

Voters' Sentiment and Propensity to Vote in The Wake of Internal Squabbling in Election Management Bodies: The Case of Ghana's Electoral Commission

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ABSTRACT: The paper explores the implications of the alleged administrative infractions at Ghana's Electoral Commission. We combine qualitative and quantitative approaches to address the issue as follows. First, we employ machine learning techniques to express the sentiment of Ghanaians towards the Commission using Facebook comments from different public sources. Second, we use data from an online survey to examine the propensity of Ghanaians to vote in future elections. The sentiment analysis allowed for the comparison of favourable, unfavourable and neutral Facebook comments and showed that 40 percent of comments were unfavourable whereas the neutral and favourable accounted for 27 and 33 percent respectively. However, the quantitative analysis showed that those respondents who see the Commission as the reason for the previous peaceful elections have a significant and positive propensity to vote in 2020 elections. Similarly, those respondents who see magnanimity of the Ghanaian as the reason for the many peaceful polls are more likely to vote in 2020 elections. It is worth noting, however, that the redeeming of the image of the Commission is imperative as the impasse has dwindled public faith in the Commission significantly.

Keywords: Ghana, Electoral Commission, Sentiment Analysis, Facebook, Perception, Voting.

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Introduction

Electoral Commissions around the world are not immune from election-related challenges in the delivery of freer and fairer elections,¹ which often defines economic growth and development trajectories as well as national security. Holding a genuine election in developing nations becomes a catalyst for improved economic policy and enhanced governance as such honest polls increase government accountability.² However, the domestic interest of competing parties in an election is a risk

1 Bishop, Sylvia, and Anke Hoeffler. 2014. *Free and Fair Elections – A New Database*. London: Center for the study of African Economies.

2 Chauvet, Lisa, and Paul Collier. 2008. *Elections and Economic Policy in Developing Countries*. Paris: Développement, Institutions et Mondialisation (DIAL).

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to a free and fair election. Moreover, that becomes a challenge to Electoral Commissions in pursuit of their mandate.³ Such problems are twofold: remote and immediate.

Elections are a competition of ideas, competition for power and control of resources, and a means to effect economic, social, political and cultural change. In such a convoluting environment, various kinds of methods are employed by interested parties to manipulate the process in their interest. The neutrality and competence of the referee—Electoral Commission—becomes an essential ingredient for diluting and foiling any overt or covert actions of competing parties.⁴ A strong and resourceful Commission often can avert threats of this kind. For instance, in advanced nations where state institutions are resourced and independent, Commissions work better at attenuating threats, including those relating to election organization. In developing countries, however, the challenges persist.⁵

The graveness of the problem in emerging democracies required urgent redress. Subsequently, significant attention was paid to this issue and the efforts have seemed to bear fruit as many emerging democracies are now able to stage elections with minimal threats from domestic sources.⁶ Ghana is one among several African states that have made strides in this direction.⁷ The independence and professionalism of the Electoral Commission have been acknowledged in many studies as a catalyst for credible election processes, despite occasional negligible errors.⁸ In fact, when one looks at percentage turnout as an indicator of trust and citizen participation in an electoral system, Ghana is seen as one of the best in comparison with Kenya, South Africa and Senegal (Figure 1.). These countries are considered to have a significant semblance of consolidated democratic rule in Africa.⁹ The strides in these countries are not ephemeral. They seem resilient enough to withstand significant setbacks.

3 Catt, Helena, Andrew Ellis, Michael Maley, Alan Wall, and Peter Wolf. 2014. *Election Management Design*. Stockholm: International IDEA.

4 Elklit, J., and A. Reynolds. 2002. "The Impact of Election Administration on the Legitimacy of Emerging Democracies: A New Comparative Politics Research Agenda." *Commonwealth & Comparative Politics* 86-119. doi:10.1080/713999584.

5 Fukuyama, Francis. 2004. "The Imperative of State-Building." *Journal of Democracy* (The Johns Hopkins University Press.) Vol. 15 (2): 17-31. doi:10.1353/jod.2004.0026.

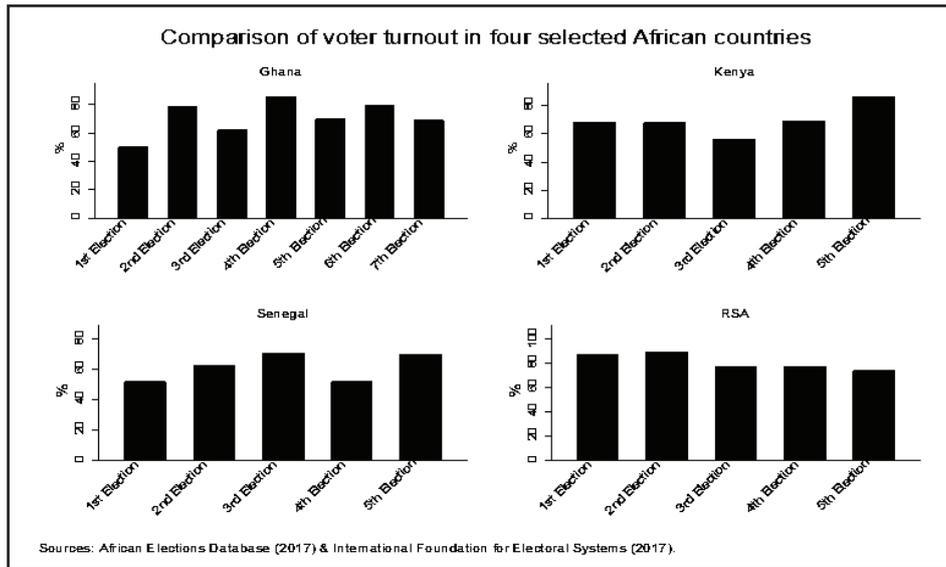
6 Darren, Kew. 2005. "Building Democracy in 21st Century Africa: Two Africas, One Solution." *Whitehead J. Dipl. & Int'l Rel.* 149-162.

7 Darren, Kew. 2005. "Building Democracy in 21st Century Africa: Two Africas, One Solution." *Whitehead J. Dipl. & Int'l Rel.* 149-162; Arthur, Peter. 2010. "Democratic consolidation in Ghana: the role and contribution of the media, civil society and state institutions." *Commonwealth & Comparative Politics* 203-226. doi:10.1080/14662041003672510.

8 Whitfield, Lindsay. 2009. "'Change for a Better Ghana': Party Competition, Institutionalization and alternation in Ghana's 2008 Elections." *African Affairs* (Oxford University Press on behalf of Royal African Society) 621-641. doi:10.1093/afraf/adp056; Debrah, Emmanuel. 2011. "Measuring Governance Institutions' Success in Ghana: The Case of the Electoral Commission, 1993-2008." *African Studies* 25-45. doi:10.1080/00020184.2011.557573.

9 Darren, Kew. 2005. "Building Democracy in 21st Century Africa: Two Africas, One Solution." *Whitehead J. Dipl. & Int'l Rel.* 149-162.

Figure 1. Comparison of Voter Turnout in Selected African Countries (1992-2017)



Source: Authors

However, Ghana's Electoral Commission has recently come under a barrage of criticism over the administrative actions of its Commissioner. The criticism reached an apogee after some "Concerned Workers" of the Electoral Commission petitioned the Chief Justice of the Republic over possible constitutional breaches by the Commissioner.¹⁰ Through the petition, the group triggered the constitutional processes of investigation and possible impeachment of the Chairperson.¹¹ In the petition, the petitioners raised over twenty-seven concerns. They range from misconduct and disrespect to corruption and misuse of authority. The Chairperson in response to the petition challenged the motive of the petitioners. She subsequently laid blame on the two Deputy Commissioners whom the Chairperson alleges are behind the petition.¹²

The fury called into question the Commission's credibility and ability to rally the country for future elections that will be acceptable to the Ghanaian populace. Perception of rot points to a total breakdown of governance systems and one that potentially affects the work of the commission as a neutral, independent and credible body. The Commission's credibility in our view is threatened by the fact that the fury is emanating from within the Commission. However, the internal wrangling which affects the credibility of election commissions, and for that matter, its future election-related activities such as the organization of credible polls, is seldom studied. Many of the cited studies concentrate much on the establishment of the credibility traits of elections (whether the results were

10 Joy FM. 2017. *MyJoyonline*. 22 July. <http://www.myjoyonline.com/politics/2017/July-22nd/full-text-charlotte-osei-fires-back-with-27-point-response-to-impeachment-petition.php>.

11 Daily Graphic. 2017. "Remove EC boss from office - Concerned workers petition President." *Remove EC boss from office - Concerned workers petition President*. Edited by Joe Okyere. Accra, Accra, 20 July. <http://www.graphic.com.gh/news/general-news/remove-ec-boss-from-office-concerned-workers-petition-president.html>.

12 Joy FM. 2017. *MyJoyonline*. 22 July. <http://www.myjoyonline.com/politics/2017/July-22nd/full-text-charlotte-osei-fires-back-with-27-point-response-to-impeachment-petition.php>.

free and fair).¹³ Undeniably, such studies are essential as they indirectly provide a sort of a measure of the credibility of the election-organizing institutions.

