

Social Media Campaign Strategies: Analysis of the 2019 Nigerian Elections

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Abstract—Online social media platforms such as Twitter and Facebook offer a flexible and effective means of communication on a large scale leading to a vast amount of diverse datasets. This capability makes it possible to analyse large amounts of data virtually on any topic from online users. Organisations, media houses, politicians, artists, entertainers, among others, utilise social media to engage with a broader audience. Social media platforms play an instrumental role in election campaigns and other political debates, as reported in past studies. Despite the growing number of studies concerning the role of social media in elections, little attention has been paid to Africa’s largest democracy (Nigeria); this motivates our study.

For the study, we collected a large number of tweets based on the Twitter handles of the political parties and presidential candidates. We measured the online activities of political parties and candidates and analysed users’ opinions to understand their sentiments. Moreover, we used differential sentiment analysis to study the relationship between the opinions of the users and the information produced by the 12 top Nigerian news media outlets. We apply a novel method of reverse engineering of Twitter accounts to understand the online campaign strategies of the parties. We found that while both the ruling party and minority parties concentrate on promoting their candidates, the top opposition party plays a two-way strategy of promoting their candidates while attacking the ruling party and its candidate. Finally, compared to the actual election results, our Twitter analysis correctly predicts the winner in 24 states out of the 37 states (including the Federal Capital Territory).

Our findings provide insight into the 2019 Nigerian election from social media perspectives and encourage further research about the country using data from social media.

Index Terms—Online Social Media, Twitter, Online Campaign, Nigerian election

I. INTRODUCTION

One of the defining features of the present civilisation is the sophistication level of technology and how it revolutionises various aspects of our lives. Social interactions amongst the public witnessed a tremendous change with the advent of online social media platforms such as Twitter, Facebook, Instagram, Snapchat. The utility of these platforms in driving change and gaining competitive advantages has been demonstrated across various domains. Social media platforms have been instrumental, where campaign strategies and propaganda are being orchestrated via online social media platforms. In the political arena, these platforms play a significant role

in attracting support from the electorates. The Twitter social platform is increasingly influential in shaping social phenomena. Users freely express opinions and engage in discussions that generate a significant impact on society. Twitter makes it easy for users to collectively engage in conversations and frame a narrative about policy and political issues [2]. Many crucial discussions from civil activism to political campaigns have been successfully coordinated on social media (see [15], [3], [6]). The past four US presidential elections witnessed a substantial use of social media as part of their campaign strategies [1], [4], [8], [30]. The same is true in recent elections in Germany and France [28] and during the Brexit referendum.

The benefits of social media attract malicious activities where *trolls* and *automated accounts* or *social bots* are being used to skew or manipulate public opinion. In politics, propaganda tools such as automated agents or social bots are widely employed to win the support of the electorates. Hence, studies are conducted to understand and detect the behaviour of social bots in undermining social interactions ([16], [27], [18], [13], [5]). Special consideration is given to social media when it comes to elections and other civil discourse. A case in point is the just-concluded Indian election where social media activities received special attention¹.

Social media platforms play an essential role in election campaigns and other political issues [2]. Despite the growing number of studies concerning the role of social media in elections, little attention has been paid to Africa’s largest democracy (Nigeria); this motivates our study to propose the following research questions for investigation:

- What is the level of online presence and engagement of the parties and their candidates? Here, we want to understand the intensity of a social media campaign.
- How do users react to online campaigns and political propaganda? This is to understand opinion polarization of online users.
- What is the correlation between the online users’ opinion and opinions promoted by the news media? This is to

¹<https://theasiadialogue.com/2019/04/01/indian-elections-2019-social-media-and-fake-news/>

understand the relationship between the two and detect a potential influence.

- How can we reveal the online campaign strategies used by candidates and political parties? This is to understand how politicians try to attract support from the online community.
- What is the correlation between the results of the Twitter analysis and the actual election? The goal is to understand the extent to which Twitter analysis can be used to predict election results in the country.

Second to the last question is particularly relevant, noting the nature of online campaigns, where aggressive strategies are used to spread campaign manifestos or misinformation about the oppositions. In particular, automated agents or social bots are widely employed to accomplish these activities. We aim to understand the campaign strategies employed by political parties and candidates in winning the support of the electorates.

For the study, we collected a large number of tweets based on the Twitter handles of the political parties and presidential candidates. We measured the online activities of political parties and candidates and analysed users' opinions to understand their sentiments. Moreover, we used differential sentiment analysis to study the relationship between the opinions of the users and the information produced by the 12 major Nigerian news media outlets. Finally, we applied a novel method of *reverse engineering Twitter account* [5] to understand the online campaign strategies of the parties. Our findings suggest that the major political parties in Nigeria are less engaged in the online space. Political parties with limited presence, i.e., not known by the majority in the offline space, exhibit higher online engagements. Moreover, while the ruling party and minority parties concentrate on promoting their candidates, the top opposition party plays a two-way strategy of promoting their candidates while attacking the ruling party and its candidate.

