

Review of: "MCDA - Groundwater prediction analysis for Sustainable Development using GIS Supported AHP in Okeigbo, Southwestern Nigeria"

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Potential competing interests: No potential competing interests to declare.

I have gone through the manuscript entitled "MCDA - Groundwater prediction analysis for Sustainable Development using GIS Supported AHP in Okeigbo, Southwestern Nigeria". A GIS-based MCDA was applied to evaluate the potential of groundwater resources and their susceptibility to pollution in the Okeigbo region of southeastern Nigeria. The paper needs significant improvements and it can be published after addressing the following major comments:

1. What is the problem statement and motivation for carrying out this research?
2. The research gap should be mentioned in the 'Introduction' section.
3. Why AHP method is selected over other methods of MCDA such as fuzzy AHP?
4. A detailed figure showing the steps of the paper should be added.
5. References should be updated with recent publications. Suggested references:
Saqr, A. M., Ibrahim, M. G., Fujii, M., and Nasr, M., "Sustainable Development Goals (SDGs) Associated with Groundwater Over-Exploitation Vulnerability: Geographic Information System-Based Multi-criteria Decision Analysis," *Nat. Resour. Res.*, vol. 30, no. 6, pp. 4255–4276, 2021, doi: 10.1007/s11053-021-09945-y.
6. The paper needs rearrangement in some sections. Some descriptions like AHP should be moved from 'Results and Discussion' section to 'Materials and Methods' section.
7. The discussion part should be expanded and strengthened with comparisons with the literature to check the capability of the utilized methodology to be applied worldwide.
8. Concerning language improvement:
 - In the 'Abstract' section: Replace (north central) with (north-central).
 - In the 'Abstract' section: Replace (metadioritic environment) with (the metadioritic environment).
 - In the 'Abstract' section: Replace (protective capacity) with (the protective capacity).
 - In the 'Abstract' section: Replace (weak regional) with (a weak regional).
 - In the 'Abstract' section: Replace (the fracture basement) with (the fractured basement).
 - In the 'Abstract' section: Replace (water bearing) with (water-bearing).
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 - In the 'Abstract' section: Replace (possibility of movement) with (a possibility of movement).
 - In the 'Introduction' section: Replace (high intensity rains) with (high-intensity rains).
 - In the 'Introduction' section: Replace (nature and quality) with (the nature and quality).

- In the 'Introduction' section: Replace (lead to delineation) with (lead to the delineation).
- In the 'Introduction' section: Replace (usually involves) with (usually involve).
- In the 'Introduction' section: Replace (cost effective) with (cost-effective).
- In the 'Material and Method' section: Replace (built up) with (built-up).
- In the 'Material and Method' section: Replace (relative humility) with (relative humidity).
- In the 'Material and Method' section: Replace (, sillimanite) with (, and sillimanite).
- In the 'Material and Method' section: Replace (Structural feature) with (Structural features).
- In the 'Material and Method' section: Replace (sub parallel) with (sub-parallel).
- In the 'Material and Method' section: Replace (These preferred alignment) with (This preferred alignment).
- In the 'Data Acquisition and Analysis' section: Replace (not compensated) with (not be compensated).
- In the 'Data Acquisition and Analysis' section: Replace (availability of secondary) with (the availability of secondary).
- In the 'Data Acquisition and Analysis' section: Replace (draw down) with (drawdown).
- In the 'Data Acquisition and Analysis' section: Replace (USGS website) with (the USGS website).
- In the 'Data Acquisition and Analysis' section: Replace (SAGA tool) with (the SAGA tool).
- In the 'Data Acquisition and Analysis' section: Replace (logarithmic) with (a logarithmic).
- In the 'Results and Discussion' section: Replace (well drained) with (well-drained).
- In the 'Results and Discussion' section: Replace (mid central) with (mid-central).
- In the 'Conclusions' section: Replace (protective capacity) with (protective-capacity).
- In the 'Conclusions' section: Replace (as a result vertical) with (as a result of vertical).