

From Oral Tradition to Digital Media: The Transformation of Sundanese Local Knowledge Communication in the Age of Artificial Intelligence

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Abstract. Sundanese local knowledge has long been communicated through oral performances embedded in particular speakers, communities, and social settings. Its movement into writing, print, audiovisual recording, digital platforms, and artificial intelligence has expanded opportunities for documentation, education, and public access while altering how cultural knowledge is selected, interpreted, and authorized. This integrative literature review examines these transformations through scholarship on oral tradition, Sundanese culture, media, digital heritage, and artificial intelligence. The analysis finds that technological accessibility does not necessarily preserve cultural context or community authority. Recent studies of Indonesian natural language processing also show that artificial intelligence can process Sundanese but remains constrained by limited data, linguistic errors, cultural shallowness, and safety risks. The article proposes a community-centered communication model based on contextual integrity, cultural authority, source traceability, meaningful participation, human validation, and equitable benefit-sharing.

Keywords: artificial intelligence; cultural communication; digital media; oral tradition; Sundanese local knowledge

1 Introduction

Oral tradition is more than a collection of inherited stories. It is a communicative process through which knowledge is performed, interpreted, negotiated, and transmitted within social relationships. UNESCO places oral traditions and expressions, including language as their vehicle, among the domains of intangible cultural heritage [1]. Vansina likewise treats oral tradition as testimony transmitted across generations, while Finnegan emphasizes that oral literature cannot be understood apart from performance, audience, and occasion [2], [3]. These perspectives shift analysis from the survival of cultural content alone to the communicative conditions that allow knowledge to remain meaningful. What is preserved is not simply a verbal text; it is also a relationship among speakers, participants, places, memories, and norms of interpretation.

This relational character is especially important in discussing Sundanese local knowledge. The term covers diverse expressions and practices rather than a single, uniform cultural inventory. Knowledge may circulate through stories, ritual speech, proverbs, songs, performance, customary instruction, craft practice, agricultural experience, and everyday language. Sibarani describes local wisdom as socially inherited knowledge that guides communal life [4], while Rusyana's study of Sundanese oral accounts concerning pencak silat illustrates the range of knowledge carried through oral forms [19]. In a Sundanese setting, a recent study of beluk in Cikondang shows that meaning emerges through the interaction of performance, participants, setting, and cultural context [5]. Such evidence cautions against treating local knowledge as detachable information that can be moved from one medium to another without consequence.

The communication of Sundanese knowledge has nevertheless always changed. Oral expression has interacted with manuscripts, writing, schools, print, radio, recorded sound, television, and other forms of mediation. Ong's account of the relationship between orality and literacy helps explain why writing does not merely store speech: it reorganizes memory, authorship, interpretation, and the distance between communicator and audience [6]. Print further changes the scale and regularity of circulation. The history of *Manglé*, for example, demonstrates how a Sundanese-language magazine became a space for cultural and linguistic continuity while operating within editorial and market institutions [7]. Mediation therefore expands reach but also introduces new selectors of what becomes visible and authoritative.

Digital media intensify this process. Social platforms enable Sundanese speakers and cultural communities to publish, reproduce, discuss, and remix cultural material beyond the limits of local encounters. Research on Sundanese use in social media confirms that digital interaction can support the continued public presence of the language [8]. Digital memory studies further show that networked media alter how cultural traces are stored, retrieved, and reactivated [21]. Yet visibility should not be equated with transmission. A short video, image, caption, or searchable excerpt may circulate widely while losing the circumstances that explain who may speak,

how an expression should be interpreted, and what obligations accompany its use. Platform metrics can further privilege content that is brief, emotionally striking, or easy to reproduce rather than knowledge that requires sustained contextual explanation.

Artificial intelligence introduces a further transformation because it does not only store and distribute cultural material. Machine-learning systems classify, translate, recommend, summarize, and generate language. These capabilities can support education, documentation, and discovery, but they also depend on uneven digital resources. Research on Indonesia's more than 700 languages identifies serious disparities in datasets and natural-language-processing tools, with dominant languages receiving far greater technical support than many regional languages [9]. For Sundanese, scarcity is not simply an engineering problem. It affects whose language patterns are represented, which genres become machine-readable, and whether automated outputs can recognize local meanings rather than approximate them through dominant linguistic categories.

Recent empirical work makes both the potential and the limitations clearer. Putri et al. examined whether large language models could generate culturally relevant commonsense question-answer data in Indonesian and Sundanese, showing that generation is possible but that cultural relevance and linguistic quality require careful evaluation [10]. IndoSafety demonstrates a related concern: safety performance in Indonesian contexts cannot be assumed from systems evaluated primarily in English or other high-resource environments [11]. Together, these findings suggest that technical fluency should not be confused with cultural competence. An output may appear grammatically plausible while simplifying a practice, inventing an explanation, blending distinct traditions, or obscuring uncertainty about its source.

Cultural data are therefore not neutral raw material. UNESCO's Recommendation on the Ethics of Artificial Intelligence stresses cultural diversity, human oversight, transparency, and inclusive participation [12]. The CARE Principles similarly foreground collective benefit, authority to control, responsibility, and ethics in the governance of data associated with peoples and communities [13]. Scholarship on Indigenous data sovereignty further demonstrates why cultural communities' authority can be diminished when institutions and technical systems extract knowledge without meaningful governance [14]. These frameworks cannot be transferred mechanically to every Sundanese community, whose histories and legal positions vary. They nevertheless provide a valuable warning: access, digitization, and computational usefulness do not automatically justify unrestricted reuse.

Existing studies illuminate oral tradition, Sundanese media, digital heritage, and Indonesian-language artificial intelligence, but these conversations are often separated. Communication research needs to connect them by asking how mediation redistributes context, participation, and authority. This article therefore asks: how has the movement from oral tradition through written, audiovisual, and digital media transformed the communication of Sundanese local knowledge, and what principles should govern its mediation by artificial intelligence? Through an integrative literature review, the article argues that sustainable digital transformation must be community-centered. Its value should be judged not only by preservation and access, but also by contextual integrity, cultural authority, source traceability, meaningful participation, human validation, and equitable benefit-sharing.

2 Research Method

This study employed a qualitative integrative literature review. The method was selected because the research question crosses bodies of scholarship that use different concepts, evidence, and disciplinary conventions: oral-tradition studies, Sundanese cultural studies, communication and media studies, digital heritage, data governance, and artificial intelligence. An integrative review permits theoretical, empirical, and institutional sources to be compared within a single analytical framework [15]. The aim was interpretive synthesis rather than statistical aggregation.

The search was conducted through official journal portals, publisher platforms, conference proceedings, and institutional repositories accessible through UNESCO, BRIN, Universitas Pendidikan Indonesia, Universitas Diponegoro, the Association for Computational Linguistics, Cambridge University Press, SAGE, Taylor & Francis, Wiley, and related scholarly sources. Searches combined terms such as 'Sundanese oral tradition,' 'Sundanese local knowledge,' 'Sundanese media,' 'digital cultural heritage,' 'oral tradition communication,' 'low-resource Indonesian languages,' 'Sundanese NLP,' 'cultural AI,' and 'community data governance.' Reference lists of relevant publications were also followed when they led to primary or authoritative material. The final metadata check was completed on September 6, 2026.

