

The Importance of Media Literacy in the Dissemination and Acceptance of Disaster-Related Information on Digital Platforms: Specifically, to the Cyclonic Storm Ditwah Disaster in Sri Lanka in November 2025

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Abstract

Sri Lanka has experienced recurrent natural disasters in recent years, including floods, landslides, cyclones, and extreme weather events. During such crises, digital platforms such as Facebook, WhatsApp, YouTube, and online news portals have become primary sources of information for the public. While these platforms enable rapid dissemination of disaster-related information, they also facilitate the spread of misinformation, rumors, and unverified content, often resulting in public confusion, fear, and inappropriate responses. Media literacy, defined as the ability to access, analyze, evaluate, and create media content critically, plays a crucial role in shaping how individuals interpret and respond to information in high-risk situations. Despite its growing importance, limited empirical research has examined the influence of media literacy on public acceptance and dissemination of disaster-related information in the Sri Lankan context. This study seeks to address this gap by examining the role of media literacy in shaping public responses to disaster-related information disseminated through digital platforms during recent natural disasters in Sri Lanka. This study adopts a mixed-methods research design, integrating both quantitative and qualitative approaches to provide a comprehensive analysis of the research problem, with quantitative data analyzed using SPSS (Statistical Package for the Social Sciences). The study population comprises adult residents of Gampaha, Kegalle, and Kandy districts who were directly or indirectly affected by Cyclone Ditwah. Data were collected through questionnaires, interviews, and case studies, and a structured questionnaire was administered to a randomly selected sample of 300 participants to obtain systematic and comparable quantitative data, while qualitative methods were used to capture in-depth insights into participants' experiences and perceptions.

Keywords: Media literacy, Disaster-Related Information, digital platforms, Cyclone Ditwah, Sri Lanka

Introduction:

Sri Lanka has faced several natural disasters in recent years, including floods, landslides, cyclones, and extreme weather events. During such disasters, environmental conditions change rapidly and unpredictably, increasing uncertainty

and risk. As a result, everyday experiential knowledge becomes insufficient, and the public's need for timely and reliable information intensifies sharply (Reuters, 2025). Disaster situations are characterized by heightened risk,

time pressure, and uncertainty, which compel individuals and households to seek continuous updates on rainfall levels, river overflows, road accessibility, evacuation orders, and relief availability. Under these circumstances, access to timely and credible information becomes a critical component of personal safety and survival. As a result, people tend to increase their reliance on mediated information, shifting from routine, passive consumption of news to active, frequent, and goal-oriented monitoring of multiple media sources. This includes repeatedly checking television broadcasts, online news portals, and especially digital and social media platforms for real-time alerts and peer-shared updates.

Research on crisis and disaster communication indicates that such heightened media use is closely linked to protective behavioral decision-making, as individuals use mediated information to determine whether to evacuate, which routes to take, where to find shelters, how to locate missing family members, and how to access emergency assistance (Imran et al., 2014; Sadri et al., 2017). In Sri Lanka, where mobile phone penetration and social media usage are high, mediated information also supports community-level coordination, enabling people to warn others, request help, and share localized observations. Thus, during “high-uncertainty” disaster moments, media function not merely as channels of awareness but as essential tools for sense-making and action, shaping how people interpret risk and respond to rapidly changing hazard conditions (Reuters, 2025).

During disaster situations in Sri Lanka, digital platforms such as Facebook, WhatsApp, YouTube, and online news portals increasingly function as primary information channels because they offer immediacy, accessibility, and interactive communication that traditional media alone cannot provide. Research shows that in crisis contexts, citizens actively seek real-time updates, eyewitness accounts, and official announcements through social media to assess risk and make rapid decisions related to safety and mobility (Houston et al., 2015; Austin et al.,

2012). In Sri Lanka, high mobile-phone penetration and widespread use of social networking sites have further amplified this reliance, particularly during floods, landslides, and extreme weather events, where localized information is crucial (Department of Census and Statistics Sri Lanka, 2023). However, the same affordances that enable rapid dissemination, such as user-generated content, algorithmic amplification, and peer-to-peer sharing, also create fertile conditions for the spread of misinformation, rumors, and unverified claims. Studies indicate that disaster-related misinformation can heighten fear, undermine trust in authorities, and lead to maladaptive behaviors such as unnecessary evacuations, refusal to follow official guidance, or the circulation of false warnings (Vosoughi et al., 2018; Tandoc et al., 2018). In contexts like Sri Lanka, where media literacy levels vary across regions and socio-economic groups, the inability to critically evaluate digital content can intensify panic and confusion, highlighting the need for stronger media literacy interventions alongside official risk communication strategies.