Contributions: our study contributes to the following:

- We present a critical analysis of the online activities of politicians – parties and candidates – in Nigeria.
- Using state-of-the-art of sentiment analysis, we reveal the polarisation of opinions among online users.
- We provide a comprehensive analysis of the news disseminated by the media during the election period.
- We use a novel method to analyse the campaign strategy employed by various political parties and candidates during the election.
- We analyse the opinion of online users in each state of the country and predict the potential winner.

The remaining part of the paper is structured as follows. We present related work on the use of social media in elections and highlight where this work extends the state of the art in Section II. Section III presents the data collection and preliminary analysis. Section IV discusses sentiments in users' opinions and Section V presents the campaign strategies used by political parties and candidates. Finally, Section VII

concludes the study and gives pointers to future work.

II. THE USE OF SOCIAL MEDIA IN ELECTIONS

Twitter and other social media platforms play an important role in elections and other democratic conversations. Many studies examined the use of social media in elections. In an analysis of the 2012 US presidential candidates' Facebook pages, [7] show that the medium was mainly used for mobilization of supporters. Candidates retain control of their message, posting information only on a small number of non-controversial topics. For the same election [23], studied the conversational features of the tweets and concluded that there was limited interaction between users. They describe the interaction as a one-sided conversation which elicits no response. The medium was mainly used for broadcasting of messages.

In a study of the 2013 Norwegian national election, [21] examine the disparity between parties' interaction strategy and online responsiveness. Findings from this research described the risk to negative online reputation and associated media attention as significant factors affecting parties' interaction with voters online. However, [14] indicate evidence of interaction between candidates and voters in their study which compares how British and Dutch parliamentary candidates used Twitter during the 2010 general election. They show that Dutch candidates interact (@reply accounting for 47% of their tweets) with others more significantly than British candidates (@reply accounting for 32% of their tweets). For the 2014 Indian general election, [19] studied Twitter accounts of the top ten political parties. They used social media for self-promotion, mobilization of voters and posting real-time updates of their offline campaign activities. In a study of how social media was used during general elections in Nigeria and Liberia in 2011, [26] find that social media was used to report problems at election units and provide updates about the election process, concluding that it helped to overcome scarcity of information.

The effect of social media use by candidates has also been considered. [11] studied the impact of social media on the Dutch election and found that although it did not influence voting behaviour in the 2010 local election, politicians with higher social media engagement received more votes within most political parties during the national election. Similarly, [22] investigated candidates' online campaign styles during the 2010 Dutch national election and showed that candidates who used Twitter received more votes than those who did not.

In terms of using social media to predict election's outcomes, [29] use Linguistic Inquiry and Word Count (LIWC) text analysis software to analyse the content of messages mentioning political parties and candidates during the German federal election. Their result shows that online messages on Twitter closely mirror the offline political sentiments. In the same context, [9] analyse tweets mentioning candidates for the U.S House of Representatives election and showed that there was a significant correlation between the candidates' electoral performance and tweets mentioning the candidates. Looking

at developing nations, Twitter users’ sentiment was used to forecast election outcomes in India, Pakistan, Indonesia and others [20], [25]. Using Indonesia’s presidential election as a case study, [10] claimed that Twitter forecast outperformed all the traditional polls at the national level.

In general, the majority of work in this area follows the same approach, combining Twitter sentiment analysis, the volume of tweets or mentions of a candidate and correlated these with electoral result [10], [20], [25], [29]. In a closely related work, [12] studied a corpus of tweets during the 2011 Nigerian presidential election. They found that tweets’ sentiment was less accurate in predicting the support for the two major candidates but counts of tweets mentioning the candidates correlated with election results across the country’s six geopolitical zones. They mentioned the resolution of the users’ location as a challenging task and suggested analysis at the state level in the future.

In this paper, apart from the prediction of election result at the state level, we study the online presence of parties and candidates to understand the degree of their campaign on social media. Sentiment analysis is used in a differential way to understand users’ opinion polarisation. We analyse the correlation of opinions promoted by the news media and those of the users to understand the relationship between the two and detect a potential influence. Finally, the use of reverse engineering techniques [5] to study the candidates’ campaign strategies is unique in this area.

