

## Actualizing the Local Wisdom of the Betawi Community through the Utilization of Digital Era Technology

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### ABSTRACT

The local wisdom of the *Betawi* community, rich in values of togetherness and environmental harmony, faces significant challenges in the digital era due to urbanization and globalization. While these values hold global relevance, their preservation is threatened by fading cultural engagement. This research aims to examine the influence of Artificial Intelligence (AI) on *Betawi* culture in Indonesia by exploring the potentials and challenges faced in the preservation and development of this culture in the digital era. Employing a qualitative approach with an explanatory-descriptive design, data were collected through in-depth interviews and participatory observation at the *Betawi* Cultural Institute (*Lembaga Kebudayaan Betawi* or LKB). Thematic analysis was used to interpret the data. The study found that the integration of AI in *Betawi* cultural traditions can yield positive impacts, such as reviving *Betawi* indigenous culture that has begun to fade with modernization, expanding the reach of the community to understand *Betawi* cultural customs more deeply, and strengthening *Betawi* cultural identity. This research demonstrates that AI plays an important role in the preservation and development of *Betawi* culture; however, it must be supported by critical thinking and awareness, as well as sufficient financial resources, to avoid negative impacts and maximize its benefits. The study concludes that strategic support from the government, private sector, and community is essential. Such collaboration is vital to overcoming existing barriers and leveraging digital technology and AI effectively, ensuring the sustainable preservation of *Betawi* culture while also providing economic benefits for its practitioners.

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**Keywords:** *Artificial Intelligence (AI), Betawi Culture, Cultural Preservation, Cultural Development, Digital Era*

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### INTRODUCTION

As an ethnic group born and developed in Indonesia's capital city, the Betawi people possess rich local wisdom values inherited across generations, embodying life principles centered on togetherness (*kebersamaan*), tolerance (*toleransi*), and mutual cooperation (*gotong royong*) that emphasize harmony between humans and their environment. These values constitute the cornerstones of Betawi cultural identity, manifesting in social practices, traditional ceremonies, culinary heritage, performing arts, and linguistic expressions that distinguish Betawi communities within Jakarta's diverse multicultural landscape (Iedarwati, 2018; Lakawa, 2015; Made Widiastuti et al., 2024; Miharja et al., 2019; Pehulisya & Nugroho, 2020). However, in the digital era marked by rapid information flows, accelerating urbanization, and intensive industrialization these noble values face existential challenges that threaten their continuity and intergenerational transmission.

Changes in urban community lifestyles, particularly in Jakarta—Indonesia's political, economic, and cultural epicenter pose substantial risks to local traditions as younger generations increasingly exhibit diminished concern for indigenous cultural practices (Brumpton et al., 2023; Harrison & Clarke, 2022; Rawluk et al., 2023; Yeh et al., 2021). The dominance of global popular culture transmitted through digital media platforms, coupled with Jakarta's transformation into a cosmopolitan megacity attracting migrants from across

Indonesia's archipelago, has created cultural hybridization processes that simultaneously enrich Jakarta's diversity while marginalizing distinctly Betawi cultural elements (Musthofa, 2020). This cultural erosion manifests tangibly: declining numbers of fluent Betawi language speakers, reduced participation in traditional ceremonies, diminishing knowledge of customary practices among youth, and displacement of Betawi neighborhoods through urban development projects (Matthews, 2017; Nicu et al., 2020, 2021; Polykretis et al., 2022).

Paradoxically, while facing local marginalization pressures, Betawi local wisdom values demonstrate heightened relevance within contemporary global contexts characterized by multiple interconnected crises. Living principles emphasizing tolerance across religious and ethnic differences, communal solidarity in addressing shared challenges, and respectful coexistence with natural environments offer alternative paradigms to prevailing individualistic, consumption-oriented global cultural models. These values present potential contributions toward resolving global problems including environmental degradation, weakening social solidarity, rising intercommunal tensions, and increasing individualism that fragments community cohesion (Wibawono & Pamungkas, 2024).

Therefore, the actualization of Betawi values transcends mere preservation of local identity—it constitutes a substantive contribution toward creating more inclusive, sustainable, and culturally resilient global societies. Recognition of indigenous knowledge systems' contributions to contemporary challenges has gained momentum internationally, evidenced by UNESCO's emphasis on intangible cultural heritage protection and the United Nations' integration of indigenous perspectives into Sustainable Development Goals frameworks. Betawi local wisdom, with its emphasis on environmental stewardship, communal responsibility, and intercultural harmony, aligns with these global frameworks while maintaining distinctly Indonesian cultural characteristics.

