

## ***Interactive comment on “Social vulnerability of rural households to flood hazards in western mountainous regions of Henan province, China” by D. L. Liu and Y. Li***

**Anonymous Referee #1**

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The paper titled “Social vulnerability of rural households to flood hazards in western mountainous regions of Henan province, China” provided a data-driven evaluation of the possible influential factors that affect household vulnerability to flood hazards. This is an interesting study that adds to the knowledge towards better understanding this particularly unique group. The methodology employed in the study and the underlying assumptions are generally sound. But the paper could be improved on better presentation and articulation of details. Also, a general assessment of what this group’s vulnerability is different from existing literature on flood hazard vulnerability should be discussed in order to put the study outcome in a broader context. The following are a list of suggested the authors can consider:

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1. Abstract needs improvement. The abstract will be more effective if the authors can articulate the significant of the study outcome, rather than restating the conclusion. Potential suggestions of flood mitigation for this region should be clearly stated.
2. Authors listed a lot of work had been done by other people/studies, however, more details need to be summarized for each paper so that reader had clear understanding of what had been done and their connection to the current study. This will help to answer the question why the authors choose index method to perform the vulnerable analysis on this particular area, etc.
3. Similarly to suggestion above, the assessment method (historical data, scenario data, GIS data, index based data) need to be introduced in detail and justified to some extent in pg. 6730.
4. Need explanation on why the population was chosen. The survey targets are suggested by local officials, what were the criteria used?
5. For the weight of eight selected indicators, is there a rationale why some factors were weighted more, while others were weighted less. Why the vehicle per capita had such a high weight in rural area in China. Do a large portion of the family surveyed have the income to make private vehicle an option?
6. There are only 94 survey results been used for the case study, so the review recommend to have a table or chart to present the original survey data (or statistics) for each category so that reader will understand how the author get high, moderate and low vulnerability index for each category.
7. Need more explanation on the correlation coefficient of HSV score, what does this indicate? (pg. 6734)
8. It will be nice to show the regression results graphically in some way.
9. In conclusion (1), there is no need to describe the weight for each category, it is clearly listed in Table 1, also, this is not appropriate in conclusion part.

Technical corrections:

1. Pg. 6730, Line 2, “historcial” typo?
2. Pg. 6731, Line 10, should be “was detailed described”
3. Pg. 6732, Line 3, what does “yr-1” mean?
4. Pg. 6735, Line 25, “strategies” typo?
5. Pg. 6736, Line 2, should be total, not “totle”
6. Pg. 6737, Line 6, should be “interesting”

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/3/C2493/2015/nhessd-3-C2493->

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