

# Better prepared but less resilient: the paradoxical impact of frequent flood experience on adaptive behavior and household resilience

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## Research motivation

Role of *frequent* flood experience is missing in empirical studies on adaptive behavior and resilience

- Floods occur more frequently and in same location (eg. due to global climate change (Shukla et al., 2019; Kreienkamp et al., 2021)) and is putting at risk individuals' mental and physical health, economic endowments and infrastructures (eg. Thielen et al., 2016; Sieg et al., 2019; GDV, 2021)
- Thus, it is necessary for behavior and resilience theories to take *frequent* flood experience into account

Inconsistent research outcomes on role of flood experience regarding its impact on behavior and resilience

## Research questions

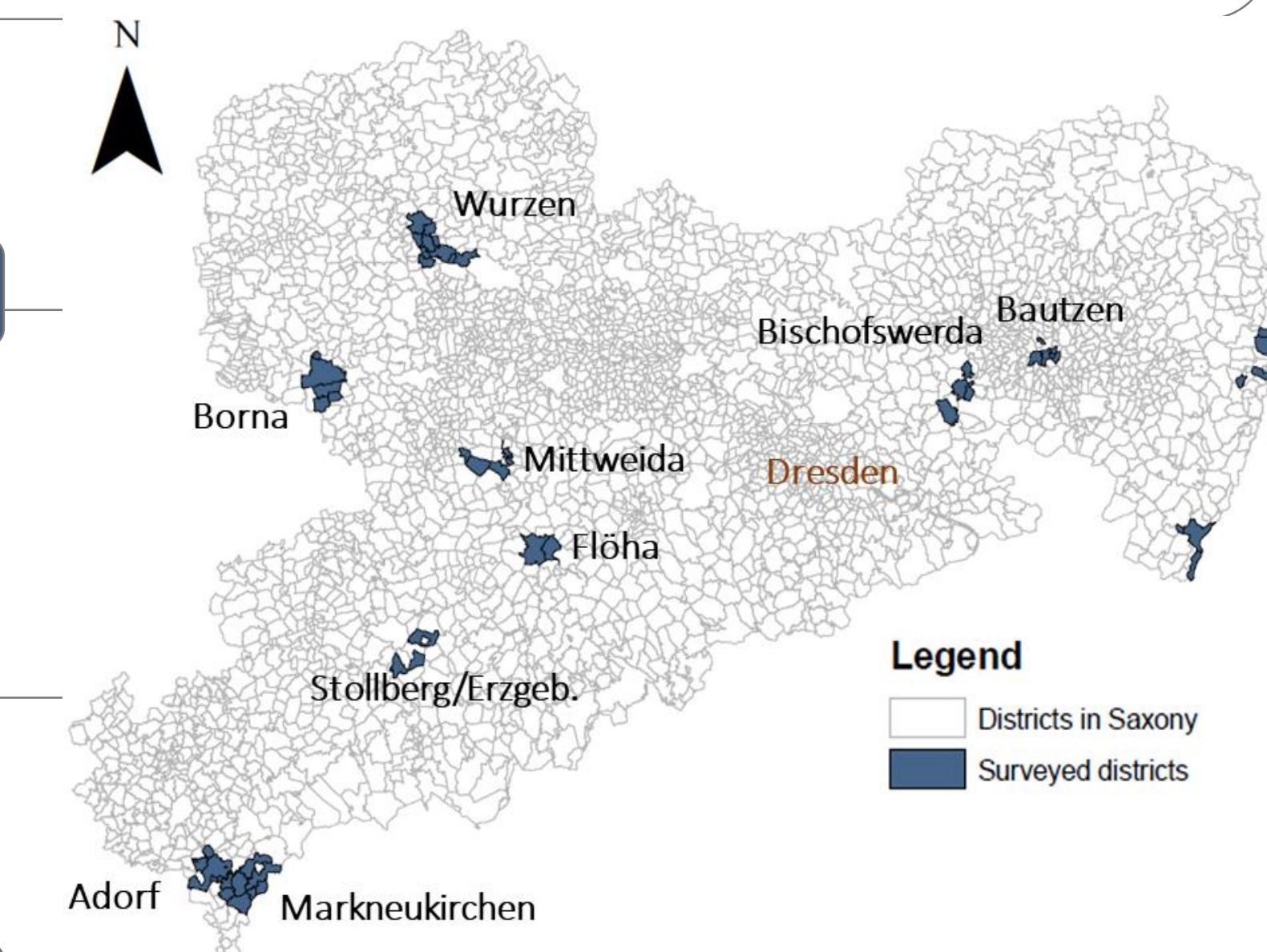
How does frequent flood experience motivate households' adaptive actions?  
How does frequent flood experience influence self-reported household resilience?

