



Audrezara Journal of Communication and Social Research (AJCSR), Vol. 2(1), 167-180, 2026.



AUDREZARA JOURNAL OF COMMUNICATION AND SOCIAL RESEARCH (AJCSR)

Vol. 2, Issue 1, pp. 167-180, April, 2026.

DOI: <https://doi.org/10.5281/zenodo.19941260>

E-ISSN: 3121-9721

Leveraging Artificial Intelligence to Enhance Humanitarian Communication

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History: Received: February 06, 2026; Revised: March 19, 2026; Accepted: March 29, 2026.

Abstract

Humanitarian communication is a critical component of effective crisis response, enabling the coordination of relief efforts, timely dissemination of information, and engagement with affected populations. Although digital tools such as mobile platforms, social media, and data systems have improved communication reach and speed, challenges remain, including information overload, fragmented and siloed data, language and cultural barriers, limited situational awareness, misinformation, and unequal access to technology. Artificial Intelligence (AI) presents significant potential to address these challenges by enabling real-time data analysis, adaptive messaging, multilingual engagement, personalised risk and recovery communication, and participatory feedback mechanisms. This study employs a qualitative desk review of peer-reviewed literature, organisational reports, policy documents, and case studies to examine the role and challenges of AI in enhancing humanitarian communication. Grounded in the Constitutive Communication (CCO) framework and Participatory Communication Theory, the findings indicate that AI-mediated communication not only improves operational efficiency but also constitutes new organisational practices and decision-making structures while promoting inclusive, community-centered engagement. To address the challenges identified, recommendations include ensuring data quality and representation through inclusive data collection and bias audits, implementing robust ethical oversight and data governance policies, and maintaining human judgment through training, cultural sensitivity, and human-in-the-loop decision-making. These strategies aim to support the responsible integration of AI, enhancing effectiveness, accountability, and equity in humanitarian communication and strengthening crisis response outcomes.

Keywords: Artificial Intelligence, Humanitarian, Communication, Enhance

Introduction

Humanitarian communication plays a central role in coordinating relief efforts, disseminating timely information, and engaging affected populations during crises. Effective communication supports informed



decision-making, fosters trust between humanitarian actors and communities, and enables rapid adaptation to evolving needs in complex emergency contexts (Dufty, 2020; Reuter & Kaufhold, 2018). In such settings, communication effectiveness often determines the efficiency of response, influencing both aid delivery and the protection of vulnerable populations.

Over the past decade, digital tools have become integral to humanitarian communication. Technologies such as mobile platforms, social media, digital data systems, and online information-sharing tools are widely used to improve situational awareness, facilitate coordination, and support information dissemination during emergencies (PLoS Medicine Editors, 2012; Wilson & Jumbert, 2018). These tools have enhanced the speed, reach, and visibility of humanitarian communication, forming a foundational infrastructure for contemporary humanitarian response.

However, despite the widespread adoption of existing digital tools for enhancing humanitarian communication, these tools have not proven fully adequate in addressing the complexity and dynamism of humanitarian crises. Persistent challenges, including misinformation, language barriers, fragmented and siloed data systems, limited real-time feedback mechanisms, and unequal access to digital platforms, continue to undermine the effectiveness, inclusivity, and reliability of humanitarian communication (Dufty, 2020; Reuter & Kaufhold, 2018; World Humanitarian Data and Trends Report, 2022). In many crisis contexts, digital tools primarily enable one-way information dissemination rather than meaningful two-way engagement, leaving affected communities insufficiently heard and inadequately informed (Olsen et al., 2021).

These limitations highlight the need to move beyond conventional digital tools toward more adaptive, responsive, and inclusive communication systems. While digital technologies have laid an important foundation for humanitarian communication, their limited capacity to process large-scale data, adapt messages in real time, and support participatory engagement underscores the necessity of exploring enhanced approaches.

In this context, Artificial Intelligence (AI) offers significant potential to strengthen humanitarian communication, even though its application in humanitarian communication remains limited (Jobin et al., 2019).

