

URHOB0 IN THE DIGITAL AGE: ICT, SOCIAL MEDIA, AND AI AS TOOLS FOR CULTURAL PRESERVATION AND INNOVATION

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Abstract

The digital revolution is reshaping how cultures are preserved, transmitted, and represented. For the Urhobo people, whose identity is deeply tied to oral traditions, language, and communal practices, the rise of ICT, social media, and artificial intelligence presents both unprecedented opportunities and serious risks. This paper examines how digital platforms and AI technologies are influencing Urhobo studies, language preservation, and cultural expression in the 21st century. The paper interrogates the role of social media in amplifying Urhobo voices globally, while also assessing how algorithmic biases and digital homogenization may marginalize indigenous knowledge. The paper explores AI-driven tools for Urhobo language documentation and translation, alongside community-led initiatives using ICT to sustain music, festivals, and oral heritage. It argues that integrating Urhobo epistemologies into the digital sphere is not merely about preservation but about innovation positioning, Urhobo culture as an active contributor to the evolving global digital humanities. By bridging tradition and technology, this study demonstrates that the future of Urhobo identity lies in harnessing digital power responsibly, ensuring that AI and ICT become tools of empowerment rather than erasure.

Keywords: Urhobo culture, digital humanities, social media, artificial intelligence (AI), language preservation, indigenous knowledge, cultural identity.

INTRODUCTION

The Urhobo people, one of Nigeria's largest ethnic groups in the Niger Delta, are renowned for their rich oral traditions, expressive festivals, intricate proverbs, and diverse cultural practices. Like many indigenous

groups across Africa, their history and worldview are deeply embedded in language, stories, and communal performances. Yet, in the 21st century, these traditions face unprecedented threats. Urbanization, globalization, and migration have weakened intergenerational transmission, while Western media and dominant languages steadily eclipse indigenous voices. For the Urhobo, the question is urgent: how can a culture rooted in oral and communal knowledge survive in an era where digital platforms dominate communication and artificial intelligence (AI) increasingly shapes human interaction?

Information and Communication Technologies, social media, and AI are transforming the ways cultures are expressed, remembered, and reinvented. On one hand, these tools provide powerful avenues for documenting, preserving, and sharing indigenous knowledge with global audiences. On the other hand, they also carry risks of misrepresentation, digital exclusion, and cultural homogenization. For example, while social media platforms like YouTube, Instagram, and TikTok allow Urhobo youths to showcase dances, music, and folklore, they also encourage remixing that can strip these traditions of context and depth. Similarly, AI offers new possibilities for language translation and preservation, but the underrepresentation of minority languages in machine-learning datasets risks erasing them from the digital future altogether.

Nigeria's digital revolution provides both challenges and opportunities. The rise of social media use among young people, the expansion of mobile technology, and increasing experimentation with AI-powered translation create a fertile ground for integrating Urhobo knowledge systems into modern communication. However, this requires intentional engagement. Without it, Urhobo voices risk being drowned in a digital ecosystem dominated by English and other global languages.

This paper explores the intersection of Urhobo studies with ICT, social media, and AI. It asks three guiding questions:

- (1) How are ICT and social media currently being used to preserve and promote Urhobo language and culture?
- (2) What role can AI play in Urhobo language documentation, translation, and cultural archiving?
- (3) What risks accompany this digital turn, and how can they be mitigated?

The significance of this study lies not only in highlighting existing digital initiatives but also in mapping future directions for Urhobo scholarship in the context of global digital humanities.

Ultimately, this paper argues that the future of Urhobo identity depends on its ability to embrace and adapt to digital transformation. By strategically harnessing ICT, social media, and AI, the Urhobo can move from being passive subjects of globalization to active contributors to the evolving global knowledge system. In doing so, Urhobo studies will not only preserve traditions but innovate upon them ensuring that the culture remains vibrant, relevant, and globally visible in the 21st century and beyond.

