

## THE IMPACT OF SUZHOU EMBROIDERY EXPERIENCE ON TOURIST ENGAGEMENT IN INTANGIBLE HERITAGE TOURISM THE MEDIATING ROLE OF FLOW AND SELF-EXPRESSION

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**Abstract:** This study aimed to explore how ritualized experiences in intangible cultural heritage tourism influence tourists' engagement through flow experiences and self-expression motivations. Using quantitative methods, the study collected questionnaires from 439 tourists at the Suzhou Embroidery Art Museum. Structural equation modeling (SEM) and exploratory factor analysis were used to assess the relationships between these variables. The results showed that ritualized experiences had a significant positive impact on tourist engagement. This finding highlights the importance of interactivity in intangible cultural heritage tourism, suggesting that cultural presentations alone are insufficient to stimulate engagement and require contextualized and interactive design to enhance the experience. Flow experiences and self-expression played a mediating role, enabling tourists to transform their focus and emotional engagement and foster sustained engagement. Notably, while the mediating effect was not highly significant, the findings suggest that this mechanism remains valuable in explaining the psychological and behavioral transformation processes of tourists. This suggests that psychological mechanisms may differ across cultures and contexts, and future research should further examine the moderating effects of context, individuals, and cross-cultural factors. These insights have important implications for tourism stakeholders in Suzhou. The study suggests that intangible cultural heritage tourism should foster contextual ambiance in event planning to enhance immersion and incorporate self-expression to stimulate participation. Digital tools also have great potential for providing personalized interactions, thereby deepening visitor engagement and cultural connection. Overall, this finding supports a visitor-centered approach and provides important insights for the sustainable development of Suzhou's intangible cultural heritage tourism industry.

**Keywords:** intangible cultural heritage, cultural tourism, Suzhou embroidery, ritualized experience, tourist engagement

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### INTRODUCTION

In recent years, intangible cultural heritage (ICH) tourism has attracted widespread global attention for its role in cultural protection, identity enhancement and sustainable development (Innocente et al., 2024). The United Nations Sustainable Development Goals (SDG 11.4) point out that protecting and preserving cultural heritage is an important foundation for building an inclusive and resilient society (Innocente et al., 2024). With the evolution of cultural tourism, tourists' experience is shifting from the traditional "sightseeing" to a more immersive and participatory model (Moneta et al., 2025).

Compared with traditional tourism models, intangible cultural heritage tourism emphasizes psychological perception and interactive participation of cultural significance (Zhang et al., 2025). It better responds to tourists' diverse experience needs and provides a new way to spread traditional skills (Lv et al., 2025). The interactive ritual theory further points out that ritualized interpersonal and social interaction is an inseparable practice that aims to strengthen social and emotional cohesion, stimulate collective vitality, and highlight its social function (Collins, 2014). The emphasis on psychological perception and deep experience in intangible cultural heritage tourism has triggered people's reflection on traditional tour modes, further highlighting the importance of sustainable development concepts and high-quality intangible cultural heritage tourism product design (Ye et al., 2025; Zhou & Ramli, 2025).

Although existing studies have focused on the role of real interactive experiences in promoting cultural cognition (Lu et al., 2024), research on how tourists transform ritual experiences into deep participation driven by psychological mechanisms is still relatively limited (Yan et al., 2024). This research gap prompted this study to use Suzhou embroidery as an empirical scenario, combining concepts such as flow, self-expression, and tourist engagement to integrate the impact of ritualized intangible cultural heritage experience. Based on the data of Suzhou Chinese Embroidery Art Museum, this study

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uses structural equation modelling (SEM) to verify a conceptual model that integrates ritual experience, flow, self-expression and tourist engagement. At the same time, the research results provide practical guidance for the communication and marketing of intangible cultural heritage tourism product design, and suggest that the interaction between ritual structure and tourist psychology should be emphasized in the design to enhance tourist engagement.