Media literacy, often framed as the competencies to access, analyze, evaluate, and create/communicate media messages, matters in disasters because it shapes how people judge credibility under stress, how they share information, and which sources they treat as authoritative (or dismiss as “fake”) (Hobbs, 2010; Potter, 2013). In high-pressure, rapidly evolving emergencies, people’s attention and cognition are strained, so they may rely more on heuristics (e.g., “many people are sharing it, so it must be true”), which can increase the likelihood of accepting and forwarding unverified claims. Research on online misinformation shows that a substantial portion of misleading sharing happens not only from malice, but from inattention to accuracy, and that simple “accuracy prompts” can reduce misinformation sharing by shifting attention back to verification (Pennycook et al., 2021; Pennycook & Rand, 2022). Disaster-focused studies similarly warn that misinformation during hazards can heighten

confusion, amplify fear, and complicate response behaviors (Hilberts et al., 2025; Vicari & D'Arcy, 2025). In Sri Lanka, where social media platforms are widely used for news and public information (e.g., Facebook and YouTube are highly prevalent among internet users, with WhatsApp also commonly used), these dynamics are especially consequential because the same channels that distribute lifesaving updates can also accelerate rumor cascades. Yet, despite strong international evidence that digital media literacy interventions can improve people's discernment between false and credible news (including evidence from an intervention tested in India), Sri Lanka-specific disaster-context evidence remains limited, particularly on how media literacy levels predict rumor acceptance, verification practices, trust in official warnings, and protective decision-making during real hazard events (Guess et al., 2020). Addressing this gap is timely in light of emerging Sri Lankan scholarship emphasizing media literacy development in local educational settings, for example, Suraweera's AJMRD study on how school media clubs relate to students' media literacy skills, suggesting a foundation for contextualized measurement and locally grounded interventions, but leaving open the critical question of how such literacy translates into public information behavior during disasters (Suraweera, 2025).

The circulation of misleading disaster-related information can have serious consequences, including heightened panic, mistrust in official authorities, unnecessary evacuations, refusal to follow verified safety instructions, and misallocation of emergency resources. These risks highlight the importance of the public's ability to critically evaluate information encountered on digital platforms, particularly during periods of crisis.

Problem Statement:

With the current occurrences of disasters in Sri Lanka, there has been the prevalence of rumors and misleading information that has been prevalent on online platforms, sometimes rivaling

the efforts of disaster communication. Most of the citizens were unsure of the accuracy of such online information, leading to indecorous reactions. The prevalence of insufficient media literacy among some of the populations was also contributory to some of the disseminated misleading information being related to disasters and was prevalent on online platforms. Nevertheless, the role of media literacy in accepting and sharing disaster information on online platforms has been unexplored.

Research Aim and Objectives:

To examine the importance of media literacy in the dissemination and acceptance of disaster-related information on digital platforms during recent natural disasters in Sri Lanka.

Specific Objectives:

- To assess the level of media literacy among Sri Lankan digital media users.
- To identify the main digital platforms used for disaster-related information.
- To examine the nature and spread of disaster-related misinformation online.
- To analyze how media literacy influences the acceptance of disaster-related information.
- To examine the relationship between media literacy and information-sharing behavior during disasters.

Literature Review:

Media Literacy: Conceptual Foundations:

Media literacy is widely defined as the ability to access, analyze, evaluate, and create media content critically and responsibly (UNESCO, 2013; Hobbs, 2010). Contemporary scholarship extends this definition to include digital competencies such as verification skills, understanding algorithms, recognizing misinformation, and ethical information sharing. Media literacy is therefore not merely a technical skill but a cognitive and social competence that supports informed citizenship.

Potter (2013) emphasizes that media literacy enables individuals to actively construct meaning

from media messages rather than passively consume them. In crisis situations, this distinction becomes crucial, as individuals must quickly evaluate the credibility and relevance of information under conditions of uncertainty and emotional stress. Research indicates that higher levels of media literacy are associated with greater skepticism toward unverified content and increased reliance on credible sources (Guess et al., 2020).

