



# ATTITUDE TOWARDS COVID-19 IN AFRICA

## **TWEET VADER GROUP:**

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100



# Objectives

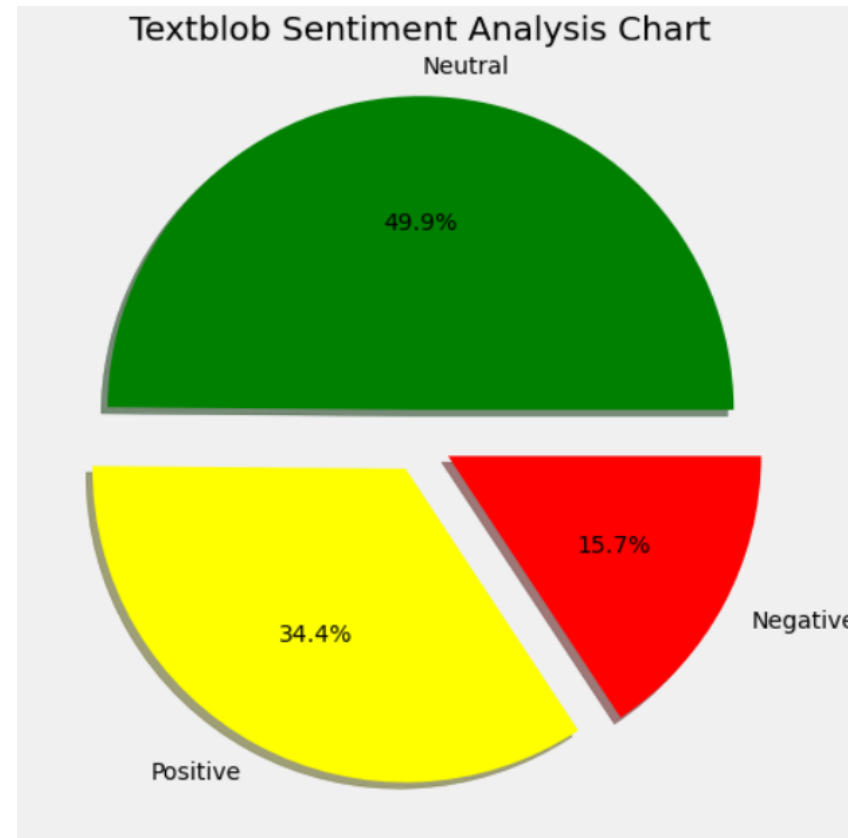
- ▶ To get the attitude towards COVID-19 vaccines using machine learning techniques
- ▶ To measure polarity and subjectivity of the tweets towards Covid-19 Vaccines
- ▶ To measure attitude towards COVID-19 vaccines in majorly tweeted African Countries

# DATA ACQUISITION AND CLEANING

- ▶ Our study area is Africa. We picked our coordinates longitude 5.511081 latitude 22.603204 and a radius of 1800km. We passed in our search words as "*coronavirus OR corona OR vaccination OR dose OR covid OR sputnik OR pandemic OR covid19 OR covid19 vaccines OR coronavirusvaccines OR astrazenecacovidvaccine OR johnson&johnson'sVaccine OR pfizervaccine*" and we were able to scrap about 2000 tweets. This was inclusive of all languages spoken in Africa.
- ▶ During data cleaning, we created a method to remove hyperlinks, special characters, emojis and @mentions from the tweets. We also removed stop words from various languages and added our own '*coronavirus', 'covid', 'pandemic', 'covid19', 'lockdown', 'amp', 'via', 'virus'*' and were left with 1127 tweets.

# SENTIMENT ANALYSIS

- ▶ Text blob Sentiment Analysis
- ▶ More Neutral Tweets showing lack of proper functionality of Text Blob

