The Impact of Revitalization Design of Bai Tie-Dye Craft on Communication Effectiveness from the Perspective of Interaction Ritual Chains

Xiaojian Shu, Xiaofei Yu*, Ruoyi Dong, Wenjing Xu

Jiangxi University of Finance and Economics, Nanchang, Jiangxi, China

*2743813845@qq.com

Abstract. The Bai ethnic group's tie-dye craft in Yunnan faces communication dilemmas in the digital context. Framed by the theory of Interaction Ritual Chains, this study constructs an impact model of revitalization design elements on communication effectiveness, and employs questionnaire surveys and mediating effect analysis for empirical testing. The results indicate that immersive experience, shared focus, emotional experience, and visual appeal all have a significant positive impact on social presence, cultural identity, and communication effectiveness; boundary setting has no significant direct impact on communication effectiveness but exerts an indirect effect through the mediating paths of social presence and cultural identity. The results indicate that the group boundary symbols embodied in tie-dye craft can strengthen the identity and emotional connection of in-group members, but may also pose barriers to understanding for ordinary audiences. Their effects require psychological transformation through emotional energy and cultural identity to drive communication behavior. This study expands the explanatory boundaries of the Interaction Ritual Chains theory in the digital communication of intangible cultural heritage and provides practical implications for the revitalization design of Bai tie-dye craft.

Keywords: Interaction Ritual Chains; Bai Tie-Dye; Revitalization Design; Communication Effectiveness

1 Introduction

As a national-level intangible cultural heritage, the Bai tie-dyeing technique in Yunnan holds profound cultural and artistic value. Under modernization, this craft confronts an aging practitioner base, a shrinking audience, and limited dissemination channels. With the rapid expansion of the experience economy and digital technologies, a pressing question is how revitalization design can reintegrate tie-dyeing into contemporary life and stimulate public engagement.

Interaction Ritual Chains (IRC) theory offers a distinct lens for revitalization design. It holds that successful rituals hinge on four elements—bodily co-presence, mutual focus, shared emotion, and boundaries excluding outsiders—which together produce group solidarity and emotional energy. It helps explain how users develop emotional

R. Zur et al. (eds.), *Proceedings of the 2026 5th International Conference on Art Design and Digital Technology (ADDT 2026)*, Advances in Computer Science Research 131,
https://doi.org/10.2991/978-94-6239-737-8_65

connections and belonging through online and offline experiences. Yet current research on intangible cultural heritage revitalization remains largely qualitative and strategic; it lacks quantitative empirical work grounded in IRC, and, more notably, systematic research that brings design elements, user psychology, and communication effectiveness into one framework. Employing IRC, this study focuses on four design elements—visual presentation, boundary markers, mutual focus, and emotional arousal—and examines their influence on communication effectiveness through the mediating mechanisms of social presence and cultural identity, aiming to provide theoretical and practical foundations for the revitalization design of Bai tie-dyeing.

2 Theoretical Basis

2.1 Theory of Interaction Ritual Chains

Randall Collins's (2004) Interaction Ritual Chains theory explains micro-level interpersonal interaction and collective emotion by positing interaction rituals as the core of social life. A successful ritual requires four synergistic elements: bodily co-presence, boundaries excluding outsiders, mutual focus of attention, and shared emotional experience; their convergence generates group solidarity, heightened emotional energy, group symbols, and reinforced collective moral sensibility. In ICH revitalization, digital experiences can be viewed as novel interaction rituals that awaken cultural memory, evoke emotional resonance, and foster deep cultural identity, along with sustained dissemination willingness. This framework thus provides a systematic foundation for analyzing the communicative efficacy of revitalization design for traditional crafts such as tie-dyeing.

