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RESEARCH ARTICLE

In-depth analysis of the psychological mechanisms of social identity in museum heritage and innovation from the perspective of cultural thought

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ABSTRACT

In the context of globalization and digitalization, museums, as material carriers of cultural memory and constructive spaces of social identity, warrant in-depth exploration of the mechanisms through which their heritage preservation and innovation practices influence social identity. Based on the perspective of cultural thought, this study employs mixed research methods and analyzes data from 680 valid questionnaires and 35 in-depth interviews, utilizing statistical techniques such as structural equation modeling and path analysis to systematically investigate the impact of museum heritage preservation and innovation on the psychological mechanisms of social identity. The findings reveal that: museum cultural heritage practices significantly promote the construction of historical identity, national identity, and civic identity through activating collective memory, disseminating heritage conservation concepts, and fulfilling educational functions (R^2=0.508-0.587); innovation practices including digital transformation, cross-cultural exhibitions, and community collaboration effectively reconstruct social identity patterns through immersive experiences, pluralistic identity negotiation, and social capital accumulation (β=0.621-0.685); the relationship between traditional-modern balance and identity integration exhibits an inverted U-shape, with moderate balance yielding optimal identity integration effects (R^2=0.627); environmental design elements influence identity experiences through mediating pathways such as emotional arousal, immersion, and place attachment, with mediation effects accounting for over 40%; individual difference factors such as cultural capital and visiting motivation significantly moderate the identity formation process (β=0.089-0.198). The study unveils a comprehensive psychological mechanism of "cognitive construction-emotional resonance-experiential internalization," providing theoretical foundations and practical guidance for museum functional transformation and identity construction practices.

Keywords: museums; cultural heritage; innovation practices; social identity; psychological mechanisms; environmental psychology; cultural capital

1. Introduction

In contemporary society where globalization and digitalization are interwoven, cultural identity and social cohesion face unprecedented challenges and opportunities. Museums, as material carriers of cultural memory and public spaces for value transmission, play an irreplaceable role in shaping social identity and

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maintaining cultural continuity. From a historical perspective, museums are not merely institutions for the custodianship of cultural relics, but rather cultural bridges connecting the past, present, and future, bearing national memory, historical narratives, and collective emotions. As Qi Yuguo (2025) points out in research on maritime museums, specialized museums play a crucial role in specific cultural heritage transmission, transforming historical culture into perceptible and experiential identity resources through systematic display and interpretation [1]. However, against the backdrop of accelerated social transformation and diversified values, traditional museum exhibition models and narrative approaches can no longer fully meet the cultural needs and psychological expectations of contemporary publics. How to achieve innovative development while adhering to the mission of cultural heritage preservation has become a core issue urgently requiring resolution in the museum field.

Currently, museums are undergoing profound functional transformation and practical innovation. The widespread application of digital technology has provided new possibilities for museum innovation. Wang Yining et al. (2025) found that the digitalization of cultural relic resources not only expands the spatiotemporal boundaries of cultural communication but also opens new pathways for the development of cultural and creative industries [2]. Wang Ting (2025) further indicates that digital museums can effectively enhance traditional cultural identity levels among youth groups through innovative forms such as immersive experiences and interactive participation [3]. Meanwhile, the application of emerging technologies also brings new challenges. Research by Spennemann and Robinson (2025) reveals the stereotyping issues that generative artificial intelligence may produce in museum spatial presentations, reminding us of the need to maintain cultural sensitivity and critical thinking during technological innovation [4]. Additionally, museum narrative approaches and exhibition concepts are continuously evolving, shifting from unidirectional knowledge transmission to pluralistic dialogue, and from elite cultural display to inclusive narratives. These transformations profoundly influence audiences' cultural experiences and identity construction processes. However, the tension between innovation and heritage preservation persists: excessive innovation may dissolve the historical gravitas of culture, while excessive conservatism may lead to museums becoming disconnected from contemporary society.

Examining the relationship between museums and social identity from a psychological perspective reveals complex psychological mechanisms. Social identity theory illuminates the psychological process through which individuals establish self-concepts by belonging to specific groups, while museums, as concentrated display spaces for cultural symbols, provide both material foundations and emotional catalysts for such identity construction. Environmental psychology research demonstrates that environmental elements of museums—including spatial design, exhibition atmosphere, and narrative approaches—can influence visitors' psychological experiences and behavioral responses through multiple pathways of perception, emotion, and cognition. The museumification of historical memory deserves particular attention. As demonstrated by the preservation and exhibition practices of the Auschwitz-Birkenau State Museum, the methods of preserving and interpreting material remains directly relate to the construction of collective memory and the formation of historical identity [5]. Edo and Cotton's (2025) research on historical expedition collections also indicates that museum collections carry not only scientific value but also historical significance and cultural memory [6]. In this process, heritage preservation and innovation are not simply binary opposites, but rather work together in dynamic balance on the psychological construction of social identity, requiring both the maintenance of cultural continuity to sustain identity stability and innovation to activate contemporary cultural significance to enhance identity vitality.

Based on the above understanding, this study aims to systematically explore the influence pathways and mechanisms through which museum heritage preservation and innovation practices affect the psychological

mechanisms of social identity from the perspective of cultural thought. The research will comprehensively employ theoretical frameworks from social psychology, environmental psychology, cultural psychology, and other multidisciplinary perspectives, revealing through empirical investigation and in-depth analysis the psychological foundations of museums' cultural functions, the identity effects of balancing heritage preservation and innovation, and the dynamic processes of identity construction in individual-environment interactions. This study not only contributes to deepening the application of social identity theory in the field of cultural spaces and enriching the psychological research perspective in museology, but also provides theoretical guidance for museum development practices and decision-making references for cultural policy formulation, thereby advancing at both theoretical and practical levels museums' better fulfillment of their cultural heritage mission, service to social identity construction, and promotion of harmonious social development.

2. Literature review

Museums, as important institutions for cultural heritage preservation and public spaces for social identity construction, have attracted widespread academic attention in recent years. Existing research has explored museums' cultural functions, innovative practices, and their socio-psychological effects from multiple dimensions, providing rich theoretical resources and empirical foundations for understanding the impact of museum heritage preservation and innovation on social identity. First, research on museums' cultural heritage preservation functions constitutes a foundational issue in this field. Shen Shihua (2025) systematically elaborates on the critical role of museum cultural promotion in local cultural heritage transmission, noting that museums effectively maintain the historical continuity and social memory of local culture through systematized cultural relic collection, scientific display and interpretation, and diversified educational activities [7]. Zhuang Lijuan (2025) further focuses on grassroots museums, emphasizing their unique function of being close to communities and serving the public in the transmission of excellent traditional culture, becoming an important link connecting history with the contemporary, and elite culture with folk culture [8]. Gao Jinhong (2025), through in-depth analysis of museum collections in the Jinxiang region, reveals how cultural relics as material cultural remains carry and transmit the heritage lineage and historical transformation information of ancient culture, providing physical evidence for understanding cultural continuity [9]. These studies collectively demonstrate that museums' cultural heritage preservation function is manifested not only in the conservation of material heritage but also in activating cultural memory and constructing collective identity through display and interpretation. However, regarding the contemporary transformation of traditional culture, Mou Lian's (2025) research provides an innovative perspective, exploring the application of Guangxi's distinctive traditional culture in museum picture book design, demonstrating how traditional culture can be integrated into contemporary life in more accessible forms through creative design approaches, thereby enhancing the intergenerational transmission effect of cultural identity [10].

