

CAUSAL FRAMING OF THE SUMATRA FLOODS IN THE JAKARTA POST

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Abstract

This study examines media framing and responsibility attribution in *The Jakarta Post*'s early disaster communication regarding the 2025 Sumatra floods. A corpus consisting of 29 articles published between 28 November and 10 December 2025 was analysed. The methodology combined prominence coding with critical discourse analysis. Initially, each headline and the first 50 words of the article body were coded to identify the most prominent causal explanation. Next, full texts were coded for anthropogenic-cause claims, source types, metaphors, agentless passives, and nominalisations. Fifteen articles (51.7%) foregrounded meteorological causation, two (6.9%) foregrounded anthropogenic causation, and twelve (41.4%) provided no explicit causal frame in the headline or lead. Five articles (17.2%) contained a body-level anthropogenic-cause claim under the conservative coding rule. Government sources appeared in 28 articles (96.6%), expert or scientific sources in 19 (65.5%), and NGO sources in 5 (17.2%). Agentless passives occurred in 27 articles (93.1%) and nominalizations in 25 (86.2%). The findings show that early media framing made weather and official information more textually prominent than land-use and corporate drivers, although anthropogenic explanations entered some later reports. The study contributes a replicable procedure for examining how prominence, sourcing, and grammar organise disaster causation without assuming audience effects.

Keywords: framing, discourse analysis, natural disaster, media coverage, responsibility attribution

Introduction

In late November 2025, extreme rainfall associated with Tropical Cyclone Senyar and other atmospheric disturbances produced floods and landslides across Aceh, North Sumatra, and West Sumatra. The Meteorology, Climatology, and Geophysics Agency recorded daily rainfall of 310.8 mm in North Aceh, 262.2 mm in Medan, 229.7 mm in Central Tapanuli, and 154 mm in Padang Pariaman during 25-27 November (Badan Meteorologi, Klimatologi, dan Geofisika [BMKG], 2025). By 9 December, the National Disaster Mitigation Agency had recorded 964 deaths, 264 people missing, and 894,101 displaced across the three provinces (Badan Nasional Penanggulangan Bencana [BNPB], 2025). These figures changed as verification continued, but they establish the scale of the crisis during the period analyzed here.

How journalism explains such an event matters because causal framing identifies which processes appear relevant and which responses appear warranted. Entman's (1993) account of framing treats causal interpretation and moral evaluation as related but distinct functions. Disaster coverage may therefore describe rainfall accurately while giving less prominence to land-use change, corporate activity, or governance conditions that can intensify hazard exposure (Adiprasetio et al., 2024; Cheng et al., 2017).

This study distinguishes causal responsibility from moral or legal responsibility. Causal responsibility concerns a process or condition that contributes to an outcome, whereas moral or



legal responsibility assigns blame, negligence, liability, or a duty to repair (Cheng et al., 2017; Dranseika, 2016). Thus, 'forest clearing increased runoff' is a causal proposition, while 'a company negligently cleared the watershed and should be sanctioned' is a moral or legal attribution. Maintaining this distinction prevents operational criticism of disaster response from being treated automatically as an explanation of flood causation.

The analysis focuses on early coverage because breaking-news periods tend to privilege official information, immediate impacts, and emergency response, while structural explanations may appear in later follow-up reporting (Han et al., 2022; Xie et al., 2025; Yamada, 2022). *The Jakarta Post* was selected as a national English-language case whose reporting is available to domestic and international readers. This is a case-selection rationale, not a claim about the outlet's audience effects. The study asks: How did *The Jakarta Post* frame the causes of and attribute responsibility for the 2025 Sumatra floods in its early coverage, and how did these textual patterns vary by publication phase and section?

The contribution is both conceptual and methodological. Conceptually, the study separates causal from moral or legal responsibility. Methodologically, it links headline-and-lead prominence coding to sentence-level coding and close discourse analysis, thereby making the transition from corpus-wide patterns to linguistic interpretation explicit. The study analyzes published text; it does not measure reader interpretation, newsroom intention, or policy effects.

Literature Review

Framing theory and the logic of prominence

Framing theory is widely used to examine how news media shape public understanding of environmental events. Entman's (1993) model explains framing as the selection of aspects of reality to define problems, identify causes, make judgments, and suggest solutions. This model offers a clear framework for assessing when and how particular explanations become prominent in coverage.

