

Reviewer 2

Comments 1: The observations in 5.2.1 and 5.2.2 are presented in previous sections of the manuscript. They may be briefly summarised in the Conclusions.

Response 1: Thank you for this helpful suggestion. We agree that the key observations discussed in Sections 5.2.1 and 5.2.2 can be more concisely synthesized in the Conclusions. Accordingly, we have revised the Conclusions to emphasize that human and economic impacts exhibit distinct spatial patterns, with corresponding differences in population and economic exposure. We have also clarified that the observed spatial patterns and centroid changes represent the spatial distribution and redistribution of recorded disaster impacts and should not be interpreted as changes in global seismic activity. These revisions provide a more concise synthesis of the main spatial findings and their interpretation without repeating the detailed discussion presented earlier in the manuscript.

Comments 2: Similarly, the discussion in 5.2.3 can be briefly summarised in the Conclusions.

Response 2: Thank you for this suggestion. We have revised the final paragraph of the Conclusions to more clearly summarize the implications discussed in Section 5.2.3. Specifically, we now emphasize that the contrasting patterns of human and economic impacts indicate that earthquake disaster risk cannot be fully characterized by a single impact dimension. We further note that global earthquake risk assessment and preparedness should consider earthquake characteristics together with population and economic exposure, while recognizing the different spatial expressions of human and economic consequences. This revision provides a concise synthesis of the practical implications of the study while maintaining the global scope of the manuscript.

Comments 3: The first two directions of future research in 5.2.4 refer to national- and asset-level data. This would be useful for better understanding of risk at those levels, but may not be particularly insightful at the global level, which is the scope of this paper.

Response 3: Thank you for this important observation. We agree that the first two future research directions in the previous version placed excessive emphasis on subnational and asset-level analyses and were therefore not fully aligned with the global scope of this study. We have revised Section 5.2.4 accordingly. The revised section now focuses on global-scale research priorities, including improving the temporal and regional comparability of global disaster records through cross-database integration and validation, integrating globally consistent and time-varying data on earthquake characteristics, population exposure, economic conditions, and disaster preparedness, and examining the stability of spatial associations and impact patterns under changing population, economic, and exposure conditions. The references to subnational variation, building characteristics, and asset-level exposure have been removed.