## Case study region: State of Saxony (Germany)

- Severe floods: 2002, 2010, 2013 (BfUL, 2018)
- Flood event in 2013: damages in 378 of 439 municipalities (LfULG, 2015)
- Area of 3.6% belongs to designated flood plain (BfUL, 2018)

## Data

- Paper-and-pencil survey (PIVO-Project; 2020-2021)
- Sample: 2462 individuals



## Method

Panel regression with fixed effects:

- Research objective = past behavior: binary logistic regression
- Research objective = self-reported resilience: linear regression

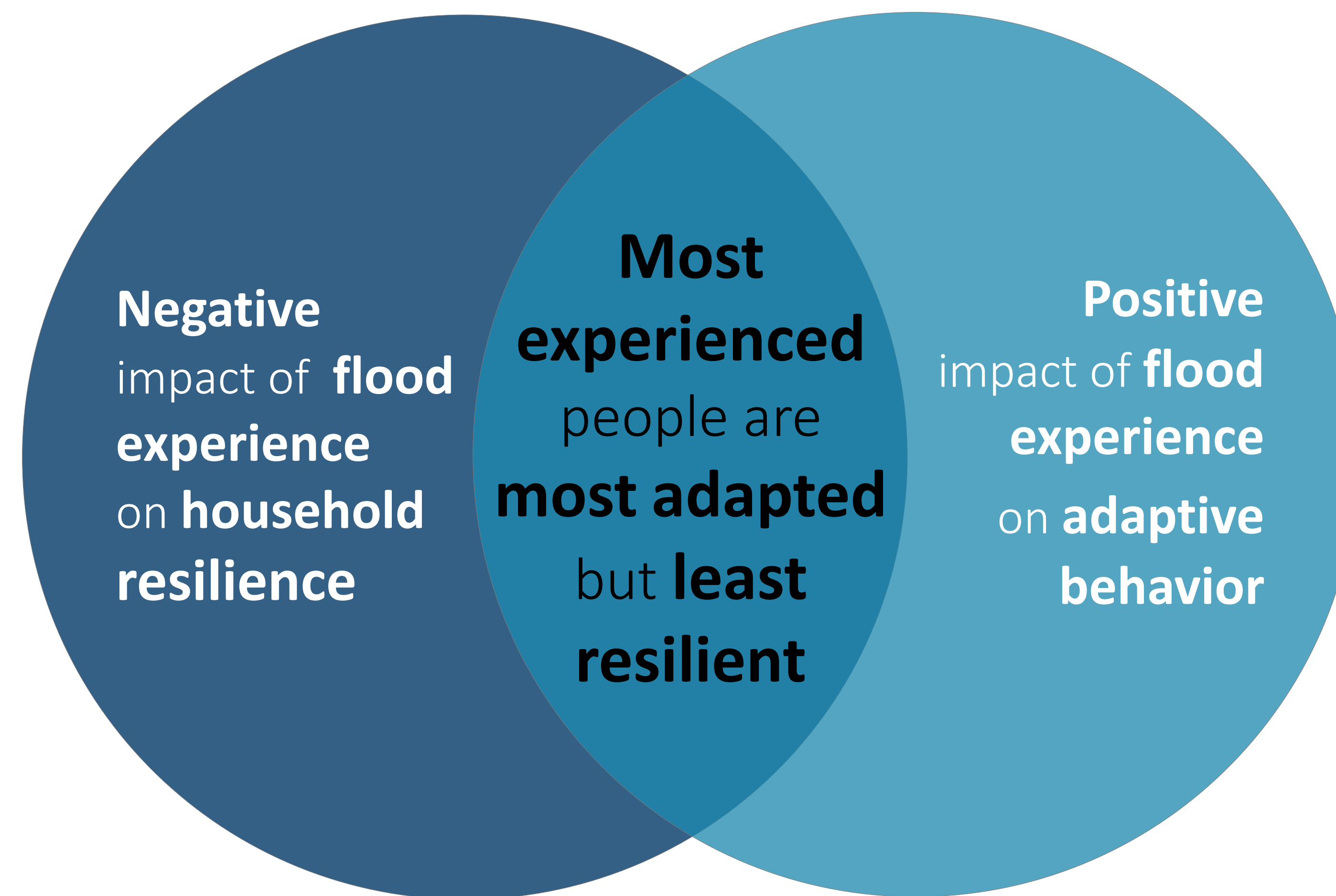
## Results

**Positive influence of frequent flood experience on adaptive behavior:**

- more experienced people are more likely to have:
- Stored important goods safely
  - Undertaken property-level adaptation
  - Taken out insurance to cover damages financially

**Negative influence of frequent flood experience on household resilience:**

- more experienced people:
- Felt more powerless during last flood event
  - Perceived their last flood event as more severe
  - Are more likely to still perceive their last flood event as a burden



## Future questions

What are mediating factors of the relationship between frequent flood experience and household resilience?

Why does the influence of frequent flood experience on resilience depend on the number of floods experienced?

