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| Journal Name: | [**Asian Journal of Geographical Research**](https://journalajgr.com/index.php/AJGR) |
| Manuscript Number: | **Ms\_AJGR\_131437** |
| Title of the Manuscript: | **Evaluation of the conditions of old dams for compliance with risk management programs for dam safety through GIS and remote sensing.** |
| Type of the Article | **Original Research Article** |

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| **PART 1: Comments** | | |
|  | **Reviewer’s comment**  **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **Author’s Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | The scope of the research study is definitely of interest to hydraulic and civil engineers with focus on dam safety. However the author((s) projection of implementing GIS integrated AHP techniques using variant spatial dataset to determine dam safety and risk management criterion is not clearly addressed. The overall manuscript should be more focussed on the author(s) work and lessen write-up of other references. Conclusions need to be brief and concise of the  study findings. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | A more refined title as “**Evaluation of old dams for risk management and dam safety criteria using GIS and remote sensing**” is suggested. |  |
| **Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.** | Slight modification of the Abstract confined to the author(s) research work is suggested. |  |
| **Is the manuscript scientifically, correct? Please write here.** | * The manuscript has inconsistency in technical phrasings and write-up structure to depict the objective of the study lucidly. Author(s) need to focus on the writing flow and minimize phrasing/quoting from articles (other sources or references). * One of the most important sections of a general technical/scientific manuscript as “Results and Discussions” is not explicitly addressed. * Dimensions or structural elements of the Mindu dam (drawings or tabular matter) are not presented in the manuscript. * Section 4 Conclusions presented in the manuscript are general in nature and do not depict any specific findings from the AHP-based study. Reference writings (other authors) are prominent in this section and may be reduced. Author(s) should entail the definitive research findings on Mindu dam safety criterion. * As per Figure 2 Methodological flowchart, the final results should generate “Validation using AHP”, “Dam Safety Map”, etc, which are not provided in the manuscript. The author(s) should take note to either revise the flowchart or provide the end results. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | *References suggested for enhancing the research study*:   1. International Commission on Large Dams (ICOLD) related bulletins, guidelines, etc 2. CWC (2019) Guidelines for Assessing and Managing Risks Associated with Dams, Document No. CDSO\_GUD\_DS\_10\_v1.0, February 2019, Central Water Commission (CWC), Ministry of Water River Development & Ganga Rejuvenation, Government of India. |  |

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| **Is the language/English quality of the article suitable for scholarly communications?** | Needs improvement in phrases and sentence composition/restructuring wherever indicated (yellow highlighted) in the original manuscript. Suggested to use a Certified Manuscript or Proof Reading. |  |
| **Optional/General** comments | *Revisions suggested and/or justifications to be provided for the following*:   1. **page-4, Figure 1:** Study area showing the location of Mindu Dam (Author,2023)   In the figure the location of Mindu Dam is shown as a disarrayed polygon scatter (blue marking), the same needs rectification in the composed map where again the DEM layer may be provided in full map extent.   1. **page 4, line 2**: Section “2.2 Research design and data collection” – section heading may be generically written as “Methods and Materials” 2. **page-5, line 1–2:** In the study context, the sentence “Qualitative analysis of secondary sources complements geospatial findings, enhancing interpretations with expert insights and historical management practices.” seems somewhat irrelevant. The author(s) may substantiate on the statement or omit the same. 3. **page-5, line 5:** sub-section heading as “**2.2.1 Remote sensing data and data edifice”** may be more appropriately termed as **“Geospatial and collateral data”.** 4. **page-5, Table 1:** In 3rd row, Digital Elevation Model source is quoted as “Google Earth Pro ground points”. It is to bring to the attention of the author(s) that when open source DEMs – ASTER Global DEM (30m), SRTM (30 m resampled/90m), ALOS PALSAR (12.5m), etc are available, the author(s) need to coherently provide reasons as to why GCPs collected from Google Earth Pro was opted for the study. 5. **page-6, line 7–8:** Inconsistency in sentence and write-up structure as: Eigenvectors (He et al., 2020).   or consistent reciprocal matrices……   1. **page-7, line 4–8:** The paragraph matter is somewhat incoherent in its write-up. Needs restructuring of the same. 2. **page-9, line 16:** Revise the phrase/wording stated as “….as prominent by Gupta et al. (2019)…”. 3. **page-9, line 31–33:** The description provided for LULC extraction stated as “Specifically, information about the factors influencing LU/LC changes in the area was gathered from key informants” is perplexing. The author(s) already stated that LULC was derived from LANDSAT imagery. Then what are “key informants”? 4. **page-10, line 27–32:** The matter provided in the paragraph discusses about ecosystems, aquatic habitats, sediments, etc under the sub-section 3.1.1.3 “Distance to the Road and River” is incoherent with sub-section theme. 5. **page-10 to 11:** The matter Under the sub-section 3.1.1.4 Soil, the texture or taxonomy of the soil types in the study area are detailed or discussed. In respect of dam safety considerations, it is suggested that the engineering properties of soil (hydraulic conductivity, shear strength, cohesion, etc) are more relevant and should be highlighted. |  |

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|  | 1. **page-14, line 18–19:** In Conclusion section, it is stated that “The results revealed that structural stability was given the highest weight (53.4%)…”. In the manuscript, the matter on “structural stability assessment” has no where been discussed either implicity or explicitly in section 2 or 3. Author(s) need to explain or revise this imparity in the conclusion section. 2. **page-14:** In “References”, ~~Overlay, F., & Analyst, S.~~ (2023). *Fuzzy Overlay ( Spatial Analyst ) Title Fuzzy Overlay ( Spatial Analyst )*. 10–12.   Author(s) may be appropriately written. | | |  | |
| **PART 2:** | | | | | |
|  | | | **Reviewer’s comment** | **Author’s comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* | |
| **Are there ethical issues in this manuscript?** | | | *(If yes, Kindly please write down the ethical issues here in details)* |  | |

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| **Reviewer Details:** | |
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