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Comparative analysis of digital practices related to cultural heritage on TikTok and Nostr

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This study examines how cultural heritage circulates and is reinterpreted on two contrasting digital ecosystems: TikTok, a highly algorithmic and centralized platform, and Nostr, a decentralized protocol based on open infrastructures. The research explores how people engage with heritage through these environments, focusing on the tensions between visibility and preservation, and the strategies they deploy to disseminate, reinterpret, and protect cultural assets. Using a mixed-methods approach, the study combines quantitative analysis of content flows, actors, and thematic patterns with qualitative digital ethnography that captures situated practices and discourses. Findings reveal two distinct logics of mediation: TikTok privileges brevity, emotional appeal, and replicability, favoring spectacularized representations of material heritage, while Nostr emphasizes persistence, traceability, and collaborative curation, enabling a more balanced presence of material, intangible, and natural heritage. These differences are not merely stylistic but infrastructural, shaping what becomes visible, how meanings are negotiated, and which forms of participation are possible. The analysis highlights how digital practices—ranging from viral challenges and memes to open-data initiatives and distributed archiving—operate as mechanisms of inclusion and cultural resistance. By comparing these two environments, the study contributes to understanding how platform governance and affordances influence cultural heritage in the digital age and suggests that strategies combining visibility and care are essential to sustain heritage as a common good in networked societies.

KEYWORDS

algorithmic governance, cultural heritage, digital practices, Nostr, TikTok, virtual ethnography

1 Introduction

Digitization and social platforms are reshaping how cultural heritage is appropriated and preserved. Technical infrastructures and algorithmic logics determine which heritage becomes visible, how it is narrated, and for what purposes it circulates; creating opportunities for civic engagement but also introducing risks to its protection. In this context, understanding how people engage with cultural heritage in digital environments is therefore crucial.

This study aims to compare how cultural heritage circulates on TikTok and Nostr, examining the tensions between visibility and care, as well as the strategies young actors employ to disseminate, reinterpret, and safeguard cultural assets in each environment. Three core questions guide the research: What quantitative patterns characterize heritage-related conversations on these platforms? What discursive repertoires and practices emerge in everyday interactions? And how do affordances and governance models shape meaning-making and the potential for collective action?

To address these questions, the article is organized into five sections. This introduction outlines the theoretical framework, reviewing debates on heritage digitization, algorithmic

governance, and digital practices. The following section details the mixed-methods design, combining quantitative analysis with digital ethnography. Results are presented in two parts: first, quantitative findings on dynamics, actors, and typologies; second, a qualitative analysis of practices, discourses, and mediations. The discussion interprets these findings considering the conceptual framework, and the article concludes by summarizing contributions, acknowledging limitations, and proposing future research directions.

1.1 Cultural heritage in the digital age: between spectacle and the right to memory

Cultural heritage has expanded beyond monuments and objects to include digital environments, as affirmed by UNESCO (2009, 2018). This expanded notion underscores the vulnerability of cultural resources—whether born-digital or converted from analog formats—exposed to technological obsolescence, dependence on private infrastructures, and loss of context (Wagner and de Clippele, 2023).

Digitization offers unprecedented opportunities for preservation and access. It enables the creation of backups, the generation of 3D reconstructions, immersive experiences, and the democratization of knowledge through open repositories (Herdrich, 2024; Buragohain et al., 2024), but also raises dilemmas of authenticity and integrity when preservation depends on commercial platforms. These questions recall what Bowker and Star (1999) termed the “politics of classification”: every standard, every protocol, and every technical decision organizes the cultural world, making some memories visible while silencing others. Digital preservation, therefore, is not merely a technical challenge but also a political and ethical one.

The infrastructural dimension is critical. In the heritage domain, this translates into interoperable systems, persistent identifiers, and standardized metadata that ensure traceability and long-term reuse (Europeana, 2024). Initiatives such as the Common European Data Space for Cultural Heritage aim to consolidate this ecosystem by promoting open standards and fostering collaboration among institutions, aggregators, and communities (Capurro and Severo, 2023). These policies not only safeguard preservation but also enable responsible circulation and innovation in the use of cultural data.

However, the digital age does more than preserve; it redefines visibility. Social media circulation turns heritage into content, subject to metrics and recommendation algorithms. This dynamic—often described as digital spectacularization—favors what can be condensed into short, visually striking formats, often at the expense of complexity or less photogenic heritage (Liang et al., 2021; Ginzarly and Teller, 2025). The risk is clear: the pursuit of visibility can lead to aesthetic homogenization, reducing cultural diversity to a repertoire of viral images.

At the same time, digitization and social networks have opened spaces for citizen participation in heritage management and dissemination. Communities increasingly use platforms to document, reinterpret, and advocate for cultural assets, generating new forms of social value (Giaccardi, 2012; Liang et al., 2021). Yet this openness coexists with rigid regulatory frameworks, and dependence on private infrastructures introduces risks of exclusion and data loss (Wagner and de Clippele, 2023).

The pandemic accelerated these dynamics, as museums paired online collections with social media and immersive formats to reach younger audiences; expanding access while heightening pressures to produce “engaging” content (Lupo et al., 2023; van Kesteren, 2023). This confirms that digitization is not neutral: it reshapes cultural hierarchies, redistributes expertise, and redefines what it means to “preserve” in a world where memory is also measured in clicks.

In short, cultural heritage in the digital era oscillates between two imperatives: achieving visibility in environments; and ensuring preservation within reliable infrastructures. Reconciling these requires robust public policies, open standards, and collaborative practices. This tension frames our comparative analysis of TikTok and Nostr in the sections that follow.

1.2 TikTok: algorithmic affordances and participatory culture

TikTok has consolidated itself as one of the most influential platforms shaping contemporary digital communication. Its design does not rely on networks of contacts but on a recommendation system that organizes visibility through the For You Page (FYP), where relevance depends on algorithmic signals rather than direct social ties (Gillespie, 2018). This design privileges formats that align with learned patterns of attention, shifting focus from the author to the performance of the content.

To understand how this architecture conditions action, the concept of affordance is useful. Introduced by Gibson (1979) to describe the possibilities for action an environment offers, it was adapted to social media by Treem and Leonardi (2012), who identified four key affordances: visibility, persistence, editability, and association. On TikTok, these dimensions take specific forms: visibility is structured around the FYP and engagement metrics; persistence extends to reusable sounds and templates; editability materializes in native editing tools; and association is enabled through features such as duets and stitches, which facilitate audiovisual responses and the construction of public chains (Treem and Leonardi, 2012).

Algorithmic governance is another central axis. As Bucher (2018) argues, algorithms are not neutral: they establish regimes of attention and define what appears as relevant. Gillespie (2018) adds that every platform moderates, combining rules, automation, and human labor. On TikTok, the promise of reach coexists with opacity: the criteria that determine circulation change constantly, and success depends both on conforming to formal conventions and on resonating with an affective grammar that the system learns and exploits. This affective dimension connects with what Papacharissi (2015) calls “affective publics”: collectives that coalesce around emotions and narratives rather than stable organizational structures. TikTok amplifies these publics by offering a syntax that facilitates immediate emotional connection: shared audio, visual hooks, and condensed narratives that invite response.

TikTok’s design also incentivizes replicability. Features such as sound reuse, filters, and templates turn imitation into a native mechanism of participation. Zulli and Zulli (2022) conceptualize this phenomenon as “imitation publics”: publics constituted through practices of imitation and remix. This logic not only amplifies circulation but also defines which formats are most visible: those that fit recognizable, easily reproducible patterns.

Two central tensions emerge from this landscape. The first lies between replicability and context: the more a piece of content fits a replicable template, the more easily it circulates; but at the cost of flattening nuance and stripping cultural materials of historical or technical depth (Shifman, 2014; Zulli and Zulli, 2022). The second opposes creative openness and algorithmic governance: where changing ranking and moderation rules set moving targets for participation (Papacharissi, 2015; Bucher, 2018).

In short, TikTok is not merely a space for entertainment: it is an algorithmic infrastructure that organizes visibility around replicability and affectivity. Its affordances—visibility, persistence, editability, and association—combined with the logic of the FYP, configure an ecosystem where creativity is optimized for circulation and participation is measured by alignment with replicable patterns. Understanding these conditions is key to analyzing how young people appropriate the platform to disseminate cultural content and contest meanings in an environment governed by metrics and algorithms.

1.3 Nostr: decentralization and the right to infrastructure

In an ecosystem dominated by centralized platforms, Nostr emerges as a radically different proposition: it is not a social network in the conventional sense but an open protocol that enables publishing and replicating messages without relying on a central server. Its minimalist design rests on two principles: cryptographic identities and independent relays that transmit signed events. This means there is no single authority controlling circulation, moderation, or archiving: each user can choose which client to use, which relay to operate, and how to manage their data. Unlike platforms where the experience is closed and governed by opaque algorithms, Nostr shifts decision-making to the margins, returning to local actors the capacity to configure the infrastructure (Wei and Tyson, 2024).

This shift is not only technical but also cultural and political. As Jasanoff and Kim (2015) argue, technologies embody “sociotechnical imaginaries”: collective visions of how social life should be organized and what values should guide it. Nostr materializes an imaginary that privileges autonomy, resistance to censorship, and identity portability. In this sense, the protocol does more than solve a technical problem: it proposes an alternative way of organizing the digital public sphere.

To grasp its significance, the concept of the “right to infrastructure,” formulated by Corsín Jiménez (2014) frames participation as the capacity to access, modify, and sustain the very systems of communication. Nostr embodies this logic: anyone can run a relay, develop a client, or replicate data without asking permission. Against the algorithmic opacity and data capture that characterize centralized platforms (Mejías and Couldry, 2019; Zuboff, 2019), Nostr advocates an active reappropriation of the technical medium as a strategy for autonomy.

Intervening at the protocol level—not just at the content level—is therefore a form of resistance: changing the material rules that govern circulation and memory. Nostr does not eliminate the need for governance but redistributes it. Each relay defines its policies, each client decides what to display, and coordination emerges from local practices rather than global algorithms (Gehl and Zulli, 2023).

