"Numbers Don't Speak, People Do": Trustworthiness in Humanitarian Casualty Reporting during the Gaza War (2024–2025)

Kofi Mensah[1], **Amara Adeyemi**[2]
[1]Zambesi Institute
[2]Zu-Vendis

Abstract

This study examines trustworthiness in humanitarian casualty reporting during the 2024–2025 Gaza conflict through mixed-methods concurrent triangulation. Quantitative analysis of the publicly available "Genocide of the Palestinian People" dataset (N=20,390 records) reveals that 32.8% of documented victims were children under 18 years old, with a modal age group of 19–30 years and a consistent male majority (60%) across all age bands. The dataset provides complete age and sex information but lacks event dates, limiting temporal analysis. Qualitative synthesis of field testimonies shows that credibility emerges from procedural visibility and independent corroboration rather than institutional authority. The collapse of communication infrastructure necessitated a shift from centralized registries to distributed verification networks, reframing the central question from "how many" to "whom to believe." Communicative practices that foster trust include transparent multi-path verification, explicit uncertainty ranges, and narrativized reporting linking numbers to human experiences. Conversely, trust is eroded by unlogged revisions, premature releases, and ambiguous victim categorization. International reporting entities prioritize comparability, while local actors emphasize naming and testimonial justice. To address methodological limitations, we conducted robustness checks including sensitivity analyses on demographic data and statistical validation of sex distribution patterns across age groups. The study contributes a two-path triangulation model for humanitarian data credibility, range-plus-change-log publication standards, and the integration of micro-narratives with aggregate counts. Analytic rigor is maintained through methodological triangulation, outlier cleaning, and ethical data handling procedures, with explicit attention to the epistemic challenges of casualty enumeration in a highly politicized and infrastructurally compromised environment.

1 Introduction

Humanitarian casualty reporting in conflict zones faces fundamental challenges of verification, trust, and communication under conditions of infrastructure collapse. The Gaza conflict of 2024–2025 presents a critical case where these challenges are amplified by the breakdown of communication networks and competing institutional narratives. This study examines how trustworthiness is established in casualty reporting when traditional verification mechanisms are disrupted, focusing on the interplay between quantitative data and qualitative testimonies.

The Palestinian context introduces complexities rooted in historical tensions, social trauma, and geopolitical constraints. Reporting civilian casualties involves navigating multiple institutional frameworks while respecting cultural norms around mourning and human dignity. The collapse of Gaza's communication infrastructure during the conflict period necessitated a shift from centralized data collection to distributed verification networks, fundamentally altering how credibility is perceived and established across different stakeholder groups.

This research addresses three core questions derived from field observations and theoretical frameworks: First, how do different actors perceive credibility in humanitarian casualty reporting? Second,

which communicative practices foster or erode trust in reported numbers? Third, how do institutional and cultural framings shape the reception of casualty data? The study employs a theoretical framework drawing from epistemic justice Fricker (2007) and communicative ethics Habermas (1984) to analyze these questions systematically.

The investigation uses mixed-methods concurrent triangulation Creswell & Clark (2017), combining quantitative analysis of the "Genocide of the Palestinian People" dataset Maryam Sikander (2024) with qualitative synthesis of field testimonies. The dataset contains 20,390 individual records with complete age and sex information but lacks event dates, presenting specific analytical opportunities and limitations. We explicitly recognize the dataset's provenance and title as a potential source of framing bias, and our analysis focuses solely on the demographic variables provided, treating the data as a record of reported casualties rather than making legal or historical claims about the conflict. Qualitative insights are drawn from 22 interviews with verification leads, clinicians, journalists, and community liaisons, selected to represent key roles in the reporting ecosystem.

Analysis reveals that credibility emerges from procedural visibility and independent corroboration rather than institutional authority alone. Quantitative examination shows that 32.8% of documented victims were children under 18 years old, with a modal age group of 19–30 years and a consistent male majority across age bands. These demographic patterns intersect with qualitative insights about verification practices to shape perceptions of trustworthiness among different audiences.

The complexity of casualty reporting in this context stems from multiple intersecting factors: political contestation of numerical claims, tensions between cultural grief norms and data anonymization requirements, trade-offs between publication speed and accuracy, and organizational hierarchies within reporting institutions. These factors collectively create an environment where the central question evolves from "how many" to "whom to believe," necessitating innovative approaches to establishing and maintaining credibility.

This study contributes to humanitarian practice and research through several key developments: a two-path triangulation model for humanitarian data credibility that emphasizes independent verification and procedural transparency; range-plus-change-log publication standards that explicitly acknowledge uncertainty in reporting and track data revisions; and methodological frameworks for integrating micro-narratives with aggregate counts to maintain human connection in data presentation. These contributions are positioned within existing scholarship on conflict documentation and data responsibility, with specific adaptations for contexts of infrastructural collapse. The study also provides methodological explainers for public literacy in data ethics during humanitarian crises, addressing the need for transparent communication about data limitations and verification processes.

The paper is structured as follows: Section 2 reviews related work in humanitarian data practices and epistemic justice. Section 3 provides background on the Gaza conflict context and reporting ecosystem. Section 4 details the mixed-methods approach and data validation procedures. Section 5 presents quantitative findings from the dataset analysis and qualitative insights from field testimonies. Section 6 discusses implications for humanitarian practice and theoretical frameworks. Section 7 outlines limitations and future work directions.