2.2 Yunnan Bai Ethnic Group Tie-dye Craftsmanship

Yunnan Bai tie-dyeing, historically known as jiaoxie, is practiced in the Dali Bai Autonomous Prefecture and surrounding areas. On pure cotton, artisans bind and stitch sections to resist dye, then repeatedly immerse the cloth in natural dyes such as Isatis indigotica; removing the threads reveals intricate blue-and-white patterns. As living heritage, its transmission is embedded in Bai family life: female elders directly impart technical skills and cultural attitudes toward nature and color to younger generations. This intergenerational mode itself constitutes an interaction ritual—participants share physical space, observe, imitate, and practice together, establishing a mutual focus of attention. Craft proficiency functions as an implicit boundary distinguishing insiders from outsiders, while the shared sense of accomplishment and aesthetic pleasure become collective emotional experiences. Thus, the intangible essence of tie-dyeing lies not merely in production techniques but fundamentally in the interpersonal interactions, emotional bonds, and cultural identity constructed through its transmission.

2.3 Communication Effectiveness

Communication effectiveness is a key multidimensional outcome variable for ICH revitalization design, encompassing not only surface-level exposure but also in-depth understanding, emotional resonance, and value identification. Integrating the cross-cultural short video evaluation framework based on emotional valence and Cultural Dimensions Theory (Zhi & Shuang, 2026) and the hierarchical logic of Chinese cultural short video effects grounded in the SIPS model (Chen, 2025), this study refines effectiveness into three progressive dimensions: exposure, understanding, and identification. In the tie-dye context, these respectively correspond to users' attention and participation, cognition and comprehension, and emotional belonging with active dissemination willingness.

3 Research Hypotheses and Model

3.1 Immersive Experience

In Interaction Ritual Chains, immersive experience is the core manifestation of emotional energy at its peak. Collins notes that intense mutual attentiveness and emotional solidarity generate collective effervescence. Studies confirm immersive experiences as the strongest expression of emotional energy, arousing resonance and enhancing cultural identity (Cheng et al., 2024; Liu et al., 2025). In tie-dye revitalization design, it appears as deep engagement marked by mind-body unity, time distortion, and temporary loss of self-awareness, which amplifies users' perception of co-present others, significantly heightens social presence, and strengthens emotional bonds and identification with tie-dye culture. Accordingly, this study proposes the following hypotheses:

H1: Immersive experience has a significant positive effect on social presence.

H2: Immersive experience has a significant positive effect on cultural identity.

3.2 Shared Focus

Shared focus, a core element of Interaction Ritual Chains, involves collective attention to a specific object or activity, which generates mutual attentiveness, emotional solidarity, collective effervescence, and group solidarity (Collins, 2004). Studies confirm that it enhances group cohesion through sustained shared attention and stimulates cultural resonance (Metiu & Rothbard, 2013; Chen et al., 2026). In tie-dye revitalization design, when visual symbols, crafting processes, or inheritor demonstrations become the attentional center, participants develop a collective simultaneous focus, markedly enhancing social presence. Meanwhile, the cultural connotations of tie-dye patterns are continuously interpreted and reinforced, deepening understanding and identification with Bai culture. Accordingly, we hypothesize:

H3: Shared focus has a significant positive effect on social presence.

H4: Shared focus has a significant positive effect on cultural identity.

3.3 Boundary Setting

Boundary setting is a symbolic expression in interactive rituals, used to distinguish between internal and external members of a group, enhancing internal identity and emotional energy by establishing group boundaries. Existing research indicates that visual symbols in folk culture have a dual function of differentiation and cohesion (He & Zhao, 2025), and appropriate boundaries can rapidly enhance the emotional energy and symbolic solidarity of a group (Draper, 2021). In the revival design of tie-dyeing, the definition of boundary symbols exhibits multidimensional characteristics: in terms of identity, the unique pattern coding and craft terminology of tie-dyeing constitute an implicit cultural threshold; in terms of media, digital platforms achieve user group differentiation and cohesion through algorithmic recommendations and topic tags; in terms of space, specific workshops or virtual experience areas create a highly concentrated interactive atmosphere. On the one hand, these boundary symbols enhance the shared presence and emotional resonance of internal users, improving social presence; on the other hand, they enhance users' sense of identity and belonging to tie-dyeing culture by marking collective identity consciousness. Based on this, this study proposes the following hypotheses:

H5: Boundary setting has a significant positive effect on social presence.

H6: Boundary setting has a significant positive effect on cultural identity.