We, however, cite a few studies that have been carried out concerning the institution of election management,¹⁴ despite their enormous contribution to a credible election process. Our work seeks to empirically investigate the opinions of people of voting age in Ghana about the Electoral Commission and the unfolding events at the Commission. We pose the following the two questions: a) What has been the reaction of Ghanaians towards the happenings at the Electoral Commission? b) To what extent would the happenings and people's perceptions of election affect the propensity to participate in future elections?

We aim to contribute to the literature on contributors of a credible or dis-credible election, especially in emerging democracies through a multifaceted approach. Our approach of using different methods and varied data types is to lessen the quality of data challenges faced in such empirical studies. Our paper utilizes a unique combination of various analytical tools, including machine learning technique for the understanding of peoples' sentiments and regression method for the study of the propensity of voting in future elections.

The remainder of this paper is organized as follows. First, we review relevant literature on the subject. Second, we outline a description of both the quantitative and qualitative approaches the study adopts. Third, we present and discuss results of the sentiment analysis and regression model. Finally, we offer some conclusions and implications of the study.

Brief Review of Relevant Literature

Electoral Commissions

The trichotomy of the Electoral Commission (EC) is organized in the following form: i) bureaucrat approach, where a clearly defined agency within the government structure is responsible for the election process, ii) judicial approach, where the judicial arm of government is made to supervise elections, and finally, iii) the expert approach, where the responsibility of running the electoral system is assigned to independent individuals. Five cardinal factors need to be considered when analyzing the activities of Electoral Commissions, namely, a) EC organizational structure, b) independence from political

13 Bishop, Sylvia, and Anke Hoeffler. 2014. *Free and Fair Elections – A New Database*. London: Center for the study of African Economies.

14 Debrah, Emmanuel. 2004. "The Politics of Elections: Opposition and Incumbency in Ghana's 2000 Elections." *Africa Insight* Vol.34(2/3) : 3-15. <http://dx.doi.org/10.4314/ai.v34i2.22397> AJOL African Journals Online; Whitfield, Lindsay. 2009. "'Change for a Better Ghana': Party Competition, Institutionalization and alternation in Ghana's 2008 Elections." *African Affairs* (Oxford University Press on behalf of Royal African Society) 621–641. doi:10.1093/afraf/adp056.; Debrah, Emmanuel. 2011. "Measuring Governance Institutions' Success in Ghana: The Case of the Electoral Commission, 1993–2008." *African Studies* 25-45. doi:10.1080/00020184.2011.557573.

forces, c) Internal EC motivation, d) EC staff motivation, and e) EC transparency.¹⁵ The Electoral Commission's impact on the quality and credibility of an election hinge on the above factors.

As such, in-depth analysis of these factors is a prerequisite to understanding Electoral Commissions. The effectiveness and credibility of the Electoral Commission is anchored on the strong independence of the Commission. They are also closely linked to the institutional legacies of each country as well as the political negotiations capabilities of the Commission.¹⁶ Other studies have confirmed that the Electoral Commissions themselves also have a positive impact on election credibility.¹⁷

Electoral Commission of Ghana under the 4th Republican Constitution

The 4th Republican Constitution birthed many important independent bodies after many years of political turmoil that engulfed Ghana. One critical institution of such is the Electoral Commission. The Commission like many others was envisioned and deliberately crafted to strengthen Ghana's return to democratic rule after several years of military rule.¹⁸ A characteristic feature of the various military regimes was the suspension of the constitution and the subsequent dismantling of the independent constitutional bodies. Elections were also rarely held during such periods. The long epoch of inactivity on the part of these institutions gradually declined. It, therefore, did not come as a surprise to many when the resuscitation of the Electoral Commission, just like many others, became a painful process.¹⁹

The evolution and the establishment of the Commission did not come easy. Its conception was one full of confusion, weak transparency in the selection of Commissioners, ill-preparedness, and without proper systematic structures.²⁰ Certainly, amidst such a convoluting setting, the Commission did not gain complete Ghanaian acceptance as many opposition elements raised countless flaws in the structure of the Commission.²¹

15 Elklit, J., and A. Reynolds. 2002. "The Impact of Election Administration on the Legitimacy of Emerging Democracies: A New Comparative Politics Research Agenda." *Commonwealth & Comparative Politics* 86-119. doi:10.1080/713999584.

16 Mozaffar, Shaheen. 2002. "Patterns of Electoral Governance in Africa's Emerging Democracies." *International Political Science Review* (International Political Science Association) 85-101.

17 Hartlyn, Jonathan, Jennifer McCoy, and Thomas M. Mustillo. 2008. "Electoral Governance Matters." *Comparative Political Studies* (SAGE Publications Inc) 73-94. doi:10.1177/0010414007301701; Hamberg, Stephan, and Aaron Erlich. 2013. *Electoral Management Bodies and the Quality of Elections in sub-Saharan Africa between 1990 and 2010*. Chicago: Prepared for delivery at the 2013 Annual Meeting of the American Political Science Association.

18 Alidu, Seidu M. 2014. "Party Politics and Electoral Malpractice in Ghana's Election 2012." *Journal of Scientific Research & Reports* 1450-1464.

19 Gyimah-Boadi, E. 1999. *The Self-restraining State: Power and Accountability in New Democracies*. Edited by Andreas Schedler, Larry Jay Diamond and Marc F. Plattner. Colorado: Lynne Rienner Publishers.

20 Gyimah-Boadi, E., and Theo Yakah. 2012. *Ghana: The Limits of External Democracy Assistance*. Helsinki: UNU World Institute for Development Economics Research (UNU-WIDER).

21 Gyimah-Boadi, E. 1999. *The Self-restraining State: Power and Accountability in New Democracies*. Edited by Andreas Schedler, Larry Jay Diamond and Marc F. Plattner. Colorado: Lynne Rienner

The Commission started as the Interim National Electoral Commission (INEC), which organized the district level elections held in 1988 and 1989 and subsequently the 1992 presidential elections. The INEC was dissolved to pave the way for the constitutional and rightful enshrinement of the Commission under the 1992 Constitution.

Article 43 of the Constitution of the Republic of Ghana and the Electoral Commission Act of 1993 gave the legal backing to the Commission.²² The independence of the Commission was envisioned and enshrined in the Constitution. The Commission is insulated from Executive powers, although the President who heads the executive arm of government appoints the Commissioners. The President does so in consultation with the Council of State. The procedure contained in article 70 of the 1992 Constitution is the rule for the selection of Commissioners. The Commission since has become the foundation of Ghana's multi-party democracy. It has since played a significant role in making Ghana the beacon of democracy and political stability in Africa. A Chairperson heads the Commission with two deputy Chairpersons and four other Commissioners. Each of the Commissioners is guaranteed tenure of office. The Commission has within the last 25 years organized seven Presidential and Parliamentary elections, all deemed as free and fair, albeit the findings reveal that most elections in Africa considered as free are not necessarily fair.²³ Ghana's success at elections is a not a blip, especially since many polls are often chaotic in Africa.

Challenges of the EC under the 4th Republic

The Commission has its problems, and here we look at the issues from a more general perspective. The discussions cover the entirety of the life of the Commission. The first challenge has to do with the weak electoral institutionalization setup of the EC after several years of inactivity.²⁴ The required systematic structures for holding credible elections did not exist for the 1992 election. The interim arrangements put in place by the INEC also did not meet the expectation of many Ghanaians.²⁵ There was no national consensus on the provisional measures for the 1992 elections despite the persistent push by local and International organisations for early elections.²⁶ The citizens at that time had grown tired of the Military and were up in arms demanding a freer society.²⁷ International

Publishers.

22 Government of Ghana. 1992. *The Constitution of the Republic of Ghana*. Accra: Government of Ghana.

23 Bishop, Sylvia, and Anke Hoeffler. 2014. *Free and Fair Elections – A New Database*. London: Center for the study of African Economies.

24 Gyimah-Boadi, E., and Theo Yakah. 2012. *Ghana: The Limits of External Democracy Assistance*. Helsinki: UNU World Institute for Development Economics Research (UNU-WIDER).

25 Gyimah-Boadi, E. 1999. *The Self-restraining State: Power and Accountability in New Democracies*. Edited by Andreas Schedler, Larry Jay Diamond and Marc F. Plattner. Colorado: Lynne Rienner Publishers.

26 Boafo-Arthur, Kwame. 2008. *Democracy and stability in West Africa; The Ghanaian Experience*. Uppsala: Universitetstryckeriet, Uppsala 2008.

