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XIX WORLD WATER CONGRESS  
International Water Resources Association (IWRA)  
Marrakech, Morocco | 1-5 December 2025

Kingdom of Morocco



Ministry of  
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# Understanding Personal and Institutional Factors Influencing Village Government Funding for Water and Sanitation Climate-Resilient Infrastructure in Rural Villages in Indonesia

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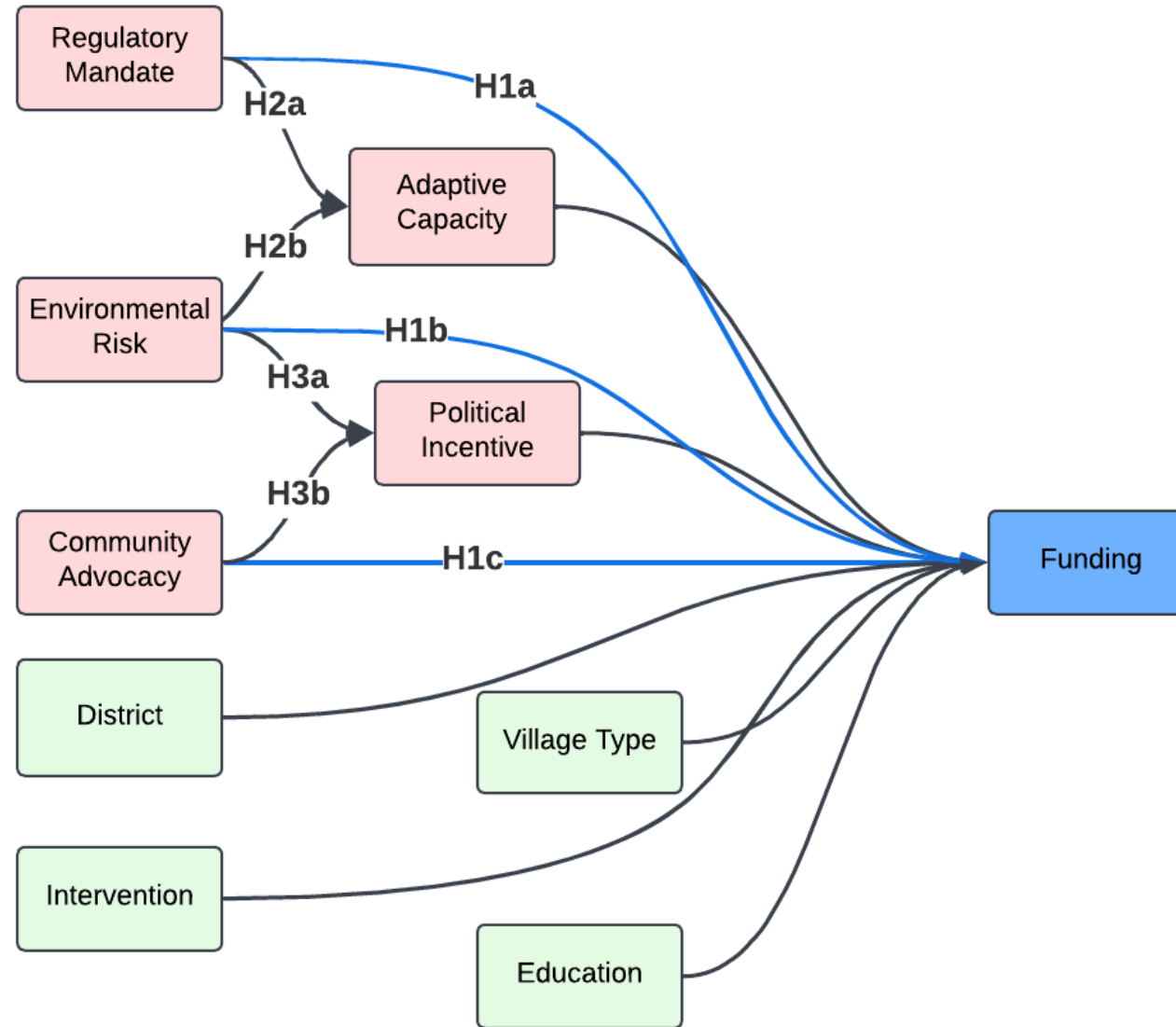


# Why do local governments invest in climate adaptation?

- **Risk Perception:** although evidence remains mixed across hazard types and magnitudes (Fahlevi et al., 2019; Krause, 2011; Kundzewicz et al., 2020).
- **Adaptive capacity:** knowledge and financial capacity (Dilling et al., 2017; Rogers et al., 2023; Sharp et al. 2011)
- **Regulatory mandate,** i.e., national policy direction (Rogers et al., 2023)
- **Political incentive,** i.e., electoral or reputational motivations (Hjerpe, 2015; Gurney, 2021).
- **Community advocacy** (Hjerpe, 2015; Sharp, 2011).
- Most studies **analyze these factors individually** rather than examining their interactions within an integrated pathway.



# Hypotheses





# Data Collection and Analysis – Mixed method

## Study Location and Sampling – Survey

- **Respondents:** 207 village-government officials involved in funding decisions, including elected village heads (village heads serve four-year terms).
- **Villages:** 115 villages across four districts in Eastern Indonesia.

