

# Digital Innovation and Social Media Strategies for Intangible Cultural Heritage: A Case Study of Pixiu Dance in Zengcheng, China<sup>1</sup>

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## Abstract

This study employed a mixed-methods case study design to explore the adaptation of traditional cultural elements for digital dissemination and their impact on user engagement and cultural identity formation. Specifically, the study examined (1) the transformation of cultural symbols, focusing on converting traditional visual elements into digitally appropriate representations of Intangible Cultural Heritage (ICH); (2) participatory design strategies that enabled users to shift from passive consumers to active co-creators; and (3) the role of digital storytelling techniques in fostering cultural identity while maintaining core cultural values. A total of 80 participants aged 18–30, all regular users of digital media platforms, were recruited through stratified sampling. Inclusion criteria required participants to have at least six months of active use on major digital platforms and varying familiarity with traditional culture. Data were collected through a structured questionnaire and semi-structured interviews. The questionnaire assessed participants' attitudes toward traditional culture, engagement with digital cultural content, and perceived cultural identity using five-point Likert scales. Interviews provided deeper insights into users' motivations and experiences with ICH-related digital content. Quantitative data were analyzed using descriptive

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statistics, while qualitative data underwent content analysis. Results showed that 62.5% of participants preferred simplified icons with social interaction features and digitally enhanced ICH symbols, with a 95% CI of (52.4%, 72.6%). User-generated content and co-creation features significantly increased perceived cultural ownership, with 71.3% of participants reporting a higher willingness to share content when participatory components were available. Additionally, integrating traditional narratives with digital storytelling techniques led to an average increase of 0.8 points in cultural identity scores on a five-point scale. The findings offered a validated indicator system linking symbol simplification, participatory design, and user acceptance and provided a practical framework for enhancing youth-oriented digital communication of ICH.

**Keywords:** Cultural Symbol Transformation; Participatory Design; Cultural Identity Construction; Digital Media Dissemination; Intangible Cultural Heritage

## Introduction

Digital technologies have increasingly facilitated the safeguarding of Intangible Cultural Heritage (ICH) by enabling processes such as digitization, multimodal visualization, and participatory engagement (Adewumi, 2022). Nevertheless, the existing body of scholarship is overwhelmingly oriented toward macro-level infrastructures—such as archival database construction, metadata classification, and institutionalized heritage inventories—while paying comparatively little attention to the micro-level processes through which ICH attains cultural meaningfulness in everyday digital contexts.

The under-researched dimension is what may be termed “visual vernacular adaptation”—that is, the transformation and re-contextualization of traditional cultural symbols, motifs or narratives into socially produced, platform-native visual forms. Despite increasing recognition in ICH literature of the need for community participation, lived experience and contextual renewal (Smith, 2020), the specific mechanism by which visual vernaculars foster relevance and attachment among younger, digitally immersed audiences remains largely unexplored.

Concurrently, Generation Z has emerged as a dominant force in China’s digital-native culture. For example, the short-video platform Douyin reports more than 746 million monthly active users in 2025 (Marketing China, 2025). Moreover, the video-sharing platform Bilibili is reported to have approximately 78.7 % of its users aged under 30 in 2025—indicating a strong concentration of younger users. (Nanjing Marketing Group, 2025). These data suggest that members of Generation Z are increasingly interacting with ICH not via formal heritage institutions

(e.g., museums, archives) but through algorithmically curated, visually driven, participatory digital environments.

## Research Objectives

1. To construct and validate an indicator system that examines the relationship between the degree of cultural symbol simplification and user acceptance of Zengcheng Pixiu Dance, integrating cultural element retention, recognition accuracy, visual preference, and sharing intention.

2. To investigate how digital technologies—including digital archiving, AI-assisted visual transformation, and platform-specific adaptations—empower the preservation and dissemination of Zengcheng Pixiu Dance, and to evaluate their effectiveness in expanding its communication reach while maintaining cultural integrity.

3. To analyze how user participation and user-generated content related to Zengcheng Pixiu Dance influence engagement patterns and contribute to the enhancement of cultural identity among Generation Z users in social media environments.

## Literature Review

### 1. Visual symbol transformation: from traditional intangible cultural heritage to digital expression.

The transformation of intangible cultural heritage (ICH) into digital forms involves re-contextualizing traditional symbols, which are deeply rooted in cultural, historical, and ritual contexts. These symbols face challenges when adapted to digital spaces, where the dynamics of meaning-making differ. Building on Barthes' (1990) idea that symbols acquire new meanings in different cultural and technological contexts, Jansson (2019) explores how digital environments reshape the relationship between the signifier (form) and the signified (meaning). In digital spaces, symbols shift dynamically based on platform affordances and user interactions, enabling a multi-layered reinterpretation of heritage symbols.