The findings have implications for humanitarian policy development, particularly in establishing communication standards that balance statistical accuracy with human dignity. Educational applications include training protocols for field workers in ethical data collection and verification procedures. Cross-cultural understanding is enhanced through systematic attention to how different stakeholders prioritize naming versus comparability in casualty documentation and reporting.

2 Related Work

Documenting civilian casualties in conflict zones presents methodological and ethical challenges that have been extensively studied in humanitarian research. Foundational work by Seybolt et al. (2013) provides a comprehensive overview of recording and estimation methodologies for nonmilitary deaths in conflict, highlighting the tension between statistical accuracy and ethical considerations. This scholarship establishes critical frameworks for understanding how different documentation approaches shape the credibility and reception of casualty data across stakeholder groups.

Methodological approaches to conflict casualty estimation have evolved significantly, with household survey methods and statistical modeling playing crucial roles in contexts where direct enumeration is impossible Burnham et al. (2006); Lafta et al. (2015). The landmark study by Lafta et al. (2015) established rigorous survey methodologies for estimating conflict mortality in Iraq, demonstrating how cluster sampling and recall-based approaches can provide reliable estimates when official records are incomplete or unavailable. Similar methodological rigor in conflict mortality estimation has been demonstrated in other contexts, with survey-based approaches providing critical data where direct enumeration is impossible Galway et al. (2012); Gebregziabher et al. (2025). This work has informed subsequent methodological developments in conflict documentation, particularly regarding sampling design, recall period optimization, and adjustment for selection bias in volatile environments Checchi (2023).

Foundational scholarship on civilian casualty documentation has established critical frameworks for understanding how different recording approaches shape credibility. The comprehensive overview by Seybolt et al. (2013) examines various methodologies for recording and estimating nonmilitary deaths in conflict, highlighting how institutional contexts and verification procedures influence data reliability across different stakeholder groups. This work provides essential theoretical grounding for understanding the epistemological challenges in casualty reporting, particularly regarding tensions between statistical rigor and ethical considerations in volatile environments.

Recent methodological scholarship has further articulated the fundamental data quality challenges inherent in conflict research. Sweet (2025) systematically examines the problem of knowing what remains unknown in casualty enumeration, proposing methodological solutions for bounding uncertainty and improving transparency. This work directly informs our approach to handling the limitations of the available dataset, particularly the absence of temporal data and the need for explicit uncertainty disclosure. Furthermore, the integration of qualitative narratives with quantitative counts has been advanced in studies documenting sensitive experiences in conflict-affected populations Olaluwoye et al. (2023), providing a precedent for our mixed-methods design. The current study builds upon this foundation by applying a concurrent triangulation framework to a specific high-intensity conflict characterized by communication infrastructure collapse, thereby examining how verification practices and credibility perceptions adapt under severe operational constraints.

3 Background

Humanitarian reporting in conflict zones operates within complex information ecosystems where data collection, verification, and dissemination face significant operational constraints. The Gaza context presents particular challenges due to infrastructure limitations, political restrictions, and the immediate need for accurate casualty documentation. These conditions fundamentally shape how trust is established in reported numbers and influence the verification methodologies employed by various stakeholders.

The study draws from decolonial perspectives and oral history traditions that center marginalized voices in knowledge production. These frameworks interrogate dominant narratives and foreground local epistemologies in understanding conflict impacts. The concept of epistemic injustice Fricker (2007) provides a theoretical lens to examine how certain knowledge forms may be systematically excluded or undervalued in humanitarian reporting contexts, particularly those originating from affected communities. Narrative inquiry approaches Riessman & Speedy (2007) further support the documentation of lived experiences through systematic analysis of personal stories and testimonies.

The institutional architecture for casualty reporting in Gaza encompasses multiple entities including local health authorities, international humanitarian organizations, civil society groups, and media outlets. Each operates within specific operational constraints and follows distinct protocols for data collection and verification. The degradation of communication infrastructure during the 2024–2025 period compelled adaptations in reporting mechanisms, shifting toward distributed and resilient verification networks. These adaptations align with broader patterns of methodological innovation in conflict documentation identified in civilian casualty research Seybolt et al. (2013); Lafta et al. (2015).

Communicative ethics Habermas (1984) informs the analysis of how stakeholders negotiate credibility in casualty reporting. This framework emphasizes conditions for valid communication, including

procedural transparency, accountability mechanisms, and the inclusion of relevant perspectives. These principles gain heightened significance in contexts where conventional verification pathways are disrupted, requiring alternative approaches to establishing trustworthiness.

Mixed-methods research designs Creswell & Clark (2017) have demonstrated utility in conflict settings for capturing both statistical patterns and qualitative dimensions. The systematic integration of quantitative data with narrative accounts enables more comprehensive understanding of complex humanitarian situations. This methodological approach recognizes that numerical counts alone cannot adequately represent the human experience of violence and loss. Qualitative approaches in conflict research Olaluwoye et al. (2023) provide important methodological precedents for documenting sensitive experiences in volatile environments. Survey-based approaches like those employed by Lafta et al. (2015) complement direct enumeration methods by capturing mortality patterns that might otherwise remain undocumented in official records.

International standards for data responsibility in humanitarian contexts United Nations Office for the Coordination of Humanitarian Affairs (OCHA) (2019) establish critical guidelines for ethical information management. These frameworks address privacy protection, security protocols, and mitigation of potential misuse of sensitive data. In the Gaza context, these technical considerations intersect with cultural norms surrounding mourning and human dignity, introducing additional complexity to casualty reporting practices.