LITERATURE REVIEW

The intersection of indigenous knowledge systems with digital technologies has become an increasingly important area of scholarship in the 21st century. Around the world, researchers are grappling with how information and communication technologies, social media, and artificial intelligence (AI) are transforming the ways minority cultures are preserved, represented, and transmitted. For the Urhobo people, whose culture and history are rooted in oral traditions, performance, and community-based knowledge, this global debate provides a crucial framework for understanding both the opportunities and risks of the digital age.

ICT and Cultural Preservation

Scholars of digital humanities argue that ICT offers unprecedented tools for archiving, preserving, and transmitting cultural heritage (Terras, Nyhan & Vanhoutte, 2013). Indigenous groups across Africa have begun digitizing oral histories, creating online dictionaries, and developing mobile learning apps to make endangered languages accessible to younger generations and diasporic communities (Adejunmobi, 2015). For instance, Yoruba and Igbo digital projects have successfully produced online repositories of proverbs, folktales, and lexicons, highlighting the role of ICT in bridging intergenerational gaps.

However, scholars also caution that digitization alone does not guarantee cultural survival (Barber, 2018). The sustainability of digital archives depends on accessibility, funding, and integration into everyday cultural practices. In Nigeria, inadequate digital infrastructure and poor policy support have limited large-scale indigenous digitization efforts (Emezue, 2021). Within this context, Urhobo cultural materials remain largely undocumented in digital formats, making them vulnerable to loss as older generations pass on.

Social Media and Indigenous Identity

Social media platforms have transformed cultural expression by enabling real-time sharing of music, festivals, proverbs, and performances. Studies on African youth show that platforms like Instagram, TikTok, and Facebook are increasingly used to remix indigenous culture, blending traditional dances, attire, and oral genres with global popular culture (Ncube, 2020). This fusion creates visibility but also risks trivializing or commodifying cultural elements.

For diasporic communities, social media has become a vital tool for maintaining connections to homeland cultures (Ogunyemi, 2017). Urhobo diaspora associations, for example, use Facebook and WhatsApp groups to teach language, circulate folk songs, and share cultural events.

Yet, as Miller (2021) notes, the global architecture of social media platforms is not neutral; algorithms prioritize mainstream content, meaning minority cultures must compete for visibility. In this sense, social media both amplifies and marginalizes indigenous voices.

Artificial Intelligence and Language Preservation

AI has recently emerged as a transformative force in language documentation and translation. Machine learning models can process large corpora of text and speech, enabling the development of dictionaries, automated translation, and speech recognition for endangered languages (Bird, 2020). Projects like Google's "Nigerian Languages in Translation" have attempted to include Hausa, Igbo, and Yoruba in digital translation systems.

However, scholars highlight the deep inequalities embedded in AI development (Birhane, 2021). Minority languages like Urhobo are often absent from training datasets, effectively rendering them invisible in digital platforms. This exclusion is not merely technical but political, reinforcing linguistic hierarchies that privilege global languages such as English. The emerging field of decolonial AI (Mohamed, Png & Isaac, 2020) advocates for inclusive datasets and ethical frameworks that recognize indigenous epistemologies. For Urhobo studies, this means that scholars and communities must actively push for the integration of the Urhobo language into AI-driven tools.

Indigenous Knowledge Systems in the Digital Era

Beyond language, scholars have examined how indigenous ecological, medical, and philosophical knowledge can be digitized and shared (Battiste, 2002). While digitization promises global recognition of indigenous wisdom, it also raises ethical concerns about appropriation and misrepresentation. Who controls indigenous knowledge in the digital sphere? Who benefits from its commodification? (Smith, 2012).

For the Urhobo, indigenous practices such as traditional healing, agricultural methods, and ethno-philosophy risk being misused or stripped of their context if digitized without community oversight. At the same time, responsible digitization could allow these practices to inform contemporary debates on climate change, healthcare, and sustainability making Urhobo knowledge a contributor to global challenges rather than a relic of the past.