3.4 Emotional Experience

Emotional experience is the core driver of interaction ritual chains: Collins argues that transient emotions transform through repeated reinforcement into enduring emotional energy. (Tang et al., 2024) show that ICH short videos, using high-aesthetic visual contexts, trigger immediate emotional responses under a shared focus, which then sublimate through community interaction into cultural identification. In tie-dye revitalization design, intense responses to interactive, visual, and atmospheric stimuli heighten social presence, and their internalization foster deep emotional attachment and value identification with the tie-dye culture. Based on this, we hypothesize:

H7: Emotional experience has a significant positive effect on social presence.

H8: Emotional experience has a significant positive effect on cultural identity.

3.5 Visual Appeal

Visual appeal transforms ICH tacit knowledge into perceivable, interactive interfaces through visual storytelling, symbolic encoding, and media design. Existing studies have shown that visual stimuli can effectively evoke users' cultural memory and emotional resonance (Lin, 2025). Anthropomorphic visual design significantly enhances social presence by strengthening users' perception of real co-presence (Ye, 2026). In tie-dye revitalization design, exquisite pattern display, realistic color reproduction, and immersive craft reproduction enhance perceived authenticity and situational presence,

strengthening social presence regarding the real existence of inheritors and other participants. Meanwhile, symbolic cultural narratives activate cultural memory and emotional identification. Accordingly, we hypothesize:

H9: Visual appeal has a significant positive effect on social presence.

H10: Visual appeal has a significant positive effect on cultural identity.

3.6 Communication Effectiveness

The generation of communication effectiveness depends on the synergistic driving force of social presence and cultural identity. Social presence refers to the degree to which an individual perceives the real existence of others through interactive experiences, providing an immediate emotional driving force for communication behavior; cultural identity is reflected in an individual's emotional belonging to the deep value of tie-dye culture, constituting the cognitive core of sustained communication behavior. Existing research has verified the above relationship: high social presence can effectively stimulate users' willingness to communicate, and cultural identity plays a positive moderating role between digital experience of intangible cultural heritage and communication behavior (Yi et al., 2025). In the revitalization design of tie-dye techniques, social presence provides an immediate emotional driving force for communication behavior, while cultural identity injects lasting value support. The two synergistically promote the realization of communication effectiveness from cognitive contact to emotional identification. Based on this, this study proposes the following hypothesis:

H11: Social presence has a significant positive effect on communication effectiveness.

H12: Cultural identity has a significant positive effect on communication effectiveness. (Fig. 1)

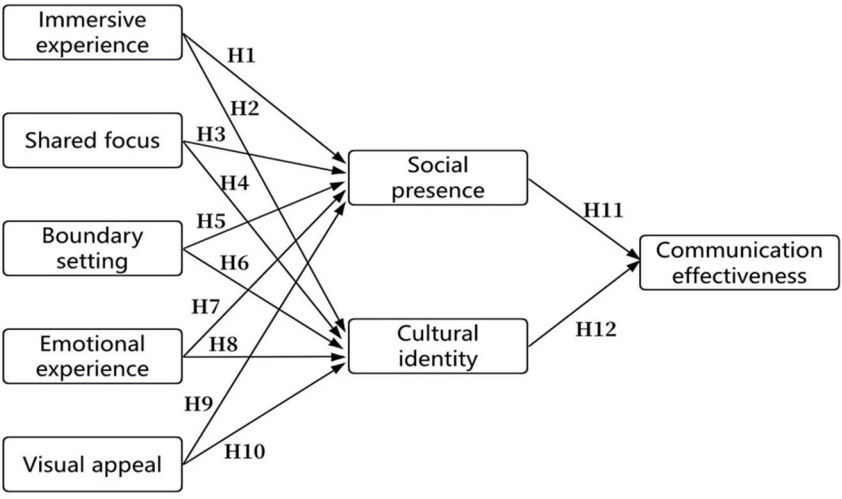

Fig. 1. Hypothetical Model for the Impact of User Experience on the Dissemination of Bai Ethnic Tie-Dyeing Techniques

4 Research Methods

The primary research method employed in this study is questionnaire survey. A total of 706 questionnaires were collected, among which 647 were valid samples, yielding an effective response rate of 91.64%. This study constructs a model examining the impact of user experience on the communication effectiveness of the revitalization-oriented design of Bai Ethnic Group's tie-dye craftsmanship. Items were referenced and revised from existing scales to fit the research context. A 5-point Likert scale was adopted, ranging from 1 (strongly disagree) to 5 (strongly agree). The measurement items for specific variables are presented in the table below (Table 1).