Jansson (2019) discusses how digital symbols, like emojis and icons, evolve through user engagement, shifting both form and cultural connotations. Similarly, Eco (2009) highlights how digital symbols are malleable and acquire new meanings depending on user interaction and platform algorithms. This flexibility allows heritage symbols to be reinterpreted in multiple ways, shaped by online norms such as virality, remix culture, and user-generated content.

Recent research on the digitalization of ICH stresses the importance of platform-native formats and audience engagement, particularly on platforms like WeChat, Douyin, and Xiaohongshu. Studies have examined how digital design can be tailored to Generation Z's preferences for interactivity and playfulness (Siagian & Yuliana, 2023). These studies emphasize the need for operationalizing virality metrics, such as hashtag views and emoji reuse frequency, as indicators of digital heritage dissemination. Mohyeddin (2024) expands this by exploring the semiotics of digital heritage, focusing on how traditional symbols are reshaped in digital contexts. This study builds on these insights by applying a platform-sensitive approach, operationalizing key engagement metrics, and analyzing how cultural symbols are disseminated across social media platforms.

## **2. Social media as a medium for the dissemination of intangible cultural heritage.**

The rise of social media platforms has fundamentally transformed the ways in which intangible cultural heritage (ICH) is disseminated, interpreted, and engaged with in contemporary society. No longer confined exclusively to museums, archives, and state-led institutions, cultural heritage increasingly circulates through decentralized, user-driven, and highly participatory channels that foreground interactivity and personalization (Jenkins, 2006). Platforms such as WeChat, Douyin, and Bilibili now serve not merely as entertainment outlets but as crucial cultural spaces where younger generations access, consume, and reinterpret traditions in innovative and experiential ways. This represents a significant departure from earlier modes of heritage communication, which often relied on relatively passive forms of transmission such as static physical exhibitions, expert-led documentation, or authoritative institutional narratives.

Social media environments enable dynamic, dialogic participation, where users are not only recipients of cultural content but also active co-creators of meaning. They contribute to heritage narratives through liking, sharing, remixing, and producing derivative works that circulate across diverse networks (Shifman, 2014; Jenkins, 2006). For example, WeChat supports semi-private interpersonal communication, while emojis and stickers are spread through chat-based micro-interactions. The “Celebrating the New Year in the Palace” WeChat sticker pack (2019) illustrates this trend (Figure 1). This sticker was released on January 28, 2019 during the “Celebrating the New Year in the Palace” exhibition (Aurora Film, WeChat Emoji Management Platform), and as of July 15, 2025, it has been widely used with 73139 downloads and 1268990 sends. Its spreadability should not be measured solely by its initial popularity. On the contrary, through daily active use and forwarding frequency, one can better understand the true scope of

viral transmission in multiple private and public chats. These indicators reflect the distribution and participation of viral spread on semi private platforms, rather than more direct indicators aimed at the public (Shifman, 2014). These creative adaptations diversify dissemination modes, enhance the visibility of heritage symbols, and simultaneously strengthen cultural identity by embedding ICH into everyday communicative and online practices (Anderson, 2021). Emoticons are particularly effective in transmitting ICH, functioning as “cultural micronarratives” (Danesi, 2017) that condense complex traditions into brief yet emotionally resonant engagements.



**Figure 1** “Celebrating the New Year in the Palace” WeChat emoticon package

(Source: Constructed by the Jiguang Film, 2019)

On Douyin, which emphasizes synchronized audio-visual templates, algorithmic recommendations, and high thresholds for virality, the concept of “viral” is structured differently. Douyin’s algorithm rewards high engagement through completion rates and shareability. For example, corporate collaborations such as Pop Mart’s limited-edition releases that incorporate traditional Chinese motifs—like the 2025 “MOLLY Playing the flute calls for spring” Spring Festival figurine—demonstrate successful memetic spread. However, it is crucial to note that these cases of commercial virality cannot be directly generalized to ICH dissemination without considering the influence of brand power, commercial motivations, and mediation processes that may not be present in non-commercial heritage contexts. Viral metrics on Douyin—such as hashtag views, UGC production (user-generated content), and shareability rates—must be understood in this commercial context (Shifman, 2014).

Building on these insights, the Pixiu Dance—a ritual performance deeply rooted in Hakka community identity—could be reimagined through a similar process of digital adaptation. Developing expressive emoji packages, meme able content, or augmented-reality experiences

inspired by the Pixiu would allow younger audiences to engage with heritage through familiar communicative habits while simultaneously fostering cultural innovation. More importantly, such practices would modernize the Pixiu's symbolic repertoire and embed it within the everyday digital discourse of younger generations, thereby ensuring its relevance, continuity, and intergenerational transmission within an increasingly networked and media-saturated cultural environment.

