

Which One is More Preferable for Gen Z: TikTok or WhatsApp for Disaster Public Communication

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Abstract

Indonesia is one of the world's most disaster-prone countries, making effective digital disaster communication essential, particularly for Generation Z, who rely heavily on social media as their primary source of information. This study aims to examine the preferences of Indonesian Generation Z in using TikTok and WhatsApp for disaster public communication and to identify the communication characteristics that make each platform effective. A qualitative approach was employed using six Focus Group Discussions involving 48 university students in Surabaya. Data were analyzed through thematic analysis to identify recurring patterns related to perceived urgency, message clarity, interactivity, and information shareability. The findings indicate that WhatsApp is perceived as the most effective platform for disseminating urgent disaster warnings due to its immediacy, trusted interpersonal networks, and rapid message delivery. In contrast, TikTok is preferred for providing explanatory, engaging, and memorable disaster information through visual storytelling and interactive features. Rather than favoring a single platform, participants consistently advocated a hybrid communication strategy that combines WhatsApp for initial emergency alerts and TikTok for subsequent educational and persuasive communication. This study contributes to disaster communication research by proposing a hybrid platform model that aligns with Generation Z's digital communication practices and offers practical implications for disaster management agencies in designing more effective digital public communication strategies.

Keywords: disaster communication; generation z; TikTok; WhatsApp; Hybrid communication.

Abstrak

Indonesia merupakan salah satu negara dengan tingkat risiko bencana yang tinggi sehingga diperlukan strategi komunikasi publik yang efektif, khususnya bagi Generasi Z yang menjadikan media sosial sebagai sumber utama informasi. Penelitian ini bertujuan menganalisis preferensi Generasi Z Indonesia dalam menggunakan TikTok dan WhatsApp sebagai media komunikasi publik kebencanaan serta mengidentifikasi karakteristik komunikasi yang menjadikan kedua platform tersebut efektif. Penelitian menggunakan pendekatan kualitatif melalui enam Focus Group Discussions (FGD) yang melibatkan 48 mahasiswa di Surabaya. Data dianalisis menggunakan analisis tematik dengan mengidentifikasi empat dimensi utama, yaitu persepsi terhadap urgensi informasi, kejelasan pesan, interaktivitas, dan kemudahan berbagi informasi. Hasil penelitian menunjukkan bahwa WhatsApp dipersepsikan sebagai media yang paling efektif untuk penyampaian peringatan dini karena mampu menyampaikan informasi secara cepat melalui jaringan komunikasi interpersonal yang terpercaya. Sebaliknya, TikTok lebih disukai untuk memberikan penjelasan yang lebih komprehensif, menarik, dan mudah diingat melalui penyajian visual serta fitur interaktifnya. Penelitian ini juga menemukan bahwa Generasi Z tidak memandang kedua platform sebagai pilihan yang saling menggantikan, melainkan sebagai media yang saling melengkapi. Oleh karena itu, penelitian ini mengusulkan model komunikasi publik kebencanaan berbasis hybrid platform, yaitu memanfaatkan WhatsApp untuk penyampaian peringatan darurat dan TikTok untuk komunikasi edukatif serta persuasif. Temuan ini memberikan kontribusi terhadap pengembangan strategi komunikasi kebencanaan digital yang lebih sesuai dengan karakteristik komunikasi Generasi Z.

Kata kunci: komunikasi bencana; generasi z; TikTok; WhatsApp; komunikasi hibrida.

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1. INTRODUCTION

Indonesia sits right in the crosshairs of natural disasters (Djalante et al., 2020; Wahyuni & Haryadi, 2020), Indonesia is exposed to multiple natural hazards, including earthquakes, tsunamis, floods, volcanic eruptions, and landslides (Rahma, 2018; Susilo et al., 2020; Twigg, 2007). Every year, more than 2,000 disasters hit,

taking thousands of lives and forcing millions from their homes. In these moments, the way we talk to the public isn't just a matter of strategy—it's about survival. Getting clear, fast, usable info out to people makes all the difference for evacuations, getting help where it's needed, and helping communities bounce back (Adams & Neef, 2019; Agyepong & Liang, 2023; Athukorala & Resosudarmo, 2005; Shaw, 2014).

The digital world has totally changed how disaster messages get out. Forget just radio and text blasts. Generation Z represents one of the most digitally connected population groups in Indonesia, with smartphones and social media serving as their primary channels for communication and information seeking (Kanbach et al., 2023; Rue, 2018). Gen Z in Indonesia is incredibly plugged in. Over 95% own smartphones (Fatria & Christantyawati, 2018). On average, they spend nine hours a day glued to their screens—mostly on TikTok, Instagram, and WhatsApp. WhatsApp is still the king for messaging: 88% of Gen Z use it for chats and group alerts (Susilo & Putranto, 2018). People love it because it's private, works even with low data, and massive. Used by family, neighbors, classmates to stay connected. Meanwhile, TikTok has exploded. By 2025, it's the most downloaded app in Indonesia, with 80% of Gen Z using it. Short videos there mix entertainment, learning, and the kind of viral energy that keeps people watching. (Putranto, 2018) Disaster agencies like BNPB have caught on. They're pushing out alerts through WhatsApp for speed, while using TikTok for campaigns with influencers and eye-catching animations. But with so many options, the real question is: Where does Gen Z actually want to get disaster information? WhatsApp or TikTok, and why?

