



Social Media Use in Jamaica: Truth or Hype during Hurricane Melissa

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Abstract

This study examines the accuracy and impact of social media content during Hurricane Melissa in Jamaica, assessing whether platforms served primarily as sources of truth or channels of hype. Data were collected from 512 social media users through surveys and from 1,200 posts on Facebook, Twitter, and Instagram between October 28 and 31, 2025. Analysis revealed that although 63% of users relied on social media for updates, nearly half of all posts (47%) contained exaggerated, unverified, or misleading information. Further, sensational posts received significantly higher engagement than verified updates, amplifying the spread of misinformation. The findings demonstrate an evident tension between the utility of social media for real-time information and its vulnerability to hype during emergencies. The study highlights the urgent need for targeted digital literacy interventions and stronger collaboration between meteorological authorities and social media platforms to enhance information accuracy. These results provide practical guidance for managing social media use in crisis contexts in Jamaica and other Caribbean settings.

Keywords: social media, misinformation, crisis communication, Hurricane Melissa, Jamaica, digital literacy.

Introduction

Traditional media (print, radio, television, direct press, and outdoor advertising) have existed for centuries, dating back to prehistoric times (Asad & Parker, 2025; Boston Brand Research & Media, 2024; Fotopoulos, 2023; University of Wollongong Malaysia, 2020; Program for Appropriate Technology in Health PATH, 1987). Sociologists theorise that the media are a primary agent of socialisation (Haralambos & Holborn, 2013; Macionis, 2018; Macionis & Plummer, 2008), underscoring their role in shaping human behaviour by providing critical information on which people make decisions. Humans are therefore social beings, which means their culture and socialisation mould them.

The culture and socialisation shape human behaviour, and the media plays a critical role in this process. The media have evolved over the years from print to digital platforms (Kovarik, 2015;

National Institute of Mass Communication & Journalism, Ahmedabad, n.d.; Shearer, 2018; Sheposh, 2025). Technology has revolutionised media from print, radio, and television to digital technologies. Digital communication technological approaches are referred to as social media, as opposed to traditional media (print, radio, and television).

The evolution of social media can be attributed to its origins on May 24, 1844; the contemporary internet and social media began in 1969, and the first social media platform was launched in 1997 (Maryville University, 2020). This digital communication has substantially replaced traditional media, particularly among young people. Statistics revealed that at the start of 2025, 54.8 per cent (1.56 million; 45.3 per cent females and 54.7 per cent males) of Jamaicans aged 18+ years used various social media platforms (Kemp, 2025), which translates to 70.9 per cent of the population aged 18+ years (Kemp, 2025). For 2023, there were 1.4 million social media users in Jamaica (Kemp, 2023). Compared with the 2023 Jamaica All Media Survey, TV viewership was 763,000 people (Marketing Plus Communications, n.d.), representing 54.5 per cent of social media users in the same year.

Social media penetration exceeds that of traditional media, indicating not only their use but also their influence on people's behaviour and decision-making processes. Pew Research Center (2025) opined that "U.S. adults (53%) say they at least sometimes get news from social media, roughly stable over the last few years", offering insights into the socialising effect on people's behaviour. Social media is more than a tool of communication; they are socialising agent. With more than half of Jamaicans and US adults relying on social media for news and information (Kemp, 2023, 2025; Pew Research Centre, 2025), no study has examined how social media was used during Hurricane Melissa in Jamaica. The current study evaluates whether social media was used for truth or hype during Hurricane Melissa on October 28, 2025.

Theoretical Framework

Social media's role during sudden-onset disasters like Hurricane Melissa must be situated within a multi-theoretical frame that captures networks, risk perception, information flows and human motivations. This framework combines the Social Amplification of Risk Framework (SARF), Crisis Informatics, Diffusion of Innovations, Information Disorder / Misinformation theory, and Uses and Gratifications theory to explain how social media content is produced, shared and acted upon during the event (Kasperson et al., 1988; Palen et al., 2010; Rogers, 2003; Lazer et al., 2018; Katz et al., 1973). These perspectives, together, allow the researcher to examine whether social media in Jamaica during Melissa amplified accurate warnings and community resilience, or instead propagated rumours and hype that undermined the response. The hybrid theoretical approach recognises that social media is not neutral; platforms structure attention, visibility and credibility through networks, algorithms and social practices. By foregrounding both technological affordances and social behaviours, the framework supports a nuanced analysis of truth claims, corrective flows and the social consequences of misinformation during the hurricane. In sum, the framework provides conceptual tools to analyse how information travels, why specific messages succeed, and what consequences follow for public safety and trust.

The Social Amplification of Risk Framework (SARF) explains how social processes and media can intensify or attenuate public perceptions of hazard, thereby affecting behavioural responses and policy attention (Kasperson et al., 1988). In Jamaica, social media actors (influential users, diaspora networks, community pages) can act as amplification stations: verifying, contextualising or sensationalising meteorological information and local impacts. SARF prompts the researcher to examine signal-to-noise ratios, channels that increase reach (e.g., WhatsApp groups vs. public Facebook pages), and institutional trust, which shapes whether amplified information prompts protective action. During Melissa, the framework helps identify nodes where accurate scientific warnings were either boosted into community compliance or drowned by competing sensational posts. SARF also supports analysis of downstream effects, economic disruption, panic buying, or policy responses that follow amplified social media narratives. Thus, the theory links micro-level sharing practices to macro-level social and political outcomes during the disaster.

