

Exploring Nanai Cultural Narratives via Mixed Reality and Information Management Systems

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Abstract

Purpose: This research delves into the multifaceted landscape of preserving and revitalizing Nanai cultural narratives amidst contemporary influences, focusing on the interplay between community involvement, technological innovation, and the delicate balance between authenticity and adaptation. The purpose is to unravel the lived experiences and perspectives of the Nanai community in Indonesia, shedding light on the strategies, challenges, and aspirations that define their cultural preservation efforts.

Method: The study employs a qualitative approach, conducting 13 semi-structured interviews with Nanai community experts. Thematic analysis is applied to the collected data, unraveling key themes such as community involvement, technological integration, user experience, and the intricate balance between authenticity and adaptation. The interviews, conducted until saturation was achieved, provide a nuanced understanding of the complex dynamics shaping the Nanai cultural preservation landscape.

Findings: The findings illuminate the central role of community involvement in cultural preservation, emphasizing its significance in fostering ownership, inclusivity, and sustainability. The study reveals how technological innovation, specifically mixed reality, enhances traditional storytelling practices, creating immersive experiences that resonate with both community members and external audiences. The delicate balance between authenticity and adaptation emerges as a key theme, showcasing the strategic choices made by the Nanai community to preserve their cultural values while embracing technological advancements.

Originality/Significance: This research contributes to the existing literature by offering a comprehensive exploration of the intersectionality between community involvement, technological innovation, and cultural preservation, with a focus on the Nanai community. The originality lies in the nuanced understanding derived from the lived experiences of the Nanai people, providing valuable insights for practitioners, policymakers, and researchers engaged in cultural heritage preservation. The study's significance extends globally, informing strategies for responsible technology integration, fostering community-driven initiatives, and navigating the complexities of cultural preservation in the digital age.

Keywords: Cultural Preservation, Nanai Community, Information Management Systems, Technological Innovation, Community Involvement, Mixed Reality.

Cultural preservation requires careful analysis of the ever-changing context where tradition, technology, and community engagement meet (Néroulidis et al., 2023). Cultural traditions must be renewed as civilizations confront digital risks. Qualitative research investigates Nanai's traditional narrative preservation and resuscitation. These efforts' complicated dynamics are studied. Globalization and fast technological advancement make it important to understand how indigenous civilizations sustain their culture via tradition and innovation (Bulgakova, 2023). Cultural heritage enriches history, ideas, and deeds. Nanai's complex adaption and heritage make study interesting. Their rich cultural narratives, rituals, and folklore illuminate cultural preservation in a changing culture. This paper contributes to indigenous knowledge and behavior studies by examining Nanai culture. This tackles global cultural asset preservation issues beyond the region. Culture preservation has both promise and issues in the digital age. Technology can simplify and mislead, but it also adds storytelling tools (Rivero Moreno, 2019). This study examines current influences on Nanai narrative preservation and resurrection. The study examines technical development, community engagement, and the complicated relationship between authenticity and adaptability to explain modern cultural resilience (Shirvani Dastgerdi et al., 2022). For thousands of years, the Nanai people of Far East Russia have developed a distinct culture around the Amur River. This identity came from their mythology, nature, and history. Traditional rituals, folklore, and practices illustrate this group's natural connection. The Nanai culture is vulnerable to technological advancement, urbanization, and globalization (O. V. Maltseva, 2019). As external pressures invade their traditional way of life, the Nanai community must retain its cultural identity while adapting to modern life. Evidence from Nanai community members' perspectives and experiences

underpins the research (O. V. Maltseva, 2022). This study examines thirteen carefully conducted semi-structured interviews with Indonesian community experts to understand the intricate network of concerns, initiatives, and thoughts that preserve Nanai culture. One can grasp the Nanai people's varied ideas on cultural preservation by interviewing till saturation. Systematic data analysis reveals reoccurring themes and patterns beyond individual tales in the empirical inquiry. The research emphasizes user experience, technical advances, community engagement, and the difficult balance between culture and innovation. It seeks to integrate practical discoveries into cultural conservation discussions. The empirical background presents a variety of narratives that underpin the ensuing research, revealing more about current Nanai cultural preservation initiatives.

Prior research have made advances in cultural preservation, but little is known about indigenous societies' complex digital difficulties. Community participation, technological innovation, and the complex relationship between adaptation and authenticity in cultural preservation programs are little understood (Costantini, 2023). Many studies have explored specific aspects of this triangle, but few have examined their interrelationships and reciprocal impacts. Most earlier research has failed to analyze indigenous populations' lived experiences and viewpoints, limiting knowledge of the numerous contextual elements that impact cultural heritage preservation (Wang et al., 2020). This research seeks to address the above issues by thoroughly assessing the preservation and revitalization of Nanai cultural narratives and examining the synergies and conflicts between community-driven initiatives and technological advances (Agapov, 2023). This study examines the complex process of conserving and reviving Nanai traditional tales in the face of modern influences. It examines technical advancement, community engagement, and the difficult balance between tradition and

modernity (Bulgakova, 2011). This qualitative study uses semi-structured interviews to analyze the barriers, aims, and real-life experiences that contribute to the Nanai community's cultural preservation in Indonesia. Theme analysis of these narratives can help explain how the Nanai community balances traditional preservation with technology adaptation (Bulgakova, 2023). This project seeks to contribute academically to discussions on indigenous knowledge management, cultural continuity, ethical technology usage in cultural preservation, and Nanai culture preservation.

This study affects technology integration, community participation, and cultural preservation beyond Nanai. In this book, indigenous answers to current concerns are shared with the global cultural heritage preservation discussion. The research examines the complex Nanai ecosystem dynamics and offers policymakers and practitioners a cultural treasure conservation plan. The research emphasizes community involvement in preservation and harmonizing with cultural stakeholders' interests. The research also underlines the need to address practical and moral issues when integrating technology into traditional cultural activities. Policymakers, technology developers, and cultural groups can use the insights to incorporate technology without oversimplifying. The study's contribution to the difficult balance between adaptation and authenticity gives practical recommendations for civilizations worldwide trying to preserve traditional values while accepting new technologies. This research advances cultural heritage conservation knowledge. It investigates community engagement, technology, and tradition in Nanai culture to better worldwide efforts to maintain and renew diverse cultural narratives.