The utilization of Artificial Intelligence (AI) technology offers transformative opportunities to *actualize* local Betawi wisdom in confronting digital era challenges. AI encompasses computational systems capable of performing tasks traditionally requiring human intelligence—including pattern recognition, natural language processing, image classification, and predictive analytics—with applications spanning diverse domains from healthcare to education to cultural preservation (Hakim et al., 2024). In cultural heritage contexts, AI technologies enable digitization and documentation of endangered cultural elements such as folklore narratives, regional languages facing extinction, traditional music compositions, culinary knowledge systems, and performing arts choreographies that exist primarily in oral and embodied transmission forms vulnerable to loss.

Through AI-based educational platforms, digital marketing strategies, and interactive content applications, younger generations can engage with Betawi culture in formats aligned with their digital media consumption habits—experiencing cultural content through immersive technologies, accessing cultural knowledge through mobile applications, and participating in virtual cultural events that transcend geographical barriers. Additionally, AI-powered platforms can strengthen community involvement in local economic empowerment through digital marketplaces connecting Betawi artisans and cultural practitioners with broader consumer audiences, facilitating cultural tourism through intelligent recommendation systems, and preserving traditional craft knowledge through digital documentation accessible to future generations (Wibawono & Pamungkas, 2024).

Existing scholarship on Betawi cultural preservation has primarily focused on community-based education initiatives, physical cultural space development (notably Setu Babakan Cultural Village), and documentation through conventional media formats. Kamaludin et al. (2022) examined the Betawi Cultural Institute's role in community empowerment through cultural preservation programs, emphasizing social engagement and traditional knowledge transmission mechanisms. Musthofa (2020) developed the *Betawi Akses* application model as a digital strategy for cultural preservation in the information and communication technology era, demonstrating the feasibility of technology-mediated cultural engagement. However, these studies addressed digital technologies primarily as distribution channels for existing cultural content rather than exploring AI's transformative potential as both a documentation tool and an interactive platform enabling new modes of cultural experience and transmission.

A critical research gap persists: while previous works discussed Betawi cultural preservation through education, physical infrastructure, and basic digital documentation, none have comprehensively explored Artificial Intelligence's potential as a transformative medium for cultural sustainability—one that actively engages younger generations, creates economic opportunities for cultural practitioners, and enables innovative forms of cultural expression that maintain authenticity while adapting to contemporary contexts. This gap is particularly significant given AI's rapid advancement and its increasingly widespread adoption across Indonesian society, creating both opportunities and risks for indigenous cultural communities.

Theoretically, this research positions itself within digital anthropology and cultural modernization frameworks, examining how technological innovations reshape cultural practices, transmission mechanisms, and identity formation processes. Cultural modernization theory—which analyzes how traditional societies adapt cultural elements amid technological and social changes—provides analytical lenses for understanding how Betawi communities navigate tensions between cultural preservation and contemporary adaptation (Wibawono & Pamungkas, 2024). Digital preservation frameworks, increasingly prominent in UNESCO and heritage management discourse, offer methodological approaches for evaluating technology's effectiveness in safeguarding intangible cultural heritage while ensuring community agency and cultural authenticity.

This study aims to examine the relevance of Betawi life principles in confronting globalization and cultural modernization, identifying which aspects of this local wisdom remain applicable to contemporary social and environmental issues. Furthermore, it investigates the specific role of Artificial Intelligence (AI) in preserving and *actualizing* this cultural heritage, analyzing its potential applications, implementation challenges, and impacts on cultural transmission and the economic sustainability of practitioners. Based on these findings, the research will provide evidence-based recommendations for stakeholders—including cultural institutions, government bodies, and technology developers—on leveraging AI to strengthen Betawi cultural resilience while mitigating the risks of technological mediation.

The expected implications of this research span theoretical, practical, and policy domains. Theoretically, it will enrich the field of digital anthropology by demonstrating how AI interacts with an indigenous knowledge system in a specific Indonesian urban context, thereby extending frameworks developed primarily in Western or East Asian settings.

Practically, the outcomes will provide actionable models for cultural institutions like the Betawi Cultural Institute, enabling them to integrate technology in a way that balances innovation with cultural authenticity. For policymakers, the research will offer guidance on creating supportive frameworks for technology-mediated cultural preservation that ensure genuine community participation and equitable benefit distribution, ultimately contributing to the development of sustainable and culturally grounded societies.