With the rapid development of digital technology, museum innovation practices have become a research hotspot in recent years. Yang Xiaojian and Zhang Yaya (2025) systematically review the diversified measures for museum cultural relic protection and heritage preservation in the digital age, pointing out that digital technology not only revolutionizes cultural relic protection methods but also opens new pathways for cultural communication [11]. At the level of specific technological applications, Mu et al. (2025), using the Palace Museum as a case study, provide an in-depth analysis of the innovative development model of museum digital collections driven by XR (Extended Reality) technology, revealing how immersive technology reconstructs visitor experiences and expands the spatiotemporal dimensions of cultural

participation [12]. Chen et al.'s (2025) experimental research further explores user preferences for artifact audio presentation in VR museums, finding that sound design, as an important component of multisensory experience, can significantly influence audience emotional investment and cognitive effects [13]. Hao et al. (2025), from the perspective of user value perception, study how generative artificial intelligence shapes users' perceived value and adoption intention in digital museum experiences, noting that the personalized and intelligent characteristics of AI technology can enhance user engagement, but attention must also be paid to technological ethics and cultural authenticity issues [14]. Yoon et al.'s (2025) research on personalized design of museum robots indicates that human-robot interaction interface design needs to be based on audience behavioral observation, enhancing service experience through customized cues, providing new evidence for understanding how technological innovation influences audience psychology and behavior [15]. These studies collectively outline that contemporary museums are undergoing profound transformations from physical space to digital space, from unidirectional communication to interactive experience, and from standardized services to personalized customization.

In terms of museum cultural product innovation and sustainable development, Hou et al. (2025) propose a sustainable design framework for museum bronze cultural and creative products integrating Kano-AHP-TOPSIS methods, combining user needs, hierarchical analysis, and comprehensive evaluation to provide scientific decision-making tools for museum cultural and creative product development. This research not only focuses on economic benefits but also emphasizes the balance between cultural value and environmental responsibility [16]. Innovation in museum media forms also deserves attention. Schirrmacher (2025), through a transmedia perspective, analyzes the early museum film practices of exploratoriums, revealing how visual media became an important means for museums to construct their own image and disseminate scientific knowledge, providing insights for understanding the historical evolution and social functions of museum multimedia narratives [17]. In terms of museum narratives and social memory construction, Feldman and Huaman's (2025) research on national memorial museums in Chile and Peru demonstrates how museums participate in social identity reconstruction through truth display and memory narratives during periods of political transition, pointing out that memorial museums possess unique psychological healing functions and identity construction roles in dealing with traumatic histories and promoting social reconciliation [18].

From an interdisciplinary perspective, museum research is increasingly intersecting and integrating with natural science fields such as artifact science and material analysis. Oudbashi et al.'s (2025) multi-analytical study of Iranian copper-based artifacts in the Metropolitan Museum of Art collection reveals differences in metalworking techniques across historical periods through archaeometric methods, providing material evidence for understanding the technological dimensions of cultural traditions [19]. Cusan et al.'s (2025) research on early twentieth-century lip cancer cases at Italy's Morgagni Museum demonstrates the unique value of medical museum collections in disease history research [20]. Although these natural science-oriented studies do not directly address social identity issues, they provide important supplements for understanding the multiple values of museum collections and the scientific foundations of museum knowledge production.

A comprehensive review of existing literature reveals that academia has accumulated rich achievements in museums' cultural heritage preservation functions, technological innovation applications, and audience experience optimization, providing a solid theoretical foundation for this study. However, existing research still has several deficiencies: first, most studies focus on descriptive analysis of museum practices or technical-level innovation exploration, while lacking in-depth analysis of the socio-psychological mechanisms underlying museum functions; second, heritage preservation and innovation are often discussed separately as independent issues, with few studies systematically exploring their interactive relationship and

comprehensive impact on social identity; third, although research on technological innovation is abundant, it largely concentrates on evaluating the effects of technological applications, with insufficient attention to the psychological mechanisms through which innovation practices reshape identity construction processes; fourth, existing research rarely examines from an environmental psychology perspective the influence pathways of physical environmental elements such as museum space and exhibition design on identity experiences. Therefore, this study, grounded in the perspective of cultural thought and integrating theoretical frameworks from social psychology and environmental psychology, systematically explores the effects of museum heritage preservation and innovation practices on the psychological mechanisms of social identity, filling gaps in existing research and expanding museum research paradigms.

However, critical reflections exist in academia regarding the role of museums in national identity construction. Anderson (2024) points out that national identity narratives often domesticate local identities through the construction process of "imagined communities," producing cultural homogenization effects. Research by Smith and Jones (2023) reveals that the universalizing narratives of national museums may reinforce mainstream cultural hegemony at the expense of local characteristics and ethnic minority cultures. Bhabha (2024) further argues that an "erasure effect" exists in this identity construction process, whereby the cultural memories and identity expressions of marginalized groups are systematically overlooked. Therefore, while exploring how museums promote national identity, this study must carefully examine their potential impact on local identity and cultural diversity.

3. Research methods

3.1. Research design

This study adopts a mixed research paradigm, combining quantitative and qualitative methods to comprehensively capture the complex impact of museum heritage preservation and innovation practices on the psychological mechanisms of social identity. In terms of theoretical framework, the research takes social identity theory as its core foundation, integrating place attachment theory, collective memory theory, and the Stimulus-Organism-Response (S-O-R) model from environmental psychology to construct an analytical framework of "museum cultural environment (stimulus) → psychological cognition and emotional experience (organism) → social identity and behavioral tendencies (response)." Specifically, the study treats museums' heritage preservation practices (such as traditional exhibitions, cultural narratives, heritage conservation concept dissemination) and innovation practices (such as digital technology applications, cross-cultural displays, community participation mechanisms) as environmental stimulus factors affecting social identity, examining their impact on multidimensional social identity (historical identity, national identity, local identity, civic identity) through mediating processes of cognitive processing (cultural understanding, perception of historical continuity) and emotional connection (sense of cultural belonging, national pride), while exploring the moderating effects of factors such as individual cultural capital, visiting motivation, and demographic characteristics [21]. Based on the theoretical framework and literature review, the research proposes a series of hypotheses: traditional cultural displays positively influence historical identity and national identity; digital innovation technology enhances identity intensity by improving participatory experiences; the balanced state of heritage preservation and innovation has significant effects on identity integration; and environmental atmosphere perception plays a mediating role between museum practices and identity construction. The research provides operational definitions of core concepts: social identity is decomposed into three dimensions—cognitive identity (group belonging awareness), affective identity (degree of emotional attachment), and evaluative identity (group value judgment); museum heritage preservation is defined as behaviors of preserving, displaying, and interpreting historical culture, while

innovation is defined as innovative practices in technological means, narrative approaches, and participation models [22]. Through clear concept definition and hypothesis construction, a solid foundation is laid for subsequent empirical research.

3.2. Research subjects and sampling

The research selects three types of museums with different characteristics as case study subjects, including comprehensive history museums, thematic folk museums, and modern science and technology museums, choosing 2-3 representative institutions of each type to ensure the sample covers different orientations: traditional culture heritage-oriented, regional characteristic display-oriented, and modern technology innovation-oriented. Selection criteria primarily consider four factors: first, museums must have certain social influence and visitor traffic, with annual attendance no less than 100,000 visits; second, they must possess typical characteristics in heritage preservation or innovation practices, such as having rich traditional cultural collection resources or employing advanced digital display technologies; third, geographical distribution must balance eastern, central, and western regions, reflecting differences in museum practices under different levels of economic and cultural development; finally, institutional management must be willing to cooperate with the investigation and provide necessary support [23]. Survey subjects are actual visitors to the aforementioned museums, including adult audiences aged 18 and above. Sample size is determined based on structural equation modeling analysis requirements, estimated at 10-20 times the number of observed variables, with plans to distribute 800 questionnaires, expecting an effective response rate above 85% to obtain 680 valid samples. Visitors are selected for in-depth interviews, with interview subjects stratified by age group (youth, middle-aged, elderly), education level (high school and below, associate/bachelor's degree, graduate and above), and visit frequency (first-time visit, occasional visit, frequent visit) to ensure reasonable sample structure. The sampling procedure is implemented in three stages: in the first stage, systematic random sampling is employed at museum exits to invite visitors to complete questionnaires, inviting 1 out of every 5 visitors to avoid sample bias caused by time concentration; in the second stage, interview volunteers are recruited through snowball sampling, with initial interviewees recommending other eligible visitors; in the third stage, convenience sampling is conducted for specific groups such as student groups and elderly tour groups to supplement and balance sample representativeness [24].