### Tourist Perception and Tourist Engagement in Cultural Tourism

In recent years, cultural tourism has played an increasingly important role in meeting tourists' deep cultural perception and participation needs. Research on cultural tourism has shifted from the early focus on “visiting” to an emphasis on “immersion” and “participation” (Idris et al., 2024). Yang & Wang (2023) proposed that the essence of cultural tourism is shifting from visiting physical spaces to the construction of individual emotions and meanings. Intangible cultural heritage plays a key role in the development of cultural tourism. It not only improves tourists' subjective satisfaction, but also helps to protect the sustainability of destination traditions and culture (Abd Halim et al., 2025).

Tourists' positive perception of the environment is the basis for entering the flow state (Yan et al., 2024). Pine & Gilmore proposed the “experience economy” model, arguing that sensory, emotional and mental perception constitute the core of experience quality, which in turn affects immersion and flow state (Mehmetoglu & Engen, 2011; Moneta et al., 2025). Many studies have confirmed the relationship between flow and behavioral intention, and found that flow can have a positive impact on consumers' behavioral intention (Liu et al., 2024). The concept of tourism participation has been widely studied in the marketing literature, but most of the studies exploring tourism participation are focused on brand marketing, festivals, scenic spot services and other fields (Martin et al., 2022; Steriopoulos et al., 2024; Zhang et al., 2025). Less in-depth exploration of the impact of contextualized experience on tourists' deep psychological state and behavioral transformation (Chang et al., 2025). Some scholars have found that good customer experience and emotional response can inspire more lasting cultural identification (Liu et al., 2024) and behavioral investment (Cao et al., 2024; Ivancsóné Horváth et al., 2025). In the field of tourism, the impact of tourists' engagement and emotional response on future behavior is very important for destinations and other stakeholders (Moneta et al., 2025; Steriopoulos et al., 2024).

### Ritualized Experience

Ritualized experience is an important topic in cultural tourism research in recent years. The concept was first proposed by Collins (2014) in the interactive ritual chain theory, which believes that individuals can gain emotional energy, group belonging and meaning recognition by participating in the ritual process under a specific time and space structure (Collins, 2014). This theory has been widely used in tourism scenarios in recent years, especially in explaining tourists' cultural resonance and deep participation (Yang et al., 2024).

Ritual interaction is widely regarded as a form of cultural participation with structural, symbolic and emotional arousal (Yang et al., 2022; Yang et al., 2023b). Its core lies in guiding individuals into a specific state of situational experience through elements such as spatial layout, behavioral procedures and symbolic symbols (Xie & Li, 2023). Despite this, existing research on the detailed psychological processes and behavioral transformation mechanisms of tourists in actual experience is still relatively limited. In particular, most studies focus on the unilateral cognition of local residents (Lan et al., 2021; Abd Halim et al., 2025), ignoring tourists' perception of the destination and behavioral intention in the context of intangible cultural heritage tourism (Chuamuangphan et al., 2025). Therefore, how tourists' participation behavior can stimulate psychological immersion, cultural identity and long-term cultural participation through traditional cultural activities (Huynh, 2025), is still an area that urgently needs further research.

### Conceptual Framework and Assumptions

Based on the interaction ritual chain theory (Lu et al., 2024), flow theory (Bai et al., 2024) and self-determination theory (Ciki & Tanriverdi, 2024), this study constructed a chain mediation model to explore how ritualized cultural experience indirectly affects tourist engagement through flow and self-expression motivation, as shown in Figure 1.

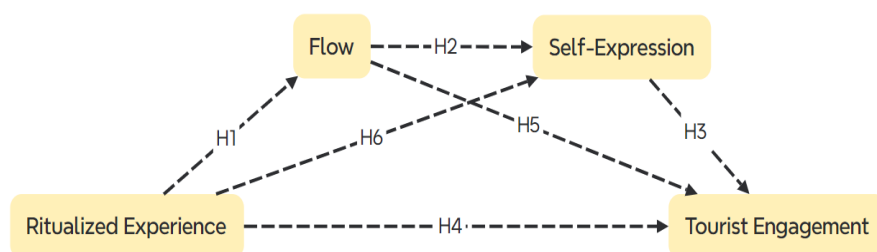


Figure 1. Chain mediation model between ritual experience and tourist engagement

In this model, tourists are regarded as informal learners who experience deep emotional and cognitive absorption (flow) in immersive cultural fields and gradually develop intrinsic motivation to express themselves through cultural activities (self-expression). Based on this, this study proposes six hypotheses, H1–H6.