## **METHOD**

This study employs a qualitative methodology with an explanatory descriptive design, which is particularly suited to exploring the meanings and values embedded in Betawi cultural practices and their potential actualization in contemporary society through technology. The research was conducted primarily at the Betawi Cultural Institute (LKB) in South Jakarta on September 12, 2024, an institution purposefully selected for its authoritative role in Betawi cultural preservation since 1976. Data collection and analysis unfolded in three phases from August to October 2024, combining in-depth, semi-structured interviews with participatory observation to provide both detailed insider perspectives and contextual understanding of the institutional environment.

The primary data was gathered through video-recorded interviews with two key cultural experts from the LKB: Bang Yahya Saputra, a senior practitioner with extensive experience in preservation programs and policy, and Bang Imbong Hasbullah, a specialist in cultural documentation and digital media. These semi-structured interviews, lasting approximately 90 minutes, explored domains such as core Betawi values, current preservation strategies, the use of digital technology, and perceptions of AI's potential role and risks. This primary data was complemented by participatory observation of the institute's physical resources, organizational activities, and digital infrastructure, as well as a review of secondary sources including academic publications and policy documents.

The collected data was meticulously analyzed using thematic analysis. This process began with the verbatim transcription of interviews, followed by initial coding that identified recurring concepts and patterns. These codes were then grouped into three overarching analytical themes: the challenges of cultural documentation and preservation, the current utilization and future opportunities of digital technology, and the various barriers and support requirements for implementation. This systematic categorization allowed for a structured interpretation of the complex interplay between tradition, modernity, and technology.

Throughout the research process, strict ethical standards were maintained, including obtaining informed consent, ensuring voluntary participation, and guaranteeing confidentiality and cultural sensitivity. The analytical interpretations were further strengthened through triangulation, where findings from interviews were cross-verified with observational notes and secondary documents, and through informal member-checking to confirm alignment with the participants' intended meanings. This multi-faceted approach was designed to ensure the validity and depth of the insights generated.

It is important to acknowledge several inherent limitations of this study. Its findings are based on a single institutional site and two informants, which may not fully represent the diversity of perspectives within the broader Betawi community, including independent practitioners or younger generations. Furthermore, the cross-sectional design offers a snapshot

in time rather than a longitudinal view of evolving practices, and the necessary translation of culturally specific concepts from Indonesian may introduce semantic nuances. Finally, the positionality of the researchers as non-Betawi scholars inevitably influences both data collection and interpretation, despite efforts to mitigate this through reflexivity and transparency.

## **RESULTS AND DISCUSSION**

### **Institutional Context: The Betawi Cultural Institute (LKB)**

Established on June 22, 1976, the Betawi Cultural Institute (Lembaga Kebudayaan Betawi/LKB) emerged from the Betawi community's collective recognition of an urgent need for institutional infrastructure dedicated to preserving their distinctive cultural heritage amid Jakarta's rapid urbanization and increasing cultural pluralism. The founding generation of Betawi cultural leaders, observing accelerating erosion of traditional practices and declining intergenerational knowledge transmission, created LKB as a centralized hub for individuals interested in and practitioners of Betawi cultural arts. The institution's foundational mission encompasses four core mandates: researching traditional Betawi cultural values and practices; developing innovative approaches to cultural preservation and transmission; enhancing quality and relevance of Betawi cultural expressions; and disseminating Betawi cultural knowledge to broader Indonesian and international audiences.

Currently housed in the Nyi Ageng Serang Building in Kuningan, South Jakarta, LKB operates as the primary organizational center coordinating Betawi cultural preservation activities across Jakarta's metropolitan region. The institution serves multiple functions simultaneously: cultural research center documenting endangered practices; educational hub providing training in traditional arts; networking organization connecting dispersed Betawi communities; advocacy body representing Betawi interests in governmental cultural policy processes; and public-facing cultural center hosting performances, exhibitions, and community events.

LKB's programmatic activities align with its multifaceted mission. Core program components include:

1. **Cultural Documentation and Research:** Systematic recording, explanation, and critical assessment of Betawi cultural values encompassing tangible heritage (traditional architecture, material artifacts, culinary implements) and intangible heritage (oral narratives, performance traditions, customary law systems, linguistic features). This documentation serves dual purposes: creating archival resources for future reference and generating knowledge bases informing contemporary cultural revitalization efforts.
2. **Information Dissemination and Cultural Promotion:** Active engagement in raising public awareness and appreciation of Betawi culture among Jakarta's diverse population and national audiences. LKB emphasizes positioning Betawi culture as integral component of Indonesian national cultural wealth rather than marginalized ethnic minority tradition, challenging narratives that privilege Javanese or other ethnic cultural elements in Indonesian national identity discourse.
3. **Intellectual Property Protection and Advocacy:** Providing information resources and advocacy support to protect Betawi cultural artworks, traditional knowledge, and

cultural expressions from unauthorized appropriation or commercial exploitation without community benefit.

