

Review of: "Quantifying the Environmental Impact: A Comparative Analysis of Consensus Algorithms in Blockchain for Carbon Footprint Reduction and Mitigating Climate Change"

Rui António Santos Cruz¹

¹ University of Lisbon

Potential competing interests: No potential competing interests to declare.

The authors claim to have presented a Comparative Analysis QUANTIFYING the Environmental impact of Consensus algorithms in Blockchain, for Carbon Footprint Reduction, but in fact, the document just presents a very high-level contextualisation together with a "Proposal" for a Methodology (?) with incomplete/missing steps/processes in the design and methodology, and nothing more!

At first, after reading the Abstract, any reader would be somehow "captivated" to read the remaining text, due to the "compelling" approach presented (in that Abstract), of the comparative analysis of consensus algorithms in Blockchain and their environmental impact. But even there (in the Abstract) the reader is surprised by not finding anything related to "results" or "findings" of what the Title of the document states: "Quantifying the Environmental Impact".

An initial deception point is reached very soon, after a few paragraphs of the Introduction section, which will then be aggravated with the remaining text. The document is essentially a very incomplete manifestation of "intentions", not well structured, and definitely not a comprehensive scientific research report. It is just a "proposal". As such, even the Title of the document should reflect that it is just a PROPOSAL, not a full research work!

Some critical concerns:

CONCERN 1:

About the (Research) Methodology, the authors did not propose to follow any recommended scientific methodology. For a scientific publication, even just a proposal, it is advisable for the authors to conduct the research process following an adequate research methodology (e.g., Exploratory Research, Qualitative Research, Quantitative Research...), as the objective of the study will be "to quantitatively assess and compare the environmental impact of various consensus algorithms employed in blockchain technology", so that the authors could process and verify the formulated (very badly and confusing, not using adequate math notation) quantitative calculations, in order to achieve the research objectives.

CONCERN 2:

Inconsistent use of acronyms and abbreviations throughout the document: some are never defined or not defined in first use in the main text, as they should, and also in the Abstract, or are multiple defined, confusing and annoying the reader.

CONCERN 3:

References do not respect the same style and format, namely in authors names and journal/conference names, and some are incomplete. The authors should be consistent and either use abbreviated journal/conference names, or the their full names, not a mix.