

	2 <sup>nd</sup> reviewer	
	Specific suggestions	Improvement made/to be made (page numbers where the corrections are made should be made at the end of the revision process)
1	Validity of WTP as a proxy for psychological impact - A clearer rationale and discussion of its limitations are needed	<p>Thank you for the comments. Responses mentioned in the previous texts have address the methods in which WTP questions were asked. Below are the copies:</p> <p>Willingness to pay (WTP) is employed in the paper as a method to elicit value, supported by the contingent valuation (CV) state preference method. The aim is to quantify the psychological and health impact—a form of intangible damage—associated to residential buildings and business premises. Using these methods, the study estimates the non-market value of stress, distress, and worries, which captures the intangible effects of flooding. The application of non-market valuation in flood damage assessment, particularly for informing decision-making in flood damage and risk management, is infrequently used and remains relatively new (Rogers et al., 2019).</p> <p>The psychological health impact is framed in the context of cost-benefit analysis, where monetary metric was used as the decision support metric. The CBA often neglects the intangible damages that could lead to malinvestment in flood risk mitigation efforts. Even if investments were allocated for reducing mental burden, justifications were difficult to be made in terms of how much public spending would a case require. Moreover, allocations to reduce psychological effects are usually prompted reactively. The present study attempts to incorporate the subjective experiences of people exposed to flooding in the risk-based flood investment decision making.</p> <p>We are aware of the possible conceptual arguments that may arise with respect to the factors that can lead to psychological health impacts of flooding, but we are limiting the variables to a number that are manageable in the context of the present study. The present study is part of the limited studies attempting to provide evidence of intangible flood damages of residential and businesses sectors. Depending on a study's prospect, future work can discern the type and degree of intangible losses, and incorporate more social variables into the intangible flood losses analysis.</p>

		<p>As for the results of the present study, one limitation that stood out is related to the lack of association between the variables and the psychological burden of the business premises. The lack of association has led to non-significant p-values among most of the considered variables. This is influenced by the small sample sizes among the respondents from the business sector, despite the efforts of the in-person interviews.</p>
2	<p>There needs to be more citations, depth, and restructuring. It would benefit from an in-depth literature review; could you include recent work on flood resilience and mental health in SE Asia? Some claims in the introduction lack evidence.</p>	<p>The introduction has been restructured to add more citations related to Southeast Asia countries in terms of the intangible damages, despite the lack of references. The following addresses the reviewers' concern:</p> <p>The Southeast Asian region has suffered adverse mental health effects due to extreme weather hazards and floods, leading to high levels of depression, anxiety, and stress compared to other extreme weather events (Patwary et al., 2024). One significant consequence of flooding is the psychological impact on exposed individuals, who endure unprecedented experiences such as loss of possessions, physical health challenges, livelihoods, or, even worse, the lives of loved ones (Law et al., 2025). Psychological effects can be defined as the emotional and mental responses individuals experience due to disruptions in daily life, including anxiety, depression, and stress, often exacerbated by isolation and changes in routine (Veale, 1987)</p> <p>In the past decade, the analysis of flood consequences has expanded from primarily focusing on conventional tangible damages, such as physical and economic losses, to also understanding psychological effects as a subset of the adverse consequences of flooding (e.g., Stanke et al., 2012; Yoda et al., 2017). Factors contributing to the coping capacity of a community, such as strong social networks among community members and organized shelter systems, have been shown to reduce anxiety and stress during flood recovery periods (Zahari &amp; Hashim, 2018; Akhir et al., 2021). The current consensus is that understanding the psychological effects of flooding is important to enhance decision-making in flood management (Ti et al., 2016; Nawi et al., 2021; Sulong &amp; Romali, 2022). Some studies have claimed that intangible flood damages are more severe than tangible losses (Nga et al., 2018; Han et al., 2023). It is widely accepted that intangible damage is a crucial factor in risk assessment, particularly for households (Joseph et al., 2015)</p>