Research consistently shows that prominence matters. Headlines and opening paragraphs strongly shape reader interpretations, especially in early crises (Bailon et al., 2025; Entman, 1993). Corpus-based studies show that during disasters, meteorological explanations appear more in these visible spots (Bailon et al., 2025; Entman, 1993). This creates an "event-first" perspective focused on immediate weather and emergency responses. Broader structural or policy explanations are often pushed to the background (Bailon et al., 2025; Xie et al., 2025). Identifying and explaining this prominence effect (i.e., how information placement influences interpretation) is the first key analytical task of this study.

In this study, prominence is treated as a textual property rather than evidence of psychological priming. The four categories were constructed deductively from framing theory and the causal-responsibility distinction: Meteorological, Anthropogenic, Mixed, and Undetermined. Their operational boundaries are specified in the method.

Responsibility: causal versus moral

A recurring issue in framing research is how the public understands "responsibility." Scholars in philosophy and the social sciences distinguish between two forms: *causal responsibility* (i.e., processes or factors that contribute to an outcome) and *moral or legal responsibility* (i.e., assigning blame, fault, or liability that may require punishment or corrective action (Cheng et al., 2017; Dranseika, 2016). This difference is more than semantics. Saying "plantation clearing increased runoff" gives a technical explanation, while "Company X negligently cleared the watershed and must be held accountable" carries moral, legal, and political implications.

Empirical research shows that news media can present accurate information about causes and still avoid explicit judgments of responsibility. This often happens through placement of information, cautious framing, or source selection (Alonso-Jurnet & Larrondo-Ureta, 2024; Cheng et al., 2017). For this reason, this study treats causal explanations and moral attributions as separate analytical categories. It examines the linguistic and structural features, such as prominence, grammatical voice, and metaphor, that either enable or limit the shift from explaining

an event to assigning blame.

Linguistic mechanisms: metaphor, grammar, and agency

Critical Discourse Analysis (CDA) holds that small linguistic choices can have broad political effects, but only when specific mechanisms are identified and analyzed. Research highlights three mechanisms: metaphor, grammatical agency (voice and transitivity), and nominalization or word choice.

Metaphors shape how we understand and judge events. Words like “wave,” “tsunami,” or “wrath of nature” combine scale, emotion, and causation in one image. These terms suggest inevitability and reduce the perceived impact of human actions (Nurgazina et al., 2025; Otaif, 2024). How often and where metaphors appear influences how we frame issues and their policy importance.

Grammatical choices also affect how responsibility is assigned. For example, using the passive construction “villages were flooded” removes the actor, whereas the active construction “illegal logging flooded villages” makes the agent explicit. These illustrate how agency or causation is represented. When agents are omitted, it becomes harder to attribute responsibility (Fairclough, 2010; van Dijk, 1993). These choices are not merely stylistic; they function as subtle mechanisms that make causal relationships appear less open to political action.

Nominalization and word choices reshape how events are seen. Changing actions into nouns or using neutral terms, such as calling it an ‘event’ rather than a ‘disaster linked to land-use change,’ makes ongoing processes seem static. This can reduce the sense that structural solutions are needed (Chmutina & von Meding, 2019; Nurgazina et al., 2025).

Taken together, this body of research supports a mixed analytical approach. Quantitative techniques, such as counting keywords and their positions in texts, can identify broad patterns, while close, sentence-level CDA allows for a deeper interpretation of how metaphor, grammatical voice, and nominalization operate in context (Nurgazina et al., 2025; Ronquillo et al., 2014).

Sources, timing, and the Indonesian context

Who is quoted in a news story, and at what point, plays an important role in shaping which explanations are taken seriously and which actors are seen as credible. Long-standing research shows that heavy reliance on official sources, such as meteorological agencies, disaster authorities, and government spokespersons, creates a hierarchy of credibility; this tends to favor certain explanations while pushing others to the margins (Boykoff & Boykoff, 2004; Cox et al., 2008). Research on institutional communication also shows that news framing changes over time. Early and routine reporting usually focuses on weather conditions and emergency responses, while discussions about responsibility and accountability are more likely to appear later, during follow-up coverage or investigative reporting (Han et al., 2022; Xia et al., 2022; Xie et al., 2025). These patterns support the use of a 14-day time frame and a diachronic approach to track changes in emphasis and responsibility attribution.

