

News and Political Information Consumption in Mexico: Mapping the 2018 Mexican Presidential Election on Twitter and Facebook

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ABSTRACT

In Mexico, there are rising concerns over computational propaganda and the political polarization it may cause. In this data memo, we analyze data about political news and information shared over Twitter and Facebook in the period leading up to the 2018 Mexican presidential election. We find that: (1) the leading candidate Andrés Manuel López Obrador dominates the Twitter conversation, with almost four times as much daily content about him than any of the other candidates and at least four times the volume of high frequency tweeting; (2) the majority of political news shared over Twitter and Facebook comes from professional news sources, with established news brands shared most widely; (3) less than one percent of political news and information shared on Facebook comes from official candidate and party pages.

INTRODUCTION

Social media users share substantial amounts of news and information on online platforms during key moments of political life. At the same time, political actors and certain Internet subcultures increasingly adapt computational resources to disseminate information to citizens. News also reaches users while they are browsing social media for other purposes. Information posted to social media ranges from legitimate reporting and professional news to emotionally-charged and polarizing junk content. This has led to concerns about the manipulation of public opinion and the spread of decontextualized, false or misleading information eroding trust in public institutions and increasing radicalization.¹ There is widespread debate about the impact of misinformation campaigns on political decision-making around the world.

In the context of Mexico's volatile media environment and global trends of polarized electoral processes, we analyze sources of news and information shared over social media in the days leading up to the 2018 Mexican presidential election. Our research questions are: (1) Which candidates led the conversation over Twitter and were associated with high frequency tweeting? (2) What types of content are being shared on Twitter? (3) What types of content are being shared on Facebook?

COMPUTATIONAL PROPAGANDA AND JUNK NEWS IN MEXICO

Increasingly, scholars have discussed the influence of computational propaganda in Mexico.^{2,3,4} Existing research has confirmed the use of computational propaganda, in the form of automated bots, during the 2012 presidential election in Mexico.⁵ The country's two major political parties, the Partido Revolucionario Institucional (PRI) and the Partido Acción Nacional

(PAN), employed these tactics to spread propaganda, and target journalists and activists.⁶

Experts have observed that these strategies are being repeated during the 2018 election, with Mexican and foreign civil society and press agencies reporting evidence of attempts at voter manipulation, fabricated outbreaks of violence, and fake polling across the country.⁷ Further, platforms, such as Twitter, Facebook and WhatsApp are being used to propagate misinformation that serves partisan or ideological purposes. Verificado 2018, a collaborative media initiative established to debunk false information on these online platforms, has identified misinformation, including false headlines disparaging candidates, false reports of rioting and looting attributed to party supporters, doctored photos of candidates with controversial figures, and political statements falsely attributed to campaigns.^{8,9}

THE PRESIDENTIAL ELECTION AND MEDIA

This year's election decides who will assume the Mexican presidency as the successor of Enrique Peña-Nieto, the country's current executive. The country operates by a plurality voting system, by which multiple parties compete for the presidency in a single-round contest. There are four major candidates for the office of president. The current front runner, Andrés Manuel López Obrador of the leftist Movimiento Regeneración Nacional (MORENA), José Antonio Meade of the center-right PRI, Ricardo Anaya, who is fronting a broad centrist coalition led by the PAN, and independent candidate Jaime Rodríguez Calderón (El Bronco).^{10,11}

The traditional Mexican news media is predominantly corporate-owned, and maintains close links with the country's business and political elite. The Reuters Digital News Report 2018 found in their survey that only 49% of Mexicans had trust in the media most

of the time. Additionally, survey data confirmed that the proliferation of junk content has shaped audience attitudes, with 63% of Mexican survey respondents saying that they are “very” or “extremely” concerned about the veracity of online news content. Of those surveyed by the Reuters Institute, 90% responded that they receive their news from online sources, including social media, compared to only 45% from print media, and 74% answered that their smartphone is the primary device for news consumption over computers. Of survey respondents, 61% use Facebook to get their news, with YouTube and WhatsApp accounting for 37% and 35% respectively, and Twitter for 23%.¹²