Sources were included when they contributed directly to at least one of four analytical needs: explaining oral tradition as situated communication; documenting Sundanese language or cultural mediation; clarifying transformations associated with writing, audiovisual media, or digital platforms; or evaluating the opportunities and risks of AI for regional-language and cultural knowledge. Priority was given to peer-reviewed journal articles, scholarly books from established presses, official international instruments, and full papers in recognized

conference proceedings. Sources were excluded when bibliographic identity could not be verified, when they merely repeated another source, or when their relevance depended on broad claims unsupported by evidence.

The search and screening process produced 55 candidate sources. Forty-four were retained for the larger article: 34 as core sources expected to support central claims and 10 as supporting sources for contextual or comparative analysis. Two sources were classified as conditional, five were held because their contribution was limited or insufficiently verified, and four were rejected. These numbers document the working corpus; they should not be interpreted as the output of an exhaustive systematic search. Following Snyder, the review design was aligned with the purpose of synthesis and the transparency appropriate to a semi-systematic or integrative inquiry [16]. It does not claim complete database coverage or formal compliance with PRISMA, although PRISMA's emphasis on transparent reporting informed the documentation of selection decisions [18].

The retained literature was coded across nine dimensions: knowledge form, communicator, audience, communicative setting, medium, mode of participation, source traceability, authority over interpretation, and principal risk or benefit. Coding was iterative. Initial categories derived from the research question were refined as recurring tensions became visible, particularly the distinction between access and contextual integrity, and between technical representation and community authority. Torracco's guidance on integrative review writing informed the movement from summary toward conceptual synthesis [17].

The analysis proceeded in three stages. First, sources on oral tradition and Sundanese practice were read to establish the communicative characteristics of situated knowledge. Second, evidence on writing, print, audiovisual documentation, and digital platforms was compared to identify how mediation changes persistence, scale, participation, and authority. Third, research and governance frameworks concerning AI were used to assess the implications of automated processing and generation. The resulting model is analytical rather than predictive. The review is limited by its reliance on published and digitally discoverable materials, the uneven coverage of Sundanese communities, and the rapid development of AI systems. Its conclusions therefore identify defensible principles and research needs rather than claiming to represent every Sundanese tradition or community.

3 Oral Tradition as a Sundanese Knowledge Communication System

Oral tradition is best understood here as a knowledge communication system rather than as an unwritten version of a text. Its operation depends on patterned relationships among expression, memory, performance, audience, and social recognition. Vansina's concept of oral testimony highlights transmission through a chain of communicators [2], while Finnegan shows that the meaning of oral literature is inseparable from its enactment [3]. The communicative event does not simply deliver pre-existing information. Through voice, timing, gesture, response, and shared expectations, it establishes how the knowledge should be heard and what kind of claim it makes.

Performance gives oral knowledge a situated form. A story narrated during a ritual, a proverb used to advise a younger relative, and a song performed for public entertainment may contain recognizable verbal elements, yet their communicative force differs. Speakers adjust emphasis, sequence, explanation, and style in relation to their listeners. Audience members may respond, correct, affirm, or interpret. Consequently, variation is not necessarily evidence of corruption. It can be a mechanism through which tradition remains responsive to changing circumstances while retaining recognizable cultural orientations.

Language performs more than a referential function in this process. Sundanese vocabulary, speech levels, metaphor, rhythm, and formulaic expression can position participants socially and carry evaluations that are difficult to reproduce through literal translation. Language identifies not only what is communicated but also the relationship within which communication is legitimate. When local expressions are extracted as isolated words or propositions, part of their pragmatic and ethical significance may disappear. This is one reason why digitizing vocabulary alone cannot amount to preserving a knowledge system.

Context also organizes interpretation. Place, occasion, material objects, religious or customary expectations, and participants' prior knowledge provide cues that may never be stated explicitly. In face-to-face transmission, these cues can be repaired through questions, repetition, demonstration, and reference to shared experience. A decontextualized record cannot automatically reproduce those resources. The difference matters because audiences unfamiliar with a tradition may interpret a visible fragment as self-contained, whereas community participants understand it as one element within a larger field of practice.

Cultural authority in oral communication is likewise relational. Authority may derive from age, experience, lineage, recognized skill, ritual role, or accountability to a community. It is not identical to legal ownership or individual authorship. The speaker's right to communicate particular knowledge may also depend on occasion and audience. This complicates modern assumptions that material becomes unrestricted once it is heard, recorded, or posted. Communicative availability does not erase the social relations through which an account becomes credible and appropriate.

The study of beluk in Cikondang offers a concrete illustration. Permadi and Permadikusumah analyze the performance and narrative context of a Sundanese vocal tradition, showing how expression is organized through performers, setting, and communal meaning [5]. The case is important not because it represents all Sundanese oral traditions, but because it reveals the density of a single communicative event. Voice, narrative, social occasion, and audience involvement operate together. A transcript may retain words; an audio recording may retain vocal qualities; a video may retain selected gesture and setting. None alone guarantees the preservation of the event's full cultural intelligibility.

This does not mean oral tradition is fixed or that mediation inevitably destroys it. Oral systems themselves involve selection, forgetting, innovation, and contestation. New settings can sustain knowledge when communities adapt performance, teaching, and participation to changing lives. The analytical issue is therefore not whether a form is 'authentic' only when unchanged. It is whether transformation remains connected to accountable knowledge holders, supplies sufficient context for interpretation, and allows communities to participate in decisions about representation.

Sundanese local knowledge should also not be portrayed as internally uniform. Communities differ by place, history, religious orientation, class, generation, and relation to institutions. Published cases make some practices more visible than others. The concept of a Sundanese knowledge communication system is thus a heuristic for identifying recurring communicative relationships, not a claim that every tradition follows one model. This limitation becomes especially important when media institutions and AI systems aggregate heterogeneous material under a single language or cultural label.

4 From Orality to Written and Audiovisual Documentation

The movement from oral communication to writing and recording extends the durability and reach of Sundanese local knowledge, but it also changes the conditions under which that knowledge is encountered. Mediation separates expression from the original event and makes it available to people who were not present. This separation can support preservation, comparison, teaching, and renewed cultural interest. At the same time, it transfers interpretive work from an interactive situation to documents, editors, archives, institutions, and later audiences.

Writing provides relative stability. A manuscript, transcription, or scholarly edition can retain linguistic material beyond the lives of particular speakers and can enable repeated reading. Yet textualization requires decisions about spelling, segmentation, translation, annotation, and the boundaries of the work. These decisions may make oral material legible to wider publics while reducing tone, timing, bodily action, and audience response. Ong's analysis of literacy helps explain why the written record is not a transparent container for speech but a technology that restructures communication and thought [6]. Assmann's account of cultural memory similarly clarifies how durable symbolic forms reorganize remembrance beyond immediate interpersonal transmission [20].

Audiovisual documentation preserves more performance features than writing alone. Sound can retain voice, melody, rhythm, and silence; video can retain gesture, spatial arrangement, material objects, and selected audience interaction. Nevertheless, every recording has a frame. Choices of location, camera position, duration, editing, captioning, and distribution influence what becomes evidence. Recording may also alter the event itself, as performers respond to equipment, documentarians, imagined audiences, or institutional expectations. Audiovisual richness should therefore be distinguished from contextual completeness.

Print and broadcast media form an important intermediate environment between situated performance and contemporary digital circulation. They enable regular production, editorial curation, and communication with dispersed audiences. They can normalize the public use of Sundanese and create communities of readers or listeners beyond immediate locality. Their institutional routines, however, also influence genre, language standardization, acceptable topics, and representation. Editors and producers become cultural intermediaries whose decisions help establish which forms of knowledge appear modern, educational, entertaining, or worth preserving.

