Interactive comment on "Evaluating and analyzing the comprehensive community disaster reduction capability" by Dajun Lian et al.

Anonymous Referee #1

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First of all, thank the experts for carefully reviewing our papers, putting forward pertinent comments and detailed suggestions. We organized the authors to analyze and discuss the problems raised by experts and formed a consensus. Before the submission of the revised paper, we will retouch the paper word by word, and adjust the structure of the paper according to all the reviews and experts' opinions. We will respond to the above questions one by one.

Literature and significance: The significance of the paper and the proposed index is not clearly explained. The proposed index of the community comprehensive disaster reduction capability (CCDRC) should be presented in a disaster risk management/science context.

Response: The secondary indices in the index system are described in detail in the appendix 1 at the end of the paper, and the meaning of the primary evaluation indices will be supplemented when submitting the revised manuscript; the first part of the paper (1.Introduction) has made a description of the relationship between CCDRC and disaster risk management. In the revised version, we will strengthen the content in accordance with the experts' suggestions.

What is the significance of the CCDRC to the scientific community?

Response: The overall strengthening of regional comprehensive disaster reduction capability was first proposed by the Chinese government in 2006 after several major natural disasters. In 2011, the overall work thought of China was fully elaborated. As the basic component of the urban public disaster prevention and reduction work, the community is the object of the direct action of different types of disaster causing factors, as well as the concrete and direct bearing body of the compound disaster. This has become the common understanding of the international academic circles. The CCDRC quantitative evaluation method and the empirical analysis described in this paper can be used as a universal compliance in the community based disaster risk management model (CBDRM), and it can also be a useful supplement to China's NDCCDR evaluation method.

How do the findings contribute to relevant literature?

Response:1, it can provide reference for disaster risk management technology on community scale; 2. The index system constructed in this paper takes into account the characteristics of all types of disaster risk, the whole process of disaster management and the main body of disaster prevention and disaster preparedness, which can provide decision-making support for the efficient disaster relief management of local governments; 3. The model is simple and easy to operate, and the results of the evaluation are diverse and universally suitable. The results of this paper have a practical reference value for related research and practice in China.

How can the results be used to improve disaster risk management? In my opinion, the proposed CCDRC is also highly related to vulnerability and resilience, which have numerous literature including a lot at a community scale.

Response: The evaluation index of CCDRC includes disaster risk assessment, and its evaluation results are helpful to disaster risk management and control. The primary evaluation indices of this paper contains engineering defense capability, which can also reflect the vulnerability, but the CCDRC and resilience also have related characteristics, which is a shortage of this paper and explained at the end of the paper (Line 558-560).

I suggest the authors improve the literature survey and identify the significance of the proposed index and the findings.

Response: We will continue to strengthen the literature review, further refine the evaluation indicators, and consolidate the significance of the research results.

Data: Very limited information is given about the data. What are the source, type, reliability, accessibility, and temporal scope of the employed data? What is the spatial size of the study area or the communities?

Response: The evaluation index data mainly comes from two aspects, (1) The spatial data is derived from the spatial database of Suzhou in 2015. The file type is mainly shp file. The data is checked before the use of the data. Some new ground objects are updated to keep the time of the attribute data, and some indexes are calculated with the help of the ArcGIS software. (2) The Suzhou Municipal Bureau of Civil Affairs organizes the acquisition of attribute data and entrusts Civil Affairs Bureau of SND to conduct investigation and statistics. All data were reviewed before the summary, so as to guarantee the real and effective data. We will supplement the study area in the revised draft.

Methods: The methodology is not well explained. First, the primary and secondary indexes of the CCDRC should be clearly explained. How are the indexes included and structured?

Response: The principle and evaluation steps of the research method were described in the

third part. In section 4.3, taking the rescue and support ability of the primary index and the corresponding secondary indices as an example, the calculation process of the primary indices and the secondary indices' target center degree is introduced. Limited to the length of the paper, there is no detailed description of other indices' calculation process.

Second, what is the relationship between the CCDRC index and the evaluation criteria of the "National demonstration community of comprehensive disaster reduction (NDCCDR)"?
What are the reasons that the NDCCDR is imperfect (line 8, 109)?
Why the CCDRC and the NDCCDR should be combined (line 25)?

Response: In response to the State Council's spirit of comprehensive strengthening of regional comprehensive disaster reduction capability, the National Disaster Reduction Commission and the Ministry of Civil Affairs have continued to organize and carry out the selection of the "National demonstration community of comprehensive disaster reduction" since 2008. So far, thousands of communities have been selected in China. The NDCCDR evaluation index system is composed of 10 primary indices and 35 secondary indices. However, the system has the following problems, such as redundancy among the primary indices, no indicators that reflect the rescue and security capabilities, and the system has not been updated since 2008; Thus we believe that the evaluation index system of NDCCDR has its own defects. However, NDCCDR plays a demonstration role in the whole country. Local governments take NDCCDR as the basis and direction of the building of CCDRC. Therefore, the evaluation of CCDRC should be carried out in conjunction with NDCCDR.

Conclusion: In my opinion, the index-based result can only help to identify relative high or low units but unable to present if the study area is weak or not. I thus disagree with the conclusion that the study area's CCDRC is relatively weak (lines 20–21, 487). It should be confirmed by a comparison between the results of the investigated area with other regions.
Response: Another important reason why we combine CCDRC with NDCCDR is that the CCDRC of NDCCDR is generally better. The findings of this paper also prove this point （Line397-405）. In addition, Suzhou City is located in the most developed area of China, with a large investment in disaster prevention and mitigation, and its CCDRC is in the leading position in China as a whole. Based on the above two points, we take the CCDRC of NDCCDR in this area as the criterion to get the conclusion that the CCDRC of the study area is relatively weak. To avoid ambiguity, we still decided to accept the expert's suggestion to replace relatively weak with relatively low (lines 20-21, 487) in our future revised manuscript.