This choice matters—big time. WhatsApp can blast out alerts instantly to personal contacts, which is perfect when every second counts, like before a tsunami hits. Group chats let people check in with each other, fitting Indonesia's "gotong royong" spirit—everyone helps out. But honestly, with 20 to 40 group chats buzzing every day, people start tuning out. Plus, lots of text can get lost in the noise. Although WhatsApp facilitates rapid interpersonal dissemination of emergency alerts, excessive message traffic may reduce users' attention to critical notifications. Conversely, TikTok offers richer visual engagement and higher levels of user interaction, although its algorithmic content distribution may also increase exposure to misinformation. Viral challenges like #BencanaSiaga have taught millions about disaster prep. The downside? Videos disappear fast, and rumors can spread even faster than official info.

Although previous studies have demonstrated the effectiveness of WhatsApp in emergency alerts and TikTok in disaster awareness campaigns, these platforms have largely been examined separately. Comparative studies investigating how Generation Z evaluates both platforms within the same disaster communication context remain limited, particularly in Indonesia, one of the world's most disaster-prone countries. Existing research has primarily emphasized message dissemination, platform adoption, or social media engagement, while relatively little attention has been paid to users' preferences for integrating multiple platforms into a coherent disaster communication strategy.

This study addresses these gaps by comparatively examining Generation Z's preferences for TikTok and WhatsApp using qualitative Focus Group Discussions. Unlike previous studies that evaluate each platform independently, this research proposes a hybrid disaster communication model that combines WhatsApp as an emergency alert channel with TikTok as an explanatory and persuasive communication platform. The findings are expected to contribute both to disaster communication theory and to practical digital communication strategies for disaster management agencies.

Based on these research gaps, this study aims to examine Generation Z's preferences regarding TikTok and WhatsApp in disaster public communication by exploring four key dimensions: perceived urgency, message clarity, interactivity, and information shareability. Furthermore, the study seeks to formulate a hybrid communication model that integrates the complementary strengths of both platforms.

The findings of this study are expected to provide both theoretical and practical contributions. Theoretically, the study enriches disaster communication literature by explaining platform preferences among Generation Z within a hybrid communication framework. Practically, the findings offer evidence-based recommendations for disaster management agencies, policymakers, and communication practitioners in designing more effective digital public communication strategies.

2. LITERATURE REVIEW

The increasing use of social media for disaster communication has prompted growing scholarly interest, particularly in understanding how Generation Z navigates digital information ecosystems (Blandi et al., 2022; Dunas & Vartanov, 2020; Firmansyah & Disyacitta, 2024; Gentina, 2019; Kanbach et al., 2023; Lemy et al., 2021; Putranto, 2018; Rue, 2018). Existing studies have examined TikTok and WhatsApp separately; however, limited research has compared their complementary roles in disaster communication, particularly within the Indonesian context.

Disaster communication has evolved from conventional one-way channels, such as radio, television, and short message services (SMS), to interactive digital platforms that emphasize speed, accessibility, and public engagement (De Leon et al., 2021; Mysiak et al., 2015; Saito & Matsuyama, 2012; Srinivas & Nakagawa, 2008; Wahyuni & Haryadi, 2020). This transformation enables real-time information exchange, broader public participation, and faster dissemination of official warnings through social media and mobile communication technologies.

The Crisis and Emergency Risk Communication (CERC) framework explains that effective disaster communication should be adapted to different disaster phases, including preparedness, response, and recovery (Geurts et al., 2023; Greenberg, 2022; Heinkel et al., 2025; Schwarz et al., 2025). While social media enhances the reach and immediacy of disaster messages, it also introduces challenges such as misinformation, information overload, and unequal access to reliable information. These characteristics underscore the importance of selecting communication platforms that match users' information needs and behavioral responses during emergencies.

WhatsApp, launched in 2009 and acquired by Meta in 2014, dominates private and semi-public crisis networks. Its broadcast lists and groups (up to 1,024 members) enable one-to-many alerts without recipient visibility, ideal for rapid warnings (Gil de Zúñiga et al., 2021). Studies from COVID-19 eras document WhatsApp's role in contact tracing, symptom reporting, and compliance nudges, with high open rates (98% within minutes) due to push notifications. In disasters, it excels in low-bandwidth environments: during 2022 Pakistan floods, groups coordinated rescues via location pins and voice notes (Aryal et al., 2025). End-to-end encryption builds trust, crucial in collectivist societies, yet one-way broadcasts risk fatigue amid prolific group memberships.

TikTok, emerging in 2016 via ByteDance, revolutionized short-form video with addictive algorithms. By 2025, it boasts 1.5 billion users globally, prioritizing 15-60 second clips that blend education, emotion, and virality. In disasters, TikTok amplifies awareness through challenges (#PrayForTurkey post-2023 quakes reached 2 billion views) and influencer partnerships (Schwarz et al., 2025). Its "For You" page personalizes feeds, sustaining engagement via dopamine-driven loops, unlike WhatsApp's linear delivery. Research notes TikTok's superiority for sense-making: visuals process 60,000 times faster than text, aiding comprehension of evacuation routes or preparedness tips.

Empirical evidence affirms WhatsApp's utility in emergencies. A Brazilian study on wildfires found groups reducing response times by 40% through shared imagery (de Freitas Melo et al., 2025). In Indonesia, BNPB leverages WhatsApp for tsunami alerts, with RT/RW (neighborhood) groups fostering gotong royong—mutual aid pivotal in archipelago logistics. Health crises further validate: during COVID-19, WhatsApp disseminated vaccine info to 80% of low-income users, outperforming email.

Limitations abound. Notification overload from 20-50 daily groups leads to muting (60-70% prevalence), burying alerts. One-way nature stifles interactivity; users crave clarifications absent in broadcasts. Misinformation thrives via forwards—fact-checkers report 30% false chains in disasters. In developing contexts, battery drain and data costs hinder sustained use, though compression mitigates.