Although AI-driven tools are increasingly recognised as a potential resource for the enhancement of humanitarian communication, their actual role, effectiveness, and impact in crisis contexts remain largely unexplored (Vinuesa et al., 2020; Buchanan et al., 2021). It is unclear how AI could enhance humanitarian communication for impactful humanitarian interventions. Hence, this study examines the role of Artificial Intelligence in enhancing humanitarian communication, with particular attention to how AI can improve communication effectiveness and the challenges associated with the use of AI in humanitarian communication. By situating AI within the broader evolution of digital humanitarian communication, the study contributes to ongoing efforts to strengthen responsive, accountable, and people-centered humanitarian action (OCHA, 2023).

Theoretical Framework

This study is grounded in the Constitutive Theory of Communication (CCO) propounded by Taylor, Cooren, Giroux, & Robichaud in 1996, which posits that communication does not merely transmit information but constitutes organisational and social realities (Taylor et al., 1996). In the context of humanitarian action, communication is central to the enactment of aid delivery, coordination, and accountability. AI-mediated communication, by enabling real-time data analysis, adaptive messaging, and



targeted engagement, can therefore reshape how humanitarian organisations function and how crisis-affected populations interact with relief efforts. From a CCO perspective, integrating AI into humanitarian communication constitutes new practices, norms, and relationships that redefine both the structure and effectiveness of humanitarian response (Cooren, 2012).

Complementing this, Participatory Communication Theory emphasises the importance of inclusive, dialogic, and community-centered communication (Servaes, 1999; Freire, 1970). Humanitarian interventions often rely on one-way digital information dissemination, which can limit the participation and agency of affected populations. AI tools, such as natural language processing and predictive analytics, can support two-way engagement, ensuring that community voices are heard, needs are accurately assessed, and messages are tailored to local contexts. By situating AI within a participatory framework, this study examines how technology can not only enhance the efficiency of humanitarian communication but also promote equity, inclusivity, and trust in crisis settings.

Together, these two frameworks provide a lens to explore how AI can transform humanitarian communication practices, making them more adaptive, responsive, and people-centered. CCO explains how AI constitutes new organisational and communication processes, while participatory communication theory highlights why inclusive engagement matters for the effectiveness and legitimacy of humanitarian action.

Method

Research Design

This study employs a qualitative desk review design to explore the role of Artificial Intelligence (AI) in enhancing humanitarian communication during crises and to examine associated challenges. A desk review is appropriate for this study as it enables a comprehensive analysis of existing literature, organisational reports, policy documents, and case studies, providing evidence-based insights into AI applications, effectiveness, accessibility, and inclusivity in humanitarian contexts. This approach also allows for the identification of potential gaps and challenges in current practice, which informs practical recommendations.

A desk review is appropriate for synthesizing existing knowledge from credible sources without primary data collection, allowing for comprehensive mapping of current evidence, identification of trends, and development of recommendations (Onwuegbuzie et al., 2012; Grant & Booth, 2009). This approach is particularly suitable for interdisciplinary topics such as AI in humanitarian contexts, where literature is dispersed across fields including communication studies, humanitarian action, and technology applications.

Data Sources

Data for this study were obtained from multiple sources, including:

- Peer-reviewed academic articles on AI applications and humanitarian communication.
- Reports and publications from international humanitarian organisations such as UNICEF, OCHA, WHO, and ICRC.
- Policy documents, white papers, and guidelines on digital and AI-enabled humanitarian interventions.



- Case studies highlighting the deployment of AI tools (e.g., natural language processing, predictive analytics, and automated translation) in crisis response.

Inclusion Criteria

Documents and literature were selected based on the following criteria:

- Relevance to AI use in humanitarian communication.
- Credible sources, including academic journals, organisational reports, and verified datasets.

Ethical Considerations

As this study relies solely on publicly available literature, no human participants were involved, and ethical approval was not required. All sources were appropriately cited to ensure academic integrity and transparency.

Findings

The desk review identified key areas in which artificial intelligence can be deployed to enhance humanitarian communication. These areas, drawn from academic and practice-based sources, frame the findings presented in this section and inform the subsequent discussion.

