Review of: "A Mathematical Characterisation of COVID-19 in Mauritius"

Vicente Martínez[1]

1 Universitat Jaume I de Castellón

Potential competing interests: No potential competing interests to declare.

The authors propose a mathematical model of the progression of COVID-19 in Mauritius and validate and compare it with other countries. The model is based on the adjustment of a logistic curve of three parameters, which represents the number of accumulated cases of positives for Covid-19. This curve has the characteristic that one of its parameters is the inflection point, which at the same time coincides with the maximum number of infected. The analysis carried out compares the growth rate and the maximum value of infected for different countries. This determines the percentage of the population that needs immunity to stop the spread of the virus. Finally they draw conclusions based on experimentation.

The analysis is novel, the structure of the writing helps to understand it, the objectives are coherent and the conclusions are based on the results obtained. For all this it is fair to congratulate them. However, the conclusions contain some food for thought, specifically the claim that a rapid growth rate of the virus results in fewer cases of infection at the end of the wave.

Is this positive? Couldn't it happen that a strong growth of those infected at the beginning of the pandemic overwhelmed the health services and mortality was much higher?
Look at the case of the United Kingdom, for example.

Another aspect to improve: Authors introduce uncertainty using an original technique based on Chi^2 minimization. It should be clarified how the confidence intervals for the parameters are calculated from this technique. In this sense, the bibliography used, despite being very relevant, is quite old; more recent references should be added.