Flash floods versus river floods a comparison of psychological impacts and implications for precautionary behaviour

Reviewer comment on nhess-2018-407

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The authors have put quite some effort into incorporating recommendations made on previous versions of this manuscript, which is commendable.

As pointed out by Referee #1 in the previous iteration, I am still struggling with some parts of the text, which remain hard to read and understand – specifically Section 2. I would strongly advise to revise this section again with a focus on accessibility.

Some passages seem to be framed in a strange way throughout the text. For instance, Section 2.4 starts with 'To apply the Bayesian statistics and regression models, an indicator (...) had to be derived'. This implies that using a certain Bayesian approach is the main goal rather than actually answering a research question.

In the following, I have focused specifically on Section 2 (Data and methods):

- Section 2.3 (p9 l26ff): The authors might want to add that 'correlation' refers to rank correlation.
- Section 2.3 (p9 l27): The RStudio Version is not that relevant, since this is merely an IDE. If versions are reported, please report the R version and package versions instead.
- Section 2.3 (p9 l29): Albeit this is subject to subjectivity, I am not sure if I would call 0.54 to be a 'strong' correlation.
- Section 2.3 (p9 l32): Please note that calculating statistical power based on the observed effect size after the study has been carried out is fundamentally flawed. After the study, reporting confidence intervals for effects (ideally) or p-values is the proper way to present results.
- Section 2.3 (p10 l10): I am not sure if 'preliminary' is the proper word to use in this context.

- Section 2.4: I find this section very difficult to follow. There are lots of complex multi-clause sentences which left me quite confused. Upon reading the section multiple times, I think I finally know what the authors actually did, but this should be clear to the reader when reading this section the first time. I guess that some of the confusion is caused by the terminology - the authors mix the terms 'indicator', 'measure' and 'score' quite a bit throughout this section. We want to derive an indicator for planned precaution, which is derived from flash flood and river flood data sets (p10 l18). This indicator is based on existing studies. Then we suddenly have two indicators in this paragraph (planned precaution and already implemented precaution, p10 l23), consisting of measures (which measures?), which are weighted (how?) according to their damage potential. In the next sentence (p10 l25) 'it' (what is 'it' exactly? There are two indicators in the preceding sentence), resembles a score. This score of weighted measures (p10 l28) is summed up and related to measures (p10 l30 - shouldn't the score compared to the score and not the measures?) implemented before the event as well as missing answers (How can something be compared to missing answers?). Please streamline this section and try to clarify the procedure.

- Section 2.4: Also, I am under the impression that quite some information might be lost in constructing the indicator by first limiting the count to 8 and then reclassifying the resulting score (on a sidenote: I assume that the reclassification is based on equal interval sizes, but this is not described in the text).

- Section 2.5: Elements of Equation (1) are not explained in the text. Also, please note that likelihood is not called L in the equation, as mentioned in the text below the formula.

- Section 2.6: Please refer to Shannon-Entropy with respect to Equation (3) before defining it in Equation (4). It cannot be assumed that all readers are familiar with this concept (p12 l29, 'Where'). In addition, I think that the formula for Shannon Entropy is not clear. What is i in this context? The base of log is not clear either. I think it should rather read something like $\mathrm{H}(X) = -\sum_{i=1}^{n} \mathrm{P}(x_i) \log_b \mathrm{P}(x_i)$ with X being a discrete random variable with possible values $\{x_1, \ldots, x_n\}$ and probability mass function $\mathrm{P}(X)$.