

Review of: "Qualitative Analysis of a Time-Delay Transmission Model for COVID-19 Based on Susceptible Populations With Basic Medical History"

Ana María Pulecio-Montoya¹

¹ Universidad de Caldas

Potential competing interests: No potential competing interests to declar.

A biological explanation of the incorporation of the delay into the model is required, especially the exponential term and its effect on virus transmission.

It is important to keep an order of the variables, since the order (S_1 , S_2 , I) is mentioned, but x to calculate the R_0 follows this other order (I, S_1, S_2).

The calculation of R_0 is not clear by notation, as well as the dimensions of the matrices involved and it is necessary to support the results to F and V with references.

On page 6, change the term A/d to d/A .

The calculation of $c_1c_2-c_3>0$ in the stability analysis of E^* is not evident. Likewise, show that the Routh-Hurwitz conditions of the coefficients of $h(z)$ are indeed satisfied, since the proof is not complete.

Note that in different parts the same letter is used to name different values, which may cause confusion to the reader.

It is not clear that $L'_2(3)<0$.

Correct the labeling of the figures to English language.

The conclusions reflect the classic results of epidemiological models, but do not show the significant contribution of the proposed model compared to other COVID-19 models.

Publication under corrections is recommended.