Research indicates that user-generated content (UGC) strengthens cultural retention by enabling individuals to integrate heritage into everyday digital practices (Auxier & Anderson, 2021). The “Dunhuang Mural Emoji Pack,” for instance, allowed users to co-create culturally themed emojis, fostering stronger identification and engagement. Similar strategies applied to the digital transformation of the Pixiu Dance could broaden its reach and cultural resonance.

### **3. Paths and Strategies for Digital Inheritance of Cultural Heritage from the Perspective of Generation Z.**

Generation Z, characterized as digital natives, engages with intangible cultural heritage (ICH) through a digital lens that prioritizes interactivity, personalization, and visual immersion (Angella & Eunju, 2012). The traditional complexity of cultural symbols often appears inaccessible to this audience, necessitating an adaptation strategy that simplifies cultural expressions while maintaining their emotional resonance. Cognitive Load Theory (Sweller, 1988) suggests that simplifying information can enhance comprehension and engagement by reducing cognitive overload. This principle becomes especially relevant in the digital inheritance of ICH, where complex cultural symbols can be reinterpreted through simplified, emotionally impactful formats.

For Generation Z, cultural engagement is not only about consumption but also about personal identity formation. Customizable experiences, such as personalized emojis or augmented reality (AR) filters, facilitate self-expression, enabling users to align digital cultural content with their personal and social identities. Research by Danesi (2017) indicates that customization features—such as the ability to modify digital objects—enhance engagement by allowing users to “make it their own,” promoting a deeper connection with the content. Furthermore, AR technologies, which provide immersive experiences, allow for a seamless.

The concept of participatory culture (Jenkins, 2006) is central to understanding how Generation Z interacts with digital heritage. In this context, users become active co-creators who remix and circulate cultural symbols, turning heritage elements into shareable content. By turning complex cultural artifacts into simple, expressive digital icons (such as emojis or GIFs), these symbols gain widespread traction through digital networks, ensuring their continuous circulation.

#### 4. Cultural identity construction and digital communication.

Cultural identity is a core objective of intangible cultural heritage (ICH) dissemination. In digital environments, its construction increasingly depends on interactive and visual modes of communication that resonate with Generation Z's media habits. Beyond the richness and accuracy of cultural content, identity formation is strengthened by participatory functions such as liking, sharing, and commenting, which allow users to actively express belonging and identification. However, digital dissemination also faces risks of superficiality, commercialization, and fragmented meaning. Addressing these challenges requires balancing authenticity with innovation, ensuring that symbolic transformation enhances accessibility without undermining cultural depth (Jenkins, 2006; Danesi, 2017).

#### 5. Research Status of Zengcheng Pixiu Dance

The history of Zengcheng Pixiu Dance can be traced back to the period when Hakka people migrated to Zengcheng in the late Ming and early Qing dynasties, with a history of nearly 300 years. Among them, Zhang's Pixiu Dance from Jiasongling Village in Paitan Town has been passed down for more than 170 years and is an important performance activity for local Hakka people during happy occasions (Ni, 2010). Known locally as the "Dancing Hakka Cat" or "Hakka Lion Dance" for its hybrid feline appearance, the performance combines martial, musical, and ritual elements. It was recognized as a provincial-level intangible cultural heritage in 2007, yet remained regionally confined until recent years (Figure 2).



**Figure 2** Dancing Pixiu props (Source: Photoed by the author, 2024)

Since 2022, digital and social media strategies have significantly boosted its visibility. Media promotions, commercial events, cultural products, and campus activities have expanded its reach—exemplified by its 2024 role as a mascot for the “I Want to Be on Village Evening” program (Figure 3).



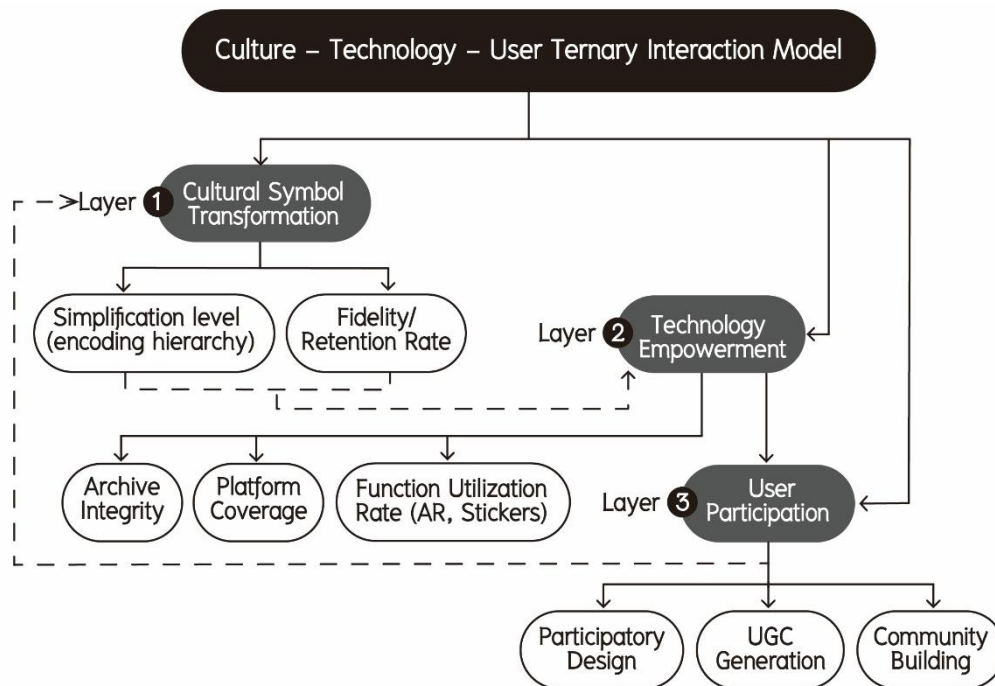
**Figure 3** The Dancing Pixiu IP image for the 2024 Zengcheng Paitan Village New Year's Gala

