterns, selective exposure), (3) platform architecture (affordances, algorithmic mediation), (4) trust and legitimacy (institutional credibility vs. visibility logics), and (5) methodological innovation (computational scaling vs. interpretive depth). The analysis reveals conceptual consolidation but also a structural imbalance in the field, characterized by the dominance of US and EU scholarship, limited cross-regional integration, and uneven theoretical convergence.

Discussion: The study argues for three key developments in future research: the adoption of mixed-method designs integrating discourse, network, and behavioral data; greater attention to non-Western contexts; and the explicit treatment of platforms as political actors, not just communication stages. Limitations include the restriction to two databases and a specific timeframe, the absence of a formal quality appraisal, and evolving platform conditions that challenge reproducibility. This review provides a roadmap for building more cumulative, comparative, and theory-driven research on the intersection of Twitter/X and governance.

KEYWORDS

Twitter/X, political communication, platform governance, digital diplomacy, public trust, polarization, platform affordances, methodological innovation

1 Introduction

Over the past decade, Twitter/X has become an indispensable tool in the repertoire of political actors, institutions, and strategists worldwide (Zayani, 2021; Abdul Reda et al., 2024; Heltzel and Laurin, 2024). What began as a microblogging platform with a 140-character limit has evolved into a central stage for political signaling (Cano-Marin et al., 2023), crisis communication (Eriksson and

Olsson, 2016), election campaigning (Sanofi et al., 2024), and real-time engagement with the public. Its architecture—favoring brevity, virality, and immediacy—has positioned it as a unique hybrid space: a conduit for official messaging and a forum for grassroots dissent (Jaidka et al., 2018). As governments and parties use Twitter/X to shape narratives and influence opinions, the platform has simultaneously been weaponized by populist actors, exploited by bots, and contested by journalists and citizens, making it not just a medium but a site of governance in itself (de Gil Zúñiga et al., 2020; Obreja, 2023).

While early research on political communication via Twitter/X focused heavily on whether it fostered deliberation or intensified ideological silos, the field is now maturing (Masroor et al., 2019). The binary framing of the echo chamber versus the public sphere has proven insufficient to account for the platform's multifaceted roles (Du and Gregory, 2017). A growing body of literature has shown the complexity of user exposure, algorithmic amplification, and the hybridization of media systems—yet these insights often remain disconnected, scattered across disciplinary silos and case-specific studies (Srnrdelj and Pajnik, 2025; Corsi, 2024; Özkent, 2022).

This review responds to the need for theoretical and conceptual integration in a research landscape marked by methodological fragmentation and platform volatility. As the nature of political communication becomes increasingly contingent on the design and logic of private platforms, there is an urgent need to critically synthesize what we know about how Twitter/X mediates visibility, influence, legitimacy, and power in political contexts.

To this end, the present article offers an integrative thematic review of peer-reviewed literature published between 2009 and 2024 exclusively from the Web of Science Core Collection and Scopus. It draws from leading empirical contributions in communication, political science, journalism, and digital governance to examine how Twitter/X is used, by whom, under what conditions, and with what democratic consequences. Special emphasis is placed on platform affordances, actor strategies, and the evolving algorithmic and institutional infrastructures that shape communication dynamics.

Four core objectives guide this review:

- To map the strategic uses of Twitter/X by political and institutional actors.
- To assess how these practices interact with audience behavior, trust, and polarization.
- To analyze how platform-specific features—technical and socio-political—influence message visibility and perceived legitimacy.
- To identify critical gaps and propose a unified research agenda for future studies on platform-mediated political communication.

2 Methodology

This article employs an integrative thematic review methodology to synthesize conceptual and empirical insights into how Twitter/X has been utilized as a political communication and governance platform. We follow established guidance for integrative/thematic reviews that synthesize heterogeneous designs while preserving theoretical coherence (Whittemore and Knafl, 2005; Torraco, 2005/2016). This approach allows for a qualitative, theory-driven synthesis across studies that vary in methods, disciplinary orientations, and analytical depth. The focus is on capturing the structural logic and conceptual trajectories that have emerged over the last 15 years.

The literature was sourced from two major academic databases: Scopus and the Web of Science Core Collection on 05/06/2025; records were exported the same day in RIS/CSV formats for screening and de-duplication. Both are internationally recognized for indexing high-quality, peer-reviewed scholarship across the social sciences and humanities. The search strategy combined terms such as “Twitter,” “X,” “political communication,” “government communication,” and “digital governance” and was applied to article titles, abstracts, and keywords. Only documents published between 2009 and 2024 were considered.

Inclusion criteria were defined as follows:

- Empirical peer-reviewed articles that explicitly analyze political communication or governance practices involving Twitter/X.
- Studies focusing on public actors (e.g., politicians, institutions, campaigns), digital political behavior (e.g., public engagement, trust, polarization), or platform design and influence.

Exclusion criteria included:

- Commentary pieces, editorials, or conceptual essays lacking empirical data.
- Technical or machine learning-focused papers that used Twitter/X data solely as input without political framing or communicative interpretation.
- Studies centered on other platforms (e.g., Facebook, YouTube) unless Twitter/X was a primary object of analysis.

Screening and selection. Searches conducted in Scopus and the Web of Science Core Collection (WoSCC) for 2009–2024 retrieved 1,226 and 1,302 records, respectively. After removing 682 duplicates, 1,846 unique records were screened at title/abstract level; 1,680 were excluded for being off-topic, non-empirical, or not centered on Twitter/X in a political/governance context. We assessed 166 full texts for eligibility and excluded 114 (insufficient political framing; purely technical/ML without communicative analysis; commentary/editorial pieces). The final corpus comprised 52 empirical, peer-reviewed articles that met all inclusion criteria and were sent to thematic coding (Figure 1).

Two independent reviewers screened titles and abstracts; disagreements were resolved by a third reviewer. Full texts were then assessed against pre-registered inclusion criteria. The final review corpus comprised 52 high-impact articles selected for their scholarly influence (Table 1), conceptual clarity, and empirical richness. High-impact was defined *a priori* by (i) global citation counts in WoS/Scopus normalized by year, (ii) publication-venue standing, and (iii) centrality in strand-defining debates evidenced within our corpus. These were manually analyzed and thematically coded using a hybrid deductive–inductive thematic analysis, starting from theory-informed codes and iteratively refining categories during full-text coding (Braun and Clarke, 2006; Fereday and Muir-Cochrane, 2006). Initial categories were informed by prior theoretical work on political communication and platform governance and refined iteratively as patterns and clusters emerged. Five primary coding dimensions guided the thematic synthesis:

- 1 Political actor strategy: How campaigns, institutions, and individuals structure and adapt their communication styles on Twitter/X.

PRISMA Flow Chart for Integrative Thematic Review

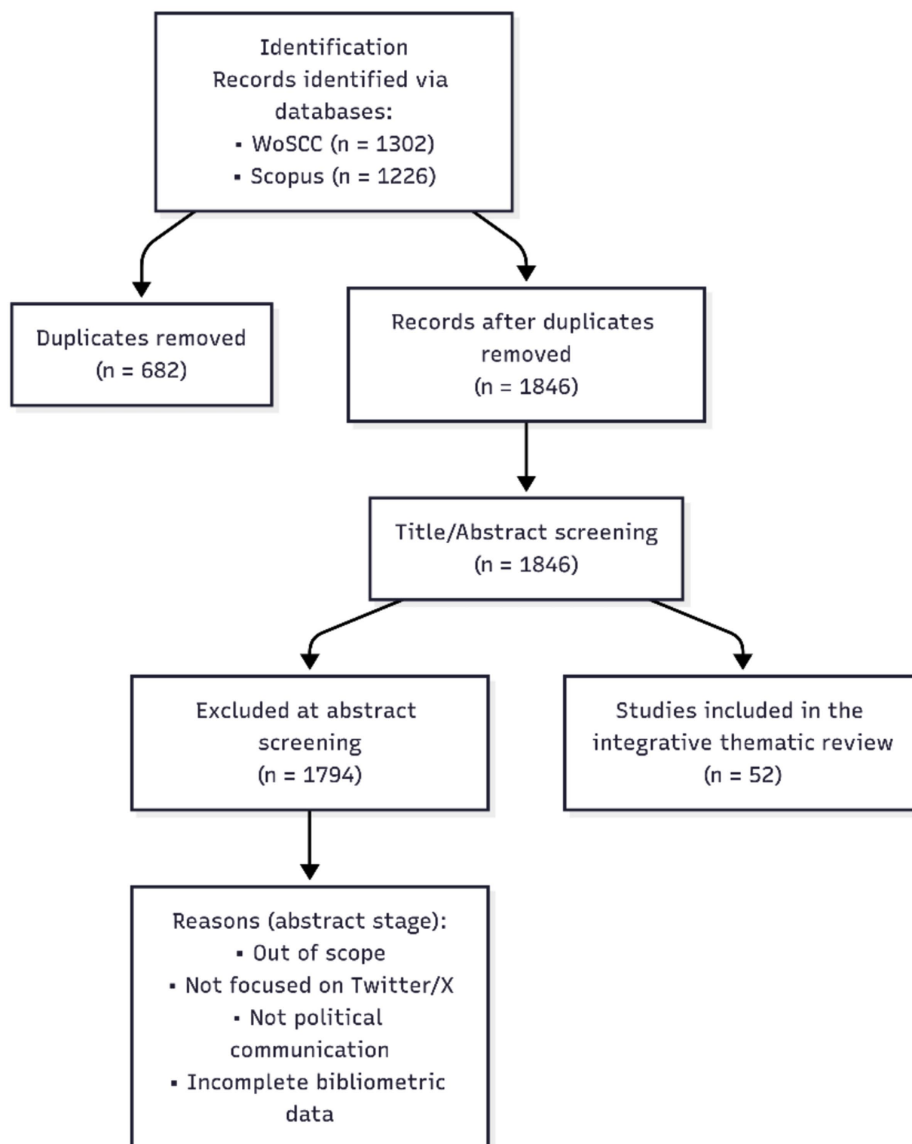


FIGURE 1
PRISMA flow diagram of study identification, screening, and inclusion.

