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Natural Hazards and Earth System Sciences
Discussions

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

**Anonymous Referee #2**

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GENERAL COMMENTS

-The overall impression of the paper is good. The paper is well-written, builds on relevant previous findings, has a clean structure and an appropriate tone.

-Overall, I think the comparison of case studies from different countries is relevant and worthwhile as it brings the science together and bridges international differences, which seems particularly important in relation to the topic of pluvial floods. Although, the comparison of the two presented case studies is challenging given the inherent inhomogeneity, the study gives relevant insights, while also providing tools and recommendations for future research in this field.

-The title might be more specific as to which impacts of extreme rainfall (i.e. impacts on residential buildings) are addressed.



-The applied methods seem appropriate and are generally well described. However, related to the self-reported financial losses, it is not quite apparent how the consistency of the estimates by tenants and homeowners was assured (see also specific comments). Is it safe to assume that each respondent estimated the damage costs using the same assumptions (e.g. replacement costs, including or excluding costs for cleaning, considerations of deductibles etc.)? Do tenants have access to the same information as homeowners, so that the loss estimates are comparable? Furthermore, are the damage values representing damage values of the whole building and if yes, how were the damages to multi-family houses considered?

SPECIFIC COMMENTS

-P2, L6-7: I do not think that it is safe to assume that generally a considerable amount of damage is caused by water entering through the roofs. Spekkers et al. (2015) have shown that this holds for pluvial damages in Rotterdam, the Netherlands, and not elsewhere. These characteristics are likely reflecting regional or national characteristics and are not of general nature.

-P2, L15-32: In these two paragraphs, two approaches to collect ex-post damage data are presented and compared. As a reader, I am under the impression that loss data from risk transfer schemes are more prone to biases than data from scientific surveys. Firstly, I would argue that the potential biases are heavily dependent on the national or regional risk transfer scheme and particularly the respective insurance scheme. Secondly, the potential biases can usually be accounted for. At the same time, similar potential biases exist for data stemming from surveys, which is not mentioned. Therefore, I think it is appropriate to stress the apparent advantage of a complete temporal and spatial picture provided by risk transfer data (mentioned), opposed to the advantage of being able to consider many different factors by survey data (mentioned). As respective disadvantages, it might be worth mentioning that data from risk transfer schemes might be difficult to obtain due to privacy reasons (not mentioned), while survey data are expensive to collect and depend highly on the willingness of the affected people to

participate in the survey (mentioned).

-P2, L31-32: It is stated that an advantage of survey data over data from risk transfer schemes is the possibility to interrogate people that have not suffered any damage during specific hazardous events. However, it is not clear if and how this advantage has been exploited in the presented case studies.

-P5, L25-29: Tenants and homeowners were interviewed, while collecting data about damages to buildings and content. However, tenants might not know as much about the damages to buildings as the respective homeowner (assuming that the homeowner is responsible for building damages), while homeowners might not have detailed information about content damage of their tenants (assuming that tenants are responsible for content damage). Is this presumption applicable and if yes, how was this taken into account? Is there a link between missing values (and/or zero damage) of tenants and building damage, as well homeowners and content damage, respectively?

-P6, L34-P7, L2: Apparently, the total damage is computed in case information about the content and building damage is available. It is not clear, however, how this affects the sample sizes. This information should be reported (e.g. in Table 4 and Figure 6).

-P15, L3-8: The paragraph's message is not clear, as the first statement (i.e. the types of implemented emergency measures are related to the event's characteristics) is rather contradictory with respect to the second statement (i.e. the same emergency measures that are independent of the event's characteristics are preferred in both case studies).

-P16, L13: A generic questionnaire should is advocated. However, it is stated earlier (P14 L6-8) that regional characteristics should be taken into account, as well.

-Table 4: It would be helpful to see the relative numbers of zero damage, as well (in percent). Maybe it would be beneficial to report the numbers by means of a stacked bar plot, instead of a table.



TECHNICAL CORRECTIONS

-P2, L23: the expression “by it own” should be revised

-P6, L21-22: punctuation should be revised

-P7, L1: where instead of were

-P9, L21: the spelling of Münster and/or the whole sentence should be revised

-P9, L26: in terms of

-P13, L23 and L25: impact on

-P13, L32: such as the

-P14, L16: relates to the use

-P14, L18: However, a wrong

-P14, L19: A possible way

-P15, L1: were a lot / much higher

-P15, L7: such as provisionally

-P15, L11: the expression “rarity of observation” should be revised

-P17, L5: such a way

-P17, L23: people thought their damage

-P20ff: Check the references' dois and omit weblinks where dois are available, e.g. P21, L27-28: omit link to discussion paper; P21, L31-33: omit (two different) web links; P22, L5-6: wrong doi

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