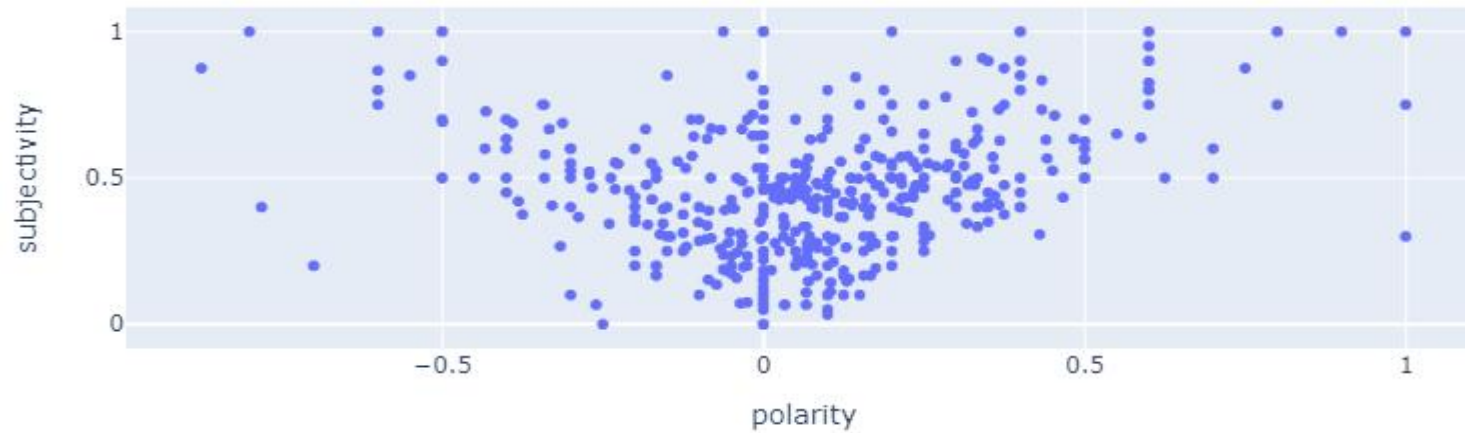




# SENTIMENT ANALYSIS

## ► Text Blob Scatter

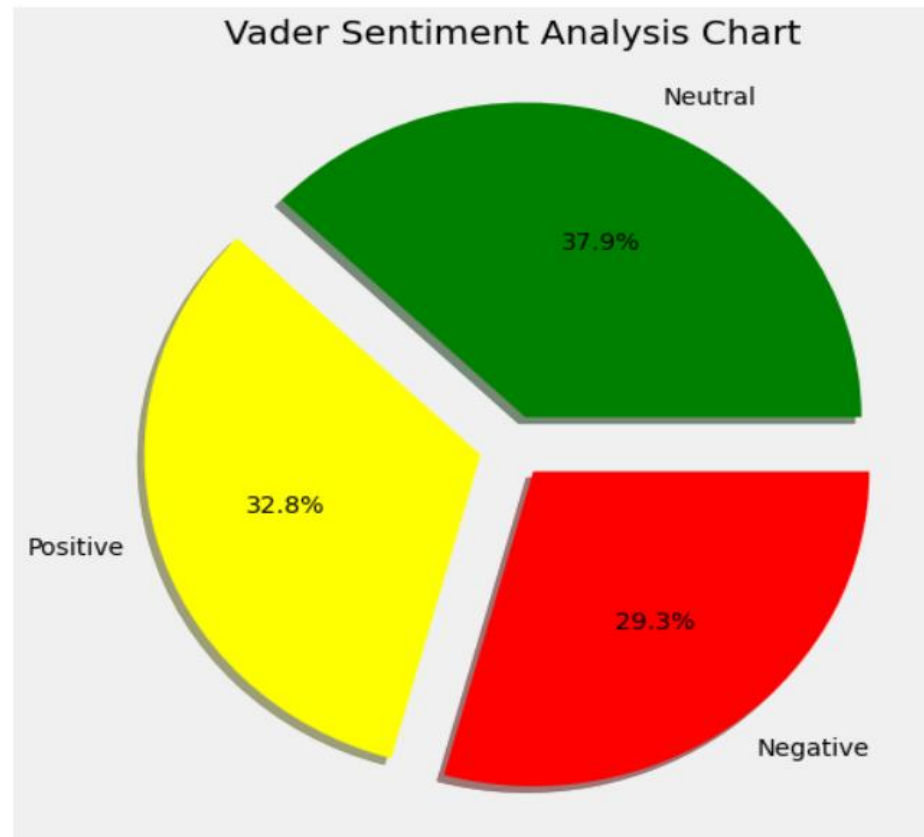
TextBlob Sentiment Analysis



- More opinions to factual tweets.