Theoretical Frameworks

Several theoretical perspectives guide this study. First, Digital Humanities frames the use of technology as a means of extending the archive, making texts, performances, and oral traditions accessible in new forms (Svensson, 2010). Applying this to Urhobo studies allows for a critical examination of how digital archives and tools can preserve oral traditions.

Second, Postcolonial Theory provides a lens for interrogating the power relations in digital technologies. The dominance of Western languages, platforms, and epistemologies in ICT and AI risks marginalizing indigenous voices. Postcolonial scholars argue for the decolonization of knowledge production, demanding that indigenous epistemologies shape not just survive the digital era (Spivak, 1999; Mbembe, 2017).

Finally, Sociolinguistics informs the analysis of language use in digital spaces. It explains how minority languages adapt in online environments, the dynamics of code-switching, and how new digital registers emerge (Blommaert, 2010). For Urhobo, sociolinguistics provides insight into how young speakers use social media to negotiate between English, Pidgin, and Urhobo.

Gap in Scholarship

Despite the global literature on ICT, social media, and AI in indigenous contexts, Urhobo culture remains underrepresented in academic debates.

While Yoruba and Igbo projects are increasingly documented, there is little systematic analysis of Urhobo digital initiatives. This gap makes Urhobo studies not only necessary but urgent. By situating Urhobo experiences within broader debates on digital humanities, this paper contributes both to the preservation of Urhobo heritage and to global discourses on cultural survival in the digital age.

METHODOLOGY

This study adopts a qualitative research design grounded in digital ethnography and case study analysis. Given that the focus lies on understanding how ICT, social media, and artificial intelligence are shaping Urhobo studies, the chosen methodology privileges depth, context, and interpretation over statistical generalization.

Research Approach

The research is exploratory and interpretive, seeking to map out emerging patterns in the use of digital technologies for the preservation, representation, and innovation of Urhobo culture. The study does not claim exhaustive coverage but rather provides an informed analysis of trends, practices, and opportunities within the digital sphere.

Data Sources

Data was drawn from multiple sources to ensure richness and triangulation:

1. **Digital Platforms:** Content from social media platforms (Facebook, TikTok, Instagram, and YouTube) where Urhobo cultural material is being created and shared. For instance, Facebook community groups focused on teaching the Urhobo language, YouTube channels archiving traditional music and festivals, and TikTok videos of Urhobo dances.
2. **Digital Archives and Online Initiatives:** Review of existing online repositories of Urhobo oral traditions, proverbs, and cultural texts where available.
3. **AI-powered Tools:** Analysis of how mainstream translation tools (e.g., Google Translate) handle or fail to handle Urhobo, alongside a review of

emerging indigenous AI projects in Nigeria.

4. Secondary Data: Scholarly articles, reports from NGOs, and media pieces documenting attempts to digitize minority languages and indigenous knowledge in Nigeria.

5. Diaspora Case Studies: Online platforms run by Urhobo diaspora associations that use ICT to sustain cultural identity, including WhatsApp and Zoom-based language classes.

Data Collection

The primary method of data collection was digital ethnography observing, documenting, and analysing Urhobo-related cultural activity in online environments. This involved tracing hashtags, studying digital communities, and cataloguing audiovisual content that highlights Urhobo traditions. Data was also collected from secondary sources, including published reports on AI and indigenous language representation.

Data Analysis

The analysis combined thematic coding and interpretive analysis. Data from online platforms was coded into themes such as language preservation, music and performance, youth engagement, diaspora participation, and risks of digital erasure. Special attention was paid to how AI tools represent (or exclude) the Urhobo language and how algorithms shape the visibility of Urhobo content online. The analysis was situated within the frameworks of digital humanities, postcolonial theory, and sociolinguistics to provide a deeper interpretive lens.

Justification of Methodology

A qualitative, interpretive approach is best suited to capture the richness of cultural practices, which cannot be reduced to numerical indicators alone. Digital ethnography provides access to online spaces where Urhobo culture is currently being expressed and negotiated, while case studies of diaspora platforms and AI projects offer grounded examples of innovation and challenge.