4. Art Studio and Economic Development Networks: Establishing and supporting art studios (*sanggar seni*) that function as both cultural transmission sites and economic enterprises. Studios sell Betawi specialty products including traditional culinary items, promote Betawi batik textiles (notably Batik Terogong—a distinctive Betawi batik style), and provide performance services for cultural events. These studios serve economic empowerment functions, generating livelihoods for studio owners and artists while sustaining cultural practices through commercial viability.

### **Digital Technology Adoption: Current Practices and Strategic Orientations**

Recognizing imperatives to adapt cultural preservation strategies to contemporary digital media landscapes, LKB has initiated digital technology adoption primarily through social media platforms including Instagram, YouTube, and institutional websites. These platforms serve multiple strategic functions:

1. Instagram (@lembagakebudayaanbetawi): Visual-oriented platform showcasing Betawi traditional clothing, performance documentation, event announcements, and brief cultural education content. Instagram's affordances for image-centric communication align well with visually rich Betawi performing arts, material culture, and ceremonial practices, enabling aesthetic engagement that attracts younger audiences accustomed to visual social media.
2. YouTube Channel: Hosting longer-form video content including performance recordings, documentary-style cultural explainers, interviews with cultural practitioners, and virtual cultural tours. YouTube's capacity for extended narrative content enables more comprehensive cultural education than Instagram's brevity-oriented format, providing spaces for in-depth exploration of cultural contexts, historical backgrounds, and philosophical dimensions of Betawi practices.
3. Institutional Website: Providing organizational information, program descriptions, contact details, and archival resources accessible to researchers, educators, and culturally interested publics.

According to interview data, LKB's digital media strategy aims to:

- Expand geographical reach beyond Jakarta-based physical audiences to diaspora Betawi communities across Indonesia and international audiences interested in Indonesian cultural diversity.
- Engage younger generations whose cultural consumption patterns center on digital platforms rather than in-person attendance at traditional cultural events or institutions.
- Demonstrate contemporary relevance of Betawi culture by presenting it through modern media formats, countering perceptions of Betawi traditions as obsolete remnants incompatible with urban contemporary lifestyles.
- Generate supplementary revenue through digital content monetization, online product sales, and attracting clients for commercial cultural performances through digital marketing.

Interview excerpt from Bang Yahya Saputra:

"We understand that today's young people, they live on their phones, on social media. If we want them to know Betawi culture, we must go where they are. So we try to use Instagram, make videos for YouTube. We post about Betawi weddings, Betawi food, Betawi music. Sometimes we get good response—people share, people comment, they become interested. But honestly, we still learning. We don't have expert in social media here. We do what we can with limited knowledge."

This testimony reveals both strategic recognition of digital media's importance and institutional constraints limiting effectiveness of current digital engagement. LKB's digital presence remains relatively modest—Instagram following below 10,000, YouTube subscribers in hundreds rather than thousands, irregular posting schedules due to capacity limitations—indicating that while institutional will exists for digital adaptation, implementation capacity lags aspirations.

### **Artificial Intelligence: Awareness, Opportunities, and Implementation Barriers**

Regarding Artificial Intelligence technologies specifically, interview data revealed that LKB leadership possesses general awareness of AI's existence and broad potential applications but lacks detailed technical understanding of specific AI capabilities, implementation requirements, or cultural heritage-specific AI applications emerging internationally.

Informants expressed conceptual understanding that AI could potentially:

1. Automate and enhance cultural documentation processes: Using AI-powered transcription for oral history interviews, image recognition for cataloging material artifacts, pattern analysis for identifying commonalities across cultural practices, and natural language processing for analyzing historical texts and contemporary cultural discourse.
2. Create interactive educational platforms: Developing AI-powered chatbots capable of answering questions about Betawi culture in conversational formats, virtual reality experiences allowing immersive participation in traditional ceremonies or historical Betawi villages, and personalized learning systems adapting cultural education content to individual user interests and knowledge levels.
3. Support language preservation and revitalization: Building AI language models for Betawi dialect capable of translation, pronunciation guidance, grammar checking, and generative text creation, potentially reversing language decline by making Betawi language accessible and usable in digital communication contexts.
4. Enable predictive cultural analytics: Analyzing digital engagement data to understand which cultural elements resonate with different audience segments, predict cultural participation trends, and optimize cultural programming and content strategies.
5. Facilitate creative cultural innovation: Using generative AI to create new Betawi-inspired music compositions, visual art, or performance choreographies that maintain cultural authenticity while incorporating contemporary aesthetics, potentially attracting audiences resistant to purely traditional formats.