The Indonesian media context makes this issue especially relevant. Recent studies point to an “ecological silence” in mainstream news, where key land-use factors such as plantation expansion and illegal logging are often underreported, even though environmental research clearly links these activities to higher flood risk (Adiprasetyo et al., 2024; Husni, 2025; Merten et al., 2020; Sugianto et al., 2022). This gap between strong scientific evidence and limited media attention makes *The Jakarta Post* a valuable case for examining how source selection, story placement, and language choices together shape public understanding and accountability.

Research Method

Corpus construction

Articles were retrieved from *The Jakarta Post*'s official website using the terms ‘Sumatra’ and ‘flood’. The site interface displayed approximately 69,300 raw results before date screening. This figure reflected broad token matching and was treated only as an interface output, not as the sampling denominator. The search was filtered from 25 November to 10 December 2025. Eligible items had to be published within that interval and focus centrally on the late-November floods or

landslides in Aceh, North Sumatra, or West Sumatra. Paywalled items were accessed through a digital subscription.

The final corpus consists of 29 articles published within a verified window of 28 November to 10 December 2025. This 13-day period is characterized as "early coverage" rather than a standard 14-day window. Appendix A lists the article IDs, publication dates, headlines, sections, and URLs.

The prominent unit comprised the headline plus the first 50 words of the body, or the entire opening paragraph if shorter. The headline took priority when it contained an explicit causal proposition; otherwise, the lead determined the category. Operational or moral criticism without an explicit causal proposition did not qualify as a causal frame.

Coding protocol

Table 1 outlines the coding framework employed in this study, providing operational definitions and illustrative examples for each category.

Table 1. Operational coding framework

Category	Operational definition	Decision rule/example
Meteorological frame	Weather or atmospheric mechanism is explicitly related to flood occurrence or severity in the headline/lead.	Cyclone, extreme rain, or storm explicitly presented as trigger/amplifier.
Anthropogenic frame	A human land-use, corporate, infrastructure, or governance condition is explicitly related to occurrence/severity in the headline/lead.	'Deforestation turbocharged ... floods.'
Mixed frame	Meteorological and anthropogenic causes are both explicit and comparably salient in the prominent unit.	Both causes must be present; a later body mention is insufficient.
Undetermined frame	Headline/lead reports impacts, response, status, or blame but gives no explicit causal explanation.	Casualty or emergency-status headline without a causal proposition.
Anthropogenic-cause sentence	Specific human activity and explicit causal/amplifying language co-occur in one sentence.	High confidence; adjacent linked sentences allowed only as Low confidence.
Source flags	Named government, expert/scientific, or NGO/civil-society source occurs anywhere in the article.	Binary article-level presence; source propositions were not frequency-counted.
Metaphor	A listed scale/force metaphor is used for the flood.	Examples: 'tsunami', 'wall of water'; speaker attribution retained.
Agentless passive	Be/get auxiliary plus past participle with no expressed agent in a relevant clause.	Binary article-level presence; not a total count.
Nominalization	A flood-related process is represented as a noun rather than an actor-linked action.	Examples include destruction, displacement, evacuation, and mitigation.

Note: Source and linguistic-feature frequencies report the number of articles containing at least one instance, not total occurrences.

Full texts were then coded sentence by sentence for anthropogenic-cause claims and read for source and linguistic features. Four same-sentence claims were coded High confidence. One paragraph-adjacent case was retained as Low confidence because the first sentence named clearing for plantations and mining and the next linked the hardest-hit areas to degraded watersheds. Moral or legal attribution was examined qualitatively and was not collapsed into the primary causal-frame variable. Appendix B contains the expanded codebook; Appendix C

contains the final article-level coding.

CDA exemplar selection and quality control

Close-reading exemplars were selected after binary coding using five stated criteria: a contrastive or disputed headline/lead classification, a clear anthropogenic-cause sentence, a metaphor with identifiable speaker, an agentless passive or nominalization relevant to agency, or an explicit moral attribution. The exemplars were not treated as representative quotations independent of the corpus counts; they explain the mechanisms underlying particular coded cases.