This model enables communicative sovereignty but raises sustainability and moderation challenges. Recent studies show that

while Nostr achieves a notable degree of decentralization, it faces risks of overload and fragmentation unless shared strategies for replication and interoperability are developed (Wei and Tyson, 2024). Here lies a critical debate about how to guarantee openness without sacrificing stability, and how to articulate standards that connect this infrastructure with long-term cultural preservation practices.

Ultimately, Nostr is not just a technical innovation, it is a counter-infrastructure that challenges the dominant model of social networking. If platforms have naturalized the idea that interaction must be mediated by algorithms maximizing engagement, Nostr proposes a space where visibility is not pre-scripted by a prescriptive feed. This difference resonates with discussions on algorithmic resistance: while in centralized environments the only option is to adapt to opaque rules, in open architectures resistance is exercised at the level of design; through forking, replication, and infrastructural modulation. Thus, the right to infrastructure is not an abstract slogan but a concrete practice that redefines what it means to participate in the digital sphere: not only producing content but also intervening in the material conditions that make it possible.

1.4 Digital practices: discourses and strategies

We define digital practices on social networks as the set of recurring actions through which people create meaning, relate to others, and sustain community continuity (Lacasa, 2023). In this study, we focus on digital practices that contribute to the circulation and safeguarding of cultural heritage, particularly through short, recognizable, and reusable formats that users employ to narrate what they consider valuable.

To analyze them operationally, we distinguish between discourses—shared ways of saying and strategies—ways of doing. As discourses, these repertoires condense cues that allow many to participate without prior coordination; as strategies, they organize time, exposure, and belonging (Lacasa et al., 2017). Three families dominate today’s social media repertoire and are particularly fertile for heritage dissemination and care: challenges, memes, and viral content.

Challenges operate as collective scripts: they establish a simple prompt—show, recreate, compare—and open a space for each participant to contribute their version. Their power lies in their ability to convene and connect: they create a sense of shared event and make it easy for many to contribute without prior coordination. In cultural contexts, these dynamics turn documentation into a game of discovery, reducing solemnity and increasing accessibility (Ito et al., 2010). Play, in this sense, is not ancillary: it legitimizes experimentation, allows role-playing, and turns participation into a shared experience.

Memes are intertextual expressive formulas—templates, formats, phrases—that are recognized, parodied, and twisted. They are not isolated jokes but families: each variation adds nuance, irony, or local knowledge (Shifman, 2014). In relation to heritage, memes facilitate cultural translation: they turn symbols, landmarks, or expressions into formats the community recognizes and shares. These combinations show that memes are not mere entertainment: they are tools for negotiating meaning and activating conversation around issues that matter.

Virality is an environment of circulation where visibility depends on replicability and shared codes. For influencers, going viral does not simply mean getting numbers but entering the conversation: being present in a flow where others can respond, remix, and continue the chain (Boyd, 2014). This logic turns each piece into a starting point rather than a closed product. Thus, virality is not just an algorithmic effect: it is a social practice that people learn, adapt, and deploy in pursuit of their interests.

Taken together, challenges, memes, and virality are not decorative but mechanisms of inclusion that allow people to appropriate cultural references and project them in formats that circulate easily. These dynamics do not eliminate tensions—between visibility and context, humor and rigor—but offer creative solutions: translating without trivializing, caring without bureaucratizing, learning without formal schooling. When these digital practices incorporate simple routines of care and attribution, they leave traces that others can pick up, turning the ephemeral into shared memory. In this flexible persistence lies much of their value for the dissemination and protection of heritage in digital environments.

2 Materials and methods

This study compares how cultural heritage circulates and is reinterpreted in two ecosystems with distinct mediational grammars—TikTok and Nostr—combining comparable counts with situated observation. Research on cultural heritage and social media has rarely compared algorithmic platforms with decentralized protocols using a unified, mixed approach. We identify a gap in operational comparability—visibility, engagement, reach, and persistence—across asymmetrical infrastructures (de la Fuente and Lacasa, 2020). Our contribution is threefold: we propose explicit comparability criteria, combine comparable counts with digital ethnography to capture situated practices, and articulate implications for platform governance and preservation strategies (de la Fuente Prieto et al., 2020). By integrating quantitative mapping with scene-based analysis, the study clarifies how mediation logics condition what becomes visible and what endures.

The methodological approach is mixed: quantitative analysis provides a basic mapping of actors, typologies, and discursive intentions; qualitative analysis, framed as digital ethnography, enables an understanding of how these forms are produced and learned in practice (Hine, 2015; Pink et al., 2016; Boellstorff et al., 2012). This articulation responds to a dual need: a structured overview of user interactions and content formats, while maintaining the interpretive depth required by heritage studies in social media environments (Farné and Iranzo, 2020; Jiménez-Badillo et al., 2020).

2.1 Quantitative analysis

The quantitative component was designed to characterize, in comparable terms, heritage-related conversations on TikTok; a video-based platform governed by a recommendation system and on Nostr; a decentralized protocol whose circulation relies on independent clients and relays. The observation window spanned from January 1 to June 29, 2025, ensuring that the corpus captured a full semester, including sustained publication rhythms and occasional peaks. Data

collection on TikTok was carried out using the TikTok Research Tools, retrieving posts containing the keyword “*patrimonio*” in hashtags, descriptions, or metadata. For Nostr, the public index Nostr.band was used to filter posts by the same keyword and retrieve the HTML content of the notes. Keyword matching was case-insensitive and included hashtags, captions, and metadata fields. Diacritics were normalized and the exact query strings were stored in the log. All queries were documented with UTC date and time, tool version, parameters, and execution logs in accordance with principles of methodological transparency (Orellana and Sánchez, 2006; Jiménez-Badillo et al., 2020). Table 1 presents the general statistics of the data obtained.

Corpus sizes differ (TikTok: 177 videos; Nostr: 225 notes; 145 excluding bots/feeds). This asymmetry stems from infrastructural differences; platform endpoints and recommendation-centric visibility on TikTok versus protocol indexing and an automated redistribution layer on Nostr (bots/feeds). Our aim is comparative mapping (forms, actors, intentions) within a fixed period rather than population estimation; exhaustive keyword capture and documented filters ensure transparency and thematic saturation within the window.

Pre-processing steps were: (1) deduplication by identifier and exact string match; (2) time filter (UTC) to keep in-window items; (3) semantic disambiguation of “*patrimonio*” to exclude non-cultural uses; (4) bot/feed flagging on Nostr; (5) normalization (UTC timestamps, lowercased hashtags, URL encoding). We applied transparent coding rules: language was inferred via automatic detection with human verification in cases of code-switching, and probable country from toponyms, tags, and institutional references. Sender type was classified into mutually exclusive categories and, for Nostr, an additional bot/feed category. Heritage typology was coded as material, intangible, and natural and discursive intention into seven classes: neutral informative, dissemination/celebration, risk/alert, tourism promotion, mobilization/action, policy/governance, and commercial. The selection and use of these categories draw on established frameworks for digital content analysis and communication for social change (Seguí-Cosme and Nos-Aldás, 2017; Cantamutto, 2021; Farné and Iranzo, 2020; Gutiérrez Galindo, 2021).

TABLE 1 Descriptive statistics by platform (January–June 2025).

Dimension	TikTok	Nostr
Time window (analyzed)	2025-01-01–2025-06-29	2025-01-02–2025-06-29
Messages (raw scraping)	593	312
Messages (final corpus)	177	225 (145 without bots)
Unique users (authors)	171	73 (49 without bots)
Views (playCount, total)	63,889,608	—
Likes (digg, total)	4,738,320	—
Comments (total)	62,867	—
Shares (total)	535,555	—
Saves/collections (total)	391,816	—
Posts with ≥ 1 hashtag (n)	177	66 (61 without bots)
Total hashtags detected	3,717	369 (326 without bots)

Given the descriptive and comparative objective, statistical treatment focused on frequencies and percentages per variable, and on contingency tables enabling interpretive cross-tabulations; for example, typology by intention, sender type by intention, or probable country by platform. Results are reported for two universes on Nostr: (i) full corpus (including bots/feeds) and (ii) filtered subset (excluding bots/feeds); figure captions indicate which universe is shown. This repertoire of decisions—from keyword query to normalization and coding—was documented in Figure 1 to ensure methodological transparency and alignment with best practices in large-scale cultural data studies, while respecting ethical standards through the exclusion of personally identifiable information and non-public data (Orellana and Sánchez, 2006; Jiménez-Badillo et al., 2020).

2.2 Qualitative analysis

The qualitative component was conducted as digital ethnography strictly aligned with the quantitative window (January–June 2025, UTC). Profiles were discovered through keyword exploration (“*patrimonio*”), tag browsing, and limited snowballing from in-scope items. After evaluating between fifteen and twenty profiles per platform, systematic observation was carried out on twelve profiles—six on TikTok and six on Nostr; including some non-orthodox cases to problematize gray areas (e.g., urbex pieces or commercial integrations) and contrast practices that might otherwise be blurred in aggregate analysis (Kozinets, 2019). For each profile, posts, threads, and visible playlists were collected, and ethnographic memos (Brekelmans, 2024) were produced with empirical descriptions of routines (challenges, remix dynamics, curatorial practices), expressive resources (text, audio, editing, tagging), and use of affordances (For You Page, duet, and playlists on TikTok; clients, relays, and links to open repositories on Nostr). Table 2 lists the number and descriptions of the selected profiles.

Coding was performed in NVivo based on an initial scheme derived from the conceptual framework and refined inductively

during fieldwork. The code tree was structured along three axes: digital practices (e.g., challenges, memes, remix, and curation), discursive strategies (e.g., dissemination, celebration, risk alerts, mobilization, policy, and branding), and affordances (e.g., algorithmic visibility, native editing, replicability, decentralization, and federation). Systematic reading of each profile allowed building a thematic matrix consolidated by recurrence and analytical relevance; discursive saturation was reached when adding new cases did not alter the thematic structure (Braun and Clarke, 2006; Saldaña, 2021). Node management and argumentation relied on established procedures for computer-assisted qualitative analysis (Jackson and Bazeley, 2019), ensuring analytical rigor without retaining personally identifiable data, in line with ethical guidelines for online research (Hine, 2015; Hammersley and Atkinson, 2019; Pink et al., 2016).

