Do Voters Value Relief over Preparedness? Evidence from Disaster Policies in Malawi

Felix Hartmann*

Short Title: Do Voters Value Relief over Preparedness?

Abstract

Growing evidence suggests that voters reward politicians for spending on disaster relief but not disaster preparedness. Yet, we know little about the mechanisms that underpin this pattern. Is it because voters generally value relief over preparedness? Or is it because voters expect preparedness policies to be less effective compared to relief policies? I test both mechanisms using a conjoint experiment in rural Malawi where participants choose between two hypothetical candidates randomly varying attributes about their preparedness and relief policies. I find that respondents reward relief efforts over preparedness efforts, but they value effective preparedness similarly to effective relief. Additionally, respondents are more likely to reward preparedness efforts if they repeatedly observe that they are effective in mitigating disaster damages. Taken together, the evidence suggests that voters have pessimistic expectations about the effectiveness of preparedness policies but would reward preparedness similarly to relief if they know it is effective.

Keywords: Electoral Accountability, Natural Disasters, Disaster Relief, Disaster Preparedness, Political Economy, Malawi

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The number of natural disasters increased by approximately 70% worldwide in the last 40 years, from around 7,000 between 1980-1999 to 12,000 between 2000-2019.[1] In the aftermath of disasters, such as the recent earthquake in Turkey or the floods in Malawi, the lack of disaster preparedness has become a pressing issue in public debate. While preparedness policies are often considered more cost-effective compared to relief policies, government investment in preparedness remains limited.[2]

One explanation for this underinvestment is that voters provide the wrong incentives to politicians by not rewarding disaster preparedness. In particular, previous studies found a positive association between relief spending and re-election rates for incumbents, but a weaker or non-association for preparedness spending (Healy and Malhotra 2009).[3] Some authors have interpreted this pattern as evidence that voters value relief over preparedness. However, Gailmard and Patty (2019) argue that voters might value preparedness as much as relief but reward them differently because they expect that preparedness efforts are less effective. So far, however, we lack empirical evidence on this mechanism.

This paper tests empirically whether voters have pessimistic expectations about the effectiveness of prevention efforts using a conjoint experiment.[4] The experiment informed participants about a hypothetical scenario in which a disaster occurred but indicated that two candidates implemented different disaster policies. In particular, the first set of policy attributes informed participants about whether a candidate exerted effort to work out a preparedness plan before the disaster and attended meetings to coordinate relief funds afterwards. The second set of attributes informed participants about the success of these efforts, specifically whether the preparedness plan successfully mitigated harm from the disaster and whether the politician was able to distribute relief funds to the village. I derive voter expectations regarding policy effectiveness from the marginal impact of prevention and relief efforts on voter support. With each of the four attributes randomized using a uniform distribution, high efforts for preparedness and

[1] For details, please refer to Appendix B2.

[2] Healy and Malhotra (2009) use data from the U.S. and estimate that each US$1 invested in disaster prevention and preparedness translates into roughly US$15 in mitigated future damages.

[3] For an extended discussion of the previous evidence, please refer to Appendix A. Importantly, the studies measure the electoral returns to relief and prevention spending *after* disasters have occurred. Therefore, the effects cannot be driven by voter uncertainty about the need for prevention policies.

[4] I define policy effectiveness as "the degree to which policy efforts are successful in achieving its desired goal". The goal of preparedness and relief efforts is to alleviate harm and destruction caused by disasters. Therefore, these policy efforts are effective if they alleviate disaster destruction.

relief proved effective in roughly half of the vignettes and ineffective in the remainder. Thus, differences in voter support for policy efforts stem from prior beliefs concerning the likelihood of policies translating into improved welfare outcomes, representing their prior expectations of effectiveness.