III. DATA COLLECTION AND ANALYSIS

A. Data Collection

We manually collected the Twitter handles of all political parties and presidential candidates. We used the Twitter API to continuously collect tweets related to the election keywords, hashtags and the handles from 4 December 2019 to 12 February 2019, covering the peak period of the election campaigns. The election was held on 23 February 2019 after being postponed at 3:00 on the initial day (16 February 2019). The datasets (summarised in Table I) consist of the following categories:

1) *Political Parties*: This dataset consists of all political parties officially registered by Independent National Electoral Commission (INEC) – the body responsible for arranging and conducting elections in Nigeria. We collect relevant information about each political party using its Twitter handles.

2) *Presidential Candidates*: For each political party, we identify its presidential flag bearer and the corresponding Twitter handle. We use that information to collect relevant tweets about the candidate.

3) *News Media and the Public*: In addition to the data from political parties and presidential candidates, we collect tweets from the news media and the general public to understand their opinions on the parties and the candidates. The news media dataset was obtained from the following Twitter handles @GuardianNigeria, @daily_trust, @nigeriantribune, @the-sunnigeria, @SaharaReporters, @THISDAYLIVE, @PremiumTimesng, @LeadershipNGA, @MobilePunch, @NTANews-

TABLE I: Dataset statistics

Category	Total Number Tweets	Proportion(%)
Parties	13,873	0.73
Candidates	32,254	1.70
News Media	14,000	0.73
Users	1,835,613	96.82

TABLE II: Twitter handles of political parties and candidates

Party	Party’s Twitter Handle	Candidate’s Twitter Handle
All Progressives Congress	@OfficialAPCNg	@MBuhari
Peoples Democratic Party	@OfficialPDPNig	@atiku
United Patriots	@ng_patriots	-
Advanced Peoples Democratic Alliance	-	@Our_DA
KOWA PARTY	@KOWA_NGR	-
Allied Congress Party of Nigeria	-	@obyzezeks
Young Progressive Party	@YPPNational	-
Action Democratic Party	@ADPNg	-
Alliance National Party	@AbundantNigeria	-

Now, @vanguardngrnews, @channelstv, @TheNationNews , and @nanonlineng.

B. Data Analysis

For each political party and presidential candidate, we are interested in determining their online presence and the opinions expressed by the users. We extract tweets produced by the political parties and candidates to understand their online campaigns during the period. To measure online engagement, we analysed the total number of *retweets* (RTs) and *favourites counts* received by tweets produced by the parties and candidates. We are also interested in understanding the sentiments in the opinions of the online community towards the political parties and the candidates. We analysed the sentiment of tweets mentioning the parties and the candidates using *VADER*, a sentiment analysis tool for social media text [17].

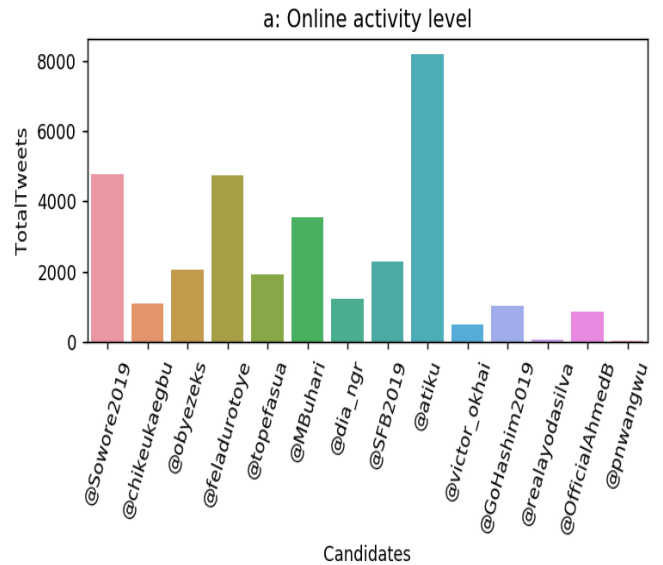


Fig. 1: Online activity level of presidential candidates

C. Users-location labelling

In Twitter, the location of the user can be identified through (1) analysing the tweets’ geo-coordinates; this is only possible if the feature is enabled by the user, or (2) identifying a *self-reported* location in the users profile provided during the account creation process. Since users rarely enable geo-tagging of their tweets, and different locations can be tagged, we utilised the second option for our analysis. Identifying the location of each tweet enables us to analyse the opinion of users across different parts of the country. The account location is substantially noisy due to imprecise tagging by users. To mitigate this challenge, we took an extra pre-processing step to label the location of each user. We created a dictionary of states and major cities of the country and implemented a program to automatically map the users’ location to a city or state in the country. A user location is recorded as ‘None’ if none of the state or city name is found associated with its location.