27 Gyimah-Boadi, E., and Theo Yakah. 2012. *Ghana: The Limits of External Democracy Assistance*. Helsinki: UNU World Institute for Development Economics Research (UNU-WIDER).

pressure was also at an apogee. Development Partners (DPs) tied assistance to Ghana's unalloyed return to democratic rule.²⁸ The Military government's lackadaisical attitude towards institutionalization frustrated and fractured the Commission right from the onset. The Military government's solitary exercise of selecting Commissioners exacerbated the mistrust.²⁹ Concerns raised about the process did not compel the regime to pause and reflect on them. They were simply not heeded, and the 1992 election went on as planned. Before the 1992 election, the Commission had by all intents and purposes gone rusty after several years of inactivity and could not stage a top performer election. It lacked both the hard and soft resources needed for such a pivotal election.³⁰

The funding insufficiency of the Commission has long been a massive challenge. In the early periods of the formation of the Commission, it was evident that the Commission required much more financial resources to address the institutional problems if the Commission was to become credible. The government did not have enough resources for such a purpose. DPs offered significant support from technical, logistical and financial standpoint, which turned out to be a crucial step towards the path of reorientation and positioning of the Commission to become a credible election supervising organization.³¹ The DPs support made the Commission flamboyant as it attracted brilliant staff who helped to build the institution's image. In the subsequent elections that followed in 1996, 2000 and 2004 (presidential & parliamentary), all polls saw steady improvements. Unfortunately, the high level of trust plummeted, especially after the 2008 general elections. A series of scandals kept rocking the institution and people's confidence waned, especially after the 2012 Supreme Court hearing of the disputed Presidential result petition was brought against the Commission by the then opposition, NPP.³²

Another challenge had to do with the 2012 election court case. To some, the court case only illustrated the resilience of Ghana's electoral system to election disputes. In as much as we share this view, we also think that it presented a new and unfamiliar challenge to the Electoral Commission. The resort to judicial redress suggested a deep mistrust in the internal dispute resolution mechanism of the Commission.³³ The case inflicted

28 Dietrich, Simone, and Joseph Wright. 2015. "Foreign Aid Allocation Tactics and Democratic Change in Africa." *Journal of Politics* 77 (1): 216-234. doi:doi.org/10.1086/678976.

29 Gyimah-Boadi, E. 1999. *The Self-restraining State: Power and Accountability in New Democracies*. Edited by Andreas Schedler, Larry Jay Diamond and Marc F. Plattner. Colorado: Lynne Rienner Publishers.

30 Gyimah-Boadi, E. 1999. *The Self-restraining State: Power and Accountability in New Democracies*. Edited by Andreas Schedler, Larry Jay Diamond and Marc F. Plattner. Colorado: Lynne Rienner Publishers.

31 Gyimah-Boadi, E., and Theo Yakah. 2012. *Ghana: The Limits of External Democracy Assistance*. Helsinki: UNU World Institute for Development Economics Research (UNU-WIDER).

32 Alidu, Seidu M. 2014. "Party Politics and Electoral Malpractice in Ghana's Election 2012." *Journal of Scientific Research & Reports* 1450-1464.

33 Saskia, Brechenmacher. 2016. "Ghana's Vaunted Electoral Process Under Stress." *Carnegie Endowment for International Peace Web Site*. 1 December. <http://carnegieendowment.org/2016/12/01/ghana-s-vaunted-electoral-process-under-stress-pub-66307>.

a weighty dent on the Commission's credibility.³⁴ Though for a long time, people had misgivings about the Commission, none could bring an evidentially colossal case against the Commission.³⁵

The court case exposed the Commission and made clear the institutional weakness of the Commission. It was feared the conduct of the Commission and the court hearing could affect future elections unless substantial reforms at the Commission were made, especially after the open discussions on many of the malpractices that took place during the 2012 election.³⁶

The last challenge relates to electoral fraud allegations. Electoral fraud of different types has been reported since the 1992 elections. The Commission's open admission to many of them including; administrative and transpositional errors and use of non-permanent staffs during the 2012 court hearing legitimized the perception of many citizens concerning allegations of fraud during past elections. The perception of fraud makes it hard for people to accept election outcomes.³⁷ This is one of the most important challenges to all election Commissions around the world.

Recent Developments at the EC

Following the Supreme Court ruling on the 2012 Election Case, the interest of Ghanaians in the activities of the Commission grew significantly. In 2015, when then-Chairperson Dr. Kwadwo Afari Gyan retired, many saw an excellent opportunity to carry out the needed reform proposed by the Supreme Court and Civil Society Organisation (CSOs). To many, the appointment of the new Commissioner was to be a litmus test of how ready the country was to ensure total independence from the Commission. Different interpretations of Article 70 (2) were offered.³⁸ On May 18, 2015, a private citizen, Mr. Dela Sky, filed a petition to the Supreme Court seeking the right interpretation of Article 70 and the role of the President as an appointing authority.³⁹ The hearing of the Supreme Court on the matter was not concluded when the President announced a substantive Chairperson on

34 Kelly, Bob, and R. B. Bening. 2013. "The Ghanaian elections of 2012." *Review of African Political Economy* 475-484.

35 Gyimah-Boadi, E. 1999. *The Self-restraining State: Power and Accountability in New Democracies*. Edited by Andreas Schedler, Larry Jay Diamond and Marc F. Plattner. Colorado: Lynne Rienner Publishers.

36 Alidu, Seidu M. 2014. "Party Politics and Electoral Malpractice in Ghana's Election 2012." *Journal of Scientific Research & Reports* 1450-1464.

37 Alidu, Seidu M. 2014. "Party Politics and Electoral Malpractice in Ghana's Election 2012." *Journal of Scientific Research & Reports* 1450-1464.

38 Mensah, Eugene Kwadwo. 2015. *Why the recent appointment of EC Chairperson by the President was unconstitutional*. Accra: Graphic Communications Group Limited. , 14 August. <http://www.graphic.com.gh/features/features/why-the-recent-appointment-of-ec-chairperson-by-the-president-was-unconstitutional-by-prof-kwadwo-mensah.html>.

39 CitiFM. 2015. *Richard Dela Sky petitions Supreme Court over EC Chair appointment*. Accra: Citi FM, 18 May. <http://citifmonline.com/2015/05/18/richard-dela-sky-petitions-supreme-court-over-ec-chair-appointment/>.

June 25, 2015.⁴⁰

The first test for the new Chairperson was the sixth District level elections in 2015, which, originally were to be held in 2014 before being postponed.⁴¹ The disarrayed way the district assembly elections were organized increased misgivings about the competence, impartiality, and credibility of the Commission to supervise free and fair 2016 Presidential and Parliamentary elections. Almost all the opposition parties had qualms about the Commission. The disqualification of thirteen candidates⁴² and the subsequent readmission of the three candidates Dr. Papa Kwasi Nduom (candidate for the Progressive Peoples' Party), Dr. Edward Mahama (of the National Convention Party) and Nana Konadu Agyeman-Rawlings (of the National Democratic Party)⁴³ stoked the debate over the competence of the Chairperson. People's trust in the Commission to guarantee a free and fair election had waned and now required the vigilance of the political parties.

Various professional bodies, including the Ghana Bar Association, Association of Chartered Accountants, National Graduate Teachers Association, and several others indicated their willingness to assist the Commission pro bono on aspects of the Commission's job that required their services.⁴⁴ The election was completed, and the results declared. The alertness of the parties, CSOs, International Observer Groups, and most importantly, the magnanimity of the Ghanaian again enabled the Commission to deliver a reasonably free and fair election that was accepted by all.

Methodology

Data

Data for the paper is drawn from different sources for both the qualitative and quantitative approaches adopted. With the qualitative approach, we used the petition filed by the "Concerned Staff" of the EC (July 19, 2017), as well as the response note of the Chairperson (July 22, 2017) for the text mining. Still under the qualitative approach, we used data from the public Facebook pages of media houses, pressure groups and political figures for sentiment analysis. We chose these public pages due in part to their global representativeness and the diversity of their followers, which allows for easy replicability

40 Government of Ghana. 2015. *Charlotte Osei Appointed New EC Chairperson*. Accra, 26 June. <http://www.ghana.gov.gh/index.php/news/1523-charlotte-osei-appointed-new-ec-chairperson>.

41 Osam, Efua Idan. 2015. "citifmonline.com." *citifmonline.com*. 19 June. <http://citifmonline.com/2015/06/19/ec-to-hold-district-assembly-elections-on-september-1/>; Gadugah, Nathan. 2015. "Myjoyonline.com." *Myjoyonline.com*. 3 October. <http://www.myjoyonline.com/politics/2015/march-10th/ec-wastes-317m-on-botched-assembly-elections-needs-90m-to-conduct-new-one.php>.

42 Citi FM. 2016. *2016 Polls: Full list of disqualified presidential aspirants*. Accra: Citifmonline.com, 10 October. <http://citifmonline.com/2016/10/10/2016-polls-full-list-of-disqualified-presidential-aspirants/>.

43 CitiFM. 2015. *Richard Dela Sky petitions Supreme Court over EC Chair appointment*. Accra: Citi FM, 18 May. <http://citifmonline.com/2015/05/18/richard-dela-sky-petitions-supreme-court-over-ec-chair-appointment/>.

