

Shaping Perceptions: Media Framing and Tone in reporting Kerala's Landslides

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Abstract

This study investigates the impact of media narratives on disaster risk and response in Kerala, India, focusing on landslides from 2018 to 2022. Through a comprehensive content analysis of three national and three regional newspapers, we examined how print media framed and portrayed significant landslides. Our findings reveal a predominant use of negative tones, emphasizing the severity and adverse impacts of these events. The most utilized frame was the responsibility frame, highlighting Governmental and NGO roles in managing disasters. Economic consequences and human-interest frames also received significant attention, reflecting the broader impacts on the economy and personal stories of affected individuals. Notably, the morality frame was absent, indicating a lack of moral and ethical discussions in the media coverage.

This study underscores the media's critical role in shaping public perception and influencing disaster management policies. By highlighting the biases and framing choices in media coverage, we provide valuable insights for media practitioners, policymakers and researchers to enhance disaster communication strategies, fostering resilience and improving disaster preparedness and response in vulnerable regions.

Keywords: Media Framing, Landslide Coverage, Print Media Analysis, Disaster Reporting, Kerala Natural Disasters.

Introduction

During crises like natural disasters, the media is vital for disseminating information from emergency management agencies to the public including early warnings, updates and guidance on evacuation and disaster relief^{3,13,22,38,41}. For instance, the media functioned as an early warning system during the 2004 earthquake and Tsunami in the Indian Ocean, distributing crucial disaster information efficiently¹³.

Newspapers significantly influence public discourse and reflect political interactions by presenting various perspectives^{14,18}. Studies have utilized framing analysis to examine how media presentations affect public engagement in disaster preparedness and climate adaptation⁷⁻⁹. For instance, Boykoff et al⁹ explored journalistic norms in India and their impact on climate discourses, while Bogdan et al⁷

used frames to understand flood risk management perceptions in Canada. Boykoff⁸ investigated how media amplify certain actors' influence on climate challenges, viewing the climate debate as a manifestation of power dynamics.

The public's attention is drawn to and opinions about a variety of subjects are shaped by the news media^{11,16,30}. Media coverage is greatly influenced by agenda-setting and media framing^{28, 29, 32}. According to Kuypers²³, framing is the method by which communicators create a viewpoint that promotes a specific interpretation of the facts. According to Zuverink⁴¹, framing analysis is similar to framing a picture in that the frame selected affects perception by highlighting or hiding certain visual aspects.

According to research, crisis news stories can be framed around responsibility, conflict, human interest, economic consequences and morality^{2,6,10,32,36,40,41}. According to responsibility frames, the Government, people, or organizations are either responsible for the issue or have the ability to lessen it⁶, they may even be able to provide remedies². Human-interest frames emphasize sentimental tales that arouse emotions through the use of first-person narratives^{10,36}. Disputes during a crisis are highlighted by conflict frames⁴⁰. According to Nijkraake et al³², economic impact frames address the financial ramifications for all parties concerned. Stories containing moral lessons and allusions to religious principles are examples of morality frames that offer guidance on appropriate conduct in times of crisis^{6,32}.

Furthermore, public opinion is significantly impacted by the way the media covers news. Positive, negative, or neutral tone can generally be found^{16, 32,40}. Nijkraake et al³² noted that for pertinent organizations, crisis news coverage frequently adopts primarily negative or neutral tones. Valentini and Romenti⁴⁰ contend that variables such as accountability, involvement, blame, or conflict influence the media tone which is used to portray the involved parties.

Considering how important the media is to disaster relief efforts, a number of studies have looked at newspapers' coverage of natural disasters^{4,5,30,33,39}. However, in India, most studies have focused on cyclones and floods^{15,23}, leaving a gap in literature regarding landslides. Our study analyzes how media outlets use frames to shape the agenda during landslide coverage. The research questions of the study include:

(1) What are the most prominent news frames in landslide coverage and how do these frames differ across various media outlets?

(2) How does the tone of print media coverage of landslides vary between positive and negative perspectives and how does this differ across media platforms?

Material and Methods

Focal Disaster and Study Area: Landslides, prevalent in hilly areas globally, result from a combination of geological and anthropogenic factors, with rainfall acting as a natural trigger¹⁷. Kerala, situated in the Western Ghats of India faces heightened susceptibility to landslides due to its hilly terrain and intense monsoon rainfall²⁶. Notably, the State witnessed a surge in landslide incidents in recent years such as the devastating events in 2018, 2019 and 2020, resulting in significant fatalities²⁶. The majority of these landslides in Kerala are classified as debris flow landslides, characterized by swift flows along steep channels, posing substantial risks to human life and causing economic losses³⁷.

