

MEMORY FROM BELOW: AN ETHNOHISTORY OF DISASTER IN DIGITAL ARCHIVES ON THE ACEH TSUNAMI, THE PADANG EARTHQUAKE, AND THE MERAPI ERUPTION

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ABSTRACT

This article examines the representation of community disaster memory in community-based digital archives, particularly personal and community blogs, through an ethnohistorical and public history framework. It analyzes how disaster memory is represented, how these archives function as spaces of public history in shaping collective memory, and how they connect past experience with contextual and sustainable disaster mitigation practices. Using a qualitative approach, the study combines web-based data collection with interpretive narrative analysis of digital narratives concerning three major disasters in Indonesia: the Aceh Tsunami (2004), the Padang Earthquake (2009), and the Merapi Eruption (2010). Of 42 initial entries, 28 sources, comprising personal blogs, community websites, and media articles based on firsthand testimony, met the criteria for community narratives and formed the primary corpus. Personal and community blogs dominate the corpus (61%), indicating that disaster memory emerges largely "from below" rather than from official institutions. Seven recurring narrative themes were identified, with solidarity and mutual cooperation (gotong royong) (59.5%) and trauma-anxiety (57.1%) the most prominent, although patterns varied by disaster type. The study identifies five roles of digital archives in linking collective memory to mitigation: memory preservation, a knowledge base for mitigation, a space for public participation, a bridge between local knowledge and formal policy, and an instrument of advocacy and accountability. The findings suggest that community digital archives constitute an alternative historiography of "history from below" with considerable potential for context-based mitigation. However, their subjective and vulnerable nature, as an "inverted archive," requires critical use.

Keywords: Digital archive, local community, ethnohistory, public history, collective memory.

INTRODUCTION

Major natural disasters that have occurred in Indonesia, such as the 2004 Aceh Tsunami, the 2009 Padang Earthquake, and the 2010 eruption of Mount Merapi in Yogyakarta, have left not only physical destruction and loss of life but also a collective memory that continues to live on among the survivors who experienced them. Not a few

survivors have experienced post-disaster trauma (Wati et al., 2020). Others have sought to preserve the memory of loved ones who have passed away through disaster monuments (Rahman et al., 2023). In the digital era, such memories are not merely preserved in the form of orally transmitted tradition, but are also documented and widely disseminated through internet-based media such as personal blogs, community websites, and online opinion columns written directly by disaster victims. This phenomenon has transformed disaster into a participatory site of memory, where anyone—including those affected—can post testimonies and recollections of the disaster through text, images, or video, thereby expanding the scope of traditional media archives (Haskins, 2018; Recuber, 2012). This phenomenon has made post-disaster digital archives a new medium for the community's experience, trauma, and interpretation of the disaster experienced. This simultaneously opens up space for ethnohistorical studies of local communities to trace how such collective memory is formed and maintained in post-disaster digital archives.

Disaster itself is a historical event that shapes community identity and memory. The collective memory held by affected communities reinforces particular values and identities (Amanda et al., 2026), such as the formation of the “Desa Bulak Baru” (New Bulak Village) identity following the relocation of residents due to recurrent disasters in Desa Bulak (Jazli & Wuryani, 2020). Meanwhile, disaster-related knowledge is transmitted by local communities through various, often informal, channels, such as oral narratives, ritual practices, and community archives. The Smong tradition in Aceh is internalized through various oral genres, such as *mananga-nanga*, *manafi-nafi*, and *nandong* (Ramli et al., 2024). Transmission through ritual practice is demonstrated by the indigenous Dayak Kanayatn community in West Kalimantan through the Nyangahatn ritual. This ritual has been interpreted by Magiman et al. (2021) as environmental governance mitigation knowledge. Community archives, such as the oral history archive in Yogyakarta, document the experiences of 2006 earthquake survivors through interviews. This documentation serves not only to preserve survivors' testimonies, but also to make the disaster experience accessible to members of the public who did not directly experience the event (Bramantya et al., 2024).

In conventional disaster historiography, the community perspective is often limited. According to Prawoto and Octavia (Prawoto & Octavia, 2021), it is important to preserve local stories and community memory as a means of transmitting disaster knowledge across generations and developing disaster education that is aligned with local culture (Prawoto & Octavia, 2021). The writing of disaster history needs to integrate non-mainstream sources, such as oral traditions, cultural practices, manuscripts, and community archives. These sources can broaden the understanding of disaster experiences from the perspective of affected communities. Oral traditions and local knowledge can function as a medium of communication and disaster mitigation, provided they are critically examined and integrated with scientific knowledge (Anwar et al., 2023; Fakhriati et al., 2023). Ultimately, disaster history narratives are not only about community vulnerability but also depict community capacity, resilience, and agency in confronting disaster (Tulius, 2020).

Thus far, studies on disaster history in Indonesia have remained limited to structural-technocratic approaches, in which the focus of study is confined to post-disaster institutional mitigation (Djalante & Garschagen, 2017; Nofharina Lutfiah et al., 2025; Yulianto et al., 2021) and disaster policy (Ayuningtyas et al., 2021; Bangkara et al., 2022; Lassa, 2013). Studies focusing on the emic perspective of affected local communities have not been extensively examined. Only a few studies discuss disaster by positioning local communities as the subject, and some of these are not empirical historical studies but rather conceptual-philosophical works (Alwi et al., 2017; Narny et al., 2025). Furthermore, existing studies have also rarely addressed the digital medium as a space in which the emic perspective can be found, even though personal blogs, websites, and opinion columns hold considerable potential as ethnohistorical sources containing emic experiences of disaster. This article therefore seeks to explore this largely untouched avenue as an effort at bridging the gap between the abundance of digital data produced by communities and the still-limited ethnohistorical study of that data. Operationally, the two frameworks are integrated in two linked layers of analysis. Ethnohistory supplies the source critical and interpretive layer: each digital narrative is read as an emic account situated in its author's position, time of writing, and local setting, and its themes, symbols, and cultural practices are coded inductively. Public history supplies the second layer: the same narratives are examined as public memory, that is, who produced them, for which audience and on which platform, and whether they work as spaces of shared authority (Buhle & Frisch, 1991) that connect community experience with public knowledge and mitigation practice.