Rosmana's historical study of Manglé illustrates this dual role [7]. The magazine contributed to the continuity of Sundanese language and cultural expression while operating through authorship, editing, publication schedules, and readership markets. Its importance lies not in reproducing oral tradition unchanged but in creating a durable public arena for Sundanese communication. The case demonstrates that mediation can strengthen cultural continuity precisely through transformation. It also shows why analysis must include the institutions that select and frame content, not only the content that finally appears.

Across writing, print, broadcast, and audiovisual documentation, authority is redistributed. Speakers and performers remain important, but scribes, researchers, translators, editors, archivists, educators, publishers, and broadcasters acquire power over selection and interpretation. This redistribution can be productive when it supports careful documentation and reciprocal collaboration. It becomes problematic when institutions detach materials from knowledge holders, conceal editorial interventions, or treat representation as a substitute for community

participation. Source attribution and documentation of context are therefore communicative requirements, not merely technical metadata.

These media should not be arranged as a simple evolutionary sequence in which one form replaces another. Oral communication continues alongside writing, print, audiovisual recording, and digital platforms; each can feed material back into the others. A printed story may be performed, a performance may be recorded, a recording may be excerpted online, and an online discussion may prompt renewed local teaching. Table 1 summarizes how each environment extends communication while introducing distinctive transformations and risks.

Table 1. Transformation of Sundanese Local Knowledge Communication

Media environment	Communicative configuration	Main extension	Principal transformation or risk
Oral communication	Speakers and participants communicate situated, performed, and embodied knowledge	Direct interaction, adaptation, and contextual interpretation	Continuity depends on speakers, social occasions, and participation
Writing and manuscripts	Writers, scribes, scholars, and readers transform expressions into durable texts	Preservation, comparison, interpretation, and education	Performance features may be reduced and editorial choices obscured
Print and mass media	Authors, editors, teachers, publishers, and broadcasters address wider publics	Regular circulation and expanded public use of Sundanese	Standardization, editorial control, and market pressures shape representation
Audiovisual documentation	Performers and documentarians preserve sound, movement, and selected interaction	Retention of voice, gesture, rhythm, and material setting	Recording and editing frame what audiences can see and hear
Digital platforms	Communities, institutions, users, and platforms circulate searchable and reproducible content	Wider access, participation, connection, and reuse	Attribution may weaken; content can lose context or depend on platform visibility
AI-mediated communication	Data contributors, developers, models, users, and communities participate in automated processing	Translation, classification, discovery, education, and generation	Bias, fabrication, cultural shallowness, weak traceability, and diminished community control

Note. The table presents an analytical comparison rather than a universal chronology. The media environments may coexist, overlap, and influence one another.

5 Digital Platforms and the Reconfiguration of Cultural Communication

Digital platforms extend the circulation of Sundanese local knowledge beyond the geographical and temporal limits of face-to-face communication. Cultural expressions that were previously encountered through performances, community gatherings, printed publications, or institutional archives can now be recorded, uploaded, searched, commented on, and redistributed across different networks. This expansion creates opportunities for younger generations, diaspora communities, educators, and researchers to encounter Sundanese language and culture more easily. However, digital availability represents only one dimension of cultural continuity. Knowledge that becomes accessible online does not necessarily retain the social relationships, interpretive guidance, or cultural authority that shaped its meaning in the original setting.

The use of Sundanese on social media demonstrates the productive possibilities of digital communication. Widyastuti and Yusuf show that social media provides a space in which Sundanese continues to be used in everyday interaction [8]. Digital communication can therefore support linguistic visibility and encourage users to produce cultural content rather than remain passive recipients. A person may share a proverb, explain a regional expression, document a performance, or discuss customary knowledge with audiences who would otherwise have limited access to it. These activities can strengthen cultural recognition. At the same time, their significance depends on whether users understand the cultural and linguistic contexts of what they circulate.

Digital mediation also changes the relationship between cultural expression and memory. Hoskins argues that digital memory is increasingly produced through networked interactions in which records can be continuously retrieved, reorganized, and recirculated [21]. Unlike a stable archival document, digital content may appear in multiple versions and acquire new meanings as users comment on, edit, or combine it with other material. This process can keep cultural expressions socially active. It can also weaken the distinction between documented knowledge, personal interpretation, commercial adaptation, and fabricated content. A widely circulated version may eventually become more familiar than the account recognized by the community from which the material originated.

The architecture of platforms influences this circulation. Platforms are not neutral channels through which content simply passes. They organize visibility through search functions, recommendation systems, engagement indicators, content moderation, and commercial priorities. Van Dijck, Poell, and de Waal describe platforms as infrastructures that shape social interaction through datafication, commodification, and selection [22]. Gillespie further explains that algorithms embedded in search engines, social media, and recommendation systems

participate in determining which information becomes relevant and visible to users [23]. Consequently, Sundanese cultural content does not circulate solely according to its cultural importance. Its visibility may depend on popularity, posting frequency, audience reaction, advertising value, and compatibility with platform formats. Knowledge that requires extended explanation can receive less attention than material that is short, humorous, emotionally provocative, or easily imitated.

This platform logic produces a tension between visibility and contextual integrity. A brief video of a ritual, performance, traditional expression, or oral narrative may attract extensive attention while offering little information about its origin, participants, occasion, or cultural restrictions. Audiences may interpret the fragment as entertainment without recognizing its educational, historical, spiritual, or customary significance. Captions and hashtags can supply some context, but they may also simplify complex practices into generalized cultural labels. The communicative problem is therefore not merely that information has been removed. It is that the remaining fragment may create an impression of completeness.

Digital platforms also redistribute participation. Community members can document their own practices, challenge inaccurate representations, and communicate without depending entirely on publishers, broadcasters, researchers, or cultural institutions. This participatory potential is particularly important for groups whose knowledge has historically been interpreted by outsiders. Nevertheless, participation on a platform is not equivalent to authority over the platform. Users can contribute content while having limited control over its storage, recommendation, commercial use, removal, or incorporation into datasets. Platform participation may therefore increase cultural expression without guaranteeing cultural governance.

The distinction between participation and control becomes more significant when cultural content is treated as data. Photographs, recordings, transcriptions, translations, comments, and interaction patterns can be collected and processed for purposes that were not anticipated by the original contributors. The CARE Principles emphasize that data governance should consider collective benefit, authority to control, responsibility, and ethics rather than focusing only on technical accessibility [13]. Related scholarship on cultural and Indigenous data governance shows that communities may lose influence when their knowledge is transferred into institutional or computational systems without accountable arrangements [14]. Although Sundanese communities should not automatically be placed within legal or political categories developed for other Indigenous contexts, the underlying issue of collective cultural authority remains relevant.

Digital circulation also complicates attribution. Content may be downloaded, cropped, reposted, translated, or combined with other material until the identity of the speaker, performer, community, or documentarian disappears. Loss of attribution is not only an ethical problem. It reduces the audience's ability to evaluate credibility, locate the original context, distinguish among regional variations, and recognize the contribution of knowledge holders. Source traceability must therefore include more than a hyperlink. A responsible record should identify, where appropriate, the contributor, cultural location, recording occasion, documentation process, editorial intervention, and conditions governing further use.