Content Analysis: A flexible research technique, content analysis is frequently used to achieve a variety of study goals in mass communication and hazard studies^{29, 32}. Utilizing various analytical tools to clarify, understand and realize information found in written or oral communication content, one can apply to quantitative, qualitative, or mixed-method studies⁶. We concentrate on qualitative content analysis (QCA) in this paper. "A research methodology that employs a systematic categorization process of coding and theme or pattern identification to enable the subjective interpretation of text data content", is how Hsieh and Shannon²⁰ define QCA.

Cho and Lee¹² emphasized the versatility of QCA in data analysis, as it can integrate either deductive or inductive methodologies, or a combination of the two. What, why and how questions are frequently addressed by researchers using QCA, such as Heikkila and Ekman¹⁹. Consistent codes or categories are used to identify and arrange data. As a strategy for descriptive inquiry, QCA essentially helps researchers to find relevant information from chosen content and to interpret it using preexisting theories, their knowledge or experience and prior research findings²⁵. This is how it functions as a strategy for QCA³⁴.

To perform the content analysis, we adhered to a four-step process as described by Schreier et al.³⁵ First, we reviewed relevant literature and formulated our research questions which were addressed in the introduction. Next, we selected materials by identifying and collecting pertinent newspaper articles related to landslides. Following this, we divided the content into segments using an existing coding frame, organizing the content based on themes identified in the literature review. Finally, we analyzed the data and communicated our findings.

Event Selection Criteria: We selected all landslides in Kerala that resulted in at least one death between 2018 and 2022. The selected events are listed below:

Data Sources and Collection: The primary data sources for this research encompassed online news articles from both national and regional newspapers. To ensure a comprehensive collection, the study deployed a dual-pronged approach. First, the Google search engine, followed by newspaper websites, was harnessed to procure a diverse array of articles from multiple sources. The search terms included a wide range of keywords such as 'Kerala landslides' or 'debris fall Kerala' or 'rockfall Kerala' and '2018-2022'. This holistic data collection strategy aimed to provide a multifaceted insight into how the media represented major landslides in Kerala over the specified time frame.

To ensure a robust and holistic understanding of the landslides that occurred in Kerala from 2018 to 2022, the data collection process was initiated by amassing an exhaustive list of 182 online news articles. These articles were collected from three prominent Indian English newspapers and three Malayalam newspapers to capture a comprehensive view of the events and their diverse portrayals. We selected the newspaper based on its circulation and readership.

Table 2 details the list of newspaper used for the study. This strategy ensured the research incorporated both regional nuances and broader perspectives, enhancing the study's depth and breadth. Furthermore, the selection of articles from accessible online platforms facilitated a smoother research process, ensuring meticulous analysis of all relevant articles.

Table 1
List of Landslides events selected for the study

S.N.	Landslide	Year	Death toll
1	Pettimudi (Idukki)	2020	70
2	Kavalappara (Malappuram)	2019	59
3	Puthumala (Wayanad)	2019	17
4	Kootickal (Kottayam)	2021	10
5	Kokkayar (Idukki)	2021	7
6	Kudayathoor (Idukki)	2022	5
8	Kuranchery (Thrissur)	2018	5
9	Kattipara (Kozhikode)	2018	8
10	Cherumkadavu (Palakkad)	2018	9

Table 2
List of Newspaper used for this Study

S.N.	Newspaper English	Circulation	Newspaper Malayalam	Circulation
1	The Hindu	1,415,792	Malayala Manorama	1,908,612
2	Indian Express	1,625,868	Mathrubhumi	1,084,215
3	The Times of India	1,872,442	Deshabhimani	622,276

Source: Audit Bureau of Circulation, 2023.

Data Analysis: We used a qualitative descriptive strategy to examine news reports about landslides in Kerala. This analysis used a "directed approach" in Qualitative Content Analysis (QCA) and was based on related works. One way to extend a theoretical framework or validate current theory is through directed content analysis²⁰. In order to establish research questions and to determine the initial coding scheme or linkages between codes, this deductive category application approach draws on pre-existing theory or research^{20,27,33}.

Using six deductive frameworks, we initiated our content analysis of the 182 articles. After setting up these sections in ATLAS.ti, we managed the data coding process, with assistance from a colleague experienced in framing analysis coding. Both collaborated to ensure accuracy and to resolve any issues that arose during the weekly discussions.