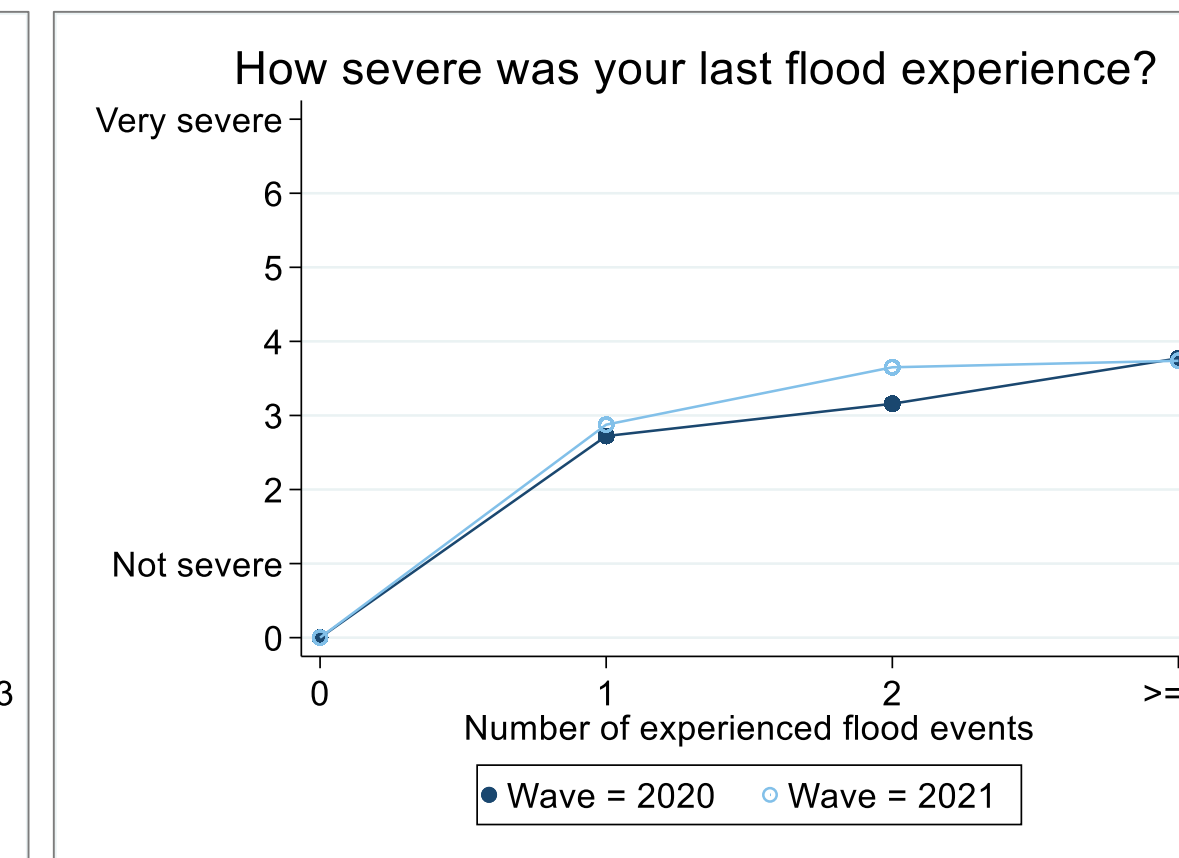
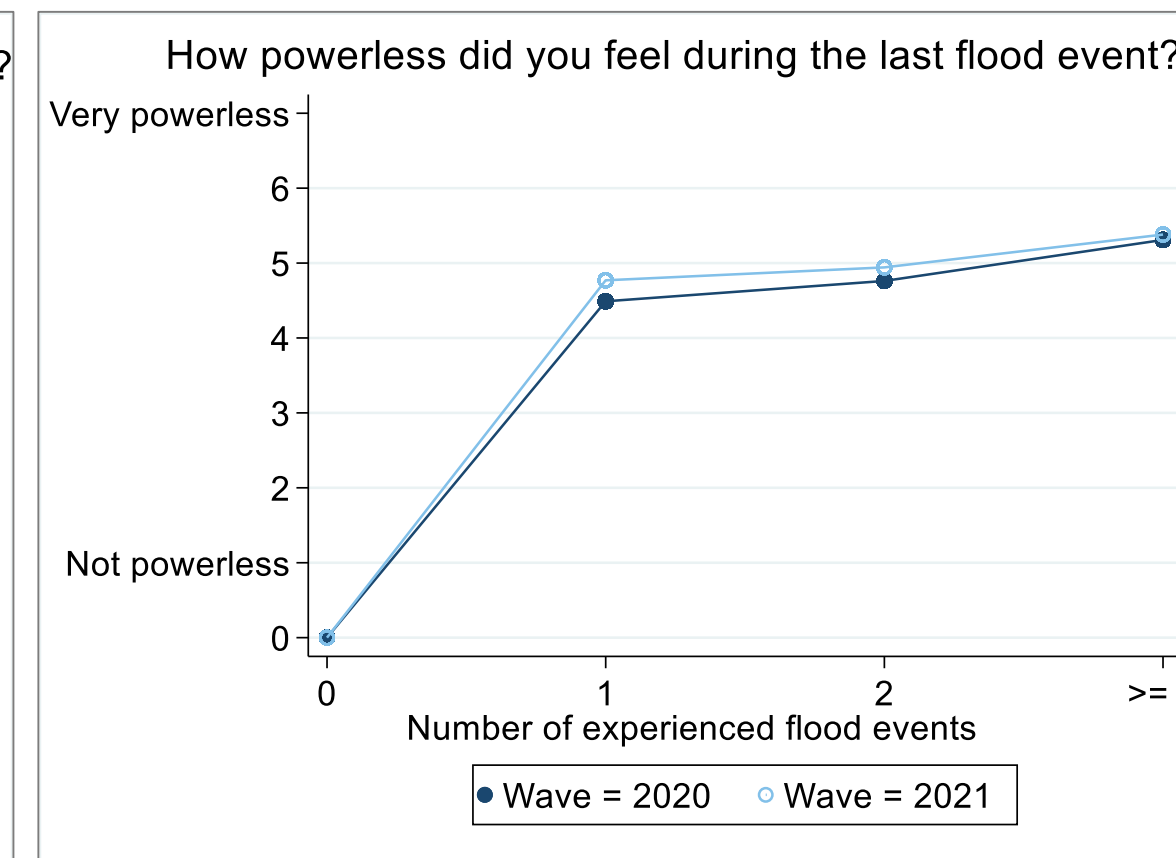
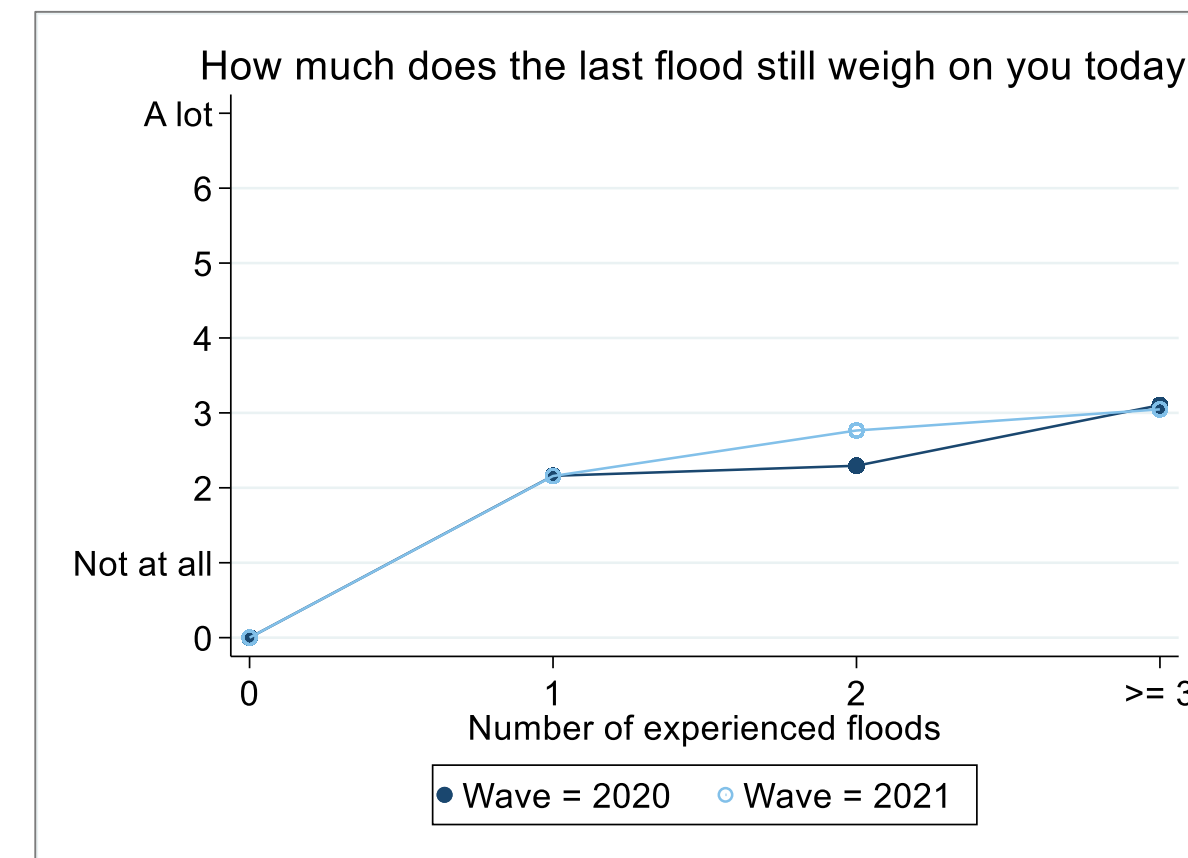
What is the relationship between self-reported resilience and adaptive behavior?

## Conclusions

- Frequent flood experience plays an important role in adaptive behavior and household resilience
- Influence of flood experience depends on number of floods experienced
- Most experienced people are the most adapted but have the lowest self-reported capacities to resist and to recover from flood events

## References

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Curvilinear relationships between flood experience and felt powerlessness, perceived severity, still existing burden