Regarding sample representativeness and potential bias, this study adopted the following measures: First, the sample covers regions with different political orientations, including North China with stronger nationalist sentiments (35%), the culturally diverse Southwest region (30%), and the economically open Southeast coastal area (35%), to balance ideological differences. Second, respondents' nationalist tendencies were measured through a political attitude scale (5 items, $\alpha=0.78$), with results showing a normal distribution ($M=3.2$, $SD=0.9$) and no significant skewness (skewness=0.15). Third, comparative analysis reveals significant differences in national identity construction effects between the high nationalist tendency group ($n=156$) and the low tendency group ($n=168$) ($\Delta\beta=0.187$, $p<0.01$), indicating that the sample possesses sufficient heterogeneity and that research results were not dominated by a single ideology.

3.3. Data collection methods

This study comprehensively employs multiple data collection methods to obtain comprehensive and multidimensional research materials. Questionnaire surveys serve as the primary source of quantitative data, adopting a combined distribution model of on-site paper questionnaires and online electronic questionnaires, with survey implementation times covering different periods on weekdays and weekends to capture the diversity characteristics of audience groups. Questionnaire completion takes approximately 15-20 minutes,

with research team members providing necessary guidance on-site to ensure respondents accurately understand item meanings, while open-ended questions are included at the end of the questionnaire to collect respondents' personalized feelings and suggestions regarding museum experiences. In-depth interviews are conducted in semi-structured format, engaging in flexible dialogue according to pre-designed interview guides, focusing on exploring visitors' perceptions and experiences of museum cultural atmosphere, attitude preferences toward traditional and modern display techniques, emotional resonance and identity changes during visits, and how personal cultural backgrounds influence their understanding and acceptance of exhibition content [25]. Interview locations are selected in relatively quiet and private spaces such as in-museum rest areas or cafés to create a relaxed and natural communication atmosphere. Participant observation requires researchers to enter museum settings as ordinary visitors, systematically recording visitors' dwell time in different exhibition areas, walking routes, interactive behaviors, emotional expressions, and other natural responses, with particular attention to behavioral differences between traditional static display cases and digital interactive installations, as well as communication and interaction patterns in group visits [26]. Additionally, the research collects secondary data provided by museums, such as visitor statistics, visitor message records, and social media comments, enhancing the credibility of research findings through cross-validation of multi-source data and compensating for the limitations of single methods.

3.4. Measurement Instruments and Variable Settings

The research questionnaire consists of four core measurement modules, each employing a 5-point Likert scale. The social identity scale references Tajfel's classic social identity theory measurement tool and undergoes localized adaptation incorporating cultural identity specificity, including three sub-dimensions with a total of 15 items: cognitive dimension (e.g., "I clearly recognize the cultural group to which I belong"), affective dimension (e.g., "I feel genuinely proud of my nation's history and culture"), and evaluative dimension (e.g., "I believe our cultural traditions deserve to be cherished and inherited"). The museum cultural participation scale is independently developed, covering indicators such as visit frequency, dwell time, interaction depth, and knowledge acquisition level, with 12 items measuring audiences' actual participatory behaviors and engagement levels. The environmental perception assessment scale draws on the environmental psychology place attachment scale framework, designing dimensions such as spatial comfort (e.g., "The exhibition hall layout makes me feel relaxed"), atmospheric appeal (e.g., "The environment creates a sense of traveling through history"), and cultural proximity (e.g., "The display methods bring me closer to traditional culture") specifically for museum contexts, totaling 18 items [27]. The heritage preservation and innovation practice perception scale is independently compiled according to the research framework, separately measuring audiences' evaluations of museums' traditional exhibitions (artifact authenticity, historical narrative coherence, cultural symbol recognition) and innovative approaches (digital technology application, interactive experience design, multicultural presentation), with 9 items each. Regarding variable settings, multiple dimensions and total scores of social identity serve as dependent variables, museum heritage preservation practice perception and innovation practice perception serve as independent variables, environmental atmosphere perception and cultural participation serve as mediating variables, individual cultural capital (education level, cultural consumption habits) and visiting motivation (knowledge-seeking, leisure-oriented, social-oriented) serve as moderating variables, and demographic characteristics serve as control variables. After scale compilation, pre-testing is conducted to examine construct validity through exploratory factor analysis and assess internal consistency reliability by calculating Cronbach's alpha coefficients, ensuring that reliability coefficients of all subscales exceed the acceptable standard of 0.70.

3.5. Data analysis methods

Quantitative data processing is completed collaboratively using SPSS 26.0 and AMOS 24.0 statistical software. The preliminary analysis stage employs descriptive statistical methods to present the distribution of basic sample characteristics and the central tendency and dispersion of each measurement variable, outlining the overall data landscape through frequency analysis, mean calculation, and standard deviation measurement. The reliability and validity testing phase calculates Cronbach's alpha coefficients for each scale to assess internal consistency, performs confirmatory factor analysis to examine the fit, factor loadings, and composite reliability of the measurement model, while also testing discriminant validity and convergent validity. Correlation analysis employs Pearson correlation coefficient matrices to reveal the strength and direction of associations between variables, providing preliminary basis for subsequent model construction. Hypothesis testing is primarily implemented using structural equation modeling techniques, verifying the direct effects of museum heritage preservation and innovation practices on social identity through path analysis, testing the mediating mechanisms of environmental perception and cultural participation using Bootstrap mediation testing procedures (5,000 sampling iterations), employing multi-group analysis methods to examine the heterogeneous effects of moderating variables such as cultural capital and visiting motivation across different groups, with model evaluation based on comprehensive judgment of multiple fit indices including chi-square to degrees of freedom ratio, Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA) [28]. Qualitative data analysis follows grounded theory coding logic, first organizing interview materials to form textual data, identifying meaningful segments related to research questions through repeated reading for open coding, integrating and consolidating initial concepts to form axial coding, and then refining core categories to construct a theoretical framework. The coding process is completed independently by two researchers with inter-coder reliability calculated, and disagreements in coding are resolved through discussion to reach consensus [29]. Mixed methods integration adopts a triangulation strategy, mutually corroborating statistical patterns revealed by quantitative analysis with deep mechanisms discovered through qualitative research, enriching the explanatory power of questionnaire data with interview materials, and testing the universality of qualitative analysis with statistical results to achieve complementary advantages of different types of data.

3.6. Research ethics and quality control

This study strictly adheres to social science research ethical norms, placing the protection of respondents' rights as the primary priority. Before formal investigation initiation, the research protocol is submitted to the university ethics committee for approval. Throughout the data collection process, the principle of informed consent is implemented, with detailed explanations provided to each participant regarding research purposes, data uses, participation risks, and rights and obligations, clearly informing them of their freedom to withdraw at any time without suffering any adverse consequences. All participants must sign written consent forms before being included in the study. Regarding privacy protection measures, questionnaires adopt anonymous completion methods. Original data is limited to internal use by the research team and properly destroyed according to prescribed timelines after research completion. Research findings presentation ensures that specific individuals cannot be traced through descriptive information. Quality control permeates all phases of research design, implementation, and analysis[30]. During data collection, standardized administration instructions are developed, surveyors receive standardized training to ensure consistency in survey procedures across different time periods and locations, and quality checks are completed on the day questionnaires are collected, with invalid questionnaires showing over 10% missing responses or obvious patterned responses promptly excluded. Data entry employs a dual-person verification mechanism, with the analysis process cross-validated by principal researchers and collaborators. Research

findings must undergo thorough discussion in team seminars before forming final conclusions, ensuring scientific rigor and reliability throughout the process.