This methodology ensures that the paper is not only descriptive but also analytical, highlighting both the opportunities and the risks inherent in bringing Urhobo culture into the digital age.

ANALYSIS AND DISCUSSION

A. ICT and Urhobo Cultural Preservation

The arrival of Information and Communication Technologies in Nigeria has opened new frontiers for documenting and transmitting indigenous culture. For the Urhobo, whose heritage is predominantly oral, Information and Communication Technologies provides opportunities to create durable records of language, folklore, music, and traditional practices. Unlike oral performance, which is ephemeral, digital tools enable preservation across generations and geographies.

One area where Information and Communication Technologies is making an impact is language preservation. Although Urhobo is spoken by over two million people, intergenerational transmission is weakening, particularly among urban and diasporic families where English and Pidgin dominate. Information and Communication Technologies has enabled grassroots initiatives aimed at reversing this trend. Several community groups have launched mobile applications and WhatsApp classes where children and youth can learn basic Urhobo vocabulary, proverbs, and storytelling. Diaspora associations in the United States and United Kingdom, for example, run online Saturday schools using Zoom and Google Classroom, demonstrating Information and Communication Technologies' role as a bridge between distance and cultural identity.

Similarly, digital archiving projects are beginning to emerge, though still on a small scale. Individual scholars and cultural enthusiasts have uploaded collections of Urhobo proverbs, folktales, and oral histories onto websites and blogs. On YouTube, one finds channels dedicated to recording Urhobo songs, dances, and oral poetry, transforming what was

once restricted to live performance into a shareable global resource. Although many of these projects are informal and lack institutional funding, they represent significant steps toward creating a digital footprint for Urhobo knowledge.

ICT has also been instrumental in revitalizing traditional festivals and ceremonies. Events such as the Ohworu water festival and the Iyerin dance have been live-streamed on Facebook and YouTube, making them accessible to audiences far beyond Delta State. This has both cultural and economic implications. For the diaspora, it provides a means of participation despite physical absence, reinforcing communal bonds. For local communities, it opens the possibility of cultural tourism, where digital visibility can attract interest and investment.

Education is another domain where ICT is reshaping Urhobo studies. Although there is no widely used e-learning platform dedicated solely to the Urhobo language, some innovators are experimenting with integrating Urhobo into language-learning apps. For instance, crowd-sourced platforms like Memrise and Duolingo, though not yet supporting Urhobo officially, have user-created modules under development. If scaled, such tools could revolutionize how young people engage with the language, embedding it in the same digital space where they learn global languages like French or Spanish.

Despite these advances, challenges remain. The majority of Urhobo cultural content online is fragmented, poorly catalogued, and vulnerable to loss if hosting platforms shut down. Many websites lack proper metadata or search optimization, making discovery difficult. Furthermore, digital inequality limits who can access or contribute to Information and Communication Technologies-driven preservation. Rural Urhobo communities, where traditions remain strongest, often lack reliable internet access and digital literacy, excluding them from participation in digital heritage initiatives.

Another limitation is the absence of institutional frameworks. Unlike Yoruba, which benefits from state-supported projects and global recognition as a major African language, Urhobo has received little organized support from government or universities in terms of digitization. Information and Communication Technologies-driven preservation efforts are therefore scattered, individual, and unsustainable in the long term.

Nevertheless, the growing presence of Urhobo materials in digital spaces signals an important cultural shift. Information and Communication Technologies is no longer an external force but has become part of how Urhobo culture is practiced, remembered, and reinvented. What is needed now is coordination the creation of digital repositories, mobile applications, and online educational resources backed by institutions, not just individuals. Such initiatives would ensure that the promise of Information and Communication Technologies as a tool for cultural preservation is fully realized.