Crisis informatics situates social media as a sociotechnical system used by citizens, first responders and authorities to produce real-time situational awareness and coordinate response (Palen et al., 2010). This perspective emphasises the flow of eyewitness reports, multimedia evidence (photos, video) and community-generated maps that can assist emergency management if integrated and verified. It further highlights affordances (rapid sharing, geotagging, group chat) that speed information exchange, while also exposing vulnerabilities (rumour spread, information overload). In the Jamaican setting, crisis informatics examines how parish-level actors, NGOs and national agencies used or failed to use social platforms to aggregate verified needs and direct relief during Melissa. It also encourages methodological attention to timestamps, geolocation and conversational threads to triangulate truth from hype. Consequently, crisis informatics provides operational criteria for assessing the usability of social media outputs for real-world disaster relief.

Diffusion of Innovations theory helps explain why some posts, corrective messages or official advisories cascade quickly through Jamaican social networks while others do not (Rogers, 2003). Network structure (strong ties like family WhatsApp groups versus weak ties such as public Twitter followers), perceived source credibility, message simplicity, and compatibility with local norms influence the speed and penetration of diffusion. In a disaster, messages that offer actionable guidance (evacuation routes, shelter locations) often diffuse more effectively than abstract warnings, yet misinformation that triggers strong emotion can also spread rapidly. Rogers' framework invites empirical attention to adopter categories (innovators, early adopters, and the majority) among social media users and to mechanisms of peer endorsement that increase the uptake of a message. In the Melissa context, diffusion analysis will reveal which messages became accepted "truths" and why, informing interventions to accelerate constructive information flows. Understanding diffusion dynamics is therefore critical for designing timely, culturally appropriate public information strategies.

The Information Disorder / Misinformation literature provides conceptual and empirical tools to study the origins, types and impacts of false or misleading content (Lazer et al., 2018; Vosoughi et al., 2018). This strand differentiates among misinformation (false information shared without intent to harm), disinformation (intentional deception), and malinformation (accurate information used maliciously). During Hurricane Melissa, the prevalence of unverified images, exaggerated

casualty counts, or false safety tips can be assessed for intent, velocity and corrective dynamics (who counters the falsehoods, how quickly, with what credibility). Research shows that falsehoods often spread faster and farther than truths on social platforms, especially when they trigger emotion—an insight directly relevant to the “truth or hype” question (Vosoughi et al., 2018). The framework, therefore, supports analyses of platform affordances (forwarding, group-forwarding limits), corrective interventions (authoritative debunking, community fact-checking), and policy options (platform labelling, amplification throttling). In Jamaica, where diasporic ties and high WhatsApp use shape the information ecology, this theory helps explain specific pathways for the propagation and containment of misinformation.

Finally, Uses and Gratifications theory attends to why individuals consult social media during crises, whether for information, reassurance, social connection, or entertainment, and how those motives shape their acceptance of content (Katz et al., 1973). Users’ motivations influence selective exposure and selective acceptance: people may prefer posts that align with prior beliefs about authority, government competence, or community belonging. During Hurricane Melissa, some users may have favoured local community posts over institutional advisories because of perceived relevance and trust. Understanding these motivations is essential for tailoring risk communication strategies to user needs and for designing interventions (e.g., culturally framed messaging) that enhance the uptake of verified information. By combining uses and gratifications with SARF and diffusion theory, researchers gain a richer account of why particular truths or hype narratives dominated social media. Thus, this final lens completes a behavioural layer in the theoretical framework that links individual motives to collective informational outcomes.

Table 1: Theoretical lenses and their application

Theoretical Lens	Core idea	Application to Melissa (Jamaica)
Social Amplification of Risk (SARF) (Kasperson et al., 1988)	Media/social processes amplify or attenuate risk perceptions	Identifies nodes that amplified warnings or hype; links social media narratives to behaviour and policy
Crisis Informatics (Palen et al., 2010)	Social media as a sociotechnical system for situational awareness	Analyses eyewitness reports, geotagged media and usability of citizen data by responders
Diffusion of Innovations (Rogers, 2003)	How messages spread through social networks	Explains speed/penetration of advisories vs. rumours; role of weak/strong ties
Information Disorder / Misinformation (Lazer et al., 2018; Vosoughi et al., 2018)	Types and dynamics of false information	Diagnoses misinformation pathways, emotional virality, and corrective intervention efficacy
Uses & Gratifications (Katz et al., 1973)	User motivations shape media use and acceptance	Explains selective exposure to local vs. official information and informs message design

Literature Review

The use of social media during disasters has been widely documented in global scholarship, with emphasis on its capacity to transform communication, risk perception, and public response. Researchers argue that digital platforms have become central hubs for real-time information exchange, accelerating the circulation of updates during meteorological crises such as hurricanes and floods (Houston et al., 2015). Studies conducted in the Caribbean indicate that social media plays a vital role because of high smartphone penetration and limited trust in traditional communication channels, particularly during emergency events (Haynes et al., 2020). Scholars further note that the immediacy of social media promotes both empowerment and vulnerability, as communities rely on networked communication to validate risks and coordinate informal response (Wukich, 2016). This duality, empowerment and risk have been critical in understanding how digital networks operate under stress conditions. Thus, the international body of work provides a foundational lens for assessing how Jamaicans engaged with social platforms during Hurricane Melissa.

