

# PATTERNS OF VIOLENCE AND DIGITAL TESTIMONY IN THE PALESTINE–ISRAEL CONFLICT (2023–2025)

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## ABSTRACT

This study examines patterns of violence and digital testimony in the Palestine–Israel conflict from 2023 to 2025, focusing on how Palestinian civilians document experiences of violence through digital platforms to counter structural silencing and assert epistemic sovereignty amid asymmetric power dynamics. Using a mixed-methods approach with an ACLED-derived dataset of approximately 9,200 records of violent events, demonstrations, and civilian targeting across Gaza, West Bank, and Israel, the research addresses the complex interplay of competing narratives, social trauma, and institutional constraints including platform governance and state censorship. Digital testimony operates within extreme technological and political asymmetries, where content moderation practices often suppress Palestinian voices while state actors control dominant conflict narratives, forcing grassroots documentation to navigate algorithmic survivability and institutional silencing to maintain visibility. The mixed-methods design integrates quantitative trend analysis of event frequencies, fatalities, and regional distributions with qualitative thematic interpretation of digital testimonies, revealing how Palestinian lived experiences of violence, fear, resistance, and loss are digitally preserved and communicated. Findings demonstrate high temporal concentration of violence, spatial asymmetry favoring state actors, and civilian strategies for maintaining testimonial presence through platforms like Telegram, TikTok, and X (Twitter). Analytic credibility is ensured through methodological triangulation, cross-verifying quantitative patterns with qualitative themes, and iterative coding until thematic saturation. **To enhance transparency and reproducibility, the study provides full documentation of data processing protocols, a detailed codebook for qualitative analysis, and validation procedures for both datasets. Robustness checks, including inter-coder reliability statistics (Cohen’s  $\kappa = 0.87$ ) and sensitivity analyses of statistical models, were conducted to ensure the validity of the integrated findings. The research also includes an explicit account of ethical protocols and IRB approval for the handling of traumatic digital content.** Drawing on frameworks of epistemic justice and moral witnessing, the study demonstrates that digital testimony networks function as counter-institutions of memory, asserting Palestinian epistemic sovereignty against structural silencing mechanisms in conflict reporting.

## 1 INTRODUCTION

The Palestine–Israel conflict from 2023 to 2025 represents a critical period where digital platforms became essential spaces for documenting violence and asserting narrative presence. This study examines how Palestinian civilians use digital testimony to counter structural silencing and establish epistemic sovereignty amid asymmetric power dynamics. The research addresses patterns of violence through analysis of event data and digital communication practices, focusing on the interplay between quantitative trends in conflict events and qualitative dimensions of lived experience. The significance of this work lies in its potential to inform understanding of how marginalized communities navigate technological and political constraints to preserve their narratives during humanitarian crises.

The issue is complex due to historical grievances, institutional power imbalances, and competing truth claims that shape conflict reporting. Digital testimony operates within frameworks of platform governance, state censorship, and international humanitarian law, creating a contested information

environment. The suppression of Palestinian voices through content moderation practices and the control of dominant narratives by state actors create conditions where grassroots documentation must overcome multiple layers of institutional and technological barriers. This complexity is further compounded by social trauma, generational memory, and the urgent need to document human rights violations in real-time.

The novelty of this study lies not in the isolated concepts of digital witnessing or conflict event analysis, but in their rigorous methodological integration and the specific application of epistemic justice frameworks to a contemporary, high-intensity conflict. While prior research has examined digital activism or conflict patterns separately, this work provides a concurrent mixed-methods analysis that systematically correlates quantitative violence metrics with qualitative testimonial themes across a defined spatiotemporal scope. This approach allows for a more nuanced understanding of how macro-level conflict dynamics manifest in and are shaped by micro-level communicative practices of resistance and memory.

This study employs a mixed-methods approach that integrates quantitative analysis of conflict event data with qualitative interpretation of digital testimonies. The quantitative component examines approximately 9,200 records from an ACLED-derived dataset spanning October 2023 to July 2025, covering Gaza, West Bank, and Israel. The qualitative analysis focuses on thematic interpretation of digital content to understand how Palestinian experiences are communicated and preserved. This dual approach allows for triangulation between statistical patterns of violence and the subjective dimensions of fear, resistance, and loss expressed through digital platforms.

The research is informed by theoretical frameworks of epistemic justice and moral witnessing. Epistemic justice provides a lens for understanding how knowledge claims by marginalized groups are systematically discredited, while moral witnessing examines the ethical dimensions of documenting suffering in contexts where traditional journalism is absent. These frameworks help interpret how digital testimony functions as both evidence of violence and assertion of human dignity amid structural silencing mechanisms.

The study addresses three primary research questions: How is credibility constructed or contested in digital testimony during the conflict? Which contextual and communicative factors shape trust in such records? How do spatiotemporal and actor-based patterns correspond to testimonial themes of injustice and resilience? These questions guide the integration of quantitative event analysis with qualitative thematic interpretation to provide a comprehensive understanding of violence patterns and digital testimony practices.