B. Social Media as Amplifier

If Information and Communication Technologies provide the structural backbone for Urhobo cultural preservation, social media has become the most visible arena for its performance, negotiation, and reinvention. Platforms such as Facebook, WhatsApp, TikTok, Instagram, and YouTube allow Urhobo people especially the youth to showcase their traditions, connect with diasporic communities, and amplify cultural narratives to global audiences. Social media's immediacy, interactivity, and wide reach have transformed Urhobo cultural expression from a largely localized practice into a transnational phenomenon.

One of the most notable uses of social media is in language and storytelling. Facebook groups such as “Urhobo Progressive Youths” and diaspora WhatsApp groups host daily discussions, proverb challenges, and translation exercises. These spaces serve as informal classrooms

where elders, enthusiasts, and young learners collaborate. Hashtags like #UrhoboLanguage or #UrhoboProverbs circulate cultural knowledge while fostering pride in heritage. In many instances, social media has replaced traditional face-to-face storytelling sessions, ensuring continuity in a digital context.

Urhobo music and dance have also found a thriving presence online. YouTube and TikTok host countless clips of Egwu Amala dances, drumming patterns, and contemporary fusions where young creators remix traditional sounds with Afrobeats. These hybrid forms resonate with digital natives, making culture more relatable without completely detaching it from its roots. On Instagram, stylized photography of Urhobo attire and cultural festivals has contributed to a renewed pride in identity, particularly among urban youth who might otherwise feel detached from tradition.

For the Urhobo diaspora, social media functions as a lifeline. Associations in Europe and North America livestream cultural festivals, weddings, and naming ceremonies, allowing members to participate virtually. Zoom has become a platform for cultural workshops, while WhatsApp groups serve as hubs for sharing prayers, songs, and recipes. These practices extend cultural participation beyond physical borders, creating a “virtual Urhobo nation” that sustains identity in exile.

However, social media's amplifying role comes with significant challenges. First, there is the problem of misrepresentation and trivialization. Viral TikTok trends often strip cultural practices of their depth, presenting them as entertainment divorced from context. For example, sacred dances or rituals may be shortened into catchy clips, raising ethical concerns about how traditions are portrayed and consumed.

Second, social media algorithms privilege content that is sensational or mainstream, marginalizing minority cultural material. While Yoruba or Igbo cultural videos may trend widely, Urhobo content often struggles for visibility, reflecting digital hierarchies that mirror offline power dynamics. Without deliberate promotion strategies, Urhobo digital culture risks remaining on the margins.

Third, the commercialization of culture presents a paradox. While social media enables creators to monetize content, it also encourages tailoring traditions to suit global tastes. These risks diluting authenticity in pursuit of likes, shares, and revenue. For example, some YouTube creators add non-Urhobo elements to their videos simply to attract broader audiences. Finally, social media has exposed Urhobo culture to critical scrutiny and contestation. Posts about traditional practices sometimes attract derogatory comments from outsiders who perceive them as “backward” or “fetish.” This not only stigmatizes Urhobo identity but also pressures cultural custodians to defend or sanitize traditions for public acceptance.

Despite these risks, social media remains a powerful amplifier of Urhobo culture. It democratizes participation, allowing young voices, women, and diaspora members to contribute to cultural narratives previously dominated by elders or local elites. By fostering dialogue, visibility, and hybrid creativity, social media ensures that Urhobo identity is not static but dynamic, adapting to new realities. What remains crucial is developing strategies to balance amplification with authenticity ensuring that the digital performance of Urhobo culture enhances rather than erodes its richness.

C. AI and the Future of Urhobo Studies

While Information and Communication Technologies and social media are already reshaping Urhobo cultural expression, artificial intelligence (AI) represents the next frontier one with enormous potential but also serious risks. As machine learning systems increasingly mediate how

humans access, translate, and circulate knowledge, the future visibility of minority languages like Urhobo may well depend on how they are integrated into AI infrastructures.

Artificial intelligence holds the power to either erase or elevate Urhobo studies. If excluded from datasets, the language and culture risk digital invisibility. But if embraced intentionally, AI can become a force for preservation, education, and global recognition. The task ahead is to ensure that Urhobo culture shapes the AI era rather than being shaped and silenced by it.