Table 1. Description of Variable Measurement

Variable	Item	Source
Immersive experience	When viewing or experiencing tie-dye digital content, I can fully concentrate on its craftsmanship and stories.	Cheng et al. (2025); Liu et al. (2025); Oh, C et al(2019)
	When viewing or experiencing tie-dye digital content, I often forget the surrounding environment.	
	When viewing or experiencing tie-dye digital content, I feel as if I am not merely a viewer but also a participant in the tie-dye craftsmanship process.	
Shared focus	When viewing tie-dye videos or discussing them with others, I can always find certain steps or patterns I particularly like and keep paying attention to them.	Matiu & Rothbard, (2013); Chen et al. (2026)
	When viewing or experiencing tie-dye digital content, I can focus on the same cultural symbols (such as traditional patterns, indigo dyes, etc.) or activities as others.	
	I can perceive that other audiences pay attention to the same tie-dye craftsmanship details as me through online interactions such as bullet comments and reviews.	
Boundary setting	When communicating with others after viewing or experiencing tie-dye digital content, I can clearly sense who truly understands tie-dye culture.	Draper (2021); Menander, S. J. et al. (2024);
	If I know nothing about tie-dye craftsmanship, I may find such content difficult and hard to engage in relevant discussions.	
	The cultural symbols of tie-dye content (such as traditional patterns, indigo dyes, etc.) make me feel a clear sense of belonging to this community.	
Emotional experience	The colors, promotional music and visuals used in tie-dye digital content resonate strongly with me emotionally.	Droppe (2023); Tang Tiantian, Lei Chenyu (2024)
	I think tie-dye digital content is successful in emotional expression, making me feel an emotional connection with this traditional craft.	
	Through touching stories or scene designs, tie-dye makes me	

Variable	Item	Source
	develop a deeper emotional identity with tie-dye culture.	
Visual appeal	The visual design of tie-dye digital content (such as color matching and image clarity) greatly attracts me.	Lin et al. (2025); Ye et al. (2026); Wang et al(2021);Zhang et al.(2026)
	The visual presentation of tie-dye digital content (such as pattern displays and craft illustrations) arouses my deeper interest in this craft.	
	I think the visual design of tie-dye digital content is professional and exquisite, which improves the overall experience quality.	
Social presence	When viewing or experiencing tie-dye digital content online, I feel as if I am in the same space as streamers and other audiences.	Liu et al. (2025); Oh, C et al. (2019); Cai L B et al. (2023)
	My emotions change with the emotional expressions of streamers or audiences in tie-dye digital content.	
	By viewing tie-dye digital content, I can well understand the cultural connotations and craft details that streamers intend to convey.	
Cultural identity	By experiencing tie-dye digital content, I perceive the profoundness and richness of tie-dye culture.	Yi et al. (2025)
	I believe Yunnan tie-dye has distinct regional cultural characteristics and is a precious heritage worthy of inheritance.	
	Experiencing tie-dye digital content makes me feel proud and deepens my sense of identity with ethnic and regional culture.	
Communication effectiveness	By viewing and experiencing tie-dye digital content, I have gained a clearer understanding of the technological processes and cultural connotations of Yunnan tie-dye.	Xue et al. (2019); Yi et al. (2025)
	I believe Yunnan tie-dye is a precious cultural heritage worthy of being known and inherited by more people.	
	I am willing to share the tie-dye content I have experienced with my family and friends.	

Table source: Drawn by the author.

The sample shows gender balance (49.6% male, 50.4% female), with the majority of respondents aged 18–35 years old (89.4%). All participants have experience using digital platforms and viewing tie-dye-related content, making the sample suitable for this study (Table 2).