**H1:** Ritualized experience has a significant positive impact on flow.

**H2:** Flow has a significant positive impact on self-expression.

**H3:** Self-expression has a significant positive impact on tourist engagement.

**H4:** Ritual experience has a significant positive direct impact on tourist engagement.

**H5:** Flow partially mediates between ritual experience and tourist engagement.

**H6:** Self-expression partially mediates between ritual experience and tourist engagement.

## MATERIALS AND METHODS

### Study Design

This study employed a quantitative approach to examine tourists' cultural perception and learning engagement in the ritualized experience of Suzhou embroidery, with flow and self-expression as mediating variables. Data were collected on November 22, 2024, at the Suzhou Chinese Embroidery Art Museum, yielding 439 valid responses through convenience sampling during the "Suzhou Embroidery Art Exhibition Week." The context included ICH demonstrations, interactive sessions, and cultural exhibitions. Tourists completed a questionnaire measuring ritual experience, flow, self-expression, and engagement using validated five-point Likert scales. Data analysis was conducted using SPSS 26.0 for reliability and validity tests, and Smart PLS 4.1 for SEM modelling to explore direct and indirect effects and validate the chain mediation structure. Because chain mediation was applied to capture sequential effects through multiple mediators (Zhou et al., 2025).

Suzhou embroidery, as one of China's most renowned forms of intangible cultural heritage, has a history spanning over two millennia. It is celebrated for its exquisite craftsmanship and refined aesthetics, with works that depict subjects in strikingly vivid and delicate detail. Such artistic expression not only demonstrates technical mastery but also evokes a sense of tranquility and emotional resonance in viewers, as shown in Figure 2.

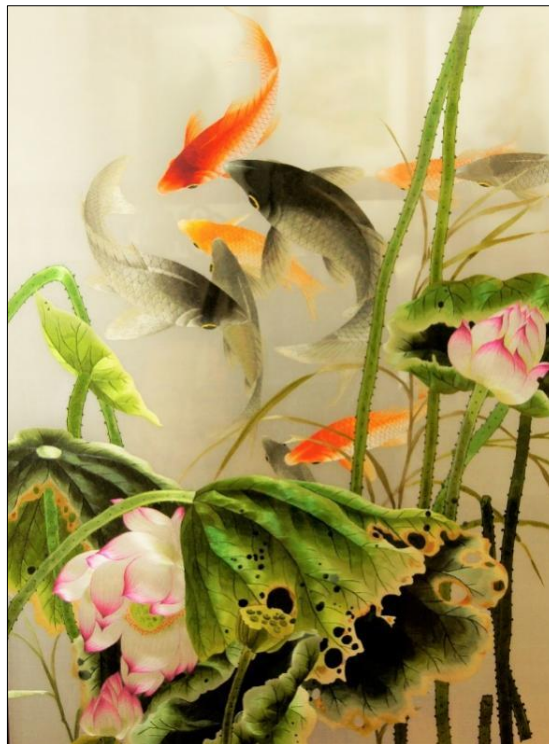


Figure 2. The embroidery work "Lotus and Carp", Suzhou, 2022 by intangible cultural heritage inheritor Ca Meiyang

### Study Location

Suzhou, located in southeastern Jiangsu Province, is a hub of intangible cultural heritage and immersive cultural experiences (Ying & Yaacob, 2025). As the birthplace of Suzhou embroidery, its museums and cultural institutions offer informal learning spaces and skill-based activities (Lu et al., 2025). This study draws on the "Suzhou Embroidery Art Exhibition Week" held in December 2024 at the China Embroidery Art Museum, themed "Splendid China, Beautiful Jiangnan." The event featured ritualised, education-oriented activities such as ICH demonstrations, interactive workshops, and cultural exhibitions, creating a rich learning context to test the "ritualized experience–psychological mechanism–learning engagement" pathway. Suzhou's diverse tourist base also ensures a representative sample for this research. It has become a key place to study the intergenerational transmission of traditional knowledge among tourists.