Integration between quantitative and qualitative analysis occurred at two points. Quantitative patterns informed case coverage (breadth of repertoires and actor types) but did not alter the quantitative coding after cleaning and normalization. In interpretation, quantitative patterns—distribution of intentions, composition of senders, probable geography—were put in dialogue with scenes and routines described in memos, enabling validation of associations, mitigation of visibility biases, and identification of mediating mechanisms that explain why certain content circulates or is preserved in each environment (Farné and Iranzo, 2020; Gutiérrez Galindo, 2021).

2.3 Ethics and limitations

This study was conducted in compliance with the ethical standards required by Frontiers and institutional regulations. The research was approved by the Ethics Committee on Research and Animal Experimentation of the University of Alcalá (approval code CEIP/2025/6/171). All data analyzed were publicly available and accessed in accordance with the platforms’ terms of use. No interaction with users or collection of private information was involved. Identifiable elements such as usernames, profile pictures, or URLs

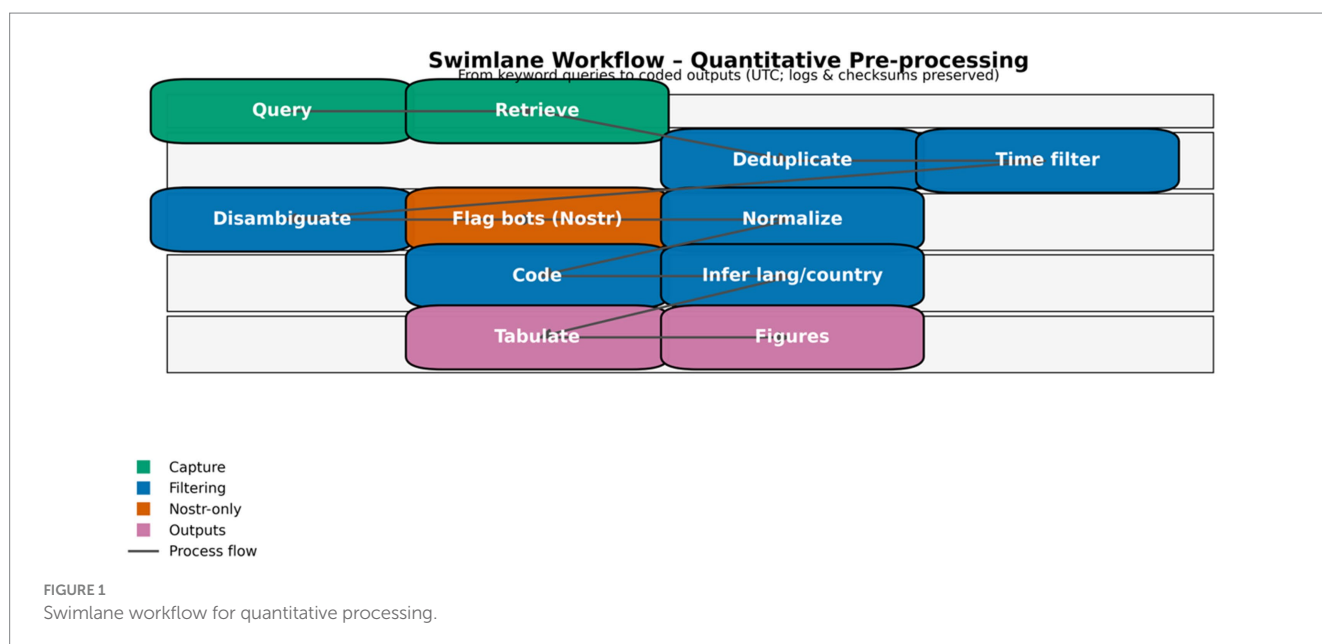


TABLE 2 TikTok and Nostr profiles chosen for the ethnographic study.

Platform	Profile	Description
TikTok	Creator A	Publishes short videos with cultural commentary and creative takes on everyday topics, often using humor and visual aesthetics.
TikTok	Creator B	Creates educational and entertaining content about art and cultural heritage, using memes and storytelling formats.
TikTok	Creator C	Shares lifestyle and cultural experiences, including travel and local traditions, often presented in a visually appealing vlog style.
TikTok	Creator D	Focuses on Andean culture and Quechua language, producing content that promotes indigenous heritage and rural life.
TikTok	Creator E	Shares creative craft videos (e.g., tufting, ceramics) while incorporating cultural references and traditions to highlight aspects of heritage.
TikTok	Creator F	Shares videos about urban exploration (urbex), showcasing abandoned or hidden spaces and linking them to cultural or historical narratives.
Nostr	User 1	Posts about digital humanities and cultural heritage, emphasizing open access and collaborative practices.
Nostr	User 2	Shares insights on manuscripts, archives, and preservation techniques, with a focus on historical knowledge.
Nostr	User 3	Discusses local heritage and archival materials, blending cultural commentary with personal perspectives.
Nostr	User 4	Advocates for open-source tools and creative approaches to historical research and cultural dissemination.
Nostr	User 5	Explores Sicilian heritage and urban history, highlighting architectural and cultural diversity.
Nostr	User 6	Engages in discussions about cultural activism and systemic critique, promoting inclusive and anti-oppression narratives.

have been anonymized in the manuscript. These measures ensure the protection of individuals while preserving the integrity of the analysis. The study aligns with the Association of Internet Researchers' Ethical Guidelines 3.0 and current best practices for research in digital environments, emphasizing transparency, accountability, and respect for user privacy (AoIR, 2019; Hammersley and Atkinson, 2019; Pink et al., 2016).

Achieving comparability between an algorithmic platform and a decentralized protocol entails limits that must be acknowledged. Using a single keyword ("*patrimonio*") may exclude discourses formulated with synonyms or local denominations, especially in intangible and natural domains (Seguí-Cosme and Nos-Aldás, 2017; Farné and Iranzo, 2020). There is also a structural asymmetry in metadata: TikTok offers detailed engagement metrics, while Nostr lacks homogeneous reach indicators; therefore, comparison focuses on content and authorship structures, not performance. Inferences about language, probable country, heritage typology, and discursive intention rely on heuristics that, although manually validated, may introduce marginal errors (Cantamutto, 2021; Gutiérrez Galindo, 2021). Nostr's dispersion across multiple clients and relays complicates uniform reach estimation without affecting the documentary validity of the analysis. Finally, the time frame limited to January–June 2025 does not capture full seasonal variations or design changes outside the period. These limitations do not invalidate the findings; they situate their interpretive scope and open the door to replications with longer windows and expanded lexical repertoires (Orellana and Sánchez, 2006; Jiménez-Badillo et al., 2020; Hine, 2015).

3 Results

The Results section presents findings organized into two complementary blocks. The first addresses the quantitative analysis, describing the composition of the corpus, temporal dynamics, distribution of actors, heritage typologies, and discursive intentions, as well as structural differences between TikTok and Nostr. The second develops the qualitative analysis, focusing on digital practices, discursive strategies, and the role of affordances in shaping meanings and enabling collective action. Both sections are read in dialogue,

offering a comparative perspective that illuminates tensions between visibility and preservation, as well as emerging forms of cultural participation in the digital age.

3.1 Quantitative study

The quantitative analysis provides an initial approach to the structure and dynamics of heritage-related conversations on TikTok and Nostr during the study period. Based on the cleaned corpus, it describes the basic dimensions of publication flows, actor composition, and the distribution of typologies and discursive intentions, as well as differences in temporality and visibility patterns that characterize each platform. These data allow us to draw a comparative map that serves as a basis for subsequent qualitative interpretation.

3.1.1 Corpus composition and temporal dynamics

The analyzed corpus comprises 225 posts on Nostr and 177 videos on TikTok, both distributed between January and June 2025. This temporal alignment makes it possible to observe how heritage conversations evolve in two environments with very different communicative logics: a federated network oriented toward syndication and textual exchange (Nostr) and a highly performative audiovisual platform (TikTok).

In terms of language, Nostr is characterized by a strong Ibero-Romance imprint: Spanish and Portuguese predominate, with minor presence of Italian and English. TikTok, by contrast, shows a hybrid pattern: although many videos originate in Spanish-speaking contexts, linguistic tagging reveals widespread use of English (eng-US), suggesting strategies for global visibility and adoption of international templates.

Regarding profile composition, Nostr incorporates a significant volume of media outlets and institutions, reinforced by the presence of bots and RSS feeds that redistribute informational content. This creates an ecosystem with high density of editorial and official messages, oriented toward updates and cultural agendas. TikTok, in turn, is structured around users and creators, with notable participation from cultural institutions and, to a lesser extent, public bodies.

Figure 2 (Weekly volume of posts, Jan–Jun 2025) illustrates the temporal evolution of content flows on both platforms. The gray line, corresponding to Nostr (including bots), shows a stable trend, with moderate oscillations and a gradual increase toward late June. By contrast, the blue line, representing TikTok, reveals a more volatile dynamic, with sharp peaks in late May and early June. These spikes coincide with moments of high cultural visibility (festivities, institutional campaigns, heritage controversies) and reflect the platform's ability to amplify contingent events through viral formats.

3.1.2 Actors and mediations: emission structures and visibility logics

The comparative analysis of senders reveals two clearly differentiated communicative architectures. On TikTok, heritage conversations revolve around individual users (36.2%) and cultural entities (27.1%), followed by creators/influencers (12.4%) and public bodies (9.6%). Media outlets (8.5%), NGOs/social movements (3.4%), political actors (2.3%), and tourism companies (0.6%) occupy marginal positions. This structure confirms the centrality of the creator as a performative mediator, capable of translating heritage into short audiovisual narratives, and the significant presence of cultural institutions seeking visibility in highly competitive attention environments.

