Review of: "Spatial Analysis of Soil Fertility Using Geostatistical Techniques And Artificial Neural Networks"

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Potential competing interests: No potential competing interests to declare.

Dear Editor,

I hope this letter finds you well. I recently had the opportunity to review the manuscript titled ***Spatial Analysis of Soil Fertility Using Geostatistical Techniques And Artificial Neural Networks***" submitted to your journal. I appreciate the opportunity to contribute to the peer review process, and I am writing to share my assessment and recommendations.

Overall, I find the manuscript to be well-prepared and thought-provoking. The authors have undertaken a commendable effort in putting the work in this form. The introduction is clearly written, and the methodology is sound. The work would add to existing literature in the field of Soil Science and geostatistics.

However, I have a few suggestions for improvement and consideration:

General comments

- Number lines should be added to the whole document to ease the review process.
- There are two sections with similar caption “Statistical analysis”. Please modify one of it.
- Check and correct grammatical errors in the whole documents

Topic

- I suggest “indicators” should be added to the topic to read “… Soil fertility indicators….”, bearing in mind that soil fertility is not a property of soil.

Abstract

- The statement “digital mapping model of local fertility classes “ and “ adjusted to soil status “ in the second paragraph in the abstract are not scientifically clear. Recast.
- Remove % from Clay and silt

Introduction

- Add soil after “ important” to read important “soil quality”
- In citing Srinivasan et al., remove the bracket before 2022
- Correct this “(Webster y Oliver, 1990).” In the text

- Be consistence in the manner of your citation. For instance, there should always be a comma after full stop in "*et al.*,"

Results and Discussion

- In table 1 change comma(,) to full stop (.)
- Define Var, Ave, min, max below Table 1
- Remove percentages from %sand, %clay, and %OM
- The soil properties values in Table 1 should be used for discussion linking it to established critical values to ascertain if it is low, moderate or high.
- Discussion of results part is totally lacking in this work. You only presented the results. This should be taken into consideration.
- Recheck this statement "Regarding kurtosis, only the data for the K variables are concentrated with respect to the mean (small standard deviation) giving an elongated plot". It is not clear. Where is the elongated plot, flattened or flattened plots?
- In table 2 recalculate the sill (Co+C1) and RN for all the soil properties, don't over approximate, be consistent with the number of decimal places.
- In addition, check existing literature to define geostatistical parameters in Table 2 appropriately.
- Items in Figure 4 are not label, your reader may find it difficult to know which is one pH, Ca, EC, K, etc. Please label them properly.
- Discussion of results is totally lacking in your work. You need to discuss your result and implication of your findings.
- In all the tables you used comma (,) in separating figures rather than dot (.). Check and correct them in all the tables.
- Figure 7 is not clear, present it in colour format for clearer visibility

Best Regards,

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