### Participants

To ensure statistical validity, this study set the sample size to no less than 384 according to Cochran's (1977) formula, adopted convenience sampling, and conducted a questionnaire survey at the Suzhou Chinese Embroidery Art Museum. A total of 480 questionnaires were collected, and after eliminating invalid items, 439 were retained, with an effective rate of 91.5%. The sample was gender balanced (46.2% male, 53.8% female), with a wide range of age levels, and diverse educational and professional backgrounds, with good representativeness and universality.

### Measurement

This study employed a structured questionnaire as the primary data collection tool, following informed consent principles to ensure participants understood the study's purpose and data usage. The questionnaire included 32 items across four sections, covering personal information (e.g., gender, age, education, occupation) and measurements of ritual experience (RS) (Yan et al., 2024), flow (FL) (Zhang & Abd Rahman, 2022), self-expression (SE) (Khademi-Vidra & Bujdosó, 2020) and tourist engagement (TE) (Melón et al., 2021).

To improve response fluency, items were arranged using a Ritualized experiences-Flow-Self-expression-Tourist Engagement format (Table 1).

A pilot survey was conducted at Suzhou Art Museum in October 2024, yielding 80 valid responses. Reliability and validity tests showed strong results: Cronbach's  $\alpha = 0.889$ , KMO = 0.885, and Bartlett's test  $p < 0.01$ . Based on expert feedback, ambiguous items were revised to enhance clarity and usability.

Table 1. Statements of variables

Dimension	Items
<b>Ritualized experiences-Uniqueness</b>	I felt the uniqueness of the ritual
	It made the moment different for me
	I felt like at the actual occasion of the ritual
	The ritual arouses feelings of unique history and culture
<b>Ritualized experiences-Commitment</b>	I dealt with the ritual activities carefully
	I spent time and energy on the ritual activities
	I took a serious attitude during the process
<b>Ritualized experiences-Ceremoniality</b>	The process embodied the spirit of inheritance
	I felt traditional customs during the process
	I feel like practising the ritual its original setting
	The accompanying objects and visual cues are ceremonial
<b>Ritualized experiences-Nonfunctionality</b>	In this process, some actions are not necessary
	In a sense, some actions are optional
	In a sense, some actions are repetitive
	In a sense, some actions are time-consuming
<b>Flow</b>	I found a lot of pleasure while participating in the Suzhou embroidery experience.
	while participating in the Suzhou embroidery experience., my attention was focused on the activity
	while participating in the Suzhou embroidery experience, I felt in control
<b>Self-expression</b>	Because the success I feel from the object I create and the process itself inspires to make new things, to do new activities
	Because it makes me feel satisfied if my work has a successful result
	Because I like trying out new things and to learn new skills
	Because I can express myself through these objects and projects
<b>Tourist Engagement</b>	I have a good understanding of the event
	I think participating in the event will give me great satisfaction
	I feel comfortable participating in the event
	Participating in the event is an enriching experience for me
	I think participating in the event allows me to demonstrate my knowledge and experience on certain topics
	I think participating in the event allows me to interact with other people who are interested in the same things

### Data Collection

To ensure the validity and reliability of the data, this study established cooperation with the China Embroidery Art Museum, clarified the survey process and obtained support from the museum. Five staff members who assisted in the distribution of questionnaires were provided with a thank-you note of RMB 50 each. The survey was conducted at the entrance of the exhibition hall, and visitors (i.e. informal learners) were guided to scan the code to fill in the questionnaire and sign the informed consent statement before filling it out. To increase the response rate, respondents were rewarded with a RMB 3 electronic voucher. All questionnaires were supervised by the research team to ensure the integrity and consistency of the data. All questionnaires were processed anonymously, and the personal identity information of the participants would not be recorded, thereby fully protecting their privacy and data security.

