Supplementary Information for "Towards Bespoke Stakeholder-relevant Disaster Impact Metrics"

Chenbo Wang[a*], Fabrizio Nocera[a], Gemma Cremen[a], Carmine Galasso[a], Vibek Manandhar[b], Prayash Malla[b]

[a]Department of Civil, Environmental and Geomatic Engineering, University College London, United Kingdom

[b]National Society for Earthquake Technology - Nepal, Nepal

[*]Corresponding author: Chenbo Wang; chenbo.wang@ucl.ac.uk

1 Survey implementation

Three rounds of workshops were held by National Society of Earthquake Technology - Nepal (NSET) on 22 July 2023, xyz August 2023, and xyz August 2023, respectively, to gather stakeholders (32, xyz, and xyz stakeholders per round), introduce them to the background of this study, and assist in filling in the questionnaires (see Figure S1). We adopt in-person workshops instead of web-based surveys considering some stakeholders' limited access to computers. Transportation reimbursement and lunch boxes were provided to the stakeholders as compensation in line with the ethics guidelines of University College London and NSET.

Figure S1. The Disaster Impact Metrics workshops held by NSET in Kathmandu, Nepal (July - August 2023).

2 Web applications

Figures S2 and S3 show the graphical user interfaces (GUIs) of ***CompareDIMs*** and ***RankDIMs***.

There are three separate panels in the GUI for ***CompareDIMs***. The left panel contains a button which users click to generate results after making changes to inputs in the middle and the right panels. The middle panel asks the users to select a disaster impact to compare the importance scores associated with different spatial scale, the stakeholder group to investigate, and the time instance of interest. The right panel asks the users to select two disaster impacts and the spatial scales of analysis for comparing the importance scores associated with two disaster impacts associated with a specified spatial scale at different temporal instances. It also allows the users to choose the level of jitteriness of dots in plots where the importance scores associated with two DIMs are visualised. The input panel of the GUI of ***CompareDIMs*** asks the users to select the temporal instance of interest, which stakeholder group to investigate, the weights assigned to different stakeholder groups, and the number of disaster impacts to show in the top lists (n_{cus}), and a specific disaster impact to show ranking and importance score for. Like ***CompareDIMs***, ***RankDIMs*** also includes a button for generating new results after changes to input are made.

The outputs of ***CompareDIMs*** include results for statistical tests described in Section 2.3.2 as well as visualisations of importance scores associated with specified disaster impacts, spatial scale of analysis, and

temporal instance. The outputs of ***RankDIMs*** include visualisations of rankings (similar to Figures 8 to 12 in Section 3.3) as well as tabulated results of rankings and importance scores.

To access the source codes for the web applications, please go to `https://github.com/wangcb98/DIMs/tree/main/web_applications`.