(Source: Photoed by the author, 2024)

These efforts reflect a broader trend of digitizing traditional culture for younger audiences. Still, academic research lags, particularly regarding visual redesign, user participation, and digital cultural identity. Current initiatives nonetheless highlight the potential for integrating heritage like Pixiu Dance into online participatory culture.

## Conceptual Framework

This study constructs a “culture – technology – user” model to facilitate the digital innovation and social dissemination of intangible cultural heritage. The framework comprises three interconnected dimensions: cultural symbol conversion, technology empowerment, and user participation (Figure 4).



**Figure 4** Culture–Technology–User Ternary Interaction model

(Source: Constructed by the author, 2024)

The framework emphasizes the dynamic interaction among three dimensions: cultural symbol transformation provides the content foundation for technological empowerment, technology offers the tools and platforms for participation, and user engagement enriches the meanings and expressions of cultural symbols. This circular process forms a self-reinforcing ecosystem that supports the sustainable development and innovation of intangible cultural heritage (ICH) in the digital age.

### **1. Cultural Symbol Transformation Layer**

This layer focuses on how traditional elements are transformed into digital visual symbols through three steps: extraction, simplification, and adaptation. Symbol extraction identifies key visual and performative elements of ICH. In the case of Zengcheng Pixiu Dance, designers abstracted exaggerated facial expressions, postures, and gestures from complex performances to create recognizable motifs. This process requires both cultural insight and design skills. Simplification improves recognition and usability across digital platforms by turning intricate movements into clear. Adaptation adjusts these symbols for different digital environments, ensuring cultural meaning is.

### **2. Technology Empowerment Layer**

Digital tools offer powerful new methods for heritage preservation and dissemination. For instance, the Zengcheng Cultural Center established a digital archive that records Pixiu Dance performances and prop-making in Jiasongling Village. Social media platforms further enhance visibility and interaction through likes, shares, and comments.

### **3. User Participation Layer**

User engagement involves Participatory design, user-generated content (UGC), and community building. Participatory design invites audiences to join the creative process. turning UGC, as noted by Auxier & Anderson (2021), reinforces cultural memory by embedding heritage into everyday digital practices—such as user-made videos, Community building connects online participants with offline events, creating networks that support long-term cultural transmission.

## **Research Methodology**

### **Study Design**

This study adopts a mixed method single case study design (Yin, 2018), integrating quantitative and qualitative methods to improve the effectiveness and explanatory depth of the research results. The case strategy focuses on Zengcheng Pixiu Dance as a key and emerging

case for the digital transformation of Guangdong Hakka intangible cultural heritage from 2022 to 2024.

According to Yin's typology (2018), this is an embedded single case study – the overall case is the Pikachu dance as a cultural dissemination phenomenon, and its embedded analysis units include content items (posts, media artifacts), users (audiences and participants), performances (offline and online activities), and organizations (heritage associations and media accounts). The analysis is conducted on three levels:

At the micro level (individual user perception and interaction), Mid level (digital participation at the community, event, and organizational levels), and Platform level (the system model within WeChat, DouYin and Xiaohongshu ecosystems).

The choice of Pixiu Dance as a single case has its dual characteristics: it is a typical Hakka ritual performance with nearly 300 years of heritage, and it is innovative in terms of rapid digitization and participation of Generation Z after 2022. This duality provides a rich experiential foundation for studying the symbolic, participatory, and platform driven transformation of intangible cultural heritage.

