



TEAM SIMBA

RESEARCH : SENTIMENTS ON MENTAL HEALTH VIS A VIS COVID19

Objectives

- ▶ To analyze sentiments around mental health vis a vis COVID 19 across the world
- ▶ To analyze sentiments around mental health vis a vis COVID 19 in Kenya and her surroundings
- ▶ To see if sentiment analysis is a good approach to mental health analysis
- ▶ Exploring the Sentiments around mental health in relation to Covid 19 with Machine Learning

Introduction

- ▶ We are applying sentiment analysis on mental health and how it has been influenced by COVID 19.
- ▶ Due to the interest of time and the nature of a hackathon, we elected to use the data with which we were provided to train and test our model.
- ▶ The Data we scraped from twitter was then used to arrive at predictions around our objectives.
- ▶ The model of choice was the Bert model for transfer learning

Data Collection and Processing

- ▶ We used the Twitter API to collect COVID19 and Mental Health related Twitter data
 - ▶ We used these search words with regards to the task at hand :
 - Coronavirus, covid , pandemic , covid19 , lockdown , loneliness , lonely , depressed , suicide , sad;
- To extract the tweet text and metadata we required.
- ▶ We then processed and cleaned the tweet text for better application to our task.

100



The most frequent words in relation to Covid 19 and Mental Health.

Transfer Learning

- ▶ We used Bert for our sentiment analysis:
- ▶ Results of Model Evaluation:

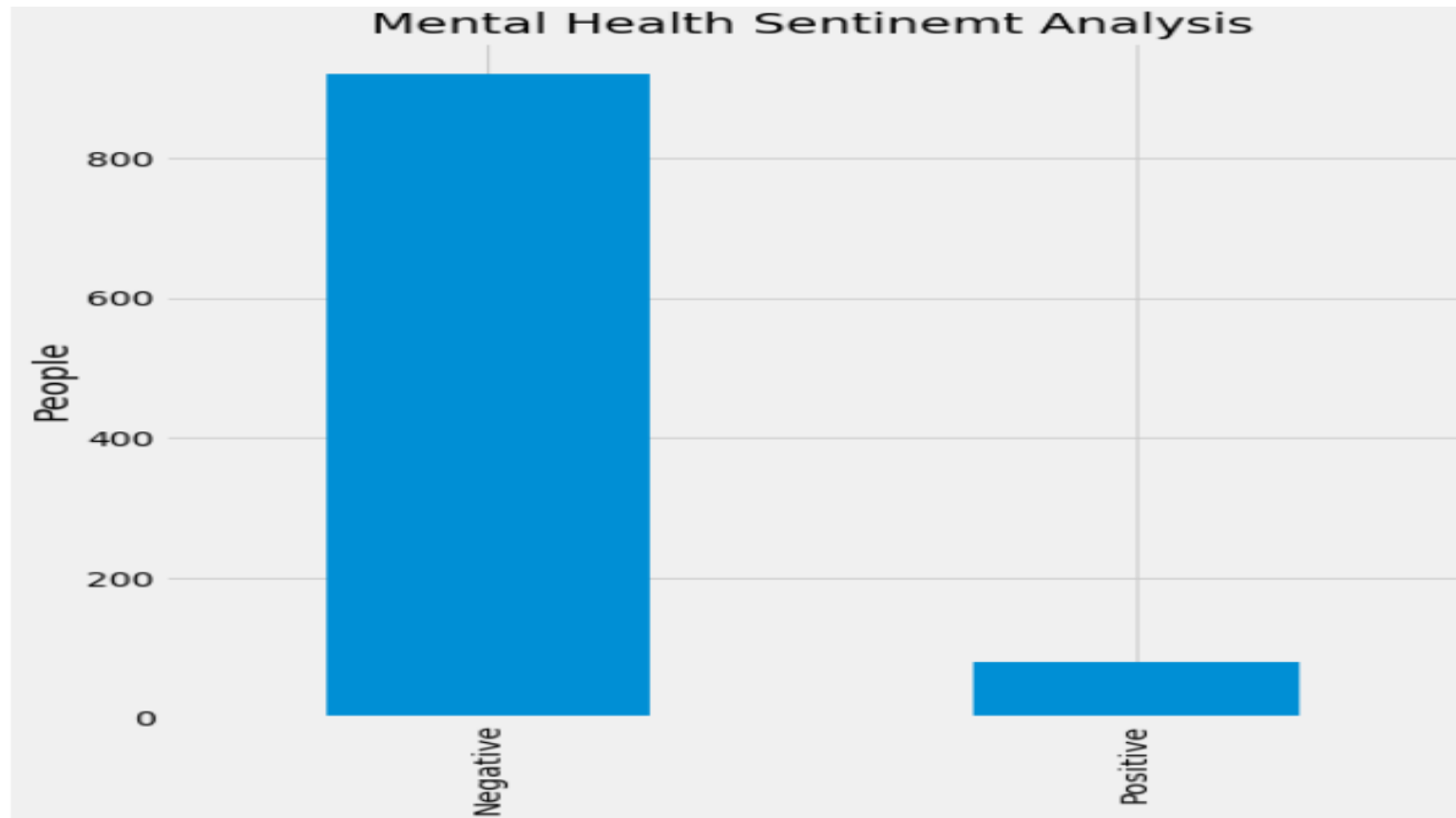
Classification Report:		precision	recall	f1-score	support
0	0.87	0.93	0.90	314	
1	0.81	0.70	0.75	141	
accuracy		0.85	455		
macro avg	0.84	0.81	0.82	455	
weighted avg	0.85	0.85	0.85	455	

CPU times: user 2min 42s, sys: 893 ms, total: 2min 43s
Wall time: 11.3 s

Results:

- ▶ After training the model we managed to assess our objectives
- ▶ The outcomes are shown in the bar graphs in the next slides

Mental Health Visualization Around the World vis a vis Covid 19



As seen in this graph; many people around the world have experienced mental health issues attributed to Covid 19.