SAMPLING AND METHODS

Twitter Sampling Method

Our Twitter dataset contains 4,215,776 tweets posted by 348,195 unique Twitter accounts, collected between 29 May and 11 June 2018 using a combination of hashtags related to candidates and the election in general, as well as handles for the major political parties and candidates (see [online supplement](#) for a complete list of hashtags and handles). To capture this data, we used Twitter’s Streaming API to collect publicly available data for our analysis. The platform’s precise sampling method is not disclosed, but Twitter reports that data available through the Streaming API is, at most, 1% of the overall global public traffic on Twitter at any given time.¹³ We collected tweets that: (1) contained at least one of the relevant hashtags or at least one Twitter handle of the candidates or the parties supporting them; (2) contained the hashtag in the URL shared or the title of its webpage; (3) were a retweet of a message that contained the hashtag in the original message; or (4) were a quoted tweet with a URL referring to the original tweet with the hashtag. The list of hashtags associated with the Mexican election was compiled via qualitative research and refined after a two-day test data collection revealed the top-used hashtags. We tracked hashtags that were both in favor of and against the candidates and their parties. Each tweet was counted if it contained one of the hashtags followed. If the same hashtag was used multiple times in a tweet, it was counted only once. If a tweet contained more than one of the tracked hashtags, it was credited to each relevant candidate hashtag group (see *Table 1*).

Within this dataset, we classified links to news sources shared five times or more on Twitter, which included links to content on YouTube and Facebook, giving us 91% coverage, which is the percentage of links shared that the team coded. Links pointing to Twitter itself were excluded from our sample. The process of categorizing the base URLs, accounts, channels and pages involved the evaluation of the sources of news and information in a rigorous and iterative coding process using a typology that has been developed and refined through our previous studies of five elections in four Western democracies.^{14,15} Our team comprised three trained coders who speak Spanish and are familiar with the Mexican political and media landscape. The Krippendorff’s alpha value for inter-coder reliability among the three coders, who also contributed to the

utilized grounded typology, was 0.87. The existing literature suggests that an $\alpha = 0.80$ or higher provides a high level of reliability.^{16,17} The details of our typology explaining our classification of the most relevant types of sources in the Mexican context, is given below.

Professional News Content

- Major News Brands. This is political news and information by major newspapers, broadcasting or radio outlets, as well as news agencies.
- Local News. This content comes from local and regional newspapers, broadcasting and radio outlets, or local affiliates of major news brands.
- New Media and Start-ups. This content comes from new media and digitally native publishers, news brands and start-ups.
- Tabloids. This news reporting focuses on sex, crime, astrology and celebrities, and includes yellow press publications.

Professional Political Content

- Experts. This content takes the form of white papers, policy papers or scholarship from researchers based at universities, think tanks or other research organizations.
- Political Party or Candidate. These links are to official content produced by a political party or candidate campaign, as well as the parties’ political committees.
- State-Funded Pro-Government. A news outlet that is entirely or in great part financed by a government, is not independent in their reporting, and promotes a pro-government agenda.

Polarizing and Conspiracy Content

- Junk News and Information. These sources deliberately publish misleading, deceptive or incorrect information purporting to be real news about politics, economics or culture. This content includes various forms of propaganda and ideologically extreme, hyper-partisan or conspiratorial news and information. To be classified as Junk News and Information, the source must fulfill at least three of these five criteria:
 - *Professionalism*: These outlets do not employ standards and best practices of professional journalism. They refrain from providing clear information about real authors, editors, publishers and owners. They lack transparency and accountability, and do not publish corrections on debunked information.
 - *Style*: These outlets use emotionally driven language with emotive expressions, hyperbole, ad hominem attacks, misleading headlines, excessive capitalization, unsafe generalizations and logical fallacies, moving images, and lots of pictures and mobilizing memes.
 - *Credibility*: These outlets rely on false information and conspiracy theories, which they often employ strategically. They report without consulting multiple sources and do not fact-check. Sources are often untrustworthy and standards of production lack reliability.
 - *Bias*: Reporting in these outlets is highly biased, ideologically skewed or hyper-partisan, and they present opinionated commentary as news.
 - *Counterfeit*: These sources mimic established news reporting. They counterfeit fonts, branding and stylistic content strategies. Commentary and junk content is stylistically disguised as news, with references to news agencies and credible sources, and headlines written in a news tone with date, time and location stamps.
- Russia. This content is produced by known Russian sources of political news and information.