- 2 Audience behavior and engagement: How users interact with political content, including sharing, commenting, and affective polarization.
- 3 Platform design and affordances: How the technical features and algorithmic structures of Twitter/X shape communication dynamics.
- 4 Trust and legitimacy: How political messages on the platform impact public perceptions of authority, credibility, and institutional accountability.
- 5 Methodological innovation: Approaches used to study Twitter/X, including computational methods, hybrid frameworks, and emerging data integration models.

This methodological framework enables a multidimensional understanding of Twitter/X as a communication tool and a political

infrastructure that reconfigures visibility, authority, and civic participation in the digital age.

3 Results

3.1 Strategic communication and actor-platform interaction

3.1.1 Message personalization and strategic timing

The personalization of political messaging and the strategic use of timing have emerged as critical determinants of communicative success on Twitter/X. While early political uses of the platform often mirrored traditional broadcast logic, more recent studies underscore

TABLE 1 Overview of the selected articles and methodological approaches.

Author(s)	Topic	Country/Region	Type of study	Data type	Method	Platform(s)	Main focus
Hermida (2010)	Twittering the News	Canada	Qualitative	News tweets	Thematic/discourse analysis	Twitter/X	Ambient journalism
Chadwick (2011)	Hybrid Media System	UK	Theoretical	Conceptual	Media integration theory	Twitter/X and news media	Media hybridization
Conover et al. (2011)	Political polarization on Twitter	USA	Quantitative	Retweet network	Network clustering	Twitter/X	Ideological separation
Jackson and Lilleker (2011)	Twitter/X and Representation	UK	Qualitative	Tweets from MPs	Thematic coding	Twitter/X	Legislative communication
Enli and Skogerbo (2013)	Personalized campaigns in party-centered politics	Norway	Qualitative	Party tweets	Content analysis	Twitter/X	Personalization
Mossberger et al. (2013)	Digital Citizenship and Civic Engagement	USA	Quantitative	Surveys	Statistical analysis	Social media	Civic trust
Criado et al. (2013)	Government 2.0	Spain	Qualitative	Institutional accounts	Case studies	Twitter/X	Digital governance
Stieglitz and Dang-Xuan (2013b)	Social Media Analytics Framework	Germany	Quantitative	Tweets	Sentiment analysis	Twitter/X	Diffusion and engagement
Bruns and Stieglitz (2013)	Crisis Communication on Twitter	Australia	Qualitative	Event tweets	Hashtag timeline	Twitter/X	Event-driven communication
Vergeer and Hermans (2013)	Online Electoral Campaigning	Netherlands	Quantitative	Politician tweets	Engagement metrics	Twitter/X	Online campaign effects
Kreiss (2016a)	Political Performance in Social Media	USA	Qualitative	Ethnography + Tweets	Performance theory	Twitter/X	Performative politics
Larsson and Moe (2015)	Journalistic Norms on Twitter	Sweden	Quantitative	Journalist tweets	Content analysis	Twitter/X	Norm diffusion and editorial logic
Barberá et al. (2015)	Birds of the Same Feather Tweet Together	USA	Quantitative	Twitter/X follower network	Bayesian ideal point estimation	Twitter/X	Ideological clustering
Ceron (2015)	Trust in Government and Social Media	Italy	Quantitative	Survey + digital media exposure	Regression analysis	Web + Twitter/X	Political trust
Theocharis et al. (2015)	Everyday Political Talk	Germany	Quantitative	Survey & content	Engagement analysis	Twitter/X	Informal political engagement
GRIMMELIKHUIJSEN and KLIJN (2015)	Trust and Transparency in Social Media	Netherlands	Quantitative	Survey data	Statistical modeling	Web + Twitter/X	Digital trust in government
Anthopoulos et al. (2016)	E-Gov Challenges	Greece	Qualitative	Case studies	Case analysis	Twitter/X	Accountability in public services
Guo et al. (2016)	Topic Modeling vs. Lexicons	USA	Quantitative	Large-scale tweets	LDA and dictionaries	Twitter/X	Framing elections
Engesser et al. (2017)	Populism and Social Media	Germany	Qualitative	Tweets by politicians	Discourse analysis	Twitter/X	Populist discourse

(Continued)

TABLE 1 (Continued)

Author(s)	Topic	Country/Region	Type of study	Data type	Method	Platform(s)	Main focus
Enli (2017)	Twitter/X as arena for the authentic outsider	Norway	Qualitative	Politician accounts	Narrative analysis	Twitter/X	Authenticity
Kreiss and McGregor (2018)	Technology Firms Shape Political Communication	USA	Qualitative	Campaign staff interviews	Process tracing	Facebook/ Twitter/X	Platform-political coordination
Ernst et al. (2017)	Populist Style on Social Media	Germany	Quantitative	Populist party tweets	Content analysis	Twitter/X	Style and rhetoric
Waisbord (2013)	Populism as Performance	Argentina	Theoretical	Conceptual	Cultural critique	Twitter/X	Political populism
Kreiss (2016)	Political Use of Twitter/X in Campaigns	USA	Qualitative	Campaign accounts	Actor-platform analysis	Twitter/X	Strategic adaptation
Bossetta (2018a)	The digital architectures of social media	USA	Theoretical	Platform design	Comparative theory	Twitter/X/ Facebook	Affordances in campaign communication
Howard et al. (2018)	Computational Propaganda Worldwide	UK/Global	Mixed	Bots and amplification	Case comparison	Twitter/X	Algorithmic manipulation
McGregor (2019)	Social Media as Public Opinion	USA	Qualitative	Journalist interviews	Discourse analysis	Twitter/X	News metrics and perception
Keller et al. (2020)	Astrourfing Germany	Germany	Quantitative	Bot tweets	Network analysis	Twitter/X	Right-wing manipulation
Stier et al. (2020)	Integrating Survey and Twitter/X Data	Germany	Mixed	Surveys + trace data	Triangulation	Twitter/X	Methodological integration
Giglietto et al. (2019)	Fake News and Platform Policy	Italy	Mixed	News accounts	Policy tracking	Twitter/X	Information disorder
Yarchi et al. (2021)	Political Polarization and Participation	Israel	Mixed methods	Tweets and interaction	Content + Network analysis	Twitter/X	Polarization
Hagen et al. (2022)	Public Health Surveillance and Online Political Communication	USA	Mixed methods	Twitter/X stream data during health emergency	Bot detection, content analysis, behavioral modeling	Twitter/X	Role of bots and human users in shaping political conversation on vaccines
Gilardi et al. (2022)	Algorithmic Personalization and Democratic Accountability	Switzerland	Quantitative	Experimental design	Survey + behavior trace	Twitter/X	Platform effects on perception
Theocharis et al. (2023)	Does the platform matter? Social media and COVID-19 conspiracy theory beliefs in 17 countries	Multinational (17 countries)	Empirical survey study	Two-wave online panel survey	Propensity score matching; cross-national comparative analysis	Twitter/X, Facebook, WhatsApp, YouTube, Messenger	Effect of platform affordances on COVID-19 conspiracy theory belief

(Continued)

TABLE 1 (Continued)

Author(s)	Topic	Country/Region	Type of study	Data type	Method	Platform(s)	Main focus
Kubin and von Sikorski (2021)	The role of (social) media in political polarization: a systematic review	USA (dominant)	Systematic review	94 articles (121 studies)	Narrative and comparative synthesis	Twitter/X (focus), Facebook	Effect of (social) media on affective and ideological polarization
Boulianne and Larsson (2023)	Engagement with candidate posts on Twitter, Instagram, and Facebook during the 2019 election	Canada	Empirical quantitative	Tweets, posts on Instagram and Facebook	Comparative engagement analysis	Twitter/X, Instagram, Facebook	User engagement by platform and post type during elections
Gilardi et al. (2022)	Social Media and Political Agenda Setting	Switzerland, Ireland	Empirical quantitative	Social media content and press releases	Time-series regression; agenda-setting modeling	Twitter/X	Influence of digital platforms on political agenda formation
Molyneux and McGregor (2022)	Legitimizing a Platform: Evidence of Journalistic Norms on Twitter	USA	Empirical qualitative + quantitative	Tweets from verified journalists and influencers	Content analysis; thematic interpretation	Twitter/X	How journalistic practices confer legitimacy to Twitter/X as a political platform
Heidenreich et al. (2024)	Discontentment trumps euphoria: Interacting with European politicians' migration-related messages on social media	Germany, Austria	Empirical quantitative	Twitter, Facebook	Multilevel negative binomial regression; survey + automated content analysis	Twitter/X, Facebook	User engagement with political actors' migration framing
Flamino et al. (2023)	Political polarization of news media and influencers on Twitter/X in the 2016 and 2020 US presidential elections	USA	Empirical quantitative	Nearly 1 billion tweets	Network analysis; bias classification; influencer identification	Twitter/X	Shifts in political bias and echo chambers from 2016 to 2020
Song et al. (2024)	Analyzing E-Government Agencies' Twitter/X Engagement: A Text-Mining Approach	USA	Empirical quantitative	Tweets from government agencies	Text mining and semantic clustering	Twitter/X	Government-public engagement via e-government tweets
Ong'ong'a (2025)	The Implementation of the Digital Diplomacy of Kenya on Twitter/X	Kenya	Empirical case study	Kenyan MFA Twitter/X feed	Case study with qualitative coding	Twitter/X	National strategies and outcomes of Kenya's digital diplomacy

a shift toward candidate-centered communication, where identity, authenticity, and timing are carefully calibrated to maximize reach and engagement.