The novelty of this research lies in its effort to combine two important frameworks in social humanities studies: ethnohistory and digital archives, in order to examine the phenomenon of disaster in Indonesia. Methodologically, this study differs from earlier digital-memory studies of disaster, which have mostly examined a single platform or a single case (e.g., Farinosi & Micalizzi, 2013), and from disaster-history studies that rely on official records, policy documents, or oral and ritual traditions gathered through fieldwork. Here, born-digital community narratives from three different disasters were purposively sampled and analyzed as ethnohistorical sources using source criticism and narrative interpretive analysis. Ethnohistory is used to reconstruct the collective memory and *local wisdom* of disaster-affected communities. This approach is useful for capturing the emic perspective of affected communities (McGregor, 2014) and this is relevant to what E.P. Thompson called "history from below" in his book "The Making of the English Working Class" (Thompson, 1963). Its forms are diverse, including oral narratives, myths, traditional mitigation rituals, and the ways in which communities give meaning to disasters passed down across generations. However, such knowledge and collective memory are not obtained through fieldwork as ethnographers typically conduct, but rather this study relies on internet-based findings. In other words, this is where the role of digital archives comes into play. Digital archives are present not merely as a supplementary data source but also as a cultural practice and a space for the production of history initiated directly by the community that experienced the disaster, thereby opening up new

perspectives for understanding how collective memory is formed, maintained, and passed down in the internet era.

The relevance of ethnohistory in this context lies in the expanded concept of sources that it offers. With its flexible methodology, this approach allows for the use of documents and ethnographic methods according to the suitability of each source (Harkin, 2010). Non-conventional sources are not merely a substitute for the absence of written sources, but can also convey meanings not apparent in official documents. Nevertheless, the use of non-conventional sources still requires source criticism. This requirement is consistent with ongoing debates within ethnohistory concerning its definition, the synthesis of history and anthropology, the expansion of the concept, and its ethical relevance (Chaves, 2008). In the study of collective memory, ethnohistory positions memory as a social practice that is continually reinterpreted, rather than merely as a static repository of facts, as demonstrated in the research of Rappaport (1994) and Mitton (2022). Collective memory can strengthen solidarity, but it can also become an arena for conflict, exclusion, or the ossification of identity. A strength-based decolonial approach can help position ancestral practices as forms of agency and resistance, rather than merely as vestiges of the past or objects to be documented (Joseph et al., 2021).

Collective memory is not a neutral copy of the past. It is formed through social interaction, rituals, narratives, places, objects, and institutions that give meaning to shared experience. The space one inhabits becomes a “place” imbued with physical, personal, and social meaning. Such stories are then transmitted to the second and third generations through various forms of activity (Greenberg & Greenberg, 2013). In post-disaster communities, the relationship between digital representation and the formation of community identity becomes highly relevant. Digital representation helps connect individual biography with urban history. Post-disaster community identity can also be shaped digitally, through *geotagging* of particular locations, individual posts that become part of a shared narrative, and representations of the past directed toward the future (Farinosi & Micalizzi, 2013).

A digital archive itself is a record that is born in digital format or converted into digital form, and is then preserved so that it can be reused as evidence and material for historical interpretation. This formulation is based on an operational definition compiled from several bodies of literature, such as Rodrigues (2021) and Brügger (2012). Digital archives can be classified according to their producers, forms, and communicative functions. First, personal blogs, which record the experiences and memories of individuals; second, community websites, which function as spaces for documenting activities and forming collective identity. Third are news pages with a citizen perspective that record events from a local point of view (Cocciolo, 2017; Nanni, 2019b).

Ian Milligan (Milligan, 2016) states that web archives present both opportunities and challenges for historians. Researchers have the opportunity to access traces of the lives of millions of non-elite individuals. Access to these voices is not entirely neutral, however, as it is shaped by disparities in internet use and archiving methods (Milligan, 2016). Milligan notes that the GeoCities archive, an everyday web-publishing platform

of the late 1990s and early 2000s, consisted of more than 38 million web pages (Milligan, 2016). Meanwhile, Müller (Müller, 2017), regards digital archives as serving two functions at once: as a repository of archival information and as a medium that engages living memory practices. Users are not merely readers but also “prosumers” who help create and share the archive's content. Digital archives can thus be understood as an interactive and participatory space of public history (Müller, 2017).

The digitization of sources and historical research practices has produced methodological consequences for historiography. According to Max Kemman (Kemman, 2020), understanding the life of 1990s society cannot be separated from an examination of their activities in online spaces (Kemman, 2020). The web also presents *born-digital* testimony in vast and varied quantities. This abundance of data likewise demands a more systematic process of selection, contextualization, and source criticism for historical study (Nanni, 2019a). Historical content on the web can be treated as part of a digital archive when understood through its *provenance* and context. This validity does not mean that all web content must be accepted as fact; rather, a more flexible form of source criticism is required, given the challenges the internet poses to authority, authenticity, validity, and verification (Allen-Robertson, 2011). In addition, attention must also be paid to the human and machine decisions involved in the formation of data (Hegarty, 2022). Relevance is not measured by popularity but by the capacity to convey the experience of groups directly affected by the event.

The objective of this study is to examine communitybased digital archives, namely personal blogs, community websites, and testimony-based media articles, as ethnohistorical and public history sources of disaster memory in Indonesia. Based on the background outlined above, this article is grounded in three fundamental questions that will be answered in the findings section. First, how do local communities represent their memories and experiences of disaster in post-disaster digital spaces? Second, how do these digital archives function as spaces of public history in the formation of collective memory? Third, how can community digital archives of history bridge past experience with contextual and sustainable disaster mitigation practices? To answer these three questions, the authors, through this research, mapped the narratives, symbols, and cultural practices contained within community-based digital archives and analyzed how these findings shape post-disaster collective memory. The implications of using these digital archives are then formulated as a means of strengthening the contribution of ethnohistory and public history in building disaster mitigation efforts grounded in local experience.