Table 2. Demographic Characteristics of the Dataset

Item	Type	Frequency	Percentage
Gender	Male	321	49.6
	Female	326	50.4
Age	Under 18	31	4.8
	18–25 years old	371	57.3

Item	Type	Frequency	Percentage
Education	26–35 years old	208	32.1
	36–45 years old	22	3.4
	46 years old and above	15	2.3
	Junior college and below	239	36.9
	Bachelor's degree	194	30.0
	Postgraduate	162	25.0
	Above postgraduate	52	8.0
Frequency of viewing tie-dye-related content via digital media	Frequently experience	204	31.5
	Occasionally experience	235	36.3
	Only experienced 1–2 times	208	32.1
	No	0	0
Media through which you experience or view tie-dye-related content (multiple choices allowed)	Short-video platforms	595	92.0
	Live-streaming platforms	447	69.1
	VR/AR interactive experiences	187	28.9
	Online exhibitions or interactive graphics	268	41.4

Table source: Drawn by the author.

5 Data Analysis

5.1 Reliability and Validity Test

Reliability denotes the consistency and stability of a scale. Coefficients above 0.70 meet psychometric standards. Using SPSS 27, all Cronbach's α values exceeded 0.9, indicating excellent reliability (Table 3).

Table 3. Reliability Analysis

Cronbach Reliability Analysis		
Number of items	Sample size	Cronbach's α coefficient
8	647	0.936

Data source: Drawn by the author.

Validity tests encompass convergent and discriminant validity. CFA tested convergent validity, yielding KMO = 0.954 (> 0.8) and a significant Bartlett's test ($p < 0.001$), confirming excellent validity (Table 4).

Table 4. Validity Analysis

KMO and Bartlett's Test		
KMO value		0.954
Bartlett's Test of Sphericity	Approximate Chi-square	3719.673
	df	28
	p-value	0.000

Data source: Drawn by the author.

5.2 Correlation Analysis

To verify the factors influencing user experience, the survey data were imported into SPSS for correlation analysis. As shown in the table, the two-tailed correlation coefficients (r) ranged from 0.575 to 0.728, with significance at the 0.01 level (Table 5). The significance test indicated that all variables had significant positive correlations with each other at ($p<0.01$).(Note: ***: $p<0.001$, **: $p<0.01$, *: $p<0.05$)

Table 5. Correlation Analysis

		Immersive experience	Shared focus	Boundary setting	Emotional experience	Visual appeal	Social presence	Cultural identity	Communication effectiveness
Immersive experience	Correlation	1							
Shared focus	Correlation	0.649**	1						
Boundary setting	Correlation	0.578**	0.610**	1					
Emotional experience	Correlation	0.575**	0.682**	0.489**	1				
Visual appeal	Correlation	0.600**	0.702**	0.598**	0.652**	1			
Social presence	Correlation	0.604**	0.705**	0.594**	0.678**	0.701**	1		
Cultural identity	Correlation	0.607**	0.710**	0.595**	0.650**	0.700**	0.696**	1	
Communication effectiveness	Correlation	0.629**	0.728**	0.579**	0.678**	0.688**	0.698**	0.704**	1

* $p<0.05$ ** $p<0.01$

Data source: Drawn by the author.

5.3 Regression Analysis

Regression analysis (Table 6) shows that immersive experience, shared focus, emotional experience, visual appeal, social presence, and cultural identity significantly positively predict communication effectiveness, with unstandardized coefficients of 0.125***, 0.215***, 0.162***, 0.127**, 0.134***, and 0.174*** respectively. Boundary setting exhibits a weak positive effect (0.057, $p>0.05$). (Note: *** $p<0.001$, ** $p<0.01$, * $p<0.05$)

Table 6. Regression Analysis of Independent and Dependent Variables

	Communication effectiveness				
	B	Standard Error	t	p	β
Constant	-0.016	0.086	-0.186	0.853	-
Immersive experience	0.125***	0.038	3.294	0.001	0.109
Shared focus	0.215***	0.41	5.270	0.000	0.211
Boundary setting	0.057	0.035	1.632	0.103	0.052
Emotional experience	0.162***	0.036	4.543	0.000	0.161
Visual appeal	0.127**	0.040	3.163	0.002	0.120
Social presence	0.134***	0.037	3.661	0.000	0.141
Cultural identity	0.174***	0.039	4.431	0.000	0.169

Data source: Drawn by the author.