In their influential qualitative study, [Kreiss and McGregor \(2018\)](#) demonstrate that the effectiveness of political communication on Twitter/X is not merely a function of message content or frequency but instead of how well messages are aligned with the candidate's public persona, the affordances of the platform, and the real-time political moment. Drawing from interviews with digital strategists from U.S. political campaigns, the authors identify five key determinants of social media strategy: (1) candidate identity and tone, (2) audience segmentation, (3) platform-specific constraints, (4) content genre, and (5) electoral timing. Their analysis reveals that successful Twitter/X campaigns are highly responsive to the performative expectations of political branding, particularly in high-stakes moments such as debates, scandals, or voting days. In this framework, timing is not incidental—it is strategically orchestrated to seize attention windows and capitalize on algorithmic amplification.

Complementing this perspective, [Vergeer and Hermans \(2013\)](#) provide a large-scale quantitative study of Dutch politicians' use of Twitter/X during election periods. Their findings show that early adopters of the platform gained more followers and received higher levels of engagement and reciprocal interactions from other users, including journalists and fellow politicians. However, the study also indicates that message personalization—such as tweeting from a personal rather than party account—was a stronger predictor of retweet and reply behavior than message frequency alone. Notably, politicians who presented themselves as authentic, accessible, and informal were more likely to attract sustained engagement, especially when tweets coincided with key moments in the electoral timeline.

These foundational insights have been echoed and expanded in more recent research ([Boulianne and Larsson, 2023](#)), through a comparative study of Twitter, Instagram, and Facebook during Canadian federal elections, confirmed that personalization—especially in the form of selfies, informal tone, and direct appeals—was more effective at eliciting interaction on Twitter/X than other platforms. Moreover, they noted that engagement was highest when candidates synchronized personalistic content with event-driven political moments such as debates or voting-day mobilization.

Similarly, [Oden et al. \(2025\)](#) shows how female candidates use personalized Twitter/X messaging to amplify visibility and reshape agenda-building practices in digital media. Their findings show that gendered messaging strategies—inflected by tone, timing, and platform affordances—can reinforce or challenge media gatekeeping logic, depending on when and how personalization is deployed during campaign peaks.

[Alonso-Magdaleno and García-García \(2024\)](#) emphasize the importance of “digital relevance windows” in electoral messaging, noting that political actors who adapt their message cadence and tone to the evolving tempo of digital publics—particularly through humor, empathy, or crisis engagement—gain disproportionate algorithmic amplification. Their study proposes that personalization is most effective when interwoven with “algorithmic tempo synchronization”—the strategic pacing of tweets to align with audience behavior and trending dynamics.

These studies reinforce the idea that Twitter/X is not a neutral communication channel but a dynamic space where identity performance and temporal sensitivity condition political visibility. The

strategic deployment of personal tone, humor, emotional resonance, and immediacy reflects a broader shift toward political branding logic native to the platform economy. Moreover, recent research emphasizes that Twitter/X timing is more than chronological—it is situational and tied to sociopolitical rhythms and media events that trigger algorithmic and audience attention. These findings challenge simplistic assumptions that digital platforms naturally democratize communication. Instead, they reveal a more complex terrain in which political success depends on the synchronization of content with the candidate's identity, the platform's affordances, and the tempo of public discourse. Message personalization and timing, therefore, are not mere tactical choices but structural variables in how political authority is constructed, negotiated, and maintained in the age of platformed politics.

3.1.2 Platform affordances and campaign design

The distinct affordances of each platform profoundly shape the design of political communication strategies on social media ([Table 2](#)). Rather than treating digital media as uniform spaces, recent scholarship has emphasized that platforms like Twitter/X and Facebook offer differentiated architectures—technical, algorithmic, and cultural—that constrain and enable political expression in unique ways. This “platform-sensitive” approach to campaign design marks a shift from content-focused analyses toward a more structural understanding of how political actors adapt to and are shaped by the environments in which they operate.

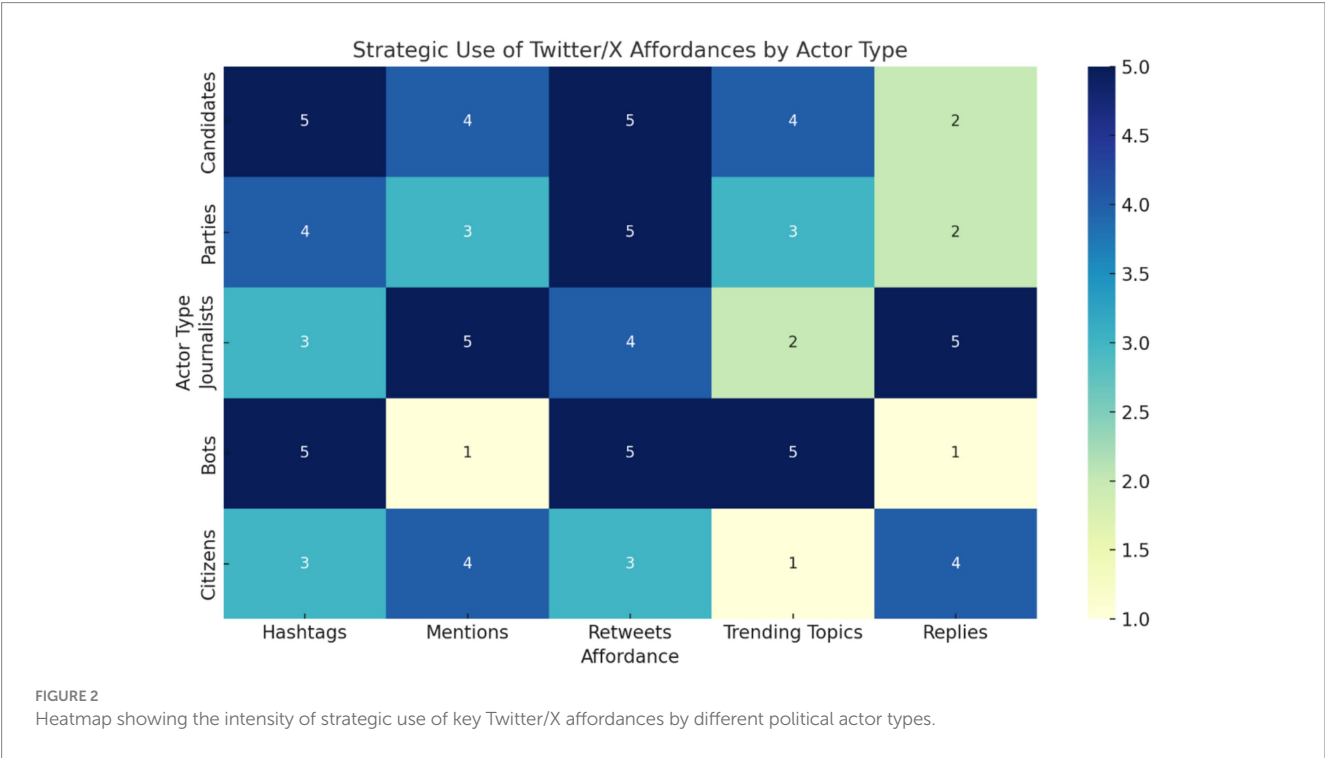
[Bossetta \(2018\)](#) introduces the concept of digital architectures to explain how the technical design of platforms—such as visibility algorithms, networking structures, content formatting, and moderation policies—conditions political communication ([Figure 2](#)). Comparing Facebook, Twitter, and other platforms during the 2016 U.S. presidential election, Bossetta shows that Twitter/X fosters more horizontal, real-time, and elite-to-elite communication. Facebook is structured to optimize visibility within private, algorithmically curated networks. These structural differences directly impact campaign strategies: on Twitter, parties engage more frequently in public agenda setting and media signaling; on Facebook, they target segmented audiences with tailored, emotion-rich content aimed at mobilization and reinforcement. In short, the architecture of each platform imposes a communicative logic that campaigns must internalize to be effective.

Expanding this comparative lens, [Graham et al. \(2016\)](#) explore how political actors in the UK and the Netherlands adapt their behaviors based on national media cultures and platform affordances. Their findings underscore that usage patterns are mediated by platform design and broader political communication norms. In the Netherlands, where personalization and consensus politics are more culturally embedded, Twitter/X was used interactively and conversationally. In contrast, it functioned more as a top-down broadcasting tool in the UK. These cross-national differences revealed that platform affordances are not deterministic; they interact dynamically with institutional cultures and strategic choices.

[Kreiss and McGregor \(2018\)](#) introduce a critical dimension often overlooked in the literature: the active role of technology firms in shaping political communication. Through fieldwork with digital staffers and campaign consultants, they reveal how companies like Facebook, Twitter, and Google go beyond providing neutral infrastructure—they act as informal political consultants, offering

TABLE 2 Strategic actor behaviors and platform affordances.