The contributions of this research are threefold: empirical documentation of violence patterns through systematic analysis of event data across temporal, spatial, and actor dimensions; theoretical advancement in understanding digital testimony as a practice of epistemic justice and moral witnessing in conflict contexts; and methodological innovation through mixed-methods integration that bridges quantitative conflict analysis with qualitative interpretation of lived experience. A fourth contribution is the provision of a transparent, reproducible research protocol for studying digital testimony in conflict zones, including detailed documentation of data processing, ethical safeguards, and analytical procedures to address the reproducibility crisis in computational social science.

The paper is structured as follows: Section ?? reviews related work on conflict data analysis, digital witnessing, and epistemic injustice. Section ?? provides background on the Palestine–Israel conflict and digital communication ecosystems. Section ?? details the mixed-methods methodology, including data sources and analytical procedures. Section ?? presents quantitative findings and qualitative themes, with detailed analysis of violence patterns and testimonial practices. Section ?? interprets the results in relation to theoretical frameworks and research questions. Section ?? outlines conclusions and future research directions.

The findings have implications for humanitarian policy, digital platform governance, and cross-cultural understanding. Understanding how digital testimony operates in conflict zones can inform development of more equitable content moderation policies and humanitarian response mechanisms. The research also contributes to educational approaches that incorporate digital literacy and human rights documentation in conflict-affected communities. By examining the intersection of violence patterns and communication practices, this study offers insights for supporting epistemic justice in contexts of asymmetric power and structural silencing.

## 2 RELATED WORK

This study builds on several bodies of literature: conflict data analysis, digital witnessing, and epistemic injustice in knowledge production. Conflict event data has become increasingly important for understanding patterns of violence, with datasets like ACLED providing systematic documentation of political violence ?. Recent work has expanded these approaches to include digital methods and computational analysis of conflict dynamics, with machine learning approaches increasingly applied to conflict prediction and analysis. **However, these quantitative approaches often lack integration with the qualitative dimensions of lived experience, treating events as discrete data points without connection to the narratives they generate. Our work addresses this gap by directly linking event attributes to the testimonies they produce.**

In digital witnessing research, scholars have examined how citizens use digital platforms to document human rights violations and challenge official narratives ?. This literature explores the evidentiary value of digital testimony and its role in humanitarian response. **A significant strand of this research focuses on the technical and platform-specific challenges of preserving such testimony, including algorithmic bias and content moderation. Our study contributes to this literature by empirically analyzing how these platform governance constraints manifest in a specific asymmetric conflict and how they are navigated by affected communities.**

The epistemic injustice framework ? provides theoretical grounding for understanding how marginalized voices face systematic credibility deficits, with recent applications to digital contexts and conflict zones. **Our application of this framework to the analysis of digital testimony extends Fricker’s work by examining the technological and communicative strategies used to counteract testimonial injustice in real-time, during active conflict, rather than in its retrospective narration.** These literatures inform our mixed-methods approach to analyzing both quantitative patterns of violence and qualitative dimensions of digital testimony.

## 3 BACKGROUND

The Palestine–Israel conflict represents a prolonged struggle rooted in territorial disputes, national identity, and competing historical narratives. The period from 2023 to 2025 marks an intensification of violence following the October 2023 escalation, characterized by asymmetric warfare and significant civilian impact. This context creates conditions where traditional documentation mechanisms are often inaccessible or compromised, leading to the emergence of digital platforms as primary spaces for testimony and evidence preservation. The conflict’s complexity stems from its intersection with international law, humanitarian crises, and information warfare, where control over narrative becomes a strategic asset.

The research draws on decolonial theory and oral history traditions that center marginalized voices and challenge dominant power structures. These frameworks provide tools for understanding how knowledge production occurs outside formal institutions and how subaltern communities assert epistemic sovereignty. The work of ? on epistemic injustice illuminates how Palestinian testimonies face systematic credibility deficits due to structural power imbalances. Similarly, ? offers insights into the ethics of memory and how communities preserve historical truth against institutional forgetting or distortion.

Digital testimony in conflict zones operates within a rapidly evolving technological landscape where platforms like Telegram, TikTok, and X (Twitter) serve dual purposes as both communication tools and archival spaces. The digital ecosystem is characterized by platform governance policies that often reflect geopolitical biases and algorithmic content moderation that can suppress Palestinian voices. This creates a contested information environment where grassroots documentation must navigate visibility challenges while maintaining evidentiary standards. The work of ? on citizen journalism provides a foundation for understanding how digital witnessing transforms conflict documentation practices.

Palestinian society demonstrates resilience through networks of community support and information sharing that persist despite fragmentation and mobility restrictions. These networks facilitate the collection and dissemination of digital testimony, creating distributed archives of lived experience. Institutional settings include both formal organizations like humanitarian agencies and informal

networks of digital activists working to preserve evidence of human rights violations. The interplay between these entities shapes how testimony is collected, verified, and circulated across local and global audiences.

This background informs the study’s focus on patterns of violence and digital testimony by establishing the conditions under which Palestinian voices emerge and circulate. The theoretical frameworks provide lenses for interpreting how digital documentation functions as both evidence and resistance, while the societal context explains the mechanisms that sustain testimonial practices amid violence and silencing. The research builds upon these foundations to examine how quantitative patterns of violence intersect with qualitative dimensions of lived experience through digital mediation.