Table 7 shows that immersive experience, shared focus, boundary setting, emotional experience, and visual appeal significantly positively predict social presence, with unstandardized coefficients of 0.108**, 0.235***, 0.159***, 0.261***, and 0.280***, respectively.(Note: *** p<0.001, ** p<0.01, * p<0.05)

Table 7. Regression Analysis of Independent Variables and Mediating Variable

	Social presence				
	B	Standard Error	t	p	β
Constant	-0.040	0.094	-0.429	0.668	-
Immersive experience	0.108**	0.041	2.630	0.009	0.090
Shared focus	0.235***	0.043	5.469	0.000	0.218
Boundary setting	0.159***	0.037	4.261	0.000	0.139
Emotional experience	0.261***	0.037	7.007	0.000	0.246
Visual appeal	0.280***	0.042	6.704	0.000	0.251

Data source: Drawn by the author.

Table 8 shows that immersive experience, shared focus, boundary setting, emotional experience, and visual appeal significantly positively predict cultural identity, with unstandardized coefficients of 0.114**, 0.251***, 0.144***, 0.178***, and 0.267***, respectively.(Note: *** p<0.001, ** p<0.01, * p<0.05)

Table 8. Regression Analysis of Independent Variables and Mediating Variables

	Cultural identity				
	B	Standard Error	t	p	β
Constant	0.029	0.088	0.327	0.744	-
Immersive experience	0.114**	0.038	2.974	0.003	0.103
Shared focus	0.251***	0.040	6.276	0.000	0.253
Boundary setting	0.144***	0.035	4.126	0.000	0.136
Emotional experience	0.178***	0.035	5.122	0.000	0.182
Visual appeal	0.267***	0.039	6.863	0.000	0.260

Data source: Drawn by the author.

Mediation analysis results (Table 9) indicate that immersive experience, shared focus, emotional experience, and visual appeal exert a significant total effect on communication effectiveness, with both social presence and cultural identity serving as partial mediators. Upon the inclusion of social presence, the direct effect of immersive experience decreased to 0.373***, while the effect of social presence was 0.474***; similarly, following the inclusion of cultural identity, the direct effect of immersive experience was 0.366***, and the effect of cultural identity was 0.523***. Regarding shared focus, the direct effect stood at 0.477*** after the inclusion of social presence—with social presence itself showing an effect of 0.349*** and at 0.469*** after the inclusion of cultural identity, with cultural identity showing an effect of 0.387***. Emotional experience and visual appeal likewise exhibited a similar pattern of partial mediation (with direct effects of 0.379*** and 0.382*** for emotional experience, and 0.411*** and 0.404*** for visual appeal). However, boundary setting demonstrated a pattern of full mediation: in the full model, its direct effect was non-significant ($p = 0.103$); yet, upon the separate inclusion of either social presence or cultural identity, its direct effect became significant (0.275*** and 0.270***), as did its mediating effect (0.518*** and 0.570***), thereby indicating that its influence is realized entirely through these two mediating pathways. (Note: *** $p<0.001$, ** $p<0.01$, * $p<0.05$)

Table 9. Regression Analysis Among Variables

	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	Standard Error	Beta		
Constant	0.854***	0.081	-	10.498	0.000
Social presence	0.661***	0.027	0.698	24.779	0.000
Constant	0.802***	0.082	-	9.748	0.000
Cultural identity	0.722***	0.029	0.704	25.142	0.000
Immersive experience	0.373***	0.038	0.326	9.907	0.000
Social presence	0.474***	0.031	0.501	15.213	0.000
Immersive experience	0.366***	0.038	0.320	9.727	0.000
Cultural identity	0.523***	0.034	0.509	15.486	0.000
Shared focus	0.477***	0.036	0.468	13.281	0.000
Social presence	0.349***	0.033	0.369	10.465	0.000
Shared focus	0.469***	0.036	0.460	13.000	0.000
Cultural identity	0.387***	0.036	0.377	10.654	0.000
Boundary setting	0.275***	0.036	0.254	7.563	0.000
Social presence	0.518***	0.032	0.547	16.286	0.000
Boundary setting	0.270***	0.036	0.249	7.449	0.000
Cultural identity	0.570***	0.034	0.555	16.615	0.000
Emotional experience	0.379***	0.035	0.378	10.680	0.000
Social presence	0.418***	0.033	0.442	12.502	0.000
Emotional experience	0.382***	0.034	0.381	11.327	0.000
Cultural identity	0.468***	0.035	0.455	13.530	0.000
Visual appeal	0.411***	0.038	0.390	10.683	0.000