Interview excerpt from Bang Imbong Hasbullah:

"We hear about AI, we see in news that AI can do many things—translate language, make pictures, answer questions like human. For Betawi culture, I think this very useful. Imagine if we have AI that can teach Betawi language to children, or AI that can explain meaning of our traditional ceremonies. Young people ask questions on Instagram, but we cannot answer everyone quickly. Maybe AI can help answer basic questions, so people learn faster. But to make this, we need money, we need people who understand technology. We don't have this."

This perspective illustrates both optimistic recognition of AI's potential and pragmatic awareness of implementation barriers that currently prevent realization of these possibilities. Critical implementation barriers identified through interviews include:

1. Financial Resource Constraints:

LKB operates with severely limited budgets derived primarily from occasional government grants, commercial performance fees, and modest product sales from affiliated art studios. These revenues prove insufficient for core operational expenses including staff salaries, facility maintenance, and basic program costs, leaving no budgetary capacity for expensive technological investments. AI implementation—requiring specialized hardware (high-performance computers for AI processing), software licensing, technical consultants, and ongoing maintenance—represents cost levels multiple orders of magnitude beyond LKB's current financial capacity.

Interview excerpt from Bang Yahya Saputra:

"Everything need money. We want to make documentary film about Betawi traditional house, need money. We want to organize big culinary festival, need money. We want to pay good salary for our staff, need money. Technology also same—need money. Sometimes we have creative ideas but cannot realize because no budget. Government give small support sometimes, but not enough and not regular. We hope this research can bring attention to our situation, maybe government or private company can help."

This financial constraint proves particularly acute given that AI development for cultural applications typically requires customization rather than off-the-shelf solutions—necessitating hiring AI developers to build culture-specific applications, substantial expenses beyond generic AI tool subscriptions.

2. Technical Expertise and Digital Literacy Gaps:

LKB staff and leadership possess deep cultural knowledge and significant experience in traditional cultural transmission but lack technical expertise in AI technologies, data science, or software development. Existing digital media use (Instagram, YouTube) represents relatively basic digital literacy—uploading content to established platforms—rather than advanced technical capabilities required for AI implementation. No LKB personnel currently possess programming skills, data management expertise, or understanding of AI training methodologies necessary for developing or even effectively utilizing sophisticated AI applications.

This expertise gap creates dependency on external technical specialists, raising concerns about:

- Cost implications: Hiring technical consultants or contracting AI development services requires financial resources LKB currently lacks.

- Knowledge transfer challenges: Without internal technical capacity, LKB would remain dependent on external providers for system maintenance, updates, and problem-solving, creating sustainability vulnerabilities.
- Cultural authenticity risks: External technical developers lacking deep Betawi cultural knowledge might inadvertently introduce cultural inaccuracies, inappropriate representations, or insensitive framings into AI-generated content or automated systems.

Interview excerpt from Bang Imbong Hasbullah:

"We are cultural people, not technology people. We understand our traditions, our history, our values. But computer programming, artificial intelligence—this is different world. We need partners who understand both culture and technology. Maybe young Betawi generation can learn this technology, then help their community. Or maybe university students studying AI can collaborate with us, help build applications for Betawi culture as their project. We are open to collaboration but need people with right skills."

### 3. AI Output Reliability and Cultural Appropriateness Concerns:

Informants expressed concerns about AI systems' potential to generate culturally inaccurate information, inappropriate representations, or misleading content that could damage Betawi cultural integrity rather than preserving it. These concerns reflect broader public discourse about AI "hallucinations" (generating false information presented as fact), bias in AI training data, and lack of cultural sensitivity in AI systems developed primarily for Western or East Asian contexts.

Specific concerns included:

- Accuracy of AI-generated cultural information: Fear that AI chatbots might provide incorrect explanations of Betawi customs, misidentify cultural artifacts, or confuse Betawi practices with those of other Indonesian ethnic groups.
- Cultural sensitivity in AI representations: Worry that AI-generated images or narratives might inadvertently create disrespectful, stereotypical, or exoticized representations of Betawi people and practices.
- Loss of human cultural authority: Concern that over-reliance on AI intermediation might diminish role of human cultural knowledge holders, elders, and practitioners as primary sources of cultural authority and authentic cultural transmission.

These concerns reflect sophisticated understanding that technology adoption risks as well as benefits require careful consideration, particularly for indigenous cultural communities historically subjected to external misrepresentation and cultural appropriation.