TikTok's disaster role pivots on visual storytelling and virality. Post-Hurricane Ian (2022), #HurricaneTikTok garnered 500 million views, blending survivor tips with official PSAs. Algorithms favor emotional content—fear appeals, humor—boosting retention beyond Gen Z's 8-second span. Indonesian cases shine: 2024 Java floods saw #BanjiSiaga videos educating 10 million on flood kits, outperforming static posts.

Interactivity shines via duets (response videos), stitches (remixes), and Lives (real-time Q&A), enabling communal verification. A 2023 Australian bushfire analysis found TikTok comments surfacing hyper-local risks faster than news. Influencers amplify: Gen Z trusts micro-influencers (10k-50k followers) 2x over officials.

Drawbacks include ephemerality—24-hour trends fade—and misinformation, with deepfakes spreading unchecked (e.g., false quake warnings). Algorithmic echo chambers risk selective exposure, prioritizing sensationalism. Bandwidth intensity disadvantages rural users, comprising 45% of Indonesia.

Generation Z (Gen Z), comprising digital natives aged 13–28 in 2026, spends an average of nine hours per day using digital media, with a strong preference for visually rich and interactive platforms. This behavior can be explained through the Uses and Gratifications (U&G) Theory, which posits that individuals actively select media to satisfy specific cognitive, affective, social, and instrumental needs (Katz et al., 1973; Ruggiero, 2000). In the context of disaster communication, Gen Z primarily seeks surveillance (obtaining timely and relevant information), social interaction (sharing and discussing information with peers), and entertainment, which enhances attention and message retention.

Indonesian surveys (2025) indicate that TikTok is the most frequently used platform for news consumption (52%), whereas WhatsApp remains the dominant platform for interpersonal communication

(88%). Furthermore, Gen Z tends to rapidly evaluate multiple pieces of online content before deciding which information deserves attention, making visually engaging and interactive messages more likely to capture their interest than conventional text-based alerts.

In crises, Gen Z exhibits "disaster literacy"—selective filtering via prior knowledge (Intan Salina Che Sulaiman et al., 2014; Yordudom et al., 2026). Studies show preference for multimodal content: TikTok's videos enhance recall 65% over WhatsApp text. Yet, trust tilts WhatsApp-ward for personal networks (family verification), TikTok for public education. Platform hierarchy emerges: WhatsApp for urgency ("Evacuate now"), TikTok for explanation ("Why and how").

Comparative insights are sparse. A 2024 Kenyan study pitted SMS vs. TikTok, finding video 3x more persuasive for hygiene compliance. Indonesian gaps loom: no head-to-head on disasters, overlooking hybrids. Social Information Processing (SIP) theory posits media richness predicts adoption—WhatsApp's cues (text, media) suit immediacy, TikTok's paralinguistic (music, effects) sense-making. Protective Action Decision Model (PADM) links threat perception to behavior; visuals heighten efficacy beliefs. Attention Economy frames competition: TikTok wins stickiness, WhatsApp proximity.

Although previous studies have documented the role of WhatsApp in emergency communication and TikTok in disaster awareness campaigns, comparative evidence remains limited. Existing research has largely examined each platform independently, overlooking how Generation Z strategically combines multiple platforms to satisfy different communication needs during disasters. Moreover, empirical evidence from Indonesia remains scarce despite its high disaster vulnerability and extensive social media adoption. This study addresses these gaps by comparatively examining both platforms and proposing a hybrid disaster communication model for Generation Z.

3. METHODOLOGY

This study employed a qualitative comparative design to examine Generation Z's preferences for TikTok and WhatsApp as platforms for disaster public communication in Indonesia. A qualitative approach was selected because it enables an in-depth exploration of participants' perceptions, motivations, and decision-making processes that cannot be adequately captured through survey-based methods. Rather than identifying a superior platform, the study sought to understand how and why each platform fulfills different communication needs during disaster situations (Widodo, 2025).

The primary method of data collection is Focus Group Discussion (FGD). FGDs are suitable because they allow for interactive conversations among participants, mirroring the peer-influenced and social nature of Gen Z's real digital environments. The study conducts six FGDs, each lasting between 90 and 120 minutes. Each group consists of 8 participants, resulting in a total of 48 Gen Z participants. All sessions are conducted online using video conferencing, while both TikTok and WhatsApp are used in real-time during the discussions to simulate actual usage scenarios for disaster communication. Participants were assigned to heterogeneous groups based on gender, academic discipline, and university affiliation to encourage diverse perspectives and reduce group homogeneity.

Participants are selected using purposive sampling. The inclusion criteria are: (1) aged 18–27, categorized as Gen Z; (2) currently enrolled as university students in Surabaya; (3) active daily users of both TikTok and WhatsApp; and (4) having experienced or received information about at least one disaster event (such as flood, earthquake, or extreme weather) in the past two years. Efforts are made to ensure diversity in gender, study program (social sciences, engineering, business, and others), and type of university (public and private) to reflect a range of media literacies and social backgrounds. Participation is voluntary, and informed consent is obtained prior to data collection, including consent for audio recording and the use of anonymized quotations.

To ensure comparability between platforms, identical disaster scenarios were developed for both WhatsApp and TikTok. Each scenario contained the same core information, including hazard description, emergency warning, evacuation instructions, and contact information for emergency services. The only difference lay in the mode of presentation. The WhatsApp version consisted of a short broadcast message accompanied by a static infographic, whereas the TikTok version presented the same content as a 45-second vertical video featuring narration, subtitles, visual animations, and background audio. This standardized design minimized content bias and enabled participants to evaluate differences attributable to platform characteristics rather than message content.