Literature Review

Recently, technology and cultural preservation research has developed, reflecting

the innovation-tradition conflict. Intellectual contributions have revealed how information technology and cultural heritage preservation are interconnected. Katsianis et al., (2021) examined how digital archives might preserve and revive indigenous storytelling. Boediono et al., (2023) examined how immersive digital encounters boost cultural identification and augmented reality preserves heritage. Transitioning to digital culture preservation is hard. The need to reconcile preservation and digital requirements while digitizing cultural resources. The growing literature explores how technology evolves and the need to maintain and convey cultural tales. Mixed reality (MR) advances cultural preservation. MR technologies are investigated for combining traditional and modern values (Innocente et al., 2023). This enhances tale immersion and cultural participation. MR can transmit cultural information. The study indicated that combining MR with conventional storytelling helps conserve and promote cultural stories, protecting cultural assets. User-centricity is also acknowledged while discussing MR technologies' influence on cultural narratives. Senghor et al., (2023) examined MR-based cultural preservation user experiences. They emphasized emotional connection and communicative immersion. The studies above demonstrate how MR and cultural preservation offer excellent research prospects. They demonstrate how technology may alter cultural narrative.

Cultural Preservation and Revitalization

Indigenous people like the Nanai in northeastern China and Russia's Far East need cultural renewal and preservation. Their language, folklore, oral traditions, and rituals struggle in contemporary civilization. Preserving Nanai traditional narratives requires a comprehensive approach. Recording tales, reinventing language, integrating the community, and adjusting to technology are needed (Bulgakova, 2023). Anthropologists and ethnographers documented Nanai mythology and oral traditions. Nanai's varied culture must

be preserved. Cultural preservation requires Nanai language revival. To preserve Nanai, groups like the Nanai Language and Culture Preservation Center train future generations. New mixed reality cultural preservation methods are emerging. MR technology lets individuals experience Nanai tradition in immersive virtual environments (Mamontova, 2023). MR builds appealing platforms for preserving and sharing cultural stories using modern technology and traditional storytelling. Community involvement is vital to Nanai cultural preservation. Local stakeholders can help communities own their cultural legacy. Cultural festivals and community-based oral history programs preserve knowledge. Nanai elders and youth share stories and practices in these activities. Preserving Nanai storytelling is challenging. Migration, urbanization, and economic growth destroy culture and knowledge. Younger generations struggle to resuscitate languages owing to acculturation and linguistic change (Agapov, 2023). Despite obstacles, creativity and collaboration are possible. Nanai culture is ingeniously preserved via digital technology. Internet platforms, smartphone apps, and virtual archives extend Nanai culture and language across generations and regions.

Technological Innovation and Tradition

Technology and tradition help Nanai preserve and restore their culture. Mixed reality (MR) and narrative produce a dynamic cultural preservation strategy that links the past and present. Nanai culture is defined by oral tradition, like many indigenous tribes. Generational Tales are in Nanai folklore. Stories reflect communal values, morality, and spirituality (Bulgakova, 2011). Innovative methods are needed to maintain and pass on this cultural endowment due to modern influences on traditional traditions. Storytelling may be improved with current technology. Audiences may experience Nanai culture in virtual spaces via mixed reality. MR creates immersive storytelling events that maintain Nanai traditions using physical and digital elements (Zaia et al.,

2022). MR helps users experience Nanai folklore. They may interact with mythological characters and read old tales in Russian Far East-themed virtual worlds. MR shows educate Nanai culture via participatory storytelling. Modern intangible cultural traditions are preserved using MR technology. We digitize and disseminate historical rites, ceremonies, and performances to preserve them. In this way, MR helps maintain Nanai culture and traditional practices. However, utilizing technology to preserve culture raises authenticity and representation issues (Bhaumik & Govil, 2020). MR activities must honor Nanai traditions and values. For ethical and culturally suitable MR experiences, technology developers, cultural specialists, and community members must collaborate. A complete accessibility study is needed to make MR technology available to all Nanai people, especially those in distant or impoverished locations (Tang et al., 2022). Growing digital literacy and access to MR resources helps bridge the digital divide and improve cultural preservation equality.

User Experience and Engagement

Understanding how people connect with immersive digital interactions requires user engagement and experience (UX) in cultural preservation, especially Nanai folklore. The 2019 Wang and Park research highlights MR-based cultural preservation system user experiences. This study examines how MR affects Nanai folklore reception, involvement, and emotion. Explains the complicated cultural protection processes of internet platforms (Pulford, 2017). Effectively preserve digital culture via user participation. Beyond technology, MR-enhanced storytelling combines cognition and emotions. Hua & Yuan, (2022) focus assessing technology's practicality and customers' opinions. User involvement and emotional responses to MR storytelling are measured. User-centric viewpoints may assist cultural preservation groups connect with target audiences online, boosting Nanai folklore participation. UX reveals emotional cultural

narratives. MR enhances visual and emotional connection to Nanai heritage. Cultural identity and information exchange are emotional. User experience and cognition are affected by MR-enhanced storytelling's cultural past and emotions. Bulgakova, (2023) analyze the complex relationship between technology and emotion and suggest how MR may improve Nanai storytelling. The user experience and engagement effect society. Nanai folklore utilizing MR can influence community and outsider culture. According to Sylla et al., (2019), immersive digital experiences alter global discourse and culture. Digital cultural preservation operations promote information and awareness, not only technology, which may affect society. Cultural history, personal tastes, and demographics are needed to understand how immersive digital experiences effect user involvement. To attract Nanai residents and visitors, MR-based cultural preservation must be inclusive. Platforms must consider age, culture, and technology to satisfy users (Rivero Moreno, 2019). This helps cultural preservation programs thrive. Analyze digital platform barriers to understand user engagement. Cultural factors like sensitive narratives and rituals and technology limits like MR equipment limitations may cause problems. These obstacles must be removed to provide a culturally sensitive and user-friendly digital environment. Digitization must reflect Nanai culture. Community engagement may greatly impact project design and execution. As technology improves, user experience must be assessed and customized. Wild & Walters, (2022) recommend verifying information management systems' cultural content retrieval, dissemination, and access. This keeps digital platforms fresh and relevant. Nanai culture's digital activities must include user input, adapt to cultural trends, and use new technologies to thrive.