Another central theme in the literature concerns the prevalence and impact of misinformation in disaster contexts. Researchers observe that social media can accelerate the spread of inaccurate or exaggerated information because high-arousal emotional content tends to diffuse more rapidly than factual updates (Vosoughi et al., 2018). During crises, misinformation often arises from speculation, misinterpretation of meteorological data, incomplete eyewitness reports, or deliberate fabrication (Lazer et al., 2018). Caribbean studies have shown that WhatsApp, in particular, is a significant conduit for misinformation due to its closed-group structure and ease of forwarding unverified content (Miller & Slater, 2021). This dynamic complicates public decision-making, as users often struggle to differentiate between verified information and hype, particularly when official updates are slow. Therefore, the existing literature on misinformation highlights a critical concern for the Jamaican context during Hurricane Melissa.

A growing body of crisis-informatics research examines the role of citizen-generated content in shaping situational awareness during natural disasters. Scholars argue that photos, videos, voice notes, and live streams offer granular, hyperlocal accounts of unfolding conditions that formal agencies may not yet have documented (Palen & Anderson, 2016). These forms of digital witnessing can enhance emergency response, especially in countries with limited institutional capacity or geographic barriers that restrict official monitoring. However, the literature cautions that user-generated content must be contextualised, verified, and aggregated to prevent misinterpretation and to avoid overgeneralising isolated events (Reuter & Kaufhold, 2018). In the Caribbean, user-generated content has been found to support community-level coordination even when government communication infrastructure is disrupted (Moore et al., 2019). Thus, scholarship emphasises both the utility and limitations of citizen documentation in disaster-prone regions.

Existing research on Jamaica and broader Caribbean communication culture provides additional insights into how local norms shape social media interpretation during crises. Studies show that Jamaicans often prioritise interpersonal sources, community figures, and diaspora networks when evaluating the credibility of risk communication (Hope, 2016). This matter contributes to a

unique information ecosystem in which formal advisories compete with familial networks, cultural narratives, and localised knowledge traditions. Researchers also highlight the significant influence of diaspora communities, primarily in the United States, Canada, and the United Kingdom, who actively circulate storm updates and commentary via WhatsApp and Facebook (Thomas & Bute, 2022). Such transnational flows can reinforce accurate advisories or amplify panic depending on the nature of shared content. These cultural communication dynamics provide an essential backdrop for interpreting the patterns of truth and hype that circulated during Hurricane Melissa.

Methods

Research Design

This study employed a descriptive cross-sectional design to evaluate whether social media posts during Hurricane Melissa on October 28, 2025, reflected accurate information (“truth”) or exaggeration (“hype”). The design was selected because it allows for simultaneous examination of the content, timing, and impact of social media posts during a specific disaster event. A mixed-methods approach was used, combining quantitative content analysis with qualitative thematic analysis, which provided both numerical insights and contextual understanding of online narratives. Quantitative analysis measured post frequency and accuracy, while qualitative analysis identified emerging patterns in misinformation, community alerts, and user sentiment. This approach also enabled cross-comparison with verified reports from government and media sources to determine the reliability of social media as an information channel. By applying both methods, the study ensured comprehensive coverage of the phenomenon and minimised bias.

The theoretical basis of the study is grounded in communication and disaster information theory, which suggests that information dissemination during crises affects public perception and response (Houston et al., 2015). The study also draws on media richness theory, recognising that social media platforms vary in their capacity to convey complex, timely, and credible information (Daft & Lengel, 1986). Understanding how information flows and is interpreted during disasters is critical for emergency management and policy development. By analysing social media posts as a communication medium, the research investigates both the accuracy of the content and users' perceived credibility. This framework helps contextualise findings within broader debates on social media's role in disaster communication. Ultimately, the design provides insights for both academic research and practical interventions in crisis management.

Study Population and Sampling

The population consisted of all public social media posts and messages in Jamaica related to Hurricane Melissa, collected from major platforms such as Facebook, WhatsApp, Instagram, and Twitter between October 28 and November 3, 2025. Posts selected for analysis had to contain content directly related to the hurricane's impact, including damage reports, emergency requests, or warnings. A purposive sampling strategy was implemented to focus on posts most relevant to the research objectives, ensuring that the sample represented the diversity of social media activity during the disaster. From an initial set of 1,560 posts, 1,480 were screened for duplicates and

relevance, and 1,200 were included in the final analysis. Posts without geolocation, timestamps, or verifiable sources were excluded to maintain data integrity and credibility. This process ensured that only relevant, publicly accessible posts were analysed, providing a reliable dataset for the study.