RESEARCH METHOD

This research employs a qualitative approach within an ethnohistorical framework based on the study of digital archives. This approach was chosen because ethnohistory accommodates the emic perspective of local communities affected by disaster events. Digital archives, meanwhile, are positioned as the primary data source rather than merely as a supplement to other primary data. The object of this research consists of three major disaster cases that have occurred in Indonesia, namely: the 2004 Aceh Tsunami, as the

largest disaster in modern Indonesian history, with digital documentation from the early blogging era; the 2009 Padang Earthquake, as a unique case occurring in an urban center with an active digital community; and the 2010 eruption of Mount Merapi, as a recurrent disaster with layered community memory across various eruption periods. Data sources are limited to websites, particularly personal blogs, community blogs, and news channels that contain emic narratives from survivors and parties involved with the disaster and its aftermath.

The data collection process was carried out using the *web-based data collection* (Rogers, 2015) technique, which consists of three stages. The first stage was source mapping, carried out over two months. This stage involved a manual search using the Google search engine with a combination of thematic and temporal keywords, as presented in Table 1. The inclusion criteria comprised content produced directly by affected individuals or communities, as well as parties directly involved, with a publication range of no more than 20 years after the disaster. This two decade window was chosen to capture both contemporaneous testimonies and later retrospective or commemorative accounts, such as those published around anniversaries, which still convey firsthand experience. The exclusion criteria, meanwhile, covered official government reports, mass media coverage without a community perspective, and content without a clear author identity.

The second stage was data collection and recording, carried out over two months. Every archive meeting the criteria was recorded in a structured worksheet (*googlesheet*) and saved in the form of a *screenshot* or PDF, as a precaution against the loss of content from the internet. Each recorded entry was then assessed through four source criticism checks. First, authorship. The author's identity and position (survivor, family member, volunteer, or journalist quoting a witness) had to be identifiable. Second, authenticity. The internal consistency of the account (dates, times, places, and sequence of events) was compared with the documented chronology of each disaster and with other narratives in the corpus. Third, provenance. The original URL, platform, and publication date were archived as a screenshot or PDF so that the version analyzed can be verified. Fourth, contextual reliability. The purpose and intended audience of the text, the temporal distance between event and writing, and editorial mediation (for media and organizational websites) were noted, so that each narrative is read as a situated and subjective account rather than a neutral record, in line with the flexible source criticism recommended for web sources (Allen-Robertson, 2011; Brügger, 2012; Milligan, 2016).

Each piece of data was grouped according to its disaster case using the following codes: "ACH" for the Aceh Tsunami case, "PDG" for the Padang Earthquake disaster, and "MRP" for the Yogyakarta Merapi Eruption disaster. The third stage was data curation and classification, carried out over one and a half months. In this stage, data were filtered based on relevance and quality, then classified into a curation table according to disaster case, data type, theme, and time period, as presented in the "Results and Discussion" section.

Table 1. List of Thematic Keywords Used in the Data Search

Aceh Tsunami (2004)	Padang Earthquake (2009)	Merapi Eruption, Yogyakarta (2010)
ACH-001 “Aceh Tsunami 2004 residents' stories blogspot 2000s era”	PDG-001 “Testimony stories of Padang earthquake 2009 victims”	MRP-001, MRP-004, MRP-005 “economic life and livelihoods of residents after the 2010 Merapi eruption blogspot”
ACH-002 “Personal blog Aceh tsunami 2004”	PDG-002 “Minangkabau earthquake 2009 residents' testimony”	MRP-002, MRP-003, MRP-007, MRP-008, MRP-011, MRP-012, MRP-015
ACH-003 “Personal experience story of an Aceh tsunami 2004 victim”	PDG-003 “Padang earthquake 2009 residents' testimony blogspot”	“residents' blog on the experience of displacement and evacuation, Merapi 2010, blogspot.com”
ACH-004 “Story of the Aceh tsunami 2004, personal blog”	PDG-004 “Padang earthquake 2009 residents' story, wordpress”	MRP-006, MRP-020 “residents' blog on community life and recovery after the 2010 Merapi eruption”
ACH-005 “Personal experience story of an Aceh tsunami 2004 victim”	PDG-005 “Padang earthquake 2009 personal story (snowball)”	MRP-010 “student's experience after the 2010 Merapi eruption, blog”
ACH-006 “Story of an Aceh tsunami 2004 survivor, 2000s-era website”	PDG-006, PDG-011 “residents' blog on victims' experiences during the 2009 Padang earthquake”	MRP-013, MRP-016, MRP-017, MRP-018, MRP-019, MRP-021 “Merapi disaster volunteer blog, experiences and humanitarian activities, Merapi 2010, blogspot”
ACH-007; ACH-008 “Aceh tsunami 2004 residents' story blog”	PDG-007, PDG-008, PDG-009, PDG-010 “blog on volunteers' experiences helping 2009 Padang earthquake victims, blogspot.com”	MRP-014 “community and environmental conditions after the 2010 Merapi eruption, blogspot”
ACH-009; ACH-010 “Stories of Aceh tsunami 2004 survivors”		

Source: data processed by the author team, 2026

The collected data were subsequently analyzed through two stages. The first stage, narrative analysis, was used to examine how a narrative is constructed, whose voices are represented within it, and what patterns or themes frequently emerge in the data. Coding was inductive and iterative. During data curation, the entries were read in full and passages describing the disaster experience, the narrator's position, and recurring symbols or metaphors were labeled in the worksheet. The initial labels, which yielded 13 thematic variants, were compared within and across the three cases and consolidated into seven principal themes on the basis of conceptual similarity and recurrence in more than one case; variants that appeared in a single case only were treated as context specific and excluded from the cross case frequencies. An entry was counted under a theme when the theme was explicit in the text, and one entry could carry more than one theme. The frequencies reported in the Results refer only to the 28 source primary corpus.