# SENTIMENT ANALYSIS

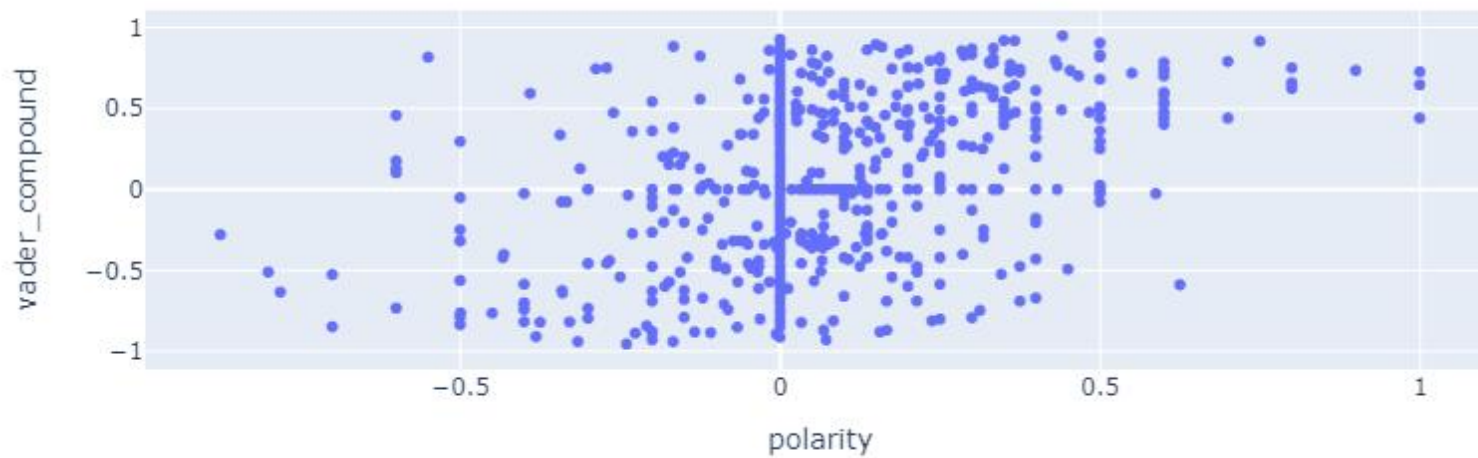
- ▶ Vader Sentiment Analysis
- ▶ Performed better than Text Blob in Sentiment Analysis