Fig 1

Mental Health Visualization in East African Region vis a vis Covid 19

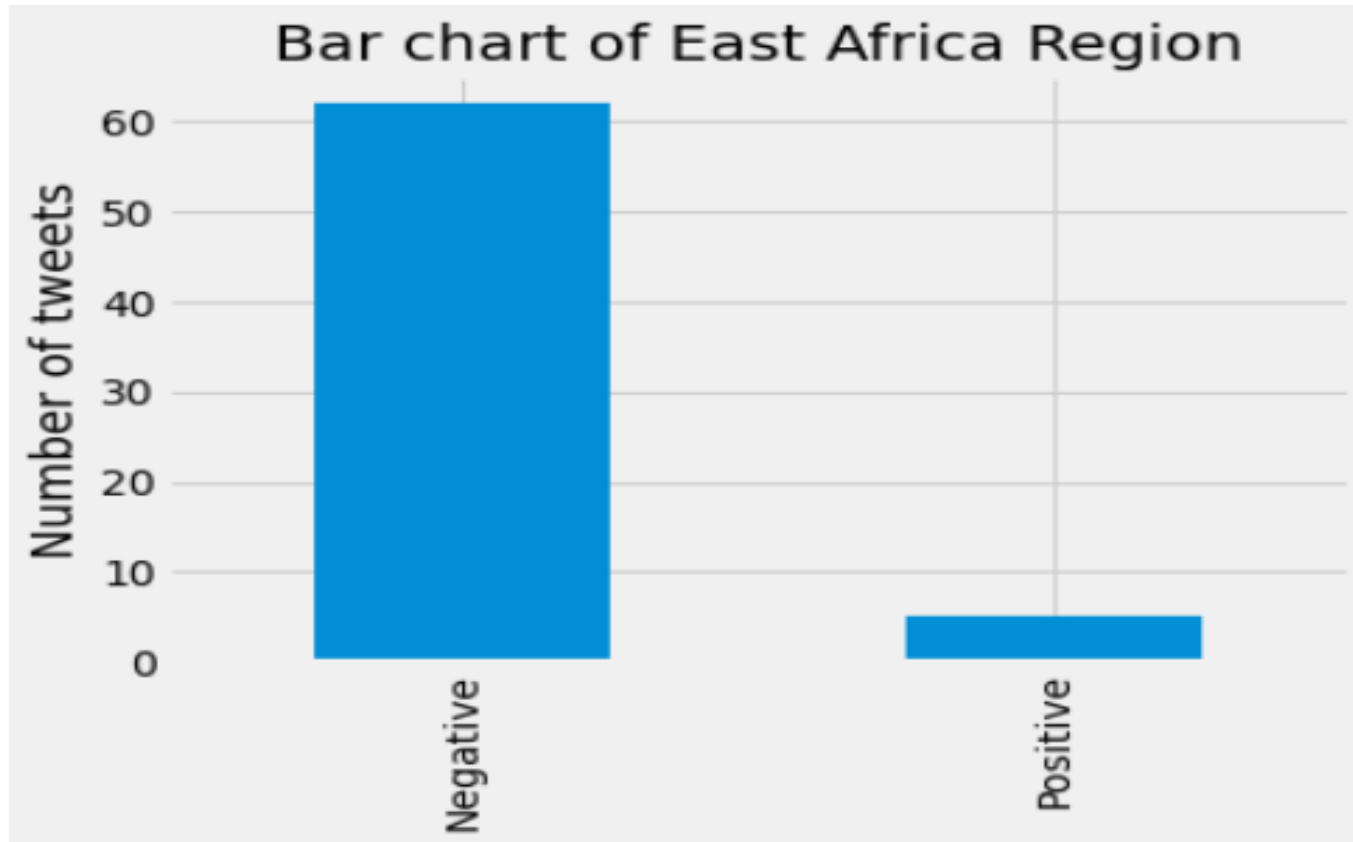


Fig 2

We have been able to predict that East Africans also have been negatively affected by Corona Virus.

From our analysis, it's been shown that East African's were adversely affected mentally by the pandemic.

But in comparison to the rest of the world, interest and sentiments on mental health is much lower.

Challenges

- ▶ Insufficient Data to work with
- ▶ Inability to show trends solely with sentiment analysis for our task
- ▶ Time caps making it difficult to label our own Data

Conclusion

- ▶ Sentiment analysis is a limited approach to mental health with regards to our task as we'd need to incorporate other tools to show trend and a large volume of data.
- ▶ There were strong negative sentiments on mental health with respect to COVID 19
- ▶ From the data, among other possible conclusions, mental health isn't a weighty issue in East Africa in comparison to the rest of the world
- ▶ Given our objectives, the process was a success.