For tonal/sentiment classification, the first step involved lemmatizing the collected articles. This was accomplished by using the 'tm' package in RStudio version 4.1.2 to remove special characters, numerals, punctuations, English stop-words like "is," "the," "and," "a," etc., as well as white spaces. Subsequently, we used the AFINN Lexicon³¹ to assign sentiment scores on an integer scale from -5 to +5. All analyses were conducted using R version 3.6.1 and RStudio version 4.1.2.

Results

Tone of the Newspapers: Our comprehensive analysis of media portrayals of significant landslides in Kerala from 2018 to 2022 categorized the tone of news articles as positive, negative, or neutral. Articles with a positive tone aimed to instil hope and optimism among readers, often highlighting efforts such as those by the National Disaster Response Force (NDRF) in rescue operations. Such reports utilized terms like "saves," "clearing the damages," and "relief" to provide reassurance. Conversely, articles with a negative tone sought to evoke fear and raise awareness about the severity of the landslides, employing words like "kills," "died," "injured," "collapsed" and "suffered" to emphasize the devastating impact. Neutral articles presented a balanced mix of positive and negative information.

The distribution of tones across national and regional newspapers predominantly framed landslide events negatively, underscoring a significant focus on the severity and adverse consequences of these events in media coverage. Specifically, national newspapers contained 11

positive, 45 negative and 27 neutral articles, while regional newspapers featured 25 positive, 55 negative and 19 neutral articles as in table 3. This data indicates a prevalent negative tone in the media's depiction of landslides, reflecting an emphasis on the critical and detrimental aspects of these natural disasters.

Framing Analysis: To understand the media framing of significant landslides in Kerala from 2018 to 2022, we employed the framing analysis framework proposed by Semetko and Valkenburg³⁶. Six distinct frames were identified, each emphasizing different aspects of the media discourse surrounding these disasters as in fig. 1. The responsibility frame was most prominently featured, accounting for 37% of the total news coverage. This frame included discussions on warnings issued by authorities, preventive measures undertaken and the roles of government and NGOs in disaster management. Articles frequently mentioned efforts by the National Disaster Response Force (NDRF) and local government authorities in mitigating landslide impacts and coordinating rescue operations.

The economic consequences frame highlighted the financial impact of the landslides including direct damages and secondary economic repercussions, constituting 26% of the total coverage. National newspapers like The Indian Express and Times of India emphasized broader economic implications, while regional newspapers focused on local economic disruptions, reflecting significant concern over economic losses and recovery costs.

The human-interest frame, more prevalent in regional newspapers (9% of the coverage), included personal stories and local impacts such as narratives of death, injury, missing persons, disease outbreaks and the perseverance of affected individuals. For example, Malayala Manorama often covered stories of local residents clearing debris and rebuilding their communities, emphasizing human resilience and solidarity.

Notably absent from the media coverage was the morality frame, accounting for 0% of the total news, indicating a lack of focus on moral and ethical discussions, such as religious responses or instances of looting. The conflict frame, making up 5% of the total coverage, highlighted disagreements and disputes arising during the disaster, with regional newspapers more likely to cover conflicts over Government response and aid distribution, reflecting local tensions and challenges faced by affected communities.