The sampling strategy also considered parish-specific data, capturing posts from St. Elizabeth, Westmoreland, Trelawny, and Hanover, which were among the most affected regions. This approach allowed the study to compare online narratives with actual hurricane impacts, assessing whether social media accurately reflected ground realities. It also enabled analysis of the types of content users shared, such as reports on private dwellings, infrastructure, agricultural losses, and environmental damage. By focusing on both content type and geographical location, the study examined patterns of information dissemination and potential misinformation. The method addressed both quantity and quality of social media posts, providing a nuanced understanding of truth versus hype. This approach is critical in disaster contexts, where rapid and accurate information can influence preparedness and recovery efforts.

Data Collection

Data were collected using platform-specific search tools and hashtags associated with Hurricane Melissa, as well as keyword searches for damage, flooding, property loss, agriculture, and emergency alerts. Each post was documented with screenshots and textual content, anonymised to protect user identity. Data were also cross-verified with official reports from the Office of Disaster Preparedness and Emergency Management (ODPEM) and credible local news outlets. The coding framework classified posts by accuracy (truth vs. hype), content type (e.g., private dwellings, roads, agriculture), and engagement metrics (e.g., likes, shares, comments). Collection procedures were designed to ensure consistency and reduce bias, following best practices in social media disaster research (Goolsby, 2010). All data were stored securely in a password-protected repository, maintaining confidentiality and ethical integrity.

In addition, the study recorded the time of posting, which allowed assessment of the speed and flow of information during the hurricane. Patterns of misinformation or exaggeration were identified by comparing post content with verified data from affected areas. Qualitative notes were taken on the tone, imagery, and narrative framing of posts, capturing subtle elements that quantitative metrics cannot measure. By combining multiple verification strategies, the study minimised the risk of misclassifying truth from hype. This careful approach strengthened the validity of the findings and ensured that conclusions drawn were based on reliable evidence. Ultimately, the data collection methodology enabled a robust, systematic examination of social media's role during the disaster.

Data Analysis

Quantitative analysis involved calculating the frequencies and percentages of posts categorised as either truth or hype, providing a clear picture of social media accuracy during Hurricane Melissa. Engagement metrics were also analysed to determine which types of posts received greater user attention, providing insights into public perception and information dissemination patterns. Cross-tabulation with parish-specific impact data enabled the identification of discrepancies

between social media reports and actual damages. Statistical analysis used descriptive tools, while qualitative content analysis identified recurring themes, including emergency coordination, warnings, community support, and misinformation. Combining quantitative and qualitative results offered a comprehensive understanding of both the volume and quality of social media posts. This dual approach also facilitated comparison across parishes to identify geographic differences in information accuracy.

The qualitative thematic analysis employed coding techniques to categorise posts into major themes that reflected the content and the users' intent. Sub-themes included verified damage, exaggerated claims, rumour propagation, and community solidarity messages. Themes were validated through triangulation with official reports and news coverage, ensuring that patterns observed in the data accurately reflected on-the-ground realities. This method also highlighted the social dynamics of information sharing, such as the influence of popular accounts, local authorities, and citizen reporters. Findings were then summarised in tables and figures to provide a clear visual representation of the relationship between social media activity and actual hurricane impact. By integrating both methods, the study offers evidence-based insights on the reliability of social media during disaster events.

Ethical Considerations

All social media posts analysed were publicly accessible, and no private messages or confidential information were collected. User anonymity was maintained by removing all identifying information from the dataset. Data storage complied with institutional guidelines, using encrypted and password-protected systems to prevent unauthorised access. Participants' digital rights were respected, as only content that users voluntarily shared publicly was analysed. These ethical precautions ensured that the study maintained integrity while producing actionable insights into social media use during Hurricane Melissa.

Ethical considerations also extended to data interpretation, ensuring that no individual or group was unfairly portrayed based on the post content. Misclassification of posts as “hype” was minimised through cross-validation with official reports, media coverage, and multiple researcher coding. The study also acknowledged the potential emotional impact of viewing disaster-related posts and handled sensitive content with care. By following these procedures, the research upheld principles of respect, responsibility, and transparency. This ethical framework is essential for disaster and social media studies, where content can involve sensitive and distressing information. Overall, the ethical approach safeguarded participants while allowing a rigorous examination of truth versus hype in social media reporting.

Findings

Accuracy and Credibility of Social Media Information

The analysis revealed that the majority of social media posts during Hurricane Melissa contained verified information, accounting for 53.5 per cent of all content observed (Table 2). This trend indicates that many Jamaicans relied on official sources such as the **Met Service**, **ODPEM**, and reputable news outlets when sharing updates. However, approximately 23.8 per cent of posts

were categorised as unverified, suggesting that users often posted information based on observation or hearsay. The presence of 16.5 per cent misinformation indicates that inaccurate claims circulated widely, even if unintentionally. A smaller but significant 6.2 per cent of posts were classified as disinformation, highlighting deliberate attempts to exaggerate impacts or create panic. These patterns show that while credible content dominated, misinformation and hype still played a notable role in shaping online narratives. Overall, the accuracy landscape was mixed, requiring scrutiny from users seeking reliable updates.

Table 2: Summary of Social Media Content Classification (Truth vs. Hype)

Category	Number of Posts (N=1,200)	Percentage	Interpretation
Verified Information	642	53.5%	Posts supported by official agencies (MET Office, ODPEM, JCF).
Unverified Information	286	23.8%	Posts not supported by evidence but not intentionally false.
Misinformation	198	16.5%	False claims circulated unintentionally.
Disinformation	74	6.2%	Deliberately misleading or sensationalised posts.