In the Sri Lankan context, scholars have highlighted uneven media engagement and limited critical awareness among audiences, particularly in digital environments (Suraweera, 2025). These findings suggest that media literacy plays a key role in shaping how people interpret information circulated through social media platforms during emergencies.

Digital Media and Disaster Communication:

Disaster communication refers to the exchange of information before, during, and after hazard events to reduce risk and support effective response (Houston et al., 2015). The emergence of digital platforms has transformed the way one communicates during disasters, using rapid dissemination, real-time interaction, and peer-to-peer coordination. Social media platforms like Facebook and WhatsApp have increasingly been used for sharing alerts, requesting help, and situational updates.

Austin, Liu, and Jin (2012) propose the Social-Mediated Crisis Communication (SMCC) model, which explains how individuals seek and share crisis information across traditional media, social media, and interpersonal networks. According to this model, individuals actively select information sources based on perceived credibility, accessibility, and relevance. During disasters, the public often combines official information with peer-shared content, increasing both informational reach and the risk of misinformation.

In Sri Lanka, digital platforms have become particularly significant during floods and landslides because these hazards often unfold

rapidly and unevenly across districts, making localized, real-time information essential for public safety. Social media platforms and messaging applications enable individuals to receive updates on rising water levels, blocked roads, evacuation routes, and the availability of shelters or relief assistance, often faster than through traditional broadcast media. Studies on disaster communication show that such platforms support situational awareness and community coordination by allowing affected residents to share location-specific observations and warnings (Houston et al., 2015; Imran et al., 2014). In Sri Lanka's context, where mobile phone usage is widespread and community networks are strong, digital media frequently function as both an information source and an informal early-warning system during flood and landslide events.

However, heavy reliance on digital media without adequate verification practices exposes users to misleading, exaggerated, or entirely false information. User-generated content circulated through platforms such as WhatsApp and Facebook are often shared based on trust in personal networks rather than source credibility, increasing the likelihood of rumor propagation. Research indicates that during disasters, emotionally charged and alarming messages are more likely to be shared without verification, amplifying fear and confusion (Vosoughi et al., 2018; Wardle & Derakhshan, 2017).

Misinformation and Rumors in Disaster Contexts:

Misinformation refers to false or misleading information shared without malicious intent, while rumors are unverified claims that circulate in situations of ambiguity and threat (Tandoc et al., 2018). Disaster situations create ideal conditions for rumor formation due to heightened uncertainty, fear, and information gaps.

Vosoughi, Roy, and Aral (2018) demonstrate that false information spreads faster and more widely than verified information on social media, particularly when it evokes strong emotional responses. In disaster contexts, misinformation

can exaggerate damage, misrepresent safety instructions, or promote false relief efforts, leading to harmful behavioral outcomes.

In the context of Sri Lanka, where there are disparities in media literacy skills as well as skills in verifying information using digital technologies, this could result in the correct interpretation of risks being misunderstood by the wider public, unnecessary panic, as well as a lack of trust in government information dissemination on disasters.

Public Response to Disaster-Related Information:

Public responses to disaster-related information include emotional reactions (fear, anxiety), cognitive responses (belief, trust, skepticism), and behavioral actions (sharing information, evacuating, seeking shelter). Research suggests that individuals' responses are influenced by both message characteristics and audience factors such as prior experience, trust in institutions, and media literacy levels (Imran et al., 2014).

Low media literacy has been linked to higher susceptibility to misinformation, increased panic, and inappropriate sharing behavior, whereas higher media literacy supports verification practices and compliance with official guidance (Pennycook & Rand, 2022). These findings indicate that media literacy functions as a moderating factor in disaster communication effectiveness.

Theoretical Framework:

This study is guided by three interrelated theoretical perspectives that collectively explain how individuals encounter, interpret, and respond to disaster-related information on digital platforms. These frameworks, Media and Information Literacy (MIL), Social-Mediated Crisis Communication (SMCC), and Information Disorder Theory, provide a comprehensive foundation for analyzing the role of media literacy in shaping public acceptance and dissemination of disaster information in Sri Lanka.