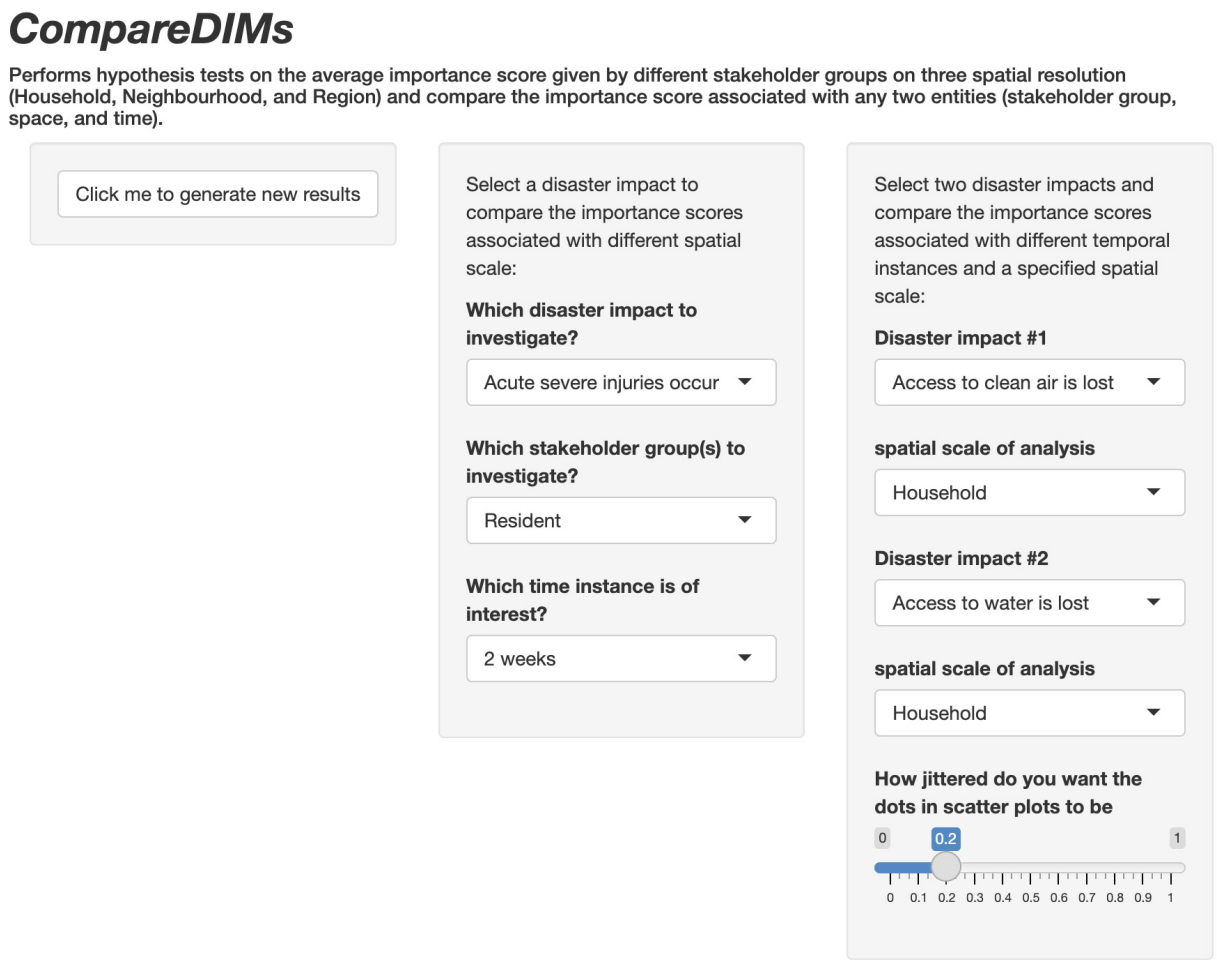

Figure S2. The GUI of ***CompareDIMs***.

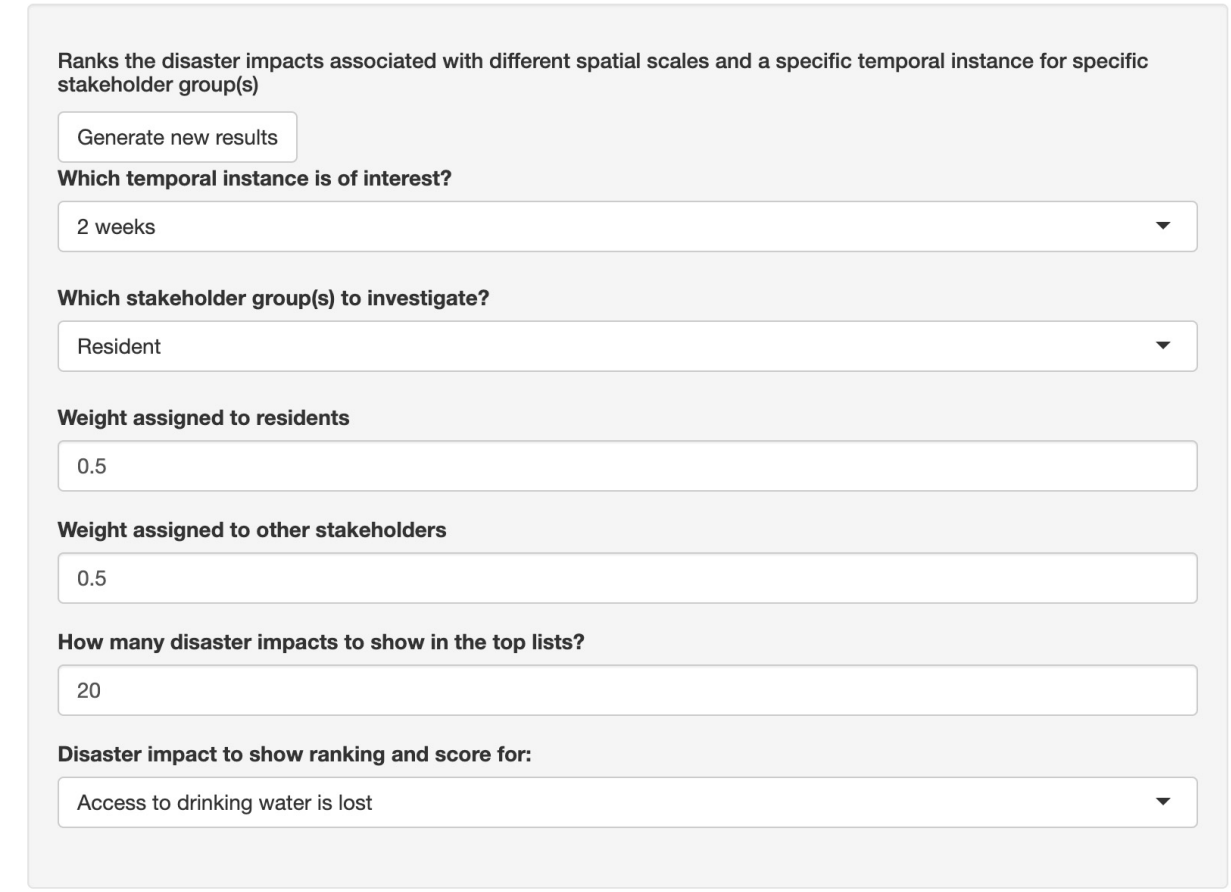

Figure S3. The GUI of ***RankDIMs***.

3 Questionnaires

To access the complete questionnaires developed for two broad stakeholder groups identified as an integral part of the pilot study in Kathmandu, Nepal, please go to `https://github.com/wangcb98/DIMs/tree/main/questionnaires_KTM`.