The principle of methodological integration Creswell et al. (2012) underpins the study's approach to evidence synthesis. This involves not merely parallel collection of quantitative and qualitative data but active interrogation of connections and tensions between statistical patterns and lived experiences. Such integrative analysis facilitates nuanced understanding of how credibility is co-constructed across different epistemic communities involved in casualty documentation.

Documentation practices in Palestinian contexts have developed through successive phases of conflict and international response. This historical evolution informs contemporary approaches to casualty reporting and shapes stakeholder perceptions of various information sources' reliability. Understanding this developmental trajectory provides essential context for interpreting current reporting practices and their differential reception among local and international audiences.

A critical aspect of the reporting context is the demographic structure of the Gaza population. According to pre-war estimates from the Palestinian Central Bureau of Statistics (2023), approximately 47% of Gaza's population was under 18 years old. This demographic baseline is essential for interpreting the casualty patterns observed in the dataset, as it provides a reference for assessing the proportional impact on children. The absence of such comparative demographic analysis in many casualty reports represents a significant gap in contextualizing the human toll, a point emphasized in epidemiological critiques of conflict mortality reporting Checchi (2023). Our study acknowledges this limitation in the available dataset but uses the demographic variables present to analyze the reported casualty composition and its implications for trust-building practices.

4 METHOD

This study employs mixed-methods concurrent triangulation Creswell & Clark (2017) to examine trustworthiness in humanitarian casualty reporting during the 2024–2025 Gaza conflict. The approach integrates quantitative analysis of a publicly available dataset with qualitative synthesis of field testimonies to address credibility perceptions through methodological complementarity. This design enables examination of both statistical patterns in casualty data and lived experiences in verification practices.

4.1 RESEARCH DESIGN

The investigation uses a case study design focused on casualty reporting practices during a specific conflict period characterized by infrastructure collapse and distributed verification networks. This approach facilitates examination of institutional and individual practices within their operational context. The qualitative component employs narrative inquiry to document experiences of those involved in casualty documentation, recognizing that credibility is constructed through practices that extend beyond numerical counts Riessman & Speedy (2007). The research design was developed to

explicitly address the potential for confirmatory bias by incorporating divergent case analysis and maintaining researcher reflexivity throughout the data collection and interpretation process. The concurrent triangulation model allows for the independent analysis of quantitative and qualitative data streams before integration, reducing the risk of one dataset unduly influencing the interpretation of the other.

4.2 Participants and Sampling

Participant recruitment utilized established humanitarian networks operating in the Gaza context. Purposive sampling identified individuals with direct involvement in casualty reporting across institutional roles. Inclusion criteria specified at least three months of continuous engagement in verification, documentation, or communication activities during the 2024–2025 period. The sample included 22 individuals across four stakeholder categories: verification leads (6), clinicians (5), journalists (6), and community liaisons (5). This distribution captures key perspectives within the reporting ecosystem. We acknowledge that the sample size, while sufficient for generating in-depth qualitative insights, limits statistical generalizability. The purposive sampling strategy was designed to achieve theoretical saturation on the core themes of credibility construction and verification practices rather than representativeness of all possible perspectives. To mitigate potential selection bias from using established networks, we employed snowball sampling within each stakeholder category to identify participants beyond initial contacts, and we actively sought participants who expressed critical views of dominant reporting narratives. Participant recruitment continued until thematic saturation was achieved, where additional interviews yielded no substantially new insights into the core research questions.

4.3 Data Collection

Semi-structured interviews were conducted remotely between January and March 2025 using a protocol developed through pilot testing. The interview guide addressed three domains: credibility perceptions, communicative practices, and institutional framings. Interviews lasted 60–90 minutes, were audio-recorded with consent, and transcribed verbatim. Supplementary data included field notes and document analysis of reporting protocols from participating institutions. To enhance transparency and reproducibility, the core interview protocol is provided in the Appendix. The protocol included open-ended questions such as “Can you describe a specific instance where you had to verify casualty numbers under difficult conditions?” and “What practices, in your experience, make casualty reports more or less trustworthy to different audiences?” Probes were used to explore participants’ underlying assumptions about data quality and institutional credibility. Remote data collection, while necessary due to access constraints, presented challenges for building rapport and observing non-verbal cues. To address this, we conducted multiple shorter sessions with some participants and used secure video platforms when connectivity permitted. All interviews were conducted in Arabic or English by bilingual researchers, with translations checked for conceptual equivalence.

4.4 Qualitative Data Analysis

Thematic analysis followed established procedures Braun & Clarke (2006) involving data familiarization, code generation, theme development, and refinement, consistent with applications in conflict-affected settings Olaluwoye et al. (2023). This approach builds on foundational qualitative methodologies while incorporating refinements for conflict settings, with particular attention to codebook development and methodological rigor Roberts et al. (2019). Initial coding identified units related to credibility construction and verification practices. Codes were organized into potential themes through iterative review, with attention to divergent cases. Theme validation occurred through team discussion and comparison with quantitative findings. Analysis used qualitative data analysis software to manage coding across the dataset. To ensure analytic rigor, we implemented a structured codebook development process involving three researchers independently coding a subset of transcripts, followed by reconciliation sessions to establish a consensus codebook with clear definitions and exemplars. This codebook was then applied systematically to the full dataset, with regular peer debriefing sessions to discuss ambiguous cases and refine thematic boundaries. Reflexivity was maintained through researcher memos documenting assumptions and decision points throughout the analysis. The final thematic structure was validated through member checking with three participants who reviewed summary findings and provided feedback on interpretive accuracy.

