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REAL-TIME DATA ANALYTICS AND PREDICTION OF THE COVID-19 PANDEMIC ¹

(PERIOD TO MARCH 26TH, 2020)

SAMIA CHEHBI GAMOURA

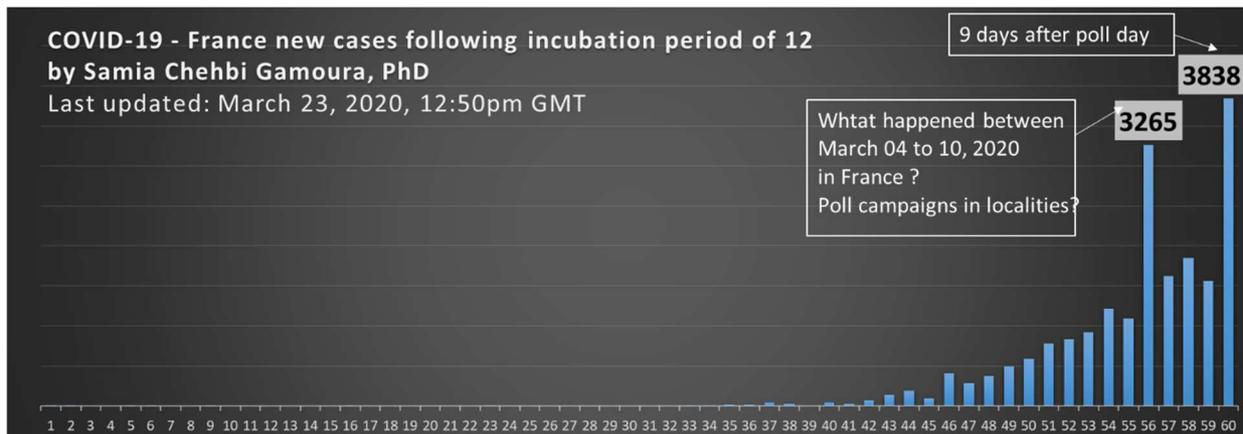
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Abstract

This brief paper is versioned 2 in a series of short papers that describe a set of descriptive and predictive analytics of the pandemic COVID-19 around the world. We exceptionally propose this new and uncommon way of publications because of the current emergency circumstances where Data are gathered and analyzed directly day by day. Because of the new behavior regarding the spread speed and the contagion features of this virus, we opted by comparative analytics based on demographic characteristics in localities and countries for prediction, without using historical data in epidemiology. The test proofs of our findings are done day by day with the real figures reported from the Data. To feed our models in algorithms, we refer to the reported cases from the Data of the World Health Organization (WHO). Because of the current circumstances of emergency, this paper is brief and will be succeeded with a series of versions until the end of the pandemic. The full paper will be published afterward with more details about the functions, the model, and the variables included in our algorithms. .

Findings 1: Two peaks in France related to two public events (by applying incubation period)

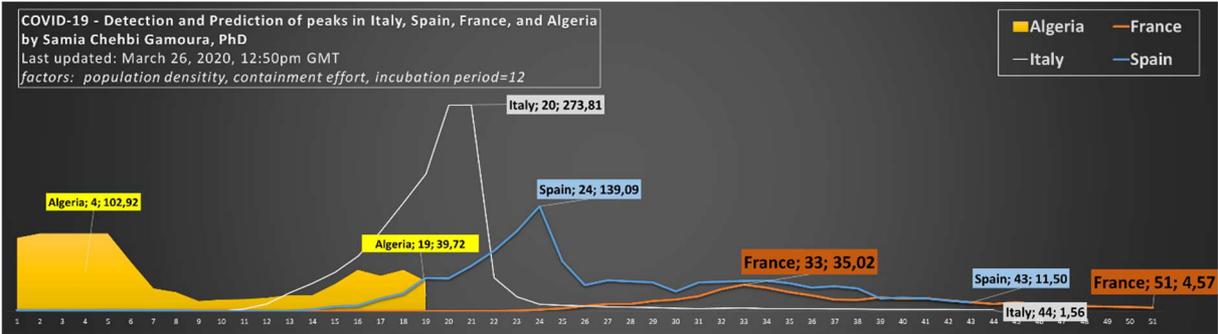


This is the chart of differentiated new cases in France with respect to the incubation period of 12 days. The question is; What happened in these two peaks? Our hypothesis is that the 60th period of the epidemic corresponds to the poll day organized 9 days before on 15th March: 33828 raised in one day. The second question is that: What happened in the period from 4 to 10 March to generate the other peak of 3265 new

¹ Date of publication : March 26, 2020

cases in only day. Our hypothesis is that it corresponds to the last Saturday where candidates traditionally went and gathered people in public markets. This was during poll campaign in France localities.

Findings 2: Detection of peaks by using contagion factor/population density



By using the factor of contagion, with the population density we can predict the peaks in countries.

Italy. Today March,26th, is at 1,56 (<2) value of the factor. This means it is already in the pandemic peak.

Spain. Today March,26th it is at 11,50 of value, this means Spain is about 23 days far before the peak (11.50/0.5).

France. Today March,26th is at 4,57. This means France is about 9 says from the peak (4,57/0.5).