Response to Anonymous Referee #2

Dear reviewer,

We are extremely grateful for your constructive feedback. It has greatly improved the quality of our manuscript.

We have made revisions one by one according to your comments and suggestions, and the revised manuscript has been uploaded together with the response letter. In the revised manuscript, the newly added and altered sections are highlighted in red, to hopefully facilitate your review.

The answers for the suggestions and comments are as follows.

Q: Regarding line 17 on page 14, I would appreciate it if you could clarify the basis on which the author divided the communities into four categories. Was there any previous study used as a foundation for this classification?

Authors' responses:

Thank you for your insightful suggestions and ongoing support.

In our study, we outline the rationale for classifying the target community into four types. Table 1 provides a description of the characteristics of these community types: Within China's metropolitan regions, the housing reform policy has spurred a socioeconomic spatial division within communities. Analyzing Wuhan City's district housing plan, we categorized target communities into four types (Table 1): high-grade residences (Type I), newly demolished and rebuilt communities (Type II), old demolished and reconstructed communities (Type III), and urban villages (Type IV). Urbanization and land expansion have furthered this spatial diversity, leading to varying stages of development across communities. Consequently, distinctions emerge in scenery, public facilities, and administrative management levels.

We apologize for any inconvenience caused by readability issues. We've revise the sentence to enhance clarity and conciseness. "Within the ambit of our study, eleven communities, labeled A to K, were systematically categorized into Types I to IV (refer to Section 2)".

Response to Referee #3

Dear reviewer,

We are extremely grateful for your constructive feedback. It has greatly improved the quality of our manuscript.

We have made revisions one by one according to your comments and suggestions, and the revised manuscript has been uploaded together with the response letter. In the revised manuscript, the newly added and altered sections are highlighted in red, to hopefully facilitate your review.

The answers for the suggestions and comments are as follows.

Q1: The main flood event for which the paper conducted the survey is the one from 1998, and we are in the year 2023, 25 years after. There is no age distribution of the ones who responded to the interview, to see for how many the 1998 flood was still relevant. Moreover, after 25 years people tend to forget. How was that taken into account while studying social vulnerability? were the city areas in 1998, the same as now, for sure not. if the community type changed, how did it affect their flood perception.

Authors' responses:

Thank you very much for your suggestions.

The context of this paper is not centered around the 1998 Yangtze River flood. In addition to the 1998 flood, the Wuhan region has experienced multiple instances of flood disasters, resulting in significant economic losses and casualties. Therefore, Wuhan is considered a flood-prone area. We discuss this in the paper："Changes in lake water levels have had a weaker relationship with the Yangtze River since 2000, when the dam was completed. However,the main effects were precipitation and industrial, agricultural, and household water use. As a result, the flooding induced by the rising water level of the inner lakes was the primary hazard risk in Hongshan District."

In the "Data collection and analysis" section, we wrote conducting preliminary interviews and questionnaire surveys in June and July 2021. The inquiries during the investigation focused on the current situation, not their recollections of the events in 1998. We apologize for any inconvenience caused by readability issues.

Q2: The methodology section lacks detail. For example it is not very clear how from the three weights of the indicators for exposure, one would come up with a weight for exposure itself?

Authors' responses:

Thanks for your insightful suggestions.

And we apologize for any inconvenience caused by readability issues. In the "Determination of weight" section, we outline the method for calculating the weight of each index/indicator. "To enhance scientific rigor, we employed the arithmetic average, geometric average (Dvorák 2016), and eigenvalue (Golub and Van der Vorst 2000) methods. Subsequently, we considered the average derived from these calculations as the final weight for each indicator (refer to Table 3)." References have been included to illustrate the standardization process.

Q3: Indicators seem to have too many digits after the dot. For example how can a weight of 0.179836 have more influence than 0.179 or 0.18. Did the researchers try to see.

Authors' responses:

Thank you for your insightful suggestions.
Following your advice, we have made modifications to the indicators, retaining two digits after the dot.

Q4: Figures have too long captions, difficult to follow. Titles/captions should be short and suggestive and all the other explanations should be given in the main text of the manuscript.

Authors' responses:

Thank you very much for your suggestions.
For image captions, these suggestions were shared by the initial two reviewers. The original manuscript included only titles, lacking accompanying explanations. Ensuring reader comprehension of images without delving into the main text may be pivotal. If you maintain this stance, integrating them into the main text is a possibility. However, further discussions with additional reviewers or editors are necessary.

Q5: Conclusions need to be more critical about the results. In the end all is lummped in a number, the vulnerability as an index need to be used along with other data.

Authors' responses:

Thank you for your insightful suggestions.
In our last revision, we engaged professional editing services, refining the entire manuscript with the assistance of a native speaker. This time, we have thoroughly examined the entire text in line with your recommendations. And the revised parts have been highlighted in red.

Q6: Overall the paper is well written, though some parts need rewriting, for example page 11, line 2-9.

Authors' responses:

Thanks for your insightful suggestions.

In accordance with your advice, we've revised the conclusion, highlighting key research findings and presenting results that diverge from both previous studies and the prevailing notion.