On Nostr, the distribution follows a different logic: although users constitute the largest group (36.8%), the weight of media outlets (21.8%) and institutions (18.6%) is substantially higher than on TikTok. Added to this is the layer of bots and RSS feeds, representing 27.3% of the total and acting as a vector for redistributing informational content. This automated mediation, combined with institutional density, configures an ecosystem oriented toward informational agendas and the circulation of official communications rather than direct audience interaction.

Figure 3 (Share of emitter types by platform) synthesizes these differences in proportional terms. While TikTok presents a

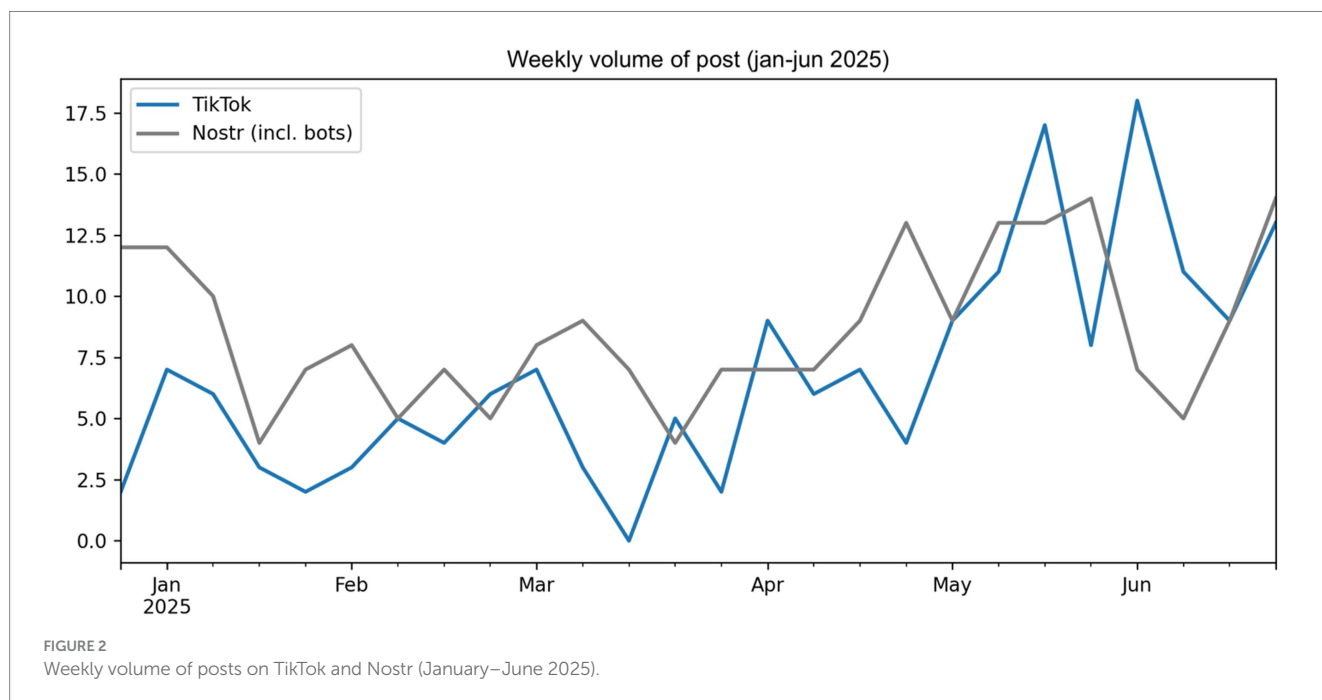
fragmented structure oriented toward individuals, Nostr exhibits institutional and media concentration reinforced by automation. This divergence is not merely quantitative: it shapes the discursive grammar of each platform. On TikTok, visibility is constructed through narrative performances, where personal experience, visual spectacularization, and emotional appeal are recurrent resources. On Nostr, by contrast, a documentary and normative register predominates, centered on recognitions, declarations, and governance policies, with little room for dramatization or visual denunciation.

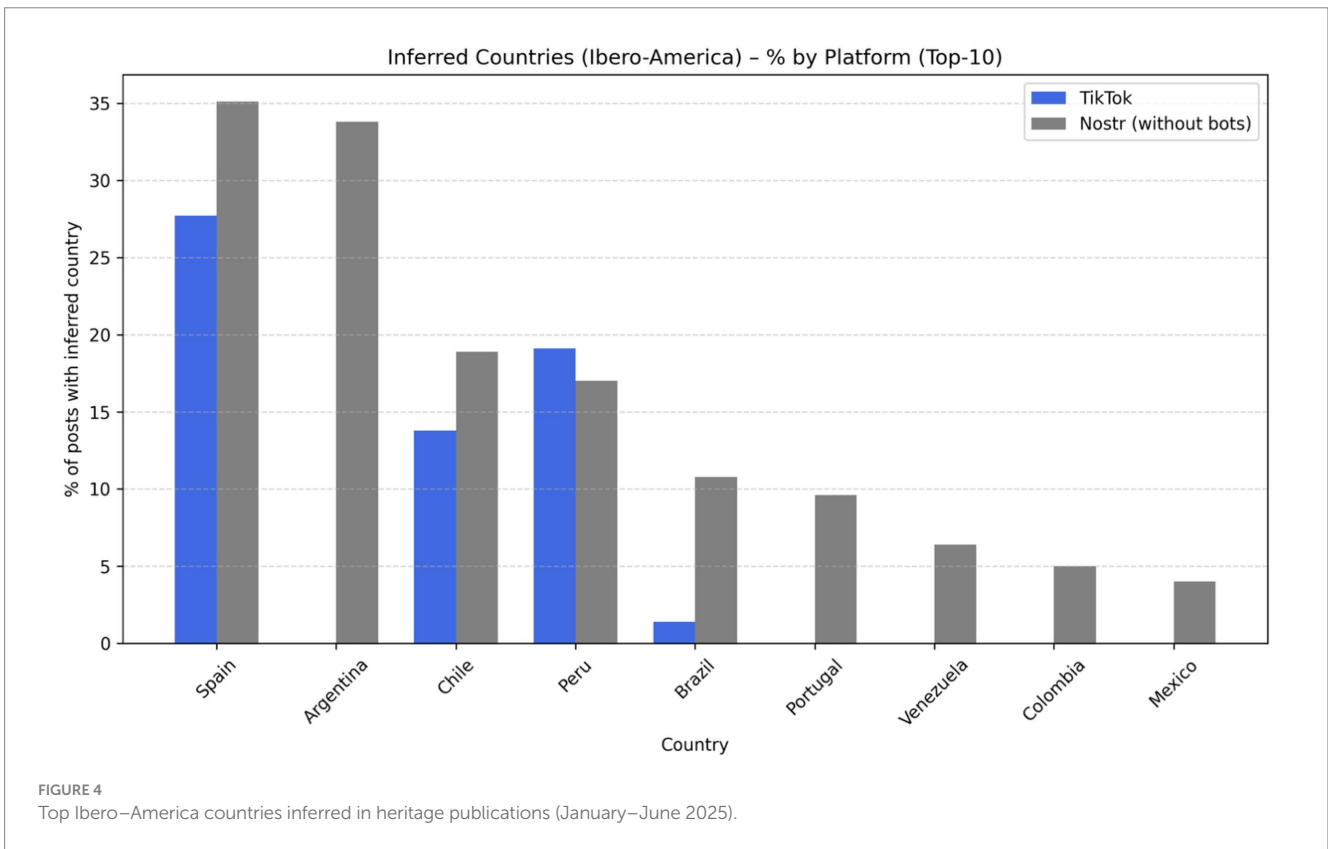
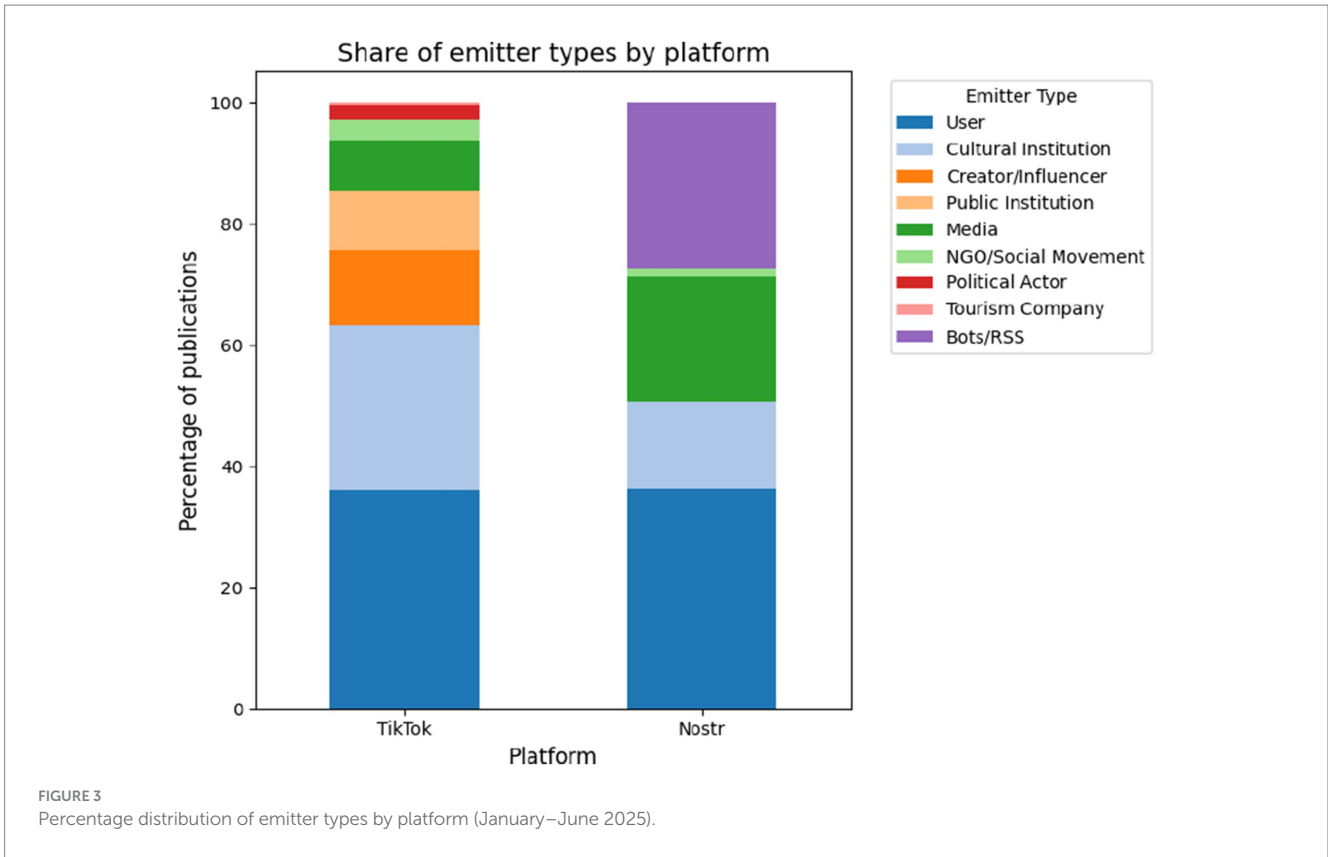
In terms of communicative governance, these differences suggest that TikTok operates as a space for cultural activation, where heritage appropriation is negotiated through entertainment and virality, while Nostr functions as a distributed repository of institutional legitimacy, oriented toward preservation and informational traceability. This tension between performativity and protocolization will be key to interpreting how digital practices and heritage protection strategies are configured in digital environments.