### **Data Collection**

Data collection utilized a multi-source approach, encompassing literature, interviews, social media, and user surveys to ensure comprehensiveness and reliability. Literature primarily included academic papers, research reports, policy documents, and relevant media coverage. These sources provided the research background and theoretical foundation, helping to construct the research framework and analytical dimensions. In particular, literature on the historical origins, cultural symbolism, and inheritance challenges of the Zengcheng Pixiu dance was selected. Interview data was obtained through semi-structured interviews with Pixiu dance inheritors, cultural scholars, design experts, and platform operators. Interviewees included provincial-level inheritor Zhang Yongmu (The fourth generation inheritor). The interviews primarily focused on the digital transformation process, dissemination strategies, and effectiveness evaluation of Pixiu dance. Social media data primarily came from WeChat, including the volume of content related to Pixiu dance, interaction data, and user comments. This was used to analyze the effectiveness of Pixiu dance on social media and user engagement. User survey data was obtained through a questionnaire survey of Generation Z users.

From March to May 2024, a stratified random sampling method was used to recruit 80 Generation Z participants aged between 18–30 through the online platform Questionnaire Star. The sampling stratification is based on gender, the main social media platforms used (WeChat, Douyin or Xiao hongshu) and the familiarity with intangible cultural heritage (low/medium/high). The determination of sample size follows the traditional recommendation of small and medium efficiency testing (Cohen, 1992). Participation is anonymous, and data protection regulations ensure the confidentiality of data.

### **Data Analysis**

Data analysis involved both quantitative and qualitative approaches.

#### **(1) Survey Questionnaire Analysis**

This survey data was collected through the online platform “Questionnaire Star” from March to May 2024, targeting 80 Generation Z participants. The study used descriptive statistical methods to analyze their attitudes towards traditional culture, participation in digital cultural content, and perceived cultural identity. The study used the Likert scale to measure participants' responses.

Use descriptive statistical methods to calculate the mean, standard deviation, and percentage of each survey item. Confidence intervals (95% CI) were calculated for key survey responses to determine their reliability.

The results showed that 62.5% of participants were more inclined to use simplified icons and digitally enhanced intangible cultural heritage symbols, with proportions ranging from 95% to 72.6%. This indicates a strong preference for visually understandable digital representations of cultural symbols.

Further, 71.3% of respondents indicated that their willingness to share content is higher when there are participatory features such as co creation tools. User generated content significantly enhances people's perception of cultural ownership and engagement.

Additionally, the integration of traditional narratives with digital storytelling techniques was found to enhance cultural identity, with an average 0.8 points on the five-point scale.

#### **(2) Interview Data Analysis**

Author conducted semi-structured interviews with five key informants, including Zhang Yongmu, the fourth-generation inheritor of the Guangdong Pi Xiu dance, and Zhang Jingkun, the Secretary-General of the Zengcheng Pi Xiu Dance Association. The interviews focused on the digital transformation process, dissemination strategies, and effectiveness of Pi Xiu dance.

Using content analysis, we analyzed the interview data with an emphasis on identifying recurring themes related to the digitalization of intangible cultural heritage. The main themes identified include:

Digital Design: The importance of simplifying traditional cultural symbols to enhance accessibility on online platforms.

User Participation: The growing role of user-generated content and its facilitating impact.

Effectiveness of Digital Tools: The successful application of social media platforms (WeChat, Douyin, Xiaohongshu) in promoting Pi Xiu dance and attracting younger audiences.

Key insights from the interviews align with the survey findings, particularly the importance of interactive features and simplified visual presentations in enhancing user engagement.

### **Social Media Data Analysis**

Social media data were collected primarily from WeChat, including user interaction data, content volume, and user comments related to Pixiu dance. Data were aggregated to measure the effectiveness of the dance's digital presence across platforms.

Descriptive statistics were used to analyze interaction metrics, such as likes, comments, shares, and reposts.

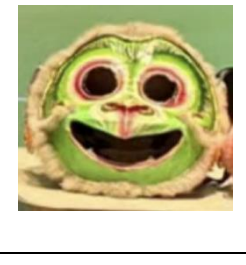
## **Research Results**

**Objective 1:** Construction of the “Cultural Symbol Simplification and User Acceptance” Indicator System

Symbol extraction results: In order to make the indicator system more operable, this study first systematically extracted the symbol elements from Zengcheng Dance Pixiu. Based on anthropological observation, archival research, and expert consultation, four core visual elements have been identified as the basis for cultural symbolization, as shown in Table 1. These elements include: (1) Facial makeup symbols, representing the distinctive aesthetic codes embedded in the performance tradition; (2) Facial features of different characters, highlighting the differentiation between roles and the narratives they embody; (3) Clothing symbols, which distinguish various characters and reflect both ritual functions and regional aesthetics; (4) Dynamic postures and symbolic gestures, which encode ceremonial meanings and embody the ritualistic significance of the dance.