The study makes three contributions to the literature. First, I present the first empirical evidence indicating that voters have pessimistic expectation for preparedness efforts. I find that voters value relief efforts over preparedness efforts. However, respondents value effective preparedness, mitigating disaster damages, similarly to effective relief transfer. Taken together, this evidence suggests that voters would reward politicians for relief over preparedness if they are uncertain about their effectiveness but would reward preparedness similarly to relief if they know it is effective. Second, I find evidence suggesting why voters doubt the effectiveness of prevention efforts. Theoretically, voters might fear that politicians are corrupt and will misappropriate preparedness funds (Gailmard and Patty 2019).[5] Voters might also believe that preparedness projects are ineffective in preventing disasters. For example, they might doubt that politicians have the state capacity needed to implement prevention policies effectively. My findings primarily support the latter concern, showing no significant link between a politician's corruption record and voter support for preparedness. However, because the conjoint experiment was conducted over six rounds, I can demonstrate that respondents are more likely to reward preparedness efforts if they repeatedly observe such efforts leading to effective outcomes. Lastly, I provide empirical evidence from Malawi. The case is important to study for two reasons. First, to the best of my knowledge, this is the first study to explore voter preferences for disaster policies in Africa. Empirical evidence from low-income countries is especially important because the population is particularly vulnerable to natural disasters (Hallegatte et al. 2016).

Theory

How would pessimistic expectations about the effectiveness of preparedness policies explain why voters reward incumbents for disaster-relief spending but not for disaster prevention spending? According to the theory of electoral accountability, voters assess government performance and policies to inform their decisions about whether to reelect an incumbent or elect a chal-

[5] In their model, voters are concerned about unnecessary spending by corrupt politicians, viewing such investments as potential signs of corruption and, therefore, becoming hesitant to support them.

lenger (Ashworth 2012; Fearon 1999). Generally, voters prefer high-quality politicians who implement policies aligned with their preferences over low-quality politicians who implement policies that do not align with their preferences. However, voters typically do not observe the quality of candidates directly but use public signals—such as investment in disaster preparedness—to form beliefs about the quality of candidates. If preparedness is deemed less effective than relief, it might be a weaker signal of a candidate's quality.

This perception can stem from several factors. Prevention policies show benefits only post-disaster and are less visible, whereas relief efforts have immediate, observable impacts (Ashworth 2012). Voters may also doubt the effective implementation of prevention policies due to perceived lack of state capacity, whereas relief actions may seem simpler to execute. Additionally, prevention policies may raise more concerns around corruption due to their lower visibility and harder monitoring (Gailmard and Patty 2019). Despite relief efforts also being susceptible to corruption, prevention spending's lower visibility and greater monitoring challenges may render it more prone to misuse. Regardless of the specific mechanism, if voters hold more pessimistic expectations about the effectiveness of preparedness policies, they will be less likely to support candidates who implement preparedness policies:

H_{1a}*: Voters will be more likely to support incumbents for relief efforts than for prevention efforts.*

However, if this is driven by expectations and not actual outcomes, voters should equally support candidates who implement successful preparedness policies and those who provide relief aid.

H_{1b}*: Voters will be indifferent between incumbents who provide effective relief and incumbents who provide effective prevention.*

If the pessimistic expectations stem from corruption concerns, support for preparedness efforts should vary between corrupt and non-corrupt politicians.[6]

H_2*: Voters will be more likely to support incumbents for preparedness efforts if the incumbents have no record of corruption.*

[6]The hypotheses were not part of the pre-analysis plan but emerged from patterns observed in the experiment, suggesting that voter perceptions are shaped by expectations of policy effectiveness. For details, please refer to Appendix C.

