

LANGUAGE, TECHNOLOGY, AND SOCIAL MEDIA

ISSN: 3026-7196

Social Media as a Crisis Communication Tool During the 2021 KwaZulu-Natal and Gauteng Civil Unrest

Luthando Valencia Ngubane and **Elvis Madondo***

To cite this article. L. V. Ngubane and E. Madondo, "Social Media as a Crisis Communication Tool During the 2021 KwaZulu-Natal and Gauteng Civil Unrest," *Lang. Technol. Soc. Media*, vol. 4, no. 2, pp. 318–340, 2026.
DOI: https://doi.org/10.70211/ltsm.3026-7196.183

To link to this article:

Published online: 13 June 2026

Submit an article to this journal

View crossmark data

Watch the video on YouTube

Full Terms & Conditions of access and use can be found at
https://journal.wiseedu.co.id/index.php/ltsmjournal/about

OPEN ACCESS

Language, Technology, and Social Media Vol 4 No 2 (2026) https://doi.org/10.70211/ltsm.3026-7196.183

Check for updates

Research Article

Social Media as a Crisis Communication Tool During the 2021 KwaZulu-Natal and Gauteng Civil Unrest

Luthando Valencia Ngubane and Elvis Madondo*

Received: 28 April 2026	Revised: 16 May 2026	Accepted: 7 June 2026	Online: 13 June 2026

Abstract

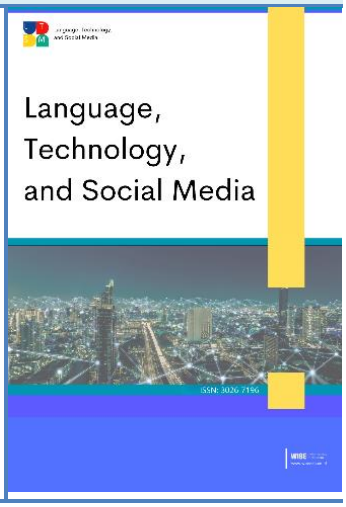
This study examines how social media functioned as a crisis communication and mobilisation infrastructure during the July 2021 civil unrest in KwaZulu-Natal and Gauteng, South Africa. Although prior research has linked digital platforms to protest organisation and crisis information flows, less attention has been paid to how affected publics perceived the simultaneous roles of mobilisation, risk communication, official communication, and misinformation in the South African unrest. Using a quantitative survey design, data were collected with an online questionnaire from 299 adult social media users who resided in KwaZulu-Natal, had witnessed the unrest through social media, and consented to participate. Descriptive statistics, reliability testing, exploratory factor analysis, and chi-square tests were used to analyse the data. The instrument showed high internal consistency (Cronbach's alpha = 0.851). Findings indicate that respondents strongly perceived social media as an integral communication channel, a tactical source of real-time information, and a mechanism for broadcasting the unrest beyond local communities. Four dimensions emerged from the analysis: connectivity and information sharing, safety and risk communication, official crisis communication, and public engagement and mobilisation. Gender differences were statistically significant for social media as a crucial information source and for real-time coordination, while race-based patterns suggested uneven perceptions across several items. The study contributes a contextualised crisis-informatics perspective on the dual capacity of social media to support public safety and intensify disorder during civil unrest.

Keywords: Social Media, Crisis Communication, Civil Unrest, Crisis Informatics, Misinformation, Mobilisation, South Africa.

Publisher's Note:

WISE Pendidikan Indonesia stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Copyright:
©
2026 by the author(s).
License WISE Pendidikan Indonesia, Bandar Lampung, Indonesia.
This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY 4.0) license (https://creativecommons.org/licenses/by/4.0/).



INTRODUCTION

The July 2021 civil unrest in South Africa marked one of the most disruptive episodes of post-apartheid social disorder, particularly in KwaZulu-Natal and parts of Gauteng. The unrest followed the imprisonment of former president Jacob Zuma and rapidly developed into large-scale looting, attacks on commercial centres, disruption of logistics corridors, and destruction of public and private property. Recent analyses frame the unrest not merely as isolated criminality but as a convergence of political contestation, socioeconomic grievance, and institutional vulnerability, thereby making it a critical case for examining crisis communication in digitally connected societies [1], [2].

Social media became a central communication arena during the unrest because platforms such as Twitter, Facebook, WhatsApp, and YouTube enabled users to circulate images, videos, voice notes, warnings, rumours, and calls for collective action in real time. Crisis informatics literature shows that social media can accelerate situational awareness, support community coordination, and provide alternative information channels when formal communication systems are slow, fragmented, or distrusted [3], [4], [5]. However, the same affordances that enable rapid public communication can also intensify disorder when unverified claims, emotionally charged content, and mobilisation cues travel faster than official corrections.

The relationship between social media and collective action should therefore be understood as interactive rather than deterministic. Digital media do not automatically cause protest or unrest; rather, they reduce communication costs, personalise participation, expand weak-tie networks, and make grievances more visible to wider publics [6], [7], [8]. These features are particularly relevant in crisis environments where publics seek immediate information, interpret unfolding risks, and decide whether to avoid, join, document, or respond to events.

Empirical evidence from earlier protest movements supports this dual interpretation. Studies of the Egyptian uprising, the Arab Spring, the Pittsburgh G20 protests, Occupy Wall Street, and related movements show that social media may facilitate mobilisation, documentation, police monitoring, emotional synchronisation, and transnational visibility [9], [10], [11], [12], [13], [14], [15]. At the same time, research on Bahrain demonstrates that social media may also serve surveillance and social-control functions, reminding scholars that platformed communication is shaped by power relations, state capacity, and platform governance [16].

A second strand of scholarship highlights the problem of misinformation during crises. False or misleading content may spread widely online because crisis audiences are highly uncertain, emotionally activated, and dependent on rapid updates. Large-scale evidence shows that false news can diffuse more broadly and faster than verified information, while experimental work demonstrates that crowdsourced quality judgments and accuracy prompts can reduce misinformation exposure and sharing [17], [18]. These findings are directly relevant to civil unrest contexts where rumours may influence movement, risk perception, and public trust.

Despite this expanding body of literature, the South African July 2021 unrest remains under-examined from the perspective of affected publics' perceptions of social media. Existing studies have often discussed the unrest as a political or security event, while fewer have examined how ordinary users interpreted social media's simultaneous functions as a mobilisation channel, information source, risk-alert system, official communication tool, and amplifier of public visibility. This gap is important because crisis communication effectiveness depends not only on what platforms technically enable, but also on how affected communities perceive and use them.

Accordingly, this study investigates how respondents perceived the role of social media during the 2021 KwaZulu-Natal and Gauteng unrest. The study addresses three objectives: to examine the extent to which social media was perceived as a communication and information-sharing tool during the unrest; to identify underlying dimensions of social media use through reliability and factor analysis; and to test whether perceptions differed by gender and race. The study contributes to the literature on language, technology, and social media by offering context-specific evidence on how platformed communication shapes crisis narratives, public mobilisation, and risk communication in a South African civil-unrest context.

LITERATURE REVIEW

Social Media, Crisis Informatics, and Public Communication

Research on social media in crises has developed into a broad crisis-informatics tradition that examines how digital traces, user-generated content, and platformed interaction shape public communication during extraordinary events. In this perspective, social media is not treated merely as an additional broadcasting channel, but as a socio-technical environment in which affected publics, authorities, journalists, emergency organisations, and ordinary witnesses produce, circulate, interpret, and contest crisis information in real time [4], [19], [20]. This view is particularly relevant to the July 2021 unrest because the events unfolded through simultaneous physical disruption and digital narration, where images, hashtags, voice notes, and location-based warnings contributed to how publics made sense of risk, danger, and collective action.

A major contribution of crisis-informatics scholarship is its emphasis on public participation. Social media can support situational awareness by enabling users to report hazards, identify blocked routes, request assistance, document damages, and amplify locally situated knowledge that may not yet be available through official channels [21], [22], [23], [24]. In fast-moving emergencies, such information flows can help communities interpret uncertain conditions and make immediate decisions. However, this participatory affordance also creates verification challenges because the same speed and openness that support timely information may also circulate incomplete, duplicated, decontextualised, or misleading content [25], [26].

For crisis communication, therefore, the central issue is not whether social media is simply beneficial or harmful, but how different actors use it under conditions of uncertainty, fear, and fragmented authority. Previous research shows that social media can be integrated into disaster planning, emergency response, and public warning systems when institutions maintain verified accounts, communicate consistently, monitor public concerns, and respond to user-generated reports [3], [27], [28], [29]. At the same time, platform data require careful interpretation because visibility, engagement, and algorithmic amplification do not automatically indicate accuracy, representativeness, or public consensus [30], [31]. These insights provide a foundation for analysing respondents' perceptions of social media during the KwaZulu-Natal and Gauteng unrest.