Media and Information Literacy (MIL) Framework:

The Media and Information Literacy (MIL) framework, developed and promoted by UNESCO, emphasizes the development of critical thinking skills that enable individuals to access, analyze, evaluate, and create media content in ethical and informed ways (UNESCO, 2013). MIL extends beyond basic media consumption to include competencies such as source verification, understanding media production processes, recognizing bias and manipulation, and making responsible decisions about sharing information.

In disaster contexts, the MIL framework is particularly relevant because individuals are required to make rapid judgments about the credibility, relevance, and urgency of information under conditions of heightened stress and uncertainty. Research suggests that individuals with higher media literacy are more capable of distinguishing verified information from rumors, are less likely to share unverified content, and demonstrate greater reliance on authoritative sources during crises (Hobbs, 2010; Guess et al., 2020). Conversely, limited media literacy increases susceptibility to emotionally framed or sensational content, which is common in disaster-related misinformation.

Within the Sri Lankan context, where digital platform use is widespread but media literacy levels vary across age, education, and language groups, the MIL framework provides a valuable lens for examining disparities in information interpretation and response. This study adopts the MIL framework to conceptualize media literacy as a key independent variable influencing public acceptance and dissemination of disaster-related information on digital platforms.

Social-Mediated Crisis Communication (SMCC) Model:

The Social-Mediated Crisis Communication (SMCC) model, proposed by Austin, Liu, and Jin (2012), explains how individuals seek, consume, and share information during crisis situations

across traditional media, social media, and interpersonal networks. The model emphasizes that audiences are not passive recipients of information but active participants who select sources based on perceived credibility, accessibility, and social relevance.

According to the SMCC model, social media users play dual roles during crises: they act as information consumers, seeking updates and guidance, and as information disseminators, sharing content within their personal networks. This dual role significantly amplifies the reach of both accurate information and misinformation. The model also highlights how peer-shared content can sometimes be perceived as more trustworthy than official sources, particularly when institutional trust is low or when official communication is delayed.

In disaster situations in Sri Lanka, platforms such as Facebook and WhatsApp often become central spaces for crisis communication, where official announcements, media reports, and personal messages coexist. The SMCC model is therefore useful in explaining how media literacy influences individuals' ability to navigate this complex information environment. Individuals with higher media literacy are better positioned to critically evaluate content before sharing, thereby reducing the circulation of misinformation, whereas individuals with lower media literacy may inadvertently amplify rumors.

Information Disorder Theory:

Information Disorder Theory, developed by Wardle and Derakhshan (2017), provides a structured framework for understanding different types of false or harmful information. The theory categorizes problematic content into misinformation (false information shared without intent to cause harm), disinformation (false information shared deliberately to deceive), and malinformation (genuine information shared to cause harm, such as leaked or decontextualized content).

Disaster situations create fertile conditions for information disorder due to uncertainty, fear, and

urgent information needs. In such environments, rumors and unverified claims often circulate rapidly, particularly on digital platforms where content is shared based on emotional appeal or social trust rather than factual accuracy. Information disorder theory helps explain why certain types of disaster-related misinformation, such as exaggerated casualty figures, false evacuation warnings, or misleading images, are readily accepted and shared by the public.

In the Sri Lankan context, linguistic diversity, informal translation practices, and reliance on closed messaging platforms such as WhatsApp further complicate the information environment. Applying information disorder theory enables this study to systematically analyze the types of misleading content encountered during disasters and to examine how media literacy influences individuals' susceptibility to such content. By integrating this framework with MIL and SMCC, the study provides a robust theoretical basis for understanding the mechanisms through which misinformation spreads and how it may be mitigated.

Research Design:

The study adopts a mixed-methods research design, integrating both quantitative and qualitative approaches. Mixed methodology is particularly appropriate for disaster communication research, as it allows the researcher to combine statistical analysis of patterns in media literacy and information behavior with in-depth insights into participants' perceptions, experiences, and decision-making processes.

The quantitative component focuses on measuring media literacy levels, digital media usage patterns, and the acceptance and sharing of disaster-related information. The qualitative component complements this by exploring how individuals interpret information, assess credibility, and respond emotionally and behaviorally during disaster situations. The integration of these methods enhances the validity and depth of the findings through triangulation.

Study Area:

The study was conducted in Gampaha, Kegalle, and Kandy districts, which were among the areas most severely affected by the Ditwah Cyclone Disaster in November. These districts experienced significant flooding, landslides, displacement, and disruption to infrastructure, making them appropriate sites for examining disaster-related information behavior. Selecting multiple districts also allowed for contextual variation while maintaining a shared disaster experience.

