

Introduction

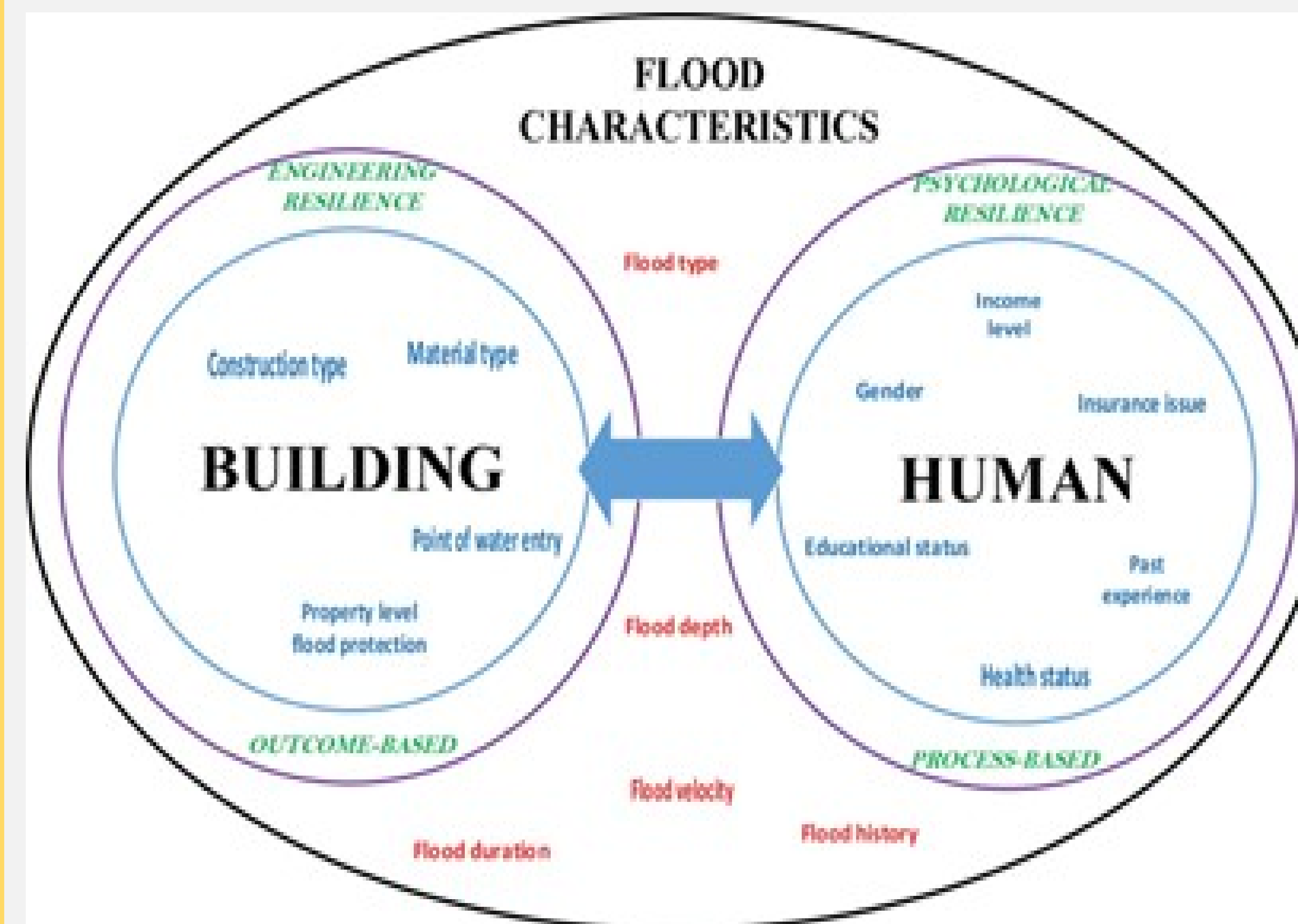
- The property sector traditionally emphasizes financial and economic performance metrics (Leal Filho et al., 2022).
- Creating social value transcends economic considerations by incorporating the potential benefits that buildings provide to occupants and the wider community (IVSC 2020, Gamage et al., 2025).
- Properties do not exist in isolation; if the buildings are at flood risk, the homeowners are equally at risk.
- To support this discourse, Adedeji et al., (2018) emphasize that flood protection measures depend on the level of flood risks, the vulnerability of the property and its occupants.
- The study will propose understanding of property social value and willingness to adopt flood mitigation measures into the modeling of property resilience framework.

Theoretical Frameworks

- This study is employing a hybrid approach, that is, combination of the property (assets) and homeowners(humans) to develop a property resilience framework.
- The study proposes three models:
 - Protection Motivation Theory: How Homeowner's perceive flood risks and decide to take actions. Components: Perceived vulnerability, Perceived severity, Response efficacy, Self-efficacy, Response costs.
 - Theory of Planned Behavior: Intentions to act. Components: Attitude toward the protective behavior, Subjective norms, Perceived behavioral control.
 - Vulnerability-capacity Framework: Explain structural resilience based on environmental and socio-economic context. Components: Physical vulnerability (exposure, construction quality, house type. Homeowner capacity (Knowledge, Income, and skills).

Research Question

- What are the interactions between flood risks and adoption of Homeowner's mitigation measures to resist or reduce its impacts?