D. Online activity and engagement

To measure online engagement, we need to know the level of activity for each political party and the presidential candidate. For brevity, we focus on the results from the parties and candidates showing significant activity.

1) *Online activity*: We measure the online activity of an account as the number of tweets produced during the peak period of the election campaign (4 December 2019 to 12 February 2019). We use the cumulative number of tweets for the whole period rather than daily or weekly numbers because our analysis shows that the number of tweets produced daily and weekly depend on offline campaign schedules. From Fig.1, we can observe that one of the strongest opposition candidate (@atiku) has higher activity in comparison to his main challenger, the incumbent president (@MBuhari). Other presidential candidates – @Sowore2019, @feladurotoye all have higher online activities than the incumbent. Following in the list are @obyzezeks (apparently declined to run), @topefasua and @SFB2019.

Similarly, Fig.2 shows the online activity of various political parties in the country. It is interesting to note how newly registered political parties actively engage with online space. The ruling party (@OfficialAPCNg) and one of the most active opposition parties (@OfficialPDPNig) show minimal online activity in comparison to parties associated with the following Twitter handles: @ng_patriots, @Our_DA, @KOWANGR, @YPPNational, @ADPng, and @AbundantNigeria. The following Twitter handle @obyzezeks also featured in the candidate list and is considered as the likely representative of the party. A plausible explanation for the observed high activity can be the changing environment and financial burden, because these new parties may not have adequate means to engage with all the citizens physically, hence resort to reaching out online.

2) *User Engagement*: Next, we measure the level of attention or engagement the content by a candidate receives in terms of the content’s sharing (*retweet count*) and likes (*favourite count*) by online users. In the engagement results

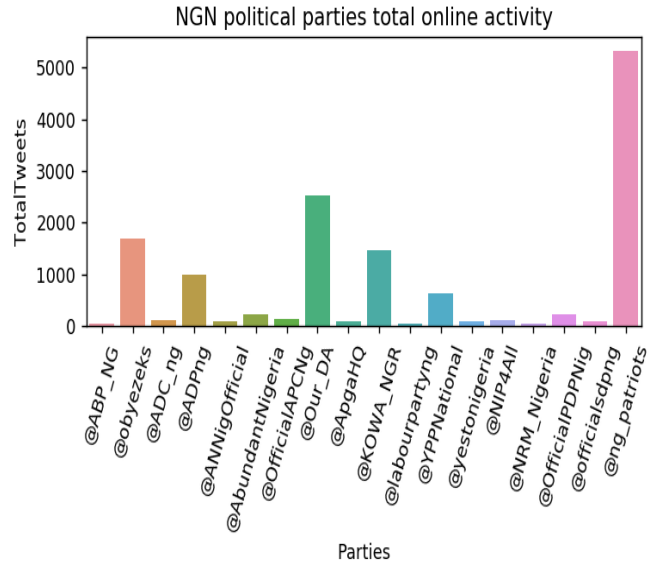


Fig. 2: Online activity level of political parties

(Fig.3), there is a marginal proportion of favourite counts that suggests how agreeable the content is to users. It is evident how the candidates from the major parties in the country stood out, and from the perspective of online interaction, this can be seen as a proxy for a decisive election between the two.

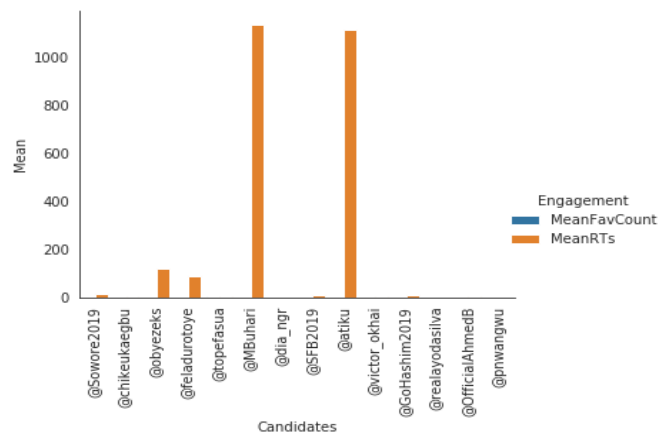


Fig. 3: Online users’ engagements with tweets produced by presidential candidates

IV. OPINION POLARIZATION

Sentiment analysis offers a means to correlate the activity level of political candidates and the response from the online users – both the electorates and the news media. Usually, the opinions and corresponding sentiments expressed in social media platforms correspond to the actual discussion in the offline environment. However, with respect to Twitter, the proportion of Nigerian electorates using the platform is negligible in comparison to the offline electorates. Our goal in this section is to analyse the sentiments of the users, the

news media and identify the offline factors that precipitate the online discussions.