## Survey Analysis

- Partial Least Squares Structural Equation Modelling (PLS-SEM)
- 5 000-sample percentile bootstrapping for paths, weights & mediation effects
- SEMinR package

## Focus Group Discussion (FGD)

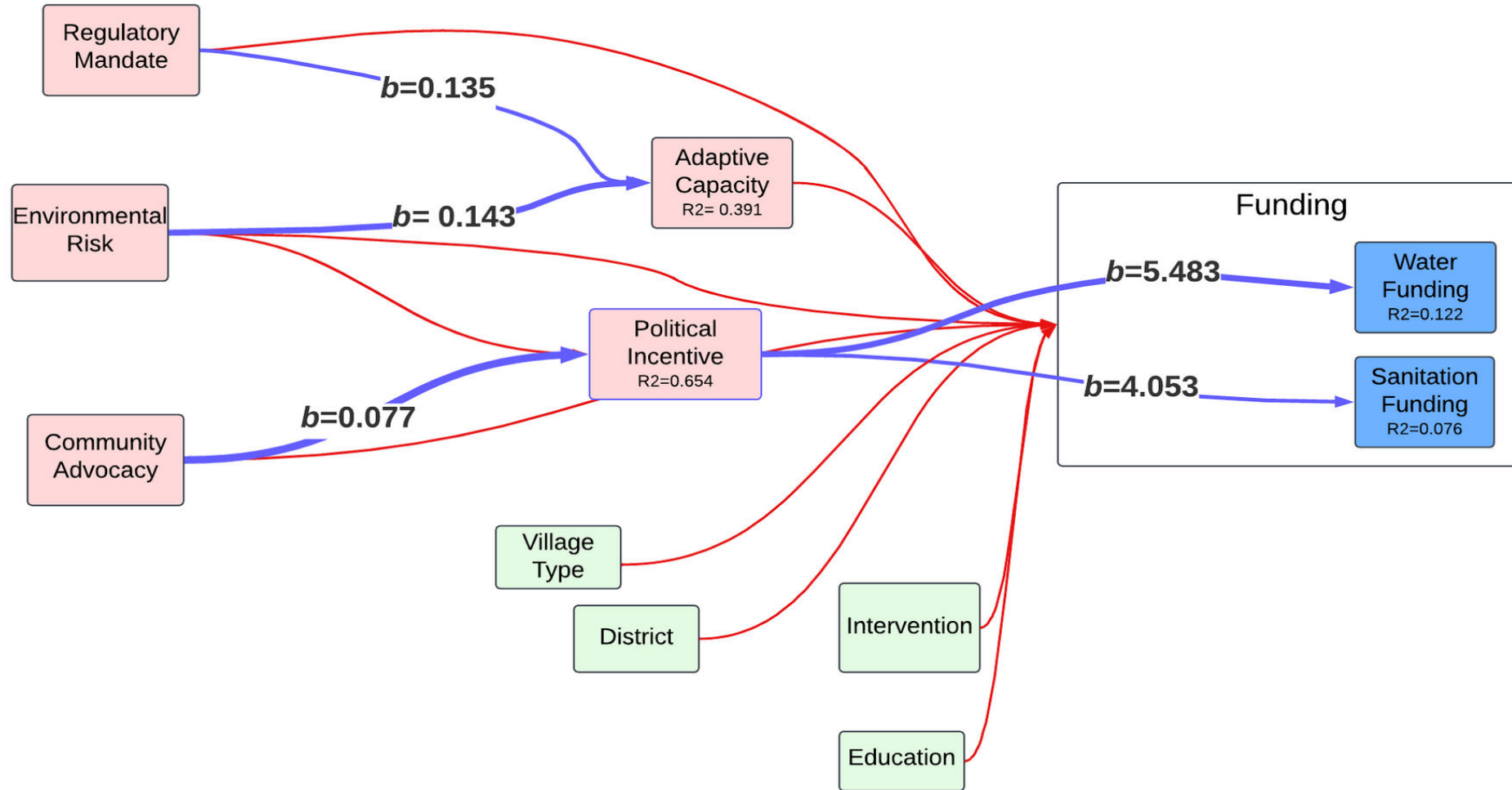
- Seven representative of respondents: roles and locations



# Survey Results



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# Key Findings from Survey

## Political incentives are the immediate budget trigger.

- They are the **only predictor with significant, positive total effects** on both Water and Sanitation Funding ( $\beta \approx 0.47$  and  $0.36$ ).
- Practical size is small-to-moderate ( $f^2 \approx 0.08/0.04$ ), yet indispensable given other paths are non-significant.

## Risk and rules build capability, not budgets.

- Environmental and regulatory pressures significantly **increase adaptive capacity** ( $\beta = 0.42$  and  $0.32$ , respectively), yet they **fail to translate into higher funding on their own**.

## Community voice is powerful, but indirect.

- **Advocacy has no direct path to money, but it elevates political incentives** ( $\beta = 0.84$ ,  $f^2 \approx 1.6$ ).







# Implications

## Politics cannot be ignored.

- While political incentives often dominate local decision-making, they can be leveraged positively when **community advocacy and demands align with political priorities**, helping to move adaptation budgets forward.

## Alignment creates opportunity.

- When community requests resonate with political agendas, adaptation initiatives gain legitimacy and are more likely to receive funding.

## Regulatory flexibility may enable responsiveness.

- More flexible funding regulations allow village governments to respond to local needs and fulfill community demands more effectively.





# Limitation and Future Research

## Biased sample and small N

- Participant are not random
- Sample size is minimal
- Association and causal relationship

## Adaptive capacity as a future pathway.

- Future research should examine how adaptive capacity, through knowledge, institutional learning, and innovation, can unlock financial resources or create new pathways to climate adaptation financing.

## Need for more pathways and robust evidence.

- Further studies should examine additional institutional, social, and behavioral pathways influencing local climate financing and generate more robust, comparative evidence across contexts.



