Journal Name:	Journal of Advances in Mathematics and Computer Science
Manuscript Number:	**Ms_JAMCS_56265**
Title of the Manuscript:	**Stochastic Modeling and Prediction of the COVID-19 Spread in Kenya**
Type of the Article	**Original Research Article**

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
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PART 1: Review Comments

	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)*
Compulsory REVISION comments	This paper discusses the stochastic modelling and prediction of the COVID 19 spread in Kenya. The multiple linear regression model is used to forecast the possible COVID 19 cases in the near future. The current data of the confirmed cases are used to estimate the coefficients in the model. The result provides the projected cases in a certain future time period. The content provides some insights to the topic concerned. However, the presentation of the paper shall be further improved. Some comments are given as follows. 1. The terms "COVID" and "Covid" shall be written in a consistent way, please use either "COVID" or "Covid" in the text but not using both. 2. The full name of COVID shall be given for the first time it appears in the text, please do not give the full name after using the term COVID for a few pages. 3. When the acronym "COVID" is defined, then this acronym shall be used in the following text, please do not use the full name anymore. 4. See the abstract, "While the Kenyan government have had plans for those who have tested positive through self-quarantine beds at Mbagathi Hospital, lack of a proper mathematical model that can be used to model and predict the spread of Covid-19 for adequate response security has been one of the main concerns for the government." This sentence is too long and the meaning of the sentence is not connected. Please separate this sentence into two (2) different sentences. 5. See Page 2, please give the full name of WHO. 6. See Page 2, "from your face", please do not use the second-person pronoun. 7. See Page 2, "Kenya is among the most affected countries in Kenya", what does this sentence mean? 8. See Page 3, "a huge challenged especially", does this sentence lost an object? What does "a huge challenged" object refer to? 9. See Page 3, "Covid-19 virus", this term has mentioned the word "virus", so please delete "virus" and write it as "COVID-19". 10. See Page 4, an overview of COVID 19 seems less correct, there are not only three states, which are susceptible (S), infectious (I), and recovered (R), the state of exposed (E) shall be considered. This is mentioned that "when a person is exposed, symptoms can easily show up from two to a maximum of fourteen days, with the expected mean number of days as five days", see Page 2. The exposed person will make a close contact person to be infected. 11. See Page 4, what does the term "t" refer to? 12. Notations and symbols in the text shall be written in the *italic* form. 13. See Page 4, "of the virusexistence", what does the term "virusexistence" mean? 14. See Page 4, $\vartheta_k\theta$, this is not the single notation that shall be used to represent the parameter in the model, please use the standard notation in the compound Poisson model. 15. Please refer to the format to label each equation. Please do not label by (0.0.1), (0.0.2), (0.0.3), …, this is not the proper way to label equations in the research article. Please revise. 16. See Page 5, "to be i.i.d", what does this "i.i.d." stand for? 17. See Page 5, "from the previous model", which is the model? 18. See Page 5, Eq. (3) can be written in Eq. (4), which is in the matrix-vector form. But the defined matrices and vectors give a wrong equation, the concept is mathematically incorrect. Please revise. 19. See Page 6, Eq. (5) is given two times in the text, any reason? 20. See Page 6, "when the announcement are made the ministry of health for proper planning", does this sentence lost a term? Please check. 21. See Page 6, what does "*pgf*" stand for?	

22. See Page 7, "*Q*(*t*) is the confirmed cases of Covid-19 in Italy in Europe", the term *Q*(*t*) is not used in estimating the parameters in the model, and this term is also not considering in the model. Please give an explanation of why using this term.
23. See Page 7, "The data is ==summarized== below", the data cannot be summarized unless the author has done some manipulations on these data. Do these data the original data?
24. See Page 7, "*X*₁(*t*) is the contact persons with the confirmed cases of virus", this statement is questioned since the patient even does not know who has he/she contacted. The data of *X*₁(*t*) may not give a proper reference.
25. See Page 8, the caption of Table 1 shall be put on the top of the table, not put at the bottom, please revise.
26. See Table 1, how many days the data used for this study? It might not be 17 days, please mention clearly.
27. See Figures 2, 3, and 4, please put the content of the figure into a box or add the frame to the content, so the confusion between text and the content can be avoided.
28. Please give an explanation for Figures 2, 3, 4, and 5.
29. Please mention the related figure number in text, do not write "as follows", it is really confusing.
30. See Page 9, the coefficients in Eq. (8) is definitely incorrect. Please check.
31. See Page 11, the first paragraph is more preferred to as the discussion. Please revise.
32. See Page 11, "We expect cases of confirmed cases of 83417.542 by the 235 day in Kenya", please check this result.
33. Please make sure all references are cited in the text.
34. Please be alert some references have not been peer-reviewed yet. Shall these paper be cited?
35. Please do not write "et al." for the references [5] and [6].
36. Please refer to the format in preparing the references.
37. There are some grammatical mistakes, please do the correction carefully.

Minor REVISION comments		
Optional/General comments		

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:

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