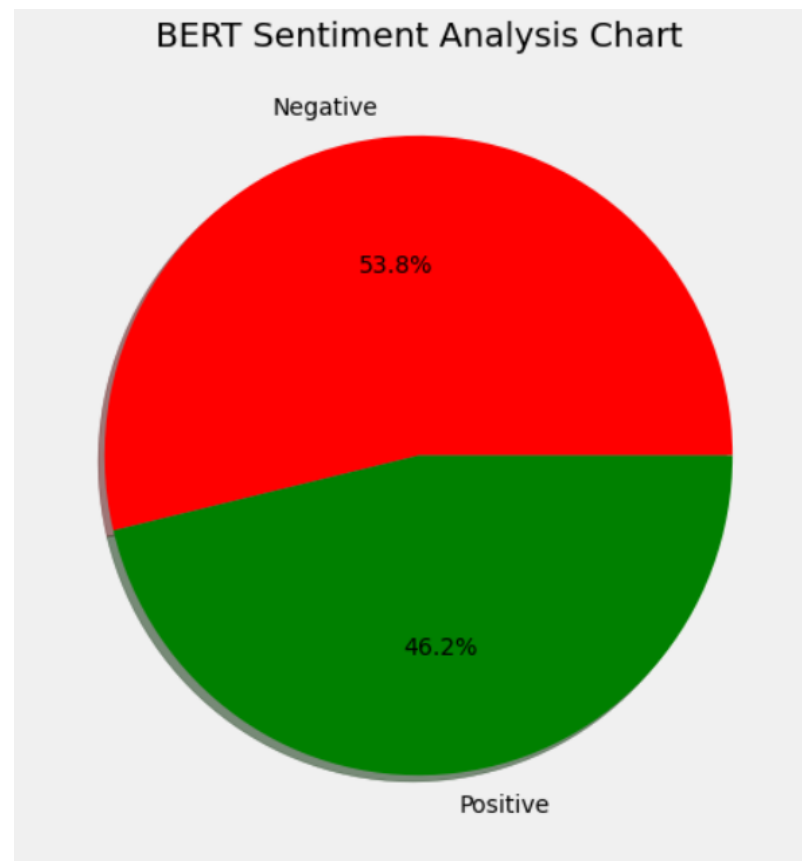
# SENTIMENT ANALYSIS

TextBlob vs VADER