44 Kwakofi, Edwin. 2016. "citifmonline.com." *citifmonline.com*. 3 January. <http://citifmonline.com/2016/01/03/assist-ec-in-2016-elections-gba-to-members/>.

of the study. Similarly important is the fact that the pages were outside the domain of the authors. The next criteria for selection had to do purely with the number of posts and comments about the issue being addressed. In other words, pages with a massive amount of comments on the subject were included in the sample. Facebook public pages, occupyghana, myjoyonline, JoyNewsonTV, citifmonline, graphiconline, and Nana Akufo Addo were analyzed [Table A1.].

Subsequently, we extracted all the posts and corresponding comments on these pages and sifted out those that were very specific to the Electoral Commission. The information was collected from July 19 to August 30, 2017. During this period, the matter had gained public interest. The sequential report of the issue is indicated in [Table A2.]. The analyzed information includes 7,680 comments in total.

Regarding the quantitative approach, we used data from an online survey that we administered following the petition. The questionnaires were sent via email, and about 150 responses were received. The respondents for the survey were selected using the convenience or accessibility sampling technique. We used this approach for ease and proximity purposes. Certainly, our sample is not representative of the voter population of Ghana who are also internet users. However, a combination of the survey results and qualitative approach allows us, to some extent, to have some insights into the situation at the Commission.

Qualitative approach

Here, we borrow some machine learning techniques to summarize and analyze the data gathered from the Facebook public pages mentioned above. First, we subject the petition and the response note to text mining. The text mining algorithm allows for summarizing the key features of the petition. It enables a proper understanding of appropriateness or inappropriateness of the language used by both sides (EC chair and concerned workers).

Second, we employed Naïve Bayes (NB) Classifier to predict the patterns of sentiments expressed through the Facebook comments. This algorithm performed excellently in text or sentiment categorization.⁴⁵ It allows for the classification of the sentiments as either neutral, unfavourable or favourable. The method is built on the notion of conditional probability using the Bayes rules. Conditional probability is a probable outcome which allows for flipping of the conditions in a much more convenient way. The Bayes formula is considered the basis for learning about unknown distribution and classification of data.⁴⁶ The Bayes formula is given as follows:

$$(1) \quad P(C = c_k | X = x) = P(C = c_k) \times \frac{P(X=x|C=c_k)}{P(X)}$$

45 Lewis, David D. 1998. *Naive (Bayes) at Forty: The Independence Assumption in Information Retrieval*. New Jersey: AT&T Labs -- Research. <https://doi.org/10.1007/BFb0026666>.

46 Lin, Yi. 2002. "Support Vector Machines and the Bayes Rule in Classification." Edited by Mannila, Ramakrishnan Fayyad. *Data Mining and Knowledge Discovery* (University of Wisconsin) 259-275.

$$(2) \quad P^{NB}(C = c_k | X = x) = \frac{P(C=c_k) (\prod_{i=1}^m P(H_i|C)^{N_i(f)})}{P(X)}$$

Where $H_i \{H_1, \dots, H_m\}$ is a predefined set of m features that can appear in a comment; $N_i(f)$ is the number of times H_i occurs in a comment f , which is represented by the comment vector $(\vec{f} = (N_1(f), \dots, N_m(f)))$. The predictive accuracy of the machine learning technique of Naïve Bayes has been estimated at over 85 percent.⁴⁷

Quantitative approach

The second part of our paper is quantitative analysis. The analysis is twofold: a) descriptive statistics and b) regression analysis using Probit. The probit model along with the logit model have been widely employed when dealing with variables that take one of only two possible values representing yes or no, or more generally success or failure. This regression analysis helps identify the perception-related factors that could affect the propensity to vote in the 2020 Ghanaian elections in the wake of the challenges the commission is faced with. The simplified probit model is then given as:

$$y_i = x\beta + \varepsilon, \quad \varepsilon \sim (0, \sigma^2)$$

Where y_i represents the propensity of voting in 2020 election (1=yes and 0=no), x is a vector of explanatory variables used to predict the propensity to vote (x_{1i}, \dots, x_{ki}), β is the parameter of interest and ε is the error term.

Results and discussion

Qualitative analysis

The qualitative analysis is divided into two parts: (i) looking at the petition and response notes, and (ii) sentiment analysis using data gathered from Facebook.

Summary of petition and response

We employed basic text mining techniques to segment the text in a manner that enabled us to judge the temperament as well as the choice of words by the parties in this matter. We did this to measure the emotional expressions of people through text or word choice(s). Emotions are a better gauge of understanding people's feelings and often give accurate results when compared with direct observations.

We begin the analysis by examining the accuracy of Zipf's law, which requires a relationship between the rank of a word and the frequency with which it is used to be negative. We plotted the rank of words of the text and compared them with their frequencies and found out that they are consistent with Zipf's law (Figure 2). Then, we conducted a corpus analysis and presented the visual representation of the word frequencies (Wordcloud). We

47 Ortigosa, Alvaro, José M. Martín, and Rosa M. Carro. 2013. "Sentiment analysis in Facebook and its application to e-learning." *Computers in Human Behavior* 527–541. www.elsevier.com/locate/comphumbeh.

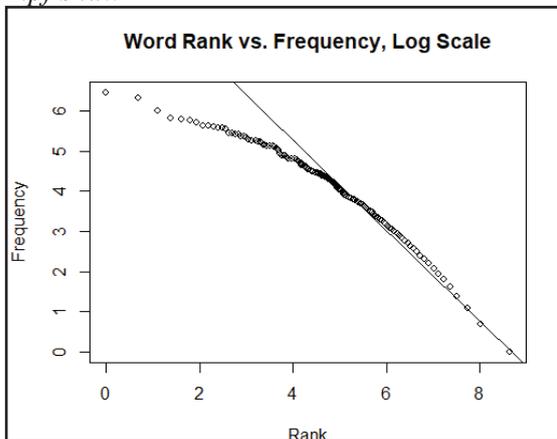
carried out to generate the most frequent words in the comments (Figure 4b). We were unable to scrap the replies to the individual comments. We conjectured that those specific replies to original comments, when included in the dataset, would change the words comparison, though we noticed many of them were not on the subject matter of interest. It is hoped that future studies would incorporate such replies (“comments on comments”) in the analysis.

Commonly appearing words included “woman,” “Ghana,” “corrupt,” “money,” and “people.” From the wordcloud, we noticed that many individuals who commented were worried about the implications of the situation on the security of the country and the election process. There were others who felt that the Chairperson was being pursued partly on the back of gender, while a sizeable group of others felt that the commissioners were corrupt and must give way to new ones. We also found that many comments did indict the current political administration of interest in the matter. Some fathom the happenings at the Commission were the machinations of the Executive. Others also held the view that the Chairperson and for that matter, the Commissioners (the chair and the two deputies), was incompetent and called for an investigation into the issues.

The comments were mixed and varied. We, however, were unable to establish if the polarized Ghanaian Facebook users’ political views can explain many of the comments. What was certain is that many Facebook users felt the debacle was not good enough for the deepening of the democratic systems of the country.

Figure 4 Zipf's and wordcloud from Facebook Comments

Zipf's law



(b) Word cloud



Source: Authors

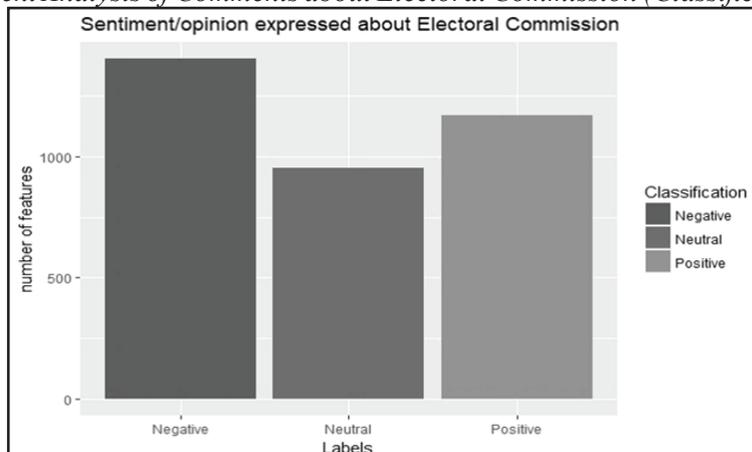
Word comparison

Through the semi-supervised machine learning process, about 3000 out of over 7000 comments were deleted as they were either repeated, empty or irrelevant to the subject matter. Similarly, this approach allowed us to improve the identification of the subject of interest in each comment given that some expressions that are classified as negative or positive in the sentiment analysis were used against or for subjects other than that of

interest. Overall, about 1500 comments were unfavourable about the Chairperson, with about 1200 comments being favourable and about 900 being neutral (Figure 5).

Also, we extracted the regular features from the classifier to shed more light on the reasons assigned for the various sentiments and in the following we present such results.