Digital Mobilisation, Connective Action, and Hashtagged Publics

The second relevant body of literature concerns the relationship between social media and collective action. Digital platforms have altered the communicative conditions of protest and mobilisation by reducing coordination costs, enabling personalised political expression, and allowing dispersed individuals to connect around shared grievances without relying exclusively on formal organisations [6], [7], [8]. The logic of connective action explains how digitally networked

publics can organise through personalised content, hashtags, images, short videos, and emotionally resonant messages that circulate across weak-tie networks [6]. In this sense, mobilisation occurs not only through formal leadership or organisational command, but also through repeated acts of sharing, tagging, reposting, and commenting.

Empirical studies of the Arab Spring, the Egyptian uprising, Occupy Wall Street, and other protest movements demonstrate that platforms such as Twitter, Facebook, and YouTube can support mobilisation, documentation, and international visibility [9], [10], [11], [12], [13], [14], [15]. These studies also caution against technological determinism. Social media may facilitate mobilisation, but it does not independently produce unrest; instead, it interacts with prior grievances, political opportunities, economic pressures, trust deficits, community networks, and state responses [7], [14], [15]. This distinction is important for the present study because the July 2021 unrest should not be explained as a direct effect of social media. Rather, social media should be examined as a communicative infrastructure that may have accelerated, amplified, organised, and publicly framed an already volatile social and political situation.

Hashtags are especially important within digitally mediated mobilisation because they organise attention, connect dispersed posts, and transform individual messages into searchable public narratives. In unrest contexts, hashtags can function simultaneously as signals of solidarity, calls to action, frames of grievance, archives of evidence, and mechanisms of visibility. However, hashtagged publics are also unstable: the same tag can carry competing meanings, be used for mobilisation or counter-mobilisation, and circulate across audiences with different intentions [10], [11], [16]. This ambivalence is directly relevant to hashtags such as #ShutdownSA, #ShutdownGauteng, and #ShutdownKZN, which became visible markers through which the July 2021 unrest was interpreted, followed, and debated.

Misinformation, Risk Communication, and Governance Challenges in Platformed Crises

A third body of scholarship focuses on misinformation, rumours, and governance challenges in platformed communication. Crisis situations are vulnerable to misinformation because publics face uncertainty, anxiety, information scarcity, and rapidly changing conditions. Under such conditions, users may share unverified content because it appears urgent, emotionally compelling, or socially useful [5], [17], [25], [26]. Large-scale evidence on online misinformation shows that false or low-quality information can travel widely through networked attention, repetition, novelty, and social reinforcement [17], [32], [33], [34], [35]. This evidence is essential for interpreting the July 2021 unrest, where digital communication may have provided warnings and public awareness while also intensifying fear, suspicion, and mobilisation cues.

The literature also shows that correction and official communication are difficult in platformed crises. Fact-checks, expert corrections, and official updates can reduce some forms of misperception, but their effectiveness depends on source credibility, timing, message clarity, repetition, and users' trust in institutions [18], [27], [36], [37], [38]. When government communication is delayed, inconsistent, or perceived as politically biased, citizens may rely more heavily on peer networks and community-based information flows. This creates a governance dilemma: authorities need social media to reach publics quickly, yet they must also compete with rumours, partisan interpretations, eyewitness fragments, and algorithmically amplified content.

Taken together, the literature indicates that social media during civil unrest should be conceptualised as an ambivalent communicative infrastructure. It enables information access,

public documentation, risk alerts, mobilisation, and collective visibility, but it can also accelerate rumour circulation, polarisation, surveillance, and harmful coordination [5], [16], [19], [27], [28]. The present study is positioned within this ambivalence. By examining respondents' perceptions of social media during the 2021 KwaZulu-Natal and Gauteng unrest, the study contributes empirical evidence from a Global South context where platformed communication intersected with political grievance, public safety, racialised and gendered perceptions, and crisis-management challenges.

METHODS

Research Design

This study used a quantitative survey design to examine public perceptions of social media during the July 2021 civil unrest. The design was appropriate because the research objectives required measurable evidence regarding respondents' levels of agreement with statements about mobilisation, information dissemination, public safety, official communication, and post-unrest community responses. A cross-sectional approach was adopted because respondents were asked to report their perceptions of a specific historical event after the unrest had occurred.

Population and Sample

The target population comprised adults aged 18 to 60 who resided in KwaZulu-Natal, were active social media users, and had witnessed or followed the July 2021 unrest and looting through social media. Participants were recruited through an online survey link distributed via the researcher's Facebook network. A total of 383 individuals were invited and 299 completed the questionnaire, yielding a response rate of 78.0%. The inclusion criteria required participants to confirm that they met the age, residence, social-media-use, and consent requirements before completing the instrument. The sampling strategy was therefore non-probability and network-based, which is suitable for reaching digitally active respondents but limits statistical generalisation to the broader provincial population.

Research Instrument

Data were collected using a structured Google Forms questionnaire. The instrument measured perceptions of social media as a communication tool, an information source, a mechanism for coordination and mobilisation, a channel for risk alerts and safety warnings, and a medium for official and crisis-organisation updates. Items used a five-point Likert-type response format ranging from strong disagreement to strong agreement. The questionnaire also collected demographic information, including gender and race, to support subgroup analysis. Reliability and validity were strengthened through internal-consistency testing and exploratory factor analysis, which are widely used to evaluate whether survey items coherently measure intended constructs [39], [40], [41], [42].

Data Collection Procedure

The online questionnaire was distributed after the unrest through a link shared on the researcher's Facebook account. Before accessing the substantive items, participants were informed about the purpose of the study, asked to confirm voluntary participation, and required to verify eligibility. No participant names were required in the questionnaire. The online format enabled rapid data collection from digitally active respondents who had used social media during the crisis, but it also

introduced the possibility of self-selection bias because individuals outside the researcher's social network or with limited internet access were less likely to participate.

Data Analysis

The analysis combined descriptive and inferential statistics. First, frequencies, percentages, means, item-rest correlations, and "alpha if deleted" values were used to describe response patterns and assess scale reliability. Second, exploratory factor analysis with varimax rotation was applied to identify latent dimensions in the questionnaire items. Third, chi-square tests and Fisher's exact tests were used to examine whether responses differed by gender and race. The interpretation of subgroup results considered both statistical significance and the uneven distribution of respondents across demographic categories. Throughout the analysis, citation numbers were ordered according to IEEE style and written as separate bracketed citations, for example [1], [2], [3], rather than as citation ranges.

Ethical Considerations

Participants provided electronic informed consent before completing the questionnaire. Participation was voluntary, and respondents could decline to proceed if they did not meet the eligibility criteria or did not wish to participate. The study did not require names or personally identifying information in the survey responses. For submission, the authors should insert the relevant institutional ethics approval details if such approval was obtained, including the name of the ethics committee and approval number.

RESULTS AND DISCUSSION

Results

Instrument Reliability and Construct Validity

Reliability analysis was conducted to determine whether the questionnaire items consistently measured perceptions of social media during the unrest. Cronbach's alpha was interpreted together with item-rest correlations, "alpha if deleted" values, and the conceptual fit of the items [39], [40]. The overall Cronbach's alpha was 0.851, indicating strong internal consistency for a perception scale used in social-science survey research.

As shown in Table 1, item means ranged from 3.559 to 4.127, indicating generally positive perceptions of social media's role during the unrest. The "alpha if deleted" values ranged from 0.836 to 0.849, showing that the removal of any single item would not increase the reliability of the instrument. For this reason, all items were retained for subsequent exploratory factor analysis.