D. Urhobo Indigenous Knowledge in the Digital Era

Urhobo culture is not defined by language alone; it encompasses a wide range of indigenous knowledge systems, including healing practices, agricultural methods, ecological wisdom, and spirituality. In the digital age, these domains face both opportunities for preservation and risks of distortion. Information and Communication Technologies, social media, and AI provide tools to record and share indigenous knowledge, but they also raise questions of ownership, ethics, and cultural integrity.

Urhobo indigenous knowledge systems stand at a crossroads in the digital era. Information and Communication Technologies, social media, and AI offer tools for preservation and innovation, but without ethical safeguards, they risk reducing sacred, ecological, and healing practices to mere data. The challenge, therefore, is not whether to digitize Urhobo knowledge, but how to do so responsibly ensuring that preservation does not come at the cost of authenticity, ownership, or dignity.

Opportunities for Language Documentation and Translation

One of AI's most promising contributions lies in language documentation. Through natural language processing (NLP), AI systems can analyse large bodies of text and speech to develop dictionaries, automated

translation tools, and speech recognition systems. For a language like Urhobo, which has limited written resources and declining intergenerational transmission, AI could create digital corpora that preserve linguistic material for future generations. Similar efforts have already been piloted with Yoruba and Igbo, where crowd-sourced translation projects feed data into Google Translate and other platforms.

AI could also facilitate e-learning applications. Imagine mobile apps that not only teach Urhobo vocabulary but also use AI-powered chatbots to simulate conversations in real time. Such tools could make language learning interactive, personalized, and engaging for young people in both Nigeria and the diaspora. Beyond pedagogy, AI could support cultural archiving by tagging digital videos, songs, and oral histories with metadata in Urhobo, making them searchable in ways that oral archives alone cannot.

Cultural Preservation through AI Innovation

Beyond language, AI offers possibilities for documenting and sharing Urhobo proverbs, folklore, and oral philosophy. Large Language Models (LLMs) trained on Urhobo texts could be used to generate contextual translations, preserving the philosophical richness of proverbs that often lose meaning in direct English translation. For example, a proverb such as “wose yeri kpo enu oto ye adata” (if you cannot climb up, say it while you are on the ground, not when you have climbed half-way) carries communalist implications that AI could help annotate and contextualize.

There are also opportunities for Urhobo contributions to digital humanities projects. AI-enabled archives could connect Urhobo ecological knowledge with global debates on sustainability and climate change, ensuring that indigenous epistemologies influence scientific and policy conversations. Properly designed, these projects could position Urhobo knowledge not as a relic of the past but as a valuable asset for addressing global challenges.

Risks of Digital Exclusion

Despite these possibilities, the risks of AI for minority cultures are profound. The most pressing issue is exclusion from datasets. Current AI systems are overwhelmingly trained on English and a few dominant world languages. Urhobo, like many minority languages, is virtually absent from global corpora. This means that AI systems cannot “recognize” or “process” Urhobo, effectively erasing it from digital futures.

Algorithmic bias compounds this problem. Even when African languages are included, they are often misclassified or mistranslated, leading to distortions of meaning. A mistranslation of a proverb or sacred concept can strip it of cultural context, reducing complex philosophies to shallow interpretations. In the worst cases, it can stigmatize or misrepresent cultural practices, reinforcing stereotypes rather than dismantling them.

Another risk lies in cultural appropriation and commodification. Once digitized, Urhobo proverbs, healing practices, or oral histories could be mined by AI without community consent, repackaged in global platforms for profit. This raises ethical concerns about ownership, intellectual property, and cultural sovereignty. As scholars in decolonial AI argue (Mohamed, Png & Isaac, 2020), without ethical safeguards, AI may replicate colonial patterns of extraction in digital form.

