Nat. Hazards Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/nhess-2017-264-RC2, 2017

Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Scale and spatial distribution assessment of rainfall-induced landslides along mountain roads" *by* Chih-Ming Tseng et al.

Anonymous Referee #2

Received and published: 30 November 2017

General comments: The authors propose in this paper an assessement of landslide susceptibility in a mountain area in Taiwan. The manuscript, which can be interesting for people studing relations between landslide susceptibility and hydrology, has several problems that can be improved after a minor revision. Readers more interested with interactions between natural hazards and roads stay more on the sidelines.

Specifics comments: The state of the art of the methods to evaluate factors influencing landslides in the Introduction is well detailled but can be better structured. I suggest to add more information / specifications about the study area (surface, length, meters above and under the road path, etc.) and the road (type, traffic, closure consequences,

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length, history, etc.). The presence of the “road” term in the title does not well represent the manuscript content. It should be more focused about the road. Please define and describe the “landslide” term used in this paper (area, volume, depth, geology, etc.). What kind of landslides do you consider? There are to much subchapters (2.3.1, 2.3.2, etc.), to much figures and tables in my opinion. I suggest to move some of them in appendices (as Table 9 for instance). Please try to reduce the number of subchapters and keep only the really relevant Figures and Tables for the comprehension of the manuscript.

Technical corrections: - Page 1, line 18 : mm value for the annually rainfall is wrong, it should be: 2’506 mm and not 2.506 mm. - Page 2, line 23 : Are really images consistent in quality ? Clouds, shadows, etc. - Page 3, line 23 : Studies have indicated. . . Which studies ? - Page 3, line 1 : The results of this study could serve as a reference.. Maybe too presumptuous. - Page 4, line 18 : Please define x. - Page 5, line 5 : Please define k. - Page 6, line 9 : Please define d. - Page 6, line 25 : In the table: Please add the Table number. - Page 7, line 5 : Please give the complete name of OA. - Page 7, line 15 : Please give explanation of Xi+, X+i, Xii. -Page 7, line 23 : Please give the complete name of EAR. -Page 8, line 20 : Please give the complete name of IR. -Page 8, line 25 and 26 : contradiction between I (rainfall intensity) and IR (not explained). -Page 9, line 14-15 : Please reword the sentence. -Page 9, 4.1, please give image info’s (resolution, surface, etc.). -Page 9, line 25 : different interpretation factors: which ones ? -Page 10, line 4 : why 8 x 8 m (and not 10 x 10 m or 5 x 5 m) ? -Page 10, line 5 : we also constructed an . . . DEM: how ? -Page 10, line 16 : 1480.6 and 265.2 m: are the values after the dot really needed? -Page 10, line 23 : seven grades: why seven, for what reason ? -Page 10, line 22 : seven grades: why seven, for what reason ? -Page 10, line 27 : six categories: why six, for what reason ? -Page 11, line 5 : five grades: why five, for what reason ? -Page 11, line 10 : six grades: why six, for what reason ? -Page 11, line 16 : six grades: why six, for what reason ? -Page 11, line 18 : seven grades: why seven, for what reason ? -Page 11, line 20 : seven grades: why seven, for what reason ? -Page 12, line 2 : six grades: why six, for what reason ?

-Page 12, line 7 : SPSS : maybe add Âń software Âż to more better describe what it is. -Page 12, line 25 : seven grades: why seven, for what reason ? -Page 13, lines 3 and 4 : please clarify the sentence with the values in " () " : 2.02 and 9.96 = I3R. -Page 13, line 20 : four level : why this repartition and not 0-25, 25-50, 50-75 and 75-100 ? All figure and table captions : please verify that every caption is ended by a ".". - Page 24, caption Figure 2 : which "blue line" do you mean ? Please try to redo the image (for example the "t" Toayan district, is not well readable), colours are no well appropriated. - Page 35, Table 2 : where aere the "before" and "after" data in the error matrix (lines or columns) ? Please clarify. - Page 38 : Table 5 : table not necessary / relevant for the paper. -Page 39 : Table 6 : please give units. -Page 44 : Table 10 : please define Dt,min and Dt,max.

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