### 4. Infrastructure and Operational Limitations:

Beyond financial and technical constraints, LKB faces basic infrastructure limitations including:

- Limited physical space: Current facilities lack adequate room for expanded programming, technology infrastructure, or increased staff.

- Inadequate archival systems: Cultural materials exist in fragmented, poorly cataloged formats scattered across locations, creating barriers to digitization prerequisite for AI applications.
- Unstable funding streams: Unpredictable and insufficient revenue creates risk-averse institutional culture hesitant to commit to long-term technology investments that might fail or become obsolete before generating returns.

### **Strategic Recommendations and Stakeholder Aspirations**

LKB leadership articulated clear aspirations for enhanced governmental and private sector support to overcome current constraints and realize cultural preservation potential through technology integration. Key recommendations emerging from research include:

#### **1. Government Financial and Policy Support:**

Sustained, substantial financial support from Jakarta Provincial Government and national Ministry of Education, Culture, Research, and Technology for:

- Cultural institution operational funding ensuring stable baseline budgets rather than project-by-project grants.
- Dedicated technology adoption grants specifically for cultural preservation applications including AI pilot projects.
- Infrastructure development funding for expanded facilities, improved archival systems, and technology hardware.

Policy frameworks supporting:

- Tax incentives for private sector companies partnering with cultural institutions on technology development.
- Integration of Betawi cultural education into Jakarta public school curricula, creating sustained demand for LKB's educational programming and resources.
- Protection of Betawi cultural intellectual property rights preventing unauthorized commercial exploitation.

#### **2. Capacity Building and Human Resource Development:**

Educational programs training younger generation Betawi community members in both cultural knowledge and technical skills, creating cadres capable of bridging cultural and technological domains. Specific initiatives could include:

- Scholarships for Betawi youth pursuing studies in computer science, data science, digital media, or related technical fields with commitments to apply skills for community cultural benefit.
- Technical workshops for current cultural practitioners teaching basic digital literacy, social media optimization, digital content creation, and AI tool utilization.
- Mentorship programs connecting Betawi cultural institutions with university AI/computer science departments for collaborative projects wherein students gain practical experience while cultural communities gain technical services.

#### **3. Strategic Partnerships and Collaborative Models:**

Partnerships between LKB and:

- Technology companies: Corporate social responsibility programs providing pro bono technical services, donated hardware/software, or funded pilot projects demonstrating AI applications for cultural preservation.

- Universities and research institutions: Collaborative research projects wherein academic researchers gain access to cultural communities for study while cultural communities receive technical expertise and resources as research outcomes.
- International cultural organizations: Exchange programs with cultural institutions globally that have successfully implemented AI for cultural preservation, enabling knowledge transfer and adaptation of best practices to Betawi context.

#### 4. Community-Based Economic Sustainability:

Enhanced revenue generation through:

- Commercial performance optimization: Professional marketing of Betawi performing arts for corporate events, tourism experiences, and cultural festivals, generating sustainable income streams.
- Digital content monetization: Developing premium digital content (online courses, virtual tours, streaming performances) generating subscription or purchase revenues.
- Cultural tourism integration: Positioning LKB as Jakarta tourism destination integrated into city tourism promotion, bringing visitor revenues supporting operations.

Interview excerpt from Bang Yahya Saputra:

"Our dream is that Betawi culture becomes strong again, that young people proud to be Betawi, that whole world knows about our beautiful traditions. Technology can help this dream, AI can help—but we need support. We need government to see us, invest in us. We need private companies with technology expertise to partner with us. We need young Betawi generation to learn these skills and come help their community. Together, we can make something great. Alone, we struggle."

This statement encapsulates both institutional vulnerability and collaborative vision characterizing LKB's current position—recognizing limitations while maintaining optimistic orientation toward potential partnerships enabling cultural resilience.

## Discussion

The findings illuminate several theoretically significant dimensions of AI-mediated cultural preservation in urban Indonesian contexts:

### 1. Cultural Resilience Through Digital Empowerment:

The research demonstrates how digital technologies, particularly AI, can function as mechanisms for cultural resilience—defined as indigenous communities' capacity to maintain cultural distinctiveness, transmit knowledge across generations, and adapt cultural practices to changing contexts while preserving core values (Wibawono & Pamungkas, 2024). Digital empowerment in cultural contexts encompasses both technical capacity (ability to use digital tools) and cultural agency (authority to determine how technologies represent and transmit cultural knowledge).