Background and Case

Natural disasters have become increasingly frequent across Africa over the last three decades. The numbers are driven by typhoons and floods that often hit the coastal areas. Malawi is a typical case in the region and frequently suffers from floods, droughts, and harvest failures.[7] The population is particularly vulnerable to natural disasters because 80% of people live off agricultural income. Natural disasters are particularly salient in the Southern Shire basin, the focus of this study, which experiences annual flooding caused by seasonal rainfall between November and January. However, with disasters increasing, so has spending on disaster relief, culminating in roughly US$350 million spent after the flood disaster of 2015. By comparison, prevention and preparedness spending only constitutes a small fraction of relief spending each year.[8]

Elected officials play a key role in disaster prevention and relief (Kita 2017). While the main authority for disaster preparedness and relief lies with the Department of Disaster Management Affairs (DoDMA), district commissioners and councils typically identify and distribute disaster relief. MPs support community-level disaster prevention and relief by mobilizing resources through the constituency development fund, organizing resettlements, providing logistics for relief items, and facilitating post-disaster reports (Kita 2017).[9] While MPs play a key role in disaster prevention and relief, they are also reported as misusing their central position to engage in corruption and vote buying, especially during the delivery of disaster relief (11).

To summarize, disasters, disaster policies, and the responsibilities of MPs in disaster prevention and response are salient to voters. However, there is considerable variation in the degree to which MPs promote public well-being or pursue personal electoral goals. The frequency and magnitude of disaster events and the responsibilities voters assign to politicians also indicate that citizens recognize the need for preparedness and relief policies.

Experimental Design and Data

While voters are usually uncertain if disasters will occur and what policy actions politicians have taken in preparation and response, I design a survey experiment that alleviates these information asymmetries by informing participants that a disaster has occurred, but that counterfac-

[7] Data show that Eastern and Southern Africa suffer the most disasters. For details and data, refer to Appendix B.3.

[8] For details and comparison to other African states, refer to Appendix B.4.

[9] The perceived responsibility of MPs is supported by original survey evidence. Please refer to Appendix B.5.

tual MPs prepared and reacted differently. In the paired conjoint design (Hainmueller, Hopkins, and Yamamoto 2014), I randomly vary seven policy choices (attributes) of two candidates running for MP regarding their prevention and relief policies, and respondents are forced to choose between them. The outcome variable is a binary measure that asks respondents: "Which MP would you vote for?". The main estimand is the Average Marginal Component Effect (AMCE), which can be interpreted as the causal effect of a candidate attribute (providing relief funds vs. not providing relief funds etc.) on vote shares in an election matching the specifications of the conjoint.[10] I estimate the AMCE using an OLS regression with heteroskedasticity-robust standard errors clustered at the individual.

Sample and Survey Implementation

The sample consists of 810 respondents from 36 villages in the districts of Nsanje and Chikwawa in southern Malawi, collected in November 2018. The Primary Sampling Unit was the 'Traditional Authority' (TA). Within each TA, four enumeration areas (EAs) were selected as Secondary Sampling Units (SSUs). Both PSUs and SSUs were selected without replacement according to the principle of Probability of Selection Proportional to Measure of Size. Within each EA, four villages were sampled based on known geographical points provided on the maps of the EAs produced for Malawi's latest population census. Once in the village, enumerators followed a random walk pattern to select households.[11] The survey was administered using tablets, offering respondents the choice to respond in English, Chichewa, or Chisena. Each of the 810 respondents evaluated six pairs of conjoint profiles, resulting in 4,860 contests and 9,720 profiles. The conjoint experiment was displayed on a tablet screen, presenting two lists of candidates to the respondents. Given that many respondents possessed only basic reading skills, the experiment was additionally read aloud to them.

Measuring Preferences for Candidates' Disaster Policies

Expectations are often measured via subjective probabilities, asking respondents about the probability that certain actions will lead to specific outcomes (Manski 2018). I use the conjoint design to study whether voters expect preparedness efforts to be less effective compared to relief efforts. In particular, a first set of attributes informed participants whether candidates invested low (0) or high (1) efforts into preparedness policies and low (0) or high (1) in relief policies. A second set of attributes informed participants whether the prevention and relief ef-

[10] For details on the empirical estimand and estimation, please refer to Appendix H.

