

A photograph showing a group of people, including children, walking through a destroyed urban area in Gaza. In the background, there are large piles of rubble and debris from collapsed buildings. A utility pole with multiple wires stands on the right side of the frame. The sky is clear and blue.

Text Analysis of the Conflict in Gaza Reveals the Civilian Impact

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(https://github.com/klinares/airwars_scraping_project)

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Israel-Hamas Conflict, 1 Year Later

- **Background:** 10/7/2023, Hamas attacks Israel, killing 1,200 people, Israel retaliates. Estimated killed ~44,000.
- **Problem:** Hamas Ministry of Health (MoH) reports casualties, cannot be corroborated.
- **Claim:** “Women & children disproportionately killed” [UN-OHCHR](#)
- **Research Questions:** To what extent can open-source data be used to identify patterns in the targeting of Palestinian civilians in Gaza?



Methodology, Casualty Incidents

Data Source: [Airwars](#) tracks civilian incidents from conflicts.

1. Web Scrape: ~ 800 incidents (~9,000 deaths, ~10,000 injured) store in SQLite.

2. JSON Parse: incident characteristics & casualties. Women & children deaths 51%. Extract geocoordinates from “Assessment” (65% of incidents).

3. Reverse Geocoding: Submit incident coordinate queries to the [Nominatim API](#), keep location type.

4. Sentiment Analysis: Derive emotional tone from assessments. [DistilRoBERTa-base](#), classifies text into Ekman’s 6 basic emotions.

5. Clustering Analysis: Explore geographic w/ sentiment features to unpack geographic associations with child & women casualties.

The screenshot shows four separate incident cards from the Airwars website, each detailing a civilian casualty event in August 2024. Each card includes a summary table with details like date, location, strike status, and civilian impact.

Incident Date	Incident Code	Location	Summary
August 28, 2024	ISPT2280824r	In front of Al-Manafout School, Deir Al-Balah, Gaza Strip	On August 28, 2024, an alleged Israeli drone strike hit a group of civilians sheltering in front of Al-Manafout School in Deir al-Balah, Gaza Strip, killing at least ten civilians and injuring "dozens." The school was being used as a shelter for displaced persons. Initial reports claimed seven people were killed.
August 24, 2024	ISPT2280824l	A school sheltering displaced people in Deir Al-Balah, Gaza Strip	While seeking shelter in a school located in Deir al-Balah, a woman was reportedly injured by an alleged Israeli sniper shortly before 3:15 PM on August 24th, 2024. Many sources such as the Palestinian Refugee Portal and the Palestine Post reported on the sniper shooting, however a...
August 22, 2024	ISPT2280824o	School housing displaced people near Al-Aqsa Martyrs Hospital, Deir al-Balah, Gaza strip, Deir al-Balah, the Gaza Strip	Two people, one of them Ramiz Madhat Abu Ajna "Abu Madhat," were killed by an alleged Israeli quadcopter drone that fired shots at a school housing displaced people in Deir al-Balah on August 22nd, 2024. Multiple sources—SafaTV Breaking, AJA Palestine, Voice of Palestine Radio,...

The screenshot shows a detailed assessment of a May 2024 incident, specifically focusing on the Al-Zaytoun neighborhood in Gaza City. It includes a summary table and a list of sources from various social media platforms.