Study	Actor type	Platform	Strategic use	Affordance leveraged	Outcome/ Effectiveness
Kreiss (2016)	Candidate (Obama, Romney)	Twitter	Identity performance, real-time timing	Character limit, immediacy, public visibility	High engagement, authenticity signaling
Vergeer and Hermans (2013)	Candidates	Twitter	Early adoption, informal tone	Follower network, reciprocal mentions	Greater interaction, elite attention
Bossetta (2018b)	Parties and Campaigns	Twitter/X vs. Facebook	Issue broadcasting vs. microtargeting	Public hashtags vs. private groups	Strategic adaptation by platform
Graham et al. (2016)	MPs (UK/NL)	Twitter	Responsive vs. broadcast styles	Mention/reply features	Platform use shaped by political culture
Kreiss and McGregor (2018)	Campaign Staff	Facebook, Twitter	Platform consulting, message shaping	Privileged access, custom analytics	Unequal amplification, backstage influence
Gilardi et al. (2022)	Political parties	Twitter	Timing of posts, alignment with algorithmic cycles	Visibility logic, trend hijacking	Improved public agenda-setting
Oden et al. (2025)	Female candidates	Twitter	Gendered message design, agenda interaction	Emotional tone, timing, public replies	Greater media visibility, issue reframing
Song et al. (2024)	E-government agencies	Twitter/X	Semantic alignment, topic mining	Hashtag structuring, automated clustering	Optimized engagement, thematic clarity
Xu et al. (2024)	State-led diplomacy	Twitter/X	Narrative embedding, global soft power signaling	Trending integration, hashtag diplomacy	Increased public participation and agenda influence



proprietary training, data support, and strategic advice to campaigns. Often hidden from public view, these relationships suggest that platforms are not passive arenas but political actors capable of shaping the boundaries of legitimate and effective communication. This corporate influence, particularly salient in U.S. electoral contexts, raises important questions about transparency, equity, and democratic accountability in digital campaigning.

More recent empirical work supports and extends this line of argument. [Gilardi et al. \(2022\)](#) demonstrate that agenda-setting power is no longer confined to traditional media or political elites but is

increasingly co-produced through interactions with platform architectures. Using time-series models, their analysis reveals how political parties strategically adapt to algorithmic amplification patterns, modifying message cadence, and framing to align with platform-driven visibility logic.

Xu et al. (2024) offer a compelling case of how state-led digital diplomacy leverages platform affordances for narrative control, particularly in China. Their findings show that the use of hashtags, thread strategies, and official-sounding language in carefully timed tweets embeds official discourse in trending topics, thereby exploiting algorithmic visibility for soft power projection.

Similarly, Song et al. (2024) analyze the communicative strategies of U.S. e-government agencies on Twitter/X, revealing a patterned use of semantic clustering and affective framing to increase engagement with citizens. The text-mining approach illustrates how institutional actors adjust communication styles and messaging sequences to optimize interaction within the platform's structural constraints. Adding a normative and conceptual perspective. Platforms have become institutional co-governors of the digital public sphere. Twitter's evolving architecture—particularly after its transformation into X—restructures diplomatic signaling, authority performance, and intergovernmental discourse in ways that challenge the autonomy of state-based political communication.

Campaign design is more than a question of message crafting; it is a deeply contextual process embedded in technological systems, institutional settings, and platform governance. Understanding political communication today thus requires attention not just to actors and content but to the material and algorithmic scaffolding upon which political meaning is constructed and contested.

3.2 Public trust, political legitimacy, and crisis response

3.2.1 Social media and political trust

As social media platforms have become central to political communication, scholars have increasingly interrogated their impact on public trust in political institutions. One of the foundational concerns is whether the immediacy, interactivity, and decentralization that define platforms like Twitter/X enhance democratic legitimacy or contribute to growing skepticism, cynicism, and perceived illegitimacy of political authority.

Ceron (2015) provides one of the most direct empirical investigations into this question, comparing the effects of two types of online communication: institutional digital channels (e.g., government or party websites) and Web 2.0 social media platforms, including Twitter. Using cross-national survey data and multivariate statistical models, Ceron finds that exposure to institutional websites is positively associated with higher levels of political trust, particularly among citizens with low baseline confidence in public institutions. These websites—characterized by formal language, structured information hierarchies, and a clear institutional identity—serve as symbolic anchors of transparency and authority, especially in politically fragmented or polarized environments.

In stark contrast, frequent engagement with social media platforms correlates with lower levels of political trust, even when controlling for ideology, age, education, and news consumption habits. Ceron argues that this erosion of trust is not merely a function of content (e.g., criticism or satire) but of platform design and culture. Twitter, in particular, fosters an environment of rapid, fragmented discourse where

authoritative voices compete with misinformation, user skepticism, and algorithmically amplified outrage. In such an ecosystem, the symbolic boundary between official and unofficial communication is blurred, and the legitimacy traditionally conferred by institutional rhetoric is diluted.

Importantly, Ceron does not suggest that social media inevitably undermines trust. Instead, the findings highlight a structural tension: while platforms like Twitter/X democratize voice and increase access to political discourse, they also deinstitutionalize credibility, making it harder for citizens to distinguish between official statements, partisan spin, and grassroots opinion. The implications are particularly significant in political crises or contested governance when public confidence in institutions becomes most fragile.

Grimmelikhuijsen and Klijn (2015) confirms that transparency in digital government communication may increase perceptions of competence and honesty, but only when institutional identity is signaled and separated from the chaotic flow of user-generated discourse in environments like Twitter/X. In this environment, state actors share the stage with activists, journalists, bots, and influencers, and the institutional voice risks being drowned in the noise.

Hagen et al. (2022) take this a step further, showing that during public health crises, the interplay between human users and automated accounts (bots) on Twitter/X can either build or erode public trust depending on the clarity, source credibility, and volume of official messaging. Their analysis during the vaccination debate in the U.S. reveals how even well-intentioned public health communication can be algorithmically outpaced by disinformation, undermining the legitimacy of public institutions during moments of high uncertainty.

Gilardi et al. (2022) introduce an additional layer by exploring how algorithmic personalization—tailoring political content by opaque platform systems—can distort perceptions of institutional performance and democratic responsiveness. When citizens are fed emotionally charged content optimized for engagement rather than accuracy or deliberation, their trust in political institutions is vulnerable to manipulation by political elites and platform incentives.

Recent evidence by Xu et al. (2024) demonstrates how states like China have adapted to this landscape by using public engagement tactics—timed hashtags, cross-platform linkages, and emotional appeals—to maintain authority while projecting legitimacy through digital diplomacy. Their findings reveal that participation can be instrumentalized to simulate trust, creating algorithmic legitimacy—where credibility is inferred from visibility and engagement rather than institutional integrity.

These studies present a critical paradox: the affordances that make Twitter/X an inclusive and participatory platform also create structural conditions destabilizing traditional institutional trust sources. While social media democratizes voice, it also flattens authority, amplifies conflict, and erodes the cognitive signals that previously distinguished official from unofficial discourse. Any normative assessment of Twitter/X's democratic potential must, therefore, grapple with this tension between epistemic accessibility and epistemic erosion, where more voices do not necessarily mean more trust, and visibility can substitute for credibility. Political trust in the platform era is no longer conferred—it is contested, constructed, and continually renegotiated in real-time.

3.2.2 E-government failures and digital accountability

The promise of e-government has long been associated with increased efficiency, accessibility, and transparency in public administration. However, the failure of high-profile digital government

initiatives has revealed a dissonance between technological modernization and institutional capacity, raising critical questions about accountability in the digital age. In this context, Twitter/X has grown as a public communication tool and a venue for collective grievance, crisis amplification, and symbolic accountability.

In the case study of [Healthcare.gov](#), the U.S. federal health insurance website launched under the Obama administration, [Anthopoulos et al. \(2016\)](#) analyze the role of Twitter/X in documenting and disseminating public dissatisfaction with the platform's failed rollout. The authors conceptualize Twitter/X as a feedback mechanism and an alternative institutional interface. In this space, citizens, journalists, and political actors collectively exposed technical malfunctions, bureaucratic inefficiencies, and policy inconsistencies in real-time.

Using a socio-technical failure analysis, the study identifies multiple dimensions of breakdown: technological (system crashes), procedural (lack of inter-agency coordination), communicative (delays in official messaging), and symbolic (erosion of public trust). Significantly, Twitter/X served as a live accountability infrastructure, enabling affected users to bypass institutional filters and perform civic oversight through public complaint and digital visibility. The hashtag ecosystem (e.g., #Obamacarefail) functioned as a dynamic archive of discontent, effectively reconfiguring political narratives around the legitimacy of the reform itself.

Anthopoulos et al. argue that Twitter's visibility reshapes the power asymmetry between institutions and the public. While traditional feedback loops rely on bureaucratic channels and delayed responses, Twitter/X allows citizens to impose temporal pressure and reputational costs on governments. In doing so, it repositions the platform from a mere communication tool to a de facto arena of public contestation, where institutional failure is reported and reframed through digital discourse.

However, the study also notes the ambiguous nature of this visibility. The viral spread of user dissatisfaction on Twitter/X does not always lead to meaningful institutional reform. On the contrary, the intensity of digital backlash may encourage reactive symbolic gestures rather than structural changes, resulting in the author's term "cosmetic responsiveness"—a cycle of communication management without systemic accountability.