LKB's strategic orientation toward digital platforms reflects recognition that contemporary cultural resilience requires technological adaptation rather than defensive preservation of purely traditional forms. By utilizing Instagram, YouTube, and aspiring toward AI applications, LKB seeks to meet younger generations within their native digital media environments, transforming cultural transmission from primarily in-person, place-based modalities to hybrid models combining physical cultural experiences with digital access points. This approach aligns with UNESCO's concept of "living heritage"—cultural practices that

remain vital through continuous reinterpretation and adaptation while maintaining connection to historical roots.

However, the research also reveals structural constraints limiting digital empowerment for marginalized indigenous urban communities. Unlike dominant ethnic groups or state-sponsored cultural institutions with substantial resources, LKB operates at the margins of institutional support systems, lacking financial and technical capacity to fully leverage digital technologies. This digital divide—not merely in access to technologies but in capacity to deploy them strategically for community-defined purposes—perpetuates cultural marginalization in digital spaces just as Betawi communities face physical marginalization through urban development displacing traditional neighborhoods.

## 2. AI as Double-Edged Sword: Opportunities and Risks:

The research confirms AI's transformative potential for cultural preservation while highlighting critical risks requiring careful mitigation. Opportunities identified include:

- Scalability: AI enables cultural knowledge dissemination to vastly larger audiences than traditional face-to-face transmission, potentially reaching diaspora communities, younger generations alienated from traditional institutions, and global audiences interested in cultural diversity.
- Interactivity: AI-powered platforms can create engaging, personalized cultural learning experiences adapting to individual user interests and knowledge levels, potentially more effective than passive consumption of static cultural content.
- Documentation efficiency: AI tools can accelerate and enhance documentation of endangered cultural elements—automatically transcribing oral histories, organizing archival materials, identifying patterns across cultural practices—preserving knowledge before it disappears.
- Creative innovation: Generative AI can enable new forms of cultural expression blending traditional elements with contemporary aesthetics, potentially attracting audiences otherwise disengaged from purely traditional formats while maintaining cultural authenticity.

Simultaneously, risks requiring mitigation include:

- Cultural inaccuracy: AI systems trained on inadequate or biased data may generate false information about cultural practices, spreading misinformation rather than preserving authentic knowledge.
- Representational harm: AI-generated cultural content may perpetuate stereotypes, create inappropriate representations, or extract cultural elements from their meaningful contexts, causing harm to cultural communities.
- Loss of human authority: Over-reliance on AI intermediation may diminish the essential role of human cultural knowledge holders—elders, practitioners, community leaders—whose embodied knowledge, contextual understanding, and cultural authority cannot be replicated by computational systems.
- Digital dependency: Communities may become dependent on external technology providers, losing control over their own cultural narratives and creating sustainability vulnerabilities when technologies become obsolete or providers withdraw support.

- Economic exploitation: Without careful intellectual property protections and benefit-sharing mechanisms, AI-enabled cultural content may be commercially exploited by external actors without compensation or permission from cultural communities.

These dual potentials position AI as a "double-edged sword" requiring thoughtful governance frameworks ensuring community agency, cultural authenticity, and equitable benefit distribution (Hakim et al., 2024).

### 3. Institutional Capacity as Critical Mediating Factor:

The research demonstrates that institutional capacity—encompassing financial resources, technical expertise, organizational infrastructure, and strategic vision—critically mediates whether AI technologies serve as empowerment tools or additional marginalization mechanisms for indigenous cultural communities.

LKB possesses strong cultural knowledge capacity and clear strategic vision but lacks technical and financial capacity for AI implementation. This asymmetry creates dependency on external actors (government agencies, technology companies, universities) for access to AI capabilities. Such dependencies risk reproducing colonial-era patterns wherein indigenous knowledge is extracted, processed, and represented by external authorities rather than controlled by knowledge-holding communities themselves.

Addressing this requires capacity-building investments enabling cultural institutions to develop internal technical expertise, collaborative partnership models ensuring cultural community authority over technology applications, and policy frameworks mandating community consent and benefit-sharing for culturally-derived AI applications. Without such measures, AI risks becoming another mechanism for cultural appropriation rather than genuine preservation tool serving community interests.

### 4. Cultural Modernization Navigations:

The research illuminates how Betawi cultural communities navigate tensions between tradition preservation and modernization adaptation. Cultural modernization theory posits that traditional societies undergoing rapid social change must balance maintaining cultural continuity (preserving core values and identity markers) with pragmatic adaptation (modifying practices to remain relevant in changing contexts) (Wibawono & Pamungkas, 2024).

LKB's approach exemplifies strategic cultural modernization: embracing digital technologies and aspiring toward AI utilization while maintaining commitment to cultural authenticity and community authority over cultural representations. This stance rejects both uncritical technology adoption (which might compromise cultural integrity through inappropriate mediation) and defensive technology resistance (which would further marginalize Betawi culture in increasingly digital Indonesian society).