Table 1. Cronbach's Alpha Ratings for Each Questionnaire Item

Items	Mean	Item-Rest Correlation	Alpha-If-Deleted
Social media has become an integral part of human communication.	4.027	0.366	0.848
Social media platforms can disseminate accurate information and influence public perceptions.	3.559	0.513	0.842
Social media is becoming a platform for the public to shape and redefine issues.	3.819	0.577	0.837

Items	Mean	Item-Rest Correlation	Alpha-If-Deleted
Social media offers effective ways to coordinate efforts and express political and social concerns.	3.963	0.415	0.846
Social media's power to mobilise people during civil unrest is undeniable.	4.037	0.510	0.841
Social media served as a tool in disseminating information before, during, and after civil unrest in KZN.	3.997	0.526	0.840
Social media was a crucial source of information during the KwaZulu-Natal looting.	3.906	0.354	0.849
Real-time information sharing helped coordinate looting efforts in KZN.	3.953	0.608	0.836
Social media helped broadcast the KZN 2021 July civil unrest globally.	3.973	0.552	0.839
Hashtags like #ShutdownSA, #ShutdownGauteng, and #ShutdownKZN were used during the 2021 unrest.	4.013	0.504	0.842
Social media played a key role in alerting individuals about potential risks during the KZN looting.	3.993	0.474	0.843
Updates on road closures and safety warnings shared on social media during the KZN looting were timely and helpful.	3.793	0.459	0.845
Government authorities effectively used social media to share official updates during the KZN looting.	4.017	0.456	0.844
Crisis organisations used social media to inform the public and gather information during the KZN unrest.	3.957	0.535	0.839
Initiatives like #LootingMustFall and #Cleanups were launched to address the aftermath of the unrest in KZN.	4.127	0.473	0.843
Overall	3.942	-	0.851

Table 1 confirms that the questionnaire formed a reliable scale for assessing respondents' perceptions of social media in a civil-unrest context. The overall mean of 3.942 on a five-point scale indicates that respondents tended to agree with statements describing social media as important for communication, information dissemination, mobilisation, risk alerts, and public visibility. Because reliability alone does not establish construct validity, exploratory factor analysis was then used to examine whether the items reflected coherent underlying dimensions [41], [42].

Exploratory Factor Structure

Exploratory factor analysis was used to identify the latent structure of the questionnaire and to determine whether the observed items clustered around theoretically meaningful constructs [41]. Varimax rotation produced four interpretable dimensions that correspond to key crisis-communication functions of social media. The four extracted factors were interpreted as follows:

Factor 1, connectivity and information sharing, captured items related to broadcasting the unrest globally, circulating hashtags, and enabling real-time coordination. This factor reflects the connective function of platforms during crisis events, where ordinary users can disseminate information faster than formal institutions [3], [4], [30].

Factor 2, safety and risk communication, captured road-closure updates, safety warnings, alternative routes, and alerts about potential risks. This factor shows that social media was not perceived only as a mobilisation tool; it was also experienced as a risk-navigation channel for affected publics [43].

Factor 3, official communication and crisis management, included government updates, crisis-organisation communication, and community initiatives such as cleanup campaigns. This factor is important because trust in official communication during crises is shaped by the perceived consistency, timeliness, and credibility of messages shared across platforms [36], [44].

Factor 4, public engagement and mobilisation, included items on collective coordination and the mobilisation of people into action. This factor demonstrates the ambivalent character of platformed communication: it can support civic response and collective problem solving, but it can also accelerate disorder when mobilisation cues are linked to looting or violence [6], [8], [11].

Table 2. Factor Analysis (Varimax Rotation)

Items	Factor 1	Factor 2	Factor 3	Factor 4	Communality
Social media promotes communication.	0.23	0.20	0.08	-0.02	0.10
Social media platforms can disseminate accurate information.	0.02	0.39	-0.07	-0.10	0.17
Social media shapes and redefines public concerns.	0.03	0.29	0.07	0.40	0.25
Social media offers ways to express political and social concerns.	0.09	-0.20	-0.09	0.59	0.40
Social media's power to mobilise during civil unrest.	0.03	-0.01	0.05	0.52	0.28
Social media was a tactical tool during civil unrest.	0.46	0.12	0.21	-0.06	0.27
Social media was a crucial source of information during looting.	0.39	0.06	0.00	0.01	0.15
Real-time sharing coordinated looting efforts.	0.60	-0.04	0.06	0.03	0.36
Social media broadcasted the KZN 2021 unrest globally.	0.63	0.12	0.11	0.11	0.44
Hashtags like #ShutdownSA were frequently used.	0.60	0.02	-0.04	0.11	0.37
Social media alerted individuals about risks during looting.	0.14	0.50	0.28	0.01	0.35
Social media shared road closures and safety warnings.	0.11	0.69	0.10	0.09	0.50

Items	Factor 1	Factor 2	Factor 3	Factor 4	Communality
Authorities used social media for official updates.	0.07	-0.04	0.61	0.00	0.38
Crisis organisations used social media for risk minimisation.	0.02	0.29	0.43	0.04	0.27
Initiatives like #LootingMustFall were launched post-riots.	0.08	0.04	0.47	0.01	0.23
Total Communalities					4.53
Cronbach's α	0.66	0.52	0.50	0.46	

Items with higher communalities, such as "road closures and safety warnings" (0.50), were better explained by the extracted factor structure, whereas lower-communality items, such as "social media promotes communication" (0.10), were less strongly represented by the model. The factor reliabilities were modest for some dimensions, particularly Factors 3 and 4, suggesting that future studies should refine and expand the item pool for each construct. Nevertheless, the four-factor solution offers a theoretically meaningful structure for interpreting how respondents perceived social media during the unrest.

Descriptive Patterns of Social Media Communication Functions

The descriptive results are organised around the main communication functions measured in the questionnaire. The presentation begins with general perceptions of social media as a communication infrastructure and then moves to information dissemination, collective coordination, mobilisation, tactical information flow, and crisis visibility. This structure allows the findings to be read as empirical evidence rather than as isolated questionnaire items.

Social Media as an Integral Part of Human Communication

Figure 1 presents respondents' perceptions of social media as an integral part of human communication.

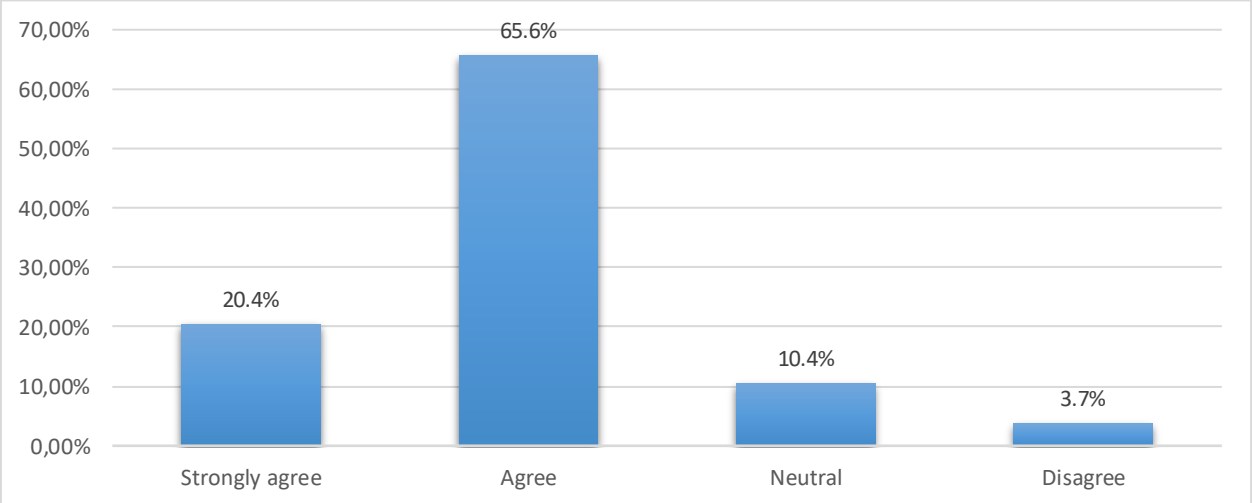


Figure 1. Social media as an integral part of human communication

Figure 1 shows that 65.6% of respondents agreed and 20.4% strongly agreed that social media has become an integral part of human communication. Only 3.7% disagreed, while 10.4% were neutral. This pattern indicates a strong consensus that social media was already embedded in respondents' everyday communication practices and could therefore become immediately relevant during the unrest.

Social Media Platforms and Information Dissemination

Figure 2 summarises respondents' views on whether social media platforms can disseminate accurate information and influence which issues the public perceives as important.