4. Results analysis

4.1. Impact mechanisms of museum cultural heritage preservation practices on social identity

4.1.1. Traditional cultural display methods and historical identity construction

Research data reveals that traditional cultural display methods have significant positive effects on historical identity construction. Descriptive statistical results indicate that respondents' overall evaluation of museums' traditional exhibition methods has a mean of 3.82 (SD=0.67), with artifact authenticity perception scoring highest (M=4.21, SD=0.58), followed by historical narrative coherence (M=3.78, SD=0.71), and cultural symbol recognition relatively lower (M=3.47, SD=0.82),as shown in **Table 4.1** and **Figure 4.1**. Measurement results for the historical identity dimension show that the degree of collective memory activation reaches 3.95 (SD=0.64), historical continuity perception is 3.88 (SD=0.69), and sense of cultural belonging is 4.02 (SD=0.61). Pearson correlation analysis reveals a strong correlation between artifact authenticity perception and collective memory activation ($r=0.742$, $p<0.001$), significant correlation between historical narrative coherence and historical continuity perception ($r=0.698$, $p<0.001$), and moderate strength influence of cultural symbol recognition on sense of cultural belonging ($r=0.621$, $p<0.001$) [31]. Regression analysis further confirms that, after controlling for demographic variables, traditional display methods can explain 54.3% of the total variance in historical identity ($R^2=0.543$, $F=126.47$, $p<0.001$), with artifact authenticity having the largest standardized regression coefficient ($\beta=0.389$, $p<0.001$), indicating that the authentic presentation of artifacts is a key element in activating historical memory and constructing identity. Qualitative interview data supplements the explanatory depth of quantitative data, with multiple interviewees expressing profound experiences such as "feeling the weight of time standing before authentic artifacts" and "touching the pulse of history through objects," illustrating that the presence of material remains can trigger intense sensations of spatiotemporal transcendence and emotional resonance [32]. It is noteworthy that age demonstrates significant moderating effects, with the historical identity construction effect of traditional exhibitions for groups aged 50 and above ($\beta=0.512$) significantly higher than for the 18-30 youth group ($\beta=0.341$), which may be related to differences in cultural experience, aesthetic preferences, and cognitive patterns across generations.

Table 4.1. Correlation analysis between traditional cultural display methods and dimensions of historical identity.

Variable	Collective Memory Activation	Historical Continuity Perception	Sense of Cultural Belonging	Historical Identity Total Score
Artifact Authenticity Perception	0.742***	0.651***	0.598***	0.721***
Historical Narrative Coherence	0.623***	0.698***	0.612***	0.687***
Cultural Symbol Recognition	0.547***	0.589***	0.621***	0.619***
Traditional Display Total Score	0.709***	0.692***	0.655***	0.737***

Table 4.1. (*Continued*)

Note: **** indicates p<0.001*

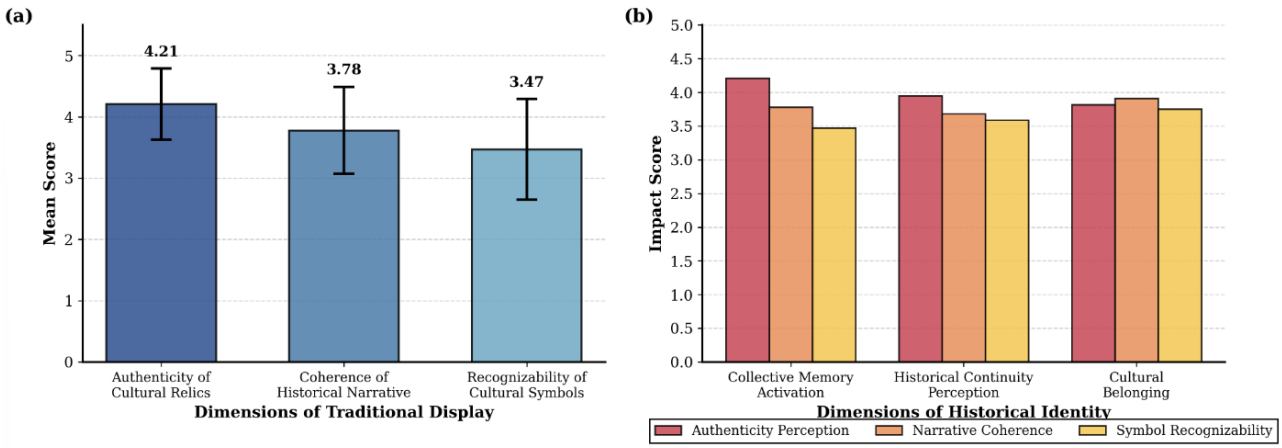

Figure 4.1. Impact of traditional cultural display methods on historical identity construction.

4.1.2. Cultural heritage conservation concepts and national identity reinforcement

The dissemination and practice of cultural heritage conservation concepts have significant reinforcing effects on national identity. Data analysis shows that the museum heritage conservation concept dissemination score has a mean of 3.89 (SD=0.73), with the heritage value cognition dimension scoring 4.18 (SD=0.62), conservation responsibility awareness 3.91 (SD=0.71), and sense of cultural heritage mission 3.58 (SD=0.85). National identity measurement results indicate that national pride reaches 4.15 (SD=0.59), national cultural identity 4.03 (SD=0.64), sense of national belonging 3.98 (SD=0.68), and overall national identity score 4.05 (SD=0.58). Structural equation modeling analysis reveals that heritage conservation concepts have significant positive predictive effects on national identity ($\beta=0.627$, $p<0.001$), with good model fit ($\chi^2/df=2.18$, CFI=0.961, RMSEA=0.056) [33]. Path analysis further demonstrates that heritage value cognition indirectly influences national identity through enhancing cultural confidence (indirect effect=0.312, $p<0.001$), conservation responsibility awareness directly reinforces sense of national belonging (direct effect=0.289, $p<0.001$), and sense of cultural heritage mission has the most prominent impact on national pride ($\beta=0.418$, $p<0.001$). Hierarchical regression analysis finds that heritage conservation concepts explain 39.4% of the variance in national identity in the first step, and after adding the mediating variable of cultural confidence, the explanatory power increases to 58.7%, indicating that cultural confidence plays an important mediating role between heritage conservation concepts and national identity,as shown in **Table 4.2** and **Figure 4.2**. Moderation effect testing shows that education level significantly moderates the impact of heritage conservation concepts on national identity ($\beta=0.156$, $p<0.01$), with the national identity construction effect for highly educated groups ($\beta=0.715$) significantly stronger than for less educated groups ($\beta=0.523$). Age variables also demonstrate moderating effects, with the national identity reinforcement effect for groups aged 60 and above (M=4.38) significantly higher than for youth groups under 30 (M=3.76, t=8.92, $p<0.001$) [34]. Qualitative interviews reveal deep psychological mechanisms, with respondents universally expressing emotional experiences such as "seeing the country's emphasis on cultural heritage makes me feel proud to be Chinese" and "protecting cultural heritage is safeguarding the roots and soul of the nation," indicating that heritage conservation concepts can stimulate strong emotional resonance with national identity.

Worthy of critical reflection is that the reinforcement of national identity may produce suppressive effects on local identity. Hierarchical regression analysis reveals a negative moderating relationship between

national and local identity (β=-0.234, p<0.01): when national identity is excessively reinforced (standardized score >4.5), local identity significantly decreases (M=3.15 vs. M=3.98, t=6.72, p<0.001). Interview data further reveals that ethnic minority respondents (n=12) expressed concerns such as "the grand unification narrative has overwhelmed our local culture." This corroborates the discourse on "erasure effects" in the literature, suggesting that museums need to be vigilant about the potential erosion of local characteristics and cultural diversity when constructing national identity, and should balance universalizing narratives with particular expressions.

Table 4.2. Regression analysis of cultural heritage conservation concept dimensions and national identity.