3.1.3 Heritage geographies: convergences and regional shifts

The territorial dimension of heritage conversations reveals differentiated patterns across platforms. **Figure 4** (Inferred countries—Top 10) summarizes the percentage distribution of posts with identified country in the Ibero-American sphere. Although coverage is not absolute, the data allow significant trends to be traced.

On Nostr, concentration is oriented toward an Atlantic arc combining Spain (35.1%), Argentina (33.8%), Chile (18.9%), Peru (17.0%), Brazil (10.8%), and Portugal (9.6%). This pattern reflects the imprint of media outlets and institutions operating in Spanish- and Portuguese-speaking environments, prioritizing the dissemination of recognitions, regulations, and commemorations. The prominent presence of Argentina and Portugal—virtually absent on TikTok—confirms Nostr's orientation toward formalized cultural agendas,





where visibility depends not on audiovisual spectacularization but on documentary circulation.

By contrast, TikTok projects a more fragmented Andean–Mediterranean map, with Spain (27.7%) and Peru (19.1%) as main poles, followed by Chile (13.8%) and, to a lesser extent, Venezuela (6.4%), Colombia, and Mexico. The absence of Argentina and Portugal on this platform, along with Brazil’s low representation (1.4%), suggests that TikTok’s visibility logic responds less to institutional density and more to the viralization of local experiences, especially in contexts where heritage intersects with tourism practices, festivities, and risk controversies.

These differences are not merely geographic: they imply divergent ways of territorializing heritage. On Nostr, spatiality is constructed as a normative cartography, anchored in institutional validation and policy continuity. On TikTok, by contrast, territory is performed as a narrative stage, where authenticity is negotiated through immersive images, personal stories, and viral formats. This tension between territory-as-archive and territory-as-experience will be key to interpreting how digital practices and heritage strategies are configured in digital environments.

3.1.4 Heritage typologies and representation logics

Analysis of heritage typologies reveals a structural divergence between platforms, both in category hierarchy and representational logic. For comparability, Figure 5 groups categories into three major blocks—material, intangible, and natural—that in the original datasets appear disaggregated (e.g., Nostr distinguishes industrial/architectural, historical/archaeological, museums/archives, documentary/UNESCO, or natural/agro). This synthesis follows a visual legibility criterion without altering relative proportions.

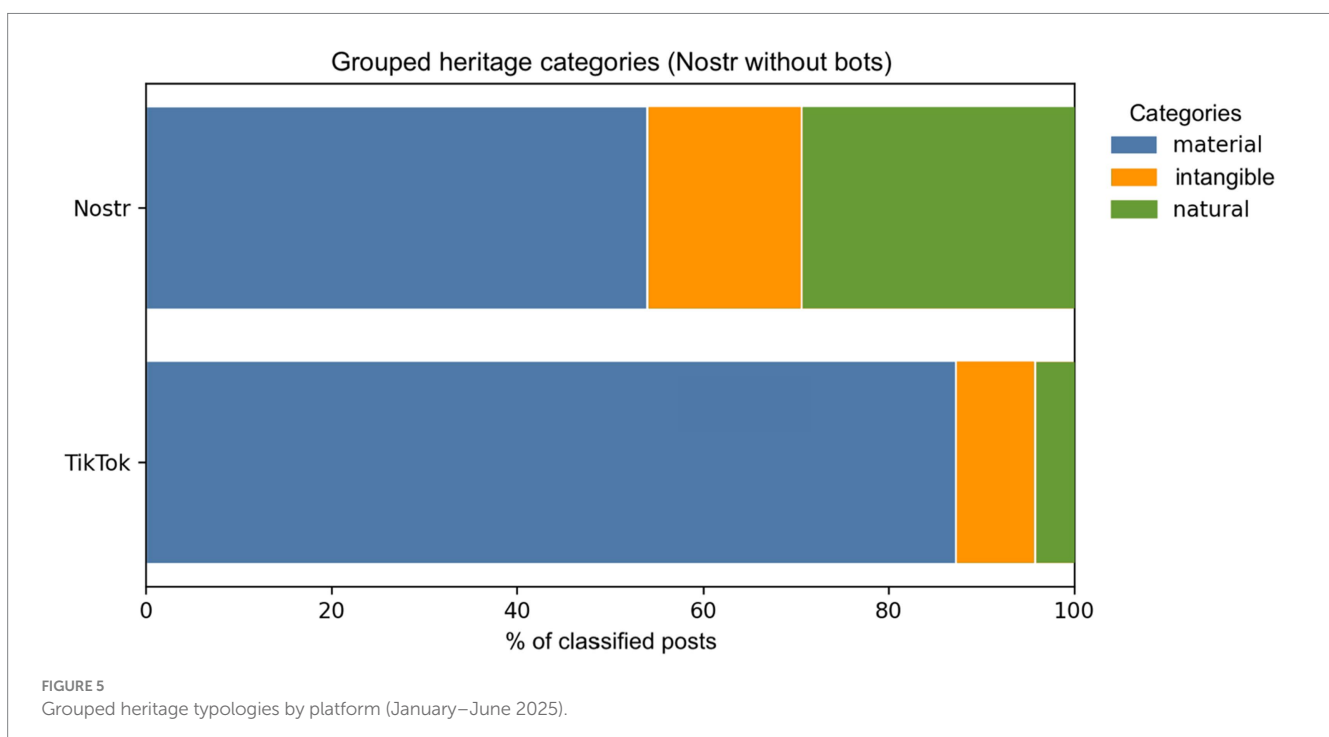
The results are striking. TikTok concentrates over 80% of its posts in the material domain, with a residual share dedicated to intangible

heritage and an almost negligible presence of natural heritage. This bias confirms the centrality of iconic imagery—monuments, historic centers, singular architectures—as a resource for attraction and virality. The platform privileges what can be shown in spectacular form, reinforcing the association between heritage and touristic scenography. The performative logic translates into an abundance of videos featuring cathedrals, historic quarters, or World Heritage sites, accompanied by visual effects, music, and tags oriented toward mass circulation. In this context, the material category not only dominates quantitatively but structures the heritage narrative as aesthetic experience and visual consumption.

On Nostr, by contrast, distribution is more balanced: approximately 50% material, 25% intangible, and 25% natural. This pattern reflects the thematic diversity that characterizes the network: alongside references to architectural and museum assets, there are mentions of festivities, cultural practices, and agroecological landscapes, as well as debates on environmental protection. The significant presence of natural and intangible heritage suggests that Nostr operates as a space for documentation and deliberation.

A complementary indicator of these logics is the reference to international organizations. On TikTok, 108 posts explicitly mention UNESCO, generally in hashtags or captions that seek to reinforce content authority while capitalizing on the prestige associated with the “World Heritage” label. This practice not only legitimizes the narrative but turns it into a cultural marketing resource, oriented toward virality and experiential tourism. On Nostr, mentions are far more discreet (29 cases), embedded in informational notes or institutional statements reporting inscriptions, candidacies, or alerts. Here, UNESCO functions as a source of credibility rather than a performative device, confirming the platform’s documentary orientation.

Although minority on both platforms, posts appealing to protection or denouncing heritage risks offer clues about the



political dimension of discourse. On TikTok, 35 videos were identified with explicit intention of denunciation or mobilization, focused on issues such as mass tourism, vandalism, or environmental degradation. These contents adopt a dramatic tone, with impactful images and calls to action that, however, remain inscribed in the logic of engagement: indignation becomes spectacle and urgency becomes trend. On Nostr, the seven posts with this orientation appear in an informational key, linked to official alerts or dissemination of red lists. Rather than emotional interpellation, they seek to document and sustain debate on conservation policies.

In terms of cultural policy, this divergence raises questions about the unequal visibility of certain heritage forms in digital environments and the risk that audiovisual spectacularization displaces more complex narratives; a point revisited in the discussion.

