

Interactive comment on “A comparative survey of the impacts of extreme rainfall in two international case studies” by Matthieu Spekkers et al.

Anonymous Referee #1

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General comment:

This paper makes a useful contribution to the need for assessing the damage potential of extreme rainfalls events and the determinants of precautionary behaviour and emergency actions of private households. This work also moves beyond typical pluvial flooding by including damages that are not caused by surface flooding (e.g. rainwater directly entering the building through roofs). The methods used for data collection and analyses appear justified and appropriate. Overall, the paper is well-written, well-structured and the presented results are supported by the analyses. Though the article is scientifically sound and worth to be published, there is a number of comments and recommendations to be considered, as outlined in the "specific comments" below.

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Specific comments:

Are the numbers for building style, years, sewer system also based on the 2016 GIS data (see Table 1.)? Please clarify from which source these figures were taken. The survey in Amsterdam does not only include data from the 28 July 2014 event, but also from other rain events that occurred after 2010. What does this mean and how does this affect the results? Please expand on this. Please provide a source for the data presented in paragraphs 2 and 3, p.5 Please provide more information on the composition of the Münster sample: % share of Münster, % share of Greven? It would be useful to provide information on how robust the results are, when the Münster sample would only include data from Münster, rather than lumping Münster and Greven into one and the same sample. What do you mean by "sample people" in last paragraph, p.8. Is this a typo? I believe it is not necessary to explain how the response rate was calculated (p.7). Presenting the actual response rates is sufficient. Please try to stick always to the same order when mentioning Münster and Amsterdam in the text. Also, keep the order of the two cities consistent across figures and tables. An inconsistent use of the order of the cities throughout the manuscript, tables and figures unnecessarily confuses the reader. paragraph 3, p.8: Please note how missing values were treated. Were missing values included in the calculation of the 39 % in Amsterdam? Without providing information on missing data, the figures are difficult to interpret. Wording regarding p-values should be used consistently: see " $p < 0.001$ " in Figure 4 and " $p\text{-value} < 0.001$ " in Figure 3. Please expand on or clarify "This is partly explained by the fact that respondents who reported ..." line 20, p.9. Also, there is a typo in this sentence (the ü is missing in Münster). last paragraph, p.11: "presented" instead of "asked" would perhaps improve the wording. first paragraph, p.17: "to make is applicable" should probably read "to make it applicable". second paragraph, p.17: "much as possible, but were relevant" should probably read "much as possible, but where relevant" second paragraph, p.17: use past tense in line 10, as in the rest of the paragraph ("was" instead of "is"). paragraph 1, p.13: There seems to be a problem regarding the causal chain "high flood experience" leads to "high risk perception" leading

to "preventive behaviour". If this argument was true, households in Amsterdam (more flood experience) would have taken more precautionary measures than households in Münster (less flood experience). In fact, it seems the opposite is true. The argument that a lack of experience with water intrusion may have led to an overestimation of risk does not seem to be plausible in this case. Please reconsider or clarify the causal change used in this paragraph. Further, the relationship between risk perception and flood precautionary behaviour is contested in the literature. A significant number of studies found that these two factors are unrelated. Please re-check the literature and expand on the argument.

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