	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	Standard Error	Beta		
Social presence	0.402***	0.035	0.425	11.656	0.000
Visual appeal	0.404***	0.038	0.383	10.582	0.000
Cultural identity	0.447***	0.037	0.436	12.035	0.000

Data source: Drawn by the author.

6 Conclusion

This study, based on the interaction ritual chain theory, empirically examines the impact of the revival design of Bai ethnic tie-dyeing techniques on communication effectiveness. The results show that immersive experience, shared concerns, emotional experience, and visual appeal all have significant positive impacts on social presence, cultural identity, and communication effectiveness. While boundary setting does not have a significant direct impact on communication effectiveness, according to the interaction ritual chain theory, the main function of boundaries is to enhance the emotional energy and symbolic identification of internal members by separating "insiders" from "outsiders," rather than directly disseminating information to the outside world. Therefore, boundary setting may not have a direct, universally applicable promoting effect on communication effectiveness; instead, its effect is primarily manifested in enhancing the social presence and collective identity of a specific group (users with a certain cognitive or emotional foundation), thereby indirectly driving their willingness and behavior to communicate. Furthermore, both social presence and cultural identity partially mediate the relationship between various independent variables and communication effectiveness, with cultural identity having a slightly stronger influence. This suggests that deeply ingrained value consistency is more conducive to sustained communication than mere presence.

In summary, this study theoretically expands the explanatory scope of the interactive ritual chain theory in the context of the digital dissemination of intangible cultural heritage. On a practical level, this study suggests that the revival of tie-dyeing techniques should prioritize optimizing visual appeal and shared concerns while appropriately lowering technical barriers and strengthening the integration of emotional narratives and cultural symbolism. Limitations of this study include a bias towards a younger population in the sample, potential methodological biases from single-source data, and the inherent difficulty in inferring causal relationships in cross-sectional research designs. Future research could further validate these limitations by employing multi-source data and longitudinal tracking methods.

Disclosure of Interests

The authors have no competing interests to declare that are relevant to the content of this article.