The findings reveal that the recurring themes identified concern trauma, loss, solidarity, adaptation, recovery, and remembrance, as well as cultural symbols and metaphors appearing in residents' narratives. The second stage, interpretive analysis, involved an in-depth reading of the presented data through a set of relevant theories and concepts. At this stage, the researchers did not merely describe the narrative patterns that emerged, but sought to demonstrate what these data reflect. The analysis was directed toward how survivors' narratives relate to a broader socio-cultural context, and what implications can be drawn from them. Interpretive analysis thus serves to bridge the textual findings of the narrative stage with more conceptual meaning-making, so that the disaster narratives shared by survivor communities in digital spaces can be understood not merely as records of personal experience, but also as collective representations of trauma, memory, and the post-disaster recovery process.

RESULT AND DISCUSSION

Mapping Post Disaster Community Digital Archives Aceh Tsunami (2004)

A web search of published narratives concerning the 2004 Aceh Tsunami case identified ten source entries coded ACH-001 through ACH-010. From this total, the data were then sorted by prioritizing the fit between the narrative and the needs of the research, namely by focusing on narratives produced directly by those involved in the tsunami disaster, whether as victims, victims' families, volunteers, or local government officials. Eight data entries were successfully identified as representative data meeting the criteria for internet-based community narratives, while the remaining two entries did not fall into this category because they did not foreground the direct narrative of affected or involved parties. No clear personal survivor narrative was found in these two entries either. The details of the 8 data entries meeting the criteria can be seen in Table 2 below.

Table 2. Community Digital Archive Data on the Post-Disaster Aceh Tsunami (2004)

No	Archive Code	Platform/Site Type	Publication Year	Location	Main Theme
1	ACH-001	Feature Article	2007	Peurada	Trauma, solidarity, recovery
2	ACH-002	Personal Blog	2010	Ulee Lheue	Loss, trauma, recovery
3	ACH-003	Kemenag Aceh, Inmas Aceh	2013	Banda Aceh	Solidarity, recovery
4	ACH-004	Wordpress	2006	Banda Aceh	Solidarity, recovery
5	ACH-005	Impact Story (Article)	2013	Nangroe Aceh Darussalam	Identity, spirituality
6	ACH-007	Web Article (Story Sharing)	2011	Krueng Raya	Trauma, loss
7	ACH-008	Web Article (Story Sharing)	2016*	Banda Aceh, Peurada	Trauma, loss, spirituality

8	ACH-009	Serambinews (Mass Media)	2024	Desa Lambaro Skep, Banda Aceh	Trauma, loss, remembrance
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Source: Data processed from the team's data-collection worksheet, 2026

Padang Earthquake, West Sumatera (2009)

The search for the 2009 Padang Earthquake case identified a total of eleven source entries coded PDG-001 through PDG-011. From this total, the data were further filtered by selecting entries that met the criteria for representing direct narratives from affected communities or parties directly involved in the post-disaster period. The final result showed that 8 data entries met the criteria, while the remaining entries still consisted of fairly brief direct narratives without accompanying photographs as concrete evidence. The profiles of these eight data entries can be seen in Table 3 below.

Table 3. Community Digital Archive Data on the Post-Disaster Padang Earthquake (2009)

No	Archive Code	Platform/Site Type	Publication Year	Location	Main Theme
1	PDG-002	Serba-Serbi (General Article)	2020	Korong Lubuk Laweh, Padang	Trauma, loss, recovery
2	PDG-003	Blogspot	2010	Padang City	Trauma, solidarity, spirituality
3	PDG-004	Wordpress	2009	Padang City	Loss
4	PDG-005	Wordpress	2009	Padang City	Trauma, loss, identity
5	PDG-007	Personal blog	2009	Siteba, Padang; Hotel Ambacang	Solidarity and mutual cooperation, adaptation and recovery, social criticism
6	PDG-008	Personal blog on the Kompasiana platform	2013	Padang; Koto Tinggi, Pdg. Pariaman	Minangkabau Airport; Padang City
7	PDG-010	Civil society/religious organization website	2009	Bandara Minangkabau; Kota Padang	Solidarity and mutual cooperation, trauma and
8	PDG-011	National mass media with victim testimony	2026	Hotel Ambacang dan RS M.Djamil, Kota Padang, Sumbar	Trauma and loss, solidarity and mutual cooperation

Source: Data processed from the team's data-collection worksheet, 2026

Merapi Eruption, Yogyakarta (2010)

From the digital archive search on the Merapi Eruption case in Yogyakarta (2010), a total of 21 data entries were collected, coded MRP-001 through MRP-021. From this total, the data were then filtered again, selecting only 12 entries (see Table 4) that represent the perspectives of those involved in the disaster. That is, only narratives written directly by those who experienced the disaster or were directly involved in its aftermath, whether as victims, victims' families, or volunteers, were included. The profile details of these 12 data entries are summarized in Table 4 below.

Table 4. Community Digital Archive Data on the Post-Disaster Merapi Eruption, Yogyakarta (2010)

No	Archive Code	Platform/ Site Type	Publication Year	Location	Main Theme
1	MRP-007	Blog pribadi/komunitas lokal	2012	Sidorejo–Umbulharjo, Cangkringan, Sleman	Trauma and loss, solidarity and mutual cooperation, memory and remembrance
2	MRP-008	Personal/local community blog	2010	Sidorejo–Umbulharjo, Cangkringan, Sleman	Trauma and loss, solidarity and mutual cooperation
3	MRP-009	Personal blog on the Kompasiana platform	2015	Salam District, Magelang	Trauma and loss, solidarity and mutual cooperation, memory and remembrance
4	MRP-010	Educational/personal blog	2011	Cangkringan, Sleman (school environment)	Trauma and loss, solidarity and mutual cooperation, adaptation and recovery
5	MRP-011	PASAG Merapi local community blog	2012	Dusun Deles, Kemalang, Klaten	Solidarity and mutual cooperation, adaptation and recovery, social criticism
6	MRP-012	Personal blog	2010	Yogyakarta City	Trauma and loss, adaptation and recovery
7	MRP-013	Personal WordPress blog	2010	Kemalang & Keputran, Klaten	Solidarity and mutual cooperation, social criticism
8	MRP-014	Personal blog	2011	Umbulharjo–Kepuharjo, Cangkringan, Sleman	Trauma and loss, memory and remembrance, identity and spirituality