Commercialization introduces another layer of complexity. Digital visibility can create economic opportunities for performers, cultural educators, creative workers, and local communities. Cultural content can support tourism, language learning, publishing, artistic collaboration, and community-based enterprises. Yet economic benefits may be captured primarily by platforms, content aggregators, or outside creators who possess greater technical and promotional resources. Couldry and Mejias describe contemporary data relations as extractive when human activities are appropriated as resources for economic value without proportionate control or benefit for those who generate them [24]. Applied to Sundanese local knowledge, this perspective raises a central question: who benefits when cultural expressions attract attention, train systems, or generate commercial products?

Digital transformation should consequently be evaluated through both communicative expansion and cultural accountability. A community-centered platform approach would preserve meaningful context, maintain source traceability, recognize different forms of cultural authority, and create mechanisms through which knowledge holders can correct, restrict, or withdraw representations. It would also distinguish material intended for unrestricted public circulation from knowledge requiring community consultation or limited access. These principles do not require cultural knowledge to remain outside digital media. They require digital communication to remain connected to the people and relationships that make the knowledge culturally intelligible.

Section 5 establishes that digital platforms do not merely enlarge the audience for Sundanese local knowledge. They reorganize the conditions of visibility, participation, memory, attribution, control, and economic value. This reconfiguration prepares the ground for artificial intelligence, which extends platform mediation by converting cultural materials into training data and generating new representations automatically. The transition from digital circulation to AI-mediated communication therefore intensifies existing questions of context and authority rather than creating an entirely separate set of problems.

6 Artificial Intelligence and the Mediation of Sundanese Local Knowledge

Artificial intelligence changes the communication of local knowledge more fundamentally than earlier forms of digital storage. A digital archive normally retrieves material that has already been recorded, whereas a generative AI system can produce new explanations, translations, classifications, summaries, images, and narratives in response to a user's request. The resulting output may appear to communicate established cultural knowledge even when it has been assembled probabilistically from incomplete or weakly connected data. AI mediation must therefore be examined not only in terms of access and efficiency but also in relation to representation, source traceability, cultural authority, and accountability.

AI systems do not encounter Sundanese culture as a human participant encounters it. They process digital representations consisting of text, images, audio, metadata, annotations, and patterns derived from training data. The quality of their output consequently depends on what has been digitized, how the material has been categorized, and whose interpretations are represented. Cultural practices that remain primarily oral, localized, restricted, or poorly documented are less likely to be adequately represented. Conversely, materials that circulate widely online may acquire disproportionate influence, even when they contain simplifications, outsider interpretations, or factual errors.

This imbalance is particularly significant in Indonesia's multilingual environment. Aji et al. identify substantial disparities in the availability of datasets, research, and natural-language-processing resources across more than 700 Indonesian languages [9]. Regional languages do not receive technical support proportionate to the number and diversity of their speakers. Sundanese has greater digital visibility than many smaller Indonesian languages, but it remains under-resourced compared with Indonesian and English. Consequently, a model may respond in apparently fluent Sundanese while depending heavily on translated Indonesian structures, limited written genres, standardized vocabulary, or data originating from particular regions and social groups.

The distinction between linguistic fluency and cultural competence is crucial. Fluency concerns whether an output appears grammatically acceptable and understandable. Factual reliability concerns whether its statements can be supported by identifiable evidence. Cultural competence requires a further capacity to recognize context, variation, social relationships, appropriate forms of address, restrictions on knowledge, and the limits of one's authority to explain a practice. An AI system may perform relatively well at the first level while remaining unreliable at the second and third. Fluent language can therefore increase risk because it gives uncertain or fabricated claims an appearance of credibility.

Research by Putri et al. provides direct evidence concerning this problem. Their study evaluates whether large language models can generate culturally relevant commonsense question-answer data in Indonesian and Sundanese [10]. The research demonstrates that AI-assisted data generation is technically possible, but the quality of the resulting material varies according to the generation method and requires human evaluation. Cultural relevance cannot be inferred from grammaticality alone. The findings also indicate that automatically produced data may contain translation problems, unnatural language, ambiguous questions, or cultural assumptions that do not correspond adequately to the target community.

The implications extend beyond question-answer datasets. Similar weaknesses may occur when AI is asked to explain a Sundanese proverb, translate a customary expression, reconstruct an oral narrative, identify the meaning of a ritual, or generate educational material. This broader risk is an analytical inference from the linguistic and contextual errors identified by Putri et al. [10] and from the limitations of form-based language modelling discussed by Bender et al. [25]. When relevant evidence is absent, a generative model may produce a plausible synthesis instead of clearly acknowledging uncertainty. It may also combine cultural elements originating from different regions or traditions. Such output would not constitute an isolated factual error; it could create a synthetic cultural representation whose components appear credible but whose overall account has no accountable source.

Safety evaluation presents a related challenge. IndoSafety provides a culturally grounded, human-verified dataset covering formal and colloquial Indonesian as well as Javanese, Sundanese, and Minangkabau [11]. Its findings show that models developed for Indonesian contexts can still produce unsafe outputs, particularly when interacting through colloquial or regional languages. This evidence demonstrates that safety cannot be treated as a universal property established through English-language testing alone. Harmful meanings, stereotypes, insults, taboos, and socially inappropriate advice depend partly on linguistic and cultural context. Regional-language evaluation is therefore necessary throughout model development and deployment.

Problems of fabrication and safety are connected to the broader opacity of large language models. Users generally cannot determine which training sources influenced a particular output, how conflicting accounts were resolved, or whether the model has confused documented evidence with statistical association. Bender et al. warn that large language models can reproduce patterns from extensive datasets without understanding the social meaning of the language they generate [25]. In the context of Sundanese local knowledge, this limitation means

that AI-generated explanations should not be treated as cultural testimony. The model cannot replace the situated knowledge holder who can explain the origin, variation, obligations, and limits of a cultural account.

AI may nevertheless provide meaningful benefits when used within an accountable communication process. It can assist with transcription, preliminary translation, cataloguing, keyword generation, document discovery, language-learning exercises, and the comparison of large collections. It may help educators prepare initial teaching materials or enable researchers to identify patterns requiring closer investigation. These functions can reduce repetitive labor and improve access. Their legitimacy, however, depends on the quality of the source material, transparency about the use of AI, and validation by people who possess the relevant linguistic and cultural expertise.

Human validation should not be understood as a final proofreading stage performed after a system has already determined the structure of cultural knowledge. Knowledge holders, language specialists, educators, archivists, and community representatives should participate in deciding what may be digitized, how categories are constructed, what contextual information accompanies the material, and which uses require restrictions. Their involvement must begin before data collection and continue through model design, testing, deployment, correction, and evaluation. Otherwise, participation risks becoming symbolic while decisive authority remains with institutions or technology developers.

Data governance is therefore inseparable from communication ethics. The CARE Principles emphasize collective benefit, authority to control, responsibility, and ethics in decisions concerning community-related data [13]. UNESCO's Recommendation on the Ethics of Artificial Intelligence similarly stresses human oversight, cultural diversity, transparency, inclusion, and protection against harm [12]. These principles imply that the technical possibility of processing publicly accessible Sundanese material does not by itself establish the ethical legitimacy of doing so. Public availability, informed permission, cultural appropriateness, and authorization for machine learning are different conditions and should not be treated as interchangeable.

Source traceability is especially important for AI-mediated cultural communication. A responsible system should distinguish retrieved evidence from generated interpretation and should identify the sources supporting its claims whenever possible. It should communicate uncertainty when evidence is incomplete, recognize disagreements among sources, and avoid presenting a single account as representative of all Sundanese communities. Where knowledge is culturally sensitive or context-dependent, the system should direct users toward appropriate human or institutional sources rather than generating an apparently definitive explanation.