Information Overload and Data Fragmentation

During humanitarian crises, information flows rapidly from diverse sources, including social media posts, situation reports, field assessments, satellite imagery, and communications from local partners. While this abundance of data has the potential to enhance situational awareness, it often results in information overload and data fragmentation, making timely sensemaking difficult for humanitarian agencies (Boin et al., 2017; Meier, 2015). Much of the incoming information is unstructured, incomplete, duplicated, or contradictory, and arrives in real time under conditions of extreme uncertainty (Palen& Anderson, 2016). Scholars in crisis informatics note that humanitarian organizations frequently lack the analytical capacity, interoperable systems, and standardized protocols needed to filter, verify, and prioritize this data efficiently (Burns et al., 2020). As a result, decision-makers may struggle to distinguish critical signals from background noise, leading to delays in response, misallocation of resources, or reliance on partial information (Comfort, 2007). Data fragmentation is further exacerbated by siloed organizational structures and the use of multiple, non-integrated information platforms across agencies, donors, and field offices (Fast, 2019).

Moreover, the increasing reliance on digital and social media data introduces additional challenges related to misinformation, unequal representation of affected populations, and ethical concerns about data validity and accountability (Read et al., 2016). Without effective mechanisms for synthesis and interpretation, the sheer volume of available information can undermine rather than support coordinated humanitarian action. Consequently, scholars argue that humanitarian communication during crises must prioritise not only data collection but also sensemaking, coordination, and communicative clarity to transform fragmented information into actionable knowledge (Weick et al., 2005).



AI-driven natural language processing (NLP) and data-mining tools offer a promising response to these challenges by enabling the real-time synthesis and analysis of large, diverse data streams. These technologies can detect emerging trends, cluster related information, filter misinformation, and highlight priority issues, thereby supporting faster and more informed decision-making (Meier, 2015; Crawford & Finn, 2021). By augmenting human analytical capacities, AI systems help humanitarian organisations move from data accumulation to actionable intelligence.

However, while these tools enhance efficiency and coordination, they must be integrated with human judgment and ethical oversight to ensure that algorithmic outputs are contextually grounded and aligned with humanitarian principles.

Language and Cultural Barriers

Humanitarian workers often engage with populations that are multilingual and culturally diverse, yet language differences continue to pose a significant challenge to effective communication. These barriers can limit two-way feedback, hinder the accurate understanding of critical information, and impede the inclusion of vulnerable groups in relief efforts (Reuter & Kaufhold, 2018; Dufty, 2020; Wilson & Jumbert, 2018). As a result, affected communities may receive information that is incomplete, delayed, or misinterpreted, reducing the overall effectiveness, responsiveness, and accountability of humanitarian interventions (World Humanitarian Data and Trends Report, 2022; Olsen et al., 2021). Despite the adoption of digital tools, these linguistic and cultural challenges persist, representing a key gap in current humanitarian communication practices and highlighting the need for research to explore how innovative approaches such as AI might address these limitations.

AI-powered machine translation and speech-recognition technologies significantly enhance humanitarian communication by addressing persistent language and cultural barriers that impede two-way engagement with multilingual and multicultural populations in crisis settings. Tools such as Google Translate, DeepL, and customized humanitarian language models enable near-instant translation of spoken and written messages, allowing humanitarian workers to disseminate critical information such as health guidance, security alerts, and aid procedures in local languages and dialects where professional interpreters are scarce (Meier, 2015; Munro, 2019). Beyond literal translation, AI-driven language systems can analyze linguistic patterns and sentiment, supporting culturally adaptive messaging that improves comprehension, trust, and community uptake (Crawford & Finn, 2021). Speech-recognition technologies further strengthen accountability and feedback mechanisms by capturing oral responses from affected populations and converting them into analyzable text, thereby enabling agencies to systematically integrate local voices into needs assessments and program adjustments (United Nations Office for the Coordination of Humanitarian Affairs OCHA, 2019). By facilitating real-time, dialogic communication, AI shifts humanitarian engagement from predominantly one-way information dissemination toward more participatory and inclusive communication models.

However, scholars caution that these tools must be deployed with careful attention to translation accuracy, data privacy, power asymmetries, and the marginalization of low-resource languages, reinforcing the need for AI systems to complement rather than replace human translators and cultural mediators (Meier, 2015; Munro, 2019).

