



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	British Journal of Mathematics & Computer Science
Manuscript Number:	Ms_BJMCS_19209
Title of the Manuscript:	Machine Interference Problem with Reliable Server under Multiple Vacations Policy
Type of the Article	Original Research Article

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
I checked the revised manuscript and I think the author(s) did not improve it. I attach the manuscript with red highlighted parts – I think these parts are not correct, I also added some comments to these parts. Moreover, I have the following comments (most of them were in my first review as well): 1. The manuscript is poorly edited. For example, mathematical symbols and notations should be written in italics. Or in some equations a strange symbol for λ is used. Some figures are placed wrongly.... 2. There are many grammatical and spelling errors. Correct them! 3. I think some sentences (even paragraphs) of the manuscript are redundant. For example, why did the author(s) copy the paragraphs in Section 4.1? Not corrected!!! 4. The author(s) claimed that the service rate is state dependent. But in the experiments only single value of the service rate is applied. Why? There is no explanation. Explain it! The author(s) added extra information but it is not correct. 5. The author(s) defined the state space in page 4. According to the definition of the state space the system can be also found in state 1,0. However for the state there is no equation in the equation system. Why? Fix it! The reply is: When there is no failed machine in the system the server continues taking multiple vacations until a failed machine arrive the system. That means the system can be found in state 1,0 therefore the state should be omitted! 6. I think the author should depict the state space and possible transitions in a state transition diagram. It is difficult to check the equations without the diagram. Moreover, due to the fact that I have not seen the state transition diagram I have some other doubts about correctness of some formulas – see the attached manuscript with my comments 7. The formulas for $P_{i,n}(t+h)$ in Section 3.0 are not correct. In each formula $o(h)$ is missing, see for example http://www.win.tue.nl/~iadan/queueing.pdf. The reply is: The $o(h)$ tends to zero in the mathematical formulation that is why it vanishes. It is not true, $\lim_{h \rightarrow 0} o(h)$ tends to zero. I strongly recommend to add it. 8. Section 3.0 needs a thorough revision – see my comment in the attached manuscript and my comment in my first review. 9. Why did the author(s) consider the measure $E(I)$, when the server cannot be idle ($P_{1,0}$ is always zero)? 10. Why did not the author(s) provide any information about experiments with linear regression – a regression model, a coefficient of determination etc.?	From this equation $P_{0,n}(t+h) = P_{0,n}(t)[1 - (M-n)\lambda h][1 - \theta h] + P_{0,n-1}(t)[(M-n+1)\lambda h][1 - \theta h]$ We get $P_{0,n}(t+h) = P_{0,n}(t)[1 - \theta h - (M-n)\lambda h - \theta(M-n)\lambda h^2] + P_{0,n-1}(t)[(M-n+1)\lambda h - \theta(M-n+1)\lambda h^2]$ As $h^2 \rightarrow 0$ $P_{0,n}(t+h) = P_{0,n}(t)[1 - \theta h - (M-n)\lambda h] + P_{0,n-1}(t)[(M-n+1)\lambda h]$ Which gives $P_{0,n}(t+h) - P_{0,n}(t) = P_{0,n}(t)[- \theta h - (M-n)\lambda h] + P_{0,n-1}(t)[(M-n+1)\lambda h]$ Dividing through by h we get equation 2 $P'_{0,n}(t) = -(\theta + (M-n)\lambda)P_{0,n}(t) + (M-n+1)\lambda P_{0,n-1}(t)$ The formula for calculating the expected length of vacation the server has is $E[V](t) = \sum_{n=0}^M n P_{0,n}(t)$ This has been corrected. This has been corrected. The values of a and b has been provided.