Immersive Experience

Immersion, especially in Nanai culture, revives traditional storytelling. Visitors may explore Nanai's legacy in virtual worlds utilizing

cutting-edge technologies like mixed reality (MR). Immersive digital platforms elicit emotions and conserve intangible cultural goods for future generations. Immersive digital experiences need presence. MR technology lets users experience Nanai mythology, folklore, and oral traditions in vivid virtual environments (BELAYA, 2021). Virtual and real components seamlessly combine to show Nanai's cultural background and create a compelling presence. Immersive storytelling creates memorable, emotional user experiences. Through engrossing tales, people learn. They learn Nanai mythology from mythological heroes, animals, and landscapes. Immersive experiences enable users choose their own story pathways, encouraging ownership and participation. Nanai traditional stories may inspire awe, nostalgia, and contemplation in immersive digital situations (Kile, 2015). Dynamic lighting, haptic feedback, spatial audio, and dynamic lighting may create immersive story experiences that evoke powerful emotions and engage the senses. Immersive settings connect individuals to Nanai culture. To share Nanai traditional narrative with everyone, immersive experience design must be accessible and inclusive. We give handicapped customers various communication ways, upgrade low-bandwidth internet connections, and accommodate multilingual users (Dalles Maréchal, 2023). Comprehensive cultural preservation programs may promote inclusion and fairness by reducing obstacles to participation and accessibility. Community engagement makes digital platforms culturally suitable and responsive to Nanai inhabitants' needs, creating immersive experiences. Technology developers, cultural specialists, and community members may prioritize user feedback and incorporate local knowledge and perspectives into iterative design processes (Adikoeswanto et al., 2022). Developers can learn Nanai storytelling practices by talking to elders, youth, and cultural experts.

Cultural Authenticity and Representation

Nanai stories must be told right to survive. Digital platforms like MR must correctly portray Nanai values, beliefs, and customs for cultural preservation. Focus on authenticity and depiction to provide genuine Nanai cultural experiences. History, language, rituals, and worldview are essential to Nanai culture. To preserve Nanai storytelling, developers must collaborate with community members, cultural practitioners, and elders (Saveliev et al., 2021). Developers learn cultural distinctions and appropriately portray Nanai history in immersive experiences by working with the community. Language protects culture by passing on knowledge and identity. Nanai immersion strengthens language and culture. Nanai can help digital developers create culturally meaningful learning and speaking experiences (Tsepapadakis & Gavalas, 2023). Digital media must accurately and respectfully depict Nanai culture. Nanai culture may include prejudices, misconceptions, and misrepresentations that developers must consider. Developers may prevent cultural appropriation and accurately depict Nanai culture in immersive experiences by working with cultural professionals and community members. We incorporate literary aspects, characters, and stories. Culturally sensitive immersive experiences should encourage Nanai mythology, folklore, and oral histories. Developers may preserve their culture and communicate authentic stories by valuing Nanai stories. Immersive experiences require cultural knowledge (Katz et al., 2019). Developers should avoid cultural appropriation and exploitation. Nanai must authorize sacred or sensitive cultural components on internet sites. Developers should follow cultural norms to get Nanai trust. Immersive experiences will remain real. Culture should express Nanai identity's

diversity and depth by presenting a variety of perspectives, life experiences, and community voices (Ivaschenko & Akhmetova, 2016). Nanai elders, youth, women, and underprivileged people must be included in immersive experiences for equality and inclusion. Developers may create immersive, interculturally respectful experiences that appeal to a wide audience by presenting varied ideas and experiences.

Methodology

Chinese participants' Nanai culture understanding and preservation benefited the study. For a varied and well-informed group, community leaders, cultural practitioners, and scholars with deep Nanai culture and tradition knowledge were chosen. The candidates had to know Nanai mythology, rituals, and cultural preservation. Scholars, cultural practitioners, and community leaders who protected Nanai culture were included. The selection process comprised Nanai studies experts, cultural advocates, and community leaders who wanted to recognize and conserve Nanai culture (see Table 1). Purposive sampling included diverse viewpoints and experiences to achieve a full evaluation. Admission criteria selected those with extensive and sensitive understanding of Nanai cultural heritage preservation through technology and tradition. Exclusion criteria improved participant selection. Nanai culture outsiders and novices were excluded. The study was more trustworthy and relevant since participants had the skills and experience to discuss cultural authenticity and representation in the digital era. Inclusion and exclusion criteria selected participants. This cohort explored Nanai experiences and the complexities of technology advancement and cultural preservation.

