

Review of: "Assessment of Quality of drinking waterbased on the water quality index method in Hawassa Zuria Woreda, Sidama Regional State, Ethiopia"

Kaouther Ncibi¹

¹ Université de Gafsa

Potential competing interests: No potential competing interests to declare.

The paper presents a study of **Assessment of Quality of drinking waterbased on the water quality index method in Hawassa Zuria Woreda, Sidama Regional State, Ethiopia**. In general, investigates the water supply situation in Ethiopia, where the majority of the population suffers from water-related diseases due to lack of access to safe drinking water distribution systems. The study aims to assess the quality of drinking water in a specific region of Ethiopia using the water quality index. However, I am struggling to identify the unique contribution of this manuscript. With the additional revision, the manuscript would be suitable for publication. In summary, there are still some aspects that can be improved to enhance the quality of the paper. Overall, the manuscript can be accepted with **Major revision**.

Authors are asked to make these corrections:

1. First, I recommend modifying the title of the article to the following formulation: **'Assessment of Drinking Water Quality Using the Water Quality Index Method in Hawassa Zuria Woreda, Sidama Regional State, Ethiopia'**. This modification would enhance the clarity and conciseness of the title, avoiding the repetition of the word 'of' while highlighting the main objective of the study.
2. The research gap should be highlighted in the abstract. The abstract should be improved.

The abstract should be written clearly and concisely and should not contain excessive detail about the methodology, such as the number of analyses or specific analyses. Instead, it should provide a brief overview of the study's context, objectives, methods, results, and conclusions. This helps readers quickly grasp the main points of the study without getting bogged down in details.

1. I recommend modifying the two keywords "Heavy metal pollution index" and "Heavy metal Evaluation Index" to "Heavy metals" and "Pollution Index" respectively. This modification would make the keywords more concise and focused, accurately representing the subject matter of the study.
2. In the introduction section, it is important to position the paper with regard to other studies reported in the literature, especially in the African context. Some references, for example, are suggested to be added to reflect the research background better:

Hamed et al. 2021 (<https://doi.org/10.1002/ird.2647>);

Ncibi et al. 2023 (<https://doi.org/10.1007/s11356-022-25016-y>);

Ncibi et al. 2022 (<https://doi.org/10.3390/w14244124>);

Missaoui et al. 2022 (<https://doi.org/10.1007/s11270-022-05806-3>);

Ncibi et al. 2021 (<https://doi.org/10.1002/ird.2599>);

Besser et al. 2021 (<https://doi.org/10.1016/j.jafrearsci.2021.104134>);

Missaoui et al. 2023 (<https://doi.org/10.1007/s41207-023-00345-7>);

1. I recommend combining the two sub-sections of “Sampling size for water quality” and “Water Sample Collection and storage” into a single subheading titled **"Water Samples Collection"** for a clearer and more concise presentation.
2. The same for both subtitles “Water Sample Analysis Methods” and “Instrument Operating Conditions and Calibration”, I recommend combining the two sub-titles into a single subheading titled **"Water Analysis and Calibration"** to streamline the presentation and provide a more cohesive description of the analytical process. Also, I propose to **shorten** this section for better conciseness and clarity.
3. I suggest merging the "Microbial Analyses" section with the "Water Analysis and Calibration" section, for better organization and clarity.
4. It is indeed recommended to include figures to present the location of the study area and the sampling sites, as well as tables summarizing the sources of each sample and the values of the conducted analyses. These visual elements will be helpful for better data comprehension and a clearer presentation of the paper.
5. It is crucial to consider the different sources of water samples and apply the appropriate evaluation method for each source. Make sure to specify in your report which evaluation method was used for each sample source. This will ensure an accurate and comprehensive analysis of the WQI pollution indices for each sampled water source.
6. I recommend dividing the discussion section into sub-sections to improve its organization and readability, as it appears to be too long in its current form. By structuring the discussion into smaller, focused sub-sections, you can effectively present and analyze the findings, address specific research questions, and provide a clear flow of information. This will make it easier for readers to navigate through the discussion and comprehend the key points being presented.
7. In the discussion section:
 - Try to improve that your methods are more useful by comparison with other studies that use a similar method,
 - Try to discuss how you should validate your choice to use these indices.
1. Try to check more the English language.