

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC2  
<https://doi.org/10.5194/nhess-2022-69-RC2>, 2022  
© Author(s) 2022. This work is distributed under  
the Creative Commons Attribution 4.0 License.



## Comment on nhess-2022-69

Vipin Kumar (Referee)

---

Referee comment on "Landslides triggered by the 2015 Mw 6.0 Sabah (Malaysia) earthquake: inventory and ESI-07 intensity assignment" by Maria Francesca Ferrario, Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2022-69-RC2>, 2022

---

### Comments on the research article (NHES-2022-69):

Author aims to elaborate spatial patterns of earthquake (2015 Mw 6.0 Sabah (Malaysia) triggered landslides using Landslide Number Density (LND) and Landslide Area Percentage (LAP). Author further applies the Environmental Seismic Intensity (ESI) scale-2007, considering epicentral intensity of IX (based on landslide affected area). The ESI-07 is used by utilizing the volume of landslides, which is determined using published landslide Area-Volume scaling relationships. The article is mostly well written except few clarifications/elaborations that will make potential readers having diverse backgrounds more interested.

### Comments:

- Author needs to include both pre- earthquake landslide (if any) and post-earthquake landslide inventory of the study area to effectively demarcate the "co-seismic landslide affected area". This affected area is crucial in view of the utilization of ESI-07 scale.
- Author also needs to recalculate the LND and LAP in view of the possible changes in the inventory caused by exclusion of pre-earthquake landslides.
- Though it might be difficult to classify 5198 landslides based on type, effective usage of the landslide area-volume (A-V) scaling relationships require type classification. Most of these A-V scaling relationships have been obtained in specific geological and/or climatic settings and have been subjected to defined hillslope material. Notably, Larsen et al. (2010), who used an inventory of >4000 landslides, observed that  $\gamma$  varies based on hillslope material. Further, why did the author include only 6 of the many published landslide A-V scaling relationships?
- Earthquakes generally result in many rock fall type landslides, as the author also showed in Fig. 2c. Author could have included some A-V relationships that have been

proposed for rock falls.