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ARTIFICIAL INTELLIGENCE (AI) IN THE DOCUMENTATION OF ABANG DANCE MUSIC

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Abstract

The integration of Artificial Intelligence (AI) into cultural heritage preservation has become an important area of scholarly inquiry, particularly for indigenous traditions such as the abang dance music of the Efik people of Nigeria. This study examines the application of AI in the documentation and preservation of abang dance music in response to the increasing decline of traditional practices caused by modernization and the erosion of intergenerational knowledge transmission. It also investigates how AI technologies supports the preservation, analysis, and creative continuity of abang dance music while maintaining cultural authenticity. The study is anchored on two theoretical frameworks: Cultural Identity and Postcolonial theories, which provide premise for understanding indigenous musical practices within their socio-cultural and historical contexts. Using ethnographic interviews, archival materials, and existing literature, the study documents the musical structures, performance contexts, and cultural meanings of abang dance music. In addition, AI-based quantitative methods are employed to transcribe and analyze rhythmic and melodic patterns of abang music. Findings indicate that AI technologies are effective in digitizing, analyzing, and reproducing the musical components of abang dance music; however, limitations in capturing its spiritual significance, performative dynamics, and communal meanings exists. While AI serves as an important tool for safeguarding and revitalizing threatened musical traditions, it cannot substitute the lived cultural knowledge of the Efik people. Therefore, the application of AI in cultural preservation must be culturally sensitive and collaborative. Thus, sustained partnerships between AI practitioners and Efik cultural custodians to ensure ethical preservation, cultural continuity, and long-term sustainability of abang dance music is imperative.

Keywords: *Abang* dance music, Artificial intelligence, Efik traditions, Cultural impact, Digital preservation.

Introduction

The Efik people of Cross River State, Nigeria, possess a rich and diverse cultural heritage that finds expression in traditional dances such as *abang*, *ekpe*, *ekombi*, *nyok* and others. These dance forms are inseparable from communal life, serving as vehicles for storytelling, ritual observance, entertainment, and the transmission of indigenous knowledge. Traditionally, Efik dances are learned and preserved through oral transmission, imitation, drumming, hand clapping, and communal participation, particularly during moonlight gatherings, festivals, rites of passage, and recreational activities (Anthony, 2024).

Amaku (2019), postulates that among these cultural expressions, *abang* dance music stands out as one of the most iconic and symbolically charged traditions of the Efik people. Rooted in spiritual beliefs, particularly the reverence for marine and earth deities such as Ndem (water goddess) and Abasi Isong (earth goddess). Additionally, Amaku stresses that *abang* functions not merely as performance but as a cultural system that embodies fertility, femininity, discipline, and communal identity. Anthony (2024), notes that the dance's defining feature is overt in the maidens' ability to balance water pots on their heads while executing fluid, serpentine movements which symbolizes harmony between human skill, spiritual guidance, and nature.

However, *abang* dance music performance in the contemporary period, the underpinning cultural settings of the dance music is undergoing rapid transformation due to technological advancement, particularly given the growing influence of Artificial Intelligence (AI) in creative and cultural domains. According to Duarte, Johnson, & Vigil-Hayes, (2022), AI technologies now facilitate music generation, transcription, motion capture, choreography mapping, digital archiving, and virtual performance. While these tools present unprecedented opportunities for the preservation and dissemination of unnoticeable cultural heritage, they also raise critical concerns regarding authenticity, ownership, cultural misrepresentation, and the erosion of communal modes of knowledge transmission.

Essien & Okon (2023), retrospect that as AI-driven systems increasingly mediate cultural production and traditions, a pertinent question to ask is, can *abang* dance music, historically be sustained through embodied practice and collective memory though with risk being digitized and without sufficient participation among custodians. This development therefore necessitates a critical examination of how AI reshapes the documentation and transmission of *abang* dance music. Consequently, this paper interrogates the possibilities and threats posed by AI to *abang* dance music, arguing that while AI can serve as an important tool for preservation and revitalization, it must be ethically applied within culturally grounded frameworks to avoid cultural alienation and technological colonialism.