Other Political News and Information

- Political Commentary Blogs. Political blogs employ standards of professional content production such as copy-editing, as well as employ writers and editorial staff. These blogs typically focus on news commentary rather than neutral news reporting on a news cycle and are often opinionated or partisan.
- Citizen, Civil Society and Civic Content. These are links to content produced by independent citizen, civic groups, civil society organizations, watchdog organizations, fact-checkers, interest groups and lobby groups representing specific political interests or agendas. This includes blogs and websites dedicated to citizen journalism, personal activism, and other forms of civic expression that display originality and creation that goes beyond curation or

aggregation. This category includes Medium, Blogger and WordPress, unless a specific source hosted on either of these pages can be identified.

Other Non-Political

- Link Shorteners. These are links that were obscured by link shorteners. If a link can be attributed to an original source, it is.

Facebook Network Mapping

We collected public Facebook pages relevant across Mexican politics. Our map was based on: (1) a list of public Facebook pages associated with the candidates and parties; (2) a snowball sample of additional pages connected to those seeds by direct likes, collected using the Facebook Graph API; (3) iterations of Mexican political, media and culture clusters from previous maps generated by Graphika.

In this study, we use the Graphika visualization suite to develop a map of public Facebook pages associated with the Mexican presidential election collected via the steps outlined above. We created a visualization of a network map of public Facebook pages using a Fruchterman–Reingold algorithm to draw a graph representing the patterns of social connections between these individual pages, which comprise the nodes of the network map.¹⁸ This algorithm arranges the nodes in a data visualization map, through a centrifugal force that pushes nodes to the edge and a cohesive force that pulls strongly connected nodes together. Next, we segmented the map into distinct communities, using a hierarchical agglomerative clustering algorithm (see [online supplement](#) for details on the algorithm). Different social media platforms have their own unique attributes that are effective in identifying communities that persist over time. For Facebook, we cluster pages by the *like* relationship. After clustering, the map-making process used supervised machine learning techniques to generate labels for *clusters* from a training set labeled by human experts. After these labels were assigned, they were manually verified, and checked for accuracy and consistency. They were then manually organized into *groups* based on shared characteristics (see [online supplement](#) for details on the terminology).

This method of segmenting and grouping pages, coding them, and generating broad observations about their associations is an iterative process drawing on qualitative and quantitative methods. We iterated between the quantitative process of network generation, clustering, and labeling; and qualitative evaluation of the resulting map by a subject matter expert to identify stable and consistent communities in a network of social media accounts (see *Figure 1*).

This process resulted in a dataset of 4,878 public Facebook pages. Finally, we collected all posts from these public pages between 7 March and 5 June 2018, using the Facebook Graph API. We then extracted all links to news sources that five or more pages in our map shared at least once, leading to a dataset of 589 links and classified the sources using our typology. Links pointing to Facebook itself were excluded from our sample.