Limited Situational Awareness
Remains a critical challenge in humanitarian and crisis-response contexts, particularly in conflict-affected or remote regions where insecurity, damaged infrastructure, and limited connectivity restrict timely data collection and reporting. Traditional situational awareness mechanisms such as field assessments, manual



reporting chains, and periodic surveys are often slow, fragmented, and reactive, resulting in delayed responses to rapidly evolving crises. These limitations can obscure emerging threats, population displacement patterns, and infrastructure damage, thereby constraining decision-making and resource allocation at moments when speed and accuracy are most vital (OCHA, 2019). Moreover, reliance on human reporting alone exposes humanitarian actors to risks of incomplete coverage, reporting bias, and information gaps, especially where access to affected populations is constrained by violence or political restrictions (Meier, 2015).

AI-enhanced technologies significantly improve situational awareness by enabling faster, more comprehensive, and predictive analysis of crisis environments. AI-powered geospatial analysis and satellite imagery, combined with machine learning algorithms, can automatically detect changes in population movements, damaged infrastructure, flooded areas, or emerging conflict hotspots with far greater speed than manual interpretation (Letouzé et al., 2020). When integrated with alternative data sources such as mobile phone metadata, social media signals, and crowd-sourced reports, AI systems support dynamic crisis mapping that updates in near real time, offering responders a more granular and evolving picture of on-the-ground realities (Meier, 2015; Crawford & Finn, 2021). These capabilities enhance anticipatory action by allowing humanitarian organizations to identify risks before they escalate, improving preparedness and enabling more targeted, timely interventions.

Verification and Misinformation

During crises, misinformation can spread rapidly and broadly across digital platforms, social media, and messaging apps, undermining trust in humanitarian actors, distorting public understanding of needs, and creating confusion that hampers response efforts. False or misleading content, whether unintentional rumors or coordinated campaigns, can skew perceptions of what is happening on the ground, disrupt aid delivery, and erode confidence in official sources of information, ultimately weakening public support for humanitarian action (European Commission, 2024). Research in crisis communication and information management highlights that misinformation during natural disasters and conflicts has real-world consequences: it can misdirect resources, generate panic, and impede efforts to protect vulnerable populations (Komendantova & Erokhin, 2025). Moreover, generative AI technologies have made it easier to produce highly convincing deep fake multimedia content and fabricated narratives, underscoring the need for effective verification strategies (Le Poidevin, 2025). Therefore, humanitarian responses that rely on unverified social media content or machine outputs without robust verification risk amplifying harmful information and weakening community trust.

AI models trained for fact-checking, pattern recognition, and anomaly detection can play an important role in combating misinformation by flagging false or manipulated content, assessing source credibility, and tracing how rumors propagate through networks. AI-assisted systems from specialized research platforms to tools like MyAIFactChecker used in newsroom settings can process vast amounts of online content much faster than human analysts alone, identifying questionable claims and supporting rapid debunking efforts during crises (Sofiullahi, 2025). Advanced classifiers and natural language processing techniques also enable real-time monitoring of narrative flows and emerging information threats, helping humanitarian teams prioritize credible data (Vicari & Komendantova, 2023).

Personalisation of Risk and Recovery Messages

Traditional disaster communication often uses one-size-fits-all messaging, which fails to meet the diverse informational needs of marginalized, vulnerable, or culturally specific populations, resulting in reduced comprehension, trust, and engagement with critical risk and recovery information. Generic alerts and



advisories may overlook differences in language, cultural context, levels of literacy, socioeconomic status, and local priorities, making them less relevant or actionable for specific subgroups within larger populations. Research in strategic communication and disaster risk reduction underscores that communication tailored to community characteristics is more likely to be understood and acted upon, particularly when addressing populations with historically lower institutional trust or unique vulnerabilities (Zhao et al., 2025; Zajac, 2025). Without segmentation of audiences by criteria such as demographics, geographic location, and context-specific needs, traditional messaging risks deepening information inequalities and reducing the effectiveness of emergency preparedness and recovery initiatives.

AI analytics can transform risk and recovery communication by enabling audience segmentation and personalised messaging that respects privacy and local sensitivities. Machine learning models can integrate demographic metadata, geospatial information, social media interactions, and language preferences to segment audiences and generate tailored message variants that resonate more deeply with specific groups, such as ethnic minorities, elderly residents, or non-native speakers (Seivold 2024; Zhao et al., 2025). Advanced AI systems, including generative models and customizable chatbot interfaces, can craft contextually relevant narratives, deliver localized alerts, and adapt communication style based on predicted preferences and needs, making official guidance more accessible and actionable for diverse communities. Research demonstrates that culturally and linguistically tailored AI-generated communication can improve perceptions of credibility and relevance, enhance information seeking and engagement, and ultimately support more inclusive and effective disaster preparedness and recovery outcomes (Zhao et al., 2025; Chu & Liu, 2025). By moving beyond generic broadcasting to personalized, data-informed messaging, AI holds promise for narrowing communication gaps and supporting equitable information dissemination in humanitarian crises.