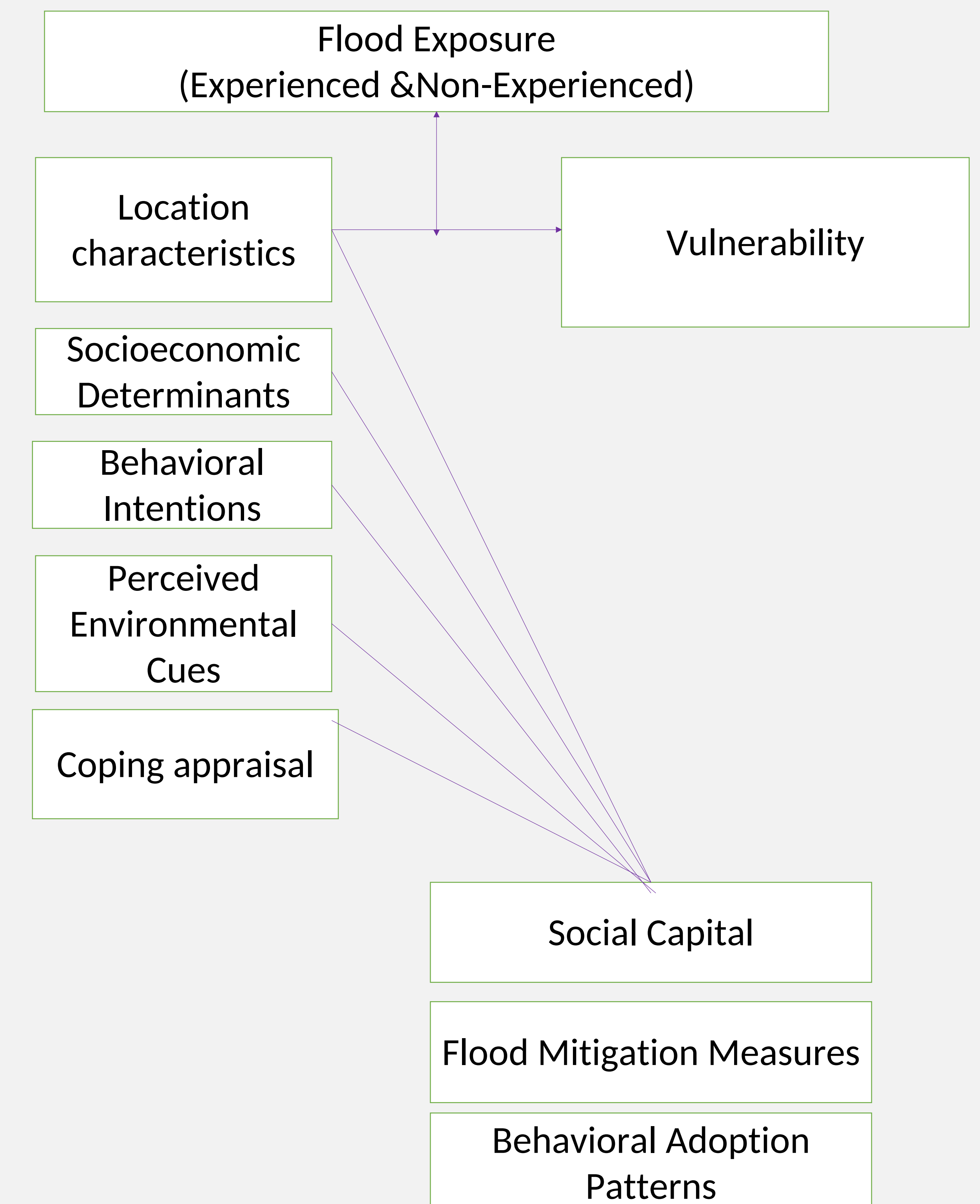


Source: Adedeji et al.,2018

Estimated Damage by Flood Events

Hawaii 2021 Floods Heavy Rain	Total Damage (\$85M) Property Damage (\$49M)
Kentucky 2022 Floods Heavy Rain	Total Damage (\$--B) Property Damage(\$950M)
New York 2023 Floods Heavy Rain	Total Damage (\$2.2B) Property Damage(\$--)
New Mexico 2024 Floods Torrential Rain	Total Damage (\$500M) Property Damage(\$100M)
Texas 2025 Floods Heavy Rain	Total Damage (\$22B) Property Damage(\$1.1B)

Modelling of Expected Findings



Acknowledgement

Thank you to the organizer of 2025 IAEM for the opportunity to present this poster and to share the research with an international community of researchers.

Reference

1. Leal Filho, W., Levesque, V., Sivapalan, S., Salvia, A. L., Fritzen, B., Deckert, R., ... & Shiel, C. (2022). Social values and sustainable development: community experiences. *Environmental Sciences Europe*, 34(1), 67.
2. Adedeji, T. J., Proverbs, D. G., Xiao, H., & Oladokun, V. O. (2018). Towards a conceptual framework for property level flood resilience. *International journal of safety and security engineering*, 8(4), 493-504.
3. <https://www.carriermanagement.com/>
4. [Aclc/org/wp-content/uploads/2023/02/housing -damage-from-KY](https://aclc.org/wp-content/uploads/2023/02/housing-damage-from-KY)
5. <https://www.pbs.org/newshour/amp/nation/>
6. <https://www.weather.gov>