9	MRP-016	Personal Blog	2010	North Sleman (around UII)	Solidarity and mutual cooperation, trauma and loss
10	MRP-017	Volunteer experience column in national online media	2011	Yogyakarta City	Solidarity and mutual cooperation, adaptation and recovery
11	MRP-020	Personal blog/community companion	2010	Polengan & Kradenan, Magelang	Adaptation and recovery, social criticism, solidarity and mutual cooperation
12	MRP-021	Community/religious organization website	2010	Klaten & Sleman (posko & rusunawa)	Solidarity and mutual cooperation, adaptation and recovery, identity and spirituality

Source: Data processed from the team's data-collection worksheet, 2026

Overall, of the 42 entries collected during the data-collection stage for the three disaster themes that are the focus of this study, 28 entries (8 for the Aceh Tsunami, 8 for the Padang Earthquake, and 12 for the Merapi Eruption) met the criteria as internet-based post-disaster community narratives and formed the primary corpus for the analysis in the following sections. The fourteen entries not included in the main tables remain documented in the worksheet as supplementary data (see the link provided in the source information for each table above).

The dominance of data sourced from personal and community blogs shows that memory of these three disasters largely grows “from below,” rather than from official institutions. Although the data were, by design, limited to direct narratives from affected communities, this nonetheless demonstrates that collective memory of disaster also finds space in the digital realm and is dominated by grassroots narratives. This is consistent with the Zavala et al (2017)'s definition of community archives as an autonomous practice driven directly by the community. Collective memory is not individual memory; it is born of collective experience that is typically difficult for *outsider* to understand, because of differences in constitutive elements (Kekki, 2025). Digital spaces such as blogs and similar platforms enable survivors, volunteers, and affected residents—as owners of the collective memory of disaster—to write down their experiences without having to pass through the filtering of formal archival institutions or mainstream media. This also affirms Hoskins (2011, 2018), *connective turn*'s idea, in which there is an ontological shift concerning memory in the digital era. Memory is no longer solely inherited or archived in a conventional manner, but through everyday practices in cyberspace, in which everyone contributes to creating a connected archive that can be accessed anytime and anywhere (Hoskins, 2024).

In terms of platform typology among the 28 sources obtained, the majority (17 sources), or the equivalent of 61%, came from personal or community blogs, such as

Blogspot, WordPress, and Kompasiana. These blogs were written directly by survivors, volunteers, or affected residents directly involved with the disaster or its aftermath (e.g., MRP-007, PDG-003, ACH-002). The second category consists of local and national media articles as well as “story-sharing” columns/*impact story* columns, found in 8 sources (29%). This second category generally contains residents' testimonies re-recorded by journalists (e.g., MRP-017, PDG-002, ACH-001). Meanwhile, archives published by non-governmental organization (NGO) or religious organization websites were found in only three sources (11%), namely Wahdah Islamiyah (MRP-021), Tzu Chi (PDG-010), and the Aceh Ministry of Religious Affairs (Kemenag Aceh) (ACH-003).

The diversity of authorial positions within the collected data has also transformed the way disaster memory is formed and transmitted. Whereas memory was once predominantly transmitted orally, face to face exchange, commonly termed communicative memory, which persists only for as long as its bearers are alive, such memories become something more akin to cultural memory once they are uploaded onto digital platforms: stored, institutionalized, and retrievable, independent of the biological memory of the speaker or author. Rather than treating the two as strictly separate registers, however, recent scholarship frames them as overlapping repertoires of remembering that are increasingly entangled in digitally networked environments (Pentzold et al., 2023). The findings of this study can therefore also be described as mediated memory, in line with current work on how internet and social media platforms remake the ways memories are produced, shared, and preserved (Wang & Hoskins, 2025). Narratives, photographs, and videos of personal disaster experiences uploaded to digital spaces function as a link between individual and collective memory (Hammelburg, 2024). The boundaries between the private and public spheres subsequently become blurred (Han, 2023). In other words, the digital archive here is not merely a collection of digitized documents, but a medium that accelerates the transition of survivors' personal memory into part of the collective memory of the disaster.

The characteristics of the authors in this corpus fall into three main groups. First, direct victims or survivors who wrote about their personal experiences, such as Ismael and Ismail Isa in Padang (PDG-002; PDG-003) and Saiful and Yonathan in Aceh (ACH-002; ACH-005). Second, humanitarian volunteers writing from the perspective of first responders, such as PASAG Merapi volunteers (MRP-011), MER-C volunteer doctors (MRP-017), the Astacala SAR team (ACH-004), and PMI (Indonesian Red Cross) volunteers (ACH-003). Third, community figures and citizen journalists, including a fifth-grade student who authored an educational blog on Merapi (MRP-010). This diversity of authorial positions lends a multi-perspectival character to the digital archive data that is rarely found in official disaster documents.

These findings have implications for how disaster history is written and transmitted in the digital era. Whereas conventional disaster historiography relies on official government archives, reports from humanitarian organizations, or major media coverage, the corpus of community digital archives in this study points to an alternative pathway for writing history from a grassroots perspective. This is referred to as “history from

below,” a form of history writing that is more personal, plural, and multi-perspectival (Quataert, 2014). Unfortunately, this shift also brings new vulnerabilities. Hoskins (2018) asserts that connective archives in the digital era possess an inverted character (*inverted archive*). Whereas conventional archives are scarce, curated, neatly stored, centralized, and stable, digital archives are the opposite. Digital archives that are *limitless* and *accessible* make the historical data collected abundant, unmanaged, and scattered. Even risks such as uncertain duration, changes in *platform*, broken links, and the vulnerability of a narrative losing its original context due to a high level of uncontrolled intervention are matters that deserve renewed scrutiny (Moss et al., 2018). The mapping and classification efforts carried out in this study are therefore important, not only as a research method but also as a means of safeguarding the collective memory of disaster history narratives through the use of digital archives.