All FGDs are moderated by a single researcher who is experienced in media and communication studies. The moderator's role is to facilitate balanced participation, encourage honest opinions, and avoid leading questions. A reflective field note is written after each session to capture non-verbal cues, group dynamics, and

initial impressions about emerging themes. The discussions are conducted mainly in Bahasa Indonesia to ensure comfort and authenticity of expression, and later transcribed verbatim. Where necessary, key excerpts are translated into English for reporting, while preserving original meaning.

The recorded discussions were transcribed verbatim and analyzed using Braun and Clarke's (2006) six-phase thematic analysis. The coding process consisted of familiarization with the data, generation of initial codes, identification of candidate themes, review of themes, definition and naming of themes, and production of the final report. Four overarching themes—urgency, clarity, interactivity, and shareability—were developed through iterative comparison across the six focus groups. Coding begins with descriptive labels such as “urgency perception,” “visual engagement,” “trust in family groups,” “fear of misinformation,” and “algorithm influence.” These codes are then grouped into broader themes, including “WhatsApp as first-alert channel,” “TikTok as explanatory and persuasive channel,” “interactivity and comment culture,” and “hybrid platform expectations.” The analysis is iterative, moving back and forth between data and themes until a coherent pattern is established that answers the research questions.

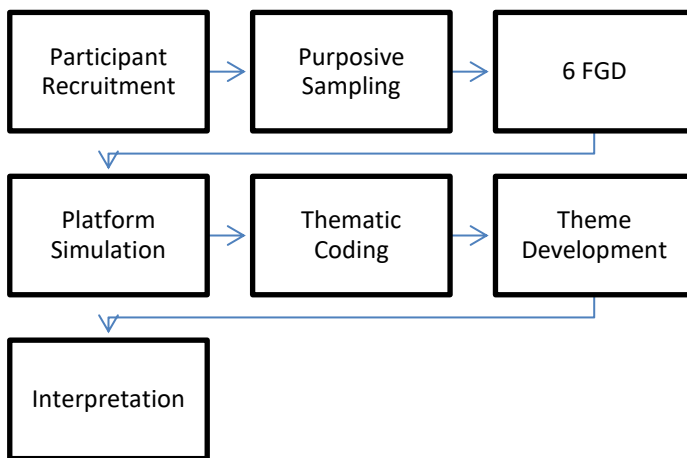


Figure 1. Research Procedure

To ensure trustworthiness, several strategies are applied. Credibility is strengthened through member checking at the end of each FGD, where the moderator briefly summarizes key points and invites confirmation or correction from participants. Dependability is supported by maintaining an audit trail, including FGD guides, field notes, coding schemes, and analytic memos. Transferability is facilitated by providing detailed contextual descriptions of participants and the Surabaya setting, allowing readers to judge applicability to other urban disaster contexts in Indonesia. Reflexivity is maintained throughout the process, with the researcher regularly reflecting on their own assumptions as a media academic and how these might influence questioning and interpretation.

Ethical considerations are central to the methodology. Participants' identities are kept confidential; pseudonyms are used in all notes and publications. They are reminded they may withdraw at any time without penalty. Given the potentially distressing nature of disaster discussion, the moderator remains sensitive to signs of discomfort and offers to pause or redirect conversation when needed. Through this methodological design, the study seeks to produce rich, context-sensitive insights into how Gen Z evaluates TikTok and WhatsApp for disaster public communication and how both platforms can be strategically combined.

4. RESULTS AND DISCUSSION

4.1. Examining Four Dimensions: Perceived Urgency, Clarity, Interactivity, and Shareability

The Focus Group Discussions (FGDs) with 48 Gen Z university students in Surabaya yielded rich qualitative data comparing TikTok and WhatsApp for disaster public communication across four key dimensions: perceived urgency, clarity, interactivity, and shareability. Thematic analysis revealed no outright winner; instead, platform strengths aligned contextually—WhatsApp dominating urgency for immediate action, TikTok excelling in clarity and interactivity for comprehension and engagement, with shareability favoring TikTok's viral mechanics. A hybrid preference emerged universally, with 92% of participants advocating WhatsApp as the "first ping" followed by TikTok elaboration.

4.1.1. Perceived Urgency

Across all six focus group discussions, participants consistently perceived WhatsApp as the most effective platform for delivering urgent disaster alerts. The platform was valued for its direct notifications, rapid message delivery, and integration within trusted interpersonal networks, including family, neighborhood, and community groups. Participants emphasized that emergency messages received through WhatsApp were more likely to prompt immediate attention and protective action than information encountered through TikTok, which was generally perceived as a platform for browsing rather than responding to time-sensitive events.

One participant explained: *"When I receive an emergency message through our neighborhood WhatsApp group, I immediately pay attention because I know it comes from people I trust. If the same information appears on TikTok, I would probably watch it later instead of responding immediately."* Similar perceptions were expressed across all discussion groups, indicating that trust in the communication source and the immediacy of message delivery strongly influenced participants' responses during simulated disaster scenarios.

These findings support the Protective Action Decision Model (PADM), which argues that individuals are more likely to initiate protective actions when hazard information is perceived as timely, credible, and personally relevant. WhatsApp's push-notification system and reliance on trusted interpersonal networks facilitate rapid threat recognition and reduce the time required for decision-making. From the perspective of Uses and Gratifications Theory, participants selected WhatsApp primarily to satisfy surveillance needs by obtaining immediate and reliable information during emergencies, rather than for entertainment or social interaction.