A. Users

Fig. 4 shows the overall absolute sentiments of the users towards the political parties. We observe that the overall opinion of users on the major parties @officialAPCNig and @OfficialPDPNig turns to negative, with @OfficialPDPNig being more negative. This is an indication of a fierce confrontation between the supporters of the two major political parties. Similarly, in Fig. 5, the candidates (@atiku and @Mbuhari) of the major parties (@officialAPCNig and @OfficialPDPNig) stood out above the other candidates. Despite the confrontation between their supporters, @atiku tends to have more positive sentiments than @Mbuhari.

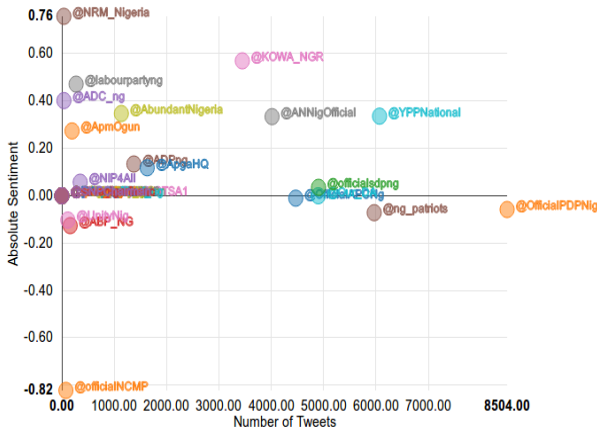


Fig. 4: Overall Opinion of the Users on the political parties

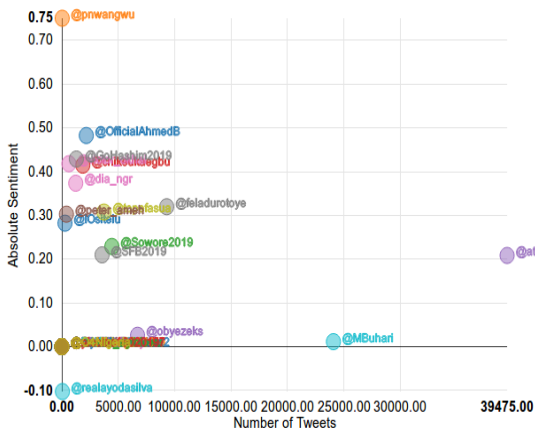


Fig. 5: Overall Opinion of the Users on the candidates

B. News media

Despite the presence of social media, traditional news media still control our daily discussions by disseminating and prioritizing information. To understand the role of news media during the election period and investigate whether the news they produced contributed in influencing the users' opinions,

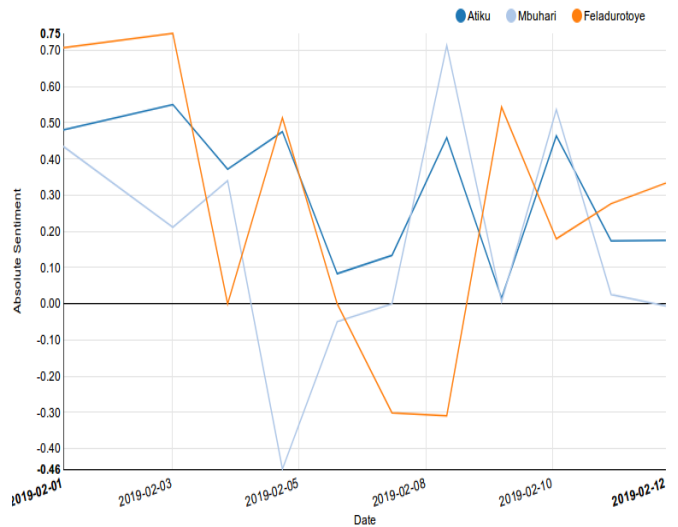


Fig. 6: Opinion of the Users on three candidates overtime

we analysed the information disseminated by 12 major Nigerian media outlets and correlated it with the opinions of the users on the two major parties and their respective candidates. Fig. 7 shows the absolute cumulative sentiment of the media and the users. The news produced by the media is mainly positive with regards to the candidates but negative on their parties. A further investigation shows that a month to the election the media was full of news about the defection of members from one party to another and the dissatisfaction of members of parties over the primary elections in various states.