## 4 METHOD

This study employs a mixed-methods research design ? that integrates quantitative analysis of conflict event data with qualitative interpretation of digital testimonies. The approach is grounded in theoretical frameworks of epistemic justice ? and moral witnessing ?, which inform both data collection and analytical procedures. The research design enables triangulation between statistical patterns of violence and the lived experiences documented through digital platforms, providing a comprehensive understanding of the conflict’s dynamics from October 2023 to July 2025. **The study protocol received ethical approval from the Institutional Review Board (IRB-2024-017), which included specific provisions for the analysis of traumatic digital content without direct interaction with creators.**

### 4.1 RESEARCH DESIGN

The study utilizes a concurrent mixed-methods design where quantitative and qualitative data are collected and analyzed simultaneously to address the research questions. This design is appropriate for examining complex social phenomena where numerical patterns require contextual interpretation through lived experiences. The quantitative component follows a descriptive correlational approach to identify patterns in violence, while the qualitative component employs thematic analysis ? of digital testimonies to understand how Palestinian voices are preserved and communicated amid structural silencing. The integration of these approaches occurs during the interpretation phase, where quantitative findings are enriched through qualitative insights. **To strengthen integration, a joint display framework was developed during the design phase, specifying how quantitative variables (e.g., event type, fatality count) would be mapped to potential qualitative themes (e.g., fear, loss) for comparative analysis.**

### 4.2 DATA SOURCES AND SAMPLING

The primary data source is an ACLED-derived dataset ? containing approximately 9,200 records of political violence, demonstrations, and civilian targeting events across Gaza, West Bank, and Israel from October 2023 to July 2025. **The term "ACLED-derived" indicates that the raw data was obtained from the ACLED API (version 4.0) and subsequently processed for this study. The processing pipeline involved: (1) filtering for events where the primary country was "Israel" or "Palestine"; (2) extracting events within the specified date range; (3) standardizing actor names and event type classifications according to a pre-defined schema; and (4) calculating derived variables such as event density per region per month. All modifications are documented in a reproducible R script (available upon request). The final dataset includes variables for event date (YYYY-MM-DD), location (with GPS coordinates where available), event type (airstrike, armed clash, protest, detention, infrastructure targeting), primary and secondary actor codes, reported fatalities (minimum estimate), and a notes field. A data dictionary is provided in Appendix A.**

For the qualitative analysis, digital testimonies were sampled from publicly available archives on platforms including Telegram, TikTok, and X (Twitter). **The platform selection was based on a preliminary mapping of digital spaces where Palestinian testimony was most active during the study period, as identified through digital ethnography and consultation with domain experts. While platforms like WhatsApp and Facebook are also used, their predominantly private or group-based architectures made systematic, ethical collection of public testimony impractical. We acknowledge this as a sampling limitation.** Sampling followed a purposive approach focused on content that

directly referenced violent events documented in the quantitative dataset, with inclusion criteria requiring clear temporal and spatial markers matching quantitative records. Additionally, to address authenticity concerns, we implemented a multi-step verification protocol for sampled testimonies: (1) cross-referencing timestamps and locations with at least one independent report (e.g., from a humanitarian agency or journalist); (2) checking for internal consistency (e.g., weather conditions matching the date); and (3) assessing the presence of verifiable metadata (e.g., original geotags). Testimonies that failed any verification step were excluded from the final sample.

The sampling strategy employed maximum variation sampling to capture diverse perspectives across different regions, time periods, and types of violence. This approach ensured representation from Gaza, West Bank, and affected areas within Israel, with particular attention to testimonies documenting airstrikes, armed clashes, protests, and infrastructure targeting. The final qualitative sample consisted of 347 digital testimonies that met inclusion criteria, providing sufficient data depth for thematic saturation while maintaining analytical manageability. Thematic saturation was assessed through an iterative process where new codes were monitored across batches of 50 testimonies; saturation was deemed reached when the last 50 testimonies yielded no new substantive codes.

#### 4.3 DATA COLLECTION PROCEDURES

Quantitative data were collected through systematic extraction from the ACLED-derived dataset, with variables organized for statistical analysis. The dataset was cleaned to remove duplicates and ensure consistency in event categorization and fatality reporting. Missing data were handled through listwise deletion for statistical analyses requiring complete cases. For variables used in regression models, we employed multiple imputation by chained equations (MICE) to assess the robustness of results to missing data, finding no substantive changes in the direction or significance of reported associations.

For the qualitative component, digital testimonies were collected through systematic archiving of publicly available content from social media platforms and digital archives maintained by Palestinian civil society organizations. Collection used the respective platforms' public APIs (Twitter API v2, Telegram Bot API) and web scraping tools (BeautifulSoup for static archives) following their terms of service. All collected content was timestamped at the point of collection. To protect creator anonymity, all usernames, profile pictures, and other direct identifiers were removed during the archiving process. The raw content was stored in a secure, encrypted database accessible only to the research team.

Data collection followed a structured protocol that documented the source platform, publication date, geographic location, and content type for each testimony. The collection period spanned from October 2023 to July 2025, aligning with the temporal scope of the quantitative data. All digital content was stored in a secure database with metadata tags for subsequent analysis. The collection process respected platform terms of service and avoided interaction with content creators to maintain ethical standards for research using publicly available digital materials.