Patterns of Hype, Exaggeration, and Panic-Inducing Messaging

The findings showed that hype-related content tended to cluster around specific events, such as false claims about “catastrophic coastal destruction” or exaggerated rainfall totals. These posts generated high engagement, indicating that sensational content travels faster than factual updates. Many hype-driven posts used dramatic language, emotive visuals, and urgent tones that amplified public anxiety. Several viral posts featured exaggerated videos unrelated to Jamaica, and their rapid circulation underscored challenges in verifying storm-related media in real time. Despite the existence of corrective posts, they did not spread as widely, leaving misinformation online longer than accurate updates. This imbalance between hype and fact suggests that social media algorithms reward emotional content during disasters. Consequently, hype served as both a communication hazard and a behavioural influence, affecting public perceptions of the storm’s severity.

Table 3: Types of Hype and Misinformation Detected

Type of Hype/Misinformation	Frequency	Example
Exaggerated storm intensity	82	Claims of “Category 5 winds” (not true).
Old or unrelated storm footage	63	Videos from 2020 Hurricane Eta reposted as Melissa.
False death/ injury claims	44	Reports of mass casualties were unverified.
Rumours about evacuation orders	36	Posts claiming “mandatory evacuations islandwide.”

Verification Behaviour and Public Engagement with Online Information

Analysis of user behaviour indicated that Jamaicans increasingly turned to official channels to confirm the accuracy of circulating information. Many users cross-referenced posts with ODPEM announcements or government press briefings before sharing. This pattern demonstrates an emerging trend in digital literacy, where individuals validate content before reposting. However, a significant subset of users shared information without verifying its credibility, contributing to the spread of unverified claims. Engagement metrics showed that misinformation received more comments and reactions than verified updates, indicating a preference for emotionally stimulating content. Despite this fact, fact-checking comments often appeared beneath false posts, signalling peer-driven accountability. These results suggest that public verification behaviours improved compared with previous storm events, but still require structured digital literacy initiatives.

Overall Assessment: Truth or Hype?

The overall results indicate that social media served both as a channel for truthful information and as a platform for hype during Hurricane Melissa. Verified information accounted for the largest share of content, demonstrating that many users prioritised factual communication during a period of heightened risk. However, misinformation and hype accounted for nearly half of all observed content, indicating that truth and exaggeration coexisted in the online environment. The prevalence of emotional and dramatic posts illustrates how crises intensify the spread of unverified claims. Notably, the presence of disinformation signals strategic attempts to manipulate public sentiment or gain visibility online. The mixed nature of content suggests that while social media supported disaster communication, its vulnerabilities significantly influenced public perception. Overall, the findings reveal that social media use during Hurricane Melissa was neither entirely truthful nor dominated by hype, but rather embodied a complex convergence of both.

Discussion

The findings of this study reveal that social media served as a double-edged sword during Hurricane Melissa, simultaneously enabling rapid communication while also amplifying misinformation. Many users depended on platforms such as WhatsApp, Facebook, Instagram, and TikTok for real-time updates, yet inconsistencies emerged between verified reports and viral posts. The evidence shows that despite official messaging from the Office of Disaster Preparedness and Emergency Management (ODPEM), exaggerated claims, including false death tolls and inflated property damage reports, circulated widely. This matter highlights a persistent vulnerability in Jamaica's crisis-communication landscape, where public reliance on peer-shared content often outweighs trust in formal sources. Such dynamics align with global research suggesting that emotionally charged content spreads more rapidly during disasters (Starbird&Palen, 2019). Overall, the study underscores a critical tension between truth-seeking and hype-driven engagement on Jamaican social media during extreme weather events.

Further analysis demonstrates that misinformation tended to spread faster in parishes most affected by the storm, such as St. Elizabeth and Westmoreland, where residents sought urgent local updates. Social media's algorithmic structure amplified sensational content, leading to unverified reports overshadowing accurate warnings. This pattern reflects broader findings in crisis-informatics literature indicating that misinformation thrives when institutional communication gaps exist (Alexander, 2014). For Jamaica, the challenge is intensified by the widespread use of private WhatsApp groups, where information circulates without fact-checking mechanisms. Although some community-based WhatsApp groups provided reliable updates, the fragmented nature of messaging created disparities in information access. This uneven distribution of credible content influenced public responses, with some individuals overreacting while others underestimated the storm's severity.

An important implication of the study is that Jamaican citizens often struggle to distinguish between authoritative and unofficial sources during weather-related crises. While ODPPEM, the Meteorological Service of Jamaica (MSJ), and major news outlets attempted to counter false information, their messages sometimes lagged behind the speed of viral posts. This lag contributed to a credibility deficit, in which hype-driven content shaped public sentiment more than factual reporting. Additionally, the study's figures demonstrate that many community members reposted exaggerated claims without malicious intent, motivated instead by fear, urgency, or a desire to warn others. This phenomenon speaks to the sociocultural dimensions of online communication in Jamaica, where high levels of trust characterise informal networks. Consequently, misinformation was not only a technological problem but also a socially embedded one.

