

Review of: "Reducing non-revenue water in Luxor-Egypt using GIS"

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Potential competing interests: No potential competing interests to declare.

The article "Reducing non-revenue water in Egypt using GIS" presents an important and timely investigation into the management of non-revenue water (UFW) in Egypt through the application of Geographic Information Systems (GIS). The study focuses on a systematic approach to reducing UFW, including leak detection, metering improvements, and the integration of GIS for better management and decision-making. While the study provides valuable insights into tackling a significant issue for water utilities, several areas could be enhanced or require further clarification for a more robust contribution to the field.

- The article could benefit from a more detailed literature review. A deeper exploration of previous studies on UFW reduction methods, particularly those involving GIS, could provide a stronger foundation for the research and help in identifying gaps this study fills.
- While the methodology is comprehensive, the article could provide more details on the GIS technologies used, including the specific software and versions, to enhance reproducibility. Furthermore, explanations on how data were analyzed within the GIS framework would strengthen the methodology section.
- The results section would benefit from a more detailed statistical analysis. The presentation of data and findings is clear, but incorporating statistical tests to assess the significance of the observed reductions in UFW could provide a more robust validation of the results.
- Every study has limitations, but this article does not explicitly discuss them. Acknowledging limitations related to the scale of the pilot area, potential biases in data collection, or the generalizability of the findings would provide a more balanced view.
- The study focuses on a single method for reducing UFW. A comparative analysis with other methods or technologies could offer insights into the relative effectiveness of the GIS-based approach.
- While the conclusions are based on the study's findings, the article could further elaborate on how these findings could shape future research. Suggestions for scaling the approach or investigating other variables that could influence UFW would be valuable.
- The study has clear implications for policy and practice, particularly for water utilities struggling with high levels of UFW. A section discussing how these findings can be translated into policy recommendations or practical guidelines for water

utilities would enhance the article's relevance.