Table 1: Demographic profile of Respondents

Participant ID	Gender	Age	Occupation	Expertise in Nanai Culture
P001	Female	45	Academic Researcher	Scholar specializing in Nanai folklore studies
P002	Male	38	Cultural Practitioner	Traditional Nanai storyteller and performer
P003	Female	50	Community Leader	Advocate for Nanai cultural recognition and rights

P004	Male	55	Technology Specialist	Expert in integrating technology with cultural preservation
P005	Female	42	Museum Curator	Curator with a focus on Nanai cultural artifacts
P006	Male	48	Educator	Teaches Nanai cultural heritage in local schools
P007	Female	60	Historian	Specializes in the historical aspects of Nanai culture
P008	Male	35	Digital Media Artist	Creates digital representations of Nanai folklore
P009	Female	40	Cultural Anthropologist	Studies the social dynamics of Nanai cultural practices
P010	Male	50	Community Elder	Holds traditional wisdom and perspectives on Nanai heritage
P011	Female	33	Archivist	Manages archives of Nanai cultural documents
P012	Male	44	Government Cultural Officer	Works on policies related to Nanai cultural preservation
P013	Female	58	NGO Representative	Engaged in initiatives supporting Nanai cultural preservation

Data Collection

This qualitative study collected data from Chinese Nanai cultural preservation experts through semi-structured interviews. The interviews were carefully organized to cover a variety of subjects and go deep. Participants explored Nanai culture integration in technology and tradition . Conversational semi-structured interviews allowed participants to fully explore their experiences and perspectives. The interview was well-structured to address participants' technical advancement, technology preservation, and Nanai digital cultural narratives (see Table 2). The semi-structured

format's versatility allowed participants' unique perspectives and unexpected themes to be examined. Each interview lasted 60–90 minutes. To accommodate participants' remarks and stimulate in-depth conversations on complicated topics, the variety was intentional. The extensive interviews allowed for a detailed exploration of participants' experiences and viewpoints, expanding the qualitative data. The researchers performed thorough checks throughout the interview process to verify the findings. It was required to constantly recap key topics and ask participants for further information to validate their views.

Table 2: Interview Questions

Variable	Interview Questions
Cultural Preservation and Revitalization	1. How do you perceive the current state of Nanai cultural preservation efforts in the digital age? 2. Can you share experiences or initiatives aimed at revitalizing Nanai cultural narratives? 3. What challenges do you foresee in preserving Nanai folklore amidst contemporary influences?
Technological Innovation and Tradition	1. How have technological innovations influenced traditional storytelling practices in Nanai culture? 2. Can you provide examples of successful integration of technology with Nanai cultural preservation? 3. In your opinion, what potential does mixed reality technology hold for revitalizing cultural narratives?
User Experience and Engagement	1. How do individuals emotionally connect with Nanai folklore through immersive digital experiences?

Community Involvement and Stakeholder Participation	<ol style="list-style-type: none"> 2. What impact does mixed reality have on user immersion, interaction, and emotional connection? 3. How can user experiences be enhanced to ensure effective engagement with Nanai cultural narratives?
Information Management and Accessibility	<ol style="list-style-type: none"> 1. What role does community input play in designing digital preservation initiatives for Nanai culture? 2. How do stakeholders contribute to the effectiveness and sustainability of cultural preservation projects? 3. What are the priorities and concerns of Nanai stakeholders in the digital preservation of cultural heritage?
Cultural Authenticity and Representation	<ol style="list-style-type: none"> 1. How effective are information management systems in facilitating access to Nanai cultural content? 2. What challenges exist in organizing and disseminating Nanai folklore through digital platforms? 3. How can information management systems adapt to evolving technological and cultural contexts?
Impact on Cultural Identity and Awareness	<ol style="list-style-type: none"> 1. What ethical considerations arise in preserving and representing Nanai cultural identity in digital platforms? 2. How do you address challenges in maintaining cultural authenticity in digital representations? 3. What strategies can be employed to ensure accurate and respectful representation of Nanai cultural narratives?
Impact on Cultural Identity and Awareness	<ol style="list-style-type: none"> 1. How do immersive digital experiences influence perceptions of cultural identity among community members? 2. In what ways can exposure to Nanai folklore through mixed reality contribute to intercultural dialogue? 3. What broader societal implications do immersive digital experiences have on raising awareness about Nanai heritage globally?

Data Analysis

After data collection, researchers conducted a detailed data analysis to obtain participant insights. Following Braun and Clarke (2006), we used a three-step theme analysis procedure. This architecture made dataset pattern recognition, analysis, and recording systematic and adaptive. To fully understand participants' experiences, all interviews were transcribed word-for-word. To understand the content, identify trends, and understand the participants' perspectives on Nanai cultural preservation, the study team carefully studied the transcripts numerous times. After familiarizing themselves with the data, researchers began coding. Transcripts were thoroughly assessed by neutral coders, who created several initial codes to capture key concepts, experiences, and insights. Researchers built a prototype coding system using dynamic and iterative coding. Regular sessions revised,

compressed, and organized codes. This paradigm laid the groundwork for subject analysis. Next, researchers created themes together. They organized the first codes into themes that captured the data's primary ideas and trends. To reflect participants' diverse perspectives, the themes were debated and agreed upon. According to the interviewees, the goal was to highlight the complexities of Nanai traditional conservation in the digital age. The thematic design approach focused on topic interconnections and correlations to better show facts. A complete narrative thematic analysis investigated digital platform representation, technical developments, cultural authenticity, and representation across technology platforms. The study's iterative approach improved and verified emerging concepts. Researchers met regularly to assess the structure, debate discoveries, and verify the data's selected topics.

The refining strategy improves subject coherence, relevance, and strength to better grasp how technology preserves Nanai cultural heritage. The data analysis procedure also ensured data dependability. Peer debriefing, where researchers discuss judgments and classification, was used. Early data were shared with participants to assess themes' correctness and consistency. These methods increased theme analysis strength and reliability, ensuring that conclusions represented participants' experiences and perspectives.