Interview evidence reveals sophisticated understanding that cultural survival in Jakarta's contemporary context requires strategic engagement with dominant technological and economic systems while maintaining distinctive cultural identity. Betawi culture cannot survive as museum relic or anthropological curiosity but must demonstrate contemporary relevance, provide livelihood opportunities for practitioners, and engage younger generations in forms aligned with their media consumption patterns.

### 5. Policy Implications and Government Responsibility:

The research underscores governmental responsibility for supporting indigenous urban cultural communities facing marginalization pressures from dominant cultural groups and

commercial development interests. Jakarta Provincial Government and Indonesian national cultural authorities bear obligations under national cultural diversity policies and international indigenous rights frameworks (including UNESCO cultural heritage conventions and UN Declaration on the Rights of Indigenous Peoples) to actively support Betawi cultural preservation.

Current support proves inadequate: irregular, project-based grants insufficient for institutional sustainability; lack of dedicated technology adoption funding for cultural institutions; absence of comprehensive Betawi cultural education in public school curricula despite Betawi status as Jakarta's indigenous population; inadequate enforcement of cultural intellectual property protections.

Evidence-based policy recommendations include:

- a. Sustained institutional funding: Establish baseline operational grants ensuring cultural institutions like LKB maintain stable programming, adequate facilities, and professional staff rather than relying on precarious project-by-project funding.
- b. Technology innovation grants: Create dedicated funding streams specifically supporting cultural institution technology adoption including AI pilot projects, digital infrastructure development, and technical capacity building.
- c. Collaborative partnership facilitation: Government agencies can broker partnerships between cultural institutions and technology sector actors (companies, universities, research institutes), leveraging corporate social responsibility programs and academic community engagement missions for cultural benefit.
- d. Educational integration: Mandate Betawi cultural education in Jakarta public schools, creating sustained demand for LKB's educational resources and programming while ensuring younger generations develop cultural knowledge and appreciation.
- e. Intellectual property frameworks: Strengthen legal protections for indigenous cultural expressions, requiring consent and benefit-sharing for commercial use of Betawi cultural elements in products, media, or services.
- f. Cultural tourism integration: Position Betawi cultural institutions as key Jakarta tourism attractions, integrating them into official city tourism promotion and infrastructure development, generating visitor revenues supporting operational sustainability.

These policy measures would address structural inequities wherein Jakarta benefits economically from being Indonesia's capital while the city's indigenous Betawi population faces cultural marginalization and economic disadvantage.

#### 6. Community-Based Innovation as Alternative Model:

Beyond top-down government or corporate interventions, the research highlights potential for community-based innovation models wherein cultural communities themselves drive technology adoption adapted to their specific needs and values.

LKB's suggestion of training younger Betawi community members in technical skills represents one such approach—building internal technical capacity rather than remaining perpetually dependent on external providers. This model aligns with indigenous knowledge sovereignty frameworks emphasizing community control over knowledge documentation, representation, and dissemination (Musthofa, 2020).

Alternative models worth exploring include:

- Community technology cooperatives: Betawi cultural practitioners and technologists forming collaborative organizations jointly developing culturally-appropriate AI applications, sharing ownership and benefits equitably.
- Open-source cultural AI tools: Developing publicly accessible AI tools specifically designed for cultural heritage applications, enabling multiple cultural communities to adapt technologies to their contexts without expensive commercial licensing.
- Participatory AI development: Involving cultural knowledge holders throughout AI development processes—from initial design through training data selection to interface design and evaluation—ensuring systems reflect community values and priorities.
- Cultural data sovereignty frameworks: Communities maintaining control over cultural data used for AI training, determining access permissions, use restrictions, and benefit-sharing arrangements for any commercial applications derived from cultural knowledge.

Such community-centered approaches require supportive policy environments and resource investments but promise more sustainable, equitable, and culturally appropriate outcomes than purely market-driven or government-controlled technology deployment models.

## CONCLUSION

Since its establishment, the Betawi Cultural Institute (LKB) has been committed to preserving and developing Betawi culture. However, it faced challenges due to limited funding, which hindered the development of creative programs such as films and festivals. The institute also needed to adopt digital technology and AI to promote Betawi culture more widely through platforms like YouTube and Instagram and to enhance the economic growth of its affiliated studios. Therefore, greater support from the government, the community, and the private sector was needed to develop innovative strategies that utilized digital technology and AI for both cultural preservation and economic empowerment of Betawi artists and their studios.

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