

# Towards Election Forecasting Using Sentiment Analysis: The Zambia General Elections 2021

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## Abstract

During the run up to the 2021 general elections, two opinion polls were conducted. One poll suggested that HH would emerge victorious whilst the other predicted that ECL would emerge victorious. The variance in the two opinion polls leaves room for alternative approaches to predicting election results. This study proposes sentiment analysis as part of the initial stage to building an alternative solution to predicting the outcome of an election leveraging sentiments shared on social media during the build up to the August 2021 general elections. The findings of the study reveal that as the election day drew closer, there was an exponential increase in the number of tweets that were posted on a daily basis. Further, our analysis of the tweets revealed that the majority of the tweets were neither positive nor negative (they were neutral) in line with the Afrobarometer opinion poll. Initial findings are promising to drive towards election forecasting using sentiment analysis.

## Introduction

In Zambia, opinion polls have been used to predict the outcome of elections since 1999. During the run up to the 2021 general elections, two opinion polls were conducted. The opinion poll by Political Science Association of Zambia (PSAZ) suggested that Edgar Chagwa Lungu (ECL), would get 40.4% and the opposition leader, Hakainde Hichilema (HH), would get 30.33%. Meanwhile, an opinion poll conducted by Afrobarometer had a representative of 1,200 Zambians drawn across all the ten provinces. The results of this opinion poll showed that support for ECL declined to 22.9%; 25.2% said that they would vote for HH and 45.6% refused to answer [1]. However, HH was declared president elect of Zambia on the 16th of August, 2021 by the Electoral Commission of Zambia (ECZ) after obtaining 59.02% of the while ECL obtained 38.71% of the votes [2]. The variance in the opinion polls and the actual results indicate there is room for more accurate predictions. This study aims to use AI to analyse the sentiments that were expressed online in relation to the 12th August Zambia general elections. We believe that the work presented in this study is a fundamental initial step towards performing a trend analysis which can ultimately lead to an alternative approach to election results forecasting. The study sought to answer the following research questions:

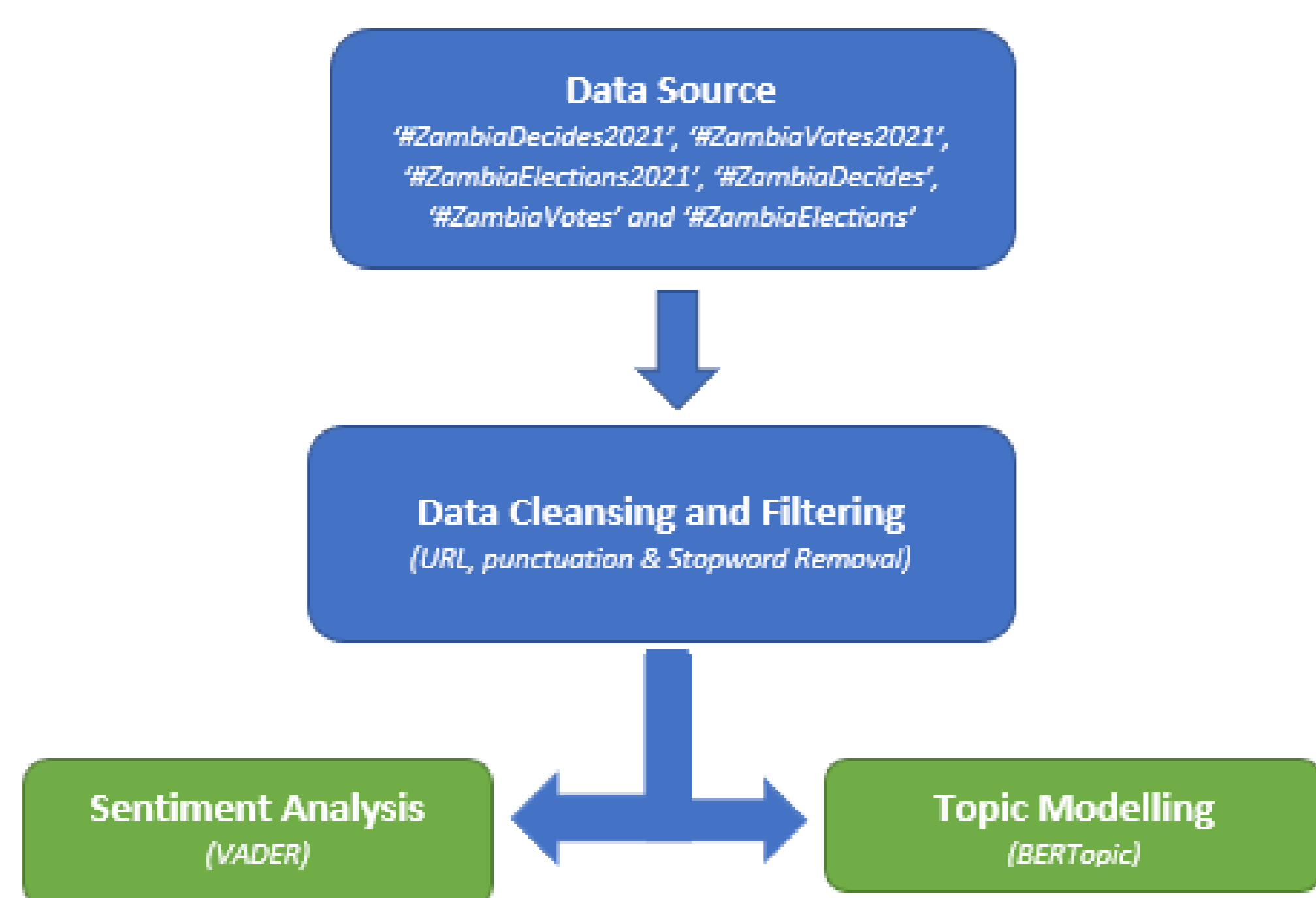
1. What were the tweeting patterns of Zambians in relation to the elections?
2. What was the polarity of sentiments shared in relation to the elections?
3. What were the significant topics during the election period?