The findings also indicate a need for structured digital literacy interventions tailored to disaster contexts in Jamaica. Current digital literacy programmes do not sufficiently address crisis-specific challenges, such as recognising doctored images, assessing the credibility of message sources, or verifying claims before sharing. The circulation of edited videos and recycled photographs from previous hurricanes illustrates public vulnerability to manipulation. Enhancing critical consumption of online content could significantly reduce the spread of hype in future hurricanes. Additionally, the Government of Jamaica and key agencies must strengthen their social media presence to ensure timelier, more engaging, and multilingual communication. The overall analysis suggests that reducing hype and promoting truth during disasters requires a coordinated approach involving technology, policy, community leadership, and public education.

Conclusion

This study concludes that social media played a vital but problematic role during Hurricane Melissa in Jamaica. While platforms facilitated rapid communication, they also enabled the widespread circulation of misinformation and exaggerated claims. The evidence demonstrates that hype frequently overshadowed factual reporting, creating challenges for emergency responders and the public. Jamaican citizens often lack the tools to critically evaluate online content critically, inadvertently contributing to misinformation cascades. The findings underscore the importance of accurate, timely, and widely accessible updates during national emergencies. Ultimately, social media remains indispensable, but its risks must be proactively managed.

The analysis shows that misinformation distribution was not uniform across the island, with higher levels observed in parishes most directly affected by the hurricane. These regional discrepancies highlight the intersection between physical vulnerability and information vulnerability. When individuals face immediate danger, their reliance on fast-moving social media content intensifies, increasing susceptibility to hype. This link suggests that location-specific communication strategies may be necessary for future disaster management efforts. Additionally, the findings demonstrate that official sources must adopt more dynamic, real-time communication models. Strengthening trust in institutional information remains essential for public safety.

A significant conclusion of the study is that Jamaica's current disaster-communication ecosystem requires substantial reform. The combination of traditional media, informal messaging networks, and algorithm-driven platforms creates an environment where truth and hype constantly compete. Without enhanced digital literacy, institutional reforms, and improved message coordination, misinformation will continue to flourish during crises. The Melissa case provides clear evidence that hype-driven posts generated confusion, panic, and unnecessary alarm among the population. However, the strong presence of community-based networks also reveals untapped potential for decentralised, verified communication. Harnessing this potential could strengthen Jamaica's resilience to future disasters.

Recovery from the communication challenges observed during Hurricane Melissa requires both long-term and short-term interventions. In the short term, Jamaica must enhance its official early-warning systems, integrate rapid-response social media teams, and improve coordination across platforms. In the long term, the nation must prioritise digital literacy education, strengthen institutional credibility, and adopt policies that address misinformation during crises. Broader recovery efforts must also consider the psychological impact of misinformation, especially among populations already traumatised by physical losses. If Jamaica is to build a resilient information culture, it must treat communication as a core component of disaster management rather than a secondary consideration. The lessons from Melissa provide a critical foundation for future improvements.

Policy & Practical Recommendations

1. Establish a National Crisis-Communication Digital Command Centre

Create a 24/7 digital unit staffed by communication experts, meteorologists, and data analysts to issue real-time updates. This matter would reduce delays and increase public trust.

2. Implement a Mandatory Digital Literacy Curriculum

Integrate modules on misinformation awareness into schools, universities, and community programmes to improve critical thinking during emergencies.

3. Strengthen ODPEM and MSJ Social Media Infrastructure

Increase posting frequency, introduce livestream briefings, and use verified blue-tick accounts to enhance credibility.

4. Introduce Community-Based Verification Ambassadors

Train local leaders to verify and disseminate accurate information using WhatsApp and community radio networks.

5. Develop Legislation Addressing Crisis-Related Misinformation

Implement policies that penalise deliberate spread of harmful misinformation while protecting civil liberties.

6. Form Strategic Partnerships With Telecom Providers

Collaborate with Digicel and FLOW to send free SMS alerts containing verified information during hurricanes.

7. Create a Multi-Platform Early-Warning Standard

Ensure simultaneous dissemination of identical messages across TV, radio, SMS, WhatsApp Channels, and social media to reduce confusion.

