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Analysis on Twitter of the Actors and Rumors around the Ebola Epidemic 2018-2019 in the Democratic Republic of Congo

Abstract:
The last major Ebola outbreak took place in 2014-2015. This epidemic affected mainly three West African countries (Guinea, Sierra Leone, Liberia) and killed 20,000 people. A number of articles have studied the rumors that circulated during this outbreak on Twitter. (Jin et al. 2014; Fung et al. 2016). Ebola disease still rages today in the Democratic Republic of Congo since 1 August 2018. It made more than 2,050 deaths. It’s the second-worst epidemic in its history after West Africa. No studies have been conducted to determine who is communicating around this epidemic and what types of tweets / rumors are being broadcast? To answer this question, we conducted an analysis on Twitter via the Radarly® software, over a period from April 1 to July 07, 2019. The keyword Ebola and the #Ebola were used, with a filter on the french language. 17,282 tweets were collected and categorized via the software. The tool also extracted and represented knowledge in a cartographic way. It also helped to identify the dominant themes in the form of clusters. The tone of messages has also been determined. Our work has highlighted several actors communicating around the epidemic: general public, experts, politicians, media... Concerning the general public, it was highlighted that a part of the congolese population plays the role of relay of preventive messages and fights against fake-news. However, an another party thinks that the disease is a plot to destabilize the country and spreads the rumor. Regarding the experts, they share many tweets to inform the general public. Concerning the politicians, the majority supports the medical teams and shows the example. In conclusion, our study, contrary to the 2014-2015 results, retrieve a congolese population divided in two: a part that admits the disease and adheres to the treatment and an another that considers it as a conspiracy. Our study suffers from bias. We did not take into account other media like Facebook and we limited our study to the French language.

1.0 Introduction

The last major ebola epidemic in Africa mainly affected three West African countries (Guinea, Sierra Leone, Liberia). It took place in 2014-2015 and killed about 20,000 people. A number of articles have investigated the rumors that circulated on Twitter during this epidemic. For example, Fung’s article pointed out that these media disseminated false information concerning the treatment of the disease, such as bathing in salt water to cure (Fung et al. 2016) Jin's article also pointed out that these media was behind fake news of a snake at the origin of the epidemic (Jin et al. 2014).

Ebola virus disease is still raging in the Democratic Republic of Congo (DRC) since August 1, 2018. It has killed more than 2,050 people. It is the second largest epidemic after the West African epidemic (Medley et al. 2020); Numerous studies have shown that Twitter is used by public health organizations, in particular to inform or educate the population, particularly in the event of a disaster or a sanitary crisis (Hart et al. 2017). However, no studies have been conducted to determine who communicates about the current Ebola epidemic in the Democratic Republic of Congo (DRC) and what types of tweets / rumors are circulated? To answer this problematic, we have conducted an analysis on Twitter over a period from 01/04/2019 to 07/07/2019. The keyword Ebola and #Ebola were used, with a filter on the French language. 17,282 tweets were collected and analyzed by a software (Radarly®). This tool permitted to
represent the knowledge in a cartographic way (volume of publications / time ...). It also permitted to identify the dominant themes in the form of clusters. The tone of the messages has also been determined. This article presents the main results found in our analysis, in particular the fact that several actors communicate around the epidemic.

2.0 Methodology

We used the Radarly® social media monitoring software marketed by Linkfluence (https://radarly.linkfluence.com/login) (Figure 1).

![Figure 1: Radarly® Interface](image1)

![Figure 2: Cartographic representations](image2)

This software allows to collect data on the social web (Tweet, Facebook, Instagram, forums, blogs, etc.). The software also makes it possible to represent the results in a cartographic manner, in particular in the form of clusters of dominant subjects. It also makes it possible to carry out analyzes of the tone of the messages published. It also identifies "influencers". To collect data from Radarly® software, we applied the monitoring process and the methodology developed by Tanti et al. (2012) and which includes 6 steps: definition of monitoring themes, identification, collection, analysis, synthesis and distribution of documents. We have analyzed tweets posted on Twitter only over a period from 04/01/2019 to 07/07/2019. A total of 17,282 tweets were collected, classified and categorized via the software. The software also enabled cartographic representations of the volume of publications as a function of time (Figure 2), making it possible to deduce media peaks intimately linked to health events.

3.0 Results

The requests have identified the main actors who communicate on Twitter concerning the Ebola disease which has been raging since 01/08/2018 in the Democratic Republic of Congo (DRC). The filter on the French language made it possible to select only tweets written in French. The analysis also made it possible to identify the messages conveyed. The main players found are: the general public, mainly Congolese citizens and associations; experts and health organizations (Ministry of Health of the Congo, WHO, etc.); the press, mainly Congolese; and politicians, mainly Congolese.

Concerning the general public: It is mainly congolese citizens and associations who speak about the epidemic. In the congolese population, there are divided opinions and two populations: a population that « believes » and a population that does not « believe » in the disease. The party that "believes" accepts the disease and the epidemic and considers it as a public health problem. It adheres to medical treatment and preventive measures. It relays messages of scientific information, education and awareness... The
rest of the population is less "gullible" and denies the disease. It constitutes the majority of the tweets found (high negative tone). Thus, despite the efforts of response teams since the start of the epidemic in August 2018, this population considers the disease as a plot to destabilize the country. This population spreads the rumor. She accuses, for example, the laboratories or the WHO of having created the virus. Concerning the experts: It was mainly the national and international health organizations responsible for the response to the disease who spoke on Twitter during the study period. In particular, we observed that they shared many tweets to inform the general public. For example, the Ministry of Health of the DRC made a regular update on the disease which it relayed on Twitter. Concerning the media: It is mainly journalists and the press, both congolese and international, who speak. They tend to share WHO response releases, WHO prevention and awareness messages. Concerning the politicians: It is mainly congolese politicians who speak out. They relay in particular prevention, health education or awareness messages. For example, a tweet relaying the photo of the President of the Congolese Republic (H.E.M. Felix Tshisekedi) who complies with medical requirements during his national tours has been relayed several times on the media. In conclusion, our study thus found 12 main influencers and highlighted a negative message tone of 73.31%.

4.0 Conclusions
Our study, unlike the results found in the 2014-2015 epidemic, highlights a divided congolese population. Some people accept the disease and adhere to the treatment and another party views it as a conspiracy.

Our study suffers from limits. The short analysis period, like the choice to limit to the french language, is questionable. In addition, in our analysis, we did not take into account another media such as Facebook and forums. Finally, it is especially the choice of analysis on the social network Twitter itself which is questionable. Indeed, this media limits the number of characters present in messages. It thus limits long discussions, making it therefore the relay of current events and the engine of polemics and debates rather than the federator of true micro-communities.

References