### Data Analysis

To test the research model and hypothesis path, this study used SPSS 26.0 and SmartPLS 4.1 for statistical analysis. In the pre-test, Cronbach's  $\alpha$  of each dimension of the scale exceeded 0.80, and the reliability and validity were good. The 439 valid samples of the formal questionnaire were extracted through exploratory factor analysis (KMO = 0.833, Bartlett test  $p < 0.001$ ), and seven factors that met the expected structure were extracted, with a cumulative total variance of 68.21%. Subsequently, a structural equation model (SEM) was constructed to verify the six path relationships and reveal the process by which ritual experience affects tourist behavior through psychological mechanisms. This provides strong support for this study to reveal the mechanism of action between psychological mechanisms and tourist behavior in intangible cultural heritage tourism.

## RESULTS AND DISCUSSION

### Reliability and Validity Analysis

The reliability levels of different dimensions of this measurement are all above 0.7, so the reliability of the questionnaire is reasonable. The KMO value of the questionnaire measured in this measurement is 0.833, the Chi-square value of Bartlett's sphericity test is 5900.942, the degree of freedom is 378, and the significance is  $0.000 < 0.05$ , which means that the data has passed the validity test and is suitable for subsequent factor analysis.

### Exploratory Factor Analysis

An examination of the overall variance explained by the measurement constructs revealed that the total variance accounted for reached 68.234%, surpassing the commonly accepted threshold of 60%. The individual contributions of the seven identified factors were 14.225%, 9.954%, 9.912%, 9.752%, 9.459%, 7.928%, and 7.003%, respectively, aligning well with the structural expectations of the questionnaire design, as summarized in Table 2.

Extraction method: principal component analysis.

Table 2. Total variance explained

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	Percentage of variance	Cumulative %	Total	Percentage of variance	Cumulative %	Total	Percentage of variance	Cumulative %
1	7.294	26.050	26.050	7.294	26.050	26.050	3.983	14.225	14.225
2	2.645	9.446	35.496	2.645	9.446	35.496	2.787	9.954	24.179
3	2.396	8.556	44.052	2.396	8.556	44.052	2.775	9.912	34.091
4	2.036	7.272	51.324	2.036	7.272	51.324	2.731	9.752	43.843
5	1.737	6.203	57.527	1.737	6.203	57.527	2.648	9.459	53.302
6	1.561	5.576	63.104	1.561	5.576	63.104	2.220	7.928	61.231
7	1.436	5.130	68.234	1.436	5.130	68.234	1.961	7.003	68.234

### Structural Equation Model Analysis

The findings reveal that ritual experience positively influences tourist engagement, flow, and self-expression, with corresponding standardized path coefficients of 0.361, 0.351, and 0.442, all reaching significance at the  $p < 0.001$  threshold. Flow, acting as a mediating factor, also exerts a statistically significant influence on both tourist engagement and self-expression. Specifically, the effect of flow on tourist engagement yielded a coefficient of 0.155 ( $p < 0.01$ ), while its impact on self-expression was 0.112 ( $p < 0.01$ ).

Additionally, self-expression demonstrated a positive contribution to tourist engagement, with a path estimate of 0.097 ( $p < 0.05$ ). These results collectively underscore the interconnectedness among ritual experience, flow, and self-expression in shaping tourist engagement, as summarized in Table 3.

Table 3. Analysis of pathway relationships

	$\beta$	SE	T	p
Ritualized experiences $\rightarrow$ Tourist Engagement	0.361	0.052	6.923	0.000
Ritualized experiences $\rightarrow$ Flow	0.351	0.040	8.727	0.000
Ritualized experiences $\rightarrow$ Self-expression	0.442	0.042	10.519	0.000
Flow $\rightarrow$ Tourist Engagement	0.155	0.058	2.693	0.007
Flow $\rightarrow$ Self-expression	0.112	0.043	2.621	0.009
Self-expression $\rightarrow$ Tourist Engagement	0.097	0.049	1.976	0.048

The direct effect of ritual experience on tourist engagement is significant, and both flow and self-expression serve as meaningful mediators. Although the full path from ritual experience  $\rightarrow$  flow  $\rightarrow$  self-expression  $\rightarrow$  tourist engagement shows a small coefficient (0.004), it remains statistically significant with a confidence interval of [0.001–0.010].