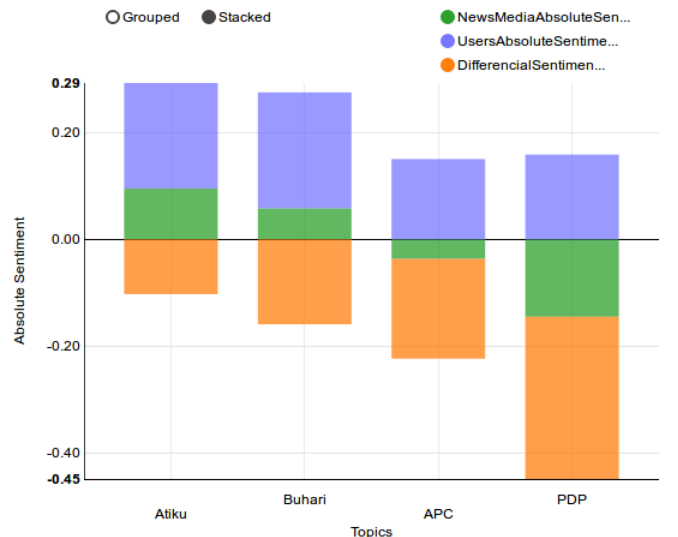
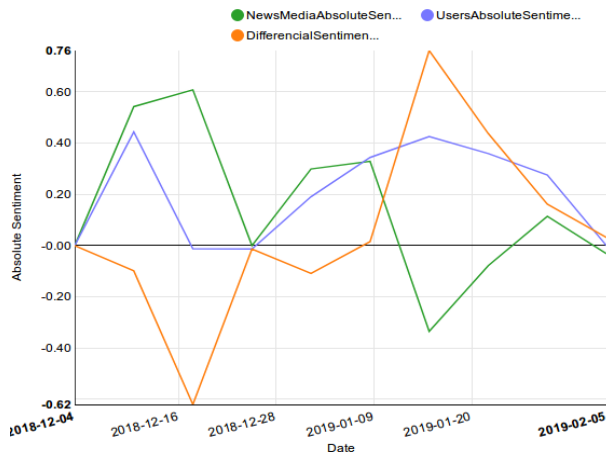
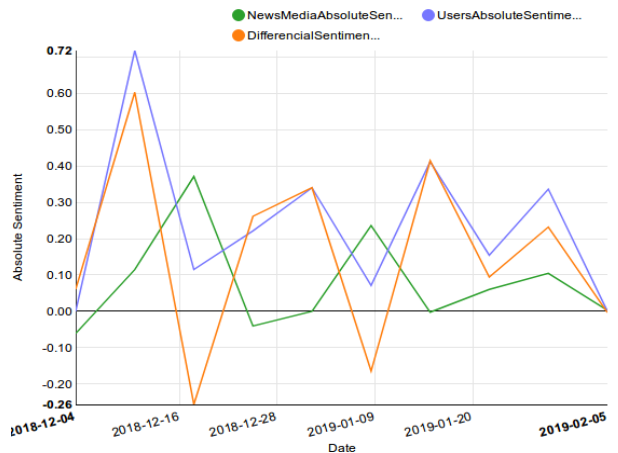


Fig. 7: Opinion of news media and users on the two major parties and candidates

Fig. 8a shows the development of sentiments over time. Differential sentiment analysis indicates the differences in sentiment between news media and online users. We found that from the 9th to the 30th January 2019, negative news mostly dominate the media while the users' opinions were generally positive. Scrutiny of tweets at that period shows that



(a) Sentiment of news media and users on Atiku overtime



(b) Sentiment of news media and users on Buhari overtime

Fig. 8: Differential sentiment overtime of news media and users on the two major candidates

the media was populated with news about the ban of the main opposition candidate (@atiku) from entering the United States of America and accusations of fraud. Despite these negative news, it is interesting to see that the overall sentiment about the opposition candidate (@atiku) was more favourable than that of the incumbent (@Mbuhari). This means the negative news did not have a significant impact on the online community, even if a slight decline in the users' sentiment can be observed. Fig. 8b shows the sentiment of the media compared to that of the users about @Mbuhari. We notice that there was not much negative news from the media about @Mbuhari as observed in @atiku. This gives a sense of what happened via public media channel during the election period, where supporters of the ruling party used earlier charges against @atiku to harm him on the news, while supporters of @atiku use the news to advertise their candidate, rather than attacking the ruling party.