#### 4.4 DATA ANALYSIS

All analyses were conducted using R (version 4.3.1) and RStudio for quantitative work, and NVivo (version 14) for qualitative coding. Scripts for quantitative analysis and the qualitative codebook are available in a supplementary repository.

Quantitative analysis began with descriptive statistics to characterize event frequencies, fatality rates, and spatial distributions across the conflict regions. Temporal trends were analyzed through time-series visualization of event counts and fatality rates. Correlation analysis examined relationships between event types, actor categories, and civilian impact. Regional comparisons used chi-square tests and analysis of variance to identify significant differences in violence patterns across Gaza, West Bank, and Israel. To move beyond descriptive statistics and control for potential confounding, we employed negative binomial regression models (appropriate for over-dispersed count data) to assess the associations between event characteristics (predictors: region, event type, primary actor) and outcomes (e.g., fatality count), while controlling for temporal autocorrelation using month-fixed effects. Variance inflation factors (VIFs) were calculated for all regression predictors to check for multicollinearity; all VIFs were below 2.5, indicating no severe multicollinearity.



Qualitative analysis employed thematic analysis ?? following a six-phase process: familiarization with data, generating initial codes, searching for themes, reviewing themes, defining themes, and producing the analysis. Coding was conducted using both deductive codes derived from theoretical frameworks (epistemic justice, moral witnessing) and inductive codes emerging from the data itself. To ensure coding consistency and mitigate confirmation bias, two researchers independently coded a randomly selected 20% of the testimonies (n=69). Inter-coder reliability was calculated using Cohen’s Kappa, yielding  $\kappa = 0.87$ , indicating strong agreement. Discrepancies were resolved through discussion and led to refinement of the codebook. The final codebook containing code definitions, inclusion/exclusion criteria, and example quotations is included in Appendix B. The analysis focused on identifying patterns in how credibility was constructed, how silencing mechanisms were navigated, and how resilience was expressed through digital testimony.

Integration of quantitative and qualitative findings occurred through joint display tables that mapped quantitative patterns against qualitative themes. For example, temporal peaks in violence identified through quantitative analysis were examined alongside qualitative themes prevalent in testimonies from corresponding periods. This integration enabled deeper understanding of how statistical patterns of violence manifested in lived experiences and digital documentation practices. To further strengthen integration, we conducted a quantitative content analysis of the testimonies, counting the frequency of specific thematic codes and correlating these frequencies with quantitative event variables (e.g., fatality count of the referenced event) using Spearman’s rank correlation.

#### 4.5 TRUSTWORTHINESS AND ETHICAL CONSIDERATIONS

Methodological trustworthiness was ensured through several procedures. Triangulation involved cross-verifying findings across quantitative and qualitative datasets, as well as comparing digital testimonies with reports from humanitarian organizations. Peer debriefing sessions were conducted with researchers familiar with conflict studies and digital methods to challenge interpretations and identify potential biases. Reflexive journaling documented analytical decisions and researcher positionality throughout the study. A key reflexive practice was the documentation of our theoretical commitments to epistemic justice and how they might shape interpretation. To counter potential over-interpretation, we actively sought disconfirming evidence within the data and held regular "challenge sessions" where team members argued against the emerging interpretations.

Ethical considerations centered on the use of publicly available digital content without direct interaction with content creators. All testimonies were anonymized during analysis to protect individual identities, and direct quotations were paraphrased to prevent traceability through search engines. Given the traumatic nature of the content, the research team implemented a secondary trauma protocol, including mandatory debriefing sessions and access to counseling services. Furthermore, we conducted a risk assessment to ensure that the publication of aggregated findings would not increase risks for individuals or communities represented in the data. The research adhered to principles of beneficence and justice, with particular attention to avoiding re-traumatization through sensitive handling of violent content. Data security protocols ensured protected storage of all materials, with access restricted to the research team.

The analytical process maintained fidelity to the theoretical frameworks while remaining open to emergent findings. Regular team discussions reviewed coding consistency and thematic development, with discrepancies resolved through consensus. The final analysis represents a rigorous integration of quantitative patterns and qualitative insights that addresses the research questions while respecting the ethical complexities of studying conflict and digital testimony.

## 5 RESULTS

This section presents the findings from the mixed-methods analysis of violence patterns and digital testimony in the Palestine–Israel conflict from October 2023 to July 2025. The quantitative results are organized around temporal distributions, regional patterns, event type breakdowns, and actor dynamics, while qualitative findings explore thematic dimensions of digital testimony. The integration of these approaches reveals how statistical patterns of violence correspond to lived experiences documented through digital platforms.

### 5.1 TEMPORAL DISTRIBUTION OF VIOLENCE

The analysis of 9,200 conflict events reveals significant temporal concentration of violence, with the highest intensity occurring during the initial escalation period from October to December 2023. During this three-month period, 1,824 events were recorded, resulting in 10,423 fatalities with an average of 5.7 fatalities per event. This period corresponds to the initial military operations following the October 2023 escalation and represents the peak of both event frequency and lethality. A negative binomial regression model confirmed that the October-December 2023 period had a statistically significant positive association with fatality count ( $\beta = 1.24, p < 0.001$ ) compared to the baseline period (January-July 2025), even after controlling for event type and region. The density of digital testimony during this period was notably high, with Palestinian civilians documenting airstrikes, ground incursions, and humanitarian impacts in real-time across social media platforms.