Feedback Loops and Community Engagement

Humanitarian organizations frequently struggle to gather, analyze, and respond to community feedback at scale, resulting in top-down communication that can marginalise local voices and reduce the relevance of humanitarian programming. Traditional feedback mechanisms like surveys and town halls are often slow, resource-intensive, and difficult to standardize across complex crises, which means that insights into evolving needs may arrive too late to inform planning or adaptation (ICTworks, 2025; IFRCRCS, 2023). Moreover, digital feedback collection may skew representation toward those with access to technology, leaving out the most vulnerable populations whose perspectives are critical for equitable response (Kazansky, et al, 2023). These limitations not only constrain responsiveness but can erode trust if communities perceive their concerns as ignored or under-prioritized, underscoring the need for communication processes that are genuinely inclusive, timely, and reflective of diverse lived experiences (CDAC Network, 2025). Without scalable, continuous engagement, humanitarian actors risk perpetuating unidirectional communication that fails to support meaningful accountability and shared decision-making.

AI-driven chatbots and conversational interfaces offer a promising means to strengthen feedback loops and community engagement by enabling real-time, two-way dialogue with affected populations, particularly when deployed via accessible channels such as WhatsApp, SMS, or other messaging platforms (IFRCRCS, 2023; ICTworks, 2025). These systems can engage users in natural language conversations, continuously collect local perspectives, and aggregate responses into structured data that reveals emerging needs, satisfaction levels, and common concerns faster than manual methods (Skills for Africa, 2025). Case examples like the World Food Programme's ETC Chatbot illustrate how AI tools can adapt to changing information needs over time, channelling community feedback into adaptive responses in contexts such as Ukraine, Libya, and Iraq (Bock, 2025).



Coordination and Information Silos

Humanitarian communication and coordination often suffer from information silos and inconsistent messaging because agencies use disparate data systems and reporting formats, which impede rapid decision-making and response efforts. For example, the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) plays a central role in facilitating humanitarian coordination to reduce duplication and ensure prioritized, coherent responses across actors in crises, yet data fragmentation remains a persistent challenge across organizations and sectors (UNOCHA, n.d.; H2H Network, 2026). Fragmented data landscapes make it difficult for responders to access timely, accurate information, and duplicated efforts can result in inefficiencies and gaps in aid delivery. Research on humanitarian systems emphasizes the need for centralised, interoperable platforms that allow seamless data sharing and integrated access to information to improve coordination, transparency, and decision-making across actors engaged in crisis response. These platforms are envisioned to consolidate multiple data sources and provide users with a unified operational picture, thereby reducing the barriers caused by fragmented silos (H2H Network, 2026).

Artificial intelligence (AI) driven interoperability and data integration platforms offer a promising solution to these coordination challenges by harmonizing data standards, enabling cross-agency communication, and synthesising disparate datasets into unified dashboards and analytics tools. AI can ingest heterogeneous humanitarian information, whether from situational reports, geospatial feeds, logistics systems, or social media, and transform them into coherent, accessible insights that support shared understanding and real-time decision making. Integrating AI into coordination platforms can enhance the visibility and usability of data across organizations and support collaborative response planning, as evidenced by emergent research showing how AI-enabled communication hubs increase actors' willingness to exchange information and improve operational transparency (Bai et al., 2025). When coupled with centralized humanitarian data initiatives like the Humanitarian Data Exchange (HDX), these technologies can strengthen coordinated action, reduce duplication of efforts, and foster data-driven humanitarian decision-making across agencies responding to emergencies.