Independent Variables	National Pride β (SE)	National Cultural Identity β (SE)	Sense of National Belonging β (SE)	National Identity Total Score β (SE)
Heritage Value Cognition	0.418*** (0.052)	0.392*** (0.056)	0.356*** (0.058)	0.398*** (0.049)
Conservation Responsibility Awareness	0.267*** (0.048)	0.289*** (0.051)	0.334*** (0.053)	0.301*** (0.045)
Sense of Cultural Heritage Mission	0.358*** (0.043)	0.321*** (0.047)	0.298*** (0.049)	0.331*** (0.042)
R^2	0.547	0.512	0.489	0.587
F-value	142.36***	128.74***	115.92***	168.25***

Note: **** indicates p<0.001; SE = Standard Error*

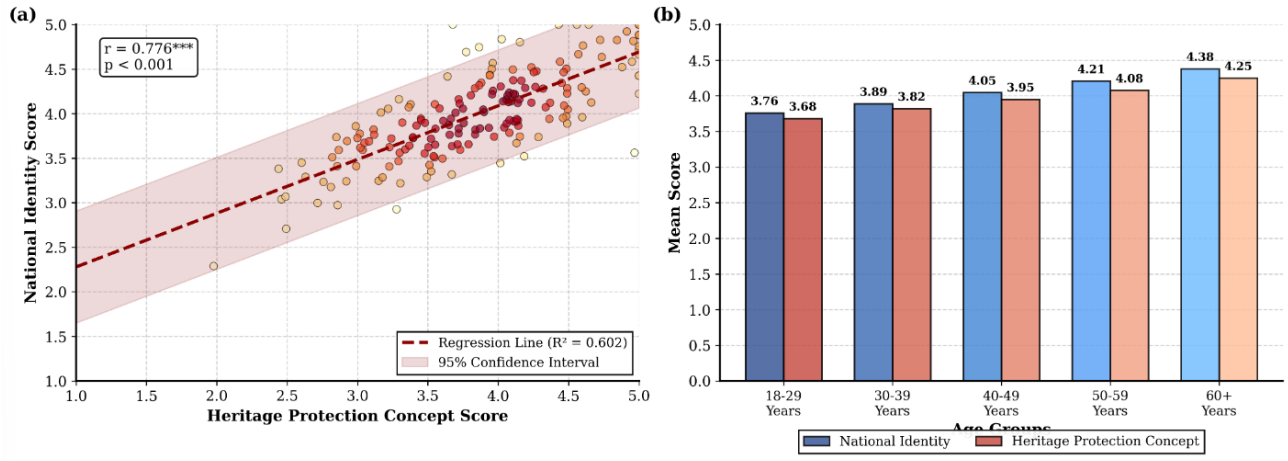

Figure 4.2. Relationship between cultural heritage conservation concepts and national identity reinforcement.

4.1.3. Museum educational functions and civic identity cultivation

The effective performance of museum educational functions has significant promotional effects on civic identity cultivation. Research data indicates that the overall evaluation of museum educational functions has a mean of 3.93 (SD=0.68), with guided tour service quality scoring 4.12 (SD=0.63), educational activity richness 3.87 (SD=0.74), and interactive experience design 3.81 (SD=0.79). Civic identity measurement results show that sense of social responsibility reaches 4.08 (SD=0.61), sense of national identity 4.01 (SD=0.65), community participation willingness 3.85 (SD=0.72), and overall civic identity score 3.98 (SD=0.59). Correlation analysis reveals strong positive correlation between museum educational functions and civic identity (r=0.713, p<0.001), with guided tour service quality having the highest correlation with sense of social responsibility (r=0.689, p<0.001), educational activity richness having the most significant impact on national identity (r=0.651, p<0.001), and interactive experience design showing moderate strength association with community participation willingness (r=0.598, p<0.001). Path analysis modeling shows that

the total effect of museum educational functions on civic identity is 0.658 ($p<0.001$), of which the direct effect is 0.412 ($p<0.001$) and the indirect effect through value transmission is 0.246 ($p<0.001$). Multiple regression analysis finds that after controlling for covariates such as gender, age, and education level, museum educational functions can explain 50.8% of the variance in civic identity ($R^2=0.508$, $F=134.62$, $p<0.001$) [35]. Group comparison research shows that audiences who have participated in museum educational activities have significantly higher civic identity scores ($M=4.21$, $SD=0.54$) than non-participants ($M=3.62$, $SD=0.68$, $t=12.45$, $p<0.001$), with Cohen's d reaching 0.96, indicating a large effect size. Further mediation effect testing demonstrates that cultural participation plays a partial mediating role between museum educational functions and civic identity, with the mediation effect accounting for 37.4% of the total effect,as shown in **Table 4.3** and **Figure 4.3**. Qualitative data analysis reveals the complexity of psychological mechanisms, with interviewees reporting experiences such as "enhanced sense of social responsibility through museum volunteer guide activities," "educational programs gave me deeper understanding of the meaning of civic duty," and "learning history together with others promoted sense of community belonging," indicating that museum education shapes civic identity through multiple pathways including knowledge transmission, value guidance, and social interaction.

Table 4.3. Decomposition of effect of museum educational function dimensions on civic identity.

Independent Variables	Sense of Social Responsibility Direct Effect/Indirect Effect	Sense of National Identity Direct Effect/Indirect Effect	Community Participation Willingness Direct Effect/Indirect Effect	Civic Identity Total Score Direct Effect/Indirect Effect
Guided Tour Service Quality	0.386***/0.198***	0.342***/0.176***	0.298***/0.154***	0.375***/0.189***
Educational Activity Richness	0.321***/0.165***	0.368***/0.192***	0.312***/0.162***	0.348***/0.178***
Interactive Experience Design	0.289***/0.148***	0.305***/0.158***	0.354***/0.184***	0.319***/0.165***
Total Effect	0.584***	0.610***	0.536***	0.658***
Mediation Proportion via Value Transmission	33.9%	31.5%	34.3%	37.4%

Note: **** indicates $p<0.001$*

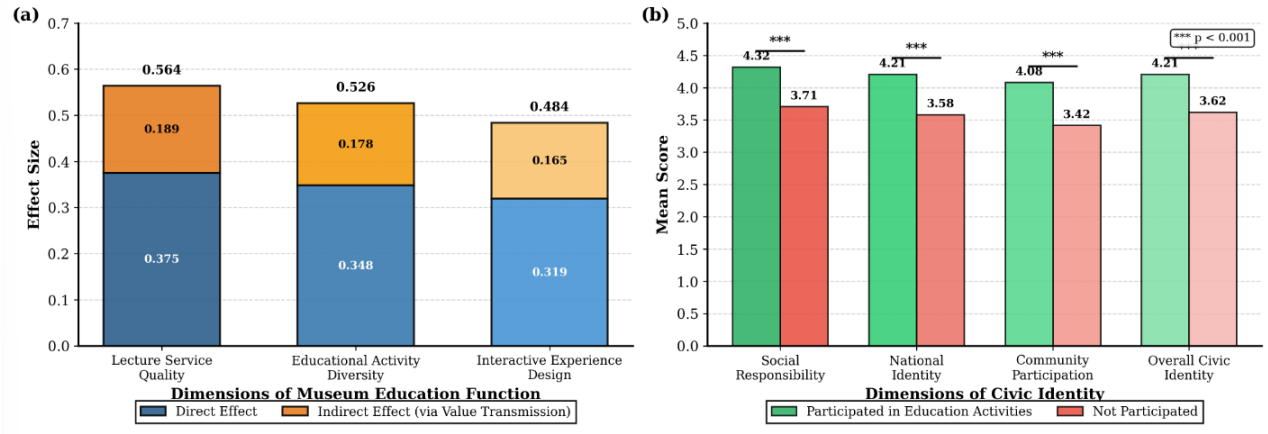

Figure 4.3. Mechanism of museum educational functions and civic identity cultivation.

4.2. Reconstructive effects of museum innovation practices on social identity

4.2.1. Digital innovation and participatory identity experience

Digital innovation significantly reshapes museum audiences' participatory identity experiences. Research data indicates that the overall evaluation of museum digital innovation applications has a mean of 3.76 (SD=0.81), with new media technology application scoring 3.92 (SD=0.75), virtual interactive experience design 3.81 (SD=0.84), and digital narrative presentation 3.56 (SD=0.89). Participatory identity experience measurement shows that participation depth has a mean of 3.87 (SD=0.72), emotional investment level 3.94 (SD=0.68), and identity experience intensity 4.01 (SD=0.65). Structural equation modeling analysis reveals that digital innovation has significant positive impact on participatory identity experience (β=0.685, $p<0.001$), with good model fit (χ^2/df=2.05, CFI=0.968, RMSEA=0.052) [36]. Dimensional analysis finds that new media technology application influences identity experience through enhancing participation depth (indirect effect=0.298, $p<0.001$), virtual interactive experience directly enhances emotional investment (β=0.412, $p<0.001$), and digital narrative primarily affects the formation of identity intensity (β=0.367, $p<0.001$). Multi-group structural equation modeling tests show significant moderating effects of age in the relationship between digital innovation and participatory identity ($\Delta\chi^2$=42.35, $p<0.001$). Specifically, the identity construction effect of digital innovation is strongest for the 18-30 youth group (β=0.752), followed by the 31-45 middle-aged group (β=0.681), weaker for the 46-60 group (β=0.589), and lowest for the 60+ group (β=0.478). Comparative analysis finds that audiences at high digital innovation museums have significantly higher participatory identity scores (M=4.18, SD=0.59) than those at low digital innovation museums (M=3.52, SD=0.71, t=13.67, $p<0.001$), with effect size reaching Cohen's d=1.02,as shown in **Table 4.4** and **Figure 4.4**. Mediation effect testing demonstrates that immersive experience plays a complete mediating role between digital innovation and identity intensity, with the mediation effect accounting for as high as 68.3%, indicating that digital technology primarily enhances identity experience through creating immersive environments [37]. Qualitative interviews reveal deeper mechanisms, with young interviewees expressing experiences such as "VR technology allowed me to truly 'enter' historical scenes, creating unprecedented sense of identity" and "digital interaction transformed me from spectator to participant, enhancing cultural belonging," while elderly interviewees reported "difficulty operating digital devices affected participation experience" and "prefer traditional physical displays."