Figure 5 Sentiment Analysis of Comments about Electoral Commission (Classification by polarity)



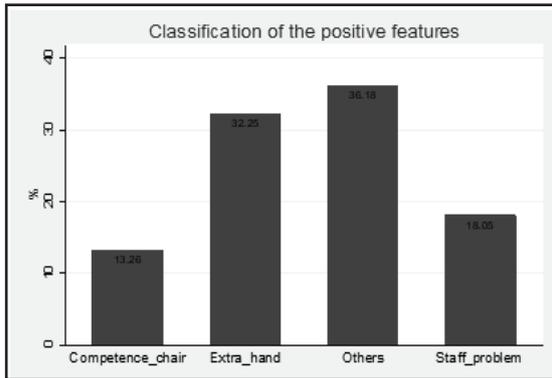
Source: Authors

The positive features reflected much of the perceived competence of the Chairperson, with a significant proportion of the people attributing the happenings to extra-hands. Many also held the notion that the staff, especially the two Deputy Chairpersons of the Commission are responsible for the troubles of the Commission. On the negative features, many felt the Chairperson was unfit to lead the Commission as the revelations of rot under her leadership are legendary. Some asked whether the Chairperson would have made the revelations if the petition had not been filled. Others just opined that the Chairperson's removal was to become a good omen for the Commission, especially since the Chairperson has lost the trust of the staff.

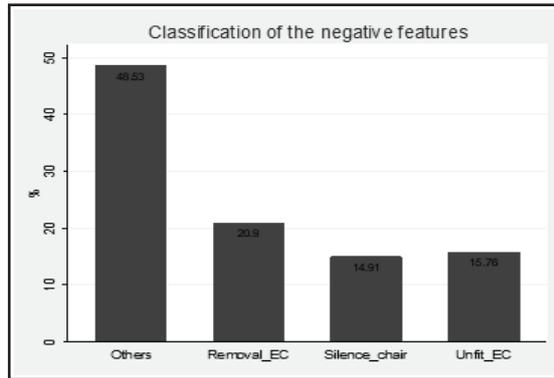
Again, though a significant number of comments were not directly related to whether the Chairperson must stay or not, they offered the most insightful and perhaps the most audacious commentary on the issue. Many of them were of the view that the laws of Ghana must be allowed to work and find a solution to the problem. The Constitution of the Republic and the Electoral Commission Act, both recognized the possibility of a situation such as this one, and procedures have been outlined to deal with them. Moreover, the matter is now traversing the corridors of the laws. What also caught our attention was the "woman factor." A significant portion of the neutral features attributed the happenings to a clash of two powerful women who just cannot coexist (the chairperson and the Deputy Chairperson). Others also felt the Chairperson is facing all the challenges because she is a woman. They expressed the point that if the Chairperson were a male, the matter would have been dead long ago.

Figure 6: Disaggregation of Sentiments about the Chairperson

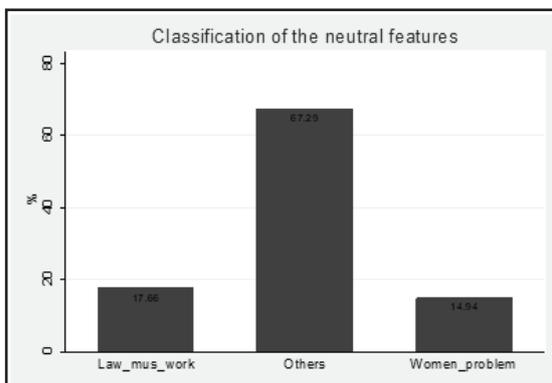
Positive features



Negative features



Neutral features



Source: Authors

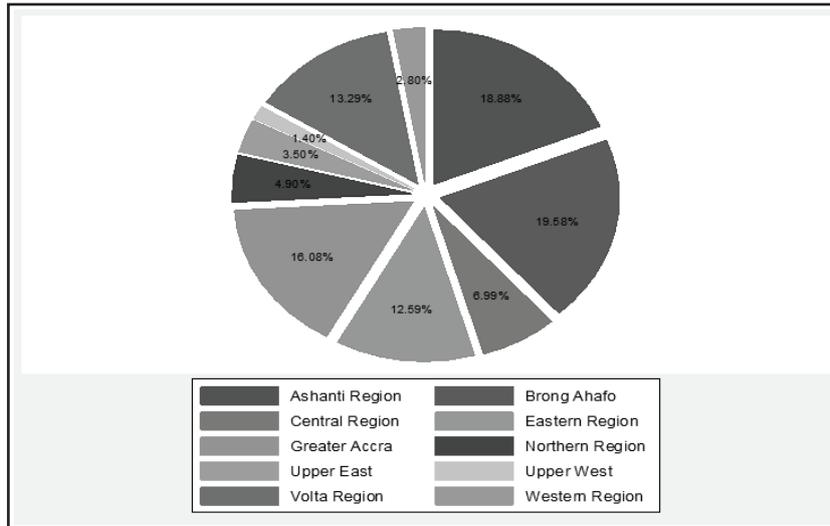
Quantitative analysis

4.2.1. Descriptive statistics

In what follows we show the results of the descriptive statistics using the responses gathered from the online survey. The respondents to the survey come from different parts of the country with Brong-Ahafo and Ashanti Regions having the highest representation of 19.6 percent and 18.9 percent respectively. The region with the lowest representation is the Upper West with only 1.4 percent.

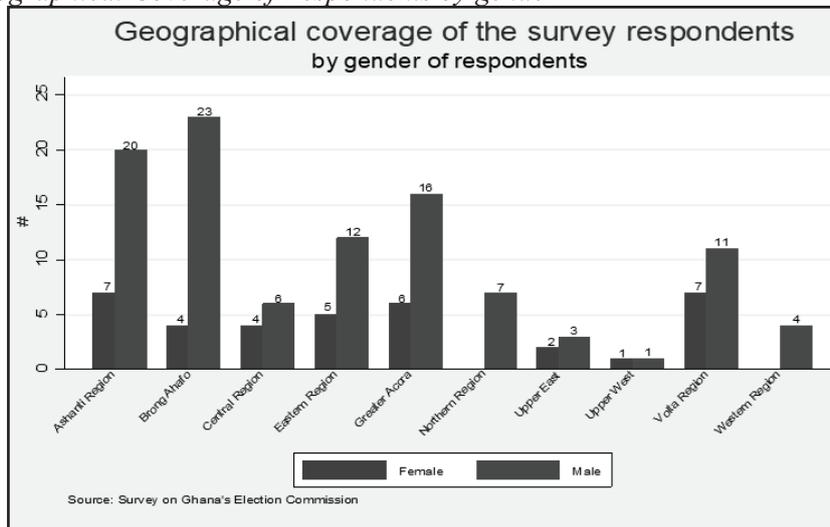
Regarding gender, the Volta and Ashanti Regions had the highest female respondents. Females represented 27 percent of the total responses (See chart 2.). The Western and Northern Regions each had no females participating in the survey. In all the regions, male respondents were higher than females. Despite the non-representability of the data of the voters who are also internet users, we conjecture the low female participation in the survey is attributable to the general disinterest of females in politics despite frantic efforts to encourage participation across the country.

Chart 1. *Distribution of Respondents by Home Region*



Source: Authors

Chart 2. *Geographical Coverage of Respondents by gender*



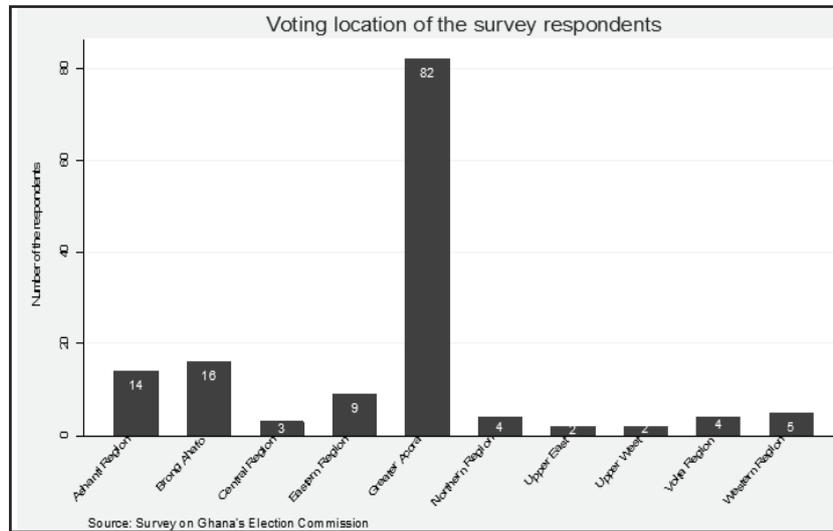
Source: Authors

Although most of the respondents come from Brong-Ahafo and Ashanti Region, some 58 percent of them exercise their franchise in the Greater Accra Region (chart 3). An indication that most of the respondents live or undertake their vocation in Greater Accra Region, the capital of Ghana. This development reflects the fact that most of the respondents are from the working class (see chart 4.) who have less interest in seeking the mandate of their constituents in the future and so turn to vote in areas where they work rather than the region of their birth. It is also instructive to point out that many of the respondents are working class people who have less likeliness to partake in active politics. They are interested in the political stability of the country so that they can ply their various vocations.