[11] For details on the sampling, please refer to Appendix G.

forts were successful or not (0/1).[12] Conjoint attributes are randomly assigned, with candidates showing high effort in half the profiles and low in the other half. High efforts are effective in about half the vignettes and ineffective in the rest. This design allows us to infer if voters support candidates for effective relief over effective preparedness but also to compare if voters are more likely to reward candidates for relief or preparedness efforts. Comparing support for preparedness and relief efforts, we can infer if voters differ in their expectations that policy efforts are effective. The premise is that politicians can vary their effort in policy design and implementation. However, policy success depends not only on effort, but also on chance (lucky or unlucky circumstances). Because we randomly assign the success of a policy, we can keep the chance constant across relief and preparedness efforts. Therefore, differences in voter support for policy efforts should be driven by voters' prior expectations about the likelihood of a policy being successful. I measure *preparedness efforts* by the time candidates invest in a

Table 1: Conjoint Experiment: Candidate Profiles

Factor (Z)	MP 1	MP 2
Effort		
Preparedness	(0) Little work on disaster prep. plan	(1) A lot work on disaster prep. plan
Relief	(0) Absent in relief meetings	(1) Attended meetings to coordinate relief
Effectiveness		
Preparedness	(0) Prep. plan ineffective against flood	(1) Prep. plan limited flood damage
Relief	(0) Did not donate funds to village	(1) Donated funds to village
Other		
Ask	(0) Did not ask for help from funders	(1) Did ask for help from funders
Visit	(0) Did not visit the disaster site	(1) Visited disaster site, declared solidarity
Corruption	(0) No record of corruption	(1) Convicted of corruption
		(2) Convicted of vote buying

disaster preparedness plan. I use disaster preparedness plans as they cover entire communities or regions and are a clear case of a local public good. Additionally, disaster preparedness and emergency plans were widely discussed in the aftermath of the 2015 floods. I measure *effective preparedness* using a binary attribute that captures the extent to which a preparedness policy mitigated the negative impact of a disaster. While MPs are not officially in charge of disaster relief, they are often involved in oversight and coordination and use their access to funds to provide relief aid (Kita 2017). Therefore, I measure *relief efforts* by the effort candidates allocate to coordinate disaster relief. Finally, I measure *effective relief efforts* through the allocation

[12]The attribute order in the conjoint was fixed rather than randomized because the 'effective' attributes only made sense in the context of the preceding 'effort' attributes.

of funds by the MP to a village. Both effective preparedness and relief should reduce disaster harm. However, only the effective preparedness attribute explicitly states that it mitigated destruction. The effective relief attribute assumes that respondents perceive funds from MPs as an effective means to reduce harm. Indeed, survey evidence indicates that respondents who previously received relief aid were satisfied with the response, implying that the funds translated into meaningful assistance.[13] Thus, it's reasonable to assume that respondents view relief funds as effective in alleviating disaster harm.

In addition, I include several other disaster-policy attributes that voters might consider. Previous research found that foreign aid can signal government competence (Winters, Dietrich, and Mahmud 2018). Therefore, I rely on an attribute indicating that a candidate asked an NGO or International Organization for material benefits. Second, faced with natural disasters, politicians often resort to visits and symbolic actions to signal that they care about their constituencies (Lazarev et al. 2014). Therefore, I include an attribute in which candidates visit the disaster site. Third, candidates may target resources to buy votes or embezzle funds for personal use. Accordingly, I include indicators for embezzling resources for personal use (corruption) and handing cash to buy votes (vote buying). Beyond disaster policies, voters also select politicians based on gender or ethnicity. To mitigate these concerns, I held those factors constant and introduced candidates that were male, had the same age (around 50), and came from the same tribe (indicating their ethnicity), but differ on their natural disaster policies.[14]