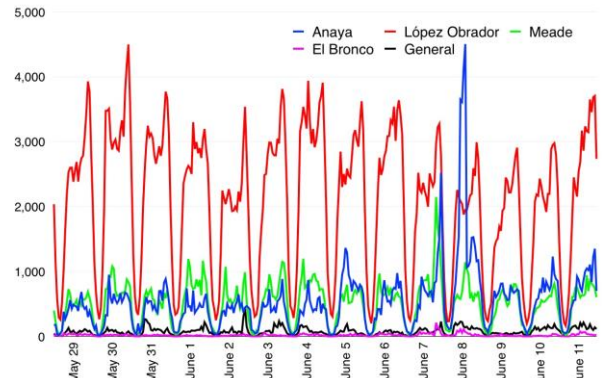
FINDINGS AND ANALYSIS

Twitter Analysis

For our analysis of Twitter data, we examined the volume of tweets, the degree of high frequency tweeting and the type of news content shared on Twitter during the Mexican presidential election.

Figure 1 shows the hourly Twitter conversation on the election, based on hashtag use. *Table 1* shows the breakdown of the Twitter conversation about the Mexican election based on candidate hashtag use. We also identify the levels of high frequency tweeting of hashtags pertaining to specific candidates. To measure this, we chose the threshold of 50 or more tweets with these hashtags in a 24-hour period. As tweets often contain multiple hashtags, there is some overlap between the candidate groups, hence the total number of tweets in *Table 1* does not represent the total number of unique tweets.

Figure 1: Hourly Twitter Conversation about the Mexican Presidential Candidates Based on Hashtag Use



Source: Authors' calculations from data sampled between 29/05/18–11/06/18. Note: See [online supplement](#) for a complete list of hashtags.

Table 1: Twitter Conversation and High Frequency Tweeting about the Mexican Presidential Election Based on Hashtag Use

Candidate	<i>N</i>	% of total	<i>N</i> of high frequency tweets	% of high frequency tweets
López Obrador	709,835	65	89,581	68
Anaya	180,881	17	19,994	15
Meade	174,906	16	19,780	15
El Bronco	6,436	0.6	236	0.2
General	26,230	2	1,732	1
Total	1,098,288	100.0	131,323	100.0

Source: Authors' calculations from data sampled 29/05/18–11/06/18. Note: See [online supplement](#) for a complete list of hashtags. Percentages have been rounded to the nearest whole number unless they were below one percent, in which case they were rounded to one decimal place. High frequency tweets refer to the number of tweets from high frequency-tweeting accounts.

Twitter activity around López Obrador, the leading candidate in the polls, was consistently the highest, accounting for 65% of the total hashtag-based traffic and 68% of high frequency tweets, showing that he dominated the online conversation (see *Figure 1* and *Table 1*). There was almost four times as much daily content about him than any of the other candidates and at least four times the volume of high frequency tweeting. On 8 June 2018 we note a spike in tweets using Anaya-related hashtags, which can mostly likely be attributed to a viral video released 7 June 2018 accusing the candidate

of ties to a money laundering operation.¹⁹ We also note that tweeting using general election hashtags was very low compared to tweeting using candidate-specific hashtags.

Next, we extracted links to news sources from our Twitter data sample and classified them according to our typology. Further, we classified Facebook and YouTube links extracted from the tweets into various news categories using the same typology.

Table 2: Types of News and Information Shared on Twitter

Type of Source	N	%
Professional News Content		
Major News Brands	36,504	31
New Media & Start-ups	23,450	20
Local News & Tabloids	6,699	6
Subtotal	66,653	57
Professional Political Content		
Political Party or Candidate	5,907	5
Experts	2,469	2
State-Funded Pro-Government	178	0.2
Government	87	0.1
Subtotal	8,641	7
Polarizing & Conspiracy Content		
Junk News & Information	763	0.7
Russia	97	0.1
Subtotal	860	0.8
Other Political News & Information		
Citizen, Civil Society & Civic Content	16,506	14
Political Commentary Blogs	13,561	12
Remaining Categories	6,798	6
Subtotal	36,865	32
Other Non-Political		
Remaining Categories	3,105	3
Link Shorteners	1,144	1
Subtotal	4,249	4
Total	117,268	100