Table 3
Tonal Distribution in Newspapers

Tone	National	Regional
Positive	11	25
Negative	45	55
Neutral	27	19

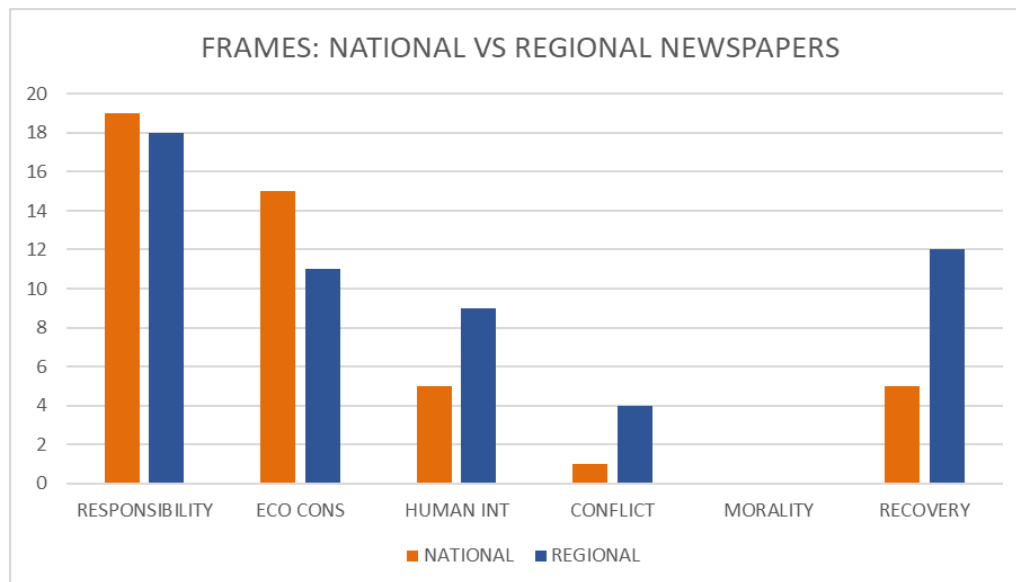


Fig. 1: Media framing of landslides in Kerala 2018-2022

Lastly, the recovery frame, prominently featured in both national and regional newspapers, emphasized efforts to restore normalcy and rebuild affected areas, constituting 17% of the total coverage. This frame highlighted Government initiatives, community efforts and the progress of rebuilding projects, providing a comprehensive view of the post-disaster recovery process.

Discussion

The extensive examination of media tone and framing in the coverage of significant landslides in Kerala spanning the years 2018 to 2022 has unveiled intriguing patterns and dynamics. Both national and regional newspapers exhibited a prevailing tendency to adopt negative tones, accentuating the severity and adverse repercussions of landslides with comparatively less prominence given to positive and neutral tones. This observed tonal distribution collectively emphasized a focus on challenges and impacts within the media narrative, reflecting a broader trend in disaster reporting where negative aspects are often highlighted to capture public attention and emphasize urgency^{15,32}.

Employing Semetko and Valkenburg's³⁶ framework for framing analysis, six distinctive frames emerged, with the responsibility frame taking centre stage and economic consequences garnering heightened attention from national outlets. The successful achievement of research objectives provided clarity on the dominant frames embraced by national and regional newspapers, illuminating divergences in their approaches. The responsibility frame's prominence aligns with previous studies highlighting the media's focus

on attributing accountability during disasters, playing a crucial role in shaping public perception and response¹⁵.

The economic consequences frame received substantial coverage, particularly in national newspapers, which is consistent with the tendency of broader media outlets to emphasize economic impacts due to their wider audience base and interest in broader economic implications^{1,15}. This divergence from regional newspapers, which often focuses more on immediate local impacts and human-interest stories, underscores the varying priorities and approaches in disaster reporting at different media levels.

The inclination towards negative tones in reporting echoes the broader discourse on the severity and consequences of landslides. This trend is supported by previous research which has highlighted the prevalence of negative framing in disaster reporting and its impact on public perception^{4,30,39}. The dominance of the responsibility frame aligns with observations emphasizing the central role of responsibility attribution in disaster communication, reinforcing the need for media sensitivity to both positive and negative elements to provide a balanced narrative¹⁵.

The observed dearth of attention to positive and neutral tones also mirrors studies on media coverage biases, emphasizing the need for a balanced approach to convey the multifaceted nature of disaster events^{15,32}. By incorporating more positive and neutral tones, media can foster a more comprehensive understanding of disaster scenarios, highlighting resilience and recovery efforts alongside the challenges.

In considering the implications of these findings, it is essential to argue that crafting more nuanced narratives is crucial for fostering public understanding and resilience. Tailored communication strategies that effectively convey disaster information including the roles of various stakeholders and the broader socio-economic impacts, are vital for improving public awareness and preparedness². Additionally, the evolving influence of social media in shaping discourse around disasters presents new opportunities and challenges for media practitioners and policymakers.

Overall, this study significantly contributes to advancing our comprehension of media dynamics in disaster reporting, presenting valuable insights for media practitioners, policymakers and future research pursuits. The implications of these findings extend to the refinement of narrative crafting, the customization of communication strategies and an exploration of the evolving influence of social media in shaping discourse around disasters. By understanding and addressing the biases and framing choices in media coverage, stakeholders can better manage public perception and can enhance disaster preparedness and response efforts.

Conclusion

This study analysed media coverage of Kerala landslides from 2018 to 2022, focusing on tone and framing. The findings revealed a predominance of negative tones, emphasizing the severity and adverse impacts of these events. The responsibility frame was most utilized, reflecting the media's focus on Governmental and NGO roles in disaster management. Economic consequences and human-interest frames were also significant, highlighting broader economic impacts and personal stories of those affected. The absence of the morality frame suggests a lack of moral and ethical discussions in the media coverage.

Understanding these framing and tonal biases can help policymakers and disaster management agencies to tailor their communication strategies to enhance public awareness and preparedness. Future research could explore the influence of social media on disaster narratives and to refine reporting practices to provide a balanced portrayal of disaster events. This study provides valuable insights into media dynamics in disaster reporting, contributing to improved disaster communication and management strategies.

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