Empirical Findings

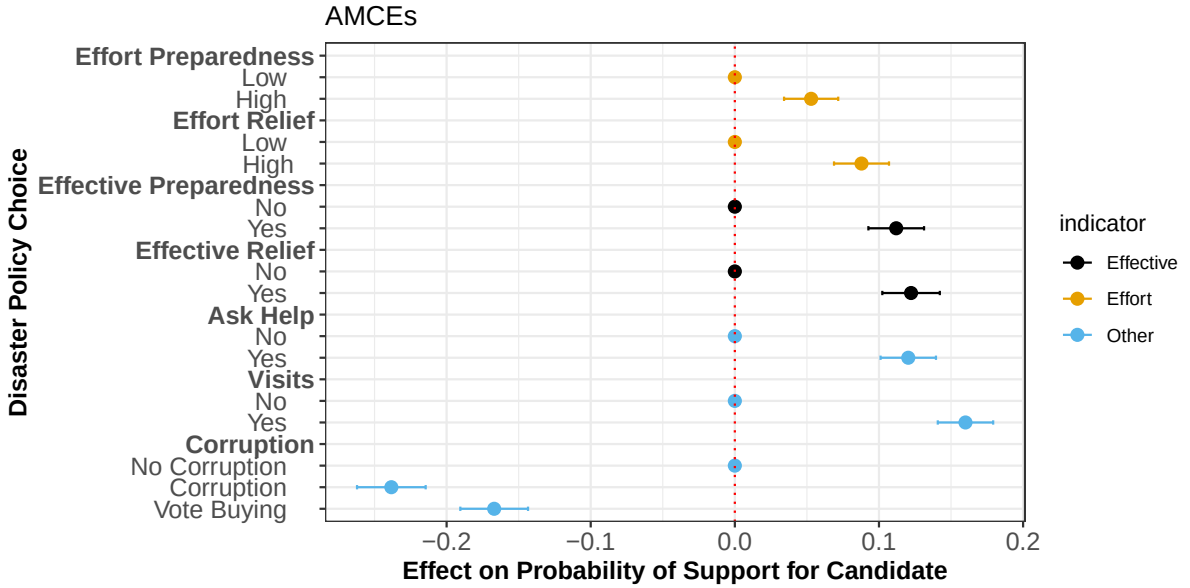
Figure 1 displays the ACMEs. Several findings can be noted. First, voters value candidate relief efforts over preparedness efforts. While the confidence intervals of the two coefficients overlap, the linear hypothesis test reveals that both are statistically different at the 0.05 level. Second, effective prevention policies that mitigated destruction are rewarded equally to post-disaster relief spending. This is supported by insignificant differences in the linear hypothesis test.[15] Third, voters value not only material benefits but also personal visits. Personal visits by the candidate to the disaster site have the strongest positive treatment effect, indicating a strong signaling effect. It is striking that asking international actors for help is valued equally

[13] For details, refer to Appendix B.7.

[14] See Appendix H.3 for the complete introduction text.

[15] See Appendix I.2 for the formal analysis of the linear hypotheses.

Figure 1: Main Results



Notes: Beta coefficients from OLS regression with robust standard errors in parentheses. Standard errors are clustered at the individual level. Horizontal lines indicate 95% confidence intervals. The baseline is always the (0) level of the given attribute.

to providing actual relief. These effects are likely driven by context, as international actors' aid is the primary source of relief.[16] Fourth, the strongest negative predictor for vote choice is the embezzlement of humanitarian aid and vote buying. Notably, voters react negatively to the embezzlement of aid for private use (corruption) but are less sensitive to vote buying. The magnitude of the vote buying effect is relatively small given the treatment's strong wording ("convicted for vote buying"). Moreover, the effects are not symmetrical; the embezzlement of aid (corruption) is more harshly punished than the delivery of benefits is rewarded. We can conclude that citizens prone to frequent disasters do not have a preference for vote buying. While there is some heterogeneity across different rounds of the experiments, the patterns are robust and emerge in both earlier and later rounds.[17]