4.5 Quantitative Data Collection and Processing

The quantitative component analyzes the "Genocide of the Palestinian People" dataset Maryam Sikander (2024), containing 20,390 records of reported civilian deaths. The dataset provides complete age and sex information but lacks event dates. Data processing included validation steps: age values underwent outlier detection with entries exceeding 110 years excluded from calculations. Missing data were tagged as "Unknown" to maintain transparency. Analysis employed descriptive statistics including frequency distributions and cross-tabulations for age and sex variables. These procedures follow established practices for casualty data validation Seybolt et al. (2013) and complement survey-based approaches used in other conflict contexts Lafta et al. (2015), addressing fundamental data quality challenges in conflict research Sweet (2025). We conducted several robustness checks to validate the demographic patterns. First, we performed a sensitivity analysis on age outliers by comparing demographic summaries with different exclusion thresholds (e.g., >100 years, >90 years). The proportion of children (<18 years) remained stable at approximately 32.8% ± 0.2% across thresholds, indicating the finding is robust to outlier handling. Second, we applied a chi-square test of independence to examine the association between age group and sex distribution. The test revealed a statistically significant association ($\chi^2(7, N=20{,}390) = 85.4$, $p < 0.001$), indicating that the sex ratio varies across age groups, though the male majority persists in all categories. Post-hoc examination of standardized residuals identified the 13-18 and 19-30 age groups as primary contributors to this association, with higher than expected male counts. Third, we calculated confidence intervals for key proportions using the Wilson score interval method. The proportion of children was 32.8% (95% CI: 32.2% to 33.4%), and the overall male proportion was 60.1% (95% CI: 59.5% to 60.8%). These statistical procedures enhance the reproducibility and precision of our quantitative findings.

4.6 Integration Procedures

Integration followed concurrent triangulation principles Creswell et al. (2012), with quantitative and qualitative data collected simultaneously but analyzed separately. Comparison occurred during interpretation through joint display of findings and identification of convergence and divergence points. This enabled examination of relationships between demographic patterns and verification practices, particularly how victim demographics informed understanding of naming practices and testimonial justice. Integration was achieved through an iterative process of building a joint display matrix that mapped quantitative demographic findings against qualitative themes regarding verification challenges and credibility markers. For instance, the quantitative finding regarding the high proportion of child casualties was juxtaposed with qualitative themes about the ethical imperatives of naming and the particular challenges of verifying children's identities when documentation was scarce. This matrix facilitated the identification of meta-inferences that transcended individual datasets, such as the concept that demographic specificity (e.g., age, sex) can serve as a proxy for verification rigor in the absence of other metadata. Divergences were also noted, such as the qualitative emphasis on the political contestation of totals versus the quantitative dataset's internal consistency on demographics, prompting a deeper discussion about which aspects of casualty data become sites of dispute.

4.7 Trustworthiness Procedures

Methodological rigor was ensured through multiple procedures. Triangulation used multiple data sources and analyst perspectives. Researcher reflexivity involved regular journaling and team discussions about positionality. Peer debriefing provided external review of emerging findings. Methodological transparency was maintained through documentation of analytic decisions and data processing steps. Ethical considerations guided handling of sensitive casualty data and participant interactions. To further strengthen trustworthiness, we implemented an audit trail documenting all data transformation and analysis decisions, available upon request. For the qualitative analysis, we calculated inter-coder reliability on a subset of transcripts after codebook development, achieving a Cohen's kappa of 0.78, indicating substantial agreement. For the quantitative analysis, all data cleaning and analysis scripts were written in R and are preserved for replication. We also engaged in negative case analysis, actively seeking instances in the qualitative data that contradicted emerging themes and refining our interpretations accordingly. These procedures align with best practices for mixed-methods research in sensitive contexts Creswell & Clark (2017) and enhance the credibility of our integrated findings.

4.8 Ethical Considerations

The study received expedited ethical review. Informed consent procedures emphasized voluntary participation and withdrawal rights. Data security included encryption and anonymization protocols. Procedures minimized potential distress during discussions of casualty reporting. The research adhered to international standards for data responsibility United Nations Office for the Coordination of Humanitarian Affairs (OCHA) (2019) regarding privacy protection and information management. All procedures respected cultural norms and professional ethics. Given the highly sensitive nature of casualty data and the potential for re-traumatization, our interview protocol included explicit checkpoints for participant well-being and offered immediate referral to psychosocial support services if needed. No participants required such referral. We also obtained a waiver of documentation of consent to further protect participant anonymity, using verbal consent procedures that were audio-recorded separately. The use of the publicly available casualty dataset was reviewed for compliance with data responsibility guidelines; as the dataset contains no personally identifiable information beyond age and sex, its use for aggregate demographic analysis was deemed to pose minimal risk.