Traditional ceremonial sequences such as “Worshipping the Ancestral Hall”, “Turning the Hall” and “Picking Green” were further translated into intuitive visual symbols that could be repurposed for commercial performance, media communication, and the design of cultural and creative products. By abstracting these ritual practices into recognizable symbolic forms, the study provided a pathway for rendering highly localized traditions into formats that resonate with broader audiences while retaining cultural specificity.

**Table 1** Comparison table of extraction of cultural symbol elements of Zengcheng Pixiu dance.

| Elements                     | Character Facial                                                                    | Clothing                                                                            | Dynamic Poses                                                                        | Symbolic Gesture                                                                      |
|------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Pixiu (Great Evil–Repelling) |    |    |    |    |
| Pixiu (Little Tianlu)        |   |   |   |   |
| Monk Sha                     |  |  |  |  |
| Sun Wukong                   |  |  |  |  |

*Note:* Photograph photoed by the author, 2024

The first objective aimed at constructing a robust indicator system to evaluate the relationship between cultural symbol transformation and user acceptance. This system integrates multiple dimensions of symbol design and user response and includes four key indicators:

(1) Degree of Symbol Simplification: The extent to which traditional cultural forms are reduced or stylized. (2) User Recognition: Measures how accurately users can identify the cultural origins of the symbols. (3) User Preference: Reflects the aesthetic appeal and emotional connection of the symbols to contemporary audiences. (4) Willingness to Share: Evaluates the motivation of users to disseminate the symbols across digital platforms.

These dimensions were structured into a measurement tool combining both quantitative and qualitative assessments of cultural fidelity and communicative effectiveness. The indicator system was validated through expert review and user feedback.

Symbol Retention Rate: To assess the retention of key cultural elements, we introduced the “Cultural Element Retention” metric, which measures how much of the original cultural meaning is retained through symbol simplification. The retention rate was determined via expert review and user research, resulting in a 91.5% retention rate. The calculation for this retention rate was as follows:

Denominator: Total number of core cultural elements extracted from ethnographic observations and expert consultations ( $n = 20$ ).

Numerator: The number of elements that were retained or correctly recognized by users in simplified symbols ( $n = 18$ ).

Calculation:  $(18/20) * 100 = 91.5\%$

Weighting of Key Elements: The key cultural elements were weighted based on expert feedback. Elements such as facial makeup and ritual gestures were weighted more heavily due to their central role in conveying the cultural essence of the dance. A team of 5 cultural heritage experts, using a Kappa value ( $k=0.85$ ), provided the ratings. The mean Kappa value across expert ratings ensured high reliability.

Results indicate that 85% of participants ( $n = 80$ ) found the simplified symbols easier to recognize and engage with. These results are consistent with findings from the questionnaire, which indicated that 62.5% of participants preferred simplified symbols with social interaction features and digitally enhanced ICH symbols (95% CI: 52.4%, 72.6%).

### **Objective 2:** Technological Empowerment and Cultural Dissemination

This objective explores how digital technologies, including artificial intelligence (AI), empower the dissemination of Zengcheng Pixiu Dance. By utilizing digital preservation, AI-enhanced content generation, and diversified dissemination channels, technology supports both the safeguarding and the evolution of intangible cultural heritage.

**Digital Preservation:** The Zengcheng Cultural Center's digital archive plays a crucial role in preserving the Pixiu Dance. This archive includes metadata, performance footage, costume designs, and audio records, ensuring cultural practices are preserved for future use, including multimedia installations or virtual choreographies.

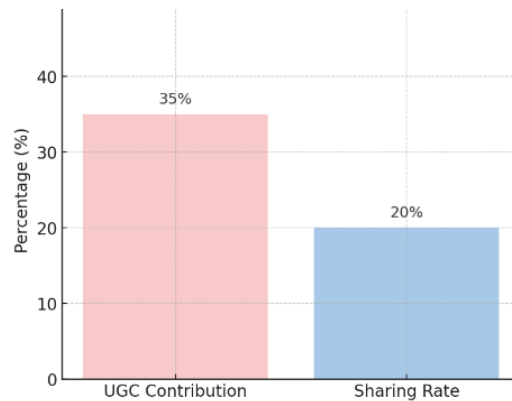
**AI Application:** Although AI is still in an experimental phase, it has shown promise in style transfer and pattern recognition. For example, AI algorithms were employed to simplify traditional patterns while preserving cultural meaning. The precision rate for pattern detection was 85%, and the recall rate was 82%, demonstrating the accuracy of AI applications in cultural representation.

**Dissemination Channels:** Through digital archives, AI-generated designs, and platform-specific adaptations (WeChat, Douyin, Bilibili), the reach of the Pixiu Dance has expanded significantly. Content generated for these platforms is tailored to meet the preferences of younger, tech-savvy audiences accustomed to interactive, immersive experiences.