The findings are consistent with previous studies showing that messaging applications are particularly effective for emergency warning dissemination because they provide direct, personalized, and trusted communication channels. However, unlike earlier research that primarily evaluated WhatsApp as an isolated emergency communication tool, this study demonstrates that its strength lies specifically in the initial alert phase of disaster communication. This finding complements the role of TikTok as an explanatory platform, suggesting that effective disaster communication depends on integrating multiple digital platforms rather than relying on a single communication channel.

4.1.2. Clarity

Participants consistently perceived TikTok as more effective than WhatsApp in communicating disaster-related information that required explanation and understanding. Rather than simply notifying users about an emergency, TikTok's combination of short videos, visual demonstrations, captions, and narration enabled participants to better comprehend disaster risks, recommended protective actions, and evacuation procedures. By contrast, WhatsApp was considered more suitable for delivering concise alerts but less effective for explaining complex disaster information.

One participant commented: *"A WhatsApp message can tell me that flooding is expected, but a TikTok video shows what is happening, where the affected areas are, and what I should do. That makes the information much easier to understand and remember."* Participants from different academic backgrounds expressed similar views, indicating that visual demonstrations, animations, and contextual storytelling helped them interpret disaster information more effectively than text-based messages alone.

These findings are consistent with Dual Coding Theory and the Cognitive Theory of Multimedia Learning, which suggest that information presented through integrated verbal and visual channels is processed more effectively than text-only communication. Visual demonstrations reduce cognitive load and facilitate knowledge retention, particularly when explaining unfamiliar or complex procedures such as evacuation routes or disaster preparedness measures. From the perspective of Uses and Gratifications Theory, participants preferred TikTok because it fulfilled both cognitive needs by providing understandable information and affective needs through engaging visual content that sustained attention throughout the learning process.

The findings support previous studies demonstrating that visual and multimedia communication enhances public understanding of disaster information, particularly among younger audiences. However, unlike earlier research that primarily emphasized TikTok's role in increasing public awareness, this study shows that participants value the platform because it improves message comprehension rather than merely attracting attention. This finding suggests that TikTok performs a complementary function to WhatsApp by supporting explanation and learning after the initial emergency alert has been delivered.

4.1.3. Interactivity

Participants consistently perceived TikTok as a more interactive platform than WhatsApp for disaster communication. Features such as commenting, sharing, live streaming, and content creation enabled users not

only to receive disaster information but also to respond, ask questions, exchange experiences, and engage in discussions with broader online communities. In contrast, WhatsApp was viewed as facilitating communication primarily within closed interpersonal groups, making interaction more immediate but less diverse and publicly accessible.

One participant stated: *"On TikTok, I can immediately read other people's experiences, ask questions in the comments, and learn from different perspectives. In WhatsApp, I usually only discuss the information with family members or friends in the group."* Similar responses emerged across the focus groups, indicating that participants valued interactive features that enabled collaborative learning and collective discussion during disaster situations.

These findings are consistent with the Uses and Gratifications Theory, which argues that individuals actively select media that satisfy their needs for social interaction, participation, and engagement. TikTok's interactive features enable users to move beyond passive information consumption by encouraging dialogue, content sharing, and collaborative knowledge construction. This pattern is also explained by Social Information Processing Theory, which suggests that meaningful interpersonal communication can develop through computer-mediated environments when users have opportunities for repeated interaction and feedback. Consequently, participants perceived TikTok as supporting greater community engagement and participatory communication than WhatsApp in the context of disaster information.

The findings support previous studies demonstrating that social media platforms with high levels of interactivity enhance user engagement and facilitate collaborative information exchange during crises. However, unlike earlier research that primarily emphasized user engagement metrics, this study shows that Generation Z values interactivity because it enables collective interpretation of disaster information and peer learning. Rather than replacing WhatsApp, TikTok complements interpersonal communication by expanding opportunities for public dialogue and shared understanding, thereby reinforcing the role of hybrid communication in disaster preparedness.

4.1.4. Shareability

Participants perceived TikTok as the more effective platform for disseminating disaster-related information beyond their immediate social circles. Its built-in sharing features, short-form video format, and algorithm-driven content distribution encouraged participants to redistribute disaster information to wider audiences. In contrast, WhatsApp was regarded as more appropriate for sharing urgent messages within trusted interpersonal networks, such as family members, neighborhood groups, and close friends, rather than for broader public dissemination.

"If I want to warn my family or neighbors, I send the message through WhatsApp because I know they will receive it immediately. But if I want more people to become aware of a disaster, I would share a TikTok video because it has a greater chance of reaching a wider audience." One participant explained. Similar opinions emerged across the focus groups, suggesting that participants differentiated between private information sharing and public information dissemination according to the characteristics of each platform.

These findings can be interpreted through the Uses and Gratifications Theory, which suggests that users actively select communication platforms according to their social interaction and information-sharing needs. Participants perceived WhatsApp as fulfilling interpersonal communication needs through trusted and closed social networks, whereas TikTok better satisfied the need to disseminate information broadly through public engagement and algorithmic amplification. From the perspective of Diffusion of Innovations Theory, TikTok facilitates wider diffusion of disaster messages by enabling rapid circulation through user interactions, recommendations, and content resharing. This reflects the characteristics of the network society, where digital platforms extend information flows beyond geographically bounded communities.

The findings are consistent with previous research showing that social media platforms differ in their capacity to support information diffusion. However, unlike earlier studies that primarily focused on message virality, this study demonstrates that participants strategically distinguish between platforms according to the intended audience. WhatsApp is primarily used for rapid communication within trusted networks, whereas TikTok is preferred for expanding public awareness through wider digital dissemination. These complementary functions further support the development of a hybrid disaster communication strategy that combines interpersonal trust with broad public outreach.

