

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC1  
<https://doi.org/10.5194/nhess-2021-34-RC1>, 2021  
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## Comment on nhess-2021-34

Anonymous Referee #1

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Referee comment on "Review article: A systematic review and future prospects of flood vulnerability indices" by Luana Lavagnoli Moreira et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-34-RC1>, 2021

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The paper "A systematic review and future prospects of vulnerability indices" presents a relevant discussion about the state-of-art of flood vulnerability indices. The authors offer an overview of the main stages for the development of vulnerability indices. I consider the main contribution of the paper is to point out the gaps in the flood vulnerability assessment (Section 5). The paper is well-structured and presents a logical order of the ideas.

### Specific comments

- **Line 7:** I would like to suggest to the authors to replace the first sentence of the abstract for the idea express in lines 58-59 (...no study has conducted a systematic review of flood vulnerability indices with a focus on the different stages involved in the construction of flood vulnerability indices). This is the main contribution of the paper and it draw attention of the reader.
- **Lines 24-25:** Vulnerability as a neglected dimension is a controversial statement that may jeopardize the paper; otherwise, how could it be possible to select 95 peer-reviewed papers?
- **Lines 34-38:** It is not essential for a review paper to present concept adopted in the manuscript. The discussion is based on many studies (i.e., 95 papers) – which used different vulnerability concepts. If the authors opt for maintaining the concepts, please quote the most updated reference of UNDRR (2017). I also recommend consulting Kelman (2018) for a broad comprehension of disaster risk science vocabulary.

Kelman, I. Lost for Words Amongst Disaster Risk Science Vocabulary?. Int J Disaster Risk Sci 9, 281–291 (2018). <https://doi.org/10.1007/s13753-018-0188-3>

- **Lines 75-114:** The Section 2 is a concise basis for the readers to understand the discussion in the next segments.
- **Lines 115-129:** Please inform the period of time (month/year) that the literature review was performed in WoS.
- **Line 119:** I would like to recommend avoiding some expressions such as “irrelevant articles”. They were not useful for the purpose of the present manuscript but probably they are relevant for another studies.
- **Lines 122-123:** Please consider providing a better description of the 11 articles included in the analysis. All the 84 papers quoted them? Which database are they indexed? Would be necessary to include another database, in addition to the Web of Science?
- **Lines 133-135:** I am not totally convinced with the reasons attributed by the authors for the increasing of papers published since 2015. Before the Sendai Framework for Disaster Risk Reduction some other international agendas were agreed by the countries, such as the Hyogo Framework for Action and the International Decade for Natural Disaster Reduction (the 1990s). The discussion about vulnerability topic therefore is not recent. Another reason pointed by the authors (i.e. “the easiness of using indices”) sounds quite superficial.
- **Line 163:** Please consider including an additional sentence to affirm that the data scarcity of rural areas is a worldwide issue (or at least for the 38 countries).
- **Lines 168-175:** Please consider reviewing this paragraph, the main idea is not clear. Are the indicators obtained by Rufat et al (2015) similar or not to the results found by the authors?
- **Line 176:** Table 4, please provide more information in Methods section about how the minimum number of papers (i.e., 4 papers) was defined as the most commonly used indicators.
- **Lines 256-257:** It is possible to develop study at the national scale aggregating census tracts.
- **Lines 264-265:** Please provide a brief comment about the framework presented by Jamshed et al (2020).
- **Lines 271-273; 321-322:** More than time and financial resources, including risk perception or past flood experience in studies requires a multidisciplinary team. It is still a challenge for disaster risk science nowadays.

## Technical corrections

- Lines 14 and 306: analyses instead of *analyzes*.
- LineS 25-27: please review the sentence, it seems incomplete.
- Line 133: SFDRR was not *created*, it is an agreement among the Member States.
- Line 162: repeated *in in*.
- Lines 187 and 188: see punctuation and typing errors.
- Lines 117, 233 and 237, 267, 321: see typing errors.
- Lines 254-255; 276; 290-291; 308-309: please rewrite some sentences in order to avoid the repetition of words (e.g. research; use and used; differentiated and different; difficult, difficulties and difficulty). I recommend a detailed revision of the manuscript to correct grammatical errors and improve the quality of the text.
- Table S1: it is a lengthy table, please repeat table header in each page.