3.1.5 Discursive intentions in heritage narratives

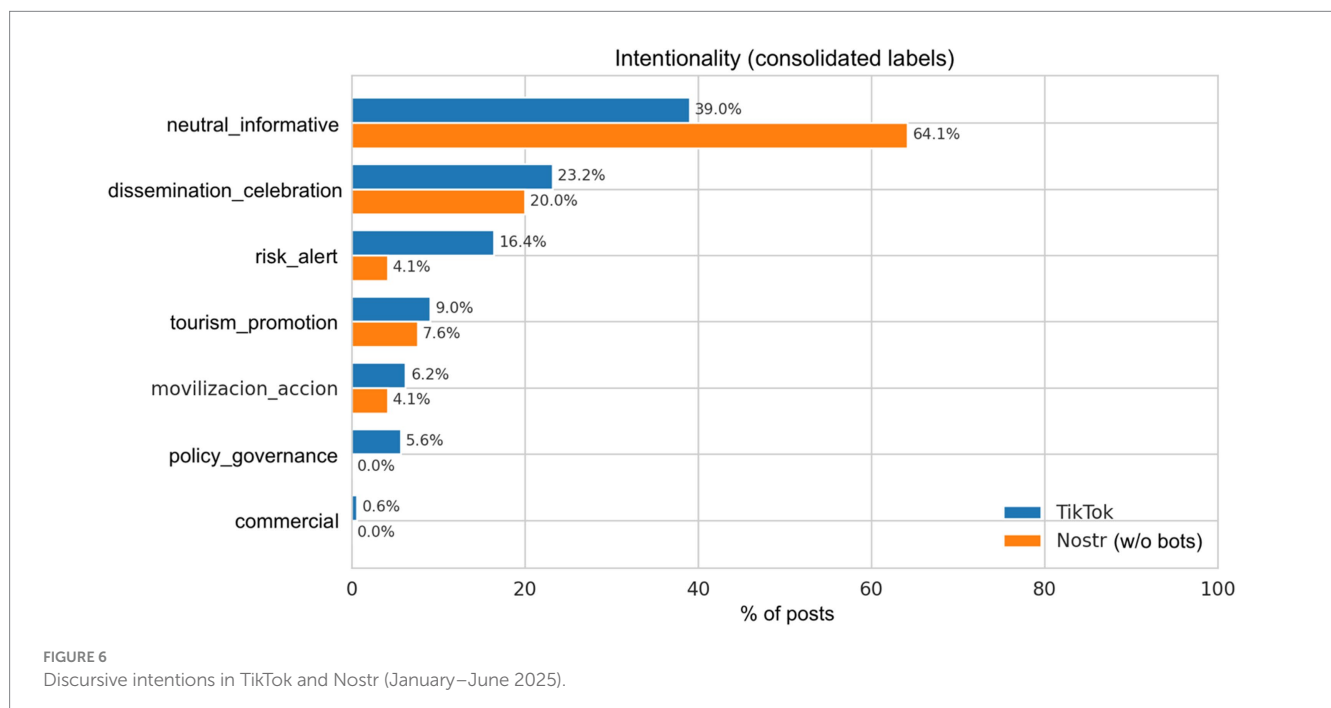
Analysis of discursive intentions reveals contrasting patterns between platforms, reflecting differences in communicative orientation and in how the relationship between heritage and digital publics is constructed. Figure 6 synthesizes this distribution of categories.

On Nostr, the *neutral_informative* category clearly predominates, accounting for more than half of the posts. It is followed, at a distance, by *dissemination_celebration* and *policy_governance*, while action-oriented categories (*mobilization* or *risk_alert*) are marginal. TikTok, by contrast, shows a more fragmented profile. Although *neutral_informative* remains present, it loses centrality to *dissemination_celebration*, which occupies a significant share of the corpus, and to *risk_alert*, which reaches values far higher than those observed on Nostr. This redistribution indicates that the platform does not limit itself to informing but exploits the expressive and emotional dimension of heritage, incorporating narratives of alert and dramatization. *Tourism_promotion* also gains visibility on TikTok,

reinforcing the association between heritage and experiential consumption.

Each category materializes in differentiated formats and tones. On Nostr, *neutral_informative* translates into brief notes, links to media, and institutional statements, with technical language and regulatory references. On TikTok, this same label takes the form of micro-explanations of historical facts or curiosities, accompanied by audiovisual resources designed to retain attention. *Dissemination_celebration* shares a common core—valorization of heritage—but with divergent styles: on Nostr, it is linked to commemorations and cultural announcements, while on TikTok it unfolds in a playful key, with humor, challenges, and personal narratives that invite interaction. A similar contrast appears in *risk_alert*: on Nostr, it is formulated as a normative alert, supported by data and links to red lists, while on TikTok it is dramatized through impactful images, music, and calls to collective indignation, transforming denunciation into viralizable content. As for *tourism_promotion*, both networks orient it toward monumental materiality but with different grammars: descriptive and referential on Nostr, aspirational and aesthetic on TikTok. *Mobilization_action* and *policy_governance* are residual, though they reveal the political dimension of discourse: calls for petitions or events on Nostr and, on TikTok, institutional messages seeking legitimacy through audiovisual formats. Commercial intention appears only marginally and is concentrated on TikTok, associated with creators and tourism brands.

The cross-tabulation of intention and heritage typology confirms TikTok's visual orientation: *tourism_promotion* and *risk_alert* cluster around material heritage, especially iconic architectures and historic centers, while on Nostr these categories, though minority, often relate to natural and intangible heritage, such as agroecological landscapes or festive practices. *Dissemination_celebration*, for its part, is associated on both platforms with intangible expressions but through opposite strategies: audiovisual spectacularization on TikTok versus descriptive record on Nostr.



Differences in the distribution of intentions are partly explained by actor composition. On Nostr, the dominance of neutral_informative reflects the strong presence of cultural institutions, administrations, and media, which prioritize data transmission and regulatory updates. On TikTok, by contrast, the centrality of dissemination_celebration and risk_alert is linked to the activity of creators and influencers, who exploit the platform's algorithmic logic to generate engagement through emotional narratives and creative formats. Tourism companies reinforce the promotional dimension, while institutions, though minority, intervene in policy_governance content to legitimize their role in heritage governance.

Taken together, the quantitative results allow us to map the dynamics, themes, and intentions shaping heritage conversations in digital environments. The observed differences reveal media grammars that condition which heritage becomes visible, how it is narrated, and for what purposes it circulates. However, these metrics do not exhaust the phenomenon's complexity. To understand how meanings, emotions, and practices are negotiated in everyday interaction, it is necessary to descend to the micro level of experience. The next section addresses this ethnographic dimension, exploring situated narratives that illuminate the cultural and affective logics underlying the patterns described here.

3.2 Qualitative study

The qualitative analysis complements the statistical reading with an ethnographic approach that allows us to observe how meanings are constructed in practice. Based on the selection of profiles and systematic observation of interactions, we explore expressive repertoires, discursive strategies, and the role of affordances in shaping participatory dynamics. This approach offers a situated perspective on the tensions between visibility and care, and on the ways in which young actors negotiate the dissemination and protection of heritage in contrasting digital environments.

3.2.1 Poetics of brevity vs. poetics of the archive: entering through play, staying for memory

On TikTok, heritage appropriation unfolds in minimal formats that condense knowledge into seconds. Creator B exemplifies this in a video that asks whether a monument is Gothic or Romanesque, engaging the audience with a direct question and symbolic rewards ("extra points if you know the name and location"). The practice reveals a central tension: visual literacy becomes a competitive challenge, expanding heritage reach at the cost of simplifying it to fit platform codes.

A similar pattern appears in Creator A, in a post explaining the origin of a popular expression while introducing botanical references. The tone is light, the editing fast, and the music familiar: everything aligns with the logic of the For You Page, which rewards brevity and immediate emotionality. This strategy is not trivial: by turning linguistic heritage into short, humorous content, Creator A dismantles the solemnity associated with "serious" culture and inserts it into the grammar of algorithmic entertainment.

On Nostr, time flows differently. User 3 offers a paradigmatic example: sharing images of microfilms and photographic media accompanied by comments that oscillate between technical and poetic. The retro aesthetic is not a filter but an ethic: sustaining the

archive against programmed obsolescence. This practice, seemingly marginal in terms of reach, acquires political value in an ecosystem where memory is not measured in likes but in continuity.

User 4 adds a hybrid register that connects with digital codes without abandoning the ethos of open culture. They celebrate achievements in apps that fragment classics into short sessions and display badges linked to public library initiatives. This gamification of reading resonates with TikTok's challenge logic but without algorithmic pressure: here, no trending rewards consistency, only a community that values self-learning. On Nostr, threads aggregate images and metadata into sequential notes (e.g., film micro-formats; open-library badges), privileging continuity over immediate reach.

These practices reveal two grammars—opposed yet complementary. On TikTok, the dominant discourse is de-dramatizing: heritage appears as something everyday, accessible, and fun. Yet this same horizontality is mediated by an algorithm that rewards spectacularization: for memory to circulate, it must become entertainment. On Nostr, by contrast, the narrative revolves around cultural responsibility: opening data, sustaining archives, revaluing analog against uncritical automation. And this difference is not merely ideological: it is inscribed in affordances. While TikTok offers an ecosystem that rewards repetition and emotionality, Nostr shifts attention toward manual curation and interoperability. Circulation is slower but more stable: what is published does not dissolve in trending logic but is inscribed in a distributed archive. The open question is whether these strategies are sustainable over time or whether, as subsequent sections suggest, the tension between visibility and memory ultimately tips the balance toward one pole or the other.

3.2.2 Public curatorship: playlists, micro-archives, and metadata

If the previous section examined how brevity and play open the door to heritage, this one focuses on strategies that organize and sustain that knowledge over time.

On TikTok, Creator C offers a paradigmatic example. Their profile organizes content into thematic lists—mythology, books, cinema—that function as micro-archives accessible to young audiences. In one video on mythology, information is condensed into less than a minute, with captions and visual effects guiding interpretation. This modular structure responds to an algorithmic logic: playlists not only facilitate navigation but also increase profile dwell time, a metric TikTok rewards with visibility. Curatorship here is not archival in the classical sense but an optimization strategy that translates cultural density into short, attractive itineraries.

A similar approach appears in Creator B, whose series extends the visual challenge logic observed earlier but embeds it in a broader pedagogical grid. Each video integrates into lists such as Art or History, enabling audiences to build thematic paths. This practice democratizes access to knowledge but also subjects it to the logic of infinite scroll: continuity depends on maintaining a posting rhythm that satisfies algorithmic expectations.