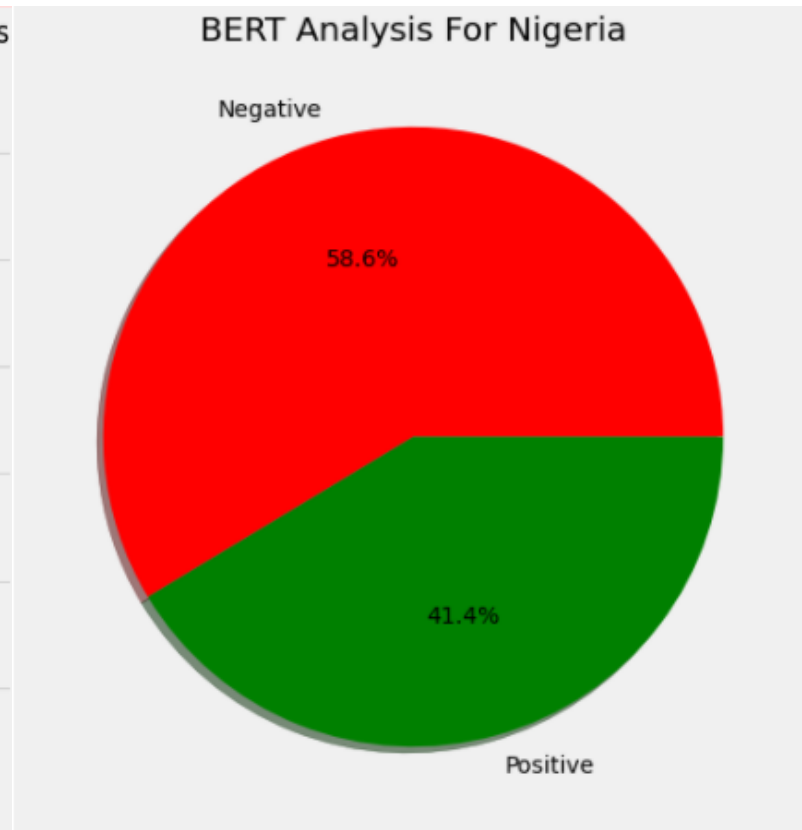
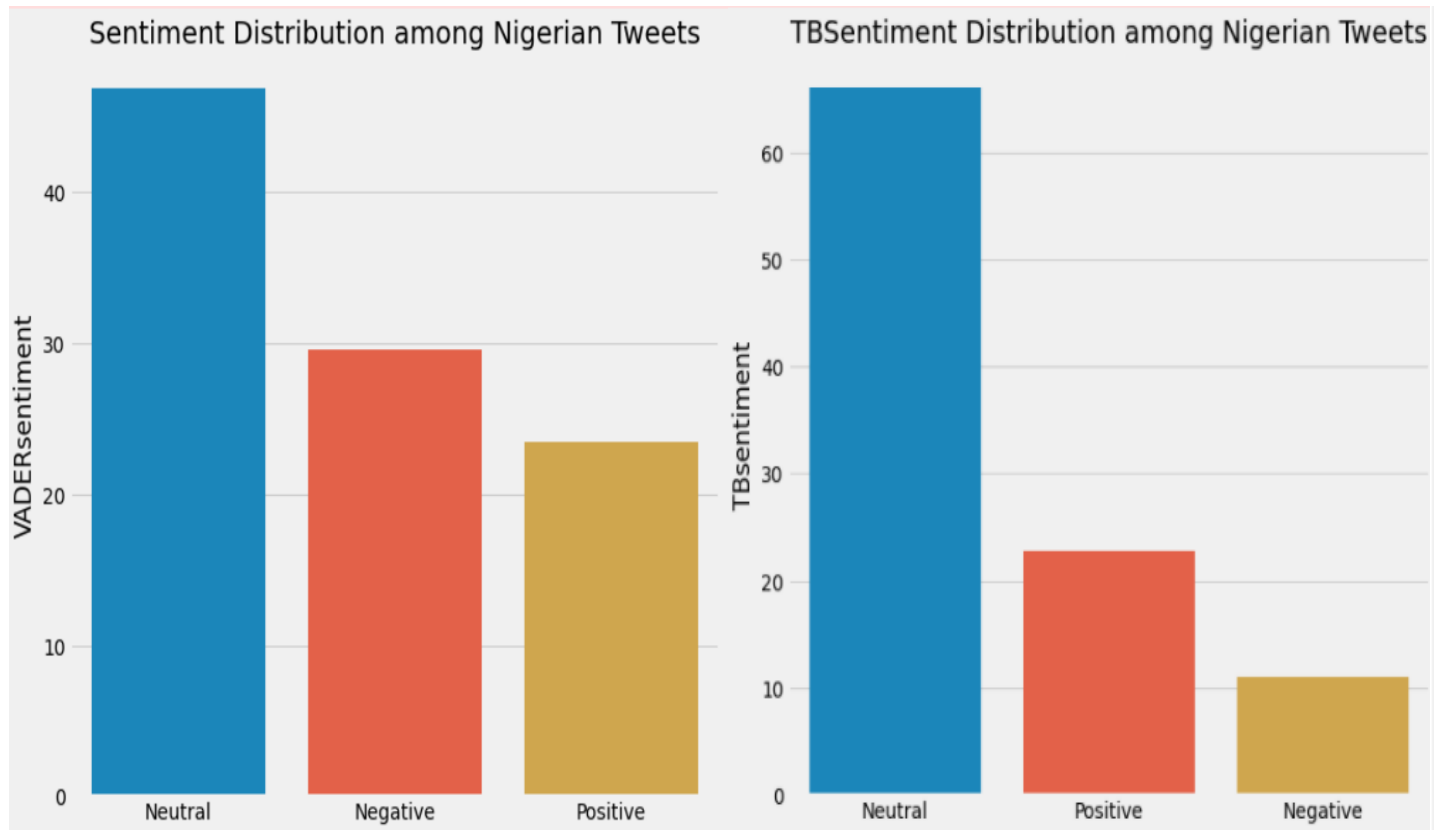
# SENTIMENT ANALYSIS