The distribution of benefits must also be considered. Communities and individual contributors may supply recordings, language examples, translations, narratives, and annotations that increase the usefulness of an AI system. Yet commercial value may accrue primarily to developers, platform operators, or organizations controlling computational infrastructure. As the critique of data extraction developed by Couldry and Mejias suggests, participation in data production does not automatically ensure control over how value is generated or distributed [24]. Community-centered AI should therefore include clear agreements concerning attribution, access, compensation where appropriate, and the return of useful resources to contributing communities.

AI does not eliminate the communicative relationships surrounding Sundanese local knowledge. It adds new actors and redistributes their influence. Knowledge holders, documentarians, researchers, annotators, developers, platform companies, models, institutions, and users participate in a chain through which cultural material is selected and transformed. Accountability should follow this chain rather than being assigned only to the final user or to the model as if it were an autonomous speaker. Developers and institutions remain responsible for dataset selection, documentation, evaluation procedures, interface design, and mechanisms for correction or withdrawal.

The central issue is consequently not whether AI should be accepted or rejected as a whole. The relevant question is under what communicative and institutional conditions AI can support cultural continuity without displacing context and community authority. AI should function as an assistive mediator whose outputs remain traceable, contestable, and subject to human validation. It should not be positioned as an independent cultural authority. This distinction provides the foundation for the community-centered communication model developed in the following section.

7 A Community-Centered Model for AI-Mediated Cultural Communication

The preceding analysis shows that each change in media extends some communicative possibilities while transforming others. Oral communication supports contextual interaction but depends on continuing participation. Writing, print, and audiovisual documentation increase durability but introduce editorial selection. Digital platforms expand circulation while reorganizing visibility, attribution, and control. Artificial intelligence adds automated classification and generation, thereby increasing the distance between cultural expression, source, and audience. A responsible model must address this entire communicative chain rather than concentrating only on the accuracy of the final AI output.

The community-centered model proposed here treats Sundanese local knowledge as relational and situated communication. Cultural materials are not considered isolated units of information awaiting digitization. They remain connected to knowledge holders, communities, communicative occasions, historical settings, and conditions governing appropriate use. The term community-centered does not imply that every decision must be made by a homogeneous or formally bounded community. Sundanese communities contain differences of region, generation, expertise, institutional affiliation, and cultural interpretation. The model instead requires that people whose knowledge and practices are being represented possess meaningful influence over the processes affecting them.

The model consists of six interdependent principles: contextual integrity, cultural authority, source traceability, meaningful participation, human validation, and equitable benefit-sharing. These principles should operate throughout the communication process, from documentation and data preparation to model development, deployment, correction, and reuse. Failure in one dimension can weaken the others. Traceable material may still be inappropriate if the source lacked authority to disclose it. Community participation may remain symbolic if participants cannot alter decisions. Accurate outputs may still be extractive if the resulting benefits are concentrated outside the contributing community.

7.1 Contextual Integrity

In this article, contextual integrity refers specifically to the preservation of the communicative and cultural conditions required for responsible interpretation. It concerns whether cultural material remains connected to the circumstances through which its meaning, social function, and conditions of appropriate use can be understood. In oral communication, context is partly supplied through the speaker, audience, occasion, place, performance style, and opportunities for clarification. When cultural expressions move into documents, databases, platforms, or AI systems, these elements must be represented deliberately because they no longer accompany the material automatically.

Context should include more than a general label such as 'Sundanese culture.' Where relevant and ethically appropriate, documentation should identify the regional setting, linguistic variety, genre, social function, recording occasion, participants, and history of the material. It should also indicate whether the record represents a common expression, a particular performer's interpretation, an institutional reconstruction, or a researcher's analytical account. This information prevents a limited case from being presented as universally representative.

Contextual integrity does not require every record to contain an exhaustive cultural explanation. The level of documentation should correspond to the risks of misunderstanding and reuse. A publicly used proverb may require less restrictive contextualization than ritual knowledge or material associated with a particular customary community. The governing question is whether removal from the original setting creates a misleading impression about meaning, authority, or appropriate use. UNESCO's approach to intangible cultural heritage supports this emphasis because safeguarding concerns the social practices and transmission processes surrounding cultural expressions, not merely their recorded forms [1].

7.2 Cultural Authority

Cultural authority identifies who has a legitimate role in explaining, representing, correcting, or restricting the use of particular knowledge. Authority may be based on recognized expertise, cultural role, participation in a community, experience, lineage, custodial responsibility, or institutional mandate. It should not be reduced to whoever first uploaded the material or whoever controls the technical infrastructure.

The principle does not assume that cultural authority is singular or uncontested. Different knowledge holders may offer legitimate but contrasting interpretations. Regional communities may use different terms, narratives, or practices. A community-centered system should preserve this plurality rather than forcing it into a single standardized account. Where disagreement exists, the system should identify the perspectives and their sources instead of automatically selecting one as definitive.

Cultural authority also establishes limits. A person may possess knowledge of a practice without having authority to make it universally accessible or authorize its use for machine learning. Likewise, a researcher or cultural institution may document material without acquiring unrestricted rights over every subsequent use. The CARE principle of authority to control is relevant here because it directs attention from technical possession toward legitimate decision-making [13]. In the Sundanese context, its application must remain sensitive to the actual organization and preferences of the communities involved rather than imposing a uniform governance structure.

7.3 Source Traceability

Source traceability enables users and affected communities to determine where a cultural claim originated and how it was transformed. At a minimum, traceability should distinguish primary documentation, scholarly

interpretation, institutional description, user-generated content, machine translation, and AI-generated synthesis. These categories carry different kinds of authority and uncertainty.

Traceability should follow transformations rather than stop at the first digital record. A transcription may derive from an audio recording; a translation may derive from the transcription; an educational summary may derive from the translation; and an AI response may combine the summary with other data. Each stage can introduce selection or error. Recording this chain allows reviewers to identify where a problematic interpretation entered the communication process.

For generative AI, source traceability presents a substantial technical challenge because outputs may not correspond to a single recoverable training document. This limitation should be communicated openly rather than concealed behind fluent output. Systems used for cultural education or documentation should, whenever possible, rely on curated retrieval from identifiable sources and distinguish retrieved material from generated explanation. When evidence cannot be traced, the output should be marked as uncertain and should not be treated as authoritative cultural information.

7.4 Meaningful Participation

Meaningful participation requires the involvement of relevant knowledge holders and community representatives in decisions that affect cultural representation. Participation must begin before data collection and continue through categorization, model development, testing, deployment, and evaluation. Consultation conducted only after a system has been built provides little opportunity to change its underlying assumptions.

Meaningful participation should be distinguished from cultural authority. Participation concerns the capacity to influence decisions and processes, whereas cultural authority concerns the legitimacy to explain, authorize, correct, or restrict particular knowledge. A participant may contribute to a project without possessing authority over every cultural matter, while an acknowledged knowledge holder may still be excluded from meaningful participation in technical decisions.

Participation is meaningful when participants have sufficient information, time, and decision-making power. They should understand the proposed uses of cultural material, including possible commercial reuse, model training, automated generation, and redistribution. They should also be able to challenge categories, identify missing context, request restrictions, and influence whether a project proceeds. Participation cannot be measured only by the number of meetings or contributors involved.

The model also recognizes inequalities within communities. People with institutional access, digital literacy, or public visibility may be easier to consult than performers, elders, rural communities, or speakers of less documented varieties. A participatory process should therefore examine whose voices are absent and whether technical procedures systematically privilege already visible groups. This approach is consistent with UNESCO's requirements concerning inclusion, diversity, and human oversight in AI governance [12].