Pessimistic expectations about the effectiveness of preparedness seem to drive policy support. I find that voters value relief efforts significantly more than preparedness efforts. If preparedness is shown to effectively mitigate disaster outcomes, voters value it similarly to effective relief provision. The source of these pessimistic expectations can be manifold. Importantly, and contrary to hypothesis H2, I find no significant interaction between corruption and preparedness efforts, suggesting that the low returns for preparedness are not driven by

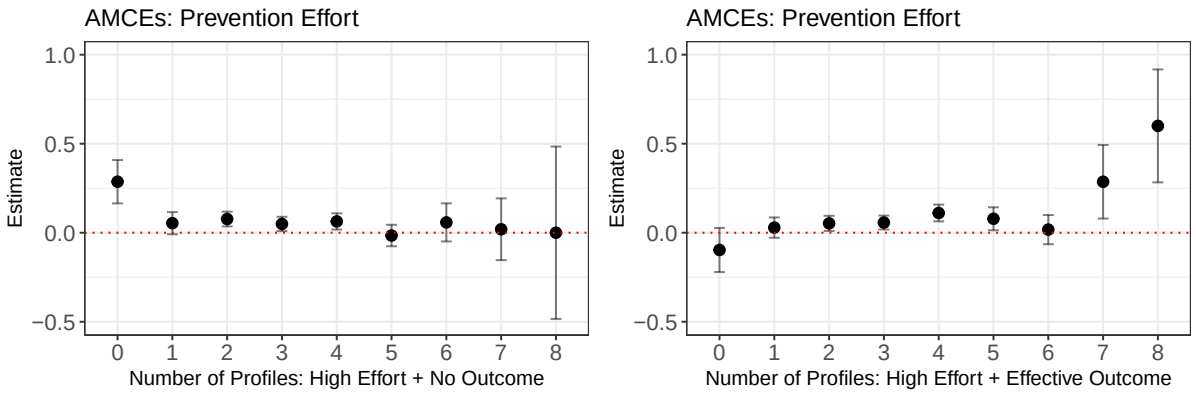
[16] See Figure A6 in the Appendix.
[17] See Appendix I.4.

voter beliefs that candidates are corrupt and, therefore, may misallocate funding.[18] Alternatively, these expectations might stem from the fact that voters have not observed politicians engaging in effective prevention efforts in the past, yet have seen them linked to effective relief outcomes. In such cases, voters may revise their beliefs about the effectiveness of preparedness if they observe successful prevention measures. Theoretically, voters might receive new signals (information) about the relationship between actions (investment in disaster preparedness) and outcomes (effective reduction of damages due to a disaster), prompting them to update their beliefs. Therefore, voters should be more inclined to support incumbents for preparedness efforts if they are presented with information demonstrating the effectiveness of such efforts. To test this expectation, I utilize the fact that the conjoint experiment was conducted over six rounds, with respondents being randomly exposed to varying numbers of profiles demonstrating either effective or ineffective preparedness efforts. Firstly, I divide the respondents into subgroups based on how many 'high preparedness efforts' plus 'effective preparedness' profiles they were exposed to over six contests.[19] For example, an indicator value of three signifies a respondent encountered three such profiles among 12 viewed. This way, I proxy the information respondents received about the effectiveness of preparedness efforts by the number of high-effort and effective outcome profile combinations a respondent observed over the six contests. Next, I plot AMCE of preparedness efforts (Y) for each of the effective and ineffective subgroups (X) (see Figure 2). The baseline for each AMCE is always candidates who invested no effort in preparedness. Descriptively, we can see in the left panel that the marginal effect of prevention effort is decreasing in the number of ineffective effort profiles a respondent saw throughout the experiment. The right panel shows that the trend is reversed if we condition the marginal effect on the number of profiles that showed a high effort and effective outcome combination. The results provide some suggestive evidence that voters hold a priori pessimistic expectations but that these expectations may change if voters observe enough successful prevention policies.

[18] In fact, none of the interaction effects between any attributes are statistically significant. See Table A7 in Appendix I.3.