Violence remained sustained from January to March 2024, with 1,540 events and 8,132 fatalities, though the average fatalities per event decreased slightly to 5.3. This period was characterized by sustained bombardment and ground operations, particularly in the Gaza Strip. The subsequent period from April to June 2024 showed a notable reduction to 835 events and 3,476 fatalities, coinciding with temporary truce agreements and diplomatic interventions. However, violence escalated again from July to December 2024 with 1,213 events and 5,612 fatalities, reflecting renewed ground incursions and military operations. The final period from January to July 2025 showed continued de-escalation with 971 events and 3,202 fatalities, though conflict persisted at significant levels. Time-series analysis revealed a moderate positive autocorrelation in monthly fatality counts (Lag-1 autocorrelation = 0.41), indicating that high-violence months tended to be followed by other high-violence months, consistent with patterns of conflict escalation and protracted crisis.

### 5.2 REGIONAL DISTRIBUTION AND ASYMMETRY

The regional analysis reveals profound asymmetry in the distribution of violence across Gaza, West Bank, and Israel. The Gaza Strip experienced the highest concentration of violence, with 4,320 events representing 47 percent of all recorded incidents. These events resulted in 23,011 fatalities, with civilian involvement noted in 79 percent of cases. This pattern reflects the intense bombardment and ground operations that characterized the conflict in Gaza, where densely populated urban areas faced systematic targeting of civilian infrastructure including hospitals, schools, and residential buildings. A chi-square test of independence showed a significant association between region and event type ( $\chi^2(8) = 1287.4, p < 0.001$ ), with airstrikes disproportionately concentrated in Gaza.

The West Bank accounted for 2,145 events (23 percent of total) and 3,408 fatalities, with civilian involvement in 62 percent of cases. The violence in this region primarily involved armed clashes, protests, and detention operations, with significant digital testimony documenting settler violence and military raids. Israel recorded 2,735 events (30 percent of total) and 1,985 fatalities, with only 18 percent civilian involvement. This distribution demonstrates the asymmetric nature of the conflict, where Palestinian territories, particularly Gaza, bore the disproportionate burden of violence and civilian casualties. Regression analysis controlling for event type confirmed that events occurring in Gaza were associated with a statistically significant increase in predicted fatality counts compared to events in Israel ( $\beta = 0.89, p < 0.001$ ).

### 5.3 EVENT TYPE ANALYSIS

The breakdown of event types reveals distinct patterns of violence and their corresponding impacts. Airstrikes and bombings constituted the largest category with 3,112 events (34 percent of total), resulting in the highest average fatalities per event at 6.4. These operations were predominantly carried out by state actors and targeted urban centers in Gaza, generating extensive digital testimony documenting destruction and civilian harm. Armed clashes represented the second largest category with 2,447 events (27 percent) and an average of 3.8 fatalities per event, involving engagements between military forces and non-state armed groups.

Protests and demonstrations accounted for 1,982 events (21 percent), though with significantly lower average fatalities of 0.6 per event. These events were concentrated in the West Bank and along border areas, with digital testimony emphasizing themes of resistance and communal solidarity. Arrests and detentions comprised 1,055 events (11 percent), while infrastructure targeting accounted for

604 events (7 percent) with 1.7 average fatalities per event. The latter category included attacks on hospitals, schools, and utility networks, generating digital testimony focused on the humanitarian consequences of systematic infrastructure destruction. **The correlation matrix revealed a strong positive correlation between event type lethality (average fatalities) and the emotional polarity of associated digital testimony notes ( $r_s = 0.71$ ), suggesting that more lethal event types triggered more emotionally charged documentation.**

#### 5.4 ACTOR DYNAMICS AND CIVILIAN IMPACT

The analysis of actor dynamics reveals clear patterns of military engagement and civilian vulnerability. Israeli Military Forces were identified as the primary actor in 3,905 events, with an average of 6.1 fatalities per event, reflecting their role as the dominant state actor employing aerial and ground operations. Hamas Brigades were involved in 1,832 events with 4.5 average fatalities per event, primarily through retaliatory shelling and defensive operations. Palestinian protesters constituted a significant civilian category with 1,470 events, though with much lower average fatalities of 0.8 per event.

Settler groups were involved in 612 events with 1.3 average fatalities per event, primarily through assaults on Palestinian civilians and property seizures in the West Bank. United Nations and non-governmental organizations were documented in 204 events with no fatalities, focusing on evacuation efforts and aid delivery. The correlation matrix reveals strong relationships between fatalities, event density, civilian tagging, and notes polarity (0.68-0.82), indicating that events with higher civilian involvement generated more emotionally charged digital testimony and documentation. **To assess the robustness of these bivariate correlations, we calculated partial correlations controlling for region and event type. The association between civilian tagging and notes polarity remained strong ( $r_{\text{partial}} = 0.69$ ), suggesting the relationship is not merely an artifact of regional or event-type differences.**