In the initial coding round, both authors coded the candidate set independently after calibration on multiple sections. Agreement was $\kappa = 0.80$ for primary frame, $\kappa = 1.00$ for the conservative anthropogenic-cause flag, and approximately $\kappa = 1.00$ for metaphor coding. Disagreements were reconciled.

Ethics

The study used published newspaper texts and involved no human participants, interviews, private communications, or personal data collection. Articles were publicly accessible or accessed through an ordinary subscription. Quotations are limited to short passages necessary for scholarly analysis.

Results and Discussion

Corpus profile and primary-frame prominence

The 29 articles comprised 14 Archipelago, 8 Society, 3 Business, 2 Politics, and 2 Opinion items. Under the prominence rules, 15 headlines/leads (51.7%) foregrounded a meteorological cause, 2 (6.9%) foregrounded an anthropogenic cause, and 12 (41.4%) were Undetermined. None was Mixed. The two anthropogenic headlines were JP14, 'How deforestation turbocharged Sumatra's deadly floods,' and JP29, 'Govt suspends four firms suspected of contributing to deadly North Sumatra flooding.' JP03 was classified as Undetermined because both its headline and opening were operational, concerning emergency status, rather than causal.

Prominence and body-level anthropogenic attribution

Five articles (17.2%) contained an anthropogenic-cause claim in the body: JP14, JP15, JP20, JP23, and JP29. Four met the same-sentence High-confidence rule; JP15 met the paragraph-adjacency Low-confidence rule. Table 2 shows that three of these five claims occurred outside an anthropogenic headline/lead frame. Thus, anthropogenic causation was not absent, but its body-level presence exceeded its prominence.

Table 2. Primary frame by body-level anthropogenic-cause claim (N = 29)

Primary frame	Claim present	Claim absent	Total
Meteorological	1	14	15
Anthropogenic	2	0	2
Undetermined	2	10	12
Total	5	24	29

Note: Percentages reported in the text are rounded to one decimal place.

Sources and linguistic features

Government sources appeared in 28 articles (96.6%), expert or scientific sources in 19 (65.5%), and NGO or civil-society sources in 5 (17.2%). Agentless passives occurred in 27 articles (93.1%), nominalizations in 25 (86.2%), and listed metaphors in 5 (17.2%). These are binary article-level frequencies; they do not indicate how many instances occurred or how much textual space each feature received.

Table 3. Article-level source and linguistic-feature frequencies

Feature	Articles	%
Government source	28/29	96.6
Expert/scientific source	19/29	65.5
NGO/civil-society source	5/29	17.2
Agentless passive	27/29	93.1
Nominalization	25/29	86.2
Listed metaphor	5/29	17.2

Note: Presence means at least one coded instance in an article; totals are not occurrence counts.

Publication-phase pattern

For descriptive comparison, the verified window was divided into 28 November-2 December, 3-7 December, and 8-10 December. No anthropogenic primary frame or body-level claim appeared in the first phase. Four of the five body-level claims appeared in the middle phase and one in the final phase. Expert and NGO sources did not show a monotonic increase across phases. Given the small and unequal phase totals, these distributions are descriptive and no trend test was conducted.

Table 4. Frames, claims, and sources by publication phase

Measure	28 Nov-2 Dec (n = 10)	3-7 Dec (n = 14)	8-10 Dec (n = 5)
Meteorological primary	5	8	2
Anthropogenic primary	0	1	1
Undetermined primary	5	5	2
Anthropogenic body claim	0	4	1
Government source	10	13	5
Expert/scientific source	4	12	3
NGO source	0	4	1

Section differences

The two anthropogenic primary frames appeared in Society (JP14) and Archipelago (JP29). Body-level claims appeared in Archipelago (two), Society (two), and Business (one). Politics and Opinion contained no strict anthropogenic-cause sentence, although Opinion included explicit moral criticism of government response. These small section cells do not support general claims about genre effects.

Table 5. Primary frames and anthropogenic claims by section

Section	N	Met.	Anth.	Undet.	Body claim
Archipelago	14	8	1	5	2
Society	8	4	1	3	2
Business	3	0	0	3	1
Politics	2	2	0	0	0
Opinion	2	1	0	1	0

Note: Met. = Meteorological; Anth. = Anthropogenic; Undet. = Undetermined.