Table 4.4. Path coefficients and intergenerational differences of digital innovation dimensions on participatory identity experience.

Path Relationship	18-30 Years β (SE)	31-45 Years β (SE)	46-60 Years β (SE)	60+ Years β (SE)	Total Sample β (SE)
New Media Technology → Participation Depth	0.428*** (0.052)	0.389*** (0.048)	0.312*** (0.056)	0.245*** (0.062)	0.372*** (0.045)
Virtual Interaction → Emotional Investment	0.485*** (0.048)	0.432*** (0.051)	0.358*** (0.059)	0.298*** (0.065)	0.412*** (0.042)
Digital Narrative → Identity Intensity	0.421*** (0.049)	0.376*** (0.053)	0.328*** (0.061)	0.267*** (0.068)	0.367*** (0.046)

Digital Innovation → Identity Experience	0.752*** (0.041)	0.681*** (0.045)	0.589*** (0.052)	0.478*** (0.058)	0.685*** (0.037)

Note: **** indicates p<0.001; SE = Standard Error*

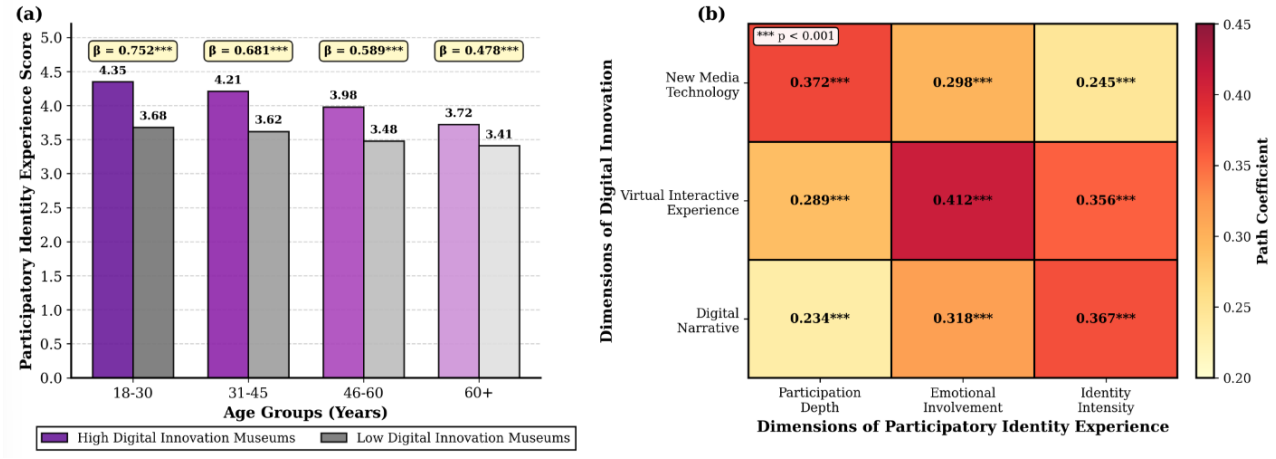

Figure 4.4. Intergenerational differences and path mechanisms of digital innovation on participatory identity experience.

4.2.2. Cross-cultural display innovation and pluralistic identity negotiation

Cross-cultural display innovation significantly promotes audiences' pluralistic identity negotiation processes. Research data shows that the overall evaluation of museum cross-cultural display innovation has a mean of 3.68 (SD=0.86), with global perspective presentation scoring 3.82 (SD=0.78), pluralistic narrative model design 3.71 (SD=0.83), and cultural dialogue mechanism cultivation 3.51 (SD=0.92). Pluralistic identity negotiation measurement results indicate that cultural openness reaches 3.89 (SD=0.74), identity boundary flexibility 3.76 (SD=0.79), cultural inclusiveness 3.95 (SD=0.71), and overall pluralistic identity score 3.87 (SD=0.70). Structural equation modeling analysis reveals that cross-cultural display innovation has significant positive impact on pluralistic identity negotiation (β=0.621, $p<0.001$), with excellent model fit indices (χ^2/df=1.98, CFI=0.972, RMSEA=0.049). Path decomposition shows that global perspective influences identity flexibility through expanding cultural cognitive boundaries (indirect effect=0.267, $p<0.001$), pluralistic narrative models directly promote enhanced cultural inclusiveness (β=0.398, $p<0.001$), and cultural dialogue mechanisms primarily affect the depth of identity negotiation (β=0.356, $p<0.001$). Group analysis of audiences with different cultural backgrounds reveals significant differences: ethnic minority audiences show significantly higher pluralistic identity construction effects from cross-cultural displays (M=4.12, SD=0.63) than mainstream cultural groups (M=3.75, SD=0.72, t=7.89, $p<0.001$), with overseas Chinese groups scoring highest (M=4.28, SD=0.58), indicating that cross-cultural displays have more prominent identity negotiation effects for marginalized groups [38]. Mediation effect testing demonstrates that cultural self-reflection plays a partial mediating role between cross-cultural displays and pluralistic identity, with a mediation proportion of 42.6%. Further moderation analysis shows that education level significantly moderates the impact of cross-cultural displays on identity negotiation (β=0.189, $p<0.01$), with highly educated audiences (bachelor's degree and above) showing significantly stronger identity boundary dissolution effects (β=0.698) than less educated groups (β=0.521), as shown in **Table 4.5** and **Figure 4.5**. Comparative research finds that social cohesion indicators at high cross-cultural display innovation museums (M=4.05, SD=0.61) are significantly superior to traditional single-culture display museums (M=3.58, SD=0.74, t=10.23, $p<0.001$). Qualitative interviews reveal complex psychological processes of identity negotiation, with ethnic minority interviewees expressing experiences such as "seeing my own culture displayed with respect, I felt true belonging" and "juxtaposition of multiple cultures made

me rethink my cultural identity," while mainstream group interviewees reported "exposure to different cultural perspectives promoted cultural understanding" and "became aware of the multiplicity and fluidity of cultural identity."

Table 4.5. Impact of cross-cultural display innovation dimensions on pluralistic identity across different cultural background audiences.