Recent studies further confirm the dual role of Twitter/X as both an amplifier of accountability and an engine of symbolic politics. [Song et al. \(2024\)](#), in a large-scale analysis of U.S. e-government agency communication, show that despite increased volume and sophistication in public messaging, institutional responses often favor semantic coherence and thematic visibility over genuine responsiveness. Their findings suggest that algorithmic visibility metrics—such as engagement and sentiment clustering—are increasingly used as proxies for public satisfaction, further entrenching what they term "algorithmic governance by proxy."

From a regional perspective, [Ong'ong'a \(2025\)](#) examines Kenya's digital diplomacy strategy. While the government leveraged Twitter/X to project transparency and citizen responsiveness, much of the activity was centered on symbolic visibility rather than actionable reform. In his case study of the Kenyan Ministry of Foreign Affairs, digital diplomacy efforts often conflated engagement with accountability, using social media presence as a shield against substantive critique.

Platforms like Twitter/X can facilitate greater transparency of institutional weaknesses, but they also risk transforming accountability

into performance, where managing perception substitutes for resolving root causes. For researchers and policymakers alike, this underscores the need to reconceptualize accountability as a networked, performative, and real-time process shaped by the dynamics of platform architecture and user mobilization.

3.2.3 Journalistic interpretation of Twitter/X as public opinion

One of the most consequential developments in platform-mediated political communication is the increasing reliance on Twitter/X as a proxy for public opinion—not by citizens alone, but by journalists and newsrooms responsible for shaping political narratives. This shift reflects a broader reconfiguration of epistemic authority in democratic systems, where social media metrics are increasingly perceived as real-time indicators of societal sentiment, legitimacy, and controversy.

[McGregor \(2019\)](#) examines how political journalists incorporate Twitter-derived data into their news production routines, often without critical reflection on its representativeness or methodological reliability. Based on interviews with reporters and content analysis of political coverage, the study reveals a growing tendency among journalists to treat engagement metrics—likes, retweets, trending hashtags, and follower counts—as proxies for public opinion, substituting them for traditional indicators such as polls, surveys, or in-person reporting.

This epistemic shift has two key consequences. First, it unclears the boundary between elite discourse and popular sentiment. Political actors with well-resourced digital teams or high algorithmic visibility may appear more salient than they are substantively representative. Second, it creates feedback loops, where journalists amplify voices already privileged by the platform's visibility logic, reinforcing particular narratives and marginalizing others. In doing so, Twitter/X becomes not merely a source of political news but a producer of political reality, shaping what issues, actors, and events are seen as legitimate, newsworthy, or urgent.

McGregor cautions that relying on Twitter/X metrics introduces systematic distortions in democratic discourse. Twitter/X users are demographically and ideologically unrepresentative of the general population—more urban, younger, politically engaged, and polarized. Therefore, interpreting Twitter/X activity as a mirror of the public can inflate the visibility of fringe positions or manufacture consensus around elite-driven frames. This distortion is not always intentional but results from structural pressures within journalism—including time constraints, competitive immediacy, and the need for measurable audience engagement.

[Molyneux and McGregor \(2022\)](#) further elaborate on this dynamic, arguing that journalists not only adopt Twitter/X for sourcing and interaction but also contribute to legitimizing it as a stage of political discourse. Their mixed-method study shows that journalistic norms are redefined to fit the platform's affordances—favoring brevity, reaction, and quantifiable attention. As journalists rely on these signals to interpret salience and controversy, Twitter/X gradually assumes the role of an informal barometer of public legitimacy, regardless of its representational limitations.

Earlier foundational work by [Hermida \(2010\)](#) coined the term ambient journalism to describe the adoption of Twitter/X as a tool for peripheral awareness in the news cycle. His study demonstrated how journalists use the platform for sourcing content, sensing social

dynamics, and anticipating editorial priorities. However, what began as a supplementary observational tool has, over time, been absorbed into the epistemic framework of newsmaking itself.

Larsson and Moe (2015) adds a quantitative perspective, showing how Swedish journalists construct news agendas by selectively amplifying political voices already possessing high social media capital. This practice exacerbates structural inequalities in visibility and reproduces the platform's underlying attention logic.

These studies reveal a shift in journalism's relationship to public discourse—from mediating between the public and power to participating in a reflexive system of platform-driven visibility. Hashtag trends, virality metrics, and follower counts are mistaken for democratic indicators, even as they reflect algorithmic optimization, actor strategy, and information inequality.

McGregor's findings thus speak to a more profound epistemic dilemma: journalism's increasing dependence on Twitter/X for gauging public opinion risks eroding its role as an independent arbiter of political meaning. Instead, it positions the media within a circular perception management system, where visibility substitutes for representativeness and digital signals replace democratic dialogue. This dynamic shows the need for scholars and practitioners to critically examine how Twitter/X is reshaping the epistemology of political knowledge in the digital era.

3.3 Polarization, echo chambers, and exposure to difference

3.3.1 Revisiting the echo chamber debate

The echo chamber concept—where individuals are insulated from opposing viewpoints by algorithmic curation and homophilic networks—has been a dominant framework in the analysis of political communication on social media. Twitter, in particular, has often been cited as a key site of ideological polarization, reinforcing preexisting beliefs and limiting deliberative exposure. However, recent empirical evidence challenges this deterministic view, suggesting a more nuanced reality in how users encounter political content on the platform.

Eady et al. (2019) provide one of the most methodologically robust reassessments of the echo chamber thesis. Using a combination of survey data and behavioral trace data from a large panel of U.S. Twitter/X users, the authors investigate actual exposure patterns to cross-cutting political information. Their findings reveal that heterogeneous exposure is significantly more common than previously assumed. Contrary to the notion that users operate in isolated ideological bubbles, many are, in fact, regularly confronted with diverse political viewpoints—including those they strongly oppose.

Notably, the study highlights that exposure to ideological differences does not necessarily lead to attitude change and, in some cases, may even intensify polarization through mechanisms such as motivated reasoning or selective rejection. However, the key contribution (Eady et al., 2019) lies in decoupling exposure from engagement. While users may see opposing views in their feeds, they often do not interact with them or consider them credible. This distinction reveals a flaw in earlier echo chamber models, often equating presence with influence and visibility with cognitive openness.

The study also reveals asymmetries in ideological behavior. Liberal users are likelier to follow accounts across the spectrum, whereas conservative users tend to maintain more homogenous

networks. This asymmetry complicates generalizations about echo chambers, suggesting that network structure and ideological orientation interact to shape users' informational environments in complex ways.

Furthermore, the authors emphasize the importance of platform architecture in shaping exposure. Twitter's algorithm does not strictly filter out opposing views, especially when users follow news organizations, public figures, or diverse issue-specific hashtags. In contrast to Facebook's more privatized and affinity-based curation, Twitter's semi-public timeline affords greater serendipity and incidental exposure, even if this does not always translate into meaningful deliberation.

Eady et al. provide compelling evidence that the echo chamber metaphor—while intuitively powerful—oversimplifies the dynamics of online political communication. Twitter/X may not foster sustained cross-ideological engagement, but it does facilitate regular encounters with political diversity. This challenges deterministic models of algorithmic polarization and calls for more granular, behaviorally grounded analyses of how users navigate digital political spaces.

These findings underscore the need for a revised theoretical framework that distinguishes exposure, engagement, and interpretation as distinct dimensions of digital political interaction. Moving forward, the echo chamber debate must evolve from binary claims toward context-sensitive accounts of how platform design, user agency, and ideological identity interact in shaping polarization online.