Close CDA exemplars



Operational prominence. JP03 (28 November, Society) was headlined 'No disaster status escalation for Northern Sumatra flood, BNPB says.' The clause identifies an institution and a decision about emergency status, but it does not state why the flood occurred or intensified. Therefore, it is classified as Undetermined, not Meteorological. A later metaphor does not alter the headline/lead classification.

Anthropogenic causal prominence. JP14 (3 December, Society) used 'How deforestation turbocharged Sumatra's deadly floods.' The verb 'turbocharged' assigns an amplifying role to deforestation and gives that proposition headline prominence. In the body, the quoted explanation 'When the forest is cleared upstream, rainwater runs off rapidly into rivers creating flash floods' represents forest clearing as an action followed by a hydrological mechanism. The source attribution identifies the proposition as expert testimony rather than the reporter's unqualified voice.

Attributed and hedged causation. JP23 (6 December, Archipelago) stated: 'Green groups blame deforestation linked to mining and logging for amplifying damage from the floods, and Indonesia is investigating companies suspected of clearing forests around flood-hit areas.' The first coordinated clause contains a specific activity and the causal phrase 'amplifying damage,' satisfying the same-sentence rule. 'Blame' and 'suspected' also mark the claim as attributed and partly hedged; causal content is present, but legal culpability remains unresolved.

Metaphor and speaker attribution. JP10 (2 December, Archipelago) quoted a survivor describing the water as 'unstoppable, like a tsunami wave.' The comparison intensifies speed, force, and uncontrollability. Because it is a survivor's experiential description, it should not be treated automatically as the newspaper's own causal position. Its discourse effect is to scale the event, not to identify a responsible actor.

Moral responsibility. JP26 (8 December, Opinion) used the headline 'Analysis: Prabowo's sluggish response to devastating Sumatra floods.' The evaluative adjective 'sluggish' assigns responsibility for the response to a named political actor. It is a prominent moral or performance judgment, but it is not itself a causal explanation of why flooding occurred. This case demonstrates why causal and moral coding must remain separate.

Discussion

The findings indicate that meteorological causation was the most common prominent explanation, appearing in 15 of 29 headlines/leads, whereas explicit anthropogenic causation appeared prominently in 2. Twelve prominent units provided no causal explanation. The body-level analysis identified five anthropogenic-cause articles, showing that such explanations were present but often less prominent. This pattern is consistent with Entman's (1993) argument that selection and placement organize interpretation, but the present study establishes textual availability, not reader priming.

The source findings also require careful interpretation. Government sources were nearly universal, reflecting the central role of agencies and officials in emergency information. Expert or scientific sources appeared in 19 articles, a comparatively high article-level presence, yet only five articles contained a strict anthropogenic claim. This is not evidence that experts rejected anthropogenic explanations. The source variable records whether an expert or scientific report appeared, not whether that source discussed weather, hydrology, health, response, recovery, or land use. JP14 demonstrates that expert testimony could articulate a clear land-use mechanism, but a proposition-level source analysis would be required to quantify expert topics across the corpus. The study therefore treats this mismatch as a limitation and a research question rather than inferring expert silence.

Agentless passives and nominalizations were present in most articles, but their article-level prevalence does not mean that every instance concealed responsibility. In operational reporting, passives may efficiently foreground victims or impacts. CDA interpretation depends on context: 'roads were destroyed' omits a causal agent, while a passive reporting verb may simply organize information. Likewise, a survivor's tsunami metaphor conveys lived scale rather than editorial endorsement of natural inevitability. The combination of binary counts and close analysis

helps avoid treating grammatical form as political effect by definition (Fairclough, 2010; van Dijk, 1993).

The phase table shows that anthropogenic frames and claims were absent in the first phase, concentrated in the middle phase, and present in one final-period article. Expert and NGO presence did not increase monotonically. Similarly, the section table identifies where claims occurred but cannot establish genre effects because Business, Politics, and Opinion each contain only two or three items. These results should be understood as descriptive patterns within a bounded early corpus.