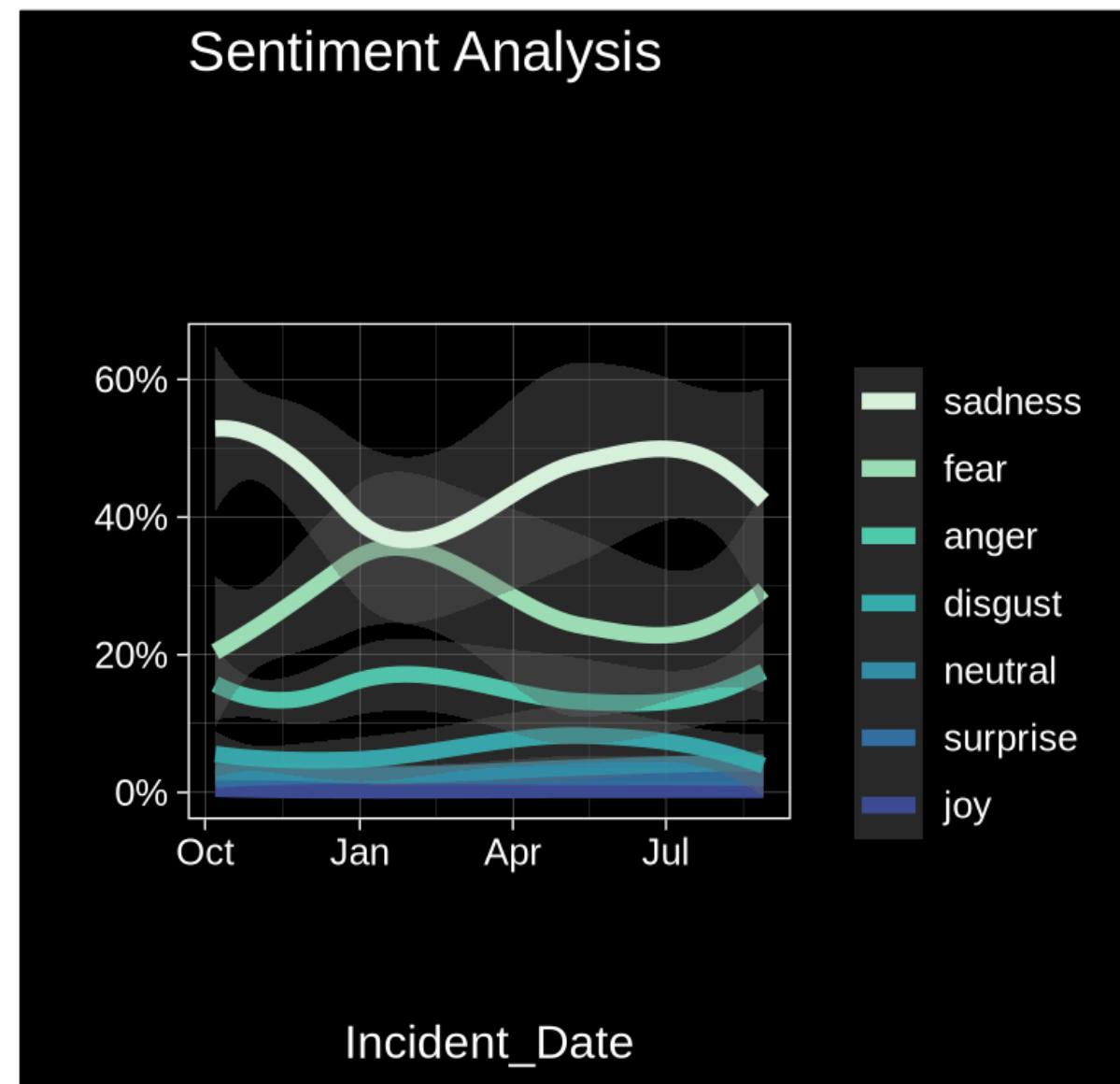
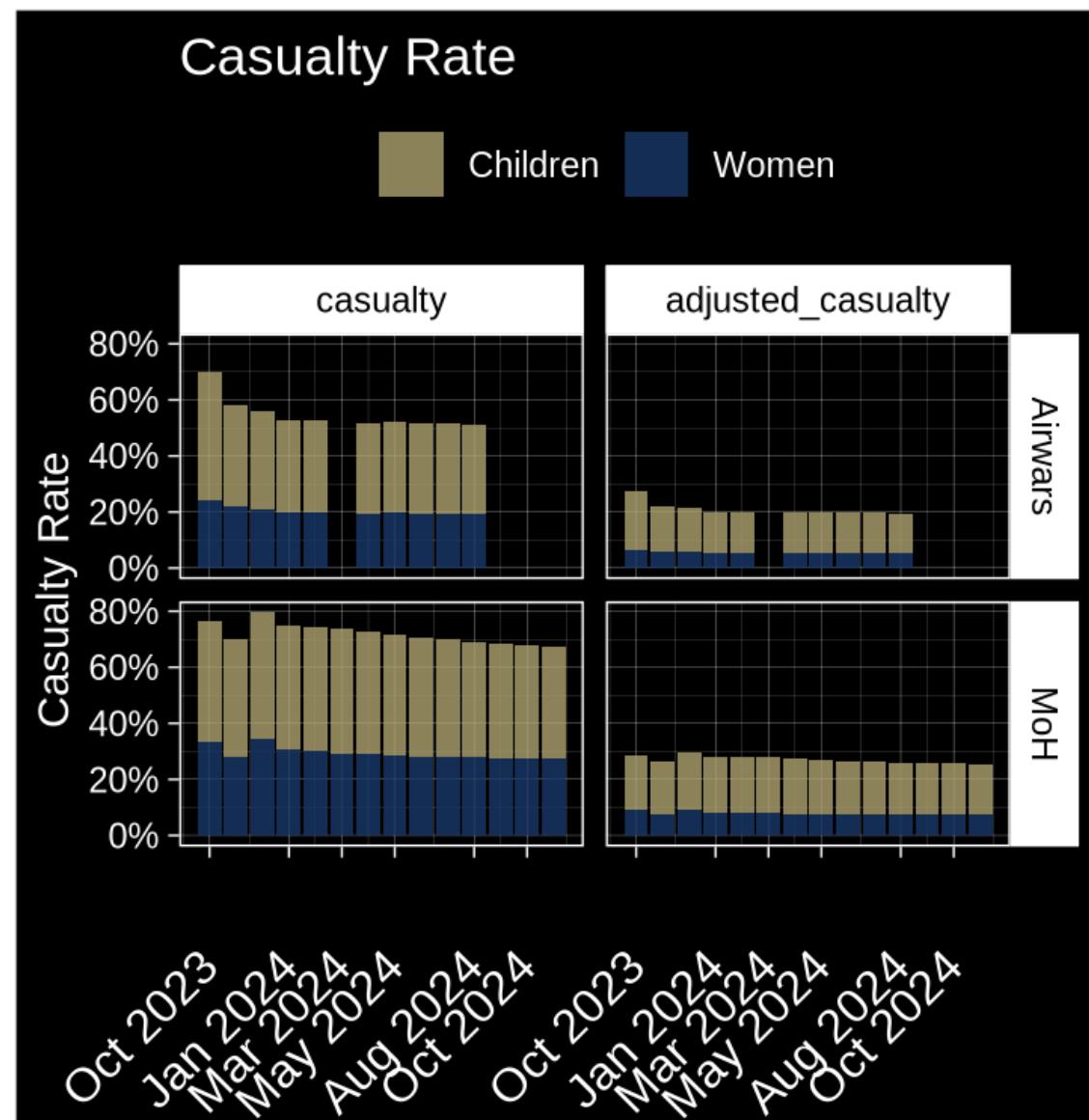
Incident Date	Incident Code	Location	Summary
May 12, 2024	ISPT120824j	Daloul building in the al-Zaytoun neighborhood, southeast of Gaza City, Gaza, the Gaza Strip	On Sunday, May 12th 2024, at least 39 civilians from at least five different families were killed and dozens were reportedly injured, including very young children, in an alleged Israeli airstrike that struck the Daloul building, on Street 8, in the al-Zaytoun neighbourhood in Gaza city in the Gaza Strip.

Sources (12) [↑ collapse]

- @AlhawayhChannel TWITTER, ARABIC ⚡ Archive
- Tasneen.hussam FACEBOOK, ARABIC ⚡ Archive
- Samar Hanouna FACEBOOK, ARABIC ⚡ Archive
- Asaad Mohammad FACEBOOK, ARABIC ⚡ Archive
- Alzaytoon2017 FACEBOOK, ARABIC ⚡ Archive
- Rami A A Daloul FACEBOOK, ARABIC ⚡ Archive
- Samar Hanouna FACEBOOK, ARABIC ⚡ Archive
- Abu Jihad Daloul FACEBOOK, ARABIC ⚡ Archive
- Amyl billah FACEBOOK, ARABIC ⚡ Archive
- Abu Jihad Daloul FACEBOOK, ARABIC ⚡ Archive
- Abdulla Daloul FACEBOOK, ARABIC ⚡ Archive
- Abu Jihad Daloul FACEBOOK, ARABIC ⚡ Archive

Results: Casualty Rate, Sentiment Analysis

- Children & Women not more likely to be killed, once adjusted for population size.
- Sadness is the prominent emotional tone, followed by fear, varies across time.



Results: Hierarchical Clustering

- 3-clusters.