Most of the respondents were within the category of the first stage to the second stage of tertiary education. About 40 percent had the second stage of tertiary education degrees

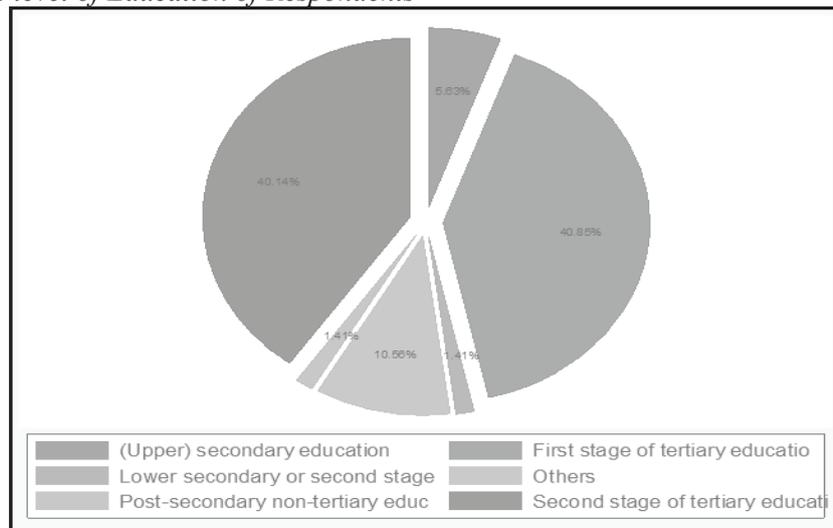
while 41 percent had the first stage of tertiary education qualification. The two categories together constituted 81 percent of the total respondents.

Chart 3. Voting Location of Respondents



Source: Authors

Chart 4. The level of Education of Respondents



Source: Authors

Regression results

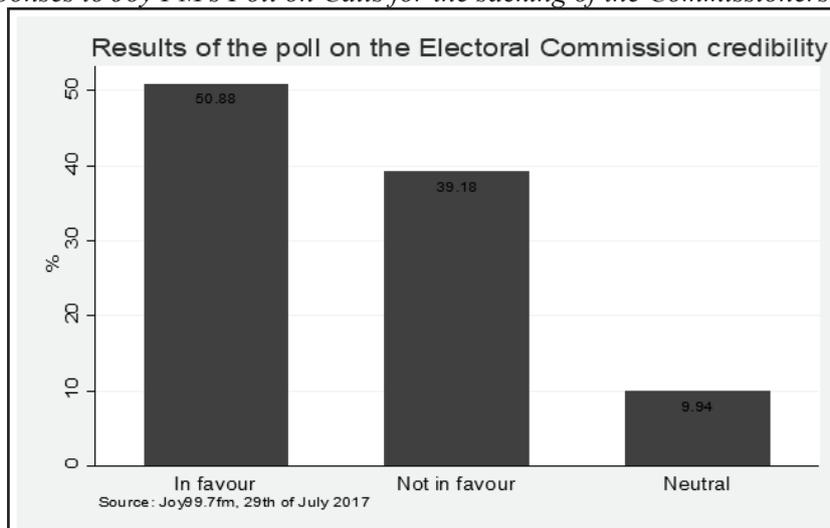
The results show that those respondents (42 responses) who see the Commission (the Institution) as the reason for the many peaceful elections have a significant and positive propensity to vote in the 2020 elections (Table 1). Their view of the Commission is one that is well established and difficult for the desires of any or all the Commissioners to override the choice of Ghanaians in any election. The established protocols of the Institution are laborious enough that they could not be substituted with the interest of the Commissioners. The involvement of the key parties, especially the political parties through the Inter-Party Advisory Committee (IPAC) in all levels of decision-making, has been extremely helpful

in boosting the transparency and trust of people in the Commission. There are occasions, however, when the IPAC recommendations are completely ignored.

From the results, those respondents who consider the Commission as the reason for the many peaceful elections are defiant in their resolve in participating in the future elections. This result confirms the importance of the Electoral Commission to the election process in Ghana. Many respondents believe that the Commission could still hold a fair election for which reason they are willing to vote in such future elections. The result is consistent with that of many studies which have established the relevance of the Election Commission to hold credible elections.

Also, our analysis of Joy FM polls from July, 29 2017, on the question “Has the leadership conflict at the Electoral Commission eroded your confidence in the commission’s credibility and do you support civil society calls for the Chairperson and her two deputies to step aside?” indicates that though many participants in the survey called for the sacking of the Chairperson, they were equally confident in the Commission to hold a credible election [see chart below]. The result suggests that confidence of the Ghanaians in the Commission has not waned in the wake of happenings in the Commission.

Chart 5. Responses to Joy FM's Poll on Calls for the sacking of the Commissioners



Source: Authors

However, it is instructive to note that in the specific question about the 2016 elections and the conduct of the Commission before, during and after the election, 106 respondents indicated their dissatisfaction with the Commission. The propensity of these respondents to vote in future elections is slim, as indicated by the negative coefficient. It may seem that our analysis of the Commission as the reason for many peaceful elections under the 4th Republican Constitution is in aberrance with the responses here. It needs mentioning that firstly, the responses received for both questions are not identical and secondly, the questions are different in direction. While one is more introspective, the other is more specific. The introspectiveness of the question shed light on the positive propensity to vote since the country had enjoyed many past elections deemed credible.

Scanning through Table 1, we find that the magnanimity of the Ghanaian is another factor which was very significant in the regression. The Ghanaian is perceived to be hospitable and peace loving. Though this view is perceptive and subjective, our results seem to establish that there lies some truth in this perception. In fact, those respondents who see the magnanimity of the Ghanaian as a reason for the many peaceful election processes indicated likeliness to vote in the 2020 elections. It seems, therefore, that the respondents, many of whom are apolitical, are committed to the country, hence their willingness to participate in future elections. Many of them are corporate people, and a peaceful country is more favourable for their trade. Also, there are no such findings in the literature that suggest the involvement of the high-end educated middle class in political upheavals in Ghana. Economic considerations are their prime concern and anything that heightens economic cost is bad for their businesses.

The authors acknowledge the limited value of the regression results due to several drawbacks, including the selection bias or non-randomness of the sample. However, the fact that the results appear consistent with those from the sentiment analysis gives us room to believe they are representative of some segment of Ghanaian voters, especially the social media users. In fact, no election in any part of the world is impermeable as infractions do occur occasionally. Many of the variables were statistically insignificant, and we do not discuss them. We, however, wish to indicate that they are still relevant in fully appreciating and explaining election-related works.

Conclusions

The paper looks at the implications of the standoff that has embroiled Ghana's Electoral Commission on its credibility from the viewpoint of internet users. The results show that the propensity to participate in future elections in Ghana is still high and the trust in the Commission seems not attenuated despite the strong reservations about the conduct and behaviour of the Commissioners.

The paper has confirmed many findings of the relevance of Election Management Body in the staging of free and fair elections. We have demonstrated through our sentiment analysis the reverence people attach to constitutionally established bodies and their willingness to protect them from perceived political interference. The study also shows the readiness of the people to purge the Election Commissioners who are found culpable of the laws of the country in the discharge of their duties. They are equally ready to allow the procedurally enshrined structures to work in addressing charges brought against such persons. Such indication of trust in the systems of the country is good for the deepening of good governance and the further shoring up of the credibility of the election system.

It is also evident that many targeted people do not see elections as the end and therefore are magnanimous in conduct before, during and after elections. There are defined structures by the laws of Ghana in addressing election-related concerns. The systems have often

been swift in attending to the concerns of different parties. The trust in the systems has ensured that people do not act on their own.

We acknowledge the shortcomings of our methods. However, our results from the sentiment analysis and regression model collaborate with each other and bear consistent results, which allow us to make meaningful insights. We, however, wish to indicate that the methods could be improved for a more accurate result. For instance, incorporating replies to comments would increase the data set for sentiment analysis, and that would precisely improve the quality of the results from sentiment analysis. Moreover, improvement in the identification of the subject of interest in each comment would enable the full utilization of unsupervised machine learning algorithms rather than semi-supervised, which turned out to be a time-consuming approach.

Preserving the credible election process is the most crucial function the Commission must strive to achieve. As the survey result indicated, over 80 percent of the respondents stated that they would not accept an election process superintended by “alleged” corrupt Commissioners. It thus indicates the importance of Commissioners to a credible election process. Commissioners must be above reproach with no dent to their persons. A credible election is a function of trust people have in the organizing institution and its processes.

Also, although in a general sense, there was a favourable sentiment expressed in both the text mining and the Facebook sentiment analysis, the unfavourable comments cannot be ignored—more so when they constitute a significant number. There is the need for a paradigm shift from the old ways that the Commission has been conducting its business and for conscious efforts at warming itself towards the public. This is critical, especially since trust is the most fundamental requirement of any credible Election Management Body.