3	<p>justify the variable selection</p> <p>discussion around the low R<sup>2</sup> values - What unmeasured variables might explain the variance?</p> <p>how they tested multicollinearity</p>	<p>A range of variables, identified based on expert knowledge from different domains, are considered important for assessing intangible flood damage. These variables relate to flood characteristics, building factors, socio-economic characteristics, and damages to households and businesses (a full list is provided). Building type, business size, the presence of elderly or children, and ownership status were treated as binary variables. The analysis was conducted for both binary and continuous variables, followed by assessments of correlation and regression coefficients.</p> <p>Explanation is added to the R<sup>2</sup> result section. The regression model for intangible damage yielded a coefficient of determination (R<sup>2</sup>) of 0.23, indicating that 23% of the variation in the dependent variable is explained by the independent variables. While an R<sup>2</sup> of 0.25 may be considered weak in some contexts, its interpretation is highly dependent on the field of study. The value of 0.23 is considered acceptable for this study on intangible damage, consistent with findings in other research that have reported similar values (Wijayanti et al., 2017)</p> <p>It is important to note that a low R<sup>2</sup> does not necessarily imply a weak model, as its value is heavily influenced by the inherent variability of the data (Hamilton et al., 2015). In fact, in some research fields dealing with human behavior, an R<sup>2</sup> of 0.10 or lower can be considered acceptable, since its significance depends entirely on the research context (Hair et al., 2018).</p> <p>The model's explanatory power could likely be improved by incorporating a broader set of variables. Future studies should consider including additional physical, economic, and environmental characteristics in a multiple regression analysis to account for a greater portion of the variation in intangible damage.</p> <p>The regression analysis on intangible damage indicated multicollinearity between two independent factors: flood duration and distance from the river in residential buildings. Therefore, the distance from the river was excluded to improve both the accuracy and reliability of the regression analysis, leaving nine independent variables. For commercial buildings, the datasets remained untransformed except for income data, which was log-transformed. All other variables met the normality criteria (Gaussian distribution). The assessment of multicollinearity was based on two diagnostic measures: the correlation coefficient and the Variance Inflation Factor (VIF). A correlation coefficient greater than 0.5 between independent variables, supported by VIF analysis, indicated the presence of multicollinearity.</p>
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	<p>focusing on average damage values to make comparisons more meaningful.</p> <p>Account for the time elapsed since the flood events. When were the interviews done? If the study was done shortly after the floods, psychological effects might not yet be fully visible</p>	<p>The intangible damage variations of residential households and businesses, according to income groups, business size, and the distance of their buildings from the river, were analyzed in terms of total and average values. The total values refer to the cumulative willingness to pay (WTP) from all respondents within each category. Meanwhile, the average values represent the mean WTP within the respective categories. The damage analysis compares both average and total damage across income groups (Figures 4 and 5)</p> <p>This study is based on a survey conducted in 2020. Respondents were asked to report on flood-related impacts from events occurring within the ten-year period from 2010 to 2020.</p>
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4	<p>The discussion section is overly descriptive, repeating findings without offering deeper analysis. For instance, the observation that B40 households report lower average intangible damages than T20 contradicts expectations, yet no explanation is offered.</p> <p>Not just cite. But critically assess why the results agree or diverge</p> <p>The authors should engage more critically with their data, exploring possible explanations and linking findings to concrete policy recommendations or planning strategies.</p> <p>There are sweeping statements and generalisations that are problematic</p>	<p>We thank for the valuable suggestion :</p> <p>The discussion has been revised accordingly. It has been updated to avoid repetition and critically assess areas of agreement or divergence with other researchers. Additionally, it provides a clear link between the findings and their implications for policymakers and planners in future flood management.</p> <p>Here is example for the income variables: This study's results also demonstrated that income does not affect a household's intangible damage. Families prioritize addressing the mental health effects on their members regardless of their wealth or income. However, other studies have found that household monthly income shows a statistically significant contribution to flood-related mental health impacts (Ghanbarpour et al., 2014; Yusmah et al., 2020). Others reported that the middle-income group of households is willing to contribute to the willingness to pay and plan for the flood prevention measures, but higher-income households were reluctant to respond to the willingness to pay. The older individuals have a lower demand for protection, even though they are also the most financially vulnerable (Foudi &amp; Osés-Eraso, 2022). The current study also found that middle-income households show participation in efforts to prevent the mental health impact. Addressing intangible damage may help households mentally prepare for flooding or improve their ability to cope with the flood effect. The contribution of income to intangible damage may encourage the community to integrate of multiple prevention measures, enhancing risk reduction strategies. However, it requires the combined efforts of all stakeholders (Mishra &amp; Sinha, 2020).</p> <p>The additions above will be included in the improved manuscript.</p>
	The manuscript is weakened by poor sentence structure and	The article has been revised by the author and co-authors for grammar and sentence structure.

	<p>grammar issues, which undermine the quality. There is a lot of repetition, Figs 3 and 4 are hard to interpret (lack of labelling and descriptive captions), and editing is strongly recommended</p> <p>Instead of the elderly, elderly people should be used. There are some formatting issues. Some tables are hard to interpret, such as lacking units. Parts of your results are in the methods part. See attached doc.</p>	
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