Flow positively influences both self-expression and engagement, while self-expression further connects ritual experience to tourist engagement, enhancing participants' involvement and satisfaction.

These results confirm the existence of a valid chain mediation effect, as shown in Table 4.

From the above table we can get Figure 3.

Table 4. Analysis of the mediation impact relationship

Path	$\beta$	SE	T	2.5%	97.5%
Ritualized experiences - Flow - Self-expression	0.039	0.016	2.477	0.010	0.073
Ritualized experiences - Self-expression - Tourist Engagement	0.043	0.022	1.908	0.002	0.089
Ritualized experiences - Flow - Tourist Engagement	0.054	0.021	2.585	0.014	0.095
Ritualized experiences - Flow - Self-expression - Tourist Engagement	0.004	0.003	1.410	0.001	0.010
Flow - Self-expression - Tourist Engagement	0.011	0.007	1.472	0.002	0.028

Figure 3 shows: the SEM results of this study indicate that ritualized experiences have a significant and direct positive impact on tourist engagement ( $\beta = 0.361$ ), partially mediated by flow (FL,  $\beta = 0.351$ ) and self-expression (SE,  $\beta = 0.442$ ).



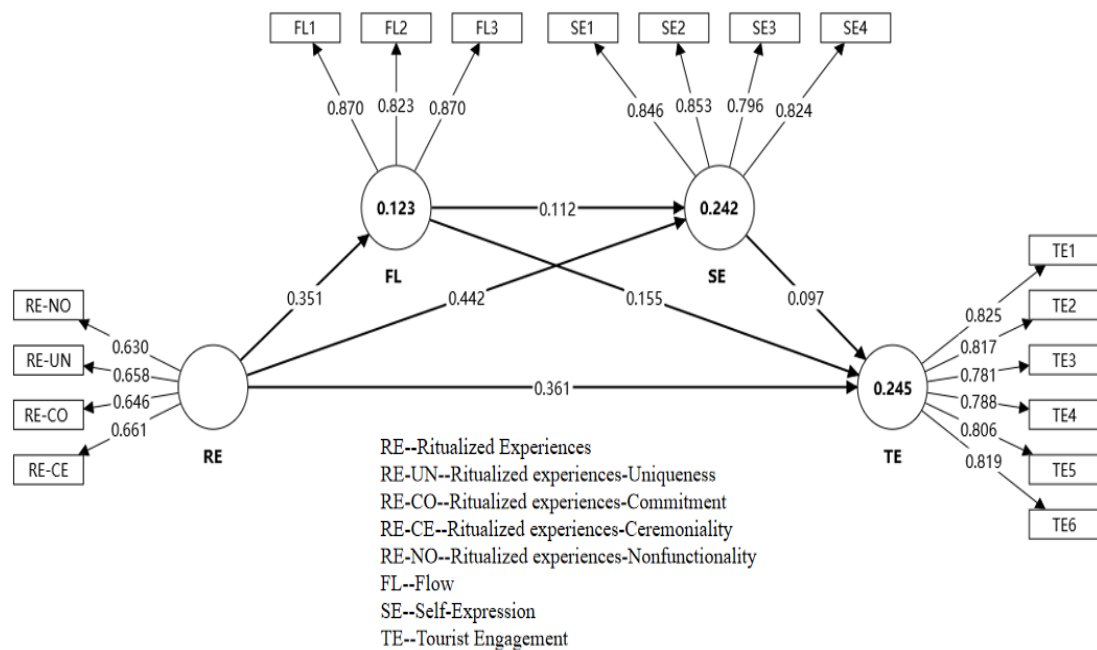


Figure3. Significant standardized direct impacts of variables in the model

In contrast, the mediating effects of flow and self-expression were relatively limited, with flow having a significant impact on tourist engagement ( $\beta = 0.155$ ), flow and self-expression having a significant impact ( $\beta = 0.112$ ), and self-expression having a relatively weak positive effect on engagement ( $\beta = 0.097$ ). This suggests that the ritualized nature of cultural tourism itself is a key factor in promoting sustained tourist engagement. At the measurement level, the four dimensions of ritual experience—non-functionality (RE-NO,  $\lambda = 0.630$ ), uniqueness (RE-UN,  $\lambda = 0.658$ ), engagement (RE-CO,  $\lambda = 0.646$ ), and ritual (RE-CE,  $\lambda = 0.661$ )—ranged from 0.630 to 0.7, indicating acceptable convergent validity, although some indicators fell slightly below the ideal level of 0.70 (Liébana-Cabanillas et al., 2025). The results reveal that ritual experience not only has a significant direct impact on tourist engagement but also partially mediates through flow and self-expression. The direct effect is more significant, indicating that the ritual characteristics of cultural tourism are themselves key drivers of tourist engagement. Furthermore, the existence of the mediating effect reveals the psychological pathways through which tourists achieve engagement, driven by immersive experiences and self-construction motivation.

## DISCUSSION

This study found that ritualistic experiences have a significant direct positive impact on tourist engagement, partially mediating this effect through flow and self-expression. This finding stems from the fact that ritualistic features of cultural tourism can strongly stimulate tourists' motivation for immersion and identity construction in the short term, thereby driving their behavioral engagement.

Consistent with previous research, scholars have shown that ritualistic and unique experiences can enhance tourist satisfaction and willingness to participate (Shang & Li, 2024; Yan et al., 2024). Flow has also been repeatedly demonstrated to be an important psychological mechanism driving engagement and well-being (Zhang & Abd Rahman, 2022; Moneta et al., 2025). Furthermore, some studies have emphasized that self-expression can promote social interaction and cultural identification in tourism experiences (Ki et al., 2025), which aligns with some of the pathways identified in this study. These consistent findings indicate that this study not only validates existing theoretical perspectives but also extends their applicability to the ICH tourism context. By confirming the mediating roles of flow and self-expression, this study underscores their cross-context robustness and provides an expandable conceptual framework for explaining tourist engagement.