- ▶ BERT Sentiment Analysis
- ▶ Most tweets were negative



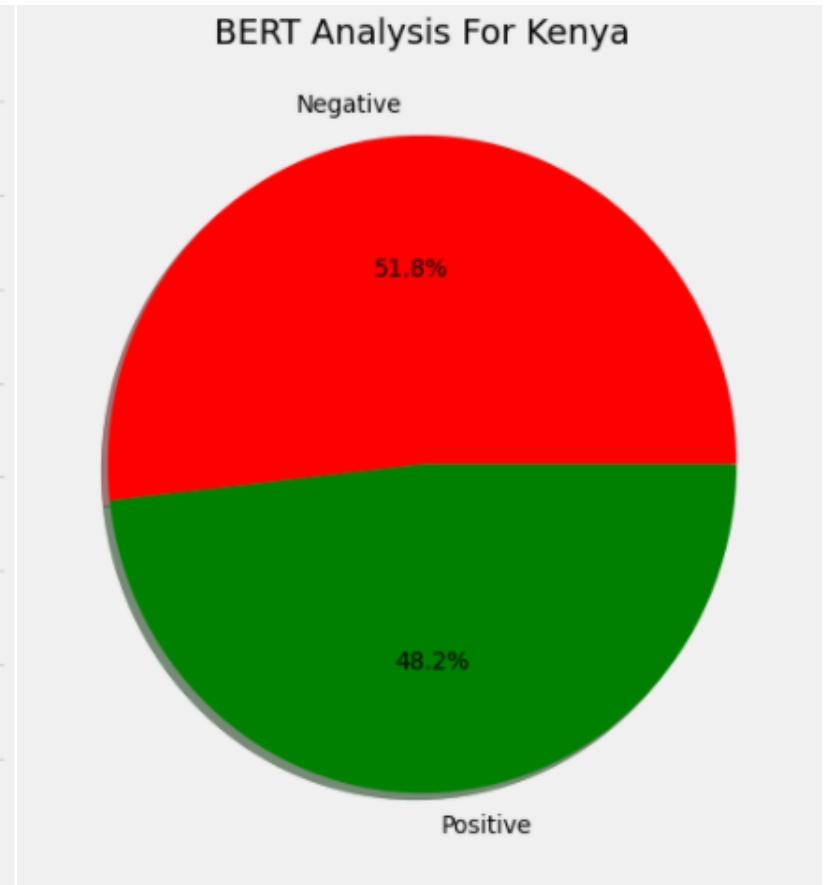
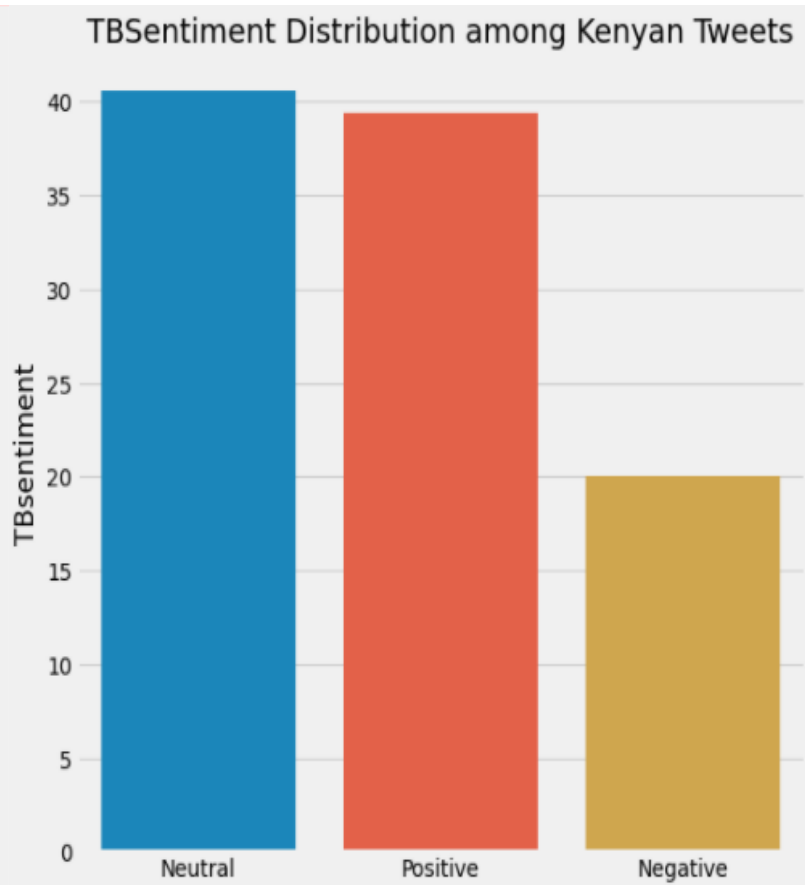
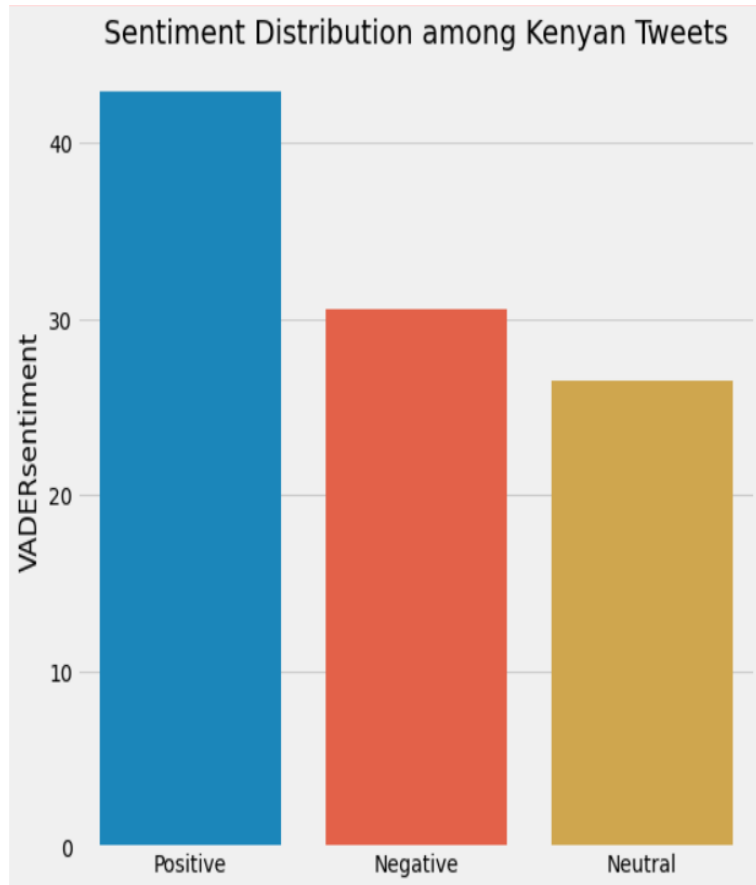
# PER COUNTRY SENTIMENT ANALYSIS