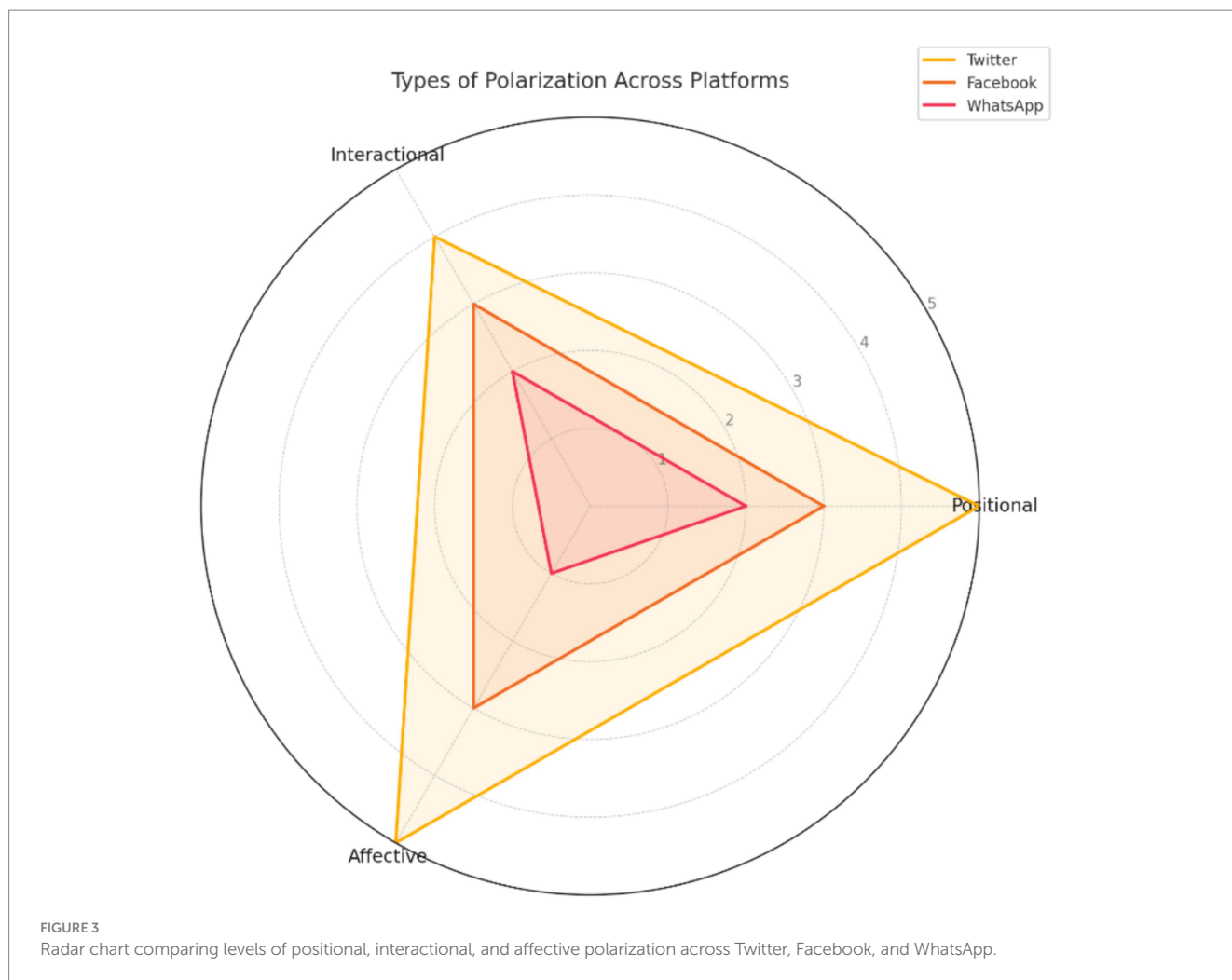
3.3.2 Affect and opinion in polarized ecosystems

While much of the literature on online political polarization has emphasized structural aspects—such as network homophily or ideological clustering, recent research increasingly turns to polarization's affective and behavioral dimensions. These include how users feel about opposing political groups, how they interact with them, and how emotional valence structures discourse across platforms. Yarchi et al. (2021) study is particularly significant for advancing this conversation, offering a tripartite framework that distinguishes between positional, interactional, and affective polarization in digital ecosystems (Figure 3).

Using a mixed-method, cross-platform analysis of over 250,000 messages across Twitter, Facebook, and WhatsApp during politically sensitive periods in Israel, the authors demonstrate that polarization is not monolithic but platform-dependent and contextually variable. Their key contribution is the operational distinction between:

- Positional polarization: differences in opinion on policy or ideology.
- Interactional polarization: communication patterns across ideological lines (e.g., mentions, replies).
- Affective polarization: negative feelings toward ideological outgroups.

Twitter, in particular, emerges as the most polarized environment across all three dimensions, as shown in Table 3. The authors attribute this to the brevity and speed of the platform's communication style and its public-by-default architecture, which incentivizes performative antagonism and ideologically loaded signaling. Unlike Facebook's more affinity-driven interaction patterns or WhatsApp's semi-private conversational structure, Twitter/X facilitates a broadcast mode of polarization that thrives on conflict visibility and emotional escalation.



The findings of Yarchi et al. also resonate with prior work by [Stier et al. \(2018\)](#) who noted that emotional intensity, especially outrage, was a primary driver of political retweet activity during German election campaigns. Likewise, [Stieglitz and Dang-Xuan \(2013a\)](#) provide quantitative evidence that tweets with emotionally charged language—both positive and negative—achieve higher levels of virality. Together, these studies point to a recurring dynamic: On platforms like Twitter, affective resonance is rewarded algorithmically, making polarization an outcome of ideological alignment and a strategic and performative act.

Another critical insight from Yarchi et al.'s work is the fluctuation of polarization by topic. For example, discourse around national security tends to produce high affective and positional polarization, while economic issues may evoke cross-cutting concerns and more moderate sentiment. This challenges the idea of static polarization and underscores the importance of issue salience and narrative framing in shaping the intensity and direction of affective division.

Moreover, these findings connect to [McGregor \(2019\)](#) work on journalism, highlighting how social media metrics—often driven by polarizing content—are misread as indicators of general public opinion, creating feedback loops between emotionally intense discourse and media amplification. The result is a platform-mediated intensification of partisan effect, where antagonism becomes normalized and operationally advantageous for attention, engagement, and influence.

Taken together, these studies show that affective polarization on Twitter/X is both emotionally grounded and structurally enabled. It is sustained by ideological differences and platform affordances that amplify division, actor strategies that exploit emotional triggers, and audience behaviors conditioned by algorithms. The interplay of these elements creates an ecosystem in which emotionally charged disagreement becomes a communicative norm rather than a discursive deviation. This multidimensional understanding of polarization calls for a conceptual reorientation: from viewing Twitter/X as a fragmented space to seeing it as an emotionally performative arena where polarization is simultaneously experienced, enacted, and monetized. The implications for political legitimacy, civic cohesion, and democratic discourse are profound, especially as they increasingly supplant deliberation in shaping the digital public sphere.

3.4 Algorithmic mediation, bots, and coordinated manipulation

3.4.1 Computational propaganda and astroturfing

As political communication increasingly unfolds within the logic of platforms, a growing body of research has focused on how algorithmic systems, automation, and coordination are used to manipulate public discourse. Far from being neutral arenas, platforms

TABLE 3 Polarization types across platforms.

Study	Platform	Positional Polarization	Interactional Polarization	Affective Polarization	Key Observations
Yarchi et al. (2021)	Twitter	High	High	High	Most polarized platform across all dimensions
Yarchi et al. (2021)	Facebook	Moderate	Moderate	Moderate	Mixed interactions; affinity-based clustering
Yarchi et al. (2021)	WhatsApp	Low	Low	Decreasing	More private space; signs of depolarization
Stier et al. (2018)	Twitter	High	Moderate	High	Emotional intensity drives virality and polarization
Stieglitz and Dang-Xuan (2013a)	Twitter	Not measured	High (retweet focus)	High (emotion-driven)	Emotional content accelerates spread, increases affect
Flamino et al. (2023)	Twitter	High	High	High	Polarization and echo chambers intensified in electoral contexts
Kubin and von Sikorski (2021)	Twitter, Facebook	High	High	High	Systematic review shows dominant presence of affective and ideological polarization across studies
Theocharis et al. (2023)	Twitter, Facebook, WhatsApp, YouTube, Messenger	Moderate	Moderate	Moderate	Conspiracy beliefs vary by platform affordances; Facebook more susceptible than Twitter
Boulianne and Larsson (2023)	Twitter, Instagram, Facebook	Moderate	Low	Low	Engagement differs across platforms; Instagram more personalized, Twitter/X more political

like Twitter/X have become the site of computational propaganda, where visibility, legitimacy, and influence can be artificially manufactured. Using bots, sockpuppets, and coordinated networks challenges core democratic principles, particularly transparency, authenticity, and equal access to the public sphere.

[Howard et al. \(2018\)](#) offer a foundational contribution by conceptualizing computational propaganda as the strategic use of algorithms, automation, and digital manipulation to influence public opinion. Focusing on the 2016 U.S. elections, they show how various actors—including foreign governments, political campaigns, and private contractors—deployed automated accounts (bots) to flood Twitter/X with partisan content, astroturfed trends, and misleading information. These systems mimic organic discourse and exploit platform algorithms to amplify selected narratives, hijack hashtags, and drown out dissent. The result is not merely a distortion of information flow but a corruption of the communicative infrastructure on which democratic deliberation relies.

Expanding this line of inquiry, [Keller et al. \(2020\)](#) examine the case of political astroturfing in South Korea, where government-affiliated agents used Twitter/X to simulate popular support and suppress opposition discourse during the 2012 presidential election. Their study departs from the bot-centric approach by emphasizing the importance of human-coordinated, temporally patterned behavior rather than solely relying on automated activity. Using network analysis, they identify distinctive

coordination signatures—such as synchronized posting, retweet chains, and message uniformity—that reveal orchestrated manipulation behind the appearance of spontaneous grassroots activity.

These findings are reinforced by earlier studies such as ([Conover et al., 2011](#)) which exposed the structural polarization of retweet networks during U.S. elections, and ([Stieglitz and Dang-Xuan, 2013a](#)) who observed how emotionally charged content spreads more rapidly through algorithmic amplification. Such dynamics, when weaponized, can create disproportionate influence by a minority of coordinated actors, skewing the public perception of political consensus.

Importantly, [Bruns and Stieglitz \(2013\)](#) emphasize the methodological need to distinguish between organic and inorganic engagement, proposing standardized metrics for detecting retweet frequency, timing, and content duplication anomalies. They argue that without such methodological clarity, research risks overestimating the authenticity of digital participation.

These studies underscore that manipulative influence on Twitter/X operates not through content alone but by exploiting the platform’s sociotechnical structure. Hashtags, trending algorithms, and engagement metrics can be played to elevate fringe narratives, marginalize dissenting voices, and simulate popularity. The stakes are not just epistemological but political: when legitimacy is constructed through digital visibility, the

ability to manipulate that visibility becomes a powerful tool of governance or subversion.