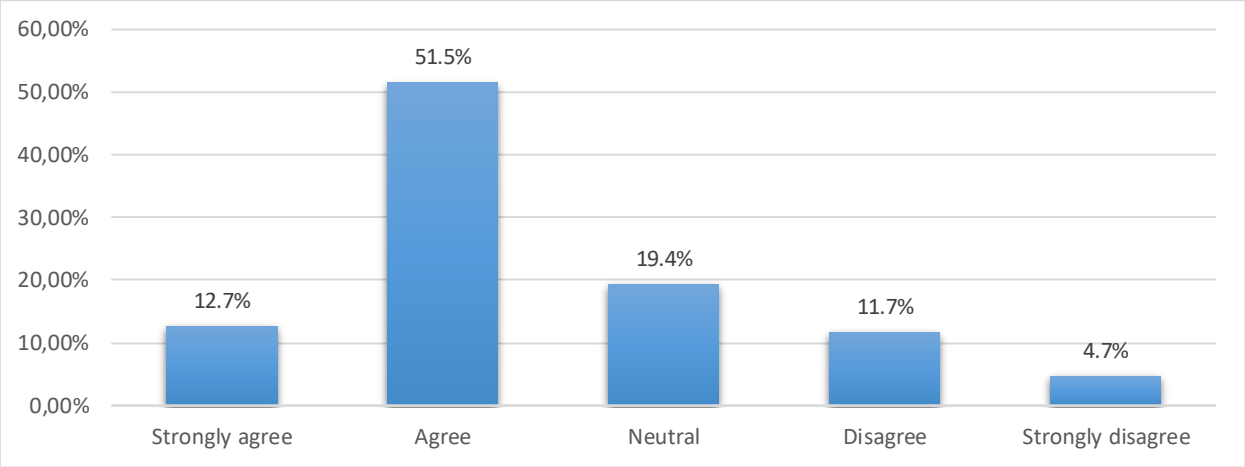


Figure 2. Dissemination of accurate information

Figure 2 shows that 51.5% of respondents agreed and 12.7% strongly agreed that social media platforms could disseminate accurate information and influence public perceptions. However, 19.4% were neutral, 11.7% disagreed, and 4.7% strongly disagreed. The result indicates majority confidence in social media as an information channel, but it also reveals a substantial level of uncertainty regarding information accuracy.

These responses show that perceptions of accuracy were more divided than perceptions of social media's general communicative role. The descriptive result is important because it suggests that respondents differentiated between using social media frequently and trusting all information circulated through platforms.

Social Media and Coordination of Collective Effort

Figure 3 illustrates respondents' views on whether social media provides creative and effective ways for people to coordinate their efforts and express political and social concerns.

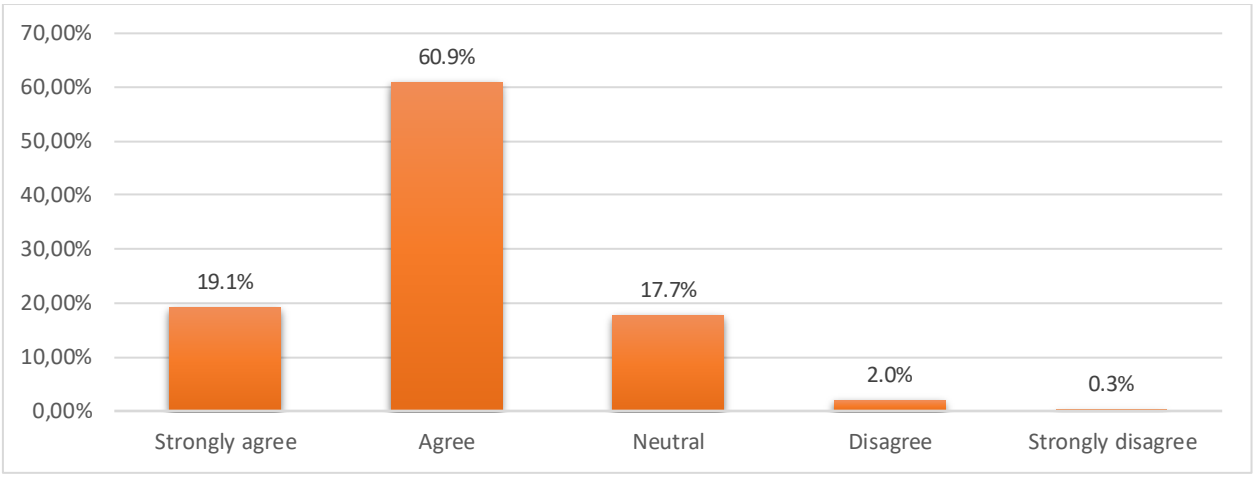


Figure 3. Creative ways for people to coordinate their efforts

Figure 3 reveals that 60.9% of respondents agreed and 19.1% strongly agreed that social media enables coordination and expression of political and social concerns. Only 2.0% disagreed and 0.3% strongly disagreed. The result shows that coordination was one of the most strongly recognised functions of social media in the dataset.

Social Media's Power to Mobilise People into Action

Figure 4 reports perceptions of the statement, "During civil unrest, social media's power to mobilise people into action is undeniable."

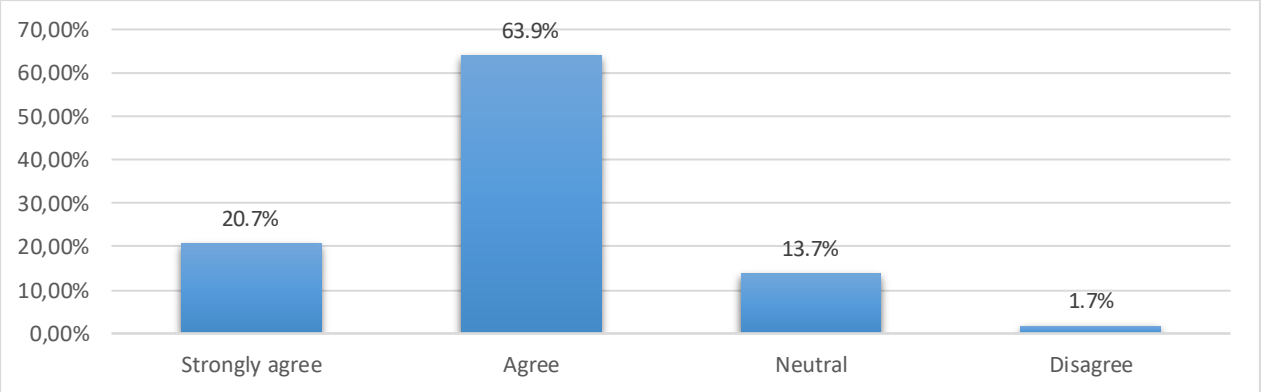


Figure 4. Power to mobilise people into action

Figure 4 shows that 63.9% of respondents agreed and 20.7% strongly agreed that social media's power to mobilise people during civil unrest is undeniable, while only 1.7% disagreed. This indicates that respondents perceived mobilisation as a central feature of platformed communication during the unrest.

Social Media as a Tactical Tool for Information Dissemination

Figure 5 illustrates how respondents perceived social media as a tactical tool for disseminating information before, during, and after the KwaZulu-Natal unrest.

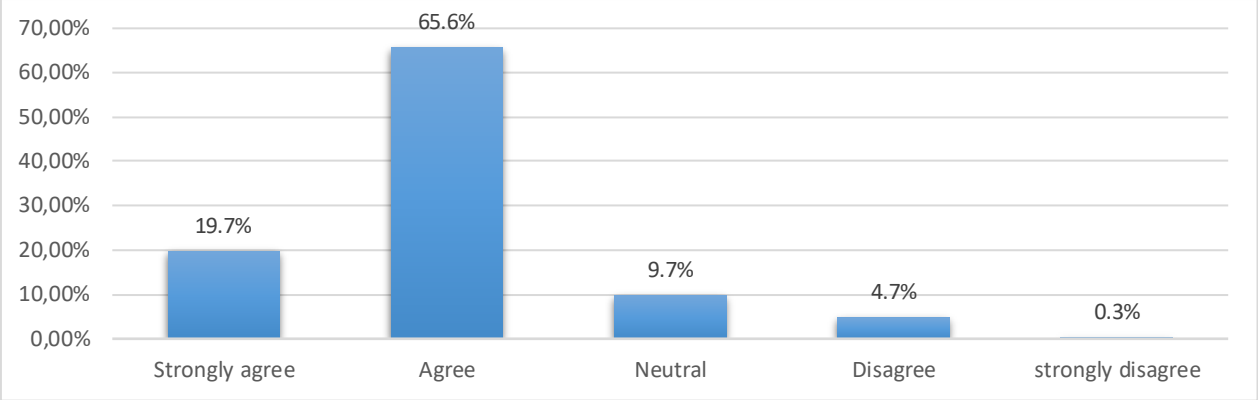


Figure 5. A tactical tool in disseminating information

Figure 5 demonstrates that 65.6% of respondents agreed and 19.7% strongly agreed that social media served as a tactical tool for information dissemination before, during, and after the unrest. Only 5.0% disagreed or strongly disagreed. This finding indicates that respondents viewed social media as central to the temporal flow of crisis information across anticipation, response, and recovery phases.