Representation of Disaster Experience and Memory

In order to obtain a more concrete picture of how disaster memory and experience are represented in digital archives, Table 5 below was compiled to present evidence in the form of blog screenshots together with narrative themes and content excerpts from 6 blogs of survivors or affected communities from the three disaster events that are the focus of this study. Each data entry in the table presents a screenshot as visual evidence of the archive's existence, accompanied by the blog's identification code, the dominant narrative theme, and relevant text excerpts representing the impression or narrative theme of the blog in question. Further details can be seen in Table 5 below.

Table 5. Representation of Disaster Experience and Memory in Digital Archives (Blogs)

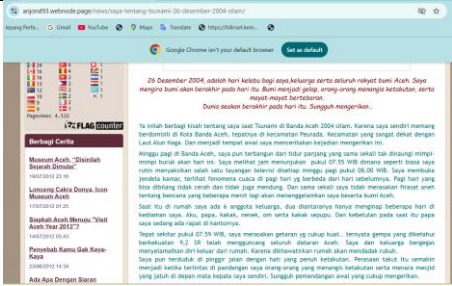
No	Disaster	Blog Screenshot	Theme and Blog Content Excerpt
1	Aceh Tsunami (2004)		Narrative theme: trauma and loss Quote (in Indonesian): <i>“Dan akhirnya gelombang raksasa itu telah menenggelamkan saya beserta seluruh orang yang berada di sekitar saya. Saya pun akhirnya harus terpisah dari genggaman papa, terombang-ambing dalam amukan gelombang Tsunami yg cukup tinggi...”</i>

Figure 1. Screenshot of Tsunami Survivor's Blog: ACH-008

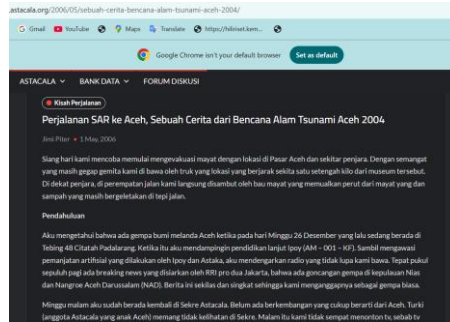


Figure 2. Screenshot of SAR Team Blog: ACH-004



Figure 3: Screenshot of Padang Earthquake Survivor's Blog: PDG-003



Figure 4. Screenshot of Padang Earthquake Survivor's Family Blog: PDG-005

Narrative theme: solidarity and recovery

Quote (in Indonesian):

“Mayat-mayat yang kami masukan ke dalam kantong dikumpulkan berjejer di tepi jalan. Kelompok yang diikuti berhasil mengevakuasi sebelas mayat. Mayat-mayat yang kami temukan sudah mulai rusak. Kulit mereka gampang sekali terkelupas dan cairan di dalam tubuh mereka mengeluarkan bau anyir dan busuk...”

Narrative theme: trauma, solidarity, and spirituality

Quote (in Indonesian):

“Takala aku ingin melaksanakan ruku’ yang pada rakaat yang kedua, terasa gegaran yang teramat kuat pada 5.16ptg (17.16) yang memaksakanku meloncat keluar secara spontan. Di luar rumah, mulai kedengaran hiruk pikuk tetangga yang menjerit dan menangis serta ada juga yang melembutkan keadaan dengan bertakbir, bertahmid dan berselawat.”

Narrative theme: trauma and anxiety

Quote (in Indonesian):

“Dari malam sampai pagi saya mencoba menghubungi kakak di Padang, tetapi tidak berhasil. Ternyata menurut laporan di TV semua saluran telekomunikasi di Padang putus..tus..tus. Listrik mati pula di sana karna jaringan PLN hancur. Keadaan benar-benar gelap gulita dan entah sampai kapan listrik bisa menyala lagi. Jadilah saya dari malam sampai siang hanya bisa menyaksikan tayangan langsung di TV...”

2 Padang Earthquake (2009)



“Dengan bantuan lima buah truk bantuan Polsek Kemalang kami memindahkan warga kami bersama ternaknya ke desa Manjung, Kecamatan Ngawen. Di desa ini kami diterima dengan tangan terbuka. Setiap pengungsi dipersilakan memilih rumah induk semang. Makanan disiapkan dengan menu sama seperti induk semang. Pengungsi anak-anak dijamin pendidikannya dan digabung ke kelas-kelas di sekolah dasar dan sekolah menengah setempat...””

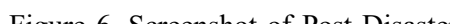


Figure 6. Screenshot of Post-Disaster Community Blog on the Merapi Eruption: MRP-011

3 Merapi Eruption (2010)

Source: Data processed from the team's data-collection worksheet, 2026

Table 5 above shows that, across the six blogs representing the three disaster cases (the Aceh tsunami, the Padang earthquake, and the Mount Merapi eruption in Yogyakarta), "trauma and anxiety" emerges as a significant theme that appears consistently in all three. A reading of all 28 entries that met the analytical criteria of this study further shows that narratives of trauma appear in at least one blog from each case (ACH-008, PDG-003, PDG-005, and MRP-008). These narratives are conveyed through concrete, embodied details, such as a narrator in Aceh who is torn from a father's grip and tossed about by the waves, a Padang resident forced out of the house in the middle of prayer, a family member who cannot reach a sister in Padang because telecommunications and electricity have failed, and a Merapi resident who hurriedly packs belongings while worrying about a mother who has not yet returned from the prayer room. By contrast, narratives of solidarity and recovery (ACH-004, PDG-003, and MRP-011) depict collective action: a SAR team evacuating bodies, neighbors easing tension through shared prayer, and villagers hosting evacuees and ensuring that their children can continue

schooling. In the Padang excerpt (PDG-003), the two registers meet, as fear and a collective turn to religious expression occur within the same passage.

