

## Review Form 1.6

Journal Name:	<a href="#">Asian Research Journal of Mathematics</a>
Manuscript Number:	Ms_ARJOM_83697
Title of the Manuscript:	Modelling the Novel Coronavirus (COVID-19) Transmission Dynamics with Qualitative Analysis: A Case Study of Nigeria.
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. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<https://www.journalarjom.com/index.php/ARJOM/editorial-policy> )

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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)
<p><b>Compulsory</b> REVISION comments</p>	<ol style="list-style-type: none"> <li>1. The pictorial representation of the model is missing. Authors should include the flowchart for the model.</li> <li>2. The graphs are too small, Authors need to make them bigger for clarity.</li> <li>3. <b>Page 6.</b> In Proof 1, Authors wrote  "Let <math>t_1 = \sup\{t &gt; 0   S \geq 0, E \geq 0, I \geq 0, H \geq 0, R \geq 0, t \in [0, t] \}</math>,"  This line needs to be clarified. Is <math>t_1</math> representing time or a population class? Authors should also explain what the following terms and explain what <math>t_1</math> means <ol style="list-style-type: none"> <li>i. <math>t &gt; 0</math></li> <li>ii. <math>S \geq 0, E \geq 0, I \geq 0, H \geq 0, R \geq 0</math></li> <li>iii. <math>t \in [0, t]</math></li> </ol> </li> <li>4. <b>Page 7.</b> The second equation of Proof 2 is not correct. Authors wrote  <math display="block">\frac{dN}{dt} (Ne^{\mu t}) \leq \Lambda - \mu N - \delta_1 H - \delta_2 I;</math> and should be re-written as  <math display="block">\frac{d}{dt} (Ne^{\mu t}) \leq \Lambda - \mu N - \delta_1 H - \delta_2 I;</math> </li> <li>5. <b>Page 7.</b> The line after equation (2.3), it is written  Then there is a subsequence <math>t_i \rightarrow \infty \dots</math>  Authors need to indicate the sequence from which the "subsequence" <math>t_i \rightarrow \infty</math> is obtained.</li> <li>6. The statement after the equation (2.3) needs to be justified. Authors should cite the source of the statement.</li> <li>7. The Introduction needs to be updated with some recent research outcomes. Authors should read and include the following recent articles in their introduction <ul style="list-style-type: none"> <li>• Fractional-order Dynamics of Human Papillomavirus. February 2022. Results in Physics 34(3):105281. DOI: 10.1016/j.rinp.2022.105281.</li> <li>• Mathematical analysis of the dynamics of COVID-19 in Africa under the influence of asymptomatic cases and re-infection. January 2022. Mathematical Methods in the Applied Sciences 45(3). DOI: 10.1002/mma.7769.</li> <li>• COVID-19 dynamics in Africa under the influence of asymptomatic cases and re-infection. August 2020. DOI: 10.22541/au.159799145.54759313</li> <li>• Analysis of the Dynamics of SI-SI-SEIR Avian Influenza A(H7N9) Epidemic Model with Re-infection. July 2020. Earthline Journal of Mathematical Sciences. DOI: 10.34198/ejms.5121.4373</li> </ul> </li> </ol>	

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	<ul style="list-style-type: none"> <li>• Analysis of the dynamics of avian influenza A(H7N9) epidemic model with re-infection. December 2019. Malaysian Journal of Mathematical Sciences 3(1). DOI: 10.30538/oms2019.0084</li> <li>• Convergence of Differential Transform Method for Ordinary Differential Equations. October 2017. Journal of Advances in Mathematics and Computer Science 24(6):1-17. DOI: 10.9734/JAMCS/2017/36489</li> </ul> <p>8. The manuscript has many typographical errors. It should be proofread.</p> <p>9. Section 4.3 should be separated into 2 different sections; Analysis of Results and Discussion of Results. The Analysis of Results should reveal the outcome of the solution, and the Discussion of Results should explain the results practically.</p>	
<b>Minor</b> REVISION comments		
<b>Optional/General</b> comments		

**PART 2:**

	<b>Reviewer's comment</b>	<b>Author's comment</b> (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)
<b>Are there ethical issues in this manuscript?</b>	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

**Reviewer Details:**

Name:	<b>Oke Abayomi Samuel</b>
Department, University & Country	<b>Adekunle Ajasin University, Nigeria</b>