Social Media as a Crucial Source of Information

Figure 6 presents responses to the statement, "Social media was a crucial source of information for me during the KwaZulu-Natal looting."

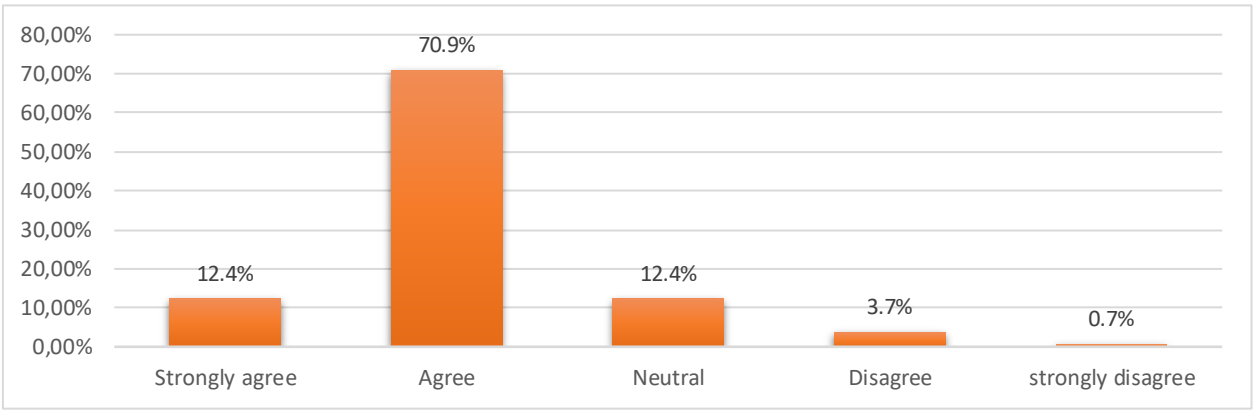


Figure 6. Social media as a source of information

Figure 6 shows that 70.9% of respondents agreed and 12.4% strongly agreed that social media was a crucial information source during the looting. This was one of the strongest positive response patterns in the study. The result suggests that respondents did not perceive social media merely as a space for opinion expression, but as a practical source for monitoring and interpreting the unrest.

Real-Time Coordination and Hashtagged Visibility

Real-Time Information and Coordination

Figure 7 summarises responses to the statement, "Real-time information allowed for the coordination of looting efforts in KZN."

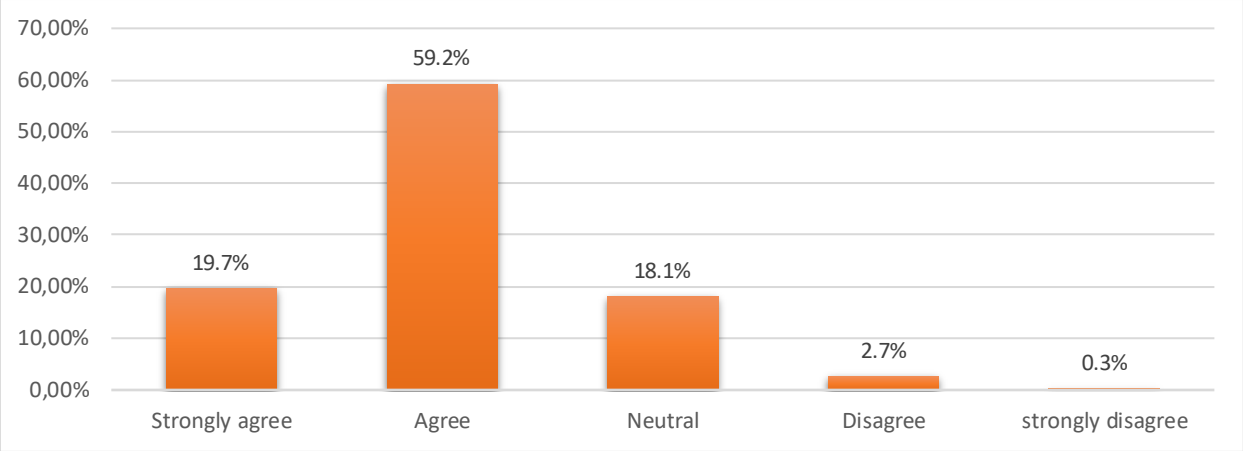


Figure 7. Real-time information

Figure 7 shows that 59.2% of respondents agreed and 19.7% strongly agreed that real-time information enabled coordination of looting efforts. A further 18.1% were neutral, while 2.7% disagreed and 0.3% strongly disagreed. The result indicates that most respondents associated real-time platform communication with the coordination of unrest-related activities.

Connecting and Broadcasting the KZN 2021 Civil Unrest to the World

Figure 8 illustrates respondents' views on whether social media helped people connect and broadcast the July 2021 unrest beyond the immediate local context.

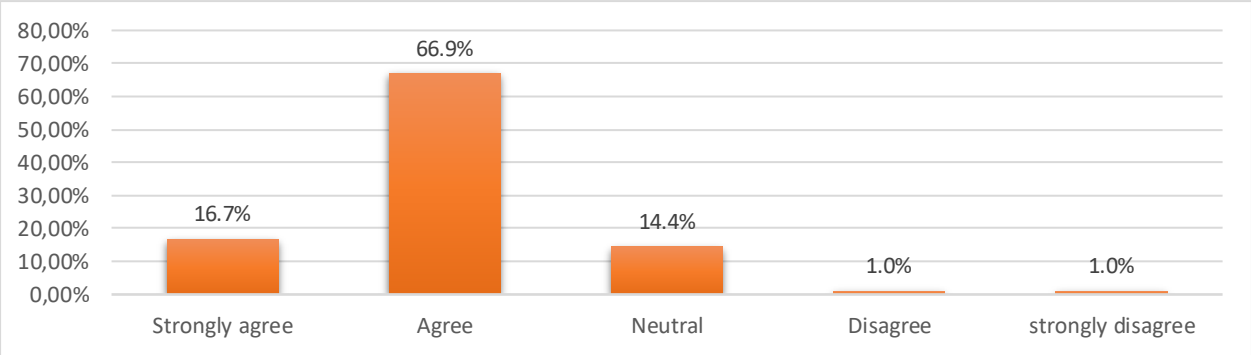


Figure 8. Social media helped people connect and broadcast

Figure 8 shows that 66.9% of respondents agreed and 16.7% strongly agreed that social media helped broadcast the unrest globally. This result reflects the visibility function of social media, in which local events can become national and international narratives through images, hashtags, eyewitness accounts, and networked sharing.

Hashtags #ShutdownSA, #ShutdownGauteng, and #ShutdownKZN

Figure 9 presents responses to the statement that hashtags such as #ShutdownSA, #ShutdownGauteng, and #ShutdownKZN were frequently used during the 2021 unrest.

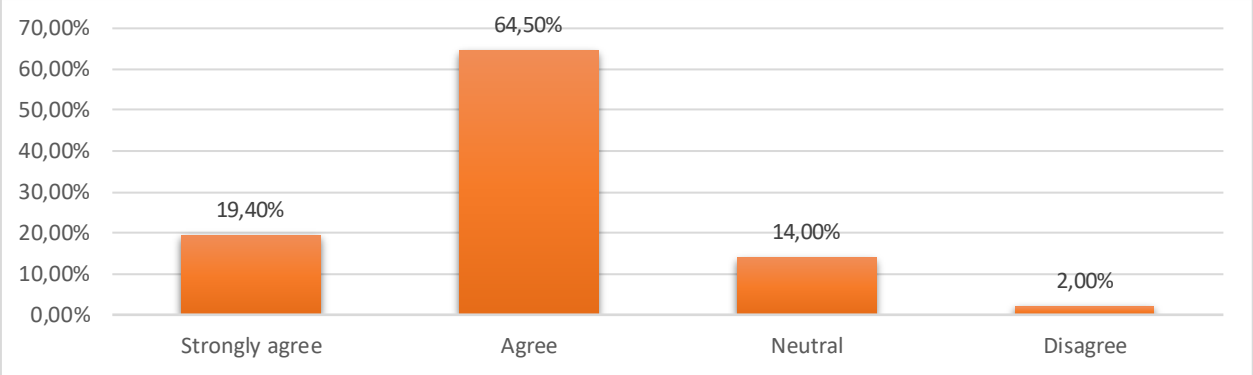


Figure 9. Social media hashtags

Figure 9 indicates that 64.5% of respondents agreed and 19.4% strongly agreed that hashtags such as #ShutdownSA, #ShutdownGauteng, and #ShutdownKZN were frequently used during the unrest, while 14.0% were neutral and 2.0% disagreed. The result confirms that hashtagged communication was a visible component of the public communication environment surrounding the unrest.