## Literature Review

According to [3], social media, particularly Twitter can be used to forecast elections. However, a study by [4] on the usage of Twitter to predict the outcome of elections suggested that tweets are more reactive rather than predictive. The authors further asserted that Twitter can be used to generate 'buzz', but this 'buzz' cannot translate into a victory. However, research by other scholars like [3] that use sentiment analysis show promise of election forecasting using tweets. Two key areas are important in this process. These are sentiment analysis and topic modelling.

## Materials and Methods

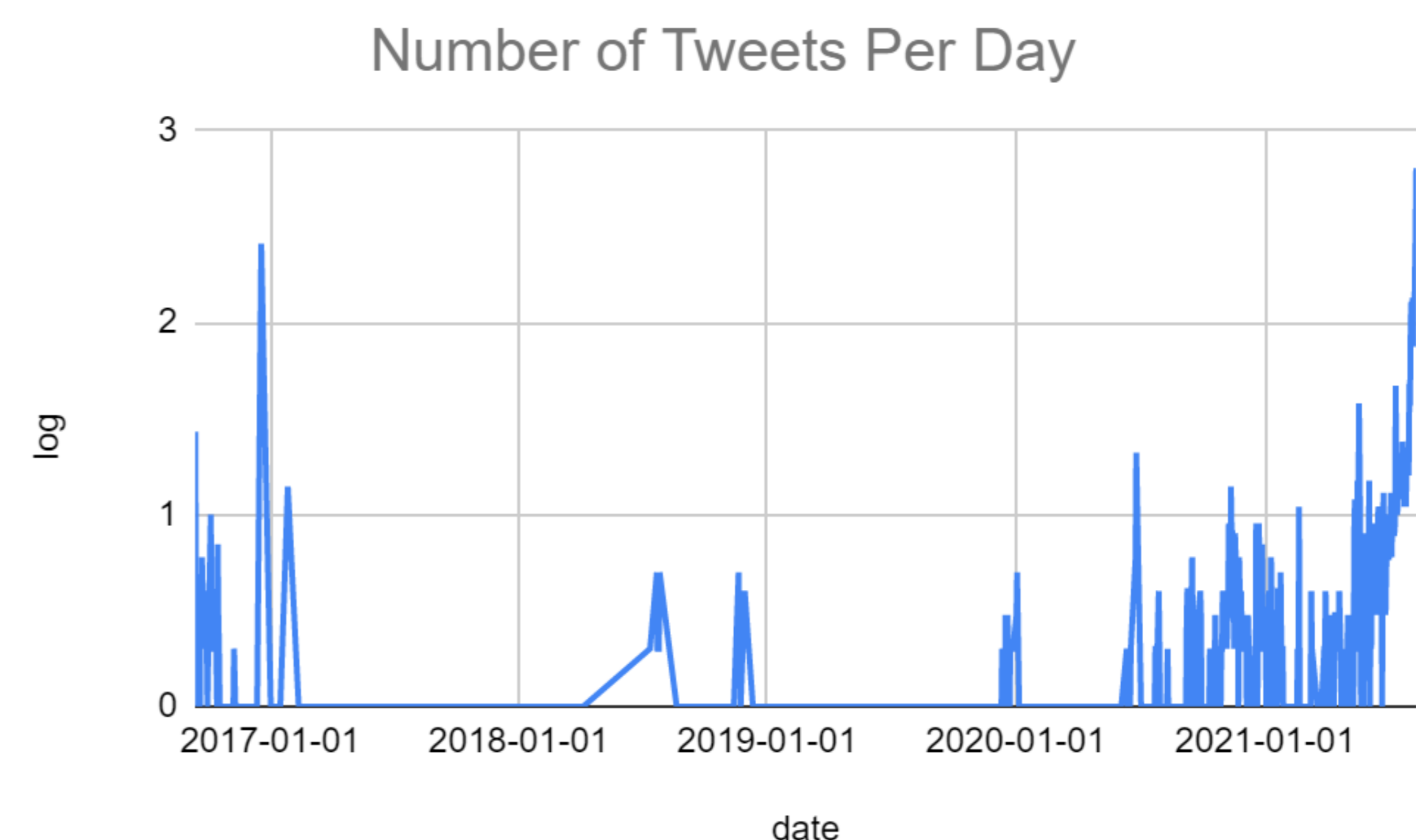
The following is a summary of the materials used.



