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# ***Interactive comment on “Landslide susceptibility mapping in Mawat area, Kurdistan Region, NE Iraq: a comparison of different statistical models”***

**by A. A. Othman et al.**

**Anonymous Referee #1**

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The paper is focused on the comparison of landslide susceptibility zonations derived using four susceptibility models in the Mawat area, Kurdistan Region, NE Iraq. The models proposed are frequency ratio (FR), weight of evidence (WOE), logistic regression (LR) and probit regression (PR). Among those the PR was applied for the first time for the susceptibility zonation. In the entire paper, the authors use the term LSI landslide susceptibility index to refer to a probabilistic susceptibility. Landslide susceptibility is more appropriate to avoid confusion with susceptibility index-based estimation approaches. The landslide terminology in not always correct (e.g. triggering area in place of depletion zone, etc.). Some of the paper speculation

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on the susceptibility comparison are based on small differences in the susceptibility model performances: this can be critical in particular if not considering the possible uncertainty associated to the different susceptibility model. Basically the authors need to prove that the differences obtained using the different models are not within the modelling uncertainties. Moreover, the paper has two additional critical problems: (i) the authors make wrong use of ROC term, indeed they use this term to refer to success rate curves, (ii) the authors make wrong use of the term of validation to define model skill prediction performance measures. The tables in the appendix can be probably put in the text, in any case these need to be correctly numbered. English grammar need a check, in particular the verb tenses are not correct in all the cases, probably the use of past tense in place of the present for describing what was done in the analysis is more appropriate. Please see the following section for specific comments.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/3/C381/2015/nhessd-3-C381-2015-supplement.pdf>

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