On Nostr, curatorship takes on a more technical and collaborative character. User 1 illustrates this dimension: their interventions revolve around open cultural data and the creation of tools that facilitate traceability. One example is a browser extension that enables access to cultural object metadata. This practice does not seek virality but interoperability, ensuring that heritage objects can circulate across repositories without losing context.

User 3 adds another layer to this ecology: mediation between institutions and digital communities. Their posts on collaborative editing events document processes where curatorship becomes collective action: incorporating images into Wikimedia, enriching Wikidata, mapping vanished buildings with open-source tools. In this context, visibility does not depend on a prescriptive feed but on circulation within trust networks and indexing in open repositories.

These differences reveal how affordances shape heritage organization. On TikTok, curatorship bends to algorithmic logic: playlists and anchors function as retention devices that maximize exposure. On Nostr, by contrast, curatorship is oriented toward persistence and interoperability: there is no trending dictating priorities, but an ethic of openness requiring technical skills and social capital. While on TikTok memory is organized for consumption, on Nostr it is structured for preservation.

Both logics respond to different material conditions but share a common challenge: how to sustain heritage relevance in environments where attention—whether algorithmic or communal—is a scarce resource.

3.2.3 Remix and DIY: from meme to open culture

The logic of remix is one of the most fertile bridges between digital culture and heritage. On TikTok, this logic revolves around community hashtags, duets, and remixes. The case of Creator A is particularly illustrative: under thematic hashtags, clips proliferate that reframe a didactic-humorous tone, reproduce catchphrases, exaggerate audiovisual cues, and decontextualize them to create new comedic or informative pieces. Remix operates as lateral pedagogy: recognizable templates are re-voiced with local cues and embedded in serial playlists. In terms of affordances, the FYP and native remix features favor this circulation: the platform rewards gesture replicability and instant intelligibility of the joke, so “knowledge” moves attached to humor and rhythm.

A second register on TikTok shifts remix toward identity-based DIY. In Creator D, a video on an Andean ritual activates a choreography of reappropriation where indigenous heritage is compressed into a capsule that invites further exploration. The practice combines micro-explanation, identity markers, and a self-archival style (profile playlists) that encourages others to repeat or vary the format with their own experiences and vocabularies. Here, remix is not only aesthetic but also the key affordance. The result is a chain of translations where the sacred and the everyday coexist, and where “do it yourself” acquires both a literal sense (repeating the recipe, chant, or greeting) and a symbolic one (claiming one’s voice in heritage narration).

On Nostr, remix takes on a less rhythmic and more editorial character: DIY becomes visible as contextual, traceability and documentary reassembly. User 3 embodies this ethic: their public activity shows how micro-practices of selection, commentary, and serial organization of archives turn institutional holdings and field captures into micro-essays of memory. Remix here is curatorial: reordering, re-describing, tagging, relating. There is no audiovisual “duet,” but a distributed edition where pieces become more useful because they retain references and layers of meaning.

Another example comes from User 5, whose living Sicilian archive practice shows a heritage remix that combines historical images, memory slogans, and popular culture cues. Their posts form series that update anniversaries, proverbs, and local episodes, generating

conversations around identity and territorial pride. The key affordance here is not an amplifying algorithm but the persistence of a thread that others can cite, link, and continue without a central relevance filter.

The comparison highlights two economies of remix. On TikTok, performative remix is optimized for instant legibility: umbrella hashtags, “short signal” aesthetics, replicable choreographies. On Nostr, remix is documentary and civic: the piece gains layers (context, traceability, serial continuity) but faces slower diffusion and dependence on affinity networks. In one case, heritage is remixed to be shared; in the other, to be preserved. Both logics converge on a crucial point: DIY as agency. In heritage terms, the value of remix lies not only in the originality of the result but in its capacity to activate communities around objects, practices, and narratives that, without constant rewriting, would remain silent or invisible.

3.2.4 Identities and territorial memories: from emotion to collective archive

If previous sections focused on aesthetics, curatorship, and protection, this one explores how platforms become stages for articulating cultural and political belonging. Here, heritage does not appear as a distant object but as a lived territory, charged with affect and symbolic disputes.

On TikTok, Creator D offers an eloquent example. In a video narrating how elderly relatives experience their first flight after decades in rural life, the creator turns a physical displacement into a rite of repair and collective pride. The clip, accompanied by emotive music and hashtags related to Indigenous communities, inscribes family experience into a genealogy of resistance against historical exclusion. The key affordance is empathic virality: the algorithm rewards affective charge, allowing the story to circulate beyond the local community; though at the cost of simplifying its complexity into a short format.

A complementary register appears in Creator C, whose practice oscillates between cultural dissemination and personal aesthetics. In one video, they document the discovery of a small urban corner dedicated to stray cats, where aesthetic gaze intertwines with sensitivity toward animal care and urban memory. Yet algorithmic logic introduces tension: to sustain visibility, Creator C combines these pieces with lighter content (fashion, routines), revealing the fragility of strategies seeking to balance cultural depth with engagement demands.

On Nostr, identity is articulated differently through the living archive. User 5 is a paradigmatic case. In a post dedicated to a historical massacre, the author recalls the assassination of a public figure and his escort with a phrase condensing the ethics of memory: “they must be remembered, to never forget.” Another thread, accompanied by historical images, claims the Sicilian Parliament as the oldest in the world, inscribing Sicily into a genealogy of power and culture that contrasts with its contemporary marginality. Here, identity is not performed playfully but argumentatively: each post is a piece in a symbolic struggle for recognition.

A compelling illustration of how digital practices intersect with territorial memory emerges from User 4’s post celebrating the annual renewal of the public domain in Portugal. By publicizing the list of authors whose works entered the public domain and promoting related events at national institutions, the post reframes access as an act of cultural stewardship rather than mere consumption. In doing so, it situates the defense of intellectual commons within a broader

struggle against enclosure, underscoring how the governance of digital circulation shapes the conditions under which local identities and historical narratives remain legible in networked environments.

On both TikTok and Nostr, narratives emerge that link memory with identity, though through very different grammars: the former through performative emotion; the latter through archival serialization.

Both logics, however, share a principle: heritage is not a dead object but a living resource negotiated in real time. The difference lies in tempo and infrastructure: while TikTok accelerates memory to make it visible, Nostr slows it down to make it enduring.

3.2.5 Protection, commodification, and grey zones

If so far we have seen heritage as play, archive, or bricolage, this section addresses a more conflictive terrain: tensions between dissemination and vulnerability, visibility and commodification, resistance and co-optation. On both TikTok and Nostr, practices emerge that oscillate between heritage defense and its instrumentalization, revealing ethical dilemmas that cannot be ignored.

On TikTok, Creator E offers a paradigmatic example of this ambivalence. In a video featuring Andalusian ceramics, the piece appears framed in a carefully curated aesthetic, accompanied by hashtags promoting regional identity and slogans appealing to responsible consumption. At first glance, the gesture seems aligned with heritage dissemination; however, the context reveals it is part of a campaign linked to a commercial brand. Here, heritage becomes advertising scenography, shifting its cultural value toward branding logic.

Another TikTok case illustrates a different dilemma: exposing vulnerable spaces. Creator F documents abandoned places—cave houses, factories, columbaria—under hashtags related to urban exploration and history. In one video, the camera pans over peeling walls and forgotten objects while the creator introduces historical data. Yet the practice is not risk-free: public exposure of locations can encourage looting or degradation. Although the profile avoids giving exact coordinates, visual clues suffice for others to identify them. Here, the tension is not between culture and market but between visibility and care.

On Nostr, tensions shift toward knowledge commodification and political resistance. A significant example is User 2's activity, denouncing the uncritical adoption of AI services in bibliographic catalogs and questioning the erosion of expert knowledge. For this user, AI incorporation is not a mere functional advance but an epistemological threat that deprofessionalizes bibliographic work and undermines record reliability. The critique reveals a structural tension: while commercial platforms promote automated solutions under the promise of efficiency, principles of control, traceability, and accountability sustaining documentary preservation are weakened. In this sense, heritage defense is not limited to safeguarding objects or opening data but involves resisting opaque automation processes that, under the rhetoric of innovation, may compromise the integrity of memory systems.

The political dimension intensifies in the case of User 6, whose practice on Nostr links cultural protection with the fight against symbolic and material violence. In one post, they criticize the restrictive nature of norms that limit cultural expression in

professional environments, arguing that prevailing standards of “professionalism” often serve as tools to enforce conformity and suppress diversity. This intervention reframes heritage defense as a struggle for identity rights: questioning dominant notions of workplace decorum becomes a way to protect cultural practices that institutional systems tend to erase.

In short, this contrast reveals that heritage protection cannot be conceived apart from the infrastructures mediating it. Neither branding nor decentralization is neutral: both shape which memories circulate, who controls them, and under what conditions. And in this dispute, what is at stake is not only the integrity of objects but the very possibility of imagining futures where culture is neither commodity nor relic but a common good in motion.

3.2.6 Governance and visibility: subversion vs. algorithmic control

Heritage circulation in digital environments depends not only on user creativity but on invisible infrastructures deciding what is seen, hidden, or forgotten. Resisting these logics involves appropriating their codes or eluding their grammar. In both cases, people experiment with tactics ranging from algorithmic infiltration to direct action.

On TikTok, Creator B deploys a strategy of resistance from within. In a video confronting conservative discourses circulating in algorithmic bubbles, they use hashtags associated with traditionalist narratives to intercept audiences the platform tends to homogenize. The critique condenses into a capsule blending irony and historical data, capable of traversing trending logic without diluting its political charge. Here, resistance does not mean abandoning the platform but hacking its codes to open cracks in the dominant narrative.

A seemingly opposite example comes from Creator E with a video on a local festival. At first glance, the piece seems to conform to entertainment logic: a short shot, humorous tone, and a phrase framing the tradition as unusual. The clip works as an algorithmic hook: it captures attention through estrangement and, from there, refers to a broader discourse on local traditions in other profile spaces. The open question is whether this tactic sustains meaning density or reduces heritage to viral curiosity. But in the face of invisibility, playing with the algorithm becomes a pragmatic form of resistance.