7.5 Human Validation

Human validation evaluates whether cultural material and AI outputs are linguistically appropriate, factually supported, contextually intelligible, and ethically suitable for their intended use. It should involve people with relevant competence rather than generic reviewers who assess only grammar or readability. Depending on the material, validation may require Sundanese language specialists, cultural practitioners, archivists, educators, researchers, or recognized community knowledge holders.

Validation must occur at several stages. Before training or retrieval, source material should be checked for provenance, quality, representativeness, and permission. During system development, categories and evaluation criteria should be reviewed for cultural assumptions. Before publication or educational use, generated outputs should be assessed for language, evidence, contextual accuracy, and potential harm. After deployment, users and communities should have accessible mechanisms to report errors and request correction.

Human validation does not make AI infallible. Reviewers may disagree, overlook errors, or represent limited perspectives. The purpose is not to replace computational opacity with the assumption of perfect human judgment. It is to create accountable points at which claims can be questioned, compared, and corrected. The linguistic problems documented by Putri et al. and the culturally specific risks identified by IndoSafety demonstrate why automated evaluation alone is insufficient for Sundanese-language systems [10], [11].

7.6 Equitable Benefit-Sharing

Equitable benefit-sharing asks who gains from the digitization and computational use of cultural knowledge. Benefits may include income, employment, training, improved documentation, educational resources, language technologies, institutional recognition, and greater public access. A project should not be considered community-centered merely because cultural material becomes more visible.

The form of benefit should be negotiated rather than assumed. Financial compensation may be appropriate when contributors perform recording, transcription, translation, annotation, or expert validation. Other projects may prioritize returning digitized collections, providing community-controlled infrastructure, supporting language education, or developing tools that respond to locally identified needs. Benefit-sharing should also recognize continuing contributions rather than treating a one-time payment or acknowledgment as sufficient for unrestricted future use.

This principle responds to the extractive tendency of data-driven systems. Cultural communities may provide the linguistic and cultural resources that make a system valuable while possessing little control over its commercial development [24]. The CARE principle of collective benefit offers a foundation for addressing this imbalance [13]. Equitable distribution does not require every benefit to be identical, but it does require transparency about value creation and a defensible relationship between contribution, authority, risk, and return.

Table 2. Operational Framework for Community-Centered AI-Mediated Cultural Communication

Principle	Central question	Required practice	Failure indicator
Contextual integrity	What information is necessary to interpret the material responsibly?	Document cultural setting, variation, function, occasion, and limitations	Cultural fragments are presented as complete or universally representative
Cultural authority	Who may explain, authorize, correct, or restrict the material?	Recognize plural knowledge holders and differentiated authority	Technical possession or publication is treated as unrestricted authority
Source traceability	Where did the claim originate, and how was it transformed?	Record provenance, editorial stages, translations, and AI intervention	Users cannot distinguish documentation from generated interpretation
Meaningful participation	Can affected communities influence consequential decisions?	Involve participants from data collection through deployment and evaluation	Consultation occurs after central technical decisions are fixed
Human validation	Who assesses linguistic, factual, contextual, and ethical quality?	Conduct multi-stage review by relevant language and cultural specialists	Fluency or automated scores are treated as sufficient evidence of quality
Equitable benefit-sharing	Who receives the value produced from cultural data?	Negotiate attribution, compensation, access, infrastructure, and community returns	Institutions or platforms capture value while contributors lose control

The six principles operate as an interdependent cycle rather than as a linear compliance checklist. No principle can substitute for another, and satisfying one requirement does not compensate for failure in a different dimension. Context helps identify the appropriate source of authority. Cultural authority determines who should participate and validate material. Participation influences documentation and system design. Traceability allows validation and correction. Benefit-sharing provides a test of whether participation has produced substantive rather than symbolic outcomes. Findings from validation may require renewed consultation, restriction, or contextualization.

Operational responsibility is distributed among several actors. Knowledge holders and communities provide cultural interpretation and establish conditions of appropriate use. Researchers, archivists, and cultural institutions document provenance and preserve contextual information. Developers translate those requirements into data structures, interfaces, retrieval procedures, evaluation protocols, and access controls. Platforms disclose how visibility, reuse, and commercialization are organized. Users remain responsible for evaluating purpose and avoiding misleading redistribution. No actor can transfer all accountability to the AI system.

The model consequently rejects two inadequate approaches. The first is technological solutionism, in which improved datasets and model performance are assumed to resolve cultural problems automatically. Better data can reduce some errors but cannot determine legitimate authority or acceptable use. The second is preservation without participation, in which institutions digitize cultural materials for public access while retaining unilateral control over categorization, interpretation, and reuse. Preservation becomes sustainable only when it remains connected to accountable cultural relationships.

A community-centered approach does not prohibit experimentation or open cultural exchange. It establishes differentiated conditions according to the characteristics and risks of the material. Some resources may be suitable for unrestricted education and creative reuse. Others may require attribution, consultation, controlled access, or exclusion from AI training. The purpose is not to place all Sundanese knowledge under a single restrictive regime, but to replace automatic extraction with accountable decision-making.

The model's central proposition is that responsible AI-mediated cultural communication depends not only on the technical quality of an output but also on the social legitimacy of the communicative process through which that output becomes possible. It must be evaluated by whether communication preserves sufficient context, respects legitimate authority, makes sources traceable, enables meaningful participation, incorporates qualified human validation, and distributes benefits fairly.

8 Discussion: Communication Transformation, Cultural Continuity, and Sustainable Digital Futures

The transformation of Sundanese local knowledge from oral tradition to artificial intelligence cannot be understood as a simple progression from an older medium to a more advanced one. Each medium establishes a different configuration of speakers, audiences, institutions, technologies, and cultural authority. Oral communication situates knowledge within direct social relationships. Writing and recording extend its durability. Print and broadcast media expand organized public circulation. Digital platforms enable participation and rapid redistribution, while artificial intelligence adds automated interpretation and generation. These environments coexist rather than replace one another.

This perspective modifies conventional understandings of cultural preservation. Preservation is often measured by the existence of records, databases, digital collections, or accessible content. Such measures are important but incomplete. A cultural expression may survive as a digital object while losing the relationships that make it understandable and socially accountable. Conversely, a tradition may remain culturally active while changing its performance, language, audience, or medium. Cultural continuity should therefore be evaluated through the capacity of communities to interpret, transmit, adapt, and govern knowledge, not solely through the persistence of recorded content.

The findings also demonstrate that accessibility and sustainability are not equivalent. Digital technologies can make Sundanese cultural material accessible to wider audiences, but sustainable communication requires the continued presence of context, authority, participation, and mechanisms for correction. Content that circulates widely without identifiable sources may increase visibility while weakening cultural accountability. A sustainable digital future depends on whether technological systems support relationships between cultural knowledge and the people who interpret and maintain it.

From a communication-theoretical perspective, the article contributes a relational account of media transformation. Media do not function merely as containers that transport unchanged cultural information. They participate in selecting, formatting, classifying, amplifying, and authorizing what becomes communicable. The transition from oral communication to AI therefore changes not only the scale of transmission but also the conditions under which a statement can appear credible. In AI-mediated environments, fluency and computational visibility may increasingly substitute for situated authority unless systems are deliberately designed to distinguish them.