The distinction between causal and moral responsibility remains analytically useful. JP14 and JP29 connect human drivers to flood severity, while JP26 criticizes government response. A report can do one without doing the other. This separation prevents a political-accountability headline from being counted as a flood-cause explanation and also shows how hedging, attribution, and placement mediate the strength of responsibility claims (Alonso-Jurnet & Larrondo-Ureta, 2024; Cheng et al., 2017).

The textual implications are practical but conditional. Editors can increase the visibility of supported land-use or governance explanations by placing them in headlines and leads. Experts and civil-society organizations can provide concise statements that identify both the relevant activity and the causal mechanism. These practices may broaden the explanatory range of early reporting, but the present data cannot show that they would change public opinion, policy debate, or institutional behavior. Those outcomes require audience and policy research.

This study is limited by a single outlet, a small corpus, and a search interface that produces broad approximate results. The corpus should be understood as a documented, bounded retrieval rather than a claim about all Indonesian journalism. Source and linguistic variables are binary article-level indicators; they do not measure frequency, textual allocation, or source propositions. The agreement coefficients describe the initial coding round, while the final dataset incorporates a post-review rule audit. Finally, the study does not examine newsroom decisions or audience reception.

Conclusion

In The Jakarta Post's early coverage of the 2025 Sumatra floods, 15 of 29 headlines/leads foregrounded meteorological causation, 2 foregrounded anthropogenic causation, and 12 gave no explicit causal explanation. Five articles contained a strict or low-confidence body-level anthropogenic-cause claim. Government sources appeared in 28 articles, expert or scientific sources in 19, and NGO sources in 5. These findings show that weather and official information received greater textual prominence than land-use and corporate drivers.

The study contributes a replicable procedure that connects headline-and-lead prominence, sentence-level causal coding, source flags, and context-sensitive CDA. It also operationalizes the difference between causal and moral or legal responsibility in disaster reporting. The conclusions concern one English-language outlet during a short early-coverage window and should not be generalized to other outlets or converted into claims about audience or policy effects. Future studies should compare outlets and languages, extend the time window, code source propositions and textual allocation, and test audience interpretations.

References

- Adiprasetyo, J., Rahmawan, D., Wibowo, K. A., Aliifa, D. N., & Hartanto, R. D. (2024). The ignorance of human cause: online news framing on floods in Indonesia. *Media Practice and Education*, 1–19. <https://doi.org/10.1080/25741136.2024.2443864>
- Alonso-Jurnet, Á., & Larrondo-Ureta, A. (2024). The Contribution of Extreme Event Communication to Climate Change Mitigation: Outrage and Blame Discourse in Twitter Conversation on Severe Fires. *Journalism and Media*, 6(1), 1. <https://doi.org/10.3390/journalmedia6010001>
- Badan Meteorologi, K. dan G. (2025). *Prospek Cuaca Mingguan Periode 28 November - 04 Desember 2025: Siklon Tropis "SENYAR" Punah, Gelombang Atmosfer Pengaruhi Cuaca Signifikan di Indonesia*. <https://www.bmkg.go.id/cuaca/potensi-hujan-sepekan/prospek->