Towards a Decolonial AI for Urhobo Studies

To mitigate these risks, a decolonial approach to AI is essential. This means ensuring that Urhobo voices, scholars, and communities are active participants in shaping how AI engages with their language and culture. Practical steps include:

- a) Developing community-led datasets of Urhobo texts, proverbs, and oral histories.
- b) Partnering with universities and NGOs to design AI tools tailored for Urhobo.

c) Advocating for inclusion of Urhobo in global platforms such as Google Translate and OpenAI systems.

d) Establishing ethical guidelines for how digitized cultural material is used, ensuring consent and community benefit.

By centering Urhobo epistemologies in AI development, the community can transform AI from a threat into a tool of empowerment. This requires collaboration between linguists, technologists, cultural custodians, and policymakers, ensuring that Urhobo culture not only survives but thrives in digital futures.

Healing Practices and Healthcare Knowledge

Traditional healing occupies a central place in Urhobo life, blending herbal medicine, spiritual rituals, and communal care. Some healers have begun documenting remedies and practices using digital tools, while younger practitioners use WhatsApp or Facebook to share knowledge with diasporic communities. There are even emerging efforts to create online herbariums cataloguing medicinal plants in Delta State. Such digitization has the potential to connect indigenous knowledge with global conversations on alternative medicine and healthcare innovation.

However, digital exposure carries risks of misuse and commodification. Once shared online, healing knowledge can be appropriated by outsiders without acknowledgment or consent. Pharmaceutical companies, for instance, may extract valuable data for profit, leaving local communities uncompensated. Furthermore, without cultural context, digital representations of healing rituals may be misinterpreted as superstition or fetishism, reinforcing stereotypes rather than fostering respect.

Agricultural Practices and Ecological Wisdom

The Urhobo have long relied on fishing, farming, and ecological stewardship, guided by practices that ensure sustainability. Oral knowledge about seasonal farming, water management, and communal land use has historically been transmitted across generations. Digital

platforms now provide opportunities to document this wisdom and share it with younger generations, particularly as climate change threatens traditional livelihoods. AI-based tools could even integrate Urhobo ecological practices into broader climate resilience strategies.

Yet, digitizing agricultural knowledge raises dilemmas. Should all knowledge be made open-access, or should some remain restricted to the community? How can sensitive ecological knowledge be protected from exploitation by commercial actors? These questions highlight the ethical dimensions of bringing indigenous knowledge into the digital sphere.

Spirituality and Sacred Knowledge

Perhaps the most sensitive area of digitization concerns spirituality and sacred rituals. Festivals such as Edjenu Festival, Egba Festival, Okere Urhobo Festival, Ekene Festival, Idju festival, Omanuku Festival or rituals tied to water deities carry profound cosmological significance. Digitizing them through photography, live-streaming, or AI-generated archives expands their reach but also risks desacralizing practices that were never intended for mass consumption. Some elders fear that digital exposure erodes the secrecy and sanctity essential to Urhobo spirituality. At the same time, younger generations argue that without digitization, these practices may disappear entirely.

Ethical Imperatives in Digital Preservation

The digitization of indigenous knowledge demands careful ethical frameworks. Scholars such as Linda Tuhiwai Smith (2012) caution against the uncritical transfer of indigenous practices into global knowledge systems that prioritize accessibility over cultural sensitivity. For the Urhobo, this means that digitization should be guided by community consent, cultural custodianship, and respect for sacred boundaries. A balance must be struck between visibility and protection: some knowledge may be digitized for public consumption, while other aspects remain restricted to the community.

CONCLUSION AND RECOMMENDATIONS

The transformation of Urhobo studies in the 21st century is inseparable from the rise of Information and Communication Technologies, social media, and artificial intelligence. As this paper has demonstrated, these tools are not neutral they simultaneously offer opportunities for preservation and innovation while posing risks of misrepresentation, exclusion, and cultural erosion. The Urhobo people, like many indigenous groups worldwide, face the urgent task of navigating this digital terrain in ways that safeguard their heritage while embracing modernity.