V. CAMPAIGN STRATEGIES

To get more insights into their activities, we applied a rule-based approach for describing the behaviour of Twitter accounts² [5] to obtain a concise, descriptive description of the behaviour political parties' accounts. While the result includes details of the underlying behavioural patterns, we will concentrate on the surface information revealed by the result. This is because the details are more relevant to the understanding of automated accounts. According to Fig. 9a, the ruling party's account, @OfficialAPCNg, is mainly promoting tweets which contain hashtags of support (#NextLevel,#PMB2ndTerm) for its candidate (@Mbuhari) or retweeting its candidate's tweets. On the other hand, the top opposition party, @OfficialPDPNig, operates differently, as shown in Fig. 9c. In addition to promoting retweets of its candidate (@tiku), the party promotes negative tweets mentioning the ruling party (@OfficialAPCNg) and its candidate (@Mbuhari). We found that the less popular opposition parties mainly concentrate on promoting their candidate rather than opposing the ruling or other parties. Fig. 9d

shows an example of a party (ANN) that is mainly promoting tweets from its candidates and tweets with hashtags supporting its candidate.

VI. ACTUAL VS PREDICTED OUTCOMES

In this section, we describe how we computed the election results across various states of the country using Twitter analysis and compared it to the actual election results. This is to understand the extent to which online analysis could predict election outcomes in Nigeria. To ensure a representative outcome, our analysis is based on replicating the ideal of *one-citizen, one-vote*. Therefore, for each state, we aggregate all the tweets from each user and compute the overall sentiment of the user concerning the two major candidates – @tiku and @MBuhari. For instance, if the overall sentiment is positive in favour of any of the contestants, the user is assumed to vote for that candidate. For each state, we sum up the overall votes for each candidate and return the candidate with the highest positive sentiment as the winner. Fig. 10a shows the actual election outcomes which were announced by the authorised electoral body (INEC) and Fig. 10b shows the prediction based on our analysis using tweets. The states won by the opposition party's candidate (Atiku of PDP) are highlighted in red colour and the states won by the incumbent (Buhari of APC) are highlighted in green.

Comparing the actual election results shown in Fig. 10a with those of our analysis shown in Fig. 10b, the analysis result correctly predicts 64.8% of the states. In other words, out of the 37 states (including the Federal Capital Territory), the predicted results of 24 states reflect the actual results of the election. The states that contradict the actual results – Jigawa, Niger, Kwara, Ekiti, Osun, Ogun, Lagos – were won by @MBuhari but were predicted to be won by the opposition candidate, @atiku. Other states comprising of Plateau, Benue, Ebonyi, Abia, Imo, Oyo were won by @atiku (marked green in our result, red in the actual result) not @MBuhari. Furthermore, we compute the overall online