However, the mediating mechanism effects found in this study regarding the effects of flow and self-expression on engagement are inconsistent with some other studies. For example, Liu et al (2024) emphasize that self-expression is the core driver of memorable travel experiences, while Moneta et al (2025) point out that tourists' feelings of flow often directly influence their depth of engagement, and that the mechanism by which flow experiences influence self-expression and behavior (Zheng & Huang, 2025) is quite significant. However, the results of this study show that the role of self-expression is relatively weak, and the promoting effect of flow on self-expression is also limited. This suggests that although existing research confirms the importance of psychological mechanisms, these mediating mechanisms are often generalized, ignoring the differences and complexity between different contexts.

## CONCLUSION

This study is one of the first quantitative studies to empirically explore how ritual experience in intangible cultural heritage tourism affects tourists' participation behavior through flow and self-expression motivation.

The study systematically explores how ritual experience affects tourists' participation behavior through flow experience and self-expression motivation. Based on the field survey data of Suzhou Chinese Embroidery Art Museum,

the chain mediation model of “ritual experience-flow experience-self-expression motivation-tourist participation behavior” was verified using structural equation model (SEM). In practice, this study found that the relationship between ritual experience and tourist participation is not only significant, but also moderated by the mediating role of key psychological variables. From a theoretical perspective, this study integrates flow theory, self-determination theory and interactive ritual chain theory, and further clarifies that “psychological mechanism” is an important mediating process for the transformation of cultural experience into long-term behavior.

This study not only deepens the understanding of the path of cultural context-psychological reaction-behavioral performance, but also provides a solid theoretical support for future exploration of how cultural experience in intangible cultural heritage tourism can be transformed into long-term development behavior, and also provides path guidance and empirical basis for related educational practice, cultural and creative design and cultural policy formulation.

This study makes theoretical and empirical contributions, but it also has limitations. First, the sample was primarily from Suzhou, potentially influenced by regional culture. Future research should compare a wider range of intangible cultural heritage projects and regions. Second, while structural equation modeling (SEM) reveals relationships between variables, it fails to capture the nuanced perceptions of tourists. Additional qualitative interviews and observations could be added. Alternatively, additional mediating or moderating variables could be introduced in the future to further enrich our understanding of the mechanisms of tourist participation in intangible cultural heritage tourism.

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