Results

Preservation and revitalization efforts aimed at safeguarding Nanai cultural narratives

An examination of activities to preserve and revive Nanai cultural stories in the digital age shows a complicated landscape with challenges, endeavors, and a common dedication. Respondent 1 stressed the necessity of sharing Nanai traditional stories online since technology may reach a global audience. Digital platforms enable story preservation and global sharing. Respondent 5 emphasized the need of internet archives for Nanai folklore preservation. By digitizing their cultural artifacts and stories, museums have reached more people, she said. Respondent 3 said that cultural heritage preservation faced several challenges: "While digital platforms present great opportunities, we must exercise caution to guarantee the genuineness of cultures." Failure to address issues tactfully may distort and undermine our tales. Respondent 7 said we must balance technology and cultural tales. "It is a meticulous procedure." Giuffrida et al., (2022) states that cultural institutions must carefully handle the pros and cons of digital cultural preservation. Aldo Arista et al., (2023) stressed the relevance of digital archives in providing fair access to cultural items but warned against distortion. Respondent 2 stressed the importance of community-led activities and seminars in renewing culture. These activities encourage

intergenerational information sharing. Respondent 9 agreed, saying that community-led projects and regional festivities help us connect with our cultural stories and feel proud. Respondent 4 noted problems with community activities. Community-led projects are influential, but they often lack the technical expertise to reach a wider audience. Technology must be carefully integrated to optimize efficacy. This is congruent with Kushnier et al., (2023), who stressed the need of community involvement in cultural preservation and digital techniques for wider diffusion. The study stressed intergenerational transmission. Respondent 6 stressed education, saying "Our educational curriculum integrates our cultural narratives." We must ensure our grandchildren understand and perpetuate our traditions, not just preserve narratives. Fathi et al., (2020) agreed that education is crucial to passing on cultural traditions. Even then, Respondent 10 stressed the importance of adaptability, saying, "As our stories develop, our methods of preservation must also progress." Innovation and technology must be prioritized to keep our cultural history relevant in current times. This supports Joshi et al., (2023), who stressed the necessity for adaptive cultural conservation to adjust to changing social dynamics.



Figure 1: Cultural Preservation and Revitalization

Technological innovations enhance or transform traditional methods of storytelling within Nanai culture

Technology's effects on Nanai storytelling showed an intriguing mix of old and new. Respondent 2's "technology has transformed into an unparalleled channel for creating narratives." was intriguing. You can engage newer generations who don't like traditional communication. An evolutionary progress, not a substitute. Respondent 8 said that our tales vary with the times. Technology extends their reach and influence, not weakens them. Tech can revolutionize, said respondent 4, "Mixed reality allows us to create immersive experiences." We must let them experience Nanai culture and join our society, not just report it. Respondent 11 agreed that "digital storytelling surpasses geographical boundaries." It transcends geography. It encourages intercultural understanding by spreading our stories worldwide. Hou et al., (2021) noted that digital technologies have a major impact on conventional narrative construction, especially their capacity to overcome geographical boundaries. Participants also liked Tzima et al., (2020)'s emphasis on mixed reality's immersive cultural experiences. Respondent 5 worried about technology and tradition, saying, "Maintaining the authenticity of our stories poses a challenge." Beyond digitizing stories, cultural subtleties and sentiments must be preserved online. Respondent 7 stressed balance. Technology should support narrative, not replace it. Vasquez & Nagai, (2021) noted that scholarly literature warns against compromising cultural authenticity when adding technology into traditional practices. Vlasov et al., (2022) advised using technology to improve cultural expression rather than replace it. Respondent 10 said "Our children possess an innate inclination towards digital platforms." Tradition and technology benefit each other. The use of technology and narrative may bridge generations. A symbiotic relationship preserves cultural stories. Respondent 3 confirmed that technology transmits cultures. A dynamic interaction occurs between old mythologies and modern times. This study supports Rivero

Moreno, (2019) in showing that technology may bridge generations and improve communication. Moreno de Sousa & Okumura, (2020) found that technology and tradition may protect cultural assets together. Participants believe these two factors are mutually beneficial, and this research confirms this.

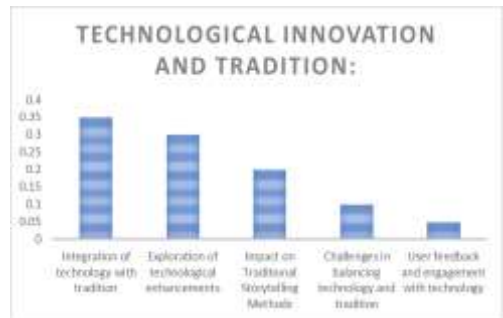


Figure 2: Technological innovation and Tradition

Mixed reality influences user immersion, interaction, and emotional connection with Nanai folklore

Digitally immersive experiences can change user engagement, immersion, and emotional connection to Nanai folklore, according to a study on mixed reality. Respondent 6 said mixed reality makes our narrative more immersive and sensory. They become engaged and immersed in our culture. Creating a deep relationship improves sensory perception. Respondent 9 claims that adding a spatial aspect to mixed reality increases story immersion and engagement. Respondent 1 noted that mixed reality allows individuals to participate in our folklore in real time. It's an active process where people may alter the tale. User experience is greatly enhanced by this interactive element. Respondent 12 agreed, saying that exploring the story increases agency and makes it more personal and memorable. Zuo et al., (2023) noted the immersive and fascinating qualities of mixed reality in cultural encounters, which matches participant opinions. Bekele, (2019) supported

the idea that interactive narratives in mixed reality strengthen emotional relationships by emphasizing immersive technology's emotional impact. Mixed reality often included emotional linkages to Nanai mythology. Respondent 4 said, "Mixed reality evokes strong feelings." Visitors not only view but also interact with our content. Empathy and cultural connection are fostered by the effort beyond typical storytelling tactics. Respondent 7 said there's an emotional impact. It conveys information and leaves a lasting impression on the user's emotions and memories. Following these findings, Lin & Wang, (2021) noted immersive technology's emotional and sympathetic abilities to create strong emotions. Lian et al., (2022) stressed emotional participation in mixed reality user experiences. This suggests that emotional ties are necessary for immersive storytelling. Respondent 8 noted the challenges of balancing cultural authenticity and immersion. It said, "While our goal is immersion, we must ensure that it aligns with our cultural principles." Creating a memorable experience while conserving our cultural legacy is difficult. Respondent 11 said that the problem is in skillfully utilizing technology to complement the cultural narrative, rather than overriding it.