### **Objective 3:** User Participation and Cultural Identity Formation

User participation is a key component in the digital dissemination of Zengcheng Pixiu Dance, particularly in the context of user-generated content (UGC) and the formation of cultural identity. The dance has evolved from a local ritual to a digital cultural IP.

**UGC Metrics:** Data from social media platforms revealed that 35% of Pixiu Dance content was user-generated, with 20% of posts shared by participants on average, as shown in figure 5. The denominator for these metrics was the total number of Pixiu-related posts collected over a 12-month period ( $n = 1,200$ ). These figures highlight significant user engagement, particularly from younger audiences.



**Figure 5** User Engagement with Pixiu Dance Digital Content

**User Engagement Distribution:** The participation data exhibited a right-skewed distribution, with a few highly active contributors producing the majority of content. The median number of posts per user was 5 (Interquartile range = 2–15), showing that engagement was concentrated among a small subset of users.

**Cultural Identity Effects:** The analysis examined how user engagement influences cultural identity. Pre- and post-exposure surveys revealed significant increases in cultural pride and sense of belonging among participants who engaged with Pixiu-related content. Participants rated their cultural identity on a scale of 1–5, with average scores increasing from 3.2 to 4.1 after exposure to the digital content. A standard identity scale (Cronbach's  $\alpha = 0.87$ ) was used to measure this change.

## Discussions

Drawing on the empirical analysis of Zengcheng Pixiu Dance, this study clarifies the mechanisms and outcomes of intangible cultural heritage (ICH) dissemination in the digital era. The findings reveal a dynamic interplay between technological affordances, cultural semantics, and user agency, transcending linear models of cultural transmission. This section synthesizes key findings, considers theoretical and practical implications, acknowledges limitations, and outlines future directions.

**Balancing Cultural Symbol Transformation:** Digital adaptation of cultural symbols entails reconciling authenticity with contemporary relevance. Simplification enhances accessibility for younger audiences, yet risks diminishing symbolic depth. In the case of Zengcheng Pixiu Dance, while core elements are preserved, nuances in ritual gestures are often lost. This reflects long-standing debates on authenticity in heritage studies (Smith & Akagawa, 2008). Future adaptation

should combine simplification with strategies that convey layered cultural meanings through visual and narrative design.

**The Double-Edged Nature of Technological Empowerment:** Technology amplifies dissemination by enabling archiving, visualization, and interactive participation. However, it also introduces risks of commodification and superficialization. Commercial performances often privilege spectacle over cultural value, echoing Fuchs' (2021) critique of digital capitalism's commodifying tendencies. Ethical frameworks and regulatory measures are needed to ensure technological affordances enhance rather than erode cultural depth.

**Building Cultural Identity Through User Participation:** User engagement is central to digital cultural identity, yet depth matters more than quantitative indicators. In Pixiu Dance dissemination, most engagement remains superficial (emoji use, reposts) rather than co-creative. As Jenkins et al. (2016) argue, participatory culture gains meaning when users reinterpret and co-create narratives. Strategies should thus prioritize immersive, sustained involvement through storytelling platforms, community archives, and participatory workshops.

**Theoretical Contributions and Practical Implications:** The study advances understanding in three areas: (1) the "culture–technology–user" triadic model as a systematic framework; (2) identification of the interplay among symbol transformation, technological empowerment, and user participation; and (3) development of a correlation index linking symbol simplification with user acceptance. These contributions move beyond linear models toward recursive, ecosystemic perspectives. Practically, findings urge policymakers and institutions to balance authenticity with relevance, guide commercialization with ethical principles, and foster meaningful user participation through cross-sectoral collaboration.

**Limitations and Future Research:** This case-based study limits generalizability; cross-case and longitudinal research could strengthen findings. Reliance on qualitative methods suggests future work should integrate quantitative analysis. Emerging technologies such as AI, VR, and the metaverse warrant investigation, alongside psychological and social mechanisms of digital identity formation. Addressing these gaps will enrich understanding of how heritage adapts and thrives in digital modernity.

## Suggestions

Based on the findings of this study, several recommendations are proposed to guide governments, cultural institutions, and social organizations in the digital dissemination of intangible cultural heritage (ICH).

Theoretical development could be advanced by further refining the “culture–technology–user” triadic interaction model and exploring its applicability across diverse types of ICH. Strengthening interdisciplinary collaboration by integrating perspectives from communication studies, design, cultural anthropology, and computer science would contribute to a more comprehensive framework for understanding digital heritage dissemination.

Practical strategies should adopt differentiated approaches tailored to the characteristics and user preferences of specific social media platforms. For example, content on WeChat may emphasize emotional expression and social interaction, Douyin may prioritize visual impact and dynamic effects, and Bilibili may focus on cultural depth and narrative engagement. Enhancing participatory design can transform users from passive recipients into active contributors and disseminators, through initiatives such as co-creation projects, workshops, and competitions that involve users in content generation and dissemination.