Across all 28 entries (8 for Aceh, 8 for Padang, and 12 for Merapi), themes were counted from the Main Theme column of Tables 2–4; an entry labeled “trauma and loss” was counted under both Trauma and Anxiety and Loss. Solidarity and Mutual Cooperation and Trauma and Anxiety were the most frequent themes, each appearing in 18 of the 28 entries (64.3%), followed by Loss in 16 entries (57.1%) and Adaptation and Recovery in 13 entries (46.4%). Identity and Spirituality (6 entries; 21.4%), Social Criticism (4 entries; 14.3%), and Memory and Remembrance (4 entries; 14.3%) appeared less often. Because an entry can carry several themes, the percentages do not add up to 100%: each entry carries 2.8 themes on average, and 20 of the 28 entries (71.4%) carry three or more. Trauma and loss co-occur in 15 entries (53.6%), and solidarity and trauma in 10 entries (35.7%), so that in more than a third of the corpus suffering and mutual aid are narrated together rather than separately.

The distribution differs by case. In the Aceh and Padang archives, which concern sudden-onset disasters, Trauma and Anxiety was the most frequent theme (5 of 8 and 6 of 8 entries, respectively). In Aceh, solidarity (3 of 8 entries) appears mostly in accounts by volunteers and responders (ACH-003 and ACH-004), whereas the survivor's blog (ACH-008) centers on trauma and loss; in Padang, solidarity is more common (5 of 8 entries) and appears alongside trauma in four of them. In the Merapi archives, which concern an eruption that unfolded gradually with a protracted evacuation period, Solidarity and Mutual Cooperation was clearly the most frequent theme (10 of 12 entries; 83.3%), ahead of Trauma and Anxiety and Loss (7 of 12 each) and Adaptation and Recovery (6 of 12). Social Criticism also appears more often in Merapi (3 of 12 entries: MRP-011, MRP-013, and MRP-020) than in Padang (1 of 8: PDG-007) and not at all in Aceh, and Memory and Remembrance appears in 3 of 12 Merapi entries (MRP-007, MRP-009, and MRP-014) against 1 of 8 in Aceh (ACH-009) and none in Padang. Given the small number of entries per case, these differences should be read as tendencies within this corpus rather than as generalizations about all disaster narratives. Even so, they suggest that the temporal character and type of disaster event influence the character of the narratives recorded in community digital archives: shock and loss dominate accounts of sudden events, whereas the protracted evacuation in Merapi brings solidarity and, to a lesser extent, social criticism to the foreground.

These findings are consistent with Nazaruddin (2023) argument that officially curated disaster memory tends toward canonization, a process of narrative standardization that risks marginalizing personal survivor narratives deemed irrelevant to the dominant account. The blogs in this corpus, by contrast, preserve personal and sometimes dissonant voices, and they align with Zavala et al (2017a) and Hoskins, (2018) on the autonomy and fragility of community driven archives. They differ from Rahman et al (2023), whose ethnographic study of tsunami memorialization in Aceh centers on physical monuments, in that these archives are not tied to a single site and cover three disaster types. Unlike Carlton (2019) who discuss institution or project initiated archives, these archives arise

spontaneously, and unlike Evecen & Şimşek Arslan (2026), who analyze reactions to a single video, the corpus consists of long-form first-person accounts. Fontanella Pisa (2024) argues that memory remains effective only when actively reinterpreted, accordingly, blogs may remain at the "archive" pole of cultural memory unless communities or researchers reactivate them, so their mitigation role is conditional rather than automatic. Finally, the contrast between sudden-onset disasters (trauma dominant in Aceh and Padang) and the gradual Merapi eruption (solidarity and social criticism dominant) has not, to our knowledge, been reported in earlier studies of digital disaster memory and should be tested in further comparative research.

Read in this way, the blogs constitute a vernacular digital archive that provides space for the individual voices of survivors. This is relevant to the public history approach, which holds that history belongs not only to the state but also to communities and marginalized individuals. The data support the shared authority argument of Frisch (1989), but with a difference: authority is not shared through collaboration between historians and informants; it is exercised by the community itself, without professional mediation. Survivors thus act not as objects narrated by others but as active subjects of their own accounts, an emphasis on agency and emic perspective that intersects with the ethnohistorical approach (Anthropology News, 1965). Accordingly, the subjectivity of survivor narratives should not be regarded entirely as bias to be neutralized, but as primary data on how an event is experienced, remembered, and narrated by those who lived through it.

Nevertheless, representations of disaster experience in blogs or on the internet need to be read critically, given their highly personal and subjective nature. The narratives written are inseparable from individual interpretation, which is susceptible to emotion, personal interest, and an inherently subjective point of view—particularly when such narratives are then overgeneralized. The assumption that a personal narrative represents collective experience is an important issue that needs to be minimized (Errante, 2000). In addition, survivors' tendency to highlight certain aspects of their experience risks *selective memory*. This is problematic because such filtering occurs on psychological grounds (coping mechanisms) (Y. Zhang et al., 2018), social grounds (self-image), and other, often personal, interests (Hirszowicz & Neyman, 2007). This has implications for the degradation of a complete picture of events as a form of disaster history narrative, which should not only record emotional moments but also encompass the overall dynamics of the event. Even so, digital archives remain a valuable resource that can be used to capture the voices and experiences of disaster survivors from an emic perspective; naturally, however, a critical and reflective stance is required in both historical writing and academic study.