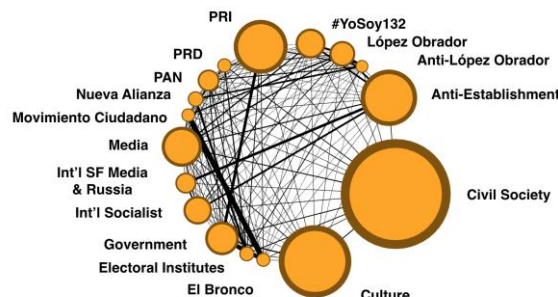
Source: Authors' calculations from data sampled 29/05/18–11/06/18. Note: See [online supplement](#) for a complete list of hashtags. Percentages have been rounded to the nearest whole number unless they were below one percent, in which case they were rounded to one decimal place. The category Tabloid was merged with Local News as it constituted a low percentage of total shares. Political Humor & Entertainment, Video/Image Sharing & Content Subscriptions, Fundraising & Petitions, Lifestyle, Religion, Online Portals, Search Engines & Aggregators, Cloud, and Other Political were collapsed into Remaining Categories as they represented a low percentage of total shares. Not Available, Shopping, Services & Applications, and Other Non-Political were collapsed into Remaining Categories as they represented a low percentage of total shares.

Of all shared links captured, only 4% were categorized as Other non-political content, affirming that our list of Twitter hashtags and handles was effective at capturing relevant traffic (see Table 2). Professional News Content were the sources shared most on Twitter, constituting 57% of total shares, while Polarizing and Conspiracy Content comprised less than 1% of total shares. Thus, per our methodology, polarizing sources do not constitute a major part of the conversation around Mexico's election. Within professional content, we see that Major News Brands were shared most widely at 31%, while New Media and Start-ups take up 20% of professional content. Citizen, Civil Society and Civic Content and Political Commentary Blogs are the other noteworthy categories, constituting 14% and 12% of total shares, respectively.

Facebook Analysis

For our Facebook analysis, we classified all the news sources that had been shared by five or more pages at least once according to our typology. Our results are presented in Table 3.

Figure 2: Mexican Audience Groups on Facebook



Source: Authors' calculations from data sampled between 07/03/18–05/06/18. Note: Groups are determined through network association. This is a basic visualization (see [online supplement](#) for a full visualization).

Table 3: Number of Pages Sharing Political News and Information on Facebook

Type of Source	N	%
Professional News Content		
Major News Brands	3,691	36
New Media & Start-ups	1,225	12
Local News & Tabloids	390	4
Subtotal	5,306	52
Professional Political Content		
Government	131	1
State-Funded Pro-Government	129	1
Experts	70	0.7
Political Party or Candidate	27	0.3
Subtotal	357	3
Polarizing & Conspiracy Content		
Russia	168	2
Junk News & Information	143	1
Subtotal	311	3
Other Political News & Information		
Citizen, Civil Society & Civic Content	560	6
Political Commentary Blogs	312	4
Remaining Categories	1,168	16
Subtotal	2,040	26
Other Non-Political		
Link Shorteners	912	9
Remaining Categories	760	8
Subtotal	1,672	16
Total	9,686	100

Source: Authors' calculations from data sampled link to hashtags 07/03/18–05/06/2018. Note: See [online supplement](#) for a complete list of hashtags. Percentages have been rounded to the nearest whole number unless they were below one percent, in which case they were rounded to one decimal place. The category Tabloid was merged with Local News as it constituted a low percentage of total shares. Political Humor & Entertainment, Video/Image Sharing & Content Subscriptions, Fundraising & Petitions, Lifestyle, Religion, Online Portals, Search Engines & Aggregators, Cloud, and Other Political were collapsed into Remaining Categories as they represented a low percentage of total shares. Not Available, Shopping, Services & Applications and Other Non-Political were collapsed as they represented a low percentage of total shares.