## ► Nigerian



# PER COUNTRY SENTIMENT ANALYSIS

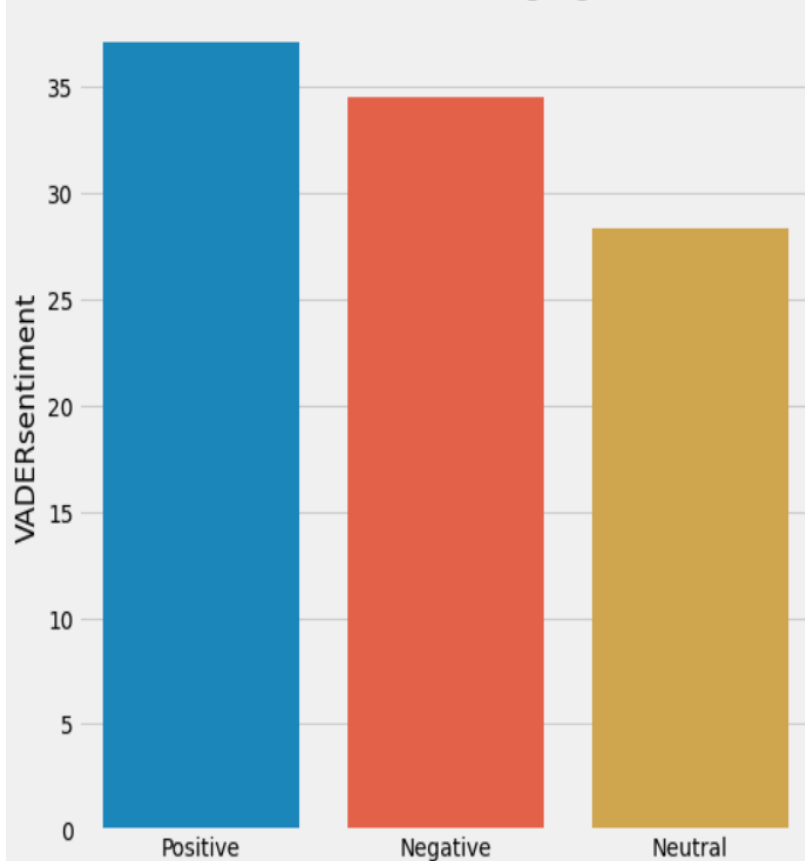
## ► Kenya



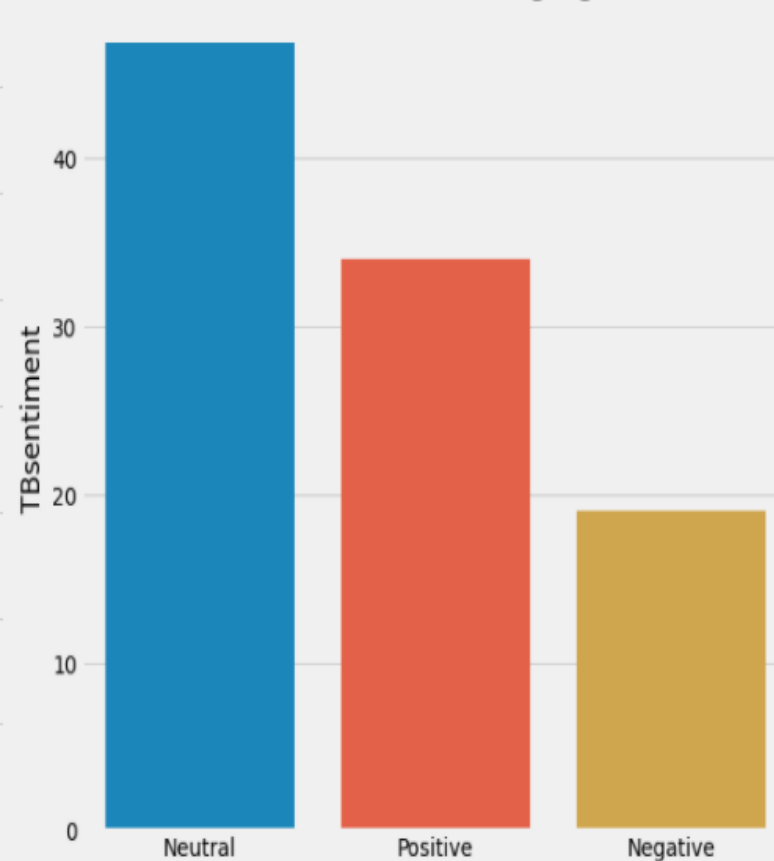
# PER COUNTRY SENTIMENT ANALYSIS

## ► Uganda

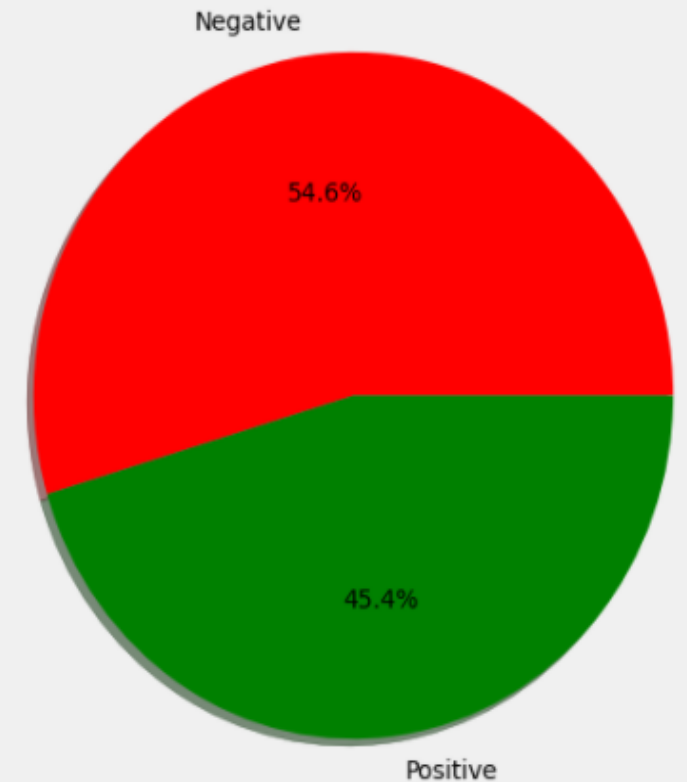
Sentiment Distribution among Ugandan Tweets



TBSentiment Distribution among Ugandan Tweets



BERT Analysis For Uganda



# CONCLUSION

- ▶ BERT model performed better than the Sentiment Analysis Tools.(Text Blob and Vader)



# CONCLUSION

	tweet_id_str	date_time	location	tweet_text	subjectivity	polarity	TBsentiment	vader_compound	VADERSentiment	Vader new	TB new	Bert Pred
0	1420889397684178946	2021-07-29 23:30:05	Lagos, Nigeria	south africa soon administer 300,000 19 vaccin...	0.000000	0.000000	Neutral	0.0000	Neutral	1	1	1
1	1420873656931168266	2021-07-29 22:27:33	Kinshasa	#covid19 les employ f raux devront tre soit va...	0.000000	0.000000	Neutral	0.0000	Neutral	1	1	1
2	1420872966682914817	2021-07-29 22:24:48	Lagos	offered monetary incentives take something sup...	0.366667	-0.287760	Negative	0.7452	Positive	2	0	0
3	1420869726591455236	2021-07-29 22:11:55	Abuja.	african union vaccine passport ? plans ? coord...	0.000000	0.000000	Neutral	0.0000	Neutral	1	1	1
4	1420866487191957506	2021-07-29 21:59:03	The Great Pacific Northwest	' know well 19 vaccines working ...	0.000000	0.000000	Neutral	0.2732	Positive	2	1	1
...	...	...	...	...	...	...	...	...	...	...	...	...
1122	1417926848353345538	2021-07-21 19:17:59	planet earth	people dying , vaccines , dying hunger food sp...	0.600000	-0.200000	Negative	-0.6298	Negative	0	0	0