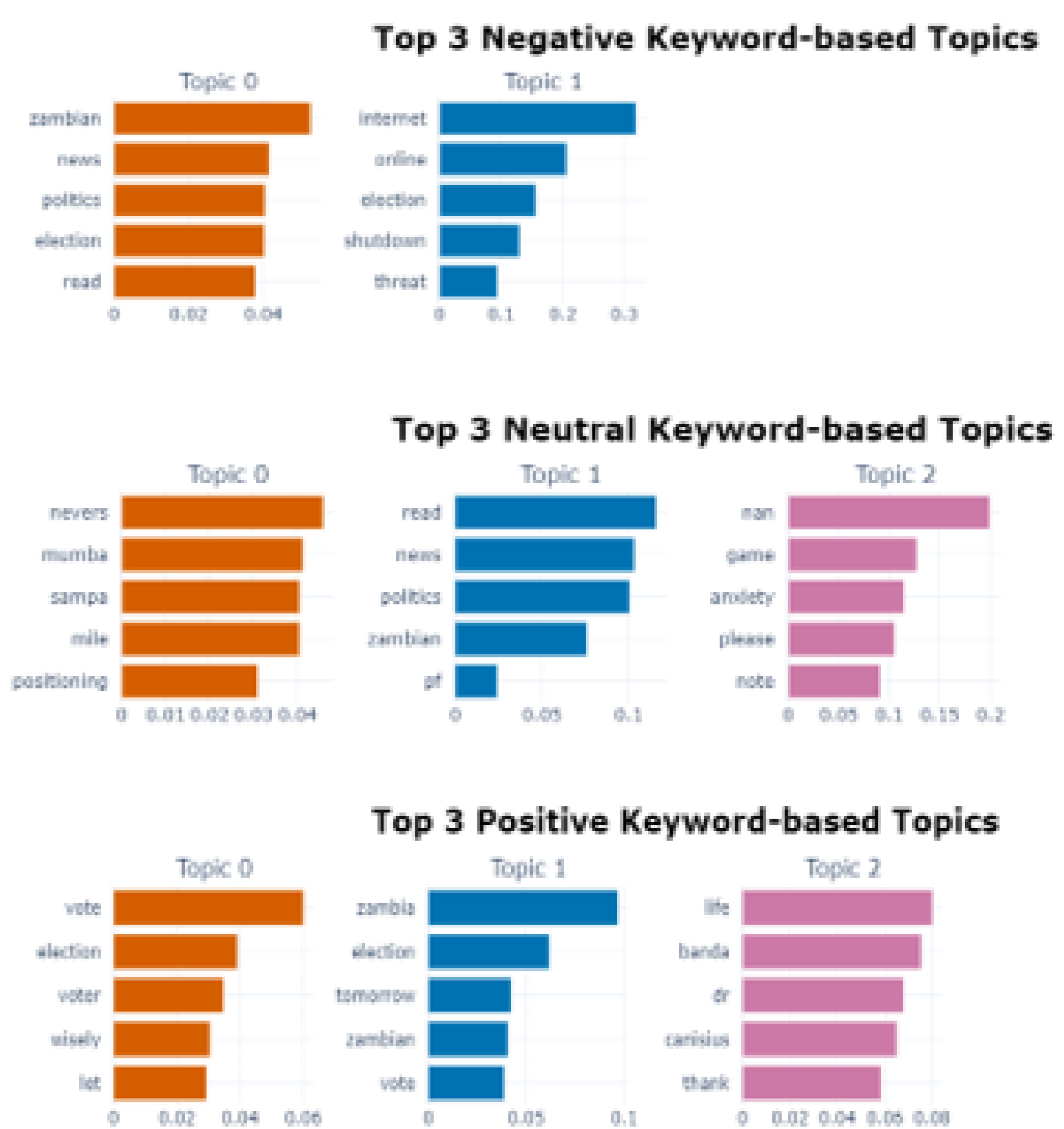
## Findings

The findings of the study reveal that as the election day drew closer, the number of tweets exponentially increased. For example, over 75% of the total sample were tweets that were

posted 11 days before the elections. A similar pick is observed during the 2016 elections.



After classifying the tweets into positive, negative and neutral, the study made a deeper analysis of each of these polarities using BERTopic. At this point the analysis was focused on classifying the tweets into topics and sentiments.



## Conclusion

The study sought to analyse the sentiments that were expressed online in relation to the 12th August Zambia general elections. Our analysis of the data revealed that the majority of the tweets were neither positive nor negative (they were neutral) in line with the Afrobarometer opinion poll. The findings further reveal that as the election day drew closer, there was excitement among electorates. Sentiment analysis with regards to mined topics clearly is in line with the election results. This shows that further study can culminate into an alternative form of election forecasting

## References

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