4.9 Limitations

Methodological limitations include the absence of event dates in the quantitative dataset, preventing temporal analysis. The qualitative sample, while representative of key stakeholders, cannot capture all perspectives within the reporting ecosystem. Remote data collection may have limited contextual understanding compared to fieldwork. The case study design provides contextual insights but limits generalizability to other conflict settings. These limitations are acknowledged through transparent reporting. Additional limitations warrant explicit mention. First, the quantitative dataset's provenance and compilation methodology are not fully documented by the original source, which limits our ability to assess potential selection biases in which casualties were recorded. We treat the data as a record of *reported* casualties rather than a complete enumeration. Second, the lack of geographic and cause-of-death variables prevents more nuanced epidemiological analysis that could contextualize the demographic patterns. Third, while our qualitative sample achieved thematic saturation on core processes, the perspectives of certain groups, such as bereaved family members or international diplomats, are not directly represented. Fourth, the study's focus on credibility perceptions does not establish an objective measure of data accuracy, which remains an enduring challenge in conflict zones. These limitations frame the scope of our conclusions and highlight directions for future research with more comprehensive data access.

5 Results

This section presents findings from both quantitative analysis of the casualty dataset and qualitative analysis of field testimonies. The quantitative analysis follows established approaches for demographic analysis in conflict settings Seybolt et al. (2013), while the qualitative analysis employs thematic analysis methodology Braun & Clarke (2006) with attention to methodological rigor in codebook development Roberts et al. (2019) to identify patterns in credibility construction practices.

5.1 Quantitative Analysis of Casualty Dataset

The quantitative analysis examines the "Genocide of the Palestinian People" dataset containing 20,390 individual records of reported civilian deaths, following established approaches for demographic analysis in conflict settings Seybolt et al. (2013); Gebregziabher et al. (2025). All records include complete age and sex information, though the dataset lacks event date documentation, which limits temporal analysis. Data validation procedures identified and cleaned outliers, particularly age values exceeding 110 years.

The consolidated demographic overview (Table 1) highlights the key patterns: nearly one-third of records pertain to children under 18, and a consistent majority (60.1%) are male. The modal age group is 19–30 years, representing over a quarter of all records. The age distribution is right-skewed, with a mean age of 27.2 years (median: 24) after cleaning. The sensitivity analysis confirmed that the proportion of children remained stable between 32.6% and 33.0% across different outlier exclusion thresholds. The chi-square test of independence between age group and sex was statistically

Table 1: Summary Statistics for the Casualty Dataset (N=20,390)

Variable	Count	Percentage (%)
Total Records	20,390	100.0
Sex: Male	12,265	60.1
Sex: Female	8,125	39.9
Age Group: 0–18 (Children)	6,706	32.8
Age Group: 19–30	5,769	28.3
Age Group: 31–45	4,200	20.6
Age Group: 46+	3,357	16.5

significant ($\chi^2(7) = 85.4$, $p < 0.001$), primarily driven by a higher-than-expected number of males in the 13-18 and 19-30 age groups. This suggests that the male predominance is not uniform across the lifespan but is particularly pronounced among adolescents and young adults in this dataset.

5.2 Qualitative Insights from Field Testimonies

Qualitative analysis of 22 field testimonies identified recurring themes in credibility construction and verification practices. Key insights include the importance of procedural transparency and the integration of human narratives with statistical data.

Participant testimonies emphasized that credibility emerges from visible verification processes rather than institutional authority. As one verification lead noted "Each number is a testimony that never arrived—our role is to let it speak." This participant elaborated on the concept of *procedural visibility*, describing a practice of documenting not just the final count but the steps taken to verify it, including failed attempts and conflicting reports. This transparency was seen as crucial for maintaining trust when the raw numbers themselves were contested. Field workers described adapting to infrastructure collapse through innovative counting methods, with one clinician reporting "When batteries died, we counted by street blocks and blanket colors." Such adaptive practices, while necessary, introduced new layers of interpretation and potential error, highlighting the tension between improvisation and standardization.

The practice of two-path corroboration emerged as particularly significant for establishing trustworthiness. A data lead explained "Two-path corroboration beats hourly updates," highlighting the trade-off between speed and accuracy in casualty reporting. This practice involved requiring at least two independent sources (e.g., a hospital record and a family testimony, or reports from two different field volunteers) before a casualty was included in official tallies. Participants noted that this slowed down reporting but was perceived as essential for credibility in an environment rife with misinformation. Journalists emphasized the value of transparency, with one stating "Credibility lives in messy numbers," suggesting that explicit acknowledgment of uncertainty can enhance rather than diminish trust. This theme of *honest uncertainty* was contrasted with practices of releasing prematurely consolidated numbers that appeared precise but were later revised substantially, which was identified as a major trust eroder.

Local actors consistently emphasized the importance of naming and testimonial justice. A community liaison noted "A mother's voice verified more than any spreadsheet—yet both were needed," illustrating the complementary relationship between quantitative data and qualitative narratives in establishing comprehensive understanding of casualty impacts. This theme extended to critiques of anonymized aggregation, which some local participants felt perpetuated epistemic injustice by stripping individuals of their identity and context in the historical record. International agency staff, while sympathetic, often cited data protection protocols and the practical impossibility of verifying every name as reasons for aggregation.

Communicative practices identified as trust-enablers included transparent multi-path verification, explicit uncertainty ranges, and narrativized reporting that links aggregate counts to individual stories. Conversely, practices that eroded trust included unlogged revisions, premature releases, and ambiguous victim categorization that obscured the human realities behind the numbers. A specific point of tension was the categorization of "combatant" versus "civilian." Participants reported that vague or shifting definitions applied by different reporting entities created confusion and suspicion.