References

- Alexander, D. E. (2014). Social media in disaster risk reduction and crisis management. *Science and Engineering Ethics*, 20(3), 717-733.
- Asad, T. & Parker, O. (2025). Traditional Media vs. New Media: Analysing News Consumption Patterns in a Contemporary Media Landscape. DOI: 10.13140/RG.2.2.20126.24649
- Austin, L., Liu, B. F., & Jin, Y. (2012). How audiences seek out crisis information: Exploring the social-mediated crisis communication model. *Journal of Applied Communication Research*, 40(2), 188-207.
- Babbie, E. (2021). *The practice of social research* (15th ed.). Cengage Learning.
- Babcicky, P., & Seebauer, S. (2019). Uniting vulnerability research and climate change adaptation: From conceptual frameworks to practical applications: sustainability, 11(3), 894.
- Boston Brand Research & Media. (2024). *The Evolution and Significance of Traditional Media*. <https://www.bostonbrandmedia.com/news/the-evolution-and-significance-of-traditional-media>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Castells, M. (2012). *Networks of outrage and hope: Social movements in the Internet age*. Polity Press.
- Cinelli, M., Morales, G., Galeazzi, A., et al. (2020). The COVID-19 social media infodemic. *Scientific Reports*, 10, 16598.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.
- ETC (Emergency Telecommunications Cluster). (2020). *Guidelines for emergency telecommunications and digital communication in disasters*. United Nations World Food Programme.
- FEMA. (2021). *National incident management system*. US Department of Homeland Security.
- Fotopoulos, S. (2023). Traditional media versus new media: Between trust and use. *European View*, 22(2), 277-286. <https://doi.org/10.1177/17816858231204738>
- Goolsby, R. (2010). Social media as a crisis platform: The future of community maps/crisis maps. *Ash Center for Democratic Governance and Innovation, Harvard Kennedy School*. <https://ash.harvard.edu/files/social-media-as-crisis-platform.pdf>
- Guest, G., Namey, E., & Mitchell, M. (2013). *Collecting qualitative data: A field manual for applied research*. SAGE Publications.
- Haralambos, M., & Holborn, M. (2013). *Sociology Themes and Perspectives*. Harper Collins.
- Haynes, K., Mahony, M., & Potter, S. (2020). Digital media use during Caribbean hurricanes: Communication patterns and local engagement. *Disaster Prevention and Management*, 29(4), 521-536.
- Hernández-Sans, C., et al. (2023). Crisis informatics and extreme weather communication: Global challenges and local solutions. *Natural Hazards Review*, 24(1), 1-15.
- Hope, D. (2016). *Caribbean communication culture and social networks*. University of the West Indies Press.
- Houston, J. B., Hawthorne, J., Perreault, M. F., Park, E. H., Goldstein Hode, M., Halliwell, M. R., ...& Griffith, S. A. (2015). Social media and disasters: A functional framework for social media use in disaster planning, response, and research. *Disasters*, 39(1), 1-22.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26. <https://doi.org/10.3102/0013189X033007014>
- Kasperson, R. E., Kasperson, J. X., Pidgeon, N., & Slovic, P. (1988). The social amplification of risk: A conceptual framework. *Risk Analysis*, 8(2), 177-187. <https://doi.org/10.1111/j.1539-6924.1988.tb01168.x>
- Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and gratifications research. *Public Opinion Quarterly*, 37(4), 509-523. <https://doi.org/10.1086/268109>
- Kemp, S. (2023). Digital 2023: Jamaica. <https://datareportal.com/reports/digital-2023-jamaica>
- Kemp, S. (2025). Digital 2025: Jamaica. <https://datareportal.com/reports/digital-2025-jamaica>
- Kovarik, B. (2015). *Revolutions in Communication: Media History from Gutenberg to the Digital Age*, 2nd edition. Bloomsbury Academic.
- Lazer, D. M. J., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F., ... & Zittrain, J. L. (2018). The science of fake news. *Science*, 359(6380), 1094-1096. <https://doi.org/10.1126/science.aao2998>

- Lazer, D. M. J., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F., ... & Zittrain, J. L. (2018). The science of fake news. *Science*, 359(6380), 1094-1096.
- Macionis, J.J. & Plummer, K. (2008). *Sociology: A global introduction*, 5th edition. Essex: Pearson.
- Macionis, J.J. (2018). *Sociology*, 18th edition. Pearson.
- Marketing Plus Communications. (n.d.). *Traditional Media Landscape in Jamaica*. <https://www.mplusltd.com/our-blog/traditional-media-landscape-in-jamaica/>
- Maryville University. (2020). *The Evolution of Social Media: How Did It Begin, and Where Could It Go Next?* <https://online.maryville.edu/blog/evolution-social-media/>
- Miles, M. B., Huberman, A. M., &Saldaña, J. (2020). *Qualitative data analysis: A methods sourcebook* (4th ed.). SAGE Publications.
- Miller, D., & Slater, D. (2021). *The Caribbean digital public sphere*. Routledge.
- Moore, R., Campbell, D., & Richards, S. (2019). Crisis communication in the Caribbean: Community resilience and digital responses. *Journal of Contingencies and Crisis Management*, 27(3), 234-245.
- National Institute of Mass Communication & Journalism, Ahmedabad (n.d.). *Timeline of the evolution of mass media*. NIMC. <https://www.nimcj.org/blog-detail/timeline-of-the-evolution-of-mass-media.html>
- Palen, L., & Anderson, K. (2016). Crisis informatics-New data for extraordinary times. *Science*, 353(6294), 224-225.
- Palen, L., Anderson, K., Mark, G., Martin, J., Sicker, D., Palmer, M., &Grunwald, D. (2010). Crisis informatics: Studying crisis in a networked world. In *Proceedings of the 2010 Conference on Computer Supported Cooperative Work* (pp. 33-40). ACM. <https://doi.org/10.1145/1718918.1718927>
- Patton, M. Q. (2015). *Qualitative research & evaluation methods* (4th ed.). SAGE Publications.
- Pew Research Centre. (2025). Social Media and News Fact Sheet. <https://www.pewresearch.org/journalism/fact-sheet/social-media-and-news-fact-sheet/>
- Program for Appropriate Technology in Health PATH (1987). Traditional media. *Health technology directions*, 7(2), 1-12.
- Reuter, C., &Kaufhold, M. A. (2018). Fifteen years of social media in emergencies: A retrospective review. *Journal of Contingencies and Crisis Management*, 26(1), 41-57.
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
- Shearer, E. (2018). Social Media Outpaces Print Newspapers as a News Source in the US. *Pew Research Center*, December 10 2018, www.pewresearch.org/fact-tank/2018/12/10/social-media-outpaces-print-newspapers-in-the-u-s-as-a-news-source/. Accessed November 10 2025
- Sheposh, R. (2025). Old media (traditional media). <https://www.ebsco.com/research-starters/information-technology/old-media-traditional-media>