Gender-Based Differences in Perceptions

Table 3. Gender-based analysis

Gender	Female (N=169)	Male (N=130)	p-value	Overall (N=299)
Social media has become an integral part of human communication and the basic goal is to promote communication			Chisq., p = 0.970	
Disagree	22 (13.0%)	18 (13.8%)		40 (13.4%)
Agree	147 (87.0%)	112 (86.2%)		259 (86.6%)
Social media served as a tactical tool in disseminating information before, during and after civil unrest in KZN			Chisq., p = 0.351	
Disagree	21 (12.4%)	22 (16.9%)		43 (14.4%)
Agree	148 (87.6%)	108 (83.1%)		256 (85.6%)
Social media was a crucial source of information for me during the KwaZulu-Natal looting			Chisq., p = 0.035	
Disagree	20 (11.8%)	28 (21.5%)	0.048	48 (16.1%)
Agree	149 (88.2%)	102 (78.5%)	0.048	251 (83.9%)
Real-time information sharing allowed for the coordination of looting efforts in KZN			Chisq., p < 0.001	

Gender	Female (N=169)	Male (N=130)	p-value	Overall (N=299)
Disagree	24 (14.2%)	39 (30.0%)	0.002	63 (21.1%)
Agree	145 (85.8%)	91 (70.0%)	0.002	236 (78.9%)
During the July civil unrest, social media helped people to connect and broadcast the KZN 2021 July civil unrest to the world			Chisq., p = 0.240	
Disagree	24 (14.2%)	26 (20.0%)		50 (16.7%)
Agree	145 (85.8%)	104 (80.0%)		249 (83.3%)
The hashtags #ShutdownSA, #ShutdownGauteng and #ShutdownKZN were frequently used during the 2021 unrest			Chisq., p = 0.139	
Disagree	23 (13.6%)	26 (20.0%)		49 (16.4%)
Agree	146 (86.4%)	104 (80.0%)		250 (83.6%)

The chi-square results in Table 3 indicate statistically significant gender-based differences for two statements. First, social media as a crucial source of information differed by gender ($p = 0.035$; pairwise $p = 0.048$), with women reporting higher agreement (88.2%) than men (78.5%). Second, real-time information sharing as a mechanism for coordinating looting efforts also differed significantly by gender ($p < 0.001$; pairwise $p = 0.002$), with women again reporting higher agreement (85.8%) than men (70.0%). These results suggest that women in the sample perceived social media as more central to information access and coordination during the unrest.

The gender pattern may reflect differences in risk perception, household safety responsibilities, information-seeking behaviour, or exposure to community-warning networks during the crisis. However, the data do not allow causal claims about why women reported stronger agreement. The result should therefore be interpreted as a statistically significant perceptual difference that requires qualitative follow-up rather than as evidence of a fixed gendered communication behaviour.

For the remaining statements, gender differences were not statistically significant. These included perceptions of social media as part of human communication, a tactical tool before and after the unrest, a mechanism for broadcasting the unrest globally, and a marker of hashtag use. Overall, the gender analysis shows broad agreement across both groups, with significant differences concentrated in information-source and real-time coordination items.

Race-Based Differences in Perceptions

Table 4. Race-based analysis

Race	Black (N=201)	Indian (N=59)	White (N=21)	Coloured (N=18)	p-value	Overall (N=299)
Social media has become an integral part of human communication and the basic goal is to promote communication					<0.001	
Disagree	13 (6.5%)	11 (23.4%)	3 (14.3%)	10 (55.6%)	Fisher's	37 (12.9%)
Agree	188 (93.5%)	36 (76.6%)	18 (85.7%)	8 (44.4%)		250 (87.1%)
Social media served as a tactical tool in disseminating information before, during and after civil unrest in KZN					0.002	
Disagree	19 (9.5%)	12 (25.5%)	7 (33.3%)	3 (16.7%)	Fisher's	41 (14.3%)
Agree	182 (90.5%)	35 (74.5%)	14 (66.7%)	15 (83.3%)		246 (85.7%)
Social media was a crucial source of information for me during the KwaZulu-Natal looting					0.004	
Disagree	23 (11.4%)	10 (21.3%)	7 (33.3%)	6 (33.3%)	Fisher's	46 (16.0%)
Agree	178 (88.6%)	37 (78.7%)	14 (66.7%)	12 (66.7%)		241 (84.0%)
Real-time information sharing allowed for the coordination of looting efforts in KZN					0.003	
Disagree	34 (16.9%)	10 (21.3%)	10 (47.6%)	7 (38.9%)	Fisher's	61 (21.3%)
Agree	167 (83.1%)	37 (78.7%)	11 (52.4%)	11 (61.1%)		226 (78.7%)
During the July civil unrest, social media helped people to connect and broadcast the KZN 2021 July civil unrest to the world					0.014	
Disagree	26 (12.9%)	9 (19.1%)	8 (38.1%)	5 (27.8%)	Fisher's	48 (16.7%)

Race	Black (N=201)	Indian (N=59)	White (N=21)	Coloured (N=18)	p-value	Overall (N=299)
Agree	175 (87.1%)	38 (80.9%)	13 (61.9%)	13 (72.2%)		239 (83.3%)
The hashtags #ShutdownSA, #ShutdownGauteng and #ShutdownKZN were frequently used during the 2021 unrest					0.197	
Disagree	30 (14.9%)	8 (17.0%)	7 (33.3%)	2 (11.1%)	Fisher's	47 (16.4%)
Agree	171 (85.1%)	39 (83.0%)	14 (66.7%)	16 (88.9%)		240 (83.6%)

The race-based analysis in Table 4 requires more cautious interpretation because several categories had relatively small cell sizes, particularly the White (N = 21) and Coloured (N = 18) groups. Contrary to the earlier interpretation that the low p-values did not indicate meaningful differences, p-values below 0.05 suggest statistically significant associations between race and responses for several items. These include social media as an integral part of communication ($p < 0.001$), social media as a tactical tool for information dissemination ($p = 0.002$), social media as a crucial source of information ($p = 0.004$), real-time coordination of looting efforts ($p = 0.003$), and broadcasting the unrest to the world ($p = 0.014$).

The pattern suggests that perceptions of social media's role were not uniform across racial groups. Black respondents generally reported higher agreement across several items, while some other categories showed more mixed responses. However, because race categories were unevenly distributed and responses were collapsed into agree/disagree categories, the results should be read as evidence of association rather than as definitive evidence of racial causality. Future studies should use larger and more balanced samples to examine how racialised experiences of place, risk, media trust, and community networks shape crisis communication.

The item concerning the use of hashtags such as #ShutdownSA, #ShutdownGauteng, and #ShutdownKZN did not show a statistically significant race-based difference ($p = 0.197$). This suggests that recognition of hashtag use was broadly similar across racial categories, even when perceptions of other social-media functions differed. The finding reinforces the role of hashtags as cross-group public markers of crisis visibility.

Discussion

Social Media as an Ambivalent Crisis Communication Infrastructure

The results demonstrate that social media during the KwaZulu-Natal and Gauteng unrest should be understood as an ambivalent crisis communication infrastructure rather than as a neutral communication channel. Respondents recognised social media as part of everyday communication, a source of real-time information, a tool for coordination, and a mechanism for broadcasting the unrest beyond local communities. This finding extends crisis informatics scholarship, which emphasises that social media is used for information seeking, sense-making, coordination, and crisis learning across preparedness, response, and recovery phases [20], [21], [22], [23].

The factor structure reinforces this interpretation. The extracted dimensions show that respondents did not perceive social media as performing a single function. Instead, they distinguished between connectivity and information sharing, safety and risk communication, official communication and crisis management, and public engagement and mobilisation. This multidimensional pattern supports the argument that platformed crises are socio-technical events in which communicative affordances, public emotions, institutional responses, and user networks interact in real time [3], [4], [30].

Mobilisation, Hashtagged Visibility, and Misinformation Risk

The strong agreement on mobilisation, real-time coordination, and hashtag visibility demonstrates how platformed communication can accelerate collective action. This result is consistent with connective-action perspectives, which argue that digital media allow participants to personalise messages, circulate action frames, and coordinate without depending entirely on formal organisations [6], [7], [8]. In the present study, however, mobilisation was not only civic or protective; respondents also associated real-time information with the coordination of looting efforts. This finding highlights the ethical and governance challenge of social media in unrest: the same affordances that enable community warning and mutual aid may also intensify harmful coordination, fear, and opportunistic action [9], [10], [11].

