

Interactive comment on “Creating a national scale debris flow susceptibility model for Great Britain: a GIS-based heuristic approach” by Emma J. Bee et al.

Anonymous Referee #1

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1) Pag. 4 line 13: some GIS based statistical landslide susceptibility assessment have been performed distinguishing between landslide type (see for example Trigila A., Fratini P., Casagli N., Catani F., Crosta G., Esposito C., Iadanza C., Lagomarsino D., Lari S., Scarascia-Mugnozza G., Segoni S., Spizzichino D., Tofani V., 2013 Landslide susceptibility mapping at national scale: the Italian case study. In: K. Sassa, P. Canuti, C. Margottini (eds) Landslide science and practice Vol. 1 Inventory and hazard assessment. Springer, pp. 287-296). 2) Par. 2.2 Predisposing morphological and geological factors: please specify the map scale of the input data (eg. Soil-Parent Material database, GCI, Quaternary Domain Map) 3) Figure 4.d: please check the legend 4) Par. 2.2.3, Table 2: In the text “Scores assigned to slopes overlaying a stream channel

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were increased by a factor of two in the 20 - 30° and 15 - 20° categories”; in the table score assigned to the categories are 4 and 6; in the caption “Score increased to 16 or 28”. Please check 5) Par. 2.2.3, line 18: “archyrdo tool” instead of “archydro tool” 6) Par. 2.23: I suggest to calculate the distribution of slope angle (histogram) in the study area and at the debris flow point (see for example Van Westen, C.J., Castellanos E., Kuriakose S.L. (2008) Spatial data for landslide susceptibility, hazards and vulnerability assessment: an overview. *Engineering geology*, 102 (3-4), 112-131) 7) Par. 3 Results and discussion, pag. 14, line 12: please enter “frequency ratio” formula 8) Par. 3, pag. 15, line 12: In the text “Vakhshoori and Zare, 2017”; in References “Vakhshoori and Zare, 2018”; please check 9) Par. 3, pag. 16, line 15-18: in order to consider the heuristic model as the most appropriate on the study area, I suggest to compare it with a statistical model (bivariate/multivariate; see for example Lee S., Min K., 2001 Statistical analysis of landslide susceptibility at Yongin, Korea. *Environmental Geology*, 40, 1095–1113; Reichenbach P., Rossi M., Malamud B.D., Mihirb M., Guzzetti F., 2018 A review of statistically-based landslide susceptibility models. *Earth-Science Reviews* 180 (2018) 60–91).

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