4.1.5. Integrated Discussion and Hybrid Imperative

The findings demonstrate that WhatsApp and TikTok should not be viewed as competing communication platforms but as complementary components of an integrated disaster communication ecosystem. Each

platform fulfills distinct communication functions that correspond to different stages of public information processing and behavioral response. WhatsApp is primarily valued for delivering immediate emergency alerts through trusted interpersonal networks, whereas TikTok is preferred for providing explanatory, engaging, and easily understandable disaster information. Together, these complementary functions support more comprehensive disaster communication than either platform could achieve independently.

From the perspective of Uses and Gratifications Theory, these findings suggest that platform selection during disasters is driven by different communication needs rather than by platform preference alone. Participants relied on WhatsApp to satisfy surveillance and interpersonal communication needs associated with rapid threat recognition, while TikTok fulfilled cognitive, affective, and participatory needs by facilitating explanation, discussion, and sustained engagement. This indicates that media selection among Generation Z is situational and functional, with different platforms serving complementary rather than substitutive roles during disaster communication.

Building on these findings, this study proposes a Hybrid Disaster Communication Model in which disaster information is communicated sequentially through complementary digital platforms. In this model, WhatsApp functions as the primary channel for emergency notification and rapid dissemination of critical information, while TikTok serves as the secondary platform for visual explanation, public engagement, and preparedness education. Rather than replacing conventional emergency communication, the integration of both platforms enhances message effectiveness by addressing multiple information needs throughout different phases of disaster communication.

The proposed hybrid approach has important practical implications for disaster management agencies. Emergency authorities should prioritize WhatsApp for disseminating time-sensitive warnings through official and community-based networks, while simultaneously utilizing TikTok to distribute explanatory videos, preparedness campaigns, and post-disaster recovery information. Such an integrated strategy is likely to improve message comprehension, public engagement, and protective behaviors among Generation Z, whose communication practices increasingly depend on multiple digital platforms.

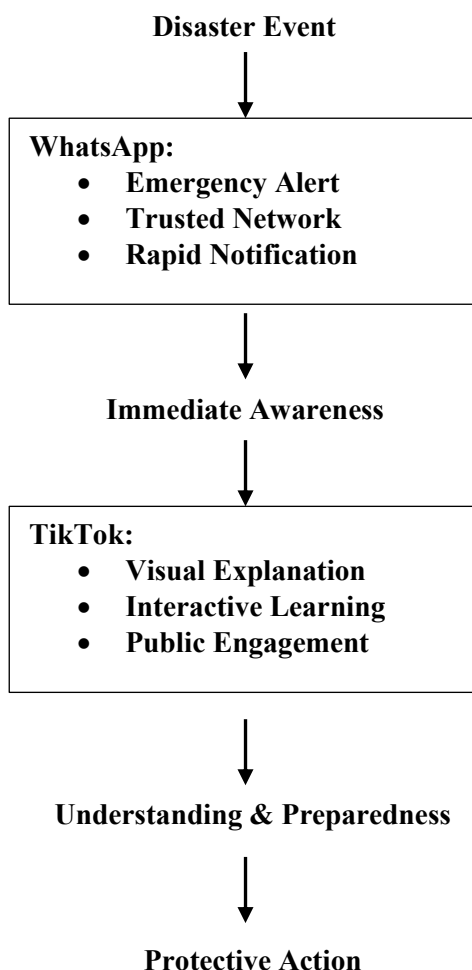


Figure 2. Hybrid Disaster Communication Model for Generation Z

4.2. Toward a Hybrid Disaster Communication Strategy for Generation Z

The findings of this study indicate that disaster public communication should move beyond identifying a single superior digital platform toward understanding the complementary functions of different social media platforms. Rather than competing with one another, WhatsApp and TikTok address distinct communication needs across different stages of disaster communication. WhatsApp is perceived as the most effective platform for delivering urgent alerts through trusted interpersonal networks, while TikTok provides greater value in explaining disaster risks, promoting preparedness, encouraging public engagement, and facilitating broader information dissemination. These complementary roles suggest that effective disaster communication depends on the strategic integration of multiple platforms rather than the dominance of a single communication channel.