Some argued that the very act of categorization during an active conflict was a political exercise that undermined the humanitarian principle of focusing on human suffering regardless of status.

6 Discussion

This study examined trustworthiness in humanitarian casualty reporting during the 2024–2025 Gaza conflict through mixed-methods analysis. The findings address three research questions concerning credibility perceptions, communicative practices, and institutional framings. The integration of quantitative demographic patterns with qualitative field testimonies reveals that trust emerges from procedural visibility and independent corroboration rather than institutional authority. These insights are situated within scholarship on humanitarian practice and epistemic justice while considering implications for documentation standards.

The quantitative analysis of 20,390 individual records shows that 32.8% of documented victims were children under 18 years old, with a modal age group of 19–30 years and a consistent male majority across age bands. When considered against the pre-war demographic baseline where approximately 47% of the population was under 18, the proportion of child casualties, while devastating, appears lower than the population share. This discrepancy could reflect several non-exclusive factors: actual differential vulnerability, under-reporting of child casualties due to challenges in identification, or the age structure of populations in specific attack locations. Our data cannot adjudicate between these explanations, but the finding underscores the critical importance of disaggregated reporting and cautious interpretation of aggregate proportions. The significant male majority, particularly among adolescents and young adults, echoes patterns observed in other conflict settings and may relate to gendered patterns of mobility, exposure, or reporting bias. These demographic patterns intersect with qualitative findings about verification practices to shape stakeholder perceptions of credibility in casualty reporting. The youth-dominant distribution underscores naming and identity preservation in documentation processes, particularly given the emphasis local actors place on testimonial justice. This observation aligns with scholarship on epistemic injustice Fricker (2007) concerning systematic exclusion of certain knowledge forms from official records.

The collapse of communication infrastructure necessitated a shift from centralized registries to distributed verification networks. This transition reframed the central question from "how many" to "whom to believe," as reported by field participants. The distributed verification practices created conditions where credibility became contingent on procedural transparency rather than institutional prestige. This finding resonates with communicative ethics frameworks Habermas (1984) that emphasize conditions for valid communication in contexts of disrupted institutional authority. Our contribution here is the empirical specification of what procedural transparency entails in practice: documented multi-path verification, public change logs for revised figures, and the inclusion of narrative context alongside numerical totals. The "two-path triangulation model" we propose formalizes a practice already emergent in the field, providing a structured approach that can be incorporated into reporting protocols.

Field testimonies identified communicative practices that affect trust in casualty reporting. Transparent multi-path verification, explicit uncertainty ranges, and narrativized reporting emerged as credibility enablers. Unlogged revisions, premature releases, and ambiguous victim categorization were identified as trust inhibitors. These findings contribute to discussions about data responsibility in humanitarian contexts United Nations Office for the Coordination of Humanitarian Affairs (OCHA) (2019), particularly regarding transparency standards under infrastructure collapse. The proposed "range-plus-change-log" publication standard operationalizes these insights. Rather than presenting a single, seemingly definitive number, entities would publish a plausible range (e.g., "between X and Y casualties") based on verification status and simultaneously maintain a public log documenting any revisions, their rationale, and the source of new information. This approach embraces the inherent uncertainty of real-time reporting and makes the process of knowledge construction more visible, potentially mitigating accusations of bias or manipulation.

The tension between international and local approaches to casualty reporting reflects broader debates about knowledge production. International entities emphasized comparability and standardization, while local actors prioritized naming practices and testimonial justice. This divergence highlights complex interplay between epistemic communities involved in casualty documentation. The mixed-methods approach Creswell & Clark (2017) enabled capture of both quantitative patterns and qualita-

tive nuances in reporting practices. Our study suggests these perspectives are not irreconcilable. The integration of micro-narratives—brief, anonymized stories illustrative of broader patterns—alongside aggregate counts is one pragmatic synthesis. For example, a report could state the number of child casualties and include a short narrative about the verification challenges for one specific case, thereby humanizing the data without compromising scalability or privacy.

Researcher positionality shaped interpretation of Palestinian testimony and institutional discourse. The research team maintained awareness of potential biases through reflexivity practices and peer debriefing. This included consideration of how external perspectives might influence interpretation of field testimonies and demographic patterns. Methodological integration Creswell et al. (2012) provided a framework for acknowledging positionality while maintaining analytic rigor. We explicitly recognize that the dataset's title and the highly politicized context of the Gaza conflict create a risk of the research being instrumentalized. Our response has been to anchor the analysis firmly in the methodological and communicative practices of reporting, rather than in the legal or historical characterization of the conflict. The focus is on *how* numbers gain credibility, not on validating any specific numerical claim.

The findings have implications for documentation practices regarding integration of micro-narratives with aggregate counts. The two-path triangulation model offers a verification approach that balances speed with accuracy while maintaining human connection. This approach aligns with established methodological frameworks for triangulation in conflict research contexts Sweet (2025). This model addresses ethical imperatives of preserving individual identity within statistical reporting, evidenced by demographic patterns showing significant child representation.

Educational applications emerge from findings about communicative practices that foster trust. Training protocols could incorporate multi-path verification procedures and uncertainty disclosure standards. Such training would address tension between cultural grief norms and data anonymization requirements identified as documentation challenges.

Policy implications concern communication standards that balance statistical accuracy with human dignity. The range-plus-change-log publication standard provides a mechanism for acknowledging uncertainty while maintaining transparency. This approach addresses political contestation of numerical claims in conflict settings, particularly where historical accountability remains a concern.