Moreover, these practices blur the lines between soft and hard interference, as seen in documented cases of foreign influence operations and platform-enabled misinformation campaigns. The boundary between campaigning and manipulation becomes increasingly tenuous, especially when platforms fail to disclose coordination, metadata, or provenance of amplification.

Computational propaganda and astroturfing are a dark underside of digital political communication. They transform Twitter/X from a space of public expression into a terrain of strategic visibility warfare, where communicative power is not earned but engineered—the implications for electoral integrity, institutional trust, and public discourse demand urgent scholarly and regulatory attention.

3.4.2 Digital platforms as political actors

In traditional political communication theory, media platforms were often conceptualized as neutral intermediaries—channels through which actors communicated with the public, constrained primarily by journalistic norms or regulatory frameworks. However, the emergence of platform capitalism and algorithmically mediated communication has complicated this model. Scholars increasingly argue that social media companies—Twitter/X, Facebook, Google—must be understood as political actors with agency, strategic interests, and substantial influence over democratic processes.

Kreiss and McGregor (2018) present one of this transformation's most compelling empirical accounts. Drawing on interviews with campaign staff and digital strategists during the 2016 U.S. elections, they reveal that technology firms do not merely provide infrastructure or passive tools for political communication. Instead, these companies actively engage in shaping electoral discourse behind the scenes. They offer training, data consulting, algorithmic insights, and strategic guidance to selected political actors—especially major-party campaigns and well-resourced organizations. This involvement is not always disclosed and often occurs through private partnerships, creating an opaque layer of influence on public political discourse.

Their findings suggest that platforms operate not just as marketplaces of attention but as uneven brokers of political visibility. By granting privileged access to campaign analytics, tailoring algorithmic advice, or fast-tracking feature integration for specific clients, these firms intervene in the strategic design of political messaging, thereby exercising soft power over electoral dynamics. This is particularly problematic in asymmetrical political systems, where smaller parties, civil society actors, or independent candidates may not receive comparable support.

This dynamic of selective enablement echoes the concerns that (Howard et al., 2018) raised regarding platforms' structural vulnerabilities to manipulation—but with a critical twist: the manipulation may be institutionalized and incentivized through corporate logic. Under pressure to demonstrate relevance, market reach, and revenue from political advertising, platforms have strong economic incentives to facilitate deep engagement with high-spending campaigns, even at the cost of partisan neutrality.

Moreover, the findings align with Bossetta (2018) concept of digital architecture, where the platform's technical and procedural affordances are neither static nor evenly applied. They are co-constructed through interactions between platform engineers,

political communicators, and evolving norms, directly impacting private governance and public influence.

This corporatization of political visibility also connects to McGregor (2019) warning about journalism's reliance on social media metrics. Public discourse is increasingly filtered through proprietary algorithms designed by private actors, and political campaigns are guided by platform-specific consulting. Both newsworthiness and electability depend on the platforms' design and discretionary logic.

Importantly, Kreiss and McGregor's analysis calls into question foundational assumptions about political autonomy and democratic transparency. If platforms curate content and strategy and do so behind closed doors, the public's ability to scrutinize electoral influence is radically diminished. In such a scenario, platforms act as unaccountable gatekeepers of political legitimacy, raising urgent normative and regulatory questions about transparency, fairness, and democratic control over digital infrastructures.

Thus, the evidence suggests that Twitter/X and its counterparts are no longer passive channels for political communication—they are co-architects of political discourse whose economic and technological decisions shape who speaks, who is heard, and under what conditions. Recognizing platforms as political actors reframes the landscape of democratic communication, demanding new conceptual and institutional frameworks to assess their power.

3.5 Methodological advances and hybrid frameworks

3.5.1 Integration of surveys and digital traces

As research on political communication in digital environments has grown more sophisticated, so too has the need for multi-method approaches capable of capturing the complex interplay between attitudes, behaviors, and algorithmically structured exposure. One of the most promising developments in this regard is the integration of survey data with digital trace data—a methodological convergence that allows researchers to bridge the gap between what individuals say and what they do online.

Stier et al. (2018) provide a landmark contribution to this field by critically examining the potential and pitfalls of combining self-reported survey responses with behavioral data extracted from platforms like Twitter/X and Facebook. The study highlights how such triangulation can enhance validity, offering richer insights into user ideology, engagement patterns, exposure to political content, and affective responses. For instance, linking survey-based ideological self-placement with the actual structure of users' Twitter/X networks enables researchers to assess not only perceived polarization but its manifestations in interaction patterns.

However, the authors also underscore the significant ethical and technical challenges associated with this integration. From a practical standpoint, linking survey and trace data requires robust consent procedures, secure data management infrastructures, and the resolution of identity-matching uncertainties—particularly when users operate under pseudonyms or multiple accounts. The task of aligning temporal windows, behavioral variables, and question framing further complicates analytical coherence.

Beyond technical barriers, ethical concerns emerge around user privacy, consent, and data reusability. Even when informed consent is obtained, respondents may not fully comprehend the extent to which

their digital behaviors will be tracked or interpreted. Stier et al. warn against the growing trend of “data extractivism,” where users’ online actions are harvested without sufficient reflection on autonomy, surveillance, or the potential for reputational harm. They call for clearer ethical guidelines and institutional accountability mechanisms, especially in studies that cross the line between observational research and experimental manipulation.

These challenges echo concerns raised in other works you have reviewed. For instance, [Guo et al. \(2016\)](#) also highlight the trade-offs between interpretability and scalability in large-scale Twitter/X analyses, particularly when using unsupervised machine learning techniques such as topic modeling. Similarly, [Bruns and Stieglitz \(2013\)](#) emphasize the importance of developing standardized metrics for analyzing engagement patterns to improve replicability and comparability across studies.

Collectively, these contributions point to a broader epistemological shift in the study of platform-mediated political communication: the move from isolated methodological silos toward hybrid, interdisciplinary, and ethically conscious frameworks. The integration of surveys and digital traces is not merely a technical advancement—it represents a paradigmatic recalibration, in which the boundaries between qualitative, quantitative, and computational methods are increasingly blurred.

To fulfill the promise of this methodological synthesis, researchers must invest not only in tool development but in conceptual clarity, data stewardship, and collaborative infrastructures that respect both scientific rigor and the rights of digital citizens. In an age where platforms mediate not just communication but visibility, identity, and power, the methods we use must be as dynamic and multifaceted as the phenomena we study.

3.5.2 From lexicons to topic modeling and computational scaling

The exponential growth of digital trace data, particularly from platforms like Twitter/X, has compelled political communication researchers to adopt increasingly automated and scalable analytical techniques, as shown in [Table 4](#). This methodological evolution—from manual coding and lexicon-based approaches to machine learning

and probabilistic modeling—has transformed how we understand issue salience, emotional tone, and narrative evolution in platform-mediated political discourse.

[Guo et al. \(2016\)](#) comprehensively compare two dominant computational approaches used to analyze large-scale Twitter/X data: dictionary-based methods and topic modeling, specifically Latent Dirichlet Allocation (LDA). Drawing from a dataset of over 77 million tweets collected during the 2012 U.S. presidential election, the authors assess how each method captures thematic structure, emotional valence, and partisan framing.

The findings reveal that dictionary-based methods—which rely on predefined word lists to measure sentiment or issue categories—offer interpretability, speed, and replicability but tend to be rigid and domain-sensitive, often failing to capture evolving language patterns, sarcasm, or platform-specific jargon. In contrast, topic modeling techniques, while less transparent and more computationally intensive, allow for emergent, unsupervised classification of content clusters. LDA, in particular, is shown to surface unexpected thematic associations and better adapt to the dynamic nature of political conversations on Twitter.

However, the authors caution against overreliance on algorithmic outputs without theoretical anchoring or validation. Topics generated through unsupervised models can be statistically coherent yet semantically ambiguous, requiring close interpretation and often manual refinement. They advocate for hybrid workflows, in which machine learning tools are embedded within interpretive, theory-driven research designs—“guided automation.”

This tension between automation and interpretability is echoed in [Kümpel et al. \(2015\)](#), who reviewed over a hundred studies on news sharing in social media. While computational methods dominate recent literature, few studies address conceptual alignment between methodological tools and communication theory. Many rely on readily available software packages without adapting them to the norms and idiosyncrasies of political discourse, particularly in multilingual or culturally diverse contexts.

Likewise, [Bruns and Stieglitz \(2013\)](#) emphasizes standardized engagement metrics—including retweet-to-original ratios, tweet lifespan, and network clustering indices—to complement text analysis

TABLE 4 Comparative summary of computational techniques.

Author(s)	Dataset size	Method	Advantages	Limitations	Validation type
Guo et al. (2016)	77 M Tweets	Lexicon and LDA	Simple, interpretable (lexicons); scalable, emergent (LDA)	Limited nuance (lexicons); semantic ambiguity (LDA)	Manual topic validation, comparison with known categories
Stieglitz and Dang-Xuan (2013a)	~100 k Tweets	Sentiment Analysis	Real-time emotional tracking	Emotion lexicons may misinterpret sarcasm/context	Correlation with tweet diffusion and virality
Bruns and Stieglitz (2013)	Hashtag networks	Engagement Metrics, Hashtag Analysis	Captures volume, timing, reach	Does not assess content or ideological stance	Time series analysis, network clustering
Kümpel et al. (2015)	Literature review	Meta-Review of Techniques	Highlights diversity of methods and goals	Heterogeneous standards; lack of theoretical grounding	Call for better integration of theory and computational metrics
Stier et al. (2018)	Survey + Trace	Data linkage, ethics filters	High validity from multi-source triangulation	Complex integration; privacy and consent issues	Transparent linkage protocol, ethics review board

and enable longitudinal comparisons across events and campaigns. Meanwhile, [Bruns and Stieglitz \(2013\)](#) shows how real-time sentiment analysis can be integrated with temporal activity curves to reveal emotional cycles in political engagement, particularly around media events or crises.