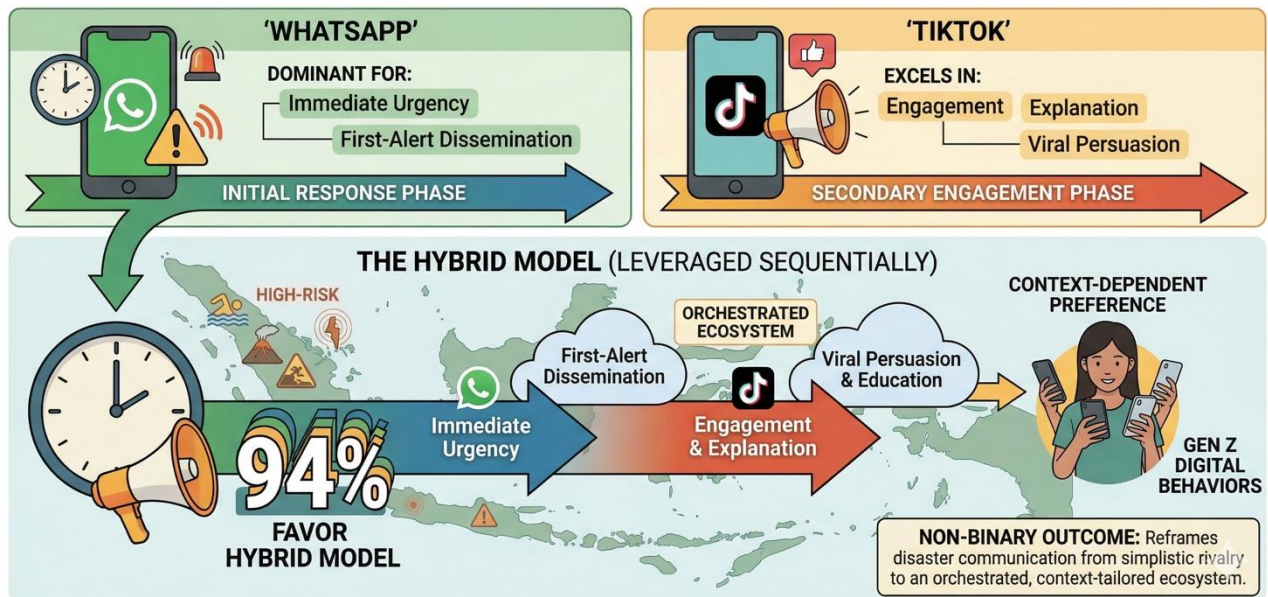


Figure 3. Nuanced and Context-Dependent Disaster Communication Ecosystem in Indonesia

This finding extends the Uses and Gratifications Theory by demonstrating that media selection during disaster situations is dynamic and need-oriented. Generation Z does not exhibit a fixed preference for either TikTok or WhatsApp; instead, they actively select communication platforms according to the specific gratifications they seek. WhatsApp primarily satisfies surveillance and interpersonal communication needs by providing rapid, credible, and personally relevant emergency information through trusted social networks. In contrast, TikTok fulfills cognitive, affective, and social interaction needs by presenting disaster information through visual storytelling, interactive content, and collaborative discussions. These findings (figure 3) suggest that platform preference is driven by functional communication needs rather than technological superiority.

Beyond extending Uses and Gratifications Theory, this study contributes to disaster communication literature by proposing a Hybrid Disaster Communication Strategy for Generation Z. Existing studies have generally examined WhatsApp and TikTok independently, emphasizing their respective strengths in emergency alerts or public engagement. This study demonstrates that these platforms perform complementary communication functions within an integrated disaster communication ecosystem. WhatsApp is most effective during the initial warning phase, where immediacy and trust are essential for triggering protective action, whereas TikTok is better suited to subsequent phases requiring explanation, education, preparedness, and sustained public engagement. Consequently, disaster communication should be conceptualized as a coordinated multi-platform process rather than a platform-specific activity.

The proposed hybrid strategy also offers important practical implications for disaster management agencies and public communication practitioners. Government institutions, emergency management organizations, and local communities should prioritize WhatsApp for disseminating time-sensitive warnings through official and community-based communication networks, while simultaneously utilizing TikTok to distribute explanatory videos, preparedness campaigns, myth clarification, and post-disaster recovery information. Such an integrated communication strategy is expected to enhance message reach, improve public understanding, strengthen community engagement, and encourage timely protective behavior among Generation Z. As digital communication practices continue to evolve, adopting complementary platform

strategies will become increasingly important for developing more responsive, inclusive, and effective disaster public communication systems.