Implications

Inasmuch as the selection of the Commissioners is a constitutional matter, we do not make much commentary about it. We, however, hope that the lessons from these findings guide our public discourse concerning the selection of Commissioners into public institutions. In that regard, we opine that the selection of future Chairpersons should be emphasised more on competence and must be on competitive basis rather than the mere constitutional right of the President. An open advert should be made to the general Ghanaians, applicants screened by a competent body, preferably the Council of States, and shortlisted persons should then be forwarded to the Presidency. The selection of apolitical and competent Commissioners in such an open and transparent manner would potentially boost the confidence of citizens in the electoral commission and thus further stimulate the trust of people in the Commission in the delivery of competent services.

Second, we wish to indicate that it is never our intention to prejudice or stampede the on-going investigations under the auspices of the Chief Justice into the matter. We,

however, would like to indicate that the sentiments of Ghanaians (Facebook users) are important on a matter as delicate as this. The opinions/sentiments expressed by Ghanaians online probably are not scientific nor logical, but they represent the views of many Facebook users who also represent some segment of the voting population. Since election credibility is about opinion, it is critical that such expressed opinion counts in matters relating to the Commission.

We also think that there are implications of the study for the dispute resolution mechanism of the Commission and it is proposed that a duly constituted dispute resolution system be instituted for the Commission with membership drawn from the Parliament of Ghana, the Council of States, the National Peace Council and IPAC to look into conflicts among the Commissioners when they arise. A duly constituted and functioning dispute resolution Committee will be an excellent ground for resolving occasional conflicts among Commissioners before they degenerate into serious problems.

APPENDIX

Table 1: Determinants of certainty of voting in 2020 election

Variables	Model 1			Model 2		
	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z
	Model 1	Model 2		Model 2		
Gender (1=female)	0.090	0.313	0.774	0.349	0.344	0.311
Age 18-24 yrs (1=yes)	-0.035	0.736	0.962	0.349	0.344	0.311
Age 25-32 yrs (1=yes)	-0.554	0.299	0.064	-0.162	0.772	0.833
Age 33-60 yrs (1=yes)	0	(omitted)		-0.589	0.330	0.074
(Upper) secondary education (1=yes)	-0.142	0.580	0.806	0	(omitted)	
First stage of tertiary education (1=yes)	0.540	0.306	0.078	0.021	0.602	0.972
Other levels (1=yes)	0.283	0.475	0.550	0.433	0.335	0.196
Second stage of tertiary education (1=yes)	0	(omitted)		0.421	0.566	0.457
Satisfaction with the supervision in previous election (1=yes)	0.072	0.297	0.808	0	(omitted)	
Importance of the commission to all the election processes (1=yes)	-0.679	0.353	0.054	0.114	0.320	0.721
Support call for a strong, united and competent EC to lead future elections (1=sure)	-0.720	0.608	0.236	-0.885	0.396	0.025
Commission as the reason for the many peaceful elections (1=True)	0.915	0.382	0.017	-0.713	0.638	0.264
Magnanimity of the Ghanaian as reason for the peace elections in Ghana (1=True)	0.592	0.316	0.061	0.883	0.428	0.039
Influence of the appointing authority of the Commissioners on EC (1=true)	0.113	0.285	0.693	0.606	0.352	0.085
Acceptance of election results declared by "alleged" corrupt EC (1=yes)	0.298	0.426	0.484	-0.023	0.306	0.939
Independence of the Election Commission (1=necessary)	0.072	0.397	0.856	0.450	0.460	0.328
Support any individual wishing to purge the current commission through (1=yes)	1.032	0.348	0.003	0.207	0.434	0.634
Brong Ahafo				1.218	0.400	0.002
Eastern Region				0.485	0.710	0.494
Greater Accra				-0.018	0.736	0.981
Northern Region				-0.233	0.472	0.621
Upper West				-0.121	0.891	0.892
Western Region				0.143	1.165	0.903
Constant	0.200	0.739	0.786	0.409	0.929	0.660
				0.164	0.910	0.857

Table A.1: Data Sources for Sentiment Analysis

Public Pages	Description	No. of Followers as of 1/09/17	Selection	Reason for selection or non-selection
Citi 97.3 FM	Media House	1,056,077	Selected	Had significant postings on the Electoral Commission
JoyNewsonTV	Media House	704,426	Selected	Had significant postings on the Electoral Commission
Joy 99.7 FM	Media House	1,029,422	Selected	Had significant postings on the Electoral Commission
Nana Addo Dankwa Akufo-Addo	Politician	1,613,383	Selected	Had significant postings on the Electoral Commission
OccupyGhana	Pressure Group	51,362	Selected	Had significant postings on the Electoral Commission
Daily Graphic	Media House	870,163	Selected	Had significant postings on the Electoral Commission
Peace 104.3 FM	Media House	126,435	Not Selected	They had few or no posting on the Electoral Commission matter
Starr FM 103.5	Media House	7,621	Not Selected	They had few or no posting on the Electoral Commission matter
CDD-Ghana - Ghana Center for Democratic Development	Think Tank	21,819	Not Selected	They had few or no posting on the Electoral Commission matter
Adom 106.3 FM	Media House	569,131	Not Selected	They had few or no posting on the Electoral Commission matter
Nhyira 104.5 FM	Media House	611,745	Not Selected	They had few or no posting on the Electoral Commission matter
Imani Center for Policy & Education	Think Tank	36,057	Not Selected	They had few or no posting on the Electoral Commission matter

Table A .2: Situational Report

Action	Date
Concerned Staff filed petition to the President	19/07/2017
The presidency receives the petition	19/07/2017
The chairperson response to the petition	22/07/2017
Presidency forward the petition to Chief Justice	26/07/2017
Petition against the Deputy Commissioners filed with the Presidency	25/07/2017
Presidency forward Petition to CJ	28/07/2017
CJ initiate investigative procedures	19/12/2017

BIBLIOGRAPHY

- Alidu, Seidu M. 2014. "Party Politics and Electoral Malpractice in Ghana's Election 2012." *Journal of Scientific Research & Reports* 1450-1464.
- Arthur, Peter. 2010. "Democratic consolidation in Ghana: the role and contribution of the media, civil society and state institutions." *Commonwealth & Comparative Politics* 203-226. doi:10.1080/14662041003672510.
- Bamfo, Napoleon. 2014. "Ghana's 2012 Presidential Court Challenge: Panic and the Lessons Learned When Democracy Worked Too Well." *Canadian Social Science* 1-10.
- Bishop, Sylvia, and Anke Hoeffler. 2014. *Free and Fair Elections – A New Database*. London: Center for the study of African Economies.
- Boafo-Arthur, Kwame. 2008. *Democracy and stability in West Africa; The Ghanaian Experience*. Uppsala: Universitetsstryckeriet, Uppsala 2008.
- Catt, Helena, Andrew Ellis, Michael Maley, Alan Wall, and Peter Wolf. 2014. *Election Management Design*. Stockholm: International IDEA.
- Chauvet, Lisa, and Paul Collier. 2008. *Elections and Economic Policy in Developing Countries*. Paris: Développement, Institutions et Mondialisation (DIAL).
- Citi FM. 2016. *2016 Polls: Full list of disqualified presidential aspirants*. Accra: Citifmonline.com, 10 October. <http://citifmonline.com/2016/10/10/2016-polls-full-list-of-disqualified-presidential-aspirants/>.
- Citi FM. 2016. *Nduom, two others cleared to contest 2016 presidential elections*. Accra: Citifmonlie.com, 9 November. <http://citifmonline.com/2016/11/09/nduom-two-others-cleared-to-contest-2016-presidential-elections/>.
- CitiFM. 2015. *Richard Dela Sky petitions Supreme Court over EC Chair appointment*. Accra: Citi FM, 18 May. <http://citifmonline.com/2015/05/18/richard-dela-sky-petitions-supreme-court-over-ec-chair-appointment/>.
- Congress, United States of America, interview by James Comey. 2017. *'Putin hates Clinton' and other things FBI knows about Russia* (20 May). <http://www.bbc.com/news/av/world-us-canada-39334757/putin-hates-clinton-and-other-things-fbi-knows-about-russia>.
- Daily Graphic . 2017. "EC boss meets leadership of Parliament today." *EC boss meets leadership of Parliament today*. Edited by Musah Yahaya Jafaru. Accra, Accra: Graphic online, 25 July. <http://www.graphic.com.gh/news/politics/ec-boss-meets-leadership-of-parliament-today.html>.
- Daily Graphic. 2017. "Remove EC boss from office - Concerned workers petition President."

Remove EC boss from office - Concerned workers petition President. Edited by Joe Okyere. Accra, Accra, 20 July. <http://www.graphic.com.gh/news/general-news/remove-ec-boss-from-office-concerned-workers-petition-president.html>.

Daniels, Laura. 2017. *Politico*. 5 June. <http://www.politico.eu/article/france-election-2017-russia-hacked-cyberattacks/>.