On Nostr, the struggle unfolds elsewhere: not against a prescriptive feed but against monetization models and closed architectures. User 2 articulates a frontal critique of the extractive logic of commercial platforms. In one post, they reject the paid newsletter model, arguing that subscription costs create barriers to access and that some hosting platforms tolerate extremist content. For this user, heritage defense is not limited to safeguarding books or archives; it involves combating architectures of exclusion conditioning who can read, write, and circulate in the digital sphere.

Even more radical is User 6's practice, which takes the dispute from the timeline to public space. In one post, they describe covering a racist sticker with another proclaiming an anti-colonial message. The platform here does not amplify by algorithm but preserves the trace and links it to other practices, generating a living archive of micro-resistances circulating in federated networks. The action does not seek virality but practical contagion, offering a replicable model that transcends the screen.

In sum, the ethnographic analysis reveals that heritage practices on TikTok and Nostr are not isolated phenomena but expressions of broader socio-technical dynamics. From algorithmic gamification and

aestheticization to distributed curatorship and infrastructural critique, these micro-interventions illuminate how cultural memory is negotiated within contrasting regimes of visibility and governance. What emerges is a spectrum of strategies—playful, commercial, activist—that redefine the boundaries between preservation and circulation, between care and commodification. This complexity invites a deeper theoretical reflection: how do these platform-specific grammars shape not only the modes of heritage appropriation but also the conditions under which cultural legitimacy is produced? The following discussion section addresses this question by situating these practices within debates on platformization, algorithmic power, and the politics of digital heritage.

4 Discussion

This discussion interprets the findings transversally and situates them in dialogue with the theoretical framework. The starting point is clear: TikTok concentrates visibility in short, performative, and highly replicable formats; Nostr prioritizes documentary continuity, traceability, and openness. This difference is not merely stylistic but infrastructural: it refers to affordances, governance models, and attention economies that condition which heritage emerges, how it is narrated, and for what purposes it circulates (Bucher, 2018; Gillespie, 2018; Treem and Leonardi, 2012; van Dijck et al., 2018). The focus here is on what these findings contribute to previous debates on platforms, heritage, and digital practices, and how they advance understanding of the problem.

Methodologically, we operationalize comparability across asymmetrical infrastructures through four criteria—visibility, engagement, reach, and persistence—linking platform features to observable outcomes. This framing clarifies how mediation logics filter what becomes visible and what reliably endures across the two ecosystems.

4.1 Visibility and preservation: two logics in tension

The framework pointed to a structural tension between the spectacularization of heritage on social media and the right to memory (UNESCO, 2009; Bowker and Star, 1999). Our data confirm this tension and specify its forms. On TikTok, a high-impact visual grammar prevails, favoring material heritage (over 80% of the corpus), with prominence of monuments, historic centers, and iconic architectures. This configuration ensures reach but sidelines elements requiring dense explanations or resistant to spectacularization (e.g., intangible or natural dimensions) (Liang et al., 2021). On Nostr, distribution is more balanced ($\approx 50\%$ material; $\approx 25\%$ intangible; $\approx 25\%$ natural): discourse relies on documentation, links, and metadata, facilitating preservation and long-term reuse (Europeana, 2024). This divergence is significant: it informs which heritage gains centrality and how its social value is constructed. Empirically, TikTok concentrates over four-fifths of items in material heritage and records 108 UNESCO mentions as visibility levers, whereas Nostr shows a more balanced $\approx 50/25/25$ split (material/intangible/natural) and 29 UNESCO references used as documentary sources rather than performative tags.

UNESCO references also diverge: on TikTok, mentions function as prestige markers and visibility levers (108 cases), while on Nostr they operate as sources for reporting inscriptions, candidacies, or alerts (29 cases), consistent with its archival vocation (UNESCO, 2018). The study's contribution is to show that these logics are not mutually exclusive: TikTok opens doors to broad publics; Nostr retains context and stabilizes memory. Thinking about their complementarity allows us to move beyond the “virality vs. archive” dichotomy and design combined strategies for circulation and care. These patterns point to complementary strategies: activation via short, replicable formats on TikTok, and contextual anchoring via linked, persistent threads on Nostr; circulation and care as coupled design aims rather than exclusive choices.

4.2 Algorithmic governance and cultural expressivity

The literature has described how recommendation systems hierarchize attention and shape visible culture (Bucher, 2018; Gillespie, 2018; van Dijck et al., 2018). Our results confirm this with nuances. On TikTok, the FYP favors replicable (templates, sounds, short edits) and affective formats, where micro-explanation coexists with the emotional “hook” (Papacharissi, 2015; Treem and Leonardi, 2012). This explains activity spikes and the relative weight of dissemination/celebration and risk_alert: registers that fit well in an attention economy based on rapid signals. Two recurrent tactics illustrate this: hashtag infiltration to reach audiences inside ideologically skewed streams, and estrangement hooks that smuggle local traditions into entertainment flows without abandoning native aesthetics. Activist discourse benefits when denunciation is visual and lends itself to replication chains but pays a cost when messages require context, historicization, or verifiable data. Many heritage types remain marginalized unless adapted to series and playlists that dose content without losing rhythm.

Nostr, by contrast, inverts the relationship between reach and process. Without a central algorithm to rank content, visibility depends more on trust networks, clients, and relays, and less on unified “trends.” This opens space for expressions requiring context—micro-archives, linked threads, metadata normalization—and for structural resistance to data capture and access closure (Mejías and Couldry, 2019; Zuboff, 2019). The trade-off is slower growth and greater dependence on technical skills and social capital; the gain is autonomy that sustains traceability and persistence (Corsín Jiménez, 2014; Wei and Tyson, 2024).

Across cases, we repeatedly observe playlist micro-archives (TikTok) versus threaded micro-archives (Nostr). The former optimize dwell time and discovery; the latter stabilize references and enable cumulative editing (e.g., Wikimedia/Wikidata sessions, tool-building for metadata access). Together they show how “curatorship” shifts from retention devices to infrastructural care. In terms of cultural expressivity, the empirical contribution is clear: TikTok amplifies what is replicable; Nostr preserves what is explainable.

4.3 Heritage as cultural resistance

Throughout the results, discourses of resistance and collective action have also emerged. The study provides evidence on both

networks. On TikTok, resistance adopts affective and tactical forms: risk denunciations, hashtag reappropriations, and micro-narratives contesting what counts as “tradition” or “cultural value.” These practices align with the notion of affective publics and show that brief performativity can politicize cultural conversation when oriented toward the common good (Papacharissi, 2015). On Nostr, resistance is infrastructural: it materializes in opening data, sustaining archives, federating content, and signaling the costs of access commodification. It does not seek engagement peaks but durability and distributed governance (Mejías and Couldry, 2019; Corsín Jiménez, 2014).

This dual pathway is not redundant: TikTok is effective for igniting and multiplying conversations; Nostr is useful for sustaining processes and documenting progress in verifiable ways. Thus, heritage protection as cultural resistance operates both at the narrative layer (which gains attention) and at the technical layer (which ensures continuity). Both converge on a shared horizon: equipping communities with narrative and technical means to dispute what is preserved, who decides, and under what conditions.

At the same time, field practices foreground ethical frictions: urbx materials expose sensitive sites despite partial obfuscation, and AI-enabled cataloging/newsletter paywalls risk eroding provenance, accountability, and equitable access; issues that locate resistance both at the narrative and infrastructural layers.

In sum, the discussion allows us to confirm three contributions. First, that heritage protection as cultural resistance adopts at least two grammars mediated by infrastructure: affective resistance igniting mass conversations on TikTok and infrastructural resistance ensuring continuity on Nostr. Second, that algorithmic governance not only amplifies but selects: privileging spectacularizable material heritage and relegating intangible and natural dimensions unless contextual bridges intervene; hence, the most effective tactics combine replicability with documentary anchors. Third, that decentralized architectures are not mere technical refuges but spaces of non-hierarchical organization where heritage activism can document, coordinate, and reproduce its action without depending on a single authority.

These conclusions do not close the debate; they shift it to an operational terrain where platforms and protocols are no longer conceived as alternative spheres but as complementary layers of the same ecosystem. In this space, digital practices appear not as content consumption but as forms of cultural co-governance: sometimes activating affects that open the door to the commons; other times caring for the infrastructure that sustains it. Between trending and the archive, heritage emerges as a common good in motion. And it is precisely in that movement—in its capacity to articulate visibility with persistence and emotion with traceability—that this study locates the core of its political potential. Practically, coupling short-form activation with protocol-level archiving offers a viable path to align visibility with persistence, converting attention spikes into shared, citable memory objects.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by *Comité de Ética de la Investigación y Experimentación Animal de la Universidad de Alcalá*. The studies were conducted in accordance with the local legislation and institutional requirements. The ethics committee/institutional review board waived the requirement of written informed consent for participation from the participants or the participants' legal guardians/next of kin because this study was conducted in accordance with Regulation (EU) 2016/679 and Spanish Organic Law 3/2018. Data processing was carried out exclusively on publicly available content from open social networks, without any direct interaction with the content authors. The exception provided under Article 14(5)(b) of the GDPR has been applied, as individual notification is impossible or would involve disproportionate effort. Data subjects may exercise their rights of access, rectification, erasure, objection, restriction, and portability by contacting the Data Protection Officer of the University of Alcalá at protecciondedatos@uah.es. The social media data was accessed and analyzed in accordance with the platforms' terms of use and all relevant institutional/national regulations.

Author contributions

JF: Writing – review & editing, Writing – original draft. CH: Writing – review & editing, Writing – original draft.

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Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declared that Generative AI was used in the creation of this manuscript. Generative AI tools were used in this study exclusively for creating data visualizations and for translating the manuscript from Spanish to English. All research design, data

collection, analysis, interpretation of results, and drafting of the original text were carried out by the authors.

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