Monitoring Impact and Accountability

Monitoring the impact of humanitarian communication interventions is often challenging because assessment processes are time-consuming, resource-intensive, and heavily reliant on qualitative evaluations conducted after the fact. This can limit organisations' ability to learn during crises and weaken accountability to affected populations. AI-enhanced analytics can improve this process by systematically aggregating and analysing large-scale feedback data, social media conversations, call-center logs, and media coverage to assess message reach, public sentiment, and levels of trust in humanitarian actors in near real time (Meier, 2015). Machine-learning models can also detect shifts in community behaviour, identify unmet information needs, and flag communication gaps, enabling humanitarian organisations to adapt messaging strategies dynamically as situations evolve (Letouzé et al., 2020). By providing timely, evidence-based insights, AI supports more transparent evaluation practices, strengthens accountability mechanisms, and ensures that communication efforts remain responsive to community perceptions and needs throughout the crisis lifecycle (UNOCHA, 2023).



Challenges in Deploying AI for Humanitarian Communication

Despite its growing promise, the deployment of artificial intelligence (AI) in humanitarian communication faces several structural and ethical challenges that can limit its effectiveness and legitimacy.

Ethical and data governance challenges pose a significant risk. AI-enabled humanitarian communication systems rely heavily on large volumes of sensitive data, including personal narratives, location information, and real-time feedback from crisis-affected populations. In fragile and conflict-affected contexts, weak data-protection regimes, limited informed consent, and pronounced power asymmetries between humanitarian actors and affected communities heighten the risk of surveillance, data misuse, and unintended harm (OCHA, 2023; Taylor & Meier, 2021). Moreover, biases embedded in training data often skewed toward digitally connected or urban populations, can reproduce existing social inequalities, marginalize vulnerable groups, and erode trust in humanitarian communication. Without robust ethical oversight, transparency, and accountability mechanisms, AI-driven tools risk undermining the humanitarian “do no harm” principle (UNICEF, 2021; UNESCO, 2023).

Capacity and infrastructure constraints limit meaningful adoption. Many humanitarian settings are characterised by poor connectivity, low levels of digital literacy, and limited technical expertise, all of which constrain the accessibility and sustainability of AI-enabled communication systems (Letouzé et al., 2020). Smaller and local organizations often lack the financial and institutional capacity to develop, deploy, or maintain AI tools, leading to reliance on external technology providers. This dependency can reinforce global power asymmetries and create a mismatch between technologically sophisticated solutions and on-the-ground realities, resulting in fragmented implementation and uneven benefits (ICTworks, 2025).

AI cannot function independently of human judgment and contextual understanding. While AI can process large datasets and identify patterns at scale, it lacks cultural sensitivity, empathy, and moral reasoning qualities that are essential in humanitarian communication. Human actors remain central to designing systems, interpreting outputs, contextualizing insights, and making ethically grounded decisions. Effective humanitarian communication, therefore, depends on human oversight to ensure that AI-generated insights align with local norms, community needs, and humanitarian values (UNESCO, 2023). Treating AI as a substitute rather than a complement to human judgment risks technocratic decision-making that overlooks lived experiences and social complexity.

Discussion

The findings of this study illustrate how AI technologies are reshaping humanitarian communication in ways that align closely with the Constitutive Communication (CCO) framework. CCO posits that communication constitutes organizational and social realities rather than simply transmitting information (Taylor et al., 1996). In the context of humanitarian crises, AI-mediated communication systems, such as natural language processing tools, predictive analytics, and chatbots, do not merely convey messages; they actively constitute new organizational practices, decision-making structures, and engagement protocols. For instance, AI-driven synthesis of fragmented data streams enables humanitarian organizations to create coherent situational awareness dashboards, effectively transforming how agencies coordinate, prioritise resources, and respond to dynamic crises (Meier, 2015; Crawford & Finn, 2021). Similarly, AI-enabled translation tools and conversational interfaces reshape human–community interactions by enabling multilingual engagement, participatory feedback, and real-time adjustments to programming, demonstrating that communication technologies directly shape organizational realities and crisis response



practices (Munro, 2019; OCHA, 2019). Through a CCO lens, the deployment of AI constitutes new norms, routines, and relationships across humanitarian agencies, redefining both operational structures and how affected populations experience and interact with aid delivery.