The community-centered model responds to this problem by relocating evaluation from the final technological output to the entire communication process. Accuracy remains essential, but it is only one dimension of responsible mediation. A culturally accurate statement can still be communicated without permission, stripped of relevant context, attributed incorrectly, or used in ways that provide no benefit to its source community. Contextual integrity, cultural authority, source traceability, meaningful participation, human validation, and equitable benefit-sharing therefore function as complementary criteria.

8.1 Implications for Education

Education represents one potential field in which digital and AI technologies may support the communication of Sundanese local knowledge. The implications discussed below are reasoned applications of the review findings rather than outcomes that have already been demonstrated through educational intervention research. Digitized recordings, annotated narratives, interactive language resources, and carefully designed AI-assisted learning tools may make cultural materials more accessible to students. They may help learners compare linguistic varieties, locate historical sources, understand performance contexts, and engage with knowledge holders beyond the classroom.

Educational use nevertheless requires more than converting cultural content into simplified teaching material. Students should be able to distinguish primary documentation, scholarly interpretation, community explanation, and AI-generated synthesis. Source traceability should therefore become part of cultural and digital literacy. Learners need to understand why an AI response may be linguistically convincing but culturally incomplete or factually unsupported. The problems identified in Sundanese data generation and regional-language safety evaluation demonstrate the importance of this critical competence [10], [11].

Teachers and educational institutions should use AI as an assistive instrument rather than an autonomous cultural instructor. AI may assist in preparing exercises, transcribing recordings, generating preliminary translations, or organizing learning resources. Final educational materials should be reviewed by people with appropriate linguistic and cultural expertise. Where possible, knowledge holders should be involved not merely as sources of content but as participants in curriculum development, interpretation, and evaluation.

This approach can connect formal education with living cultural transmission. Schools and universities may collaborate with cultural communities, local media, archives, libraries, and creative practitioners to develop contextualized resources. Such collaboration helps prevent a division in which communities are treated as data providers while educational institutions retain interpretive authority. It also creates opportunities for students to learn research ethics, documentation, communication, and responsible technology use through direct engagement.

8.2 Implications for Digital and Creative Industries

Sundanese language and cultural knowledge have potential relevance for digital publishing, audiovisual production, tourism communication, language technologies, games, archives, and other creative activities. This potential should not be interpreted as evidence that digitization will automatically produce economic growth or community welfare. Digital tools can reduce some production barriers and connect culturally grounded products with wider publics, but their outcomes depend on institutional and economic arrangements.

Economic development based on local knowledge is sustainable only when it does not separate cultural value from the people who maintain it. Commercial projects should establish clear agreements concerning attribution, authorization, representation, compensation, and future reuse. Publicly visible material should not automatically be treated as a free resource for product development or AI training. The distinction between accessibility and authorization remains important because cultural expressions may be publicly performed while retaining social expectations about appropriate reuse.

Creative adaptation should also be distinguished from claims of cultural authenticity. Artists and producers may legitimately reinterpret cultural material, but audiences should be informed when a work is a contemporary adaptation, institutional reconstruction, or AI-assisted creation. This distinction protects both creative freedom and cultural intelligibility. It allows innovation without presenting new combinations as inherited tradition.

The platform environment creates an additional challenge. Cultural products may depend on recommendation systems, engagement metrics, and commercial infrastructures that communities do not control [22], [23]. Short and spectacular content may receive greater visibility than detailed cultural explanation. Industry strategies should therefore consider alternative forms of circulation, including community-controlled archives, educational partnerships, curated collections, and documentation that remains accessible outside a single commercial platform.

Equitable benefit-sharing provides the bridge between cultural communication and sustainable economic development. Benefits should include more than immediate payments or promotional exposure. Training, employment, digital infrastructure, access to resulting datasets, community archives, and support for cultural transmission may produce longer-term value. The appropriate arrangement will differ across projects, but it should be negotiated transparently with relevant contributors and knowledge holders. The CARE Principles provide a useful ethical orientation through their emphasis on collective benefit and authority to control [13].

8.3 Institutional and Policy Implications

Universities, cultural institutions, government agencies, and technology developers have different but connected responsibilities. Cultural institutions should improve provenance documentation and establish differentiated access conditions. Universities can develop interdisciplinary validation involving communication scholars, cultural researchers, language specialists, computer scientists, and community representatives. Technology developers should provide mechanisms for source attribution, uncertainty communication, correction, and restriction. Government policy can support regional-language datasets and public-interest infrastructure without requiring unrestricted release of all cultural material.

Investment in Sundanese language technology should not focus solely on increasing dataset size. Data quality, genre diversity, regional representation, documentation, permission, and community involvement are equally important. A large dataset assembled from easily accessible online content may reproduce platform biases rather than represent the diversity of Sundanese communication. The under-resourcing identified by Aji et al. is therefore both quantitative and institutional: it concerns not only the amount of data but also the capacity to develop resources responsibly [9].

Policies should also recognize differentiated cultural sensitivity. A uniform open-data approach is unsuitable for material that varies in authority, purpose, and conditions of use. Some resources may be made openly available, while others require attribution, controlled access, consultation, or exclusion from machine-learning processes. These distinctions should be recorded in metadata and enforced through institutional procedures rather than relying entirely on individual users' goodwill.

8.4 Limitations and Research Agenda

The proposed model is based on an integrative review and should not be treated as an empirically validated governance standard. The available literature provides uneven coverage of Sundanese communities, cultural

forms, and digital practices. Published research tends to make documented and institutionally visible traditions easier to analyze than everyday, localized, or restricted knowledge. The model therefore requires further evaluation through community-based and comparative research.

Future studies should examine how different Sundanese communities define cultural authority, permission, and acceptable digital reuse. Research should also investigate how speakers evaluate AI-generated Sundanese across regional varieties, speech levels, genres, and cultural contexts. Experimental accuracy measures should be combined with interviews, participatory observation, discourse analysis, and community review. Such work would reveal errors that cannot be detected through standard linguistic benchmarks alone.

Further research is also needed on institutional practice. Studies could compare museums, archives, educational institutions, cultural organizations, creative enterprises, and technology projects to identify how provenance, participation, and benefit-sharing are implemented. The six-principle model can serve as an analytical framework for these comparisons, but its categories should remain open to revision based on empirical evidence.

The broader implication is that bridging local wisdom with education and digital industry requires more than technological transfer. It requires communicative arrangements through which innovation remains culturally intelligible, socially accountable, and capable of producing shared benefits. Sustainable economic growth cannot be inferred from digitization, platform visibility, or AI adoption alone. It becomes more defensible as a development objective when cultural communities retain meaningful roles in determining how knowledge is documented, represented, used, and valued.

9 Conclusion

This article examined how the movement from oral tradition through written, audiovisual, and digital media has transformed the communication of Sundanese local knowledge, and what principles should govern its mediation by artificial intelligence. The review shows that this transformation cannot be described adequately as a linear movement from traditional to modern communication. Oral performance, writing, print, audiovisual documentation, digital platforms, and AI-mediated communication continue to coexist and influence one another. Each medium extends the durability, accessibility, or scale of communication while redistributing context, participation, interpretation, and cultural authority.

The movement into writing and audiovisual documentation enables cultural expressions to persist beyond particular speakers and occasions. It also introduces decisions concerning selection, transcription, translation, framing, editing, and institutional custody. Digital platforms expand opportunities for participation and public circulation but organize visibility through platform infrastructures, commercial priorities, and algorithmic selection. Artificial intelligence intensifies these transformations because it can generate new cultural representations rather than merely retrieve existing records.

