

Journal: NHESS

Title: **BN-FLEMOΔ: A Bayesian Network-based Flood Loss Estimation Model for Adaptation Planning in Ho Chi Minh City, Vietnam**

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Iteration: First review

The manuscript presents a new probabilistic multi-variable loss model for residential buildings in Ho Chi Minh City (HCMC). The model is based on a set of about 1000 newly collected loss data and Bayesian Network methods. The topic fits within the scope of the journal. The structure of the paper is clear, the methodology and results are clearly explained, and results are supported by data. In my opinion, the paper can be accepted for publication after minor points are clarified/addressed.

Minor concerns:

Pg. 4 “Nevertheless, 467 out of 1530 data points contained missing values in flood loss predictors” → Do authors refer to water depth?

Table 1 → Could authors better explain how these 16 variables have been selected? And why physical vulnerability of buildings (e.g. building structure) has not been considered? Could all buildings in the affected considered similar from this perspective?

Pg. 11 “In comparison with studies conducted in Europe (Kreibich et al., 2017; Wagenaar et al., 2018; Mohor et al., 2021), we observe significantly higher importance of renovation and elevation of the building, as to our knowledge these variables have not been identified as relevant loss-influencing variables there” → I do not agree with this sentence. Many loss models include building elevation and level of maintenance/renovation as independent variables.

Pg. 13 “Consequently, it is a valuable tool for supporting decision-makers in developing adaptation strategies in data-scarce and rapidly evolving environments like delta cities” → Could authors supply some examples of how the models can be used in practice by decision makers? I am afraid that this kind of models are hardly transferable to decision makers.