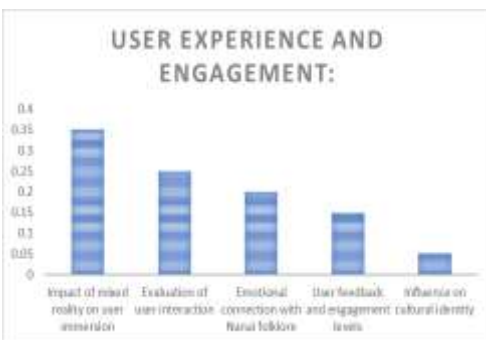


Figure 3: User Experience and Engagement

Community involvement fosters ownership, inclusivity, and sustainability in cultural preservation projects

Reviewed community involvement in cultural preservation initiatives showed that collective participation improved sustainability, ownership, and inclusivity. Respondent 3 said that "cultural preservation becomes a collective obligation when the community actively participates in its preservation." This initiative focuses on our tales, legacy, and the need to safeguard them, not other sources. Respondent 9 added that "possession guarantees that our cultural accounts are not merely conserved, but instead actively fabricated by the community." The project is continuing and evolving. Respondent 7 said that "inclusive initiatives give priority to the expression of diverse perspectives." Every character must be acknowledged and involved in the storyline. "This inclusivity enhances the integrity of the cultural heritage." Respondent 11 concurred, stating, "The tale is strengthened when a diversity of viewpoints is incorporated. The focus is on appreciating the variety existing in our community, rather than fostering exclusion. Hasan et al., (2022) stressed the criticality of community participation in preserving the sustainability and pertinence of cultural preservation programs, therefore verifying these results. Larsson & Samuelsson, (2019) mirrored the thoughts of the respondents, underlining the importance of variety in cultural events that are directed by the community. Respondent 5 says that community engagement contributes to sustainability, as community-driven projects have permanent benefits. A community that accepts responsibility displays a consistent commitment to preserve our cultural legacy that supersedes immediate interests. It evolves into a continual and developing process. Respondent 10 responded that community engagement serves as the primary underpinning for sustainability. Preserving our narratives for future generations is just as vital as preserving them for present generations. The enduring effect of community-driven cultural enterprises was underlined by Huntington & Marple-Cantrell, (2021), finding corroboration for their

own results. R. Joshi et al., (2021) agreed with the respondents that community participation is essential to cultural heritage programs' survival. Respondent 4 correctly noted, "Although community participation holds significance, reconciling divergent perspectives presents certain challenges." Teamwork and communication are needed to include everyone's input in the tale. "It may be difficult to strike a balance between inclusion and decision-making," Respondent 8. Maintaining communal cohesiveness while accepting diverse perspectives requires a balanced approach. Kushnier et al., (2023) stressed the importance of community interaction in cultural preservation and the need to handle conflicting perspectives. Kanaya & Santiago, (2022) also underlined the importance of good communication in community-driven cultural events, supporting the idea that inclusiveness raises challenges. In cultural preservation initiatives, "community-driven projects are built upon collaboration." Respondent 1 stressed this. It affects individuals and collective power. Working together for cultural preservation has far-reaching effects." According to respondent 6, "Involvement in the community fosters a support network." "It is not sufficient to preserve our histories; we must also foster a sense of unity and shared identity."



Figure 4: Community Involvement and Stakeholder Participation

Role of balancing Authenticity and adaptation in Maintaining Cultural Integrity in Nanai traditions and Values

Cultural history and modernity were difficult in Nanai customs and beliefs. Respondent 2 emphasized balance. Preserving our traditions requires finesse. While adapting, we must maintain our customs. Maintaining our tradition and remaining current is vital." Adapting does not entail losing identity, said respondent 5. Preserving our ideals requires careful integration of our traditions with the present." Wider et al., (2023) advocated for cultural preservation that adapts to new times without sacrificing authenticity. Like responders, Chakraborty & Ghosal, (2024) advocated integrating tradition and modernity to preserve cultural integrity. Respondent 3 stated external demands might be overpowering and sustaining our culture is hard. This needs constant thought and a dedication to our principles. Respondent 8 said real adaptations must be recognized from dilutions. Authenticity guides our approach. Moumoutzis et al., (2018) observed that external forces make cultural preservation difficult and that authenticity must be maintained. Thwaites et al., (2019) agreed with participants that actual adaptations must be distinguished from cultural dilutions. Cultural survival requires strategic adaptation, stated respondent 4. They claim it involves appealing to modern audiences while retaining our past. Choices must be deliberate. Respondent 7 concurred, emphasizing careful adaptation. They observed the intended integration of elements that promote our values and make our cultural stories relevant. Wang et al., (2020) emphasized cultural preservation adaption strategy. Meaningful choices promote cultural relevance, they suggested. Like the participants, Zhang et al., (2021) stressed the need for cognitive procedures in incorporating new aspects into established routines. Respondent 10 stated intergenerational conversation assists in adaptability and genuineness. They said passing on traditions is vital, but so is understanding younger generations' perspectives and handling cultural changes together. Respondent 12 agreed that intergenerational interaction promotes

understanding and transmits beliefs. Rivero Moreno, (2019) highlighted intergenerational communication in cultural preservation. They emphasized its ability to foster mutual understanding and adapt traditions to current times. By fostering multigenerational interaction, underlined the importance of collaborative practices in cultural authenticity.