The analysis demonstrates that linguistic fluency should not be confused with factual reliability or cultural competence. AI systems may produce plausible Sundanese-language outputs while depending on limited datasets, translated structures, uneven regional representation, or culturally shallow associations. Such outputs can obscure uncertainty, combine material from different traditions, and weaken the relationship between cultural claims and accountable sources. AI-generated explanations should therefore not be treated as cultural testimony or as substitutes for situated knowledge holders.

The article's primary conceptual contribution is a community-centered model of AI-mediated cultural communication. The model consists of six interdependent principles: contextual integrity, cultural authority, source traceability, meaningful participation, human validation, and equitable benefit-sharing. Together, these principles shift assessment from the apparent quality of the final output to the legitimacy of the entire communication process. A technically accurate result remains inadequate when it lacks appropriate authorization, conceals its sources, excludes affected communities, or generates benefits that are captured primarily by outside institutions.

The model also provides a framework for connecting local wisdom with education and digital industry. AI may assist documentation, transcription, preliminary translation, resource discovery, and the development of learning materials. Digital and creative industries may use Sundanese cultural resources for publishing, audiovisual production, tourism communication, language technologies, and other forms of cultural innovation. These possibilities do not establish that digitization or AI adoption will automatically support cultural continuity or sustainable economic growth. Their contribution depends on accountable representation, community participation, qualified validation, and transparent distribution of benefits.

Because this study is an integrative literature review, the proposed model should be treated as an analytically grounded framework rather than an empirically validated governance standard. The reviewed literature cannot be assumed to represent every Sundanese community, linguistic variety, cultural practice, or understanding of legitimate authority. The model is analytically grounded in the reviewed literature but has not yet been tested as

an operational governance framework in particular Sundanese communities or institutions. Future research should evaluate it through participatory and comparative studies involving knowledge holders, regional-language speakers, cultural institutions, educators, creative practitioners, and technology developers.

The central conclusion is that technological accessibility does not by itself preserve cultural knowledge. Sustainable communication requires cultural material to remain connected to the people, contexts, and relationships through which it becomes meaningful. Artificial intelligence can support this process when it functions as an assistive, traceable, contestable, and human-validated mediator. It becomes culturally problematic when computational fluency is permitted to substitute for accountable evidence and community authority. The future of Sundanese local knowledge in the digital era therefore depends not only on what technology can generate, but also on who participates, who decides, whose knowledge is recognized, and who benefits.

References

- [1] UNESCO: Convention for the Safeguarding of the Intangible Cultural Heritage. UNESCO, Paris (2003).
- [2] Vansina, J.: Oral Tradition as History. University of Wisconsin Press, Madison (1985).
- [3] Finnegan, R.: Oral Literature in Africa. Open Book Publishers, Cambridge (2012). <https://doi.org/10.11647/OBP.0025>
- [4] Sibarani, R.: Kearifan Lokal: Hakikat, Peran, dan Metode Tradisi Lisan. Asosiasi Tradisi Lisan, Jakarta (2012).
- [5] Permadi, T., Permadi Kusumah, M.A.: Performansi dan konteks penuturan seni Beluk pada masyarakat adat Cikondang. *Tambo: Journal of Manuscript and Oral Tradition* 4(1) (2026). <https://doi.org/10.55981/tambo.2026.15178>
- [6] Ong, W.J.: Orality and Literacy: The Technologizing of the Word, 2nd edn. Routledge, London (2002).
- [7] Rosmana, H.: Majalah Mangle: Pelestari budaya Sunda 1957-1998. *Jurnal Sejarah Citra Lekha* 2(1), 75-81 (2017). <https://doi.org/10.14710/jscl.v2i1.15053>
- [8] Widyastuti, T., Yusuf, C.M.: Pemakaian bahasa Sunda dalam media sosial. *Lokabasa* 12(2), 213-221 (2021). <https://doi.org/10.17509/jlb.v12i2.39929>
- [9] Aji, A.F., et al.: One country, 700+ languages: NLP challenges for underrepresented languages and dialects in Indonesia. In: *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics*, pp. 7226-7249 (2022).
- [10] Putri, R.A., et al.: Can LLM generate culturally relevant commonsense QA data? Case study in Indonesian and Sundanese. In: *Proceedings of EMNLP 2024*, pp. 20571-20590 (2024).
- [11] Azmi, M.F., Al Kautsar, M.D., Wicaksono, A.F., Koto, F.: IndoSafety: Culturally Grounded Safety for LLMs in Indonesian Languages. In: *Proceedings of the 2025 Conference on Empirical Methods in Natural Language Processing*, pp. 9135-9166. Association for Computational Linguistics (2025).
- [12] UNESCO: Recommendation on the Ethics of Artificial Intelligence. UNESCO, Paris (2021).
- [13] Carroll, S.R., et al.: The CARE Principles for Indigenous Data Governance. *Data Science Journal* 19, 43, 1-12 (2020). <https://doi.org/10.5334/dsj-2020-043>
- [14] Spano, I., Zhang, Y.: Indigenous data sovereignty and cultural heritage governance. *International Journal of Cultural Property* 32(2), 167-193 (2025). <https://doi.org/10.1017/S0940739125100064>
- [15] Whitemore, R., Knafl, K.: The integrative review: Updated methodology. *Journal of Advanced Nursing* 52(5), 546-553 (2005). <https://doi.org/10.1111/j.1365-2648.2005.03621.x>
- [16] Snyder, H.: Literature review as a research methodology: An overview and guidelines. *Journal of Business Research* 104, 333-339 (2019). <https://doi.org/10.1016/j.jbusres.2019.07.039>
- [17] Torraco, R.J.: Writing integrative literature reviews: Guidelines and examples. *Human Resource Development Review* 4(3), 356-367 (2005). <https://doi.org/10.1177/1534484305278283>
- [18] Page, M.J., et al.: The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ* 372, n71 (2021). <https://doi.org/10.1136/bmj.n71>
- [19] Rusyana, Y.: *Tuturan tentang Pencak Silat dalam Tradisi Lisan Sunda*. Yayasan Obor Indonesia, Jakarta (1996). ISBN 979-461-245-6.
- [20] Assmann, J.: *Cultural Memory and Early Civilization: Writing, Remembrance, and Political Imagination*. Cambridge University Press, Cambridge (2011).
- [21] Hoskins, A. (ed.): *Digital Memory Studies: Media Pasts in Transition*. Routledge, New York (2018). <https://doi.org/10.4324/9781315637235>
- [22] van Dijck, J., Poell, T., de Waal, M.: *The Platform Society: Public Values in a Connective World*. Oxford University Press, New York (2018). <https://doi.org/10.1093/oso/9780190889760.001.0001>
- [23] Gillespie, T.: The relevance of algorithms. In: Gillespie, T., Boczkowski, P.J., Foot, K.A. (eds.) *Media Technologies: Essays on Communication, Materiality, and Society*, pp. 167-194. MIT Press, Cambridge, MA (2014). <https://doi.org/10.7551/mitpress/9780262525374.003.0009>
- [24] Couldry, N., Mejias, U.A.: *The Costs of Connection: How Data Is Colonizing Human Life and Appropriating It for Capitalism*. Stanford University Press, Stanford (2019). <https://doi.org/10.1515/9781503609754>
- [25] Bender, E.M., Gebru, T., McMillan-Major, A., Shmitchell, S.: On the dangers of stochastic parrots: Can language models be too big? In: *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency*, pp. 610-623. Association for Computing Machinery, New York (2021). <https://doi.org/10.1145/3442188.3445922>