

# Review of: "Statistical Implicative Analysis of Students' Algebra Performance"

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Potential competing interests: No potential competing interests to declare.

**As a blind peer reviewer of this manuscript in the first round of the review process, I went through the entire manuscript with the title "Statistical Implicative Analysis of Students' Algebra Performance." I appreciate the authors' extensive work in submitting their research work as a manuscript. The idea of the authors is to evaluate the performance and follow-up of students' knowledge in mathematics, especially in algebra. For this, the authors conducted item-level analysis, comparing different cut-off levels for implication intensity, and a follow-up analysis of scales constructed from the clusters revealed. After careful observation, I need to list the lacunae in the manuscript, where the authors should take it as constructive criticism.**

1. At first, the authors should give a brief introduction to the SIA and the two versions, such as Classical and entropic, without giving examples or avoiding examples, because it is a research paper, not a textbook.

2. Why did the second author fail to show her ORCID iD in the manuscript?

3. I went through the website [www.smartvic.com](http://www.smartvic.com). One of the authors is a co-author of 9 published manuscripts, and they may show some reference manuscripts in the literature and in the reference section.

4. On what basis were the battery of questions selected in algebra? Give justification and include it in the manuscript.

5. Is it possible to prove the reliability and validity of the set of algebraic problems asked to the students based on the success and failure rate of the problems apart from item analysis? Give justification and try to incorporate.

I am able to point dozens of lacunae, and as a statistician, I suggest the authors incorporate the pointed suggestions very carefully and resubmit the manuscript. Resubmission does not imply possible publication of the manuscript.

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**I recommend the editors to encourage the authors to resubmit the manuscript after the corrections.**