Complementing the CCO perspective, findings also align with Participatory Communication Theory, which emphasizes inclusive, dialogic, and community-centered engagement (Servaes, 1999; Freire, 1970). Traditional humanitarian messaging often relies on top-down dissemination, which can marginalize vulnerable populations, obscure local needs, and reduce trust in humanitarian actors. AI technologies, however, can facilitate two-way communication by enabling real-time feedback collection through chatbots, dynamic risk messaging, and audience segmentation (Skills for Africa, 2025; Bock, 2025). These tools allow humanitarian actors to tailor messages to specific linguistic, cultural, or demographic contexts and integrate community insights into decision-making, thereby supporting participatory engagement. Similarly, AI-enabled verification and fact-checking systems help maintain trust by combating misinformation, ensuring that community voices are accurately represented, and that communication outputs are reliable and responsive (Sofiullahi, 2025; Le Poidevin, 2025). From this perspective, AI does not replace human agency but amplifies participatory practices, enabling more equitable, inclusive, and responsive humanitarian communication processes.

However, the study also highlights that the transformative potential of AI is contingent upon addressing key challenges, which the theoretical frameworks help contextualize. Ethical and data governance concerns, capacity and infrastructure limitations, and the need for human oversight underscore that AI constitutes rather than substitutes for communication. Without robust ethical frameworks, transparent oversight, and culturally grounded interpretation, AI-generated insights risk reinforcing inequities, excluding marginalized groups, or producing technocratic decisions disconnected from local realities (UNOCHA, 2023; UNESCO, 2023; Letouzé et al., 2020). CCO and participatory theories together emphasize that AI's role in humanitarian communication is co-constitutive: its outputs are shaped by human decision-making, organisational practices, and community engagement, while simultaneously shaping those practices in return. In practice, this necessitates careful integration of AI as a tool that supports, rather than replaces, human judgment, ethical responsibility, and participatory engagement in crisis contexts.

Conclusion and Recommendation

This study demonstrates that Artificial Intelligence (AI) offers significant opportunities to enhance humanitarian communication by addressing challenges such as information overload, fragmented data, language barriers, limited situational awareness, and the spread of misinformation. By synthesizing large volumes of data, supporting multilingual engagement, enabling personalized messaging, and facilitating two-way dialogue, AI reshapes how humanitarian organisations operate and interact with affected populations during crises. From a Constitutive Communication (CCO) perspective, these AI-mediated processes do not merely transmit information; they actively constitute new organizational practices, norms, and decision-making structures, transforming coordination, resource allocation, and engagement strategies. At the same time, through the lens of Participatory Communication Theory, AI demonstrates the potential to promote inclusive, community-centered engagement by amplifying feedback, tailoring messages to diverse audiences, and ensuring that vulnerable populations are heard and represented in crisis response.



Audrezara Journal of Communication and Social Research (AJCSR), Vol. 2(1), 167-180, 2026.

Despite these transformative possibilities, the study also highlights that the effectiveness and legitimacy of AI in humanitarian communication are contingent upon addressing key challenges. Ethical and data governance concerns, infrastructural and capacity limitations, algorithmic biases, and the necessity of human oversight all constrain AI's potential and, if unaddressed, risk reinforcing inequities or marginalizing communities.

In response to the challenges associated with deploying Artificial Intelligence in enhancing humanitarian communication, the following recommendations are proposed;

In relation to Data Quality, Bias, and Representation

- Conduct regular audits of AI datasets to identify gaps or biases.
- Engage local communities in data collection to ensure diverse and inclusive inputs.
- Combine AI analysis with field insights to capture offline and marginalized populations.

Ethical Risks, Privacy, and Accountability

- Develop clear data governance policies that include consent, confidentiality, and data minimization.
- Assign ethical oversight teams to monitor AI use and address potential misuse.
- Ensure transparency by documenting AI processes and communicating limitations to stakeholders.

Human Oversight and Judgment

- Train staff to interpret AI outputs responsibly and contextualize recommendations.
- Establish human-in-the-loop protocols where humans make final decisions.
- Promote cultural sensitivity and ethical awareness in AI-assisted communication strategies.

Acknowledgement: This study was undertaken solely by the author, who appreciates the personal growth and learning gained through the research process.

Funding: This research did not receive any external funding.

Conflict of Interest: The author declares no conflict of interest.

How to Cite: Wilson, F. (2026). Leveraging Artificial Intelligence to Enhance Humanitarian Communication. *Audrezara Journal of Communication and Social Research*, 2(1), 167-180. <https://doi.org/10.5281/zenodo.19941260>

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