Theoretical Framework: Cultural Identity, Postcolonialism, and the Posthuman Condition

This study is anchored on cultural identity theory, postcolonial theory, and posthuman discourse, providing an interdisciplinary framework to examine the connection among tradition, technology, and power. From a cultural identity perspective, Hall's (1990) assertion that identity is a "production" rather than a fixed essence and its particularly instructive. Hall emphasizes that cultural identities are continually reshaped by history, representation, and social practice. Within this framework, *abang* dance music is practiced not as a static artefact of the past but as a dynamic cultural form that has historically adapted through changes in costumes, performance contexts, and symbolic objects. The incorporation of AI into *abang* documentation can therefore be read as part of this ongoing process of identifying cultural becoming, provided it does not separate the tradition from its communal roots.

Moreso, the postcolonial theory, complementing this view, especially Spivak's (1988) critique of epistemic violence that raises concerns about whose knowledge is represented and who controls the means of representation. Indigenous African cultural practices have historically been marginalized, extracted, or misinterpreted through Western technological frameworks. In the context of AI, Essien & Okon (2023), detected danger that *abang* dance music may be digitized, archived, or reproduced in ways that privilege external narratives while silencing Efik voices, however, this study therefore situates AI within a broader critique of technological marginalization and cultural appropriation.

The paper also engages Braidotti's (2013) concept of the posthuman condition, which recognizes cultural production as an interaction between human and non-human agencies. This theoretical perspective is particularly relevant to *abang* dance music, whose origin myth already reflects human and non-human dilemma through the imitation of the Ndem (water goddess). Long before digital technology, Amaku (2019), asserts that Efik maidens reproduced non-human rhythms, movements, and spiritual energies through embodied performance. AI's involvement in *abang* music can be interpreted as a contemporary extension of this human and non-human relationship, though one that requires ethical negotiation to preserve cultural meaning and agency. By integrating AI into the discourse, the paper aligns with Braidotti's (2013) notion of the posthuman condition, where human and non-human agencies interact in cultural production, this is noticed among the *abang* dancers, when the maidens mimicked the rhythmic sound and movement of the Ndem (water goddess), thus reproduced same among others during the moonlight game and from generation to another, the practice revolves.

***Abang* Dance Music**

Abang dance music originated among the Efik people of Cross River State, Nigeria. According to Anthony (2024), the term "*abang*" is derived from the Efik language and translates to "pot." It is believed that the Efik people adopted this name while paying obeisance to the Ndem (water goddess) and Abasi Isong (earth goddess). Archibong (2024) orally claims that the powerful force of Abasi Isong (earth goddess), is credited with the creation of all living beings, animals, and plants as well as believed to be the sender of rains to nurture plants for abundant harvests on yearly basis; hence, *abang* dance music is the cultural interaction between human and non-human agencies, associated with Abasi Isong. Even when Amaku (2019) agrees with Archibong, she complements Anthony's submission of *abang* as a "water pot" that originated from the Ndem cult worship. It accentuates the Efik people's deep reverence for the Ndem (water goddess). Amaku adds that *abang* dance music is a multifaceted cultural expression deeply rooted in Efik heritage and spirituality. Amaku's position reflects that *abang* dance music is a testament to the Efik people's profound connection with their earth goddess, and their intricate cultural evolution over time.