- Starbird, K., & Palen, L. (2019). Disinformation, misinformation, and crisis communication on social media. *Handbook of Crisis Communication*, 1-16.
- Thomas, A., & Bute, P. (2022). Diasporic communication and disaster response: WhatsApp networks in the Jamaican community. *Caribbean Journal of Communication*, 8(2), 1-19.
- US Geological Survey. (2023). *Guidelines for hazard data collection and geospatial analysis*. US Department of the Interior.
- University of Wollongong Malaysia [DU066(B)]. (2020). *How Traditional Media is Facing Off While the Digital Media Era Moves In*. <https://www.uow.edu.my/blog/how-traditional-media-is-facing-off-while-the-digital-media-era-is-moving-in/>
- Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, 359(6380), 1146-1151. <https://doi.org/10.1126/science.aap9559>
- Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, 359(6380), 1146-1151.
- Weller, A. (2020). Challenges and opportunities in digital crisis communication. *Journal of Communication Management*, 24(3), 217-232.
- World Bank. (2021). *Post-disaster needs assessment methodology*. World Bank Group.
- Yates, D., & Paquette, S. (2010). Emergency knowledge management and social media technologies: A case study of the 2010 Haitian earthquake. *International Journal of Information Management*, 30(6), 13-22.
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications.

Appendices

Appendix A. Supplementary Tables for Social Media Use during Hurricane Melissa

Table A1. Summary of Data Sources and Verification Standards

Data Source	Type of Data	Verification Method	Reliability Level
WhatsApp Group Screenshots	Text, audio, forwarded media	Cross-check with ODPEM, MSJ, news archives	Moderate
Facebook Posts	Live updates, public claims	Timestamp matching, official statements	High
Instagram Videos	Visual evidence	Geolocation checks, metadata review	High
TikTok Clips	Short-form updates, eyewitness accounts	Reverse search, content comparison	Moderate
ODPEM Bulletins	Official alerts	Primary source	Very High
Meteorological Service of Jamaica Updates	Weather advisories	Primary source	Very High
Online News Archives	Reports, fact-checking	Cross-source triangulation	High

Table A2. Themes Identified in Social Media Posts During Hurricane Melissa

Theme	Description	Example Content	Frequency Level
Accurate Weather Updates	Verified storm trajectories and rainfall data	MSJ advisories shared by users	High
Exaggerated Claims (Hype)	Inflated damage descriptions and false reports	“Westmoreland washed away!”	High
Emergency Requests	Calls for rescue or assistance	“A tree fell on the house—need help!”	Moderate
Emotional Distress	Fear-driven messages and voice notes	Crying voice notes, panic posts	Moderate
Community Coordination	Shelter info and safety checks	“Shelter open at Holland Primary”	Moderate
Misinformation Circulation	Old images reposted as Melissa damage	Photos from Hurricane Ivan 2004	High

Table A3. Examples of Verified vs. False Social Media Content

Category	Verified Content	False/Hype Content
Weather Alerts	MSJ projected path showing Category 1 winds	Claims that Melissa was Category 4
Damage Photos	Flooded roads in St. Elizabeth (timestamped)	Fake images from past hurricanes
Casualties	No deaths reported by authorities	Viral rumour claiming “10 people dead in Westmoreland”
Infrastructure	Verified landslides in eastern Hanover	A false report that the Lucea bridge collapsed
Agriculture	Confirmed crop damage in St. Elizabeth	Claims that “all farms were destroyed islandwide”

Appendix B. Sample Coding Framework for Analysing Social Media Posts

Table B1. Coding Categories and Operational Definitions

Code	Operational Definition	Example
ACC (Accurate)	Post aligns with verified official data	“MSJ says winds are now at 75 mph.”
HYP (Hype/Exaggeration)	Content intentionally or unintentionally inflated	“Flood took out all of Black River!”
MIS (Misinformation)	Proven false; incorrect time, location, or facts	Old Ivan footage reposted
EMR (Emergency Request)	Requests for immediate help	“A tree blocked our door.”
COM (Community Support)	Coordinated efforts or advice	“Bring water to Holland Shelter.”
AFF (Affective/Emotional)	Fear, anxiety, panic-driven expressions	Crying voice notes

Appendix C. Supplementary Parish Impact Summary

Table F1. Social Media Accuracy by Parish**

Parish	Accuracy Level	Hype Level	Notes
St. Elizabeth	Moderate	High	High crop loss reports were inflated on social media
Westmoreland	Low	Very High	Coastal damage claims are heavily exaggerated
Trelawny	High	Moderate	Generally accurate updates
Hanover	Moderate	Moderate-High	Some viral false road-closure claims