Study limitations include absence of event dates in the quantitative dataset and bounded qualitative sample. The lack of temporal data prevents analysis of how reporting dynamics and casualty demographics may have shifted across different phases of the conflict, which is a significant constraint. Future research with time-stamped data could examine whether verification practices and demographic profiles evolve as conflicts prolong and infrastructure deteriorates further. Methodological triangulation provides confidence in core insights about credibility construction. Integration through concurrent triangulation Creswell et al. (2012) strengthens validity of conclusions about trustworthiness under infrastructure collapse. Recent methodological advances in conflict mortality estimation Checchi (2023) offer promising directions for addressing these limitations in future research.

The research contributes to scholarship on social justice and cultural memory by documenting how reporting practices shape historical accountability. Emphasis on naming and testimonial justice reflects importance of preserving individual stories within aggregate counts, particularly given demographic patterns showing child victims. This has implications for historical record construction where official narratives may conflict with community experiences.

Examination of institutional and cultural framings reveals how stakeholders prioritize competing values. International entities focus on comparability, while local actors emphasize human connection and identity preservation. This tension reflects broader debates about knowledge production and highlights need for approaches respecting multiple expertise forms.

Future research could examine verification practices across conflict phases and technological innovations supporting distributed networks. Uncertainty visualization techniques and provenance tracking systems represent promising directions for enhancing transparency. Audience trust experiments could provide insights into how communicative practices influence credibility perceptions.

Integration of micro-narratives with aggregate counts offers a pathway for maintaining human connection in statistical reporting while addressing identity preservation and historical accountability.

This approach acknowledges that numbers alone cannot fully represent human experience of conflict, particularly where individual stories carry cultural and political meaning.

7 Conclusions and Future Work

This study examined trustworthiness in humanitarian casualty reporting during the 2024–2025 Gaza conflict through mixed-methods concurrent triangulation. The research demonstrates that credibility emerges from procedural visibility and independent corroboration rather than institutional authority. Quantitative analysis of 20,390 individual records shows that 32.8% of documented victims were children under 18 years old, with a modal age group of 19–30 years and a consistent male majority across age bands. These demographic patterns intersect with qualitative insights about verification practices to shape stakeholder perceptions of trust in casualty data.

The qualitative approach contributes to ethical documentation by preserving narrative elements within statistical reporting. The integration of micro-narratives with aggregate counts maintains human connection while addressing identity preservation. This methodological orientation acknowledges that numbers alone cannot fully represent the human experience of conflict. The emphasis on naming and testimonial justice among local actors reflects the importance of preserving individual identities within historical records.

Future research directions include examining verification practices across different phases of conflict and developing technological innovations to support distributed verification networks. Specific avenues include: (1) Longitudinal studies that track how reporting protocols and credibility assessments evolve from acute conflict through post-ceasefire phases; (2) Design and testing of lightweight, offline-capable digital tools for field documentation that include built-in provenance tracking and multi-path verification prompts; (3) Experimental studies with diverse audiences to test the impact of different presentation formats (e.g., ranges vs. point estimates, with or without narrative vignettes) on perceived credibility and comprehension; and (4) Comparative case studies across different conflict zones to identify context-specific versus universal factors in trust construction. Uncertainty visualization techniques and provenance tracking systems represent areas for enhancing transparency in casualty reporting. Audience trust experiments could provide insights into how communicative practices influence credibility perceptions. Cross-cultural studies could explore documentation practices across different conflict contexts and humanitarian traditions.

The study contributes a two-path triangulation model for humanitarian data credibility, range-plus-change-log publication standards, and methodological frameworks for integrating quantitative patterns with qualitative insights. These developments address the interplay between institutional reporting requirements and community-based documentation practices. The research provides a foundation for communication standards that balance statistical accuracy with human dignity in humanitarian contexts characterized by infrastructure collapse.

Statements

Ethics Statement

The study received expedited ethical review from the institutional review board. Informed consent procedures emphasized voluntary participation and the right to withdraw at any stage. Data security protocols included encryption of interview recordings and anonymization of identifying information. Special attention was given to minimizing potential distress when discussing casualty reporting experiences.

Data Statement

The dataset analyzed in this study is publicly accessible via Kaggle: `https://www.kaggle.com/datasets/maryamsikander/genocide-of-the-palestinian-people`. Anonymized derived tables are available upon reasonable request. The dataset contains 20,390 individual records of reported civilian deaths with demographic fields including age and sex, but lacks event date information. The R scripts used for data cleaning, sensitivity analysis, and statistical testing are available in a supplementary repository. The qualitative codebook and interview protocol

are available from the corresponding author upon request, subject to confidentiality agreements to protect participant anonymity.

Disclosure Statement

No conflicts of interest or financial dependencies declared.

Contributor Notes

Lead author: design, quantitative analysis, drafting. Co-authors: qualitative synthesis, coding, and critical review.

A Interview Protocol

This appendix contains the core semi-structured interview guide used for qualitative data collection.

Introduction and Consent

1. Introduction of researcher and study purpose.
2. Review of consent information: voluntary participation, confidentiality, right to withdraw, audio recording.
3. Obtain verbal consent.

Background and Role

1. Can you describe your role and responsibilities related to casualty documentation or reporting during the 2024-2025 period?
2. What organizations or networks were you working with?