The Role of Digital Archives in Bridging Collective Memory and Disaster Mitigation Practices

Digital archives do not merely function as storage repositories that digitally collect disaster-related data; they also occupy a strategic position in connecting the collective

memory held by communities with disaster mitigation practices. A study by Boret & Shibayama (2016) conducted in Japan shows that collecting the collective memory of victims and eyewitnesses in digital form can be used as a knowledge base for formulating mitigation policy. Digital archives accommodate the testimonies of victims and involved witnesses in order to reveal perspectives that may not be covered in dominant historical narratives about disaster (Hogervorst, 2019). In addition, digital archives also mobilize collective memory as a basis for resilience (*resilience*). Digital archives have the potential to encourage active outreach and the mobilization of local communities to build models of disaster resilience (Carlton, 2016). In other words, the process involves community engagement in collecting historical narratives, thereby building a social network that can serve as a form of resilience capital for the community in facing future disasters.

From this research, five important roles of digital archives in bridging collective memory and mitigation practice can be summarized. First, as a medium for the preservation and recovery of collective memory. Survivors' stories shared in cyberspace can serve as an important record that can be accessed and reactivated by future generations. Memories that were originally personal and easily fragmented can be gathered into a unified narrative that can be accessed repeatedly, thereby preventing the occurrence of *collective forgetting* with respect to past disaster events. Second, as a source of learning and a knowledge base for mitigation. As defined, mitigation is an effort to reduce disaster risk, which can be carried out through physical development, awareness-raising, or the enhancement of understanding in facing threats (Indriana et al., 2024); digital archives can therefore serve as one empirical basis that can be drawn upon as learning capital.

Third, as a space for public participation in producing disaster-related knowledge. Digital archive platforms open opportunities for anyone, including members of the public across all strata of society, to contribute to documenting their experiences and what they have witnessed. This is referred to as *crowdsourced archiving* or, in the terminology of historian Michael Frisch, "Shared Authority." This concept, derived from oral history, emphasizes that historical narrative is not entirely controlled by professional historians but is shared with informants and the public (Buhle & Frisch, 1991). Fourth, as a bridge between local knowledge and formal policy. Mitigation policy, which is typically technocratic in nature, often overlooks the humanistic aspects of human experience. Digital archives become a vessel that accommodates human experience—from natural signs to local disaster-related knowledge—making it more readily accessible to policymakers. Fifth, as an instrument of advocacy and accountability. Digital platforms not only capture disaster experience but can also serve as a monitoring tool for tracking government response and policy on disaster. This helps accelerate improvements as well as future mitigation efforts.

Taken together, the seven narrative themes and the five archival roles extend previous studies in three respects. First, earlier research has examined disaster archives and memorial initiatives mainly as sites of commemoration or as platforms within specific national or event contexts (Acker & Flamm, 2021; Gerster & Maly, 2022), and has

discussed their role in disaster risk reduction chiefly in terms of lesson transmission and disaster education, largely in Japan (Ono et al., 2021) the seven recurring themes offer an empirically grounded typology of survivor produced narratives across three Indonesian disasters. Second, the variation of these themes by disaster type, with trauma more prominent in sudden onset events and solidarity and social criticism more prominent in the protracted Merapi eruption, shows that the temporal character of an event shapes what communities record, a comparison that is rarely made in studies of digital disaster memory. Third, the five roles link archival, public history, and mitigation perspectives in a single framework that specifies how community narratives can serve as a knowledge base for mitigation, rather than only as memorials or testimony.

Beyond the three disasters examined in this article, the findings carry broader value for the development of community based digital archives, public history, and to some extent, the field of disaster migration practice. For community based digital archives, the seven narrative themes and five archival roles can serve as an initial framework for deciding what to collect and how to organize it, which matters because community documentation is often scattered across personal photographs, messaging applications, and administrative records and is rarely consolidated into a shared archive (Wahyuni et al., 2026). The participatory approach here is consistent with evidence that collaborative documenting, storytelling, and memory-making can build connectivity and resilience in communities facing crisis (Bushey, 2023). For public history, the results show that survivor produced narratives record experiential, emotional, and social knowledge that is largely absent from official accounts, which supports the principle of “shared authority” (Frisch, 1989) in which communities co-produce the historical record rather than merely supplying testimony. For mitigation practice, the five roles suggest that archives can be used as learning resources in disaster education and in the transmission of local lessons (Uchiyama et al., 2026). Furthermore, archival and memorial practices contribute to disaster risk reduction when memory is actively transmitted rather than only preserved (Fontanella Pisa, 2024; X. Zhang & Izumi, 2024). These implications are not limited to the three cases studied. The framework can be adapted to other hazards provided that local context, ownership, and access arrangements are negotiated with the communities concerned. Future research should test the framework in other regions and hazard types and examine whether such archives improve preparedness.

CONCLUSION

This research shows that the digital era has fundamentally changed how disaster memory is recorded, produced, and transmitted. Analyzing three of the most traumatic disasters in Indonesian history, such as the 2004 Aceh Tsunami, the 2009 Padang Earthquake, and the 2010 Merapi Eruption. 28 of 42 data entries were presented as representative findings, with personal and community blogs dominating the sources (61%). This indicates that collective memory of disaster in digital spaces is largely driven autonomously by communities, reflecting a shift from orally transmitted memory to mediated memory (connective turn). Seven principal themes were mapped, of which

solidarity mutual cooperation and trauma-anxiety were the most prominent: sudden-onset disasters such as tsunamis and earthquakes tend to elicit trauma narratives, whereas gradual ones such as the Merapi Eruption elicit more stories of solidarity and social criticism. From an emic, ethnohistorical perspective, these digital archives allow survivors to speak as active agents rather than as objects narrated by others, and they help connect collective memory with contextually appropriate and sustainable disaster mitigation. Nevertheless, their subjective character, the risk of data overabundance and loss of context, the digital divide, funding and infrastructure constraints, and non-neutral curation demand a critical and reflective stance in their use as historical sources or policy bases. Systematic mapping and classification are therefore needed so that post-disaster digital archives can preserve collective memory and serve as a space for the democratization of history from a grassroots perspective.

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