The findings also clarify why misinformation and verification must be placed at the centre of crisis communication. Respondents generally recognised social media as useful, but the weaker agreement on accurate information indicates that platform users were aware of informational uncertainty. Research on fake news and misinformation shows that false or low-quality content can gain visibility through attention incentives, emotional appeal, selective exposure, and clustered networks [32], [33], [34], [35]. In violent unrest, these dynamics may intensify fear, blame, uncertainty, and premature judgement when users forward images, voice notes, or claims without confirming their origin.

Risk Communication, Governance, and Practical Implications

For public authorities, emergency managers, journalists, and community organisations, the study suggests that social media should be integrated into crisis management before unrest occurs rather than treated as an improvised response tool. Prior research recommends verified institutional accounts, coordinated messaging, two-way public reporting, social media analytics, and rapid clarification mechanisms [27], [28], [29]. The findings of this study support those recommendations because respondents perceived social media as central to information access, risk alerts, mobilisation, and public visibility.

At the same time, the race- and gender-based results show that crisis communication is not experienced uniformly across publics. Women in the sample perceived social media as more central to information access and real-time coordination, while race-based differences were significant for several items. These results should not be essentialised; rather, they indicate that place, exposure to risk, platform access, community networks, and media trust may shape how different groups interpret crisis communication. Future studies should therefore combine surveys with interviews, platform trace data, and geographically sensitive analysis to examine how digital communication intersects with social position during unrest.

Finally, platform governance and public digital literacy should be treated as complementary elements of crisis preparedness. Social media data can be affected by sampling bias, bot activity, geolocation uncertainty, API restrictions, and algorithmic visibility; therefore, platform evidence should be triangulated with surveys, interviews, administrative records, and field observations [31]. Crisis strategies should combine rapid official messaging, community-level verification networks, source-labelling practices, and digital-literacy interventions that reduce misinformation-related harm while preserving the constructive uses of social media for warning, coordination, accountability, and recovery [36], [37], [38].

CONCLUSION

This study demonstrates that social media functioned as a multi-layered crisis communication infrastructure during the 2021 KwaZulu-Natal and Gauteng civil unrest. Respondents perceived social media not only as a general communication channel but also as a tactical source of real-time information, a mechanism for mobilisation, a platform for risk alerts, and a means of broadcasting the unrest to wider publics. The reliability results showed strong internal consistency, and factor analysis identified four dimensions: connectivity and information sharing, safety and risk communication, official crisis communication, and public engagement and mobilisation. Gender differences were significant for social media as a crucial information source and for real-time coordination, while race-based results suggested statistically significant associations for several items but required cautious interpretation because of uneven group sizes. The study contributes to the literature on language, technology, and social media by showing that platformed communication during civil unrest has a dual capacity: it can support public awareness, safety, and community response, while also enabling misinformation, harmful coordination, and escalation. For practice, the findings imply that crisis managers, government agencies, media organisations, and platform stakeholders should develop faster verification systems, clearer official messaging, and stronger digital-literacy interventions before future unrest occurs.

LIMITATIONS

Several limitations should be acknowledged. First, the study relied on a non-probability online sample recruited through the researcher's Facebook network. This approach enabled access to digitally active respondents but may have excluded individuals with weaker internet access, lower platform use, or limited connection to the researcher's network. Second, the study measured perceptions rather than direct behavioural data; therefore, the findings cannot prove that specific social media posts caused particular actions during the unrest. Third, the survey was retrospective, which means respondents' memories may have been influenced by later media coverage, public debate, and personal interpretation of the events. Fourth, subgroup analyses by race should be interpreted cautiously because the sample distribution across racial categories was uneven and some cells were small. Fifth, the factor reliabilities for some subdimensions were modest, indicating the need for future instrument refinement. Future research should combine surveys with platform analytics, interviews, and content analysis of posts, hashtags, images, videos, and official crisis messages. Comparative studies across provinces and crisis types would also help clarify whether the patterns identified in this study are specific to KwaZulu-Natal and Gauteng or reflect broader dynamics of social media use during civil unrest.

AUTHOR INFORMATION

Corresponding Author

Elvis Madondo - Department of Strategic Communication, University of Johannesburg (South Africa);
orcid.org/0000-0002-6263-1604
Email: elvismadondo@gmail.com

Authors

Luthando Valencia Ngubane - Department of Public Relations, Durban University of Technology (South Africa);
orcid.org/0000-0002-7236-7923

Elvis Madondo - Department of Strategic Communication, University of Johannesburg (South Africa);
orcid.org/0000-0002-6263-1604

AUTHOR CONTRIBUTION

E.M. contributed to the conceptualisation of the study, supervision, data analysis, interpretation of findings, manuscript revision, and final approval of the manuscript. L.N. contributed to instrument preparation, data collection, literature review, initial manuscript drafting, and manuscript revision. Both authors reviewed the final manuscript and agreed to the submitted version.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DECLARATION OF USE OF AI IN SCIENTIFIC WRITING

The authors used ChatGPT during the preparation of this work to support language editing, structural refinement, and reference-style consistency. After utilising the tool, the authors reviewed and edited the content, verified the citations and DOI information, and assume full responsibility for the publication's content.

REFERENCES

[1] C. O. Mongale, "Social discontent or criminality? Navigating the nexus between political violence and the 2021 July riots in South Africa," *Frontiers in Sustainable Cities*, vol. 4, Art. no. 865255, 2022. https://doi.org/10.3389/frsc.2022.865255

[2] N. Phungula, "Understanding the dynamics of South Africa's July 2021 social unrest," *Journal of Nation-Building and Policy Studies*, vol. 8, no. 1, pp. 71–87, 2024. https://doi.org/10.31920/2516-3132/2023/v8n1a4

[3] J. Brynielsson, M. Granåsen, S. Lindquist, M. Narganes Quijano, S. Nilsson, and J. Trnka, "Informing crisis alerts using social media: Best practices and proof of concept," *Journal of Contingencies and Crisis Management*, vol. 26, no. 1, pp. 28–40, Mar. 2018. https://doi.org/10.1111/1468-5973.12195

[4] L. Palen and K. M. Anderson, "Crisis informatics—New data for extraordinary times," *Science*, vol. 353, no. 6296, pp. 224–225, Jul. 2016. https://doi.org/10.1126/science.aag2579
[5] O. Oh, M. Agrawal, and H. R. Rao, "Community intelligence and social media services: A rumor theoretic analysis of tweets during social crises," *MIS Quarterly*, vol. 37, no. 2, pp. 407–426, 2013. https://doi.org/10.25300/MISQ/2013/37.2.05
[6] W. L. Bennett and A. Segerberg, "The logic of connective action: Digital media and the personalization of contentious politics," *Information, Communication & Society*, vol. 15, no. 5, pp. 739–768, 2012. https://doi.org/10.1080/1369118X.2012.670661
[7] S. Boulianne, "Social media use and participation: A meta-analysis of current research," *Information, Communication & Society*, vol. 18, no. 5, pp. 524–538, 2015. https://doi.org/10.1080/1369118X.2015.1008542
[8] S. Valenzuela, "Unpacking the use of social media for protest behavior: The roles of information, opinion expression, and activism," *American Behavioral Scientist*, vol. 57, no. 7, pp. 920–942, 2013. https://doi.org/10.1177/0002764213479375
[9] Z. Tufekci and C. Wilson, "Social media and the decision to participate in political protest: Observations from Tahrir Square," *Journal of Communication*, vol. 62, no. 2, pp. 363–379, 2012. https://doi.org/10.1111/j.1460-2466.2012.01629.x
[10] J. Earl, H. McKee Hurwitz, A. M. Mesinas, M. Tolan, and A. Arlotti, "This protest will be tweeted: Twitter and protest policing during the Pittsburgh G20," *Information, Communication & Society*, vol. 16, no. 4, pp. 459–478, 2013. https://doi.org/10.1080/1369118X.2013.777756
[11] Y. Theocharis, W. Lowe, J. W. van Deth, and G. García-Albacete, "Using Twitter to mobilize protest action: Online mobilization patterns and action repertoires in the Occupy Wall Street, Indignados, and Aganaktismenoi movements," *Information, Communication & Society*, vol. 18, no. 2, pp. 202–220, 2015. https://doi.org/10.1080/1369118X.2014.948035
[12] R. Brym, M. Godbout, A. Hoffbauer, G. Menard, and T. H. Zhang, "Social media in the 2011 Egyptian uprising," *The British Journal of Sociology*, vol. 65, no. 2, pp. 266–292, 2014. https://doi.org/10.1111/1468-4446.12080
[13] T. Eaton, "Internet activism and the Egyptian uprisings: Transforming online dissent into the offline world," *Westminster Papers in Communication and Culture*, vol. 9, no. 2, pp. 3–24, 2013. https://doi.org/10.16997/wpcc.163
[14] M. Ben Moussa, "From Arab street to social movements: Re-theorizing collective action and the role of social media in the Arab Spring," *Westminster Papers in Communication and Culture*, vol. 9, no. 2, pp. 47–68, 2013. https://doi.org/10.16997/wpcc.166
[15] K. Clarke and K. Koçak, "Launching revolution: Social media and the Egyptian uprising's first movers," *British Journal of Political Science*, vol. 50, no. 3, pp. 1025–1045, 2020. https://doi.org/10.1017/S0007123418000194
[16] M. O. Jones, "Social media, surveillance and social control in the Bahrain uprising," *Westminster Papers in Communication and Culture*, vol. 9, no. 2, pp. 69–92, 2013. https://doi.org/10.16997/wpcc.167
[17] S. Vosoughi, D. Roy, and S. Aral, "The spread of true and false news online," *Science*, vol. 359, no. 6380, pp. 1146–1151, Mar. 2018. https://doi.org/10.1126/science.aap9559
[18] G. Pennycook and D. G. Rand, "Fighting misinformation on social media using crowdsourced judgments of news source quality," *Proceedings of the National Academy of Sciences of the United States of America*, vol. 116, no. 7, pp. 2521–2526, 2019. https://doi.org/10.1073/pnas.1806781116
[19] U. A. Bukar, M. A. Jabar, F. Sidi, R. N. H. B. Nor, S. Abdullah, and M. Othman, "Crisis informatics in the context of social media crisis communication: Theoretical models, taxonomy, and open issues," *IEEE Access*, vol. 8, pp. 185842–185869, 2020. https://doi.org/10.1109/ACCESS.2020.3030184