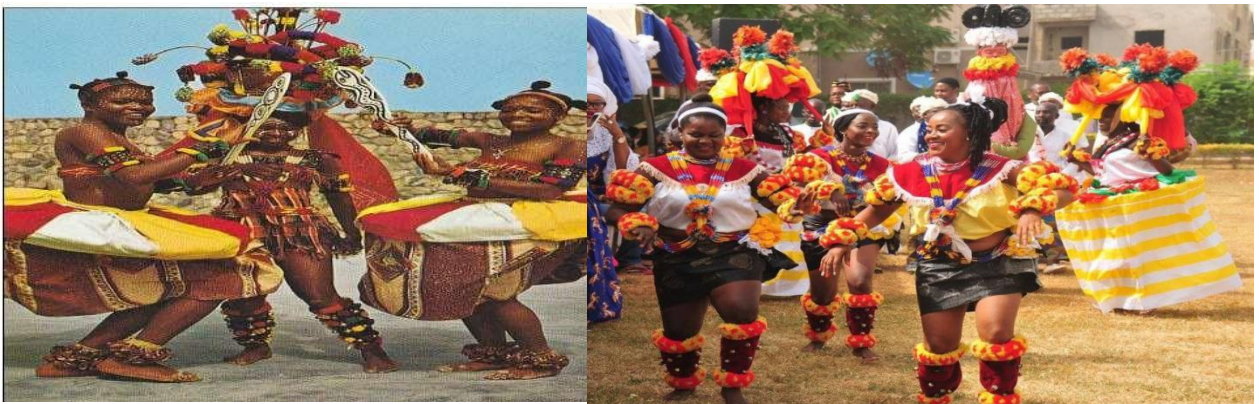


Fig. 1 & 2: *Abang* Dancers (Anthony, 2024).

The word '*abang*' translated as 'water pot' by Amaku in Efik language, is an indigenous art form which seeks to extol the importance of the sea/water in Cross River environs. The Cross River indigenous art forms include lots of the Efik dance, dramas, drumming, folktales, legends, songs and stories. Indigenous art forms are attributed to appeasements, appearances and disappearances of Ndem (deities) on the river surface. Often times,

Ndemers are caught dancing beautifully on the surface of the river as these revered mermaids never danced in full glare of anyone. Nonetheless, female acolytes of the Ndem cult and several Efik maidens of old, allegedly claimed that while going to fetch water with their local clay pots, and sometimes to offer sacrifices in the river, they had stumbled upon dancing mermaids on the river surface, they mimicked, retained and practiced the music heard and dance steps during the moonlight game and recreational moments.



Fig. 3: The Researcher with Elizabeth Asuquo (Anthony, 2024).

Asuquo (oral interview, 2023), admits that the Ndemers are “marine spirits that dance gracefully on the river surface, and their dance is of a serpentine nature, their body movements appeared to be in sync with the waves of the sea”. Asuquo affirmed the submissions of both Anthony and Amaku, but also added that maidens who observed the display of the Ndem’s worshippers while at the river bank, attempted to communicate and relate with the supernatural by mimicking some body movements over again, until they became worshippers of the deities. Repeatedly, the maidens practiced what they had witnessed as a form of adoration and ritualistic act to the marine deities on daily basis, until they became adept in the art and continued to pass it onto different generations. This religious dance grew to become more than a ritual dance from the river bank to a scintillating performance at the village square and several family compounds. Overtime, it became a tradition to be performed by young women as a rite of passage during festivals and coronations. This act aligns with the cultural identity theory and the posthuman discourse, where maidens naturally reproduced the serpentine dance movements of the

Ndem with their water pots securely balanced on their heads, manifesting the spiritual in the physical, without the pot fallen.

Dancing with a pot of water on one's head entails a high level of coordination, Anthony (2024) emphasizes that *abang* dancers are unique maidens that exhibits high level of coordination between their human and non-human existence. Amaku (2019) declares that the gods of the Efik did not evolve out of the dance, rather, they were in existence before the dance was developed as a mode of worship.