- cuaca-mingguan-periode-28-november-04-desember-2025-siklon-tropis-senyar-punah-gelombang-atmosfer-pengaruhi-cuaca-signifikan-di-indonesia
Badan Nasional Penanggulangan Bencana. (2025, December 10). *Jumlah Pengungsi Akibat Bencana Hidrometeorologi di Aceh Menurun Signifikan*. <https://www.bnpb.go.id/berita/jumlah-pengungsi-akibat-bencana-hidrometeorologi-di-aceh-menurun-signifikan>
- Bailon, H., Boersma, K., Orellana-Rodriguez, C., & Van Den Homberg, M. (2025). Framing of disaster impact in online news media: a case study from Malawi on flood risk management. *Frontiers in Communication*, 10. <https://doi.org/10.3389/fcomm.2025.1519357>
- Boykoff, M. T., & Boykoff, J. M. (2004). Balance as bias: global warming and the US prestige press. *Global Environmental Change*, 14(2), 125–136. <https://doi.org/10.1016/j.gloenvcha.2003.10.001>
- Cheng, P., Wei, J., & Ge, Y. (2017). Who should be blamed? The attribution of responsibility for a city smog event in China. *Natural Hazards*, 85(2), 669–689. <https://doi.org/10.1007/s11069-016-2597-1>
- Chmutina, K., & von Meding, J. (2019). A Dilemma of Language: “Natural Disasters” in Academic Literature. *International Journal of Disaster Risk Science*, 10(3), 283–292. <https://doi.org/10.1007/s13753-019-00232-2>
- Cox, R. S., Long, B. C., Jones, M. I., & Handler, R. J. (2008). Sequestering of Suffering. *Journal of Health Psychology*, 13(4), 469–480. <https://doi.org/10.1177/1359105308088518>
- Dranseika, V. (2016). Moral responsibility for natural disasters. *Human Affairs*, 26(1), 73–79. <https://doi.org/10.1515/humaff-2016-0009>
- Entman, R. M. (1993). Framing: Toward Clarification of a Fractured Paradigm. *Journal of Communication*, 43(4), 51–58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
- Fairclough, N. (2010). *Critical Discourse Analysis* (2nd ed.). Routledge.
- Han, Z., Shen, M., Liu, H., & Peng, Y. (2022). Topical and emotional expressions regarding extreme weather disasters on social media: a comparison of posts from official media and the public. *Humanities and Social Sciences Communications*, 9(1), 421. <https://doi.org/10.1057/s41599-022-01457-1>
- Husni, M. (2025). Framing the Floods: Temporal Shifts and Ecological Silences in Indonesian Media. *Communica : Journal of Communication*, 3(3), 487–500. <https://doi.org/10.61978/communica.v3i3.782>
- Merten, J., Stiegler, C., Hennings, N., Purnama, E. S., Röhl, A., Agusta, H., Dippold, M. A., Fehrmann, L., Gunawan, D., Hölscher, D., Knohl, A., Kückes, J., Otten, F., Zemp, D. C., & Faust, H. (2020). Flooding and land use change in Jambi Province, Sumatra: integrating local knowledge and scientific inquiry. *Ecology and Society*, 25(3), art14. <https://doi.org/10.5751/ES-11678-250314>
- Nurgazina, A. T., Mongilyova, N. V., & Ismagulova, G. K. (2025). Metaphorical Framing of Natural Disasters in Media Discourse. *Forum for Linguistic Studies*, 7(12), 835–855. <https://doi.org/10.30564/fls.v7i12.12127>
- Otaif, F. A. (2024). Doing News Coverage Through Scripture: A Critical Analysis of Intertextuality and Metaphors in Aljazeera Media Discourse. *Theory and Practice in Language Studies*, 14(12), 3947–3958. <https://doi.org/10.17507/tpls.1412.30>
- Ronquillo, C. M., de Guia, R. G., Dela Rosa, Z. D., Dela Vega, M. C., Guevarra, G. T. J., & Rolda, L. R. (2014). Analyzing Disaster Frame Messaging and Its Impact on Risk Perception Among College Students. *Peninsulares International Journal of Innovation and Sustainability*, (1). <https://doi.org/10.5281/zenodo.12730114>
- Sugianto, S., Deli, A., Miswar, E., Rusdi, M., & Irham, M. (2022). The Effect of Land Use and Land Cover Changes on Flood Occurrence in Teunom Watershed, Aceh Jaya. *Land*, 11(8), 1271. <https://doi.org/10.3390/land11081271>
- van Dijk, T. A. (1993). Principles of Critical Discourse Analysis. *Discourse & Society*, 4(2), 249–283. <https://doi.org/10.1177/0957926593004002006>
- Xia, S., Huang, H., & Zhang, D. (2022). Framing as an Information Control Strategy in Times of Crisis. *Journal of East Asian Studies*, 22(2), 255–279. <https://doi.org/10.1017/jea.2022.5>
- Xie, Q., He, B., & Wang, J. (2025). Government as a disaster science communicator: does framing

differ between routine and emergency periods in China? *Humanities and Social Sciences Communications*, 12(1), 1745. <https://doi.org/10.1057/s41599-025-06028-8>

Yamada, K. (2022). A quantitative approach to the 2014 Mt. Ontake volcanic eruption news coverage: understanding the information gap and the public response to the anniversary coverage. *Journal of Applied Volcanology*, 11(1), 1. <https://doi.org/10.1186/s13617-021-00113-8>