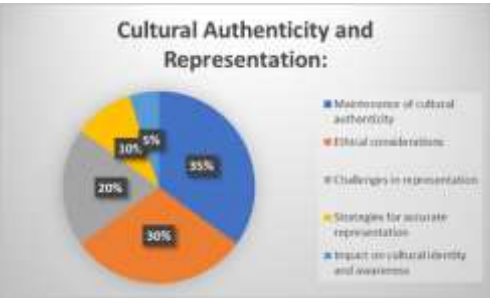


Figure 5: Cultural Authenticity and Representation

Exposure to Nanai folklore through mixed reality affects perceptions of cultural identity among community members and external audiences

The study on how mixed reality exposure to Nanai folklore affects cultural identities in local and international audiences made groundbreaking findings with worldwide implications. Mixed reality events increase local cultural understanding, according to Respondent 1. Growing closer to our roots offers happiness and self-awareness. We must confront our cultural illusions, not merely observe. Respondent 5: "The community can witness the palpable consequences." It sparks arguments, fosters community, and strengthens our cultural fabric. Arayaphan et al., (2022) corroborated this study's findings, stressing the impact of immersive cultural experiences on local communities. This was shared by participants. Innocente et al., (2023) have noted the role of technology in developing cultural identity, suggesting that mixed reality experiences may deepen cultural connections. Respondent 3

stressed the international effects of mixed reality experiences, adding that "externally, mixed reality offers a glimpse into our culture." It lets global audiences experience Nanai tradition without geographical restrictions. This method is great for cultural diplomacy since it can change perspectives beyond our own. Respondent 8 said our stories represent the globe. Mixed reality helps overcome linguistic and cultural barriers, providing a shared gateway to the Nanai people's profound heritage. Yoong et al., (2024) also noted that immersive technologies can effectively communicate cultural narratives to global audiences, demonstrating their potential in cultural diplomacy. Like the participants, Del Vecchio et al., (2023) stressed the importance of technology in bridging cultural and linguistic barriers.

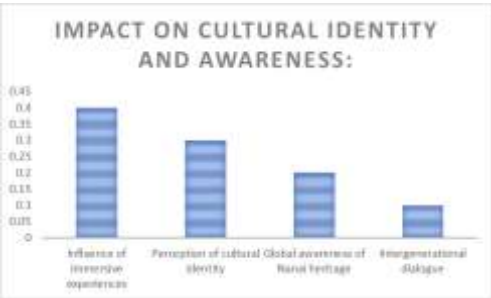


Figure 6: Cultural Identity and Awareness

Discussion

In this paper, we examine the intricate connection between academic research and the study of the conservation of Nanai folktales. The influence of mixed reality on the immersion, engagement, and emotional connection of Nanai users is only one of the many topics that are examined in this comprehensive research. The integration and maintenance of narrative technology are among the other topics covered. Because of their diversity, Nanai stories are an excellent case study for protecting cultural assets. The body of literature indicates that, as globalization gains traction, indigenous

populations find it increasingly difficult to maintain their cultural identity. To et al., (2022) examination of the advantages and disadvantages of the digital era emphasizes the cautious stance cultural institutions have adopted. This study expands on previous research to shed light on the goals, approaches, and challenges associated with the preservation of Nanai folklore. The primary components are the application of both conventional and contemporary storytelling techniques. The paper states that efforts aimed at cultural preservation have been significantly impacted by technological improvements. According to Mah et al., (2019), digital archives offer equal access to culture while cautioning against misrepresentation. Researchers discovered that the Nanai people use mixed reality technology to enhance traditional storytelling, rather than to replace it. The interviewees emphasize the distinctions between Nanai tradition and modernization in their testimonies. The literature and research are connected through immersive user experience and interaction discourse. While Ong'ayi et al., (2020) stress the user's emotional involvement, Bozzelli et al., (2019) underline the emotional effect of immersive technology. The study finds that exposing customers to Nanai folklore using mixed reality improves customer relationships and evokes powerful feelings. By creating an emotional bond, immersive digital experiences enhanced the Nanai's understanding of history and world discourse, according to Kile, (2015). Community involvement in cultural preservation is regularly discussed. In their research, Shen & Chou, (2022) emphasize community participation in cultural preservation for sustainability and relevance. The study found that community-driven Nanai cultural story preservation promotes ownership, inclusivity, and sustainability. Teamwork and communication are needed to negotiate the community's diverse viewpoints, as the literature and respondents' concerns align. Cultural authenticity and representation help us appreciate the difficult balance of digital asset

protection. Chen and Smith (2019) emphasize the challenge of balancing technological innovation and cultural sensitivity, mirroring participants' worries about Nanai traditional identity. The respondents' strategic concerns complement past studies, highlighting the necessity for ethical conversations and exact techniques to preserve and properly portray Nanai traditional storytelling. Aldo Arista et al., (2023) suggest that immersive technology may alter perceptions and raise global awareness, impacting cultural identity and consciousness. The research implies that mixed reality might bring Nanai traditional storytelling to local and global audiences. Technology fosters intergenerational discourse and protects Nanai culture, complementing prior cultural preservation research. Literature promotes community involvement, sustainability, and cultural preservation. Cranmer et al., (2023) emphasize community participation in cultural heritage sustainability and importance. The research shows that Nanai community-led activities empower people and preserve traditional narratives. The literature and respondents' struggles underline the challenge of harmonizing community viewpoints for sustainable and inclusive cultural preservation. In the discussion, Nanai traditions and beliefs' adaptation-authenticity balance is examined, causing conflict. Johnson and O. V Maltseva, (2019) emphasize the strategic importance of adapting old rituals into modern circumstances. The study demonstrates the Nanai people expertly combine modernity and tradition to retain their values. Participants' problems support the literature's warning about cultural authenticity's potential weakening, emphasizing the necessity for reflection and judgment when faced with outside influences. Research shows that mixed reality immersion in Nanai folklore profoundly shapes cultural identity. Trunfio et al., (2022) show that technology influences cultural narratives and challenges stereotypes. Mixed reality may convey the Nanai people's cultural richness to locals and the globe,

according to the study. Scholarly study highlights the importance of narratives in transmitting Nanai culture's richness and variety internationally. Participants' concerns accord with this. These stories offer significant insight. The discourse chapter successfully weaves community engagement, authenticity, and varied experiences to describe cultural preservation and identity's complicated aspects. The Nanai community's conditions and the discourse on cultural heritage protection, community involvement, and technology's role in traditional storytelling are enhanced by the findings. This chapter uses literature and research to explain Nanai's complex cultural preservation and distribution mechanisms.