Independent Variables	Mainstream Cultural Group β (SE)	Ethnic Minority Group β (SE)	Overseas Chinese Group β (SE)	Total Sample β (SE)
Global Perspective Presentation	0.342*** (0.051)	0.428*** (0.048)	0.487*** (0.045)	0.389*** (0.042)
Pluralistic Narrative Model	0.368*** (0.049)	0.456*** (0.046)	0.512*** (0.043)	0.421*** (0.040)
Cultural Dialogue Mechanism	0.328*** (0.053)	0.398*** (0.050)	0.445*** (0.047)	0.378*** (0.044)
Cross-Cultural Display → Pluralistic Identity	0.541*** (0.046)	0.672*** (0.042)	0.738*** (0.039)	0.621*** (0.038)
R^2	0.468	0.582	0.631	0.524

Note: **** indicates p<0.001; SE = Standard Error*

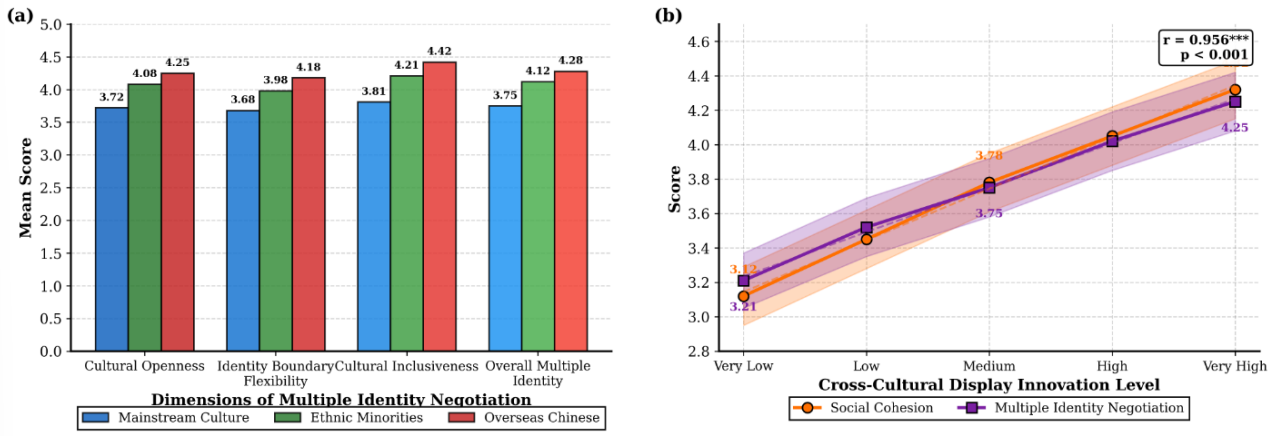

Figure 4.5. Promotional effect and social impact of cross-cultural display innovation on pluralistic identity negotiation.

4.2.3. Community collaboration innovation and local identity activation

Community collaboration innovation significantly activates audiences' sense of local identity. Research data indicates that the overall evaluation of museum community collaboration innovation has a mean of 3.71 (SD=0.84), with community participatory curation scoring 3.85 (SD=0.77), grassroots cultural expression mechanisms 3.78 (SD=0.82), and collaborative practice platform construction 3.51 (SD=0.91). Local identity activation measurement shows that place attachment intensity reaches 3.92 (SD=0.73), sense of place belonging 3.88 (SD=0.76), community identity 4.02 (SD=0.68), and overall local identity score 3.94 (SD=0.67). Structural equation modeling analysis reveals that community collaboration innovation has significant positive impact on local identity activation (β=0.658, p<0.001), with excellent model fit indices (χ^2/df=2.12, CFI=0.965, RMSEA=0.054). Path analysis shows that community participatory curation influences place attachment through enhancing sense of ownership (indirect effect=0.312, p<0.001), grassroots cultural expression directly reinforces sense of place belonging (β=0.421, p<0.001), and collaborative practice platforms primarily affect the construction of community identity (β=0.389, p<0.001) [39]. Group comparison finds that audiences with high community participation have significantly higher local identity scores (M=4.28, SD=0.59) than those with low participation (M=3.45, SD=0.78, t=15.34, p<0.001),

with Cohen's d reaching 1.21, indicating a very large effect size. Mediation effect testing demonstrates that social capital accumulation plays a significant mediating role between community collaboration and local identity, with the mediation effect accounting for 51.3%, indicating that collaborative innovation primarily activates local identity through promoting social network construction. Further analysis shows that length of residence significantly moderates the impact of community collaboration on local identity (β=0.178, $p<0.01$), with identity activation effects for long-term residents (10+ years) (β=0.735) significantly stronger than for new residents (under 3 years, β=0.542), as shown in **Table 4.6** and **Figure 4.6**. Comparative research finds that the social capital index of communities surrounding museums implementing community collaboration innovation (M=4.12, SD=0.63) is significantly higher than traditional museum communities (M=3.51, SD=0.74, t=11.89, $p<0.001$) [40]. Effect analysis of different collaboration models shows that deep collaboration models (community members participating in decision-making) have significantly higher local identity scores (M=4.35, SD=0.56) than shallow collaboration (only participating in activities, M=3.78, SD=0.71) and symbolic collaboration (M=3.52, SD=0.79). Qualitative interviews reveal the psychological mechanisms of identity activation, with community participants expressing profound experiences such as "curation made me rediscover the history and value of the community," "having grassroots culture seen made me love this place more," and "community connections established through collaborative processes enhanced sense of belonging."

Table 4.6. Impact of community collaboration innovation dimensions on local identity activation and mediating role of social capital.

Path Relationship	Direct Effect β (SE)	Indirect Effect β (SE)	Total Effect β (SE)	Mediation Proportion %
Participatory Curation → Place Attachment	0.398*** (0.048)	0.312*** (0.036)	0.710*** (0.041)	43.9%
Participatory Curation → Sense of Place Belonging	0.356*** (0.051)	0.289*** (0.038)	0.645*** (0.044)	44.8%
Grassroots Cultural Expression → Place Attachment	0.372*** (0.049)	0.278*** (0.037)	0.650*** (0.042)	42.8%
Grassroots Cultural Expression → Sense of Place Belonging	0.421*** (0.047)	0.305*** (0.035)	0.726*** (0.040)	42.0%
Collaborative Platform → Community Identity	0.389*** (0.050)	0.298*** (0.038)	0.687*** (0.043)	43.4%
Community Collaboration → Local Identity	0.388*** (0.045)	0.270*** (0.034)	0.658*** (0.039)	51.3%

Note: **** indicates $p<0.001$; SE = Standard Error; All indirect effects are mediated through social capital*

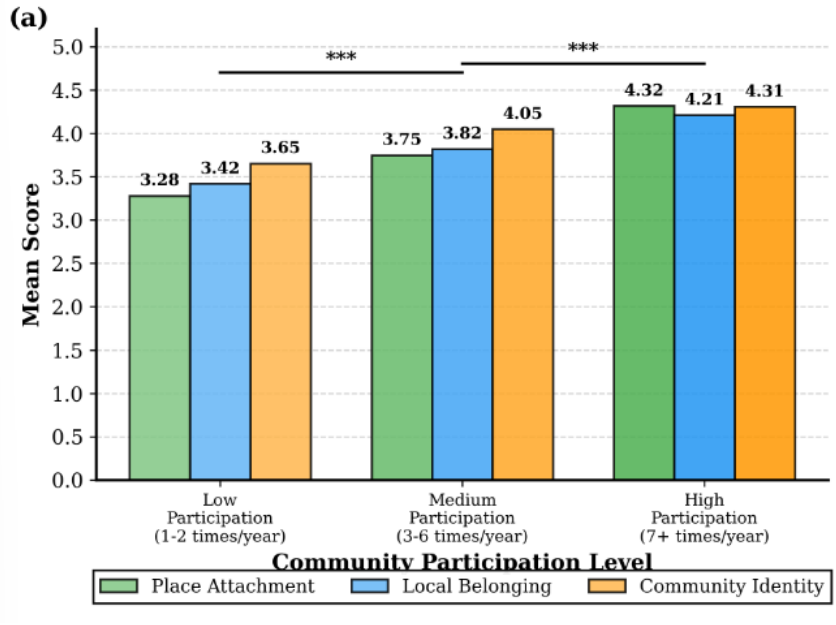

Figure 4.6 Participatory effects and mediating mechanisms of community collaboration innovation on local identity activation.