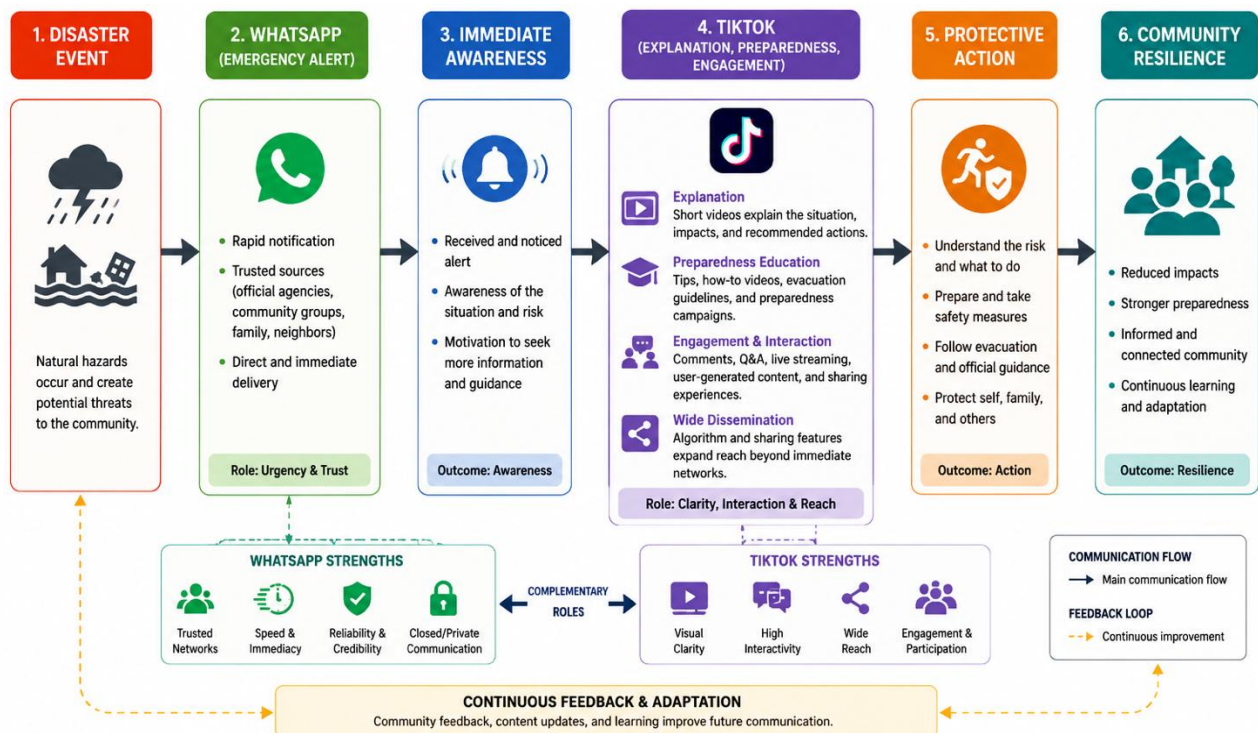


Figure 4. Hybrid Disaster Communication Strategy for Generation Z

Figure 4 illustrates the proposed Hybrid Disaster Communication Strategy for Generation Z, which integrates the complementary strengths of WhatsApp and TikTok across different stages of disaster communication. The model begins with the occurrence of a disaster event, where WhatsApp functions as the primary channel for disseminating emergency alerts through trusted interpersonal and community networks. Its immediacy and credibility facilitate rapid message delivery, enabling recipients to develop immediate situational awareness and recognize potential risks.

Once initial awareness has been established, TikTok assumes a complementary role by providing visual explanations, preparedness education, interactive engagement, and broader public dissemination. Through short-form videos, visual storytelling, and user interaction, TikTok enhances message comprehension, encourages public participation, and reinforces disaster preparedness. These complementary communication processes ultimately promote appropriate protective actions, including evacuation, risk reduction, and compliance with official guidance. In the longer term, the integration of both platforms contributes to stronger community resilience by improving preparedness, strengthening social connectedness, and fostering continuous learning and adaptation. The model therefore conceptualizes WhatsApp and TikTok not as competing platforms but as complementary communication channels that collectively enhance the effectiveness of disaster public communication for Generation Z.

Overall, this study demonstrates that the effectiveness of disaster public communication should no longer be evaluated based on the superiority of a single digital platform. Instead, communication effectiveness depends on how different platforms are strategically integrated to address diverse communication needs throughout the disaster management cycle. WhatsApp provides rapid, trusted, and personalized emergency alerts that facilitate immediate awareness and protective responses, whereas TikTok strengthens public understanding, preparedness, engagement, and wider information dissemination through visual and interactive communication. By integrating these complementary functions, the proposed Hybrid Disaster Communication Strategy extends the application of Uses and Gratifications Theory within disaster communication by demonstrating that media selection among Generation Z is functional, contextual, and need-driven rather than platform-centered. Beyond its theoretical contribution, the model also offers practical guidance for disaster management agencies in designing evidence-based, multi-platform communication strategies that improve public preparedness, encourage timely protective action, and ultimately strengthen community resilience in increasingly digital information environments.

5. CONCLUSION

This study demonstrates that effective disaster public communication for Generation Z should move beyond selecting a single "best" digital platform toward integrating the complementary strengths of multiple communication channels. The findings reveal that WhatsApp is perceived as the most effective platform for disseminating urgent disaster alerts because of its speed, trusted interpersonal networks, and immediate notification system. In contrast, TikTok is preferred for providing visual explanations, preparedness education, interactive engagement, and wider dissemination of disaster-related information. Rather than functioning as competing platforms, both media perform complementary roles that collectively support more effective disaster communication throughout different stages of disaster management.

From a theoretical perspective, this study extends the application of Uses and Gratifications Theory by demonstrating that media selection during disaster situations is functional and context-dependent rather than platform-centered. Generation Z actively chooses different digital platforms according to specific communication needs, including surveillance, cognitive understanding, social interaction, and public participation. Building upon these findings, this study proposes the Hybrid Disaster Communication Strategy, which conceptualizes WhatsApp and TikTok as complementary communication channels that address distinct but interconnected communication objectives. This model contributes to the growing literature on disaster communication by shifting attention from platform competition toward platform complementarity.

The findings also offer practical implications for disaster management agencies, government institutions, and public communication practitioners. Disaster communication strategies should adopt a coordinated multi-platform approach by utilizing WhatsApp for rapid emergency alerts through trusted community networks while employing TikTok for explanatory communication, preparedness campaigns, public engagement, and post-disaster education. Such an integrated strategy is expected to improve message comprehension, encourage timely protective actions, and strengthen community resilience, particularly among digitally connected younger generations.

Despite these contributions, this study has several limitations. The research involved university students in Surabaya using qualitative focus group discussions, which may limit the transferability of the findings to other demographic groups, geographical settings, or disaster contexts. In addition, the study focused exclusively on TikTok and WhatsApp, without considering other emerging digital platforms that may also influence disaster communication practices.

Future research should validate the proposed Hybrid Disaster Communication Strategy using quantitative or mixed-methods approaches involving larger and more diverse populations across different regions of Indonesia. Comparative studies incorporating additional digital platforms, such as Instagram, Telegram, or emerging AI-assisted communication technologies, would further enhance understanding of multi-platform disaster communication ecosystems. Longitudinal research examining changes in digital communication behavior before, during, and after disaster events would also contribute to the refinement and broader applicability of the proposed model.

Ultimately, this study argues that the future of disaster public communication lies not in choosing the most popular digital platform, but in strategically integrating complementary communication channels that align with users' evolving information needs. By positioning WhatsApp and TikTok as complementary rather than competing platforms, the proposed Hybrid Disaster Communication Strategy offers a theoretically grounded and practically applicable framework for strengthening disaster preparedness and community resilience in increasingly digital societies.

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