1123	1417924096675962889	2021-07-21 19:07:03	Nairobi, Kenya	established 19 vaccines uganda pure water. mus...	0.500000	0.214286	Positive	-0.5106	Negative	0	2	0
1124	1417923719855435778	2021-07-21 19:05:33	Nigeria	fox ' mixed messages vaccines coming scrutiny	0.250000	0.000000	Neutral	0.0000	Neutral	1	1	1
1125	1417923130807443456	2021-07-21 19:03:12	Nairobi, Kenya	pfizer strikes deal produce vaccines africa co...	0.850000	-0.150000	Negative	-0.6249	Negative	0	0	0
1126	1417922072660090880	2021-07-21 18:59:00	Kampala, Uganda	aceng despot museveni claim money vaccines wes...	0.400000	0.200000	Positive	0.7550	Positive	2	2	0

df\_raw[2]

'offered monetary incentives take something supposed saving life? ? hidden agenda ! ! vaccines alter dna ! vaccines deadly ! 19 biden tells states offer 100 vaccine incentive cases rise'

# Nikita's Challenge.

**Additional challenge:** Given the labels provided for each tweet in the 'label' column (which we will consider to be the correct sentiment of each tweet), investigate the accuracy of the TextBlob and VADER sentiment analysis tools.

1. For what percentage of tweets did the TextBlob and VADER tools correctly predict the sentiment? Which model performs better?
2. For each of the models, does the number of words (or characters) in a tweet affect the accuracy of the assigned sentiment?

```
rightVad = df[df['Label Vs Vadar']==1]
print(str(rightVad.shape[0]/df.shape[0]*100) + " %")
```

50.224639394655945 %

```
rightTb= df[df['Label Vs TB']==1]
print(str(rightTb.shape[0]/df.shape[0]*100) + " %")
```

47.8363679356822 %