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Comment

# ***Interactive comment on “Regional trends and controlling factors of fatal landslides in Latin America and the Caribbean” by S. A. Sepúlveda and D. N. Petley***

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General comments:

The paper by Sepúlveda and Petley uses landslide fatality data extracted from Spanish literature & media sources, along with social and physical variables, to explore the factors influencing landslide losses in Latin America and the Caribbean. Overall, the paper is well written, and the data, methods, and interpretations appear mostly sound. The contribution of this paper to understanding landslide losses is not ground-breaking, largely confirming previous (albeit coarser resolution) work, but nonetheless the data

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are interesting and could be of value. However, the authors could do more to convince us that their paper and findings are of value. What has been learnt about the benefits of using the local language in search databases? How can these findings be used to actually reduce losses in these regions? If rainfall, topography, population density, research, and corruption are important factors (even if not the only factors), what do the authors suggest can be done to turn this information into a reduction in losses? Perhaps this is an unfair question to put to the authors alone, but I imagine that the authors could have some ideas that would be worth sharing; doing more to answer this question would perhaps help justify this interesting piece of research.

Specific comments:

I have no doubt of the value of improving the reliability and completeness of datasets for any hazard, but the 5 % gain in data generated by using Spanish search terms, in addition to English, is surprisingly low. In fact, this relatively small gain might seem, to many readers, to hardly justify the additional effort that the collection and validation of these data probably required. The authors do not explicitly comment on whether or not they considered this extra 5 % worthwhile, or if they would, in hindsight or in future work, recommend this approach. It would be helpful if the authors could demonstrate whether or not this additional information would have significantly changed their analyses, so that other global or regional hazard data collection programs could better assess the value of using local language search terms. Furthermore, perhaps the authors could spend more time discussing the reasons for why this 5 % increase was so low – does it reflect the dominance of the English language in science publications, aid-organisations, and global media? Or does it reflect the fact that Spanish is the first language for only about 60% of Latin America and the Caribbean, and the word for ‘Landslide’ in Portuguese (which is spoken by about 1/3 of the population in the region) is different to that of Spanish? It would be helpful to list, in the Methodology section, the search terms actually used.

While the analysis showed that there is some negative correlation between fatalities

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and research on landslides, the correlation is not particularly strong, nor is there any deeper exploration of what factors might influence this correlation. While it is probably beyond the scope of the research presented here, it seems that a useful recommendation for future work would be to explore this data and these relationships further (if not possible to do with the data presented here) – do different types of research (e.g. landslide risk studies, hazard studies, susceptibility studies, disaster response reports, geotechnical reports), or the journals in which research is published (local journals/publishers, high impact-factor journals, open access) show different correlation strengths? This could shed light on what types of research and publication options are most beneficial. I'm sure that the authors would believe that the quality, applicability, communication, and implementation of the research are of importance for reducing landslide risk, rather than any landslide research per se. The authors argue, in the Conclusions section, that increasing an understanding of landslides would probably help reduce landslide losses, but it is a shame that they were not able to use the data to say more than this; and as such, this 'more detailed analysis' has not significantly advanced the earlier conclusions of Petley (2012b). Likewise, the authors have shown that there is a strong correlation between rainfall, slope, population density, and corruption. This is perhaps not surprising to many people, but the authors could have taken this finding a step further and put forward some practical suggestions for how this information could be used to reduce losses; what further research needs to be done, or can authorities already start using this information to start making reductions?

P 2783 | 15-22. These sentences are difficult to make sense of. Presumably the 'slight reduction in gradient' mentioned on line 15 refers to a reduction through time? If not a reduction through time, what is the reference point for the reduction? If it is a reduction through time, then I have difficulty understanding how the explanation for this reduction was arrived at: '...due to undersampling of small cases...'. The undersampling must be an issue for all years and the authors do not put forward any evidence to suggest that the sampling quality changed through time.

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Interactive Discussion

Discussion Paper



P 2786, l 10-11: It says ‘We have also examined the relationship with other socio-economic factors such as...’ but doesn’t go on to say what these relationships were. The sentence that follows certainly does not help: ‘A weak increasing trend of fatalities induced by landslides can be observed...’ This sentence seems to only describe a trend over time, not a relationship/correlation between landslide fatalities and either of the two indices from the previous sentence. Is something missing?

P 2786, l 10-18: It would be useful to see the correlations referred to here, either correlation scores or graphs, presented either in the main paper or in appendices.

Technical corrections:

P 2779, l 7: insert ‘been’ between ‘previously’ and ‘considered’

P 2782, l 3: suggest changing this sentence to: ‘Whilst the dataset from 2000 is now somewhat out of date, it remains one of the most comprehensive datasets available.’

P 2785, l 5-7: Would this sentence read better as: ‘However, at a local scale, the geology is likely to be a key factor determining the occurrence of landslides, but because of the coarse scale of the data used here, no further analysis was undertaken’ ?

P 2786, l 14-16: ‘A similar result is obtained...’ Similar to what? Similar to the weak decreasing trend, or the strong correlation between landslide fatalities and population density?

P 2788, l 11-12: check sentence: ‘...should be accounted for a more refined analysis.’

P 2791, l 8: to make less ambiguous, suggest changing ‘that in this approach’ to ‘that in the World Bank approach’

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