These studies point to an emerging methodological consensus: that scalability must be matched by conceptual rigor, and automation must serve interpretive goals. Computational scaling is not a replacement for critical judgment but a complement to it—one that can uncover latent structures in massive datasets while still demanding contextual, human-driven interpretation.

Moving toward computational scaling introduces not only opportunities but also responsibilities. Issues of reproducibility, model transparency, and data ethics become paramount as these methods shape academic knowledge and public understanding. As Twitter/X data continues to serve as a proxy for public discourse, the tools used to analyze it must adhere to standards of methodological integrity and democratic accountability.

4 Discussion

The evidence reviewed in this article decisively dismantles any binary understanding of Twitter/X as either a democratizing tool or a manipulative instrument. Instead, the platform emerges as a contingent and contested space, shaped by the intersection of actor strategies, technological architectures, and sociopolitical context. It functions neither as an open agora nor a sealed echo chamber but as a dynamic terrain where visibility is earned, engineered, or algorithmically amplified—often all at once.

At one level, the platform offers undeniable opportunities for political personalization, strategic engagement, and rapid

responsiveness, as [Kreiss \(2016\)](#) and [Vergeer and Hermans \(2013\)](#) demonstrated. The affordances of Twitter/X enable candidates to perform authenticity, tailor timing, and participate in issue framing with a granularity unthinkable in broadcast-era politics. Similarly, scholars such as [Bossetta \(2018\)](#) and [Graham et al. \(2016\)](#) emphasize that Twitter's architectural design encourages real-time interaction and horizontal visibility, which can benefit emerging voices, marginalized actors, and agile communicators.

However, these same affordances simultaneously enable coordinated manipulation, affective polarization, and platform-facilitated inequality. The studies by [Howard et al. \(2018\)](#) and [Keller et al. \(2020\)](#) illustrate how Twitter's algorithmic infrastructure has been weaponized through bots, astroturfing, and artificial amplification, distorting what is seen but what appears to be popular. Moreover, [Kreiss and McGregor \(2018\)](#) reveals that platform companies are not neutral intermediaries; they act as strategic partners and power brokers, shaping electoral discourse through opaque consulting practices and asymmetrical resource access.

These tensions (as shown in [Table 5](#)) come into sharp relief when one considers the emotional economy of the platform. Research by [Stieglitz and Dang-Xuan \(2013a\)](#) and [Yarchi et al. \(2021\)](#) shows that emotionally charged messages—particularly those triggering outrage—enjoy disproportionate visibility. Affect becomes the currency of attention, rewarded by algorithms and exploited by actors across the ideological spectrum. Once theorized in fringe scholarship, the affective turn in political communication has become a central mechanism of platform-mediated legitimacy, fueling interactional and affective polarization without necessarily deepening ideological sophistication.

A further contradiction lies in the relationship between exposure and engagement. As [Eady et al. \(2019\)](#) demonstrate, users are often incidentally exposed to ideologically diverse content, undermining

TABLE 5 Conceptual tensions identified in the literature.

Tension	Description	Illustrative Study	Implications for Theory	Implications for Practice
Personalization vs. Populism	Personalization humanizes campaigns, while populism often relies on antagonism and simplification	Kreiss et al. (2017) , Bracciale and Martella (2017) , and Enli (2017)	Challenges normative assumptions about authenticity and engagement	Encourages emotional, direct rhetoric at the expense of deliberation
Exposure vs. Polarization	Users may be exposed to opposing views but still remain polarized due to affective and cognitive filtering	Eady et al. (2019) and Yarchi et al. (2020)	Reframes debates around echo chambers and selective exposure	Explains persistent division despite heterogeneous content visibility
Platforms as Stages vs. Actors	Platforms not only host communication but actively shape its dynamics and outcomes	Kreiss et al. (2017) , Chadwick (2010) , and Bossetta (2018)	Demands rethinking accountability and neutrality of digital intermediaries	Raises questions about unequal access and algorithmic gatekeeping
Automation vs. Authenticity	Bot activity and astroturfing simulate engagement, undermining trust in real discourse	Howard et al. (2018) and Keller et al. (2019)	Highlights manipulation risks in digital visibility metrics	Complicates the interpretation of virality and legitimacy
Scalability vs. Interpretability	Computational methods allow for large-scale analysis but risk losing nuance and theoretical grounding	Guo et al. (2016) and Bruns and Stieglitz (2013)	Challenges overreliance on black-box models in political analysis	Calls for hybrid approaches balancing automation and depth

simplistic notions of echo chambers. However, exposure alone does not guarantee deliberation. Many users filter opposing viewpoints through cognitive biases, while others engage only performatively, reinforcing tribal identity rather than interrogating political claims. This calls for a conceptual reframing: Polarization is not merely a matter of whom one sees but how one processes, responds to and instrumentalizes that visibility.

On the methodological front, the field faces serious obstacles. While data abundance has encouraged the rise of computational methods—topic modeling, sentiment analysis, network analysis—the quality of insight is often compromised by lack of transparency, poor reproducibility, and restricted access to platform APIs, as emphasized by Stier et al. (2020) and Guo et al. (2016). Moreover, the overreliance on proprietary metrics (e.g., likes, retweets, follower counts) risks conflating visibility with legitimacy, an issue further compounded by journalistic misreading of Twitter/X as public opinion, as discussed by McGregor (2019). This creates a troubling feedback loop in which platform logic reshapes journalistic agendas, influencing elite discourse and completing a circuit of algorithmic governance.

Conceptually, three central tensions animate the field and demand deeper interrogation:

- 1 Personalization vs. Populism: On Twitter/X, personalization often overlaps with populist style—direct, emotional, antagonistic—but the two are not synonymous. Personalization can humanize politics; populism can delegitimize democratic pluralism. Future research must unpack how these dynamics co-evolve in platform-native formats.
- 2 Exposure vs. Polarization: As noted above, exposure is not a sufficient antidote to ideological fragmentation. Indeed, as Yarchi et al. (2021) show, exposure can coexist with affective polarization. This complicates any normative assumptions that connectivity leads to cohesion.
- 3 Platforms as Stages vs. Actors: Perhaps the most urgent conceptual revision involves rejecting the idea of platforms as passive stages. As Kreiss and McGregor (2018) and Chadwick (2011) demonstrate, platforms actively shape, filter, and co-produce political discourse. Their algorithms, monetization strategies, and partnership structures influence what circulates and how political meaning is constructed.

In short, Twitter/X is a performative, programmable, and politicized infrastructure. It affords connection but incentivizes confrontation. It provides access but privileges amplification. It lowers communicative thresholds but raises epistemic uncertainty. These contradictions are not flaws to be corrected—they are features of the platform's socio-technical design embedded within broader political economies of attention and power.

The review is restricted to WoSCC/Scopus and to the 2009–2024 window; relevant studies outside these sources or dates may be missing. We did not conduct a formal quality appraisal of included studies, and selection is subject to screening judgment despite dual independent review. Finally, the fast-changing nature of platform governance and API access constrains reproducibility and may bias the literature toward specific geographies and methods.

This review thus reframes the question not as “Is Twitter/X good or bad for democracy,” but rather: Under what conditions, for whom, and through which mechanisms does platform-mediated

communication produce political legitimacy—or erode it? Only by foregrounding these contingencies can scholars and practitioners begin to grapple with the role of Twitter/X not just as a communication tool but as an institutional actor in democratic life.

5 Conclusion

This review has demonstrated that Twitter/X is no longer just a platform for political communication—it has evolved into a complex governance layer where visibility, legitimacy, and influence are negotiated through sociotechnical infrastructures. Rather than functioning solely as a conduit for democratic expression or a vector of manipulation, the platform operates as a hybrid political actor whose influence is contingent upon the interplay of algorithmic design, actor strategy, and sociopolitical context.

Far from being a neutral space, Twitter/X actively shapes the structure, tempo, and affective tenor of political discourse. It enables personalization but amplifies populism; it increases exposure but does not guarantee deliberation; it facilitates access but embeds structural asymmetries in visibility. The platform's architecture, incentive structures, and opaque partnerships with political actors reconfigure the conditions under which democratic communication unfolds.

Given this complexity, future research must advance in three critical directions:

- 1 Develop multimodal and integrative methodological frameworks that combine textual analysis, network structure, sentiment, and behavioral traces. Political communication in the platform era cannot be meaningfully studied through single-modal approaches.
- 2 Expand the geographic and cultural scope of research beyond the dominant Western contexts. Political uses of Twitter/X in Latin America, Sub-Saharan Africa, Southeast Asia, and hybrid regimes remain understudied and may follow distinct logics shaped by infrastructural, linguistic, or authoritarian constraints.
- 3 Critically interrogate the role of private platforms as gatekeepers of political visibility. As platform companies increasingly influence message diffusion and strategy formation, their political agency and accountability must be brought to the center of scholarly and regulatory inquiry.

Data availability statement

The data analyzed in this study is subject to the following licenses/restrictions: Scopus and Web of Science data are not available unless you have a paid account. Requests to access these datasets should be directed to anaranjo.vinueza@gmail.com.

Author contributions

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