As interesting as this art form is, it was observed that prior to AI, the *abang* dance music was transmitted from one generation to another through mimicking and oral transmission, thus, restricted within the Efik communities and its environs including village squares and market places. Though the dance is an artistic means to communicate with the Ndem, it was however, limited to only oral performance. The Efik tradition is a process and not a static art, affirming the cultural identity's theory. *Abang* dance music promotes diversities,



where items such as baskets, gourds, lanterns, pitchers, calabashes, trays, and mortars were lavishly ornamented and used to express delight and celebrate the Ndem in the absence of the water pot. Consequently, the maidens added colours and glammers to their ritualistic performance by experimenting with whatever household items they could place on their head in the absence of the required pot. Culturally, only skilled performers were allowed to carry the *abang* and/or the *akpan* (tray), while

others danced around the *akpan* carriers and in several formations. **Fig. 4: Maiden carrying the *abang* (Anthony, 2024).**

Apparently, *abang* being a marine dance or performance, its source is traced to the river goddesses, and its efficacious benefits were not lost on the Efik tradition. As a one-time *abang* dancer, Okon-Effiong (oral interview,2023) rightly asserts that *abang* is associated with fertility, therefore women, especially the pregnant and/or barren women patronize the *abang* dancers more than the men. This is so because one of the most renowned Efik goddesses, Anansa is attributed as the sole giver of children and the goddess does the benevolence when the women danced to ecstasy. There is no gainsaying that the typical Efik

women believe that the goddess gives children, thus, they dance doggedly in order to receive their promised child or children as the case may be. Okon-Effiong (oral interview, 2023) corroborates that “Anansa is the archetypal mother of children in Efik land”. Therefore, *abang* dance music is not only for entertainment purposes, but also meant to secure the many blessings of the supernatural. Hence, the dance features rhythmic drum patterns, choral singing, and symbolic movements representing fertility, maturity, and community roles (Offiong, 2014), all in the Efik language and usually passed down in an oral manner through generations.

AI: AI is an abbreviation for artificial intelligence. It is the capability of computer systems or algorithms to imitate intelligent human behaviour. The convergence of artificial intelligence (AI) has gained significant attention in recent years, particularly in the context of indigenous traditions. AI technologies, including machine learning and natural language processing, are increasingly being deployed to document, analyze, and preserve intangible cultural heritage (ICH), including music, dance, and oral traditions (Duarte, Johnson & Vigil-Hayes, 2022). AI-generated music icons like AIVA, Amper, Audacity, Sonic visualizer and ELAN and Google’s Magenta offer new opportunities for communities to retain and revitalize their cultural identity in a rapidly digitizing world through smart phones and/or laptops. AI is increasingly applied in music composition, dance notation, and digital archiving (Herremans, Chuan & Chew, 2017). Similarly, motion capture technologies and machine learning have enabled the reproduction and prediction of dance movements (Crnkovic-Friis & Crnkovic-Friis, 2016). While these tools are primarily Western in origin and application, their diffusion into African cultural contexts raises important questions. UNESCO (2022) attests that digitization without localization, risks “technological colonialism,” where indigenous expressions are extracted, commodified, and represented without content or context.

AI and the Transmission of *Abang* Dance Music: Traditionally, *abang* dance music is learned through oral repetition, mentorship, mimicking and communal dance rehearsals. With AI, *abang* dance music can be documented, recorded, transcribed and augmented by various digital platforms. AI can be used to generate rhythmic patterns similar to *abang* beats, thereby accelerating the learning process. However, this efficiency may come at the cost of communal learning and the socio-emotional bonds that come with it and as a result, AI-

generated *abang* music becomes a programmed version rather than a live experience (Ebewo, Steven & Sirayi, 2020).

AI and Cultural Commodification: The use of AI introduces the potential for commodification. The core Efiks are afraid that once *abang* dance music is digitized and made accessible globally, it becomes vulnerable to misappropriation and exploitation. Also, that AI generated samples are capable in commercializing the *abang* dance music without attribution to the Efik people. This not only reduces the cultural depth of the music but also deprives its custodians of economic and symbolic ownership (Zuboff, 2019). AI-generated highlife beats sometimes incorporate elements of traditional rhythms, raising ethical questions about authorship. Without legal frameworks protecting indigenous music in the age of AI, cultural theft becomes a real risk.