From the analysis, four key insights emerge. First, Information and Communication Technologies have already proven valuable in preserving Urhobo language and cultural materials. Online classes, digital archives, and livestreamed festivals extend traditions beyond local boundaries and ensure intergenerational transmission. Yet, such initiatives remain fragmented, often driven by individuals rather than institutions, and therefore lack sustainability. Second, social media has amplified Urhobo cultural expression, enabling youth and diaspora communities to participate actively in shaping cultural narratives. However, its algorithm-driven logic risks privileging entertainment over authenticity, commodifying traditions in pursuit of visibility. Third, AI represents both the greatest opportunity and the greatest threat. Properly harnessed, AI could revolutionize Urhobo language preservation, education, and cultural archiving. But if neglected, Urhobo risks digital invisibility, excluded from datasets that define the future of human knowledge. Finally, indigenous knowledge systems spanning healing, agriculture, and spirituality illustrate the ethical dilemmas of digitization. Without frameworks of consent and custodianship, sacred and ecological wisdom could be appropriated or trivialized in the digital sphere.

These findings suggest that the digital future of Urhobo culture is neither predetermined nor uncontested. It will depend on deliberate strategies

that balance preservation, innovation, and ethical responsibility. To this end, the following recommendations are proposed.

1. Institutional Commitment to Digitization

Urhobo cultural preservation cannot rely solely on individuals or diaspora associations. Universities, cultural institutes, and government agencies must invest in systematic digitization projects. This includes creating online repositories of Urhobo texts, proverbs, oral histories, and performance archives. Such repositories should be curated by experts in collaboration with community custodians to ensure both accuracy and cultural sensitivity.

2. Development of Urhobo Digital Tools

Beyond archiving, there is a need for practical digital tools that embed Urhobo into everyday life. Mobile apps for language learning, AI-powered dictionaries, and e-learning platforms tailored to schools in Delta State can normalize the use of Urhobo in digital spaces. Partnerships between technologists, linguists, and cultural activists are essential for producing such tools.

3. Advocacy for Inclusion in Global AI Systems

The exclusion of Urhobo from major AI systems such as Google Translate reflects broader inequalities in the digital order. Advocacy efforts must push for the inclusion of Urhobo in global datasets. This requires both local data creation such as compiling corpora of Urhobo texts and international lobbying for recognition. Collaboration with global digital humanities projects can accelerate this process.

4. Ethical Frameworks for Indigenous Knowledge Digitization

Not all knowledge should be digitized or made publicly accessible. Community-driven ethical frameworks must determine what aspects of Urhobo healing, spirituality, and ecological wisdom can be shared digitally, and under what conditions. Intellectual property laws should be adapted to protect indigenous cultural resources from appropriation by external actors.

5. Empowerment of Youth and Diaspora Communities

Youth are the most active digital creators, while diaspora communities are deeply invested in cultural continuity. Programs should empower these groups with digital literacy, content creation skills, and cultural training, ensuring that their contributions enhance rather than dilute Urhobo traditions. Digital storytelling workshops, cultural hackathons, and youth-led documentation projects could strengthen engagement.

6. Policy and Curriculum Integration

The Nigerian government and Delta State authorities should integrate digital heritage preservation into policy frameworks. Urhobo language and culture can be incorporated into school curricula not only through traditional teaching but also via digital platforms. This dual approach would normalize the coexistence of tradition and modernity.

Conclusion

The survival of Urhobo identity in the digital age depends on agency. If left to chance, Information and Communication Technologies, social media, and AI may distort or erase Urhobo voices. But if approached deliberately, these tools can amplify, preserve, and even reinvent Urhobo culture for future generations. The task is not to resist technology but to shape it, ensuring that digital transformation becomes a site of empowerment rather than erasure.

By embedding Urhobo into the infrastructures of the digital world, the community can secure its place in global conversations. More than preservation, this is about innovation about ensuring that Urhobo studies contribute actively to the global knowledge economy. In the end, the challenge is not simply to keep the Urhobo past alive, but to make it resonate in the future.

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