[19] Since each factor is randomly assigned to two MP profiles in each of the six rounds, a respondent could—in theory—see this combination up to 12 times at most, once in each of the six rounds for both candidates. In the data, the most frequent occurrence of this combination was eight times.

Figure 2: Marginal Effect of Prevention Effort Conditional on Effectiveness.



Notes: Beta coefficients from OLS regression with standard errors in parentheses. Vertical lines indicate 95% confidence intervals. The baseline is low levels of prevention effort.

Discussion and Limitations

To mitigate future calamities, politicians must invest in disaster preparedness. Instead, they often rely on relief, which is less cost-effective. Previous research suggests that one reason for this underinvestment might be that voters provide the wrong incentives to politicians, as they appear to reward relief spending but not preparedness spending. However, to date, we lack empirical evidence regarding whether this reflects voters' preferences, namely, if voters generally value relief over preparedness. I find no evidence that voters generally reward effective relief policies over effective preparedness. However, voters do support relief efforts more than preparedness efforts, indicating that they have pessimistic expectations about the effectiveness of preparedness efforts compared to relief efforts.

How do these findings apply in real-world settings? The survey experiment informed respondents about the policy actions by candidates, and if they turned out to be effective. However, people may lack detailed information on disaster policies. It might be particularly challenging for voters to observe preparedness policies. Efforts to create early warning systems or emergency planning might be less salient and/or visible to voters compared to meetings to coordinate disaster relief because their benefits are more abstract, they lack immediate impact, and are technically more complex. However, the findings suggest that even if voters could observe efforts in preparedness, they would be less likely to support them at the ballot box than efforts in response. It is perhaps even more difficult for voters to ascertain their effectiveness because effective disaster preparedness means that a potential disaster may not materialize as

such–thus, voters may not even realize there's something to reward. Consequently, clear communication about the success of preparedness measures by politicians is essential for garnering political support.

How do politicians communicate their efforts and the effectiveness of their disaster policies to voters? Politicians can reach the public via speeches, media interviews, or community meetings, while voters can access this information through those channels.[20] However, the question remains: Do voters in Malawi and elsewhere have access to this information? An additional analysis, utilizing data on news coverage across 65 countries (including Malawi) from 2017 to 2023, reveals that while voters have access to information about disaster policies comparable to other policy areas, media coverage predominantly emphasizes relief.[21] Further analysis of political speeches at the EU level indicates a lesser likelihood of disaster preparedness mentions compared to relief.[22]

The evidence presented here does not invalidate the findings of Healy and Malhotra (2009); rather, it refines their interpretation. It suggests that voters may still favor relief over preparedness, not due to a general preference but because of pessimistic expectations regarding the effectiveness of preparedness efforts. These expectations could be a significant driver of voting behavior, as evaluating the effectiveness of preparedness is challenging. Moreover, preparedness topics tend to receive less attention from the news media and are infrequently mentioned by politicians in public speeches, further complicating the public's understanding and valuation of these efforts. This analysis, while not exhaustive, underscores the importance of making disaster preparedness as politically appealing as disaster relief. Encouraging politicians to invest in disaster prevention could involve several strategies: showcasing the cost-effectiveness of prevention compared to relief, highlighting the political dividends of successful prevention efforts, and leveraging media and public education campaigns to clarify the benefits of prevention to voters. Indeed, this study has the potential to contribute to updating politicians' beliefs regarding the value of disaster preparedness. Lastly, future research should investigate whether voters maintain similar preferences in contexts characterized by infrequent disaster exposure, enhanced state capacity for disaster policy implementation, and varying degrees of corruption.

[20] See Appendix K for examples.

[21] Compared to other policy areas, unemployment receives more coverage, while the coverage of taxation aligns closely with that of relief policies. For details, please see Appendix K.1.

[22] For details, see Appendix K.2.

Theoretically, these variables may critically influence how voters perceive the effectiveness of disaster preparedness policies, shaping their expectations and, ultimately, their political support for such initiatives.

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