Digital Preservation: Digital preservation strategies have increasingly shifted towards participatory and community-based approaches. The inclusion of AI tools in these strategies allows for enhanced interactivity, long-term storage, and cross-platform dissemination of indigenous knowledge (Olupona & Nnadi, 2024). However, effective preservation of indigenous heritage such as the Efik traditions requires a critical balance between technological innovation and cultural sensitivity, documentation, recording and transcription. Digitizing Efik traditions, such as *abang* dance music must involve community participation to ensure that technological interventions do not distort or commodify cultural meanings.

Efik Traditions: Cultural expressions such as the *ekombi*, *ekpe* and *abang* dances, oral histories, and ritual practices represent valuable repositories of indigenous knowledge of the Efik traditions of south eastern Nigeria. However, these traditions face challenges from modernization, urban migration, and generational disconnects owing to its limited oral transmission (Essien & Okon, 2023). Efforts to digitally preserve such practices are still emerging, and the integration of AI remains limited but promising. For instance, AI-powered transcription and audio-visual analysis can be used to archive and interpret performances in ways that were previously inaccessible. While AI offers powerful capabilities for preserving and promoting indigenous cultures like those of the Efik, its implementation must be guided by ethical frameworks and inclusive practices. More localized research and collaboration are needed to harness AI effectively within the context of Nigerian cultural heritage.

Ethical Application: The ethical application of AI in *abang* dance music demands cultural consent and participation. Community leaders, artisan, and scholars must be involved in the digitization process. There must also be a balance between innovation and preservation. AI should be a tool for cultural empowerment, not erasure. Intellectual Property (IP) rights must be enforced to prevent exploitation. Indigenous Knowledge Systems (IKS) must guide the design and use of AI tools in this context (WIPO, 2021). Otherwise, AI becomes a modern tool of cultural imperialism rather than a bridge to sustainability.

Preservation and Authentication: One of the strengths of AI is its capacity for digital preservation. *Abang* songs can be documented, recorded, analyzed, and stored using AI-enhanced databases, thus protecting them from loss. AI can be used to transcribe rhythms just as the transcribed song '*calaabar eh*'. It can also be used to map choreographic sequences, and translate lyrics (see table for *calabar eh*). Using Natural Language Processing (NLP), the Efik language used in *abang* songs can be digitized for translation and preservation, however, these processes also risk stripping the music of its performative authenticity; when a machine replicates a dance or song, it often lacks the cultural emotion, context, and improvisation embedded in human performance, (Adegboyega, Olayemi & Ajibola, 2021). As a result, AI reproduces a "representation" rather than an "embodiment" of the Efik culture in *abang* dance music.

Abang Music

Efik Language	English Translation
Title: Calabar <i>eh</i>	Calabar <i>eh</i>
Call: Calabar <i>eh</i>	Calabar <i>eh</i>
Resp: <i>eeeh</i> Calabar <i>eh</i>	Yes, Calabar <i>eheh</i>
Resp: <i>iya 'ya 'ya</i> Calabar <i>eh</i>	yes,yes,yes Calabar <i>eh</i>
Call: Calabar <i>eh</i>	Calabar <i>eh</i>
Resp: <i>eeeh</i> Calabar <i>eh</i>	yes Calabar <i>eh</i>
Resp: <i>iya 'ya 'ya</i> Calabar <i>eh</i>	yes,yes,yes Calabar <i>eh</i>

Song title: Calabar *eh***Composer:** Unknown**Arrangers:** Elizabeth B.A & Jacob O.**Era:** African Folk**Key:** F Major**Meter:** 12/8**Length:** 13 Bars**Medium:** Voice with African Instrumental Accompaniment**Scale:** Diatonic Major Scale**Form:** Vocal and Instrumental**Texture:** Polyrhythmic**Tempo:** Moderate**Language:** Efik

Abang Music

Calabar

Transcribed by
Elizabeth B. A. and Jacob Opue

$\text{♩} = 110$

Call
Ca - la - bar eh

Response
Eh Ca - la - bar

Ntakrak

Nsak I

Nsak II

Uboro Ekoma

Ekoma Iba

Ibid I

Ibid II

Nkong

Cl.
Ca-la-bar eh

Rsp.
eh Iya iya iya Ca-la-bar eh

Nt.