Darren, Kew. 2005. "Building Democracy in 21st Century Africa: Two Africas, One Solution." *Whitehead J. Dipl. & Int'l Rel.* 149-162.

Debrah, Emmanuel. 2004. "The Politics of Elections: Opposition and Incumbency in Ghana's 2000 Elections." *Africa Insight* Vol.34(2/3) : 3-15. <http://dx.doi.org/10.4314/ai.v34i2.22397> AJOL African Journals Online.

Debrah, Emmanuel. 2011. "Measuring Governance Institutions' Success in Ghana: The Case of the Electoral Commission, 1993–2008." *African Studies* 25-45. doi:10.1080/00020184.2011.557573.

Department of Justice . 2017. *Appointment of Special Counsel*. Washington D.C., Washington, 17 May. <https://www.justice.gov/opa/pr/appointment-special-counsel>.

Dietrich, Simone, and Joseph Wright. 2015. "Foreign Aid Allocation Tactics and Democratic Change in Africa." *Journal of Politics* 77 (1): 216-234. doi:doi.org/10.1086/678976.

Dow, Jay K., and James W. Endersby. 2004. "Multinomial probit and multinomial logit: a comparison of choice models for voting research." *ELSEVIER* 107-122. http://ac.els-cdn.com/S0261379403000404/1-s2.0-S0261379403000404-main.pdf?_tid=725f3e32-86f8-11e7-a568-0000aacb35f&acdnat=1503378908_c614034297cee5be81372929ca6c7527.

Elklit, J., and A. Reynolds. 2002. "The Impact of Election Administration on the Legitimacy of Emerging Democracies: A New Comparative Politics Research Agenda." *Commonwealth & Comparative Politics* 86-119. doi:10.1080/713999584.

Fukuyama, Francis. 2004. "The Imperative of State-Building." *Journal of Democracy* (The Johns Hopkins University Press.) Vol. 15 (2): 17-31. doi:10.1353/jod.2004.0026.

Gadugah, Nathan. 2015. "Myjoyonline.com." *Myjoyonline.com*. 3 October. <http://www.myjoyonline.com/politics/2015/march-10th/ec-wastes-317m-on-botched-assembly-elections-needs-90m-to-conduct-new-one.php>.

Ghana News360. 2017. "Minority Warns Akufo-Addo Not To Dare Touch Charlotte Osei." *Minority Warns Akufo-Addo Not To Dare Touch Charlotte Osei*. Edited by Chris Danquah. Accra, Accra, 21 July. <http://ghananews360.com/minority-warns-akufo-addo-not-dare-touch-charlotte-osei/>.

Ghana Web. 2017. *Ghanaweb*. 25 July. <https://www.ghanaweb.com/GhanaHomePage/>

NewsArchive/EC-boss-deputies-fight-2-years-old-Korsah-562513.

Government of Ghana. 2015. *Charlotte Osei Appointed New EC Chairperson*. Accra, 26 June. <http://www.ghana.gov.gh/index.php/news/1523-charlotte-osei-appointed-new-ec-chairperson>.

—. 1992. *The Constitution of the Republic of Ghana*. Accra: Assembly Press.

Government of Ghana. 1992. *The Constitution of the Republic of Ghana*. Accra: Government of Ghana.

Gyimah-Boadi, E. 1999. *The Self-restraining State: Power and Accountability in New Democracies*. Edited by Andreas Schedler, Larry Jay Diamond and Marc F. Plattner. Colorado: Lynne Rienner Publishers.

Gyimah-Boadi, E., and Theo Yakah. 2012. *Ghana: The Limits of External Democracy Assistance*. Helsinki: UNU World Institute for Development Economics Research (UNU-WIDER).

Hamberg, Stephan, and Aaron Erlich. 2013. *Electoral Management Bodies and the Quality of Elections in sub-Saharan Africa between 1990 and 2010*. Chicago: Prepared for delivery at the 2013 Annual Meeting of the American Political Science Association.

Hartlyn, Jonathan, Jennifer McCoy, and Thomas M. Mustillo. 2008. "Electoral Governance Matters." *Comparative Political Studies* (SAGE Publications Inc) 73-94. doi:10.1177/0010414007301701.

Hu, Minqing, and Bing Liu. Aug 22-25, 2004. "Mining and Summarizing Customer Reviews." *Proceedings of the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD-2004)*. Seattle: ACM SIGKDD International. 1-20.

Joy FM. 2016. *Group demands EC boss' resignation for keeping another job*. Accra: MyJoyonline.com, 1 July. <http://www.myjoyonline.com/news/2016/January-7th/ec-boss-financial-integrity-questioned-as-group-demands-her-resignation.php>.

—. 2017. *MyJoyonline*. 22 July. <http://www.myjoyonline.com/politics/2017/July-22nd/full-text-charlotte-osei-fires-back-with-27-point-response-to-impeachment-petition.php>.

Kelly, Bob, and R. B. Bening. 2013. "The Ghanaian elections of 2012." *Review of African Political Economy* 475-484.

Kwakofi, Edwin. 2016. "citifmonline.com." *citifmonline.com*. 3 January. <http://citifmonline.com/2016/01/03/assist-ec-in-2016-elections-gba-to-members/>.

Lewis, David D. 1998. *Naive (Bayes) at Forty: The Independence Assumption in Information Retrieval*. New Jersey: AT&T Labs -- Research. <https://doi.org/10.1007/BFb0026666>.

Lin, Yi. 2002. "Support Vector Machines and the Bayes Rule in Classification." Edited by

- Mannila, Ramakrishnan Fayyad. *Data Mining and Knowledge Discovery* (University of Wisconsin) 259-275.
- McKelvey, Richard D., and William Zavoina. 1975. "A statistical model for the analysis of ordinal level dependent variables." *The Journal of Mathematical Sociology* 103-120. doi:10.1080/0022250X.1975.9989847.
- Mensah, Eugene Kwadwo. 2015. *Why the recent appointment of EC Chairperson by the President was unconstitutional*. Accra: Graphic Communications Group Limited. , 14 August. <http://www.graphic.com.gh/features/features/why-the-recent-appointment-of-ec-chairperson-by-the-president-was-unconstitutional-by-prof-kwadwo-mensah.html>.
- Mozaffar, Shaheen. 2002. "Patterns of Electoral Governance in Africa's Emerging Democracies." *International Political Science Review* (International Political Science Association) 85–101.
- Ortigosa, Alvaro, José M. Martín, and Rosa M. Carro. 2013. "Sentiment analysis in Facebook and its application to e-learning." *Computers in Human Behavior* 527–541. www.elsevier.com/locate/comphumbeh.
- Osam, Efua Idan. 2015. "citifmonline.com." *citifmonline.com*. 19 June. <http://citifmonline.com/2015/06/19/ec-to-hold-district-assembly-elections-on-september-1/>.
- Redvers, Louise. 2011. "BBC." *BBC web site*. 19 September. <http://www.bbc.com/news/world-africa-14952240>.
- Reuters. 2017. *Reuters*. Edited by Kit Rees. 22 June. <http://uk.reuters.com/article/britain-stocks-idUKL8N1JK1GW>.
- . 2012. *Reuters International*. Edited by Kwasi Kpodo and Richard Valdmanis. 9 December. <http://www.reuters.com/article/us-ghana-election-idUSBRE8B80EC20121210>.
- Sanger, Daavid, and Scott Shane. 2016. *The New York Times*. 9 December. <https://www.nytimes.com/2016/12/09/us/obama-russia-election-hack.html?rref=collection%2Fnewseventcollection%2Frussian-election-hacking&action=click&contentCollection=politics®ion=runk&module=package&version=highlights&contentPlacement=3&pgtype=collecti>.
- Saskia, Brechenmacher. 2016. "Ghana's Vaunted Electoral Process Under Stress." *Carnegie Endowment for International Peace Web Site*. 1 December. <http://carnegieendowment.org/2016/12/01/ghana-s-vaunted-electoral-process-under-stress-pub-66307>.
- The New York Times. 2016. *Obama Strikes Back at Russia for Election Hacking*. Edited by David E. Sanger. New York, New York, 29 December. <https://www.nytimes.com/2016/12/29/us/politics/russia-election-hacking-sanctions.html>.
- . 2016. *The New York Times*. Edited by The Editorial Board. 19 December. <https://www.nytimes.com/2016/12/19/us/politics/russia-election-hacking-sanctions.html>.

com/2016/12/19/opinion/russian-meddling-and-europes-elections.html.

Troussas, Christos & Virvou, Maria & Junshean Espinosa, Kurt & Llaguno, Kevin & Caro, Jaime. 2013. *Sentiment analysis of Facebook statuses using Naive Bayes classifier for language learning*. Piraeus: Department of Informatics, University of Piraeus.

Whitfield, Lindsay. 2009. "Change for a Better Ghana': Party Competition, Institutionalization and alternation in Ghana's 2008 Elections." *African Affairs* (Oxford University Press on behalf of Royal African Society) 621–641. doi:10.1093/afraf/adp056.