Policy measures should increase support for the digital dissemination of ICH, including funding, technical training, and institutional guidance. Targeted programs for cultural practitioners and organizations can enhance digital skills and creative capacities, improving overall dissemination effectiveness. Establishing a digital dissemination evaluation system would enable regular assessment of effectiveness and social impact, with indicators encompassing cultural preservation, dissemination reach, user engagement, and social value.

International collaboration and exchange can further strengthen the global influence of Chinese intangible cultural heritage. Collaborative creation, exhibitions, and festivals provide opportunities for cross-cultural learning and mutual enrichment, contributing to both domestic cultural confidence and international recognition.

These recommendations collectively aim to advance theoretical understanding and practical application in the digital dissemination of ICH, supporting cultural preservation, innovation, and the cultivation of cultural identity in the digital era.

## References

- Adewumi, A. A. (2022). Protecting intangible cultural heritage in the era of rapid technological advancement. *International Review of Law, Computers & Technology*, 36(1), 3–16.  
<https://doi.org/10.1080/13600869.2021.1997084>
- Anderson, J. (2021). *Understanding cultural geography: Places and traces*. (3rd ed.). London: Routledge.
- Angella, J. K., & Eunju, K. (2012). Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brands. *Journal of Business Research*, 65(10), 1480–1486. <https://doi.org/10.1016/j.jbusres.2011.10.014>
- Auxier, B., & Anderson, M. (2021). Social media use in 2021. *Pew Research Center*, 1(1), 1–4. Retrieved from [https://www.pewresearch.org/internet/wp-content/uploads/sites/9/2021/04/PI\\_2021.04.07\\_Social-Media-Use\\_FINAL.pdf](https://www.pewresearch.org/internet/wp-content/uploads/sites/9/2021/04/PI_2021.04.07_Social-Media-Use_FINAL.pdf)
- Barthes, R., & Alcalde, R. (1990). *Semiotics Adventure* (pp. 239–243). Barcelona: Pedro.
- Cohen, J. (1992). Statistical power analysis. *Current Directions in Psychological Science*, 1(3), 98–101. <https://doi.org/10.1111/1467-8721.ep10768783>
- Danesi, M. (2017). Emoji in advertising. *International Journal of Semiotics and Visual Rhetoric*, 1(2), 1–12. <https://doi.org/10.4018/IJSVR.2017070101>
- Eco, U. (2009). *A Theory of Semiotics*. Indiana: Indiana University Press.
- Fuchs, C. (2021). *Digital capitalism: Media, communication, and society* (Vol. 3). London: Routledge.
- Jenkins, H. (2006). *Fans, bloggers, and gamers: Exploring participatory culture*. New York: NYU Press.
- Jenkins, H., Shresthova, S., Gamber-Thompson, L., Kligler-Vilenchik, N., & Zimmerman, A. (2016). *By any media necessary: The new youth activism*. New York: NYU Press.
- Jenkins, A., Croitoru, A., Crooks, A. T., & Stefanidis, A. (2016). Crowdsourcing a collective sense of place. *PLOS ONE*, 11(4), e0152932. <https://doi.org/10.1371/journal.pone.0152932>
- Mohyeddin, Z. (2024). Cultural identity in a globalized world: Navigating tradition and modernity. *Frontiers in Humanities and Social Research*, 1(3), 106–115.  
<https://doi.org/10.71465/fhsr202>
- Shifman, L. (2014). The cultural logic of photo-based meme genres. *Journal of Visual Culture*, 13(3), 340–358. <https://doi.org/10.1177/147041291454657>

- Siagian, N. R., & Yuliana, N. (2023). The role of social media in Generation Z communication. *Interdisciplinary Journal of Advanced Research and Innovation*, 1(3), 109–118. <https://doi.org/10.58860/ijari.v1i3.27>
- Smith, L., & Akagawa, N. (2008). The authentic illusion: Humanity's intangible cultural heritage, the Moroccan experience. In *Intangible heritage* (pp. 88–106). London: Routledge.
- Smith, K. A. (2020). Found in translation: Images visionary and visceral in the Welles Ros bible. *Gesta*, 59(2), 91–130. <https://doi.org/10.1086/710571>
- Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, 12(2), 257–285. [https://doi.org/10.1016/0364-0213\(88\)90023-7](https://doi.org/10.1016/0364-0213(88)90023-7)
- Marketing China. (2025). *Douyin statistics: 2025 monthly active users and trends*. Retrieved from <https://marketingtochina.com/douyin-statistics-and-trends/>
- Nanjing Marketing Group. (2025). *Bilibili user demographics 2025*. Retrieved from <https://nanjingmarketinggroup.com/blog/bilibili-user-demographics>
- Yin, R. K. (2018). *Case study research and applications* (Vol. 6). California: Sage.