References

1. Collins, R. (2004). Interaction ritual chains. Princeton University Press. https://doi.org/10.1515/9781400851744
2. Chen, S., & Feng, S. (2025). Research and analysis on the overseas breakthrough of Chinese cultural symbols based on the SIPS model—Taking the video content of "Tai Chi Zidong" on YouTube and TikTok as examples. International Theory and Practice in Humanities and Social Sciences, 2(1), 326–336. https://doi.org/10.70693/itphss.v2i1.190
3. Zhi, Y., & Shuang, L. (2026, January). Real-time evaluation and affective computing of international discourse communication effect for cross-cultural short videos. In Proceedings of the 2nd International Conference on Digital Society, Information Science and Risk Management (pp. 34–38). https://doi.org/10.1145/3804504.3804511
4. Cheng, Q., Zhang, F., & Feng, Z. (2025). Immersive experiences and cultural identity construction: An interactive ritual chain perspective. Tourism Management Perspectives, 48, 101149. https://doi.org/10.1016/j.tmp.2025.101417
5. Liu, P., He, Z., & Zhang, H. (2025, November). From embodied ritual to cultural pride: A framework for fostering cultural identity through a VR experience of the twenty-four solar terms. In Proceedings of the 2025 International Conference on Human-Engaged Computing (pp. 1–8). https://doi.org/10.1145/3786995.3787072
6. Oh, C., Herrera, F., & Beilenson, J. (2019). The effects of immersion and real-world distractions on virtual social interactions. Cyberpsychology, Behavior, and Social Networking, 22(6), 365–372. https://doi.org/10.1089/cyber.2018.0404
7. Matiu, A., & Rothbard, N. P. (2013). Task bubbles, artifacts, shared emotion, and mutual focus of attention: A comparative study of the microprocesses of group engagement. Organization Science, 24(2), 455–475. https://doi.org/10.1287/orsc.1120.0738
8. Chen, S. X., Xu, S., Lai, I. K. W., Tse, S. W. T., & Li, Z. (2026). Digital technology rituals at heritage sites: How technology–culture fit shapes tourists' willingness to recommend through dual-path emotional energy. Asia Pacific Journal of Tourism Research. Advance online publication. https://doi.org/10.1080/10941665.2026.2622399
9. Menander, S. J., Moran-Nae, B., & Hodsdon, L. (2024). 'By the community, for the community': Boundary narratives, boundary work, and intangible cultural heritage. In Revoicing intangible cultural heritage (pp. 33–47). Routledge. https://doi.org/10.4324/9781003459149-4
10. He Xiangyu, & Zhao Meng. (2025). The Intrinsic Logic and Practical Path of Folk Custom Short Videos in Strengthening the Sense of Community of the Chinese Nation—Based on the Perspective of Interactive Ritual Chains. Journal of Ethnology, (3), 15–21. https://doi.org/10.16023/j.cnki.cn64-1016/c.2025.03.002 (in Chinese)
11. Draper, S. (2021). Effervescence accelerators: Barriers to outsiders in Christian interaction rituals. Sociology of Religion, 82(1), 1–23. https://doi.org/10.1093/socrel/srab001
12. Bala, P., Nisi, V., & Nunes, N. J. (2024). Stories as boundary objects: Digital storytelling with migrant communities for heritage discourses. Proceedings of the ACM on Human-Computer Interaction, 8(CSCW1), 1–32. https://doi.org/10.1145/3641016
13. Dropped, A. (2023). Emotional ambience in interaction rituals: A conceptual completion to emotional energy. Social Sciences, 12, 509. https://doi.org/10.3390/socsci12090509
14. Tang T T, Lei C Y. Emotional Interaction and Value Coupling of Intangible Cultural Heritage Short Videos under the National Cultural Digitalization Strategy[J]. Audio-Visual Review, 2024(02):12-17. https://doi.org/10.13994/j.cnki.stj.2024.02.015 (in Chinese)

15. Lin, C., Xia, G., Nickpour, F., & Chen, Y. (2025). A review of emotional design in extended reality for the preservation of cultural heritage. NPJ Heritage Science, 13(1), 86. https://doi.org/10.1038/s40494-025-01625-x
16. Ye, Q., Li, Y., Luo, Y., & Pang, Z. (2026). The impact of AI anchor anthropomorphism on users' willingness to co-create value in tourism live-streaming contexts: The mediating role of social presence and the moderating role of perceived control. Frontiers in Psychology, 16, 1724176. https://doi.org/10.3389/fpsyg.2025.1724176
17. Wang, B., Dane, G. Z., & de Vries, B. (2021). Preferences for a multimedia web platform to increase awareness of cultural heritage: A stated choice experiment. Journal of Heritage Management, 6(2), 188–208. https://doi.org/10.1177/24559296211045299
18. Yi, C., Huang, J., & Song, L. (2025). Enhancing intangible cultural heritage dissemination through digital experience: An affective events theory approach. NPJ Heritage Science, 13, 136. https://doi.org/10.1038/s40494-025-02017-x
19. Zhang, Z., Jiang, S., Zhang, R., et al. (2026). Interactive visual communication for cultural learning and preservation: A mixed-methods study of user engagement with China's intangible heritage. Acta Psychologica, 263, 106238. https://doi.org/10.1016/j.actpsy.2026.106238
20. Xue, K., Li, Y., & Meng, X. (2019). An evaluation model to assess the communication effects of intangible cultural heritage. Journal of Cultural Heritage, 40, 124–132. https://doi.org/10.1016/j.culher.2019.05.021
21. Cai L B, Ding Z Q. Research on the Quantitative Mechanism of Audience Interaction and Social Presence in Event Activities: Taking the Opening Ceremony of the Tokyo Olympic Games as an Example[J]. Tourism Tribune, 2023, 38(6):105-121. https://doi.org/10.19765/j.cnki.1002-5006.2023.06.013 (in Chinese)