²<https://github.com/bellobichi2/botscope>

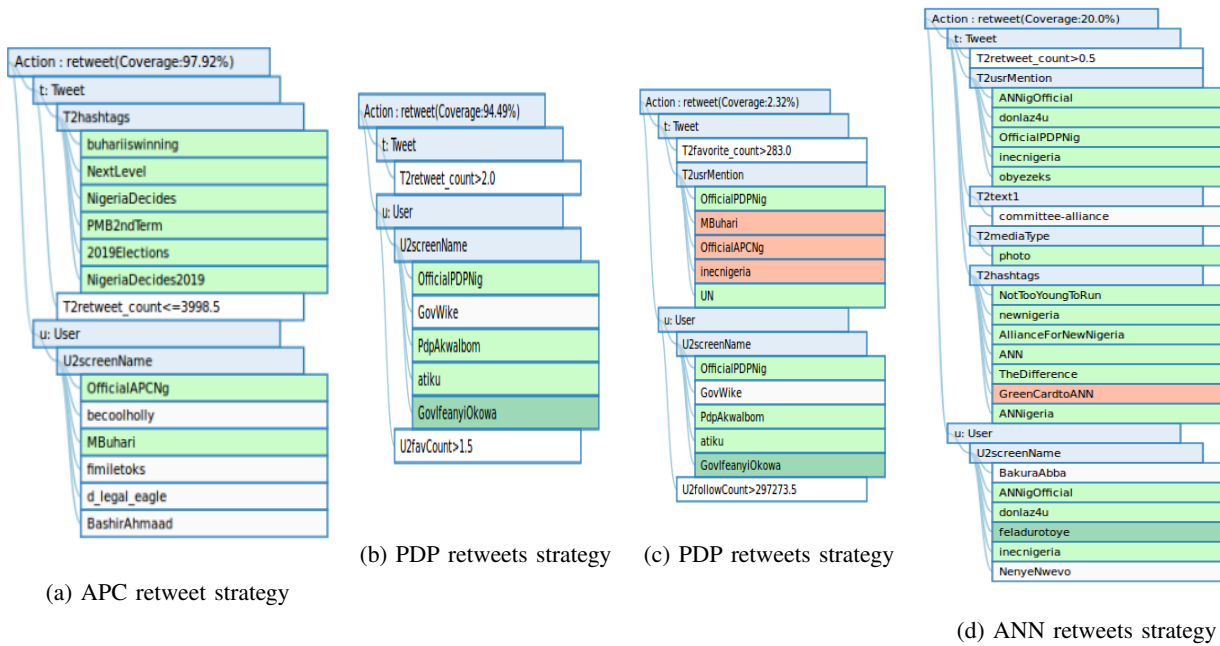


Fig. 9: APC, PDP and ANN retweets strategy

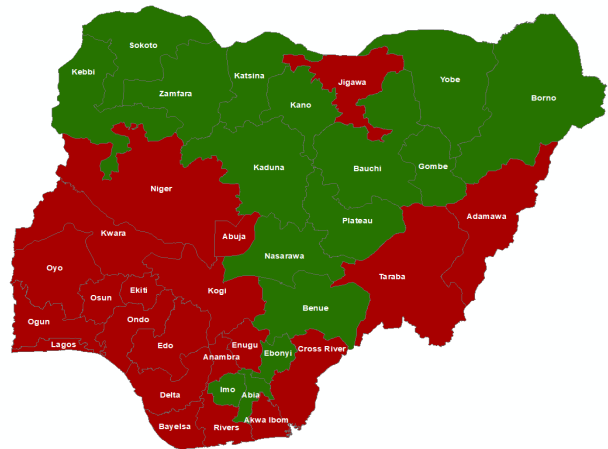
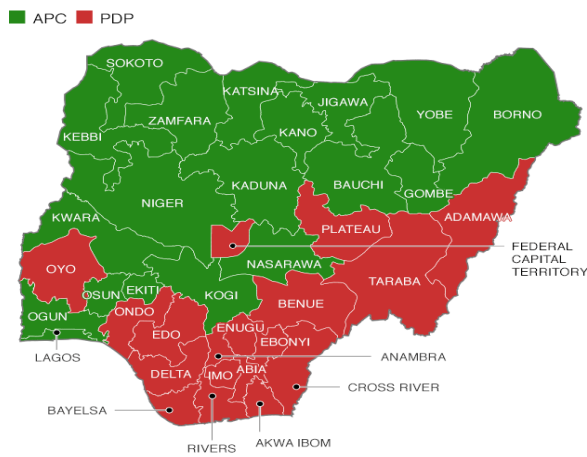


Fig. 10: A comparison of actual election result with result obtained from the Twitter analysis

result, including users whose location is Nigeria, but without any particular state, we found that @atiku received 51.64% and @MBuhari 48.36% votes. However, in the actual election result, @MBuhari received 55.6% of the votes while @atiku received 41.2% of the votes. The result of this analysis is indeed surprising, noting the volume of the analysed online content and the degree to which the predictions match reality. Despite the fact that many Nigerians are not using Twitter, and the number of users in this study is just 6.9% of the total votes cast in the actual election, it is evident that we can get a sample of Twitter users from each state of the country to conduct more comprehensive analysis that will improve prediction accuracy in future elections.

VII. CONCLUSION

Present day social media platforms are useful avenues for various forms of communication, leading to large amounts of data. In this study, we focused on the role of social media and campaign strategies during the 2019 election in Nigeria. We utilised a large number of tweets collected from relevant stakeholders and measured the online activities of political parties, candidates and the general online public. We analysed the opinions of the users and campaigning strategies employed by various political parties and candidates. We also analysed the information disseminated by 12 top Nigerian news media outlets and correlated it with the opinions of online users in a differential way to understand the relationships and biases

between the two. We found that the opinions of users correlate with that produced by the news media between 09/01/2019 to 30/01/2019. We use reverse engineering of Twitter accounts, an approach proposed by [5], to reveal the campaign strategies of the main party accounts. The two most influential parties - APC (the ruling party) and PDP (the most active opposition party) - both use social media. However, the ruling party's presence in social media (Twitter) is less active than that of the opposition party. While the latter attacked the ruling party via social media and garnered support for its candidate, the ruling party seems to rely on news from traditional news media to attack the opposition. With the method proposed in [5], it is possible for political parties to quickly understand the strategy of their opponents and improve their campaigns.

Finally, we compared the actual election results with our predicted results across various states of the country; our Twitter analysis predicts the winner correctly in 24 states out of the 37 states.

With the growing popularity of social media platforms and its predominant use by the younger population, such platforms will be critical players in determining how strong a political party or candidate will be in the near future. More effective and intelligent use of these platforms will be a crucial factor in improving the approval level of political parties or politicians vying for elected positions. Inspiration can be drawn from the recent elections in Brazil, where the victorious candidate relied mainly on social media to engage with the electorates.

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