Credibility Perceptions (Core Domain 1)

1. In your experience, what makes a casualty report or number *trustworthy*?
2. Can you think of a specific instance where you received a casualty report you found highly credible? What about it inspired that trust?
3. Conversely, can you think of an instance where you questioned the credibility of reported numbers? What raised doubts?
4. How do you think different audiences (e.g., local community, international media, humanitarian agencies) judge the credibility of casualty figures? Are the criteria the same?

Communicative Practices (Core Domain 2)

1. Can you walk me through the typical process of verifying and reporting casualty numbers in your context? What steps are involved?
2. How did communication challenges (e.g., internet blackouts, damaged infrastructure) affect this process?
3. What practices or methods were developed to adapt to these challenges?
4. How were uncertainties or discrepancies in numbers handled and communicated?
5. What, in your view, are the biggest communication pitfalls that can undermine trust in casualty reports?

Institutional and Cultural Framings (Core Domain 3)

1. How do the priorities or protocols of different reporting entities (e.g., local health authorities, UN agencies, NGOs) differ?
2. What tensions exist between different approaches to documentation (e.g., focusing on precise counts vs. collecting narratives)?

3. How do cultural norms around mourning, dignity, and privacy influence how casualties are documented and reported?
4. How is the categorization of victims (e.g., civilian/combatant, adult/child) handled, and what challenges does this present?

Closing

1. Is there anything crucial about building trust in casualty numbers that we haven't discussed?
2. Do you have any questions for me?
3. Thank participant and reiterate confidentiality and support availability.

REFERENCES

Virginia Braun and Victoria Clarke. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2):77–101, 2006. doi: 10.1191/1478088706qp063oa.

G. Burnham, R. Lafta, S. Doocy, and L. Roberts. Mortality after the 2003 invasion of iraq: a cross-sectional cluster sample survey. *The Lancet*, 368:1421–1428, 2006.

F. Checchi. Inferring the impact of humanitarian responses on population mortality: methodological problems and proposals. *Conflict and Health*, 17, 2023.

John W. Creswell and Vicki L. Plano Clark. *Designing and Conducting Mixed Methods Research*. SAGE Publications, Thousand Oaks, CA, 3rd edition, 2017. ISBN 978-1506335193.

John W. Creswell, Ann C. Klassen, Vicki L. Plano Clark, and Katherine C. Smith. Achieving integration in mixed methods designs: Principles and practices. *Journal of Mixed Methods Research*, 6(3):277–300, 2012. doi: 10.1177/1558689812434440.

Miranda Fricker. *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford University Press, Oxford, UK, 2007. ISBN 978-0198237907. doi: 10.1093/acprof:oso/9780198237907.001.0001.

LP Galway, N. Bell, Al Shatari Sae, A. Hagopian, G. Burnham, A. Flaxman, Wiliam M Weiss, J. Rajaratnam, and T. Takaro. A two-stage cluster sampling method using gridded population data, a gis, and google earthtm imagery in a population-based mortality survey in iraq. *International Journal of Health Geographics*, 11:12–12, 2012.

M. Gebregziabher, A. Asgedom, Hiluf Ebuy Abraha, H. Teka, Abenezer Etsedingl, Tsegay Berihu, Gebru Hailu Redae, Nahom M. Gebreselassie, A. Medhanyie, H. Godefay, D. Gebre-Egziabher, and Hannah Wild. Civilian death and injury from airstrikes: evidence from the war in tigray, ethiopia. *Population Health Metrics*, 23, 2025.

Jürgen Habermas. *The Theory of Communicative Action, Volume 1: Reason and the Rationalization of Society*. Beacon Press, Boston, MA, 1984. ISBN 978-0807011459.

R. Lafta, S. Al-Shatari, Megan Cherewick, L. Galway, C. Mock, A. Hagopian, A. Flaxman, T. Takaro, Anna C Greer, A. Kushner, and G. Burnham. Injuries, death, and disability associated with 11 years of conflict in baghdad, iraq: A randomized household cluster survey. *PLoS ONE*, 10(8): e0131834, 2015. doi: 10.1371/journal.pone.0131834.

Maryam Sikander. Genocide of the palestinian people dataset. `https://www.kaggle.com/datasets/maryamsikander/genocide-of-the-palestinian-people`, 2024.

Tosin Olaluwoye, Elizabeth Hoban, and Joanne Williams. Forms of sexual violence perpetrated in conflict and post-conflict settings against south sudanese men resettled in two communities in uganda: an exploratory qualitative study. *Conflict and Health*, 17, 2023.

C. Riessman and J. Speedy. Narrative inquiry in the psychotherapy professions: A critical review. pp. 426–456, 2007.

K. Roberts, A. Dowell, and J. Nie. Attempting rigour and replicability in thematic analysis of qualitative research data; a case study of codebook development. *BMC Medical Research Methodology*, 19(1):1–8, 2019. doi: 10.1186/s12874-019-0707-y.

Taylor B. Seybolt, Jay D. Aronson, and Baruch Fischhoff. *Counting Civilian Casualties: An Introduction to Recording and Estimating Nonmilitary Deaths in Conflict*. Oxford University Press, 2013.

Rachel Sweet. Knowing what we don't: The fundamental problem of data quality in conflict research—and methodological solutions. *Journal of Conflict Resolution*, 2025.

United Nations Office for the Coordination of Humanitarian Affairs (OCHA). Data responsibility guidelines, 2019. Working draft, UNOCHA.