Review of: "Computer Analysis of Stochastic Aging According to the Gompertz-Makeham Mortality Law"

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Potential competing interests: No potential competing interests to declare.

In this work, the Gompertz-Makeham mortality law is studied as a probability distribution, assuming uncorrelated Gaussian distributions for the parameters that define it.

I have some major drawbacks concerning this manuscript:

1. To provide equations (4)-(7) seems one of the objectives of this work. However, the author does not give any indication about how these equations have been obtained. If an algebraic software has been used for that purpose, I do not find the finding relevant. It, on the contrary, if another procedure has been followed, details lack.

2. The computational analysis performed seems arbitrary. The values chosen for the different parameters are not justified, and no details are given that would allow the reader to assume that real situations are being studied. With this lack of information, the work done looks like an exercise in the application of basic Monte Carlo techniques, and I have doubts that such a work deserves to be published.

3. There are no details about how the calculations have been carried out. Are the results plotted in the figures obtained by sampling the corresponding Gaussian distributions for the parameters and, afterwards, calculating μ and the corresponding statistics? Or are these figures obtained by using directly the moments in equations (4)-(7)? If the former is the case, how has time been managed? And in that case, why have equations (4)-(7) not been checked with the Monte Carlo procedure?

Other comments are the following:

1. In equation (1), the meaning of ω is not indicated.
2. Parameters in the Gompertz-Makeham law must be positive (otherwise, they would be meaningless). Has the author taken this into account in his calculations?
3. Figures are not very informative. All of them are very similar, and, in particular, figures 9 and 12 do not seem to have any information. Instead of 3D figures, 2D cuts at the appropriate values of the parameters would provide a clearer idea of what happens.
4. References related to what has been done in the present work are not mentioned. For example, the paper by Jodrá (reference [2]) is mentioned in the Introduction, referring to general time series, but it deals specifically with the Gompertz-

Makeham law. In another paper by the same author (Jodrá, P. (2013). On order statistics from the Gompertz-Makeham distribution and the Lambert W function. Mathematical Modelling and Analysis, 18, 432–445.), a complete statistical analysis of the law is carried out, including expressions for its moments; however, this paper is not cited. Other references, including expressions for the moments of the distribution, can be found in the literature.