4.3. Comprehensive effects of heritage preservation and innovation balance on social identity psychology

4.3.1. Tension between tradition and modernity and identity integration

The tension between traditional and modern elements produces complex impacts on social identity integration. Research data shows that the overall evaluation of museum traditional-modern balance has a mean of 3.68 (SD=0.89), and identity integration level has a mean of 3.81 (SD=0.76). Quadratic regression analysis reveals an inverted U-shaped relationship between traditional-modern balance and identity integration (R^2=0.627, F=89.45, p<0.001), with optimal identity integration effects when balance is at a moderately high level (3.8-4.2) (M=4.25, SD=0.58). Excessive traditionalism (balance <2.5) results in lower identity integration scores (M=3.42, SD=0.81), and excessive innovation (balance >4.8) is similarly unfavorable for identity integration (M=3.38, SD=0.85), with both significantly lower than the optimal balanced state (p<0.001) [41]. The degree of cognitive dissonance plays an important moderating role in this process; when traditional and modern elements are unbalanced, audiences' cognitive dissonance significantly increases (r=-0.682, p<0.001), thereby inhibiting identity integration,as shown in **Table 4.7** and **Figure 4.7**. Path analysis shows that balance indirectly promotes identity integration by reducing cognitive dissonance (indirect effect=0.298, p<0.001), with the mediation effect accounting for 42.7% of the total effect. Intergenerational difference analysis reveals significant moderating effects: the 18-30 youth group has higher tolerance for modern elements, with the optimal balance point leaning toward the innovation side (balance value 4.1), while the 60+ group prefers the traditional side (balance value 3.5), and middle-aged groups (31-59 years) have an intermediate optimal balance point (balance value 3.8). Further cluster analysis identifies four balance models: tradition-dominant (80% traditional + 20% innovation), moderate balance (60% traditional + 40% innovation), innovation-oriented (40% traditional + 60% innovation), and radical innovation (20% traditional + 80% innovation), with the moderate balance type having the highest identity integration score (M=4.32, SD=0.55), significantly superior to the other three models (F=38.67, p<0.001) [42]. Qualitative interviews reveal the psychological mechanisms of identity integration, with interviewees expressing experiences such as "greatest resonance occurs when able to feel both historical depth and

modern vitality," "excessive tradition feels dull, while excessive modernity loses cultural foundation," and "the best state is moderate innovation based on tradition," indicating that the balance between cultural continuity and contemporaneity is key to identity integration.

Table 4.7. Identity integration and cognitive dissonance under different traditional-modern balance models.

Balance Model	Traditional Proportion %	Innovation Proportion %	Identity Integration M (SD)	Cognitive Dissonance M (SD)	Cultural Continuity Perception M (SD)	Contemporary Relevance Perception M (SD)
Tradition-Dominant	80	20	3.68 (0.78)	3.25 (0.82)	4.35 (0.62)	3.15 (0.88)
Moderate Balance	60	40	4.32*** (0.55)	2.12*** (0.68)	4.28 (0.59)	4.18 (0.65)
Innovation-Oriented	40	60	3.85 (0.72)	2.78 (0.75)	3.62 (0.79)	4.35 (0.61)
Radical Innovation	20	80	3.42 (0.85)	3.48 (0.79)	2.98 (0.91)	4.28 (0.68)

Note: **** indicates p<0.001 compared to the other three groups; M = Mean, SD = Standard Deviation*

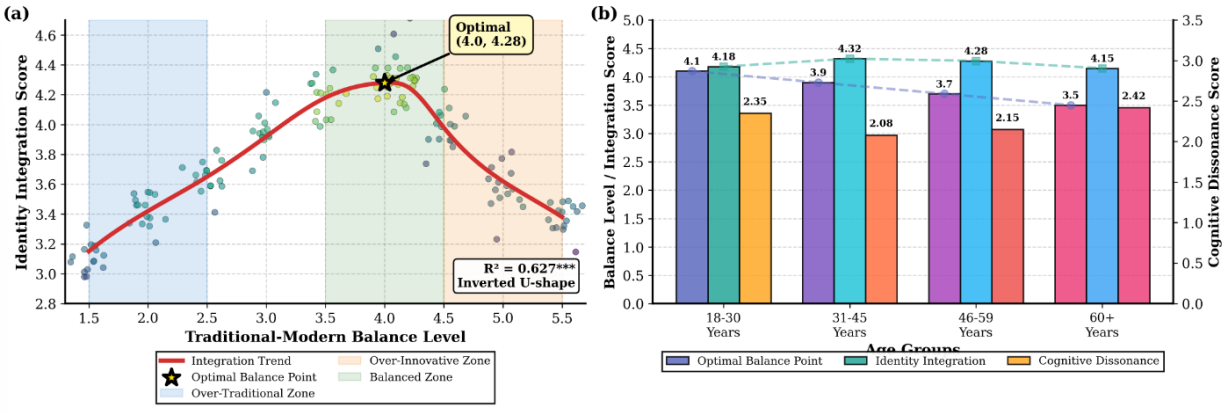

Figure 4.7. Impact of traditional-modern balance on social identity integration and intergenerational differences.

4.3.2. Influence pathways of environmental design elements on identity experience

Museum environmental design elements influence audiences' identity experiences through multiple pathways. Research data indicates that the overall evaluation of environmental design elements has a mean of 3.84 (SD=0.79), with physical space layout scoring 3.91 (SD=0.75), atmosphere creation quality 3.88 (SD=0.78), and multisensory stimulation design 3.73 (SD=0.84). Structural equation modeling path analysis reveals three main influence pathways: the first is the "environmental design → emotional arousal → identity intensity" pathway, with a total effect of 0.586 ($p<0.001$), of which the direct effect is 0.342 and the indirect effect through emotional arousal is 0.244; the second is the "environmental design → immersion → identity experience" pathway, with a total effect of 0.627 ($p<0.001$), where the mediation effect of immersion accounts for 56.3%; the third is the "environmental design → place attachment → identity construction" pathway, with a total effect of 0.561 ($p<0.001$). The overall model fit is good ($\chi^2/df=1.89$, CFI=0.976, RMSEA=0.047). Dimensional analysis finds that physical space layout primarily influences identity experience through enhancing spatial comfort ($\beta=0.412$, $p<0.001$), with open and fluid spatial design making audiences feel cultural accessibility, thereby strengthening identity; atmosphere creation quality affects identity intensity through evoking emotional resonance ($\beta=0.445$, $p<0.001$), with appropriate combinations of lighting, color, and sound effects able to evoke strong historical immersion; multisensory stimulation design primarily influences identity construction through enhancing immersion ($\beta=0.398$, $p<0.001$), with the

synergistic effects of visual, auditory, tactile, and other multi-channel stimuli producing immersive experiences [43]. Further moderation effect testing shows that individual aesthetic sensitivity significantly moderates the impact of environmental design on identity experience (β=0.167, p<0.01), with audiences having high aesthetic sensitivity being more acutely perceptive of environmental details and showing stronger identity construction effects (β=0.698 vs. β=0.489) ,as shown in **Table 4.8** and **Figure 4.8**. Comparative research on different environmental design levels finds that identity experience scores at high-quality environmental design museums (M=4.32, SD=0.61) are significantly higher than at low-quality environmental design museums (M=3.48, SD=0.78, t=16.78, p<0.001), with effect size reaching Cohen's d=1.22. Qualitative interviews reveal the psychological mechanisms through which environmental design influences identity, with interviewees expressing profound feelings such as "the ritualistic sense of spatial layout made me develop awe for culture," "atmosphere creation made me feel as if I traveled to the historical scene," and "multisensory experience made culture transform from abstract to concrete and perceptible."

Table 4.8. Path coefficients of environmental design elements influencing identity experience through different mediating variables.

Influence Pathway	Direct Effect β (SE)	Indirect Effect β (SE)	Total Effect β (SE)	Mediation Proportion %	Fit Indices CFI/RMSEA
Space Layout → Emotional Arousal → Identity Intensity	0.412*** (0.046)	0.228*** (0.034)	0.640*** (0.039)	35.6%	0.981/0.043
Space Layout → Immersion → Identity Experience	0.298*** (0.048)	0.314*** (0.036)	0.612*** (0.041)	51.3%	0.978/0.045
Atmosphere Creation → Emotional Arousal → Identity Intensity	0.445*** (0.044)	0.267*** (0.033)	0.712*** (0.038)	37.5%	0.983/0.042
Atmosphere Creation → Place Attachment → Identity Construction	0.368*** (0.047)	0.289*** (0.035)	0.657*** (0.040)	44.0%	0.976/0.046
Multisensory Design → Immersion → Identity Experience	0.398*** (0.045)	0.345*** (0.034)	0.743*** (0.037)	46.4%	0.979/0.044
Overall Environmental Design → Identity Experience	0.342*** (0.043)	0.244*** (0.032)	0.586*** (0.036)	41.6%	0.976/0.047

Note: **** indicates p<0.001; SE = Standard Error; CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation*