Ns I

Ns II

U.E

E.I

Ib. I

Ib. II

Nk.

12

Cl.

Rsp.
Iya iya iya Ca - la - bar Eh

Nt.

Ns I

Ns II

U.E.

E.I

Ib. I

Ib. II

Nk.

Opportunity for Cultural Education and Revitalization: Despite the risks, AI offers avenues for cultural revitalization. AI-powered educational platforms can teach *abang* music and dance in schools, museums, and online academies. Virtual Reality (VR) and Augmented Reality (AR) can immerse users in simulated Efik festivals, allowing diaspora communities and non-Efik Nigerians to learn and appreciate the tradition. Moreover, AI can help composers fuse *abang* rhythms with contemporary sounds, creating hybrid genres that keep the tradition alive among younger audiences. This cultural hybridity, if done respectfully, can serve as a form of "strategic traditionalism" (Barber, 2000).

Findings

AI possesses significant capacity to document and preserve the structural elements of *abang* dance music, including rhythmic patterns, melodic contours, choreographic sequences, and linguistic content. Through music transcription algorithms, audio-visual analysis, and motion-capture technologies, AI can safeguard aspects of *abang* that are increasingly threatened by urbanization, generational disinterest, and the decline of oral transmission. When informed by ethnographic data and local knowledge, AI systems can generate culturally relevant digital records that support long-term preservation.

Despite its technical efficiency, AI remains limited in capturing the spiritual, ritualistic, and affective dimensions of *abang* dance music. Interviews with cultural custodians and practitioners reveal that *abang's* meaning resides not only in form but in embodied experience, communal participation, ancestral consciousness, and spiritual belief systems. These dimensions resist full computational representation, emphasising the risk of reducing *abang* to a symbolic or aesthetic artefact detached from its lived cultural context.

This paper further argues that AI presents both revitalizing and commodifying possibilities, depending on how it is deployed. On one hand, AI-enabled platforms can attract younger generations, facilitate cultural education, and inspire creative hybridity that sustains *abang's* relevance in contemporary society. On the other hand, without ethical safeguards and intellectual property protections, AI risks transforming *abang* into a commodified cultural product stripped of attribution and meaning. The study therefore emphasizes the necessity of co-creation with Efik communities, ensuring that innovation aligns with cultural authenticity and respect.

Conclusion

The application of Artificial Intelligence in the documentation of *abang* dance music represents both a transformative opportunity and a profound ethical challenge. While AI offers powerful tools for recording, transcription, analysis, and dissemination, thereby enhancing preservation and accessibility, it also threatens to distort cultural meanings when divorced from community participation and spiritual context. This paper argues that AI should not be perceived as a replacement for human intelligence or embodied cultural practice, but rather as a supportive catalyst for the sustainable evolution of *abang* dance music. Ultimately, the survival of *abang* in the digital age depends on negotiated coexistence between technology and tradition. Guided by ethical frameworks, cultural consent, and indigenous knowledge systems, AI can help *abang* thrive simultaneously in physical, communal spaces and digital environments.

Recommendations

AI-based projects on *abang* dance music must actively involve Efik elders, dancers, musicians, and cultural custodians to ensure cultural integrity and authenticity. The training of Efik youths in AI and digital documentation tools will empower communities to control the narration and preservation of their heritage.

Developers and researchers must design culturally sensitive AI models that reflect Efik values, spirituality, and performance contexts. Nigerian cultural and technology agencies should formulate legal and policy frameworks that protect indigenous music and dance.

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