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| Journal Name: | [**Asian Journal of Probability and Statistics**](https://journalajpas.com/index.php/AJPAS) |
| Manuscript Number: | **Ms\_AJPAS\_132038** |
| Title of the Manuscript:  | **A SYSTEMATIC WAY OF DEVELOPING A COVID-19 REINFECTION MODEL USING MATHEMATICAL MODEL APPROACH** |
| Type of the Article |  |

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| PART 1: Comments |
|  | Reviewer’s comment**Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | Author’s Feedback *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | **This manuscript is written in a systematically manner.** **However, the objective mentioned in the abstract is not fulfil by the author. For example- This model is also capable of estimating hospital bed requirements. But in the whole manuscript I did not find how to do it. I could not find any in the complete manuscript on the following facts-****We demonstrate a strong correlation between our model’s predictions and reported data. Additionally, we analyze how the model’s outputs behave when applied to incomplete reported data—specifically, data truncated around the peak daily case counts. This comparison allows us to evaluate the modelling errors that arise when determining parameters during the early stages of the pandemic. Lastly, we explore various scenarios to illustrate how different detection rates could have influenced the overall scale of COVID-19 in China, providing valuable insights for policymakers.** |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | **Yes, it is suitable. But I suggest and recommend it to improve.** **A deterministic SVEQAITR model to analysis Covid-19 reinfection.** |  |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | **No abstract is not comprehensive. I suggest that Abstract should written in such a way that it represents actual work in manuscript. Kindly rewrite complete abstract. The basic reproduction number, disease free and endemic points are missing. Local and global stability or numerical analysis should be included.** |  |
| Is the manuscript scientifically, correct? Please write here. | **Yes. Manuscript is scientifically correct. But I again suggest that some points are missing. It seems to be a incomplete manuscript. Kindly justify the manuscript as per abstract and Objective mentioned by you.**  |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | **I suggest to include some recent articles.** 1. Soni, M., Sharma, R. K., & Sharma, S. (2024). Prevention Strategies to Control an Epidemic using a SEIQHRV Model. *The Pure and Applied Mathematics*, *31*(2), 131-158.
2. SONI, M., SHARMA, R. K., & SHARMA, S. (2024). FOMITE FACTORS AND SILENT SPREAD: A VSEIQCR STUDY OF VIRAL DISEASES. *Journal of Nonlinear Analysis and Optimization: Theory & Applications (JNAO)*, *15*(2), 1-21.
3. Sharma, S., & Sharma, P. K. (2023). Stability analysis of an SIR model with alert class modified saturated incidence rate and Holling functional type-II treatment. *Computational and Mathematical Biophysics*, *11*(1), 20220145.
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| Is the language/English quality of the article suitable for scholarly communications? | **Yes** |  |
| Optional/General comments | **I appreciate the way of manuscript writing. I appreciate the novelty of the manuscript. But I need complete manuscript , it seems to be missing many major parts.** |  |

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| **PART 2:**  |
|  | **Reviewer’s comment** | **Author’s comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Are there ethical issues in this manuscript?**  | *(If yes, Kindly please write down the ethical issues here in details)* |  |

**Reviewer details:**

Mohit soni, Govt. Holkar Science College, Indore, Madhya Pradesh, India