[20] C. Reuter and M.-A. Kaufhold, "Fifteen years of social media in emergencies: A retrospective review and future directions for crisis informatics," *Journal of Contingencies and Crisis Management*, vol. 26, no. 1, pp. 41–57, Mar. 2018. https://doi.org/10.1111/1468-5973.12196
[21] J. B. Houston *et al*., "Social media and disasters: A functional framework for social media use in disaster planning, response, and research," *Disasters*, vol. 39, no. 1, pp. 1–22, Jan. 2015. https://doi.org/10.1111/disa.12092
[22] D. E. Alexander, "Social media in disaster risk reduction and crisis management," *Science and Engineering Ethics*, vol. 20, no. 3, pp. 717–733, Sep. 2014. https://doi.org/10.1007/s11948-013-9502-z
[23] M. Imran, C. Castillo, F. Diaz, and S. Vieweg, "Processing social media messages in mass emergency: A survey," *ACM Computing Surveys*, vol. 47, no. 4, Art. no. 67, 2015. https://doi.org/10.1145/2771588
[24] S. Vieweg, A. L. Hughes, K. Starbird, and L. Palen, "Microblogging during two natural hazards events: What Twitter may contribute to situational awareness," in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 2010, pp. 1079–1088. https://doi.org/10.1145/1753326.1753486
[25] M. Mendoza, B. Poblete, and C. Castillo, "Twitter under crisis: Can we trust what we RT?," in *Proceedings of the First Workshop on Social Media Analytics*, 2010, pp. 71–79. https://doi.org/10.1145/1964858.1964869
[26] K. Starbird, E. Spiro, I. Edwards, K. Zhou, J. Maddock, and S. Narasimhan, "Could this be true? I think so! Expressed uncertainty in online rumoring," in *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*, 2016, pp. 360–371. https://doi.org/10.1145/2858036.2858551
[27] M. Eriksson, "Lessons for crisis communication on social media: A systematic review of what research tells the practice," *International Journal of Strategic Communication*, vol. 12, no. 5, pp. 526–551, 2018. https://doi.org/10.1080/1553118X.2018.1510405
[28] A. Saroj and S. Pal, "Use of social media in crisis management: A survey," *International Journal of Disaster Risk Reduction*, vol. 48, Art. no. 101584, 2020. https://doi.org/10.1016/j.ijdrr.2020.101584
[29] P. Panagiotopoulos, J. Barnett, A. Z. Bigdeli, and S. Sams, "Social media in emergency management: Twitter as a tool for communicating risks to the public," *Technological Forecasting and Social Change*, vol. 111, pp. 86–96, Oct. 2016. https://doi.org/10.1016/j.techfore.2016.06.010
[30] S. Stieglitz, M. Mirbabaie, B. Ross, and C. Neuberger, "Social media analytics—Challenges in topic discovery, data collection, and data preparation," *International Journal of Information Management*, vol. 39, pp. 156–168, 2018. https://doi.org/10.1016/j.ijinfomgt.2017.12.002
[31] D. Erokhin and N. Komendantova, "Social media data for disaster risk management and research," *International Journal of Disaster Risk Reduction*, vol. 114, Art. no. 104980, 2024. https://doi.org/10.1016/j.ijdrr.2024.104980
[32] H. Allcott and M. Gentzkow, "Social media and fake news in the 2016 election," *Journal of Economic Perspectives*, vol. 31, no. 2, pp. 211–236, 2017. https://doi.org/10.1257/jep.31.2.211
[33] D. M. J. Lazer *et al*., "The science of fake news," *Science*, vol. 359, no. 6380, pp. 1094–1096, Mar. 2018. https://doi.org/10.1126/science.aao2998
[34] E. C. Tandoc Jr., Z. W. Lim, and R. Ling, "Defining 'fake news': A typology of scholarly definitions," *Digital Journalism*, vol. 6, no. 2, pp. 137–153, 2018. https://doi.org/10.1080/21670811.2017.1360143
[35] M. Del Vicario *et al*., "The spreading of misinformation online," *Proceedings of the National Academy of Sciences of the United States of America*, vol. 113, no. 3, pp. 554–559, Jan. 2016. https://doi.org/10.1073/pnas.1517441113

[36] K. S. Al-Omoush, A. Garrido, and J. Cañero, "The impact of government use of social media and social media contradictions on trust in government and citizens' attitudes in times of crisis," *Journal of Business Research*, vol. 159, Art. no. 113748, 2023. https://doi.org/10.1016/j.jbusres.2023.113748
[37] E. K. Vraga and L. Bode, "Using expert sources to correct health misinformation in social media," *Science Communication*, vol. 39, no. 5, pp. 621–645, 2017. https://doi.org/10.1177/1075547017731776
[38] A. M. Guess, B. Nyhan, and J. Reifler, "Exposure to untrustworthy websites in the 2016 U.S. election," *Nature Human Behaviour*, vol. 4, no. 5, pp. 472–480, 2020. https://doi.org/10.1038/s41562-020-0833-x
[39] L. Sürücü and A. Maşlakçı, "Validity and reliability in quantitative research," *Business & Management Studies: An International Journal*, vol. 8, no. 3, pp. 2694–2726, 2020. https://doi.org/10.15295/bmij.v8i3.1540
[40] K. S. Taber, "The use of Cronbach's alpha when developing and reporting research instruments in science education," *Research in Science Education*, vol. 48, no. 6, pp. 1273–1296, 2018. https://doi.org/10.1007/s11165-016-9602-2
[41] M. Tavakol and A. Wetzel, "Factor analysis: A means for theory and instrument development in support of construct validity," *International Journal of Medical Education*, vol. 11, pp. 245–247, 2020. https://doi.org/10.5116/ijme.5f96.0f4a
[42] M. M. Ansari and S. Khan, "An in-depth examination of validity assessment: Exploring diverse methodologies and dimensions of validity in social research studies," *Asian Journal of Agricultural Extension, Economics & Sociology*, vol. 41, no. 10, pp. 772–782, 2023. https://doi.org/10.9734/ajaees/2023/v41i102224
[43] V. Cvetković, A. Nikolić, and A. Ivanov, "The role of social media in the process of informing the public about disaster risks," *Journal of Liberty and International Affairs*, vol. 9, no. 2, pp. 121–135, 2023. https://doi.org/10.47305/JLIA2392121c
[44] K. Aiseng and S. Gamede, "Analysis of South African media coverage of the 2022 KZN floods," in *Proceedings of the International Conference on Media Science and Digital Communication*, 2023. https://doi.org/10.17501/29506530.2023.2103
[45] G. Grill, "Researching online labor strike and protest prediction technologies," *AoIR Selected Papers of Internet Research*, 2020. https://doi.org/10.5210/spir.v2020i0.11222