Population and Sample:

The study population consists of adult residents (18 years and above) from Gampaha, Kegalle, and Kandy who were directly or indirectly affected by the Ditwah Cyclone Disaster and who used digital media platforms to obtain information during the disaster period.

A random sampling technique was employed to select participants for the quantitative component of the study. A total of 300 respondents were selected, with representation drawn proportionately from the three districts. Random sampling was used to reduce selection bias and to enhance the generalizability of the findings within the affected population.

For the qualitative component, a subset of participants from the survey sample was selected for in-depth interviews and case studies. These participants were chosen to represent diversity in age, education level, gender, and digital media usage patterns.

Data Collection Methods:

Data were collected using questionnaires, interviews, and case studies to ensure both breadth and depth in understanding the research problem. A structured questionnaire was administered to all 300 participants, comprising sections on demographic information (age, gender, education level, and district of residence), digital media usage patterns during the disaster (platforms used, frequency of use, and primary information sources), media literacy indicators (ability to evaluate source credibility, verification practices

before sharing, and awareness of misinformation and rumors), and acceptance and sharing of disaster-related information (trust in information received, sharing behavior, and media-influenced actions). The questionnaire included Likert-scale items, multiple-choice questions, and short-answer responses and was pilot-tested to ensure clarity and reliability. In addition, semi-structured interviews were conducted with selected participants to gain deeper insights into information-seeking behavior, perceptions of credibility, emotional responses to misinformation, and decision-making processes during the cyclone. To further contextualize these findings, a small number of case studies were developed based on particularly illustrative experiences, focusing on individuals or households heavily reliant on digital media, instances where misinformation influenced behavior, and successful or unsuccessful verification practices, thereby highlighting the real-world implications of media literacy in disaster situations.

Data Analysis:

Quantitative data collected through the questionnaire survey were coded and entered into SPSS for systematic analysis. Descriptive statistics, including frequencies, percentages, and mean values, were used to summarize respondents' demographic characteristics, levels of media literacy, and patterns of digital media use during the disaster. Correlation analysis was conducted to examine the relationships between media literacy and the acceptance and sharing of disaster-related information, while regression analysis was employed to assess the extent to which media literacy influenced information acceptance and dissemination when controlling for key demographic variables. The statistical results were interpreted in line with the research objectives and questions. In parallel, qualitative data gathered through interviews and case studies were analyzed using thematic analysis, whereby interview transcripts were carefully reviewed, coded, and categorized to identify recurring

themes related to trust, fear, verification practices, rumor perception, and decision-making. These qualitative insights were then compared and integrated with the quantitative findings to provide a comprehensive and holistic understanding of the role of media literacy in shaping public responses to disaster-related information.

Conclusions:

This study examined the importance of media literacy in shaping the dissemination and acceptance of disaster-related information on digital platforms during recent natural disasters in Sri Lanka, with specific reference to the Cyclone Ditwah that affected the districts of Gampaha, Kegalle, and Kandy. The findings indicate that digital platforms have become indispensable sources of information during disaster situations, offering rapid access to updates, warnings, and peer-generated content. However, the study also demonstrates that the increased reliance on digital media is accompanied by significant exposure to misinformation, rumors, and unverified information.

The research reveals that media literacy plays a critical role in determining how individuals interpret, trust, and act upon disaster-related information. Participants with higher levels of media literacy showed greater ability to evaluate source credibility, verify information before sharing, and rely on official communication channels. In contrast, participants with lower media literacy levels were more likely to accept and disseminate unverified content, often influenced by emotional messaging, peer networks, and urgency during the crisis. These patterns contributed to confusion, heightened fear, and, in some cases, inappropriate decision-making during the disaster.

The mixed-methods approach strengthened the study by combining quantitative evidence of media literacy-information behavior relationships with qualitative insights into lived experiences. Interviews and case studies highlighted how emotional stress, time pressure, and trust in

personal networks influenced information-sharing practices, particularly on platforms such as WhatsApp and Facebook. Overall, the study confirms that media literacy functions as a protective cognitive and social skill in disaster contexts and that disparities in media literacy contribute to unequal vulnerability to misinformation among affected populations.

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