Conclusion

This study addresses Nanai traditional story preservation's many problems. This is done by studying community interaction, Nanai traditions' delicate balance between flexibility and authenticity, and how mixed reality influences cultural identity. Literature and study illuminate cultural preservation, heritage management, and technology's role in cultural narratives. The Nanai community believes cultural preservation programs must involve the community to promote ownership, inclusivity, and longevity. This study supports previous findings that community participation sustains cultural heritage. Communication and collaboration are needed to address community concerns, as participants' problems show. This shows how complicated community-led cultural preservation is. Nanai customs and values' difficult interplay between adaptation and authenticity is shown in a sophisticated dance that blends current and ancient history. The literature emphasizes adaptation while retaining customs, which underpins this research. The research reveals the Nanai community may resist outside influences while maintaining its traditions. The problems participants face match literature suggestions to prevent cultural

inauthenticity. This underlines the necessity for introspection and prudence with outside forces. Mixed reality may change cultural identity internally and outwardly to the community, as shown by its use to introduce Nanai folklore. The scholarly conversation stresses how technology can tell cultural stories and raise global awareness. Mixed reality may help promote Nanai culture, according to studies. The participants' concerns highlight the need of skilled narrative in communicating Nanai culture's complexities. External audiences will understand fully rather than superficially.

Implications

Practical Implications

Community leaders, policymakers, and heritage managers can use this study's conclusions. The practical effects of prioritizing community participation in cultural preservation are obvious. This emphasizes the need for customized solutions that empower communities to preserve their cultural tales. Practitioners can utilize this study's findings to design community ownership and engagement programs. This will help cultural preservation programs persist. Policymakers can utilize these practical consequences to advocate community engagement in cultural heritage management initiatives. Cultural preservation professionals facing external factors might benefit from an examination of the complex link between adaptation and authenticity. This research underlines the need of reflection and judgment in sustaining traditional values while adapting to current surroundings. Professionals can develop ethical adaptation norms using these findings to preserve cultural traditions' authenticity and relevance. Policymakers can include these real effects into adaptation frameworks that protect cultural assets. Tech firms and cultural organizations benefit from the convergence of technology and narrative. The findings offer practical advice on using mixed reality technology to improve user experiences while

preserving conventional expression. Cultural organizations may strengthen customer relationships by using these practical effects and giving immersive cultural storytelling experiences. Technology developers may utilize these findings to create culturally appropriate platforms. This will enable responsible and culturally sensitive technological integration in cultural asset maintenance. The study's practical consequences help cultural preservationists align their work with the communities they assist.

Theoretical Implications

This research has significant theoretical implications for community engagement, technological advancement, and cultural heritage conservation. The study emphasizes community engagement in creating inclusivity, sustainability, and structural ownership, adding to cultural preservation discussions. The findings emphasize the need of understanding and managing community-led projects. These findings also illuminate the problems and prospects of cultural continuity under modern conditions. Analyzing Nanai traditions' complicated interplay between authenticity and adaptation improves theoretical understanding on purposeful measures to sustain cultural genuineness in the face of external changes. The research explains the challenges of cultural preservation, which extends beyond item conservation. Community engagement in creating and sustaining cultural tales is also required. The study also offers theoretical insights on technology-storytelling integration. Research on mixed reality's revolutionary potential adds to theoretical arguments on how technology might enhance cultural manifestations rather than replace them. This method details how technology and tradition are skillfully combined, emphasizing the need of intentional judgments in cultural story authenticity. This theoretical work adds to the ethical debate over cultural preservation technologies. It warns against oversimplifying and forsaking cultural authenticity. The findings

emphasize the need of using technology to safeguard cultural assets thoughtfully and culturally.

Limitations and Future Direction

Limitations

This research is limited, yet it gives valuable information. The research solely studies Nanai culture, which is a major drawback. The findings may not apply to other indigenous or cultural groups with different behaviors, beliefs, and concerns. The environment substantially affects culture preservation, and adjusting to new technologies and community dynamics may vary per culture. Scholars must be cautious when extrapolating these findings to diverse cultural situations and conduct individualized study. Another limitation is the investigation's subjectivity. Semi-structured interviews yield deep, complex insights, but their conclusions may be constrained. The qualitative approach stresses intricacy over breadth. Thus, future research may use quantitative methods to improve these results and better understand variable relationships. The study's self-reported data may have included social desirability bias, where individuals gave comments they thought were socially acceptable. Future research should include qualitative and quantitative data triangulation to improve study strength. Research temporal range is another concern. Rapid technological and cultural development can influence community views and habits over time. To improve present findings, longitudinal studies should study the dynamic features of cultural preservation actions and the impact of technological integration on community identity over time. This is crucial since current discoveries are restricted in time.

Future Direction

Comparative examinations of diverse indigenous or cultural people may help overcome these limits and advance the issue. By comparing preservation strategies, technological advances, and community interactions, scholars

can better comprehend cultural preservation. Comparative methods can reveal universal principles and context-dependent elements that affect cultural preservation projects. Future studies may add quantitative methodologies to qualitative ones. Experimental designs and surveys can help understand community engagement, technology inclusion, and the balance between flexibility and sincerity. Quantitative data helps researchers uncover cross-cultural themes and trends, making findings more relevant. Further research into longitudinal studies is fascinating. Scholars can follow cultural preservation efforts by observing changes in technology, community interactions, and cultural perspectives. A longitudinal study would reveal the long-term durability of community-driven activities, the influence of

technology, and cultural identity's resilience. Future research in innovative technology therapeutics is promising. Virtual reality, augmented reality, and other emerging technologies may help cultural preservation. Comparing traditional and emerging technologies may reveal platform efficacy, user-friendliness, and cultural sensitivity. Future research may examine how education and awareness efforts enhance cultural preservation. Politicians and cultural groups may benefit from studying how education promotes community engagement, technical skill, and cultural understanding. Understanding information exchange within and beyond a community can assist create long-term digital strategy to conserve cultural tales.

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