Professional News Content were the sources shared most on Facebook, constituting 52% of total shares, while

Polarizing and Conspiracy Content comprised only 3% of total shares (see *Table 3*). Thus, following our Twitter trends observed above, pages in our Mexican Facebook map predominantly share professional news sources. Within professional content, we see that Major News Brands were shared most widely at 36%, while New Media and Start-ups take up only 12% of total shares. The remaining noteworthy category is Other Political News and Information which take up 26% of total shares. We also note an unusually small number of direct shares to Political Party or Candidate content on Facebook.

Lastly, we calculated a heterophily score for each combination of group pairings (see [online supplement](#) for the heterophily index). A heterophily score of 1.0 is a neutral connection, with anything above that being a strong tie and anything below indicating a lack of a connection. A higher heterophily score between two groups indicates more connections between them while a higher score of a group to itself indicates more within-group connections. We notice a high heterophily score between the Anti-Establishment and International State-Funded Media and Russia groups (3.5). The student movement #YoSoy132 and López Obrador (2.5), #YoSoy132 and Anti-Establishment (2.2), as well as López Obrador and Anti-Establishment (2.3) have high heterophily scores as well, indicating strong ties between these pairings. Movimiento Ciudadano has a very high heterophily score to itself (138.7) and to López Obrador (1.8), signaling many within-group ties as well as a closer connection to the opposition candidate, who was the party's first leader. Lastly, El Bronco and Government, which includes local and state government clusters, have a very high score (5.7) most likely due to his governorship in Nuevo León.

Figure 2 is a basic visualization of 17 Mexican audience groups on Facebook, excluding one group of politically irrelevant audiences (see [online supplement](#) for list of groups and clusters, and heterophily index). The size of each group is determined by the number of Facebook pages that belong to it. The connections between the groups are computed using the heterophily scores between the groups. The width of the lines linking groups represents the strength of the connection.

CONCLUSIONS

Our main conclusions are that: (1) the leading candidate Andrés Manuel López Obrador dominates the Twitter conversation, with almost four times as much daily content about him than any of the other candidates and at least four times the volume of high frequency tweeting; (2) the majority of political news shared over Twitter and Facebook comes from professional news sources, with established news brands shared most widely; (3) less than one percent of political news and information shared on Facebook comes from official candidate and party pages.

Overall, our analysis has found limited evidence of junk content over Twitter and Facebook, and prevalent sharing of professional content. Within that, major news brands are shared much more widely than new media publications. However, although only a small percentage of news sources in our data samples on

Twitter and Facebook met three of the five criteria required by our typology to be classified as junk content, there was biased, partisan, ideologically skewed and opinionated commentary even among professional news sources, encompassing traditional Mexican media which is often reliant on government advertising money.^{20,21} We also found that Twitter users and Facebook pages prefer to share political news covered by the media rather than from parties or candidates directly.

Our findings also support the notion that Twitter has a well-educated and politically elite user demographic with very low consumption of junk news sources. Facebook's new measures to increase "meaningful" newsfeed content presents uncertainties about future handling of news on the platform and might account for the low presence of junk news sources in our Facebook data sample.^{22,23}

Our results indicate that misinformation in Mexico is becoming more nuanced. Polarizing and conspiracy content takes on a variety of multi-media formats, including text, video and audio, memes and highly shareable short text snippets. As news-seeking behavior and social exchange moves away from public spaces on Twitter and Facebook, and into private, one-to-one applications, we foresee a need for future research to investigate the role of misinformation on popular services such as WhatsApp and Facebook Messenger.

ABOUT THE PROJECT

The [Project on Computational Propaganda](#) (COMPROP) based at the [Oxford Internet Institute](#) is an interdisciplinary team of social and information scientists researching how political actors manipulate public opinion over social networks. This work includes analyzing the interaction of algorithms, automation, politics and social media to amplify or repress political content, disinformation, hate speech and junk news. Data memos are designed to present quick snapshots of analysis on current events in a short format, and although they reflect methodological experience and considered analysis, they have not been peer-reviewed. Working papers present deeper analysis and extended arguments that have been collegially reviewed and engage with public issues. COMPROP's articles, book chapters and books are significant manuscripts that have been through peer review and formally published.

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