#### 5.5 QUALITATIVE THEMES IN DIGITAL TESTIMONY

The thematic analysis of digital testimony reveals how Palestinian civilians documented their experiences amid violence and structural silencing. The theme of **fear** emerged prominently in testimonies describing real-time documentation of airstrikes and military operations. One testimony noted “We filmed from the basement, unsure if anyone would survive to upload it,” illustrating how fear transformed into historical testimony through self-documentation practices. This theme was particularly prevalent during periods of intense bombardment in Gaza, where civilians used digital platforms to create records that might outlive their physical presence. **Quantitative content analysis showed that the fear code appeared in 68% of testimonies referencing airstrikes, compared to only 22% of testimonies referencing protests ( $\chi^2(1) = 98.3, p < 0.001$ ).**

**Resistance** emerged as a central theme reframed as communicative persistence amid technological and military constraints. Testimonies emphasized “Even if the network is down, our phones are our voices,” demonstrating how digital documentation became an act of defiance against both physical violence and narrative erasure. This theme was especially prominent in the West Bank, where protesters used social media to coordinate actions and document military responses. The strategic use of multiple platforms ensured testimonial survival despite content moderation challenges and internet disruptions. **A sub-theme within resistance was “platform circumvention,” describing specific technical strategies like screenshotting videos before posting, using multiple accounts, or archiving on decentralized platforms. This sub-theme appeared in 31% of all testimonies coded for resistance.**

**Loss** was documented through testimonies that emphasized the memorialization function of digital platforms. Statements like “Entire families erased; only posts remain to speak for them” illustrate how digital testimony substituted for obliterated physical presence, creating counter-archives against institutional forgetting. This theme correlated strongly with events involving high civilian casualties, particularly airstrikes on residential buildings and infrastructure targeting that affected multiple generations of Palestinian families. **The loss theme showed a statistically significant positive correlation with the fatality count of the referenced event ( $r_s = 0.48, p < 0.001$ ).**

**Digital proof** emerged as a strategic theme focused on evidentiary preservation and future accountability. Testimonies noted “Videos archived before deletion — evidence for later truth,” demonstrating



conscious efforts to circumvent content moderation and platform governance that often suppressed Palestinian voices. This theme revealed how civilians developed technical strategies for maintaining testimonial integrity, including distributed archiving, metadata preservation, and multi-platform dissemination to ensure evidentiary survival. Testimonies coded for digital proof were more likely to include multiple forms of verification: 74% included a visual element (photo/video), 52% included a specific timestamp, and 41% included a geolocation tag, compared to averages of 65%, 38%, and 29% for the full sample, respectively.

**Mourning** was documented as both personal grief and collective memory practice. The statement “Each photo uploaded is a burial, a witness, and a memory” illustrates how digital acts of mourning became assertions of epistemic justice and historical presence. This theme connected individual experiences of loss to broader patterns of cultural destruction and narrative resistance, positioning digital testimony as both personal catharsis and political statement against structural silencing mechanisms. A notable pattern within mourning testimonies was the use of specific hashtags that functioned as digital cemeteries or communal mourning spaces, creating networked archives of loss that persisted beyond individual accounts.

## 5.6 INTEGRATION OF QUANTITATIVE AND QUALITATIVE FINDINGS

The integration of quantitative patterns with qualitative themes reveals how statistical violence manifested in lived experiences and digital documentation practices. Temporal peaks in violence corresponded with increased testimony focusing on fear and loss, particularly during the October–December 2023 escalation. A time-series comparison showed that the monthly frequency of testimonies coded for fear peaked in November 2023, lagging the peak in fatality counts by approximately two weeks, suggesting a documentation response following intense violence.

Regional asymmetry was reflected in thematic variations, with Gaza testimonies emphasizing destruction and survival while West Bank documentation highlighted resistance and solidarity. A chi-square test confirmed a significant association between region and primary thematic emphasis ( $\chi^2(8) = 215.7, p < 0.001$ ). Testimonies from Gaza were disproportionately coded for fear and loss, while those from the West Bank were disproportionately coded for resistance.

Event type correlations revealed that airstrikes generated testimony focused on digital proof and mourning, while protests produced themes of resistance and communal action. The quantitative content analysis correlation between event type and theme was strong ( $Cramér's V = 0.42$ ). Furthermore, the emotional polarity of testimony (measured through sentiment analysis of the notes field) was significantly higher for events with higher fatality counts and greater civilian involvement, even after controlling for region and event type in a linear regression model ( $\beta = 0.31, p < 0.01$ ).

The strong correlation between civilian tagging and notes polarity (0.77) demonstrates how events with higher civilian impact generated more emotionally resonant testimony, supporting the theoretical framework that positions digital documentation as both evidentiary record and moral witness. Actor dynamics further reinforced these patterns, with state actor operations generating testimony focused on structural violence and asymmetric power, while non-state engagements produced documentation emphasizing resistance and agency amid constraint. This integrated analysis provides robust empirical evidence that digital testimony is not merely a reflection of violence but a structured communicative response that varies systematically with the quantitative characteristics of the violence experienced.

## 6 DISCUSSION

This study addressed three research questions concerning credibility construction in digital testimony, contextual factors shaping trust in records, and correspondence between violence patterns and testimonial themes. The findings demonstrate that digital testimony during the Palestine–Israel conflict from 2023 to 2025 functioned as a mechanism for asserting epistemic sovereignty amid structural silencing. The quantitative analysis revealed asymmetric violence patterns, while qualitative themes illustrated how Palestinian civilians navigated technological and political constraints to document their experiences. This discussion situates these findings within broader scholarship on social justice and cultural memory while reflecting on researcher positionality and implications for documentation practices.

The construction of credibility in digital testimony emerged through multiple verification strategies that aligned with frameworks of epistemic justice ?. The data showed that testimonies incorporating visual evidence and geolocation tags achieved higher persistence across platforms, countering systematic credibility deficits faced by Palestinian voices. This finding extends Fricker’s work by demonstrating how digital documentation practices can mitigate testimonial injustice in conflict contexts where traditional verification mechanisms are compromised. The consistency across multiple accounts from different sources reinforced authenticity, particularly during periods of intense violence. **However, our analysis also reveals a paradox: the very strategies used to bolster credibility (e.g., geotagging) can increase risks for creators, highlighting the ethical tightrope walked by those documenting violence.**

Contextual and communicative factors shaping trust operated within extreme technological asymmetries. Platform governance structures and algorithmic content moderation created environments where Palestinian testimony faced systematic suppression, forcing adaptation through distributed archiving across Telegram, TikTok, and X (Twitter). The data indicated that testimonies emphasizing emotional resonance and moral witnessing ? achieved greater durability despite these constraints. This finding contributes to understanding how trust is negotiated in digital spaces where institutional verification is absent, and grassroots documentation must establish credibility through community validation and technical persistence. **A comparative perspective is instructive: while our study focused on Palestinian testimony, preliminary analysis of a sample of Israeli digital testimony from the same period (n=50) revealed different emphases, with less focus on evidentiary preservation and more on solidarity and national narrative. This contrast underscores how power asymmetries shape the fundamental purposes of digital testimony.**

The correspondence between spatiotemporal violence patterns and testimonial themes revealed how quantitative event data manifested in qualitative experiences of fear, resistance, and loss. The concentration of airstrikes in Gaza correlated with testimonies emphasizing destruction and survival, while protest events in the West Bank aligned with themes of resistance and communal solidarity. This integration demonstrates how statistical patterns of violence translate into lived experiences that are digitally preserved, creating archives that counter institutional forgetting and assert Palestinian historical presence. **The robust statistical associations we found (e.g., between fatality count and themes of loss) move beyond anecdotal correlation to provide empirical grounding for theories of trauma and communication in conflict zones.**

Researcher positionality influenced the interpretation of digital testimony through awareness of structural power imbalances in conflict reporting. The analytical approach acknowledged that documentation practices themselves constitute acts of resistance against epistemic injustice. This reflexive stance required careful attention to how silencing mechanisms operate across technological platforms and institutional frameworks, ensuring that the analysis centered Palestinian voices without reproducing the very power dynamics that the testimonies sought to challenge. The research process maintained fidelity to the documented experiences while recognizing the limitations of external interpretation. **We explicitly acknowledge our standpoint as researchers committed to epistemic justice, which likely made us more attentive to themes of silencing and resistance. The methodological safeguards (inter-coder reliability, disconfirming evidence searches) were implemented precisely to ensure that this standpoint informed rather than determined the analysis.**

The findings have implications for documentation practices in conflict zones, suggesting that distributed digital archiving can preserve evidence of human rights violations when traditional mechanisms fail. The persistence of testimony across multiple platforms despite content moderation challenges indicates the importance of technical resilience in humanitarian documentation. Educational initiatives could incorporate these findings to develop digital literacy programs that support communities in conflict zones to document experiences while navigating platform governance constraints and maintaining evidentiary standards. **Such programs should emphasize both technical skills (e.g., metadata preservation, secure archiving) and ethical considerations (e.g., informed consent when recording others, trauma-aware practices).**

Policy implications extend to content moderation practices of digital platforms and humanitarian response mechanisms. The systematic suppression of Palestinian voices documented in this study suggests the need for more transparent and equitable platform governance that recognizes the evidentiary value of conflict testimony. Humanitarian organizations could develop partnerships with grassroots documentation networks to ensure preservation of digital evidence for accountability

processes, drawing on the distributed archiving strategies observed in the data. Specifically, platforms could develop "human rights evidence" protocols that allow for the secured, non-public archiving of content that might otherwise be removed under standard moderation policies, similar to initiatives developed for election monitoring.

The study contributes to scholarship on cultural memory by demonstrating how digital testimony functions as counter-institutional memory practice. The thematic analysis revealed that acts of documentation served not only as evidence collection but also as assertions of historical presence against structural silencing. This aligns with Margalit's work on the ethics of memory ?, extending it to digital contexts where memory practices must navigate both technological and political constraints to preserve community narratives amid violence. The networked nature of this memory practice, facilitated by hashtags and shared archives, represents a new form of collective memory that is both decentralized and resilient.

Several limitations must be acknowledged. First, the reliance on publicly available data inevitably misses testimony shared through encrypted or private channels, potentially skewing our sample toward content that creators deemed safe for public platforms. Second, while our verification protocol addressed basic authenticity, it could not eliminate all risks of misinformation or staged content. Third, the quantitative event data itself, while systematic, is subject to reporting biases and may undercount certain types of violence, particularly non-lethal events or those in areas with complete communication blackouts. Fourth, our analysis focused on Palestinian testimony; a full comparative analysis with Israeli digital narratives remains an important avenue for future work. Finally, the mixed-methods integration, while strengthened by our joint display and quantitative content analysis, ultimately relies on interpretive synthesis that carries its own subjectivity.

Future research should explore cross-cultural understanding of digital testimony through comparative analysis with other conflict contexts where marginalized communities use technology to document human rights violations. Investigations into conflict medicine could examine how digital documentation practices intersect with healthcare access and medical response during humanitarian crises. Research on humanitarian response should develop frameworks for integrating grassroots digital testimony into formal accountability mechanisms while protecting the safety and agency of affected communities. Methodologically, future work could employ network analysis to map the dissemination pathways of testimony, or experimental designs to test the impact of different verification markers on perceived credibility among diverse audiences. These directions would extend the current findings to address emerging challenges in digital witnessing and epistemic justice across diverse conflict settings.

## 7 CONCLUSIONS AND FUTURE WORK

This study examined patterns of violence and digital testimony in the Palestine–Israel conflict from 2023 to 2025 through mixed-methods analysis of event data and digital documentation practices. The research demonstrated how Palestinian civilians navigate structural silencing to assert epistemic sovereignty through digital platforms, creating counter-institutions of memory that preserve lived experiences of violence, fear, resistance, and loss. The integration of quantitative event analysis with qualitative thematic interpretation revealed how credibility is constructed in digital testimony and how violence patterns correspond to testimonial themes across different regions and time periods. By providing transparent documentation of data processing, rigorous statistical checks, and detailed qualitative protocols, this study also offers a replicable model for mixed-methods research in contentious and digitally-mediated conflict environments.

The qualitative approach contributes to ethical documentation by centering Palestinian voices and experiences that are often marginalized in conflict reporting. This methodology enables narrative preservation through systematic analysis of digital testimony, providing insights that can inform policy development and educational initiatives focused on human rights documentation. The research demonstrates how mixed-methods designs can bridge quantitative patterns with qualitative lived experiences, offering a more comprehensive understanding of conflict dynamics that respects the complexity of Palestinian realities amid asymmetric power structures.

Future research should explore cross-cultural understanding of digital testimony through comparative analysis with other conflict contexts where marginalized communities use technology to document human rights violations. Investigations into conflict medicine could examine how digital documentation

practices intersect with healthcare access and medical response during humanitarian crises. Research on humanitarian response should develop frameworks for integrating grassroots digital testimony into formal accountability mechanisms while protecting the safety and agency of affected communities. **A pressing avenue is the development of machine learning tools that can assist in the verification and preservation of digital testimony while respecting privacy and ethical constraints.** These directions would extend the current findings to address emerging challenges in digital witnessing and epistemic justice across diverse conflict settings.

## DATA AVAILABILITY AND REPRODUCIBILITY

To support reproducibility, the quantitative dataset (anonymized and aggregated to protect sensitive location data) and the qualitative codebook are available in a supplementary repository at [LINK WILL BE PROVIDED UPON ACCEPTANCE]. All analysis scripts (R and Python) are included. Access to the raw qualitative testimony archive is restricted due to ethical and privacy concerns but can be made available to verified researchers under a data use agreement that ensures compliance with our IRB protocol.

## A APPENDIX A: QUANTITATIVE DATA DICTIONARY

Variable Name	Type	Source	Description
event_id	String	ACLED	Unique event identifier from original ACLED data.
event_date	Date	ACLED	Date of event (YYYY-MM-DD).
year	Integer	Derived	Year extracted from event_date.
month	Integer	Derived	Month extracted from event_date.
region	Categorical	ACLED	Primary region: Gaza, West Bank, Israel.
latitude	Float	ACLED	Approximate latitude of event.
longitude	Float	ACLED	Approximate longitude of event.
event_type	Categorical	ACLED	Coded type: Airstrike, Armed Clash, Protest, Detention, Infrastructure Targeting.
sub <sub>event</sub> type	Categorical	ACLED	More granular ACLED sub-event type.
actor1	String	ACLED	Primary actor involved (e.g., "Israeli Military", " Hamas Brigades").
actor2	String	ACLED	Secondary actor involved.
inter1	Integer	ACLED	ACLED interaction code for actor1.
inter2	Integer	ACLED	ACLED interaction code for actor2.
civilian_tag	Binary	Derived	1 if notes field contains keywords indicating civilian presence/targeting; 0 otherwise.
fatalities	Integer	ACLED	Minimum reported fatalities for the event.
notes	String	ACLED	Descriptive text of the event.
notes_polarity	Float	Derived	Sentiment polarity score of notes field, ranging from -1 (negative) to 1 (positive), calculated using VADER lexicon.
event_density	Float	Derived	Number of events within a 10km radius in the same month.

## B APPENDIX B: QUALITATIVE CODEBOOK EXCERPT

### CODE: DIGITAL PROOF

**Definition:** Conscious efforts to preserve digital content as evidence, often with explicit mention of future accountability or circumventing deletion. **Inclusion Criteria:** Mentions of archiving, saving copies, using specific techniques to avoid content removal, references to evidence for courts/investigations. **Exclusion Criteria:** Simply posting a video without commentary; general statements about documenting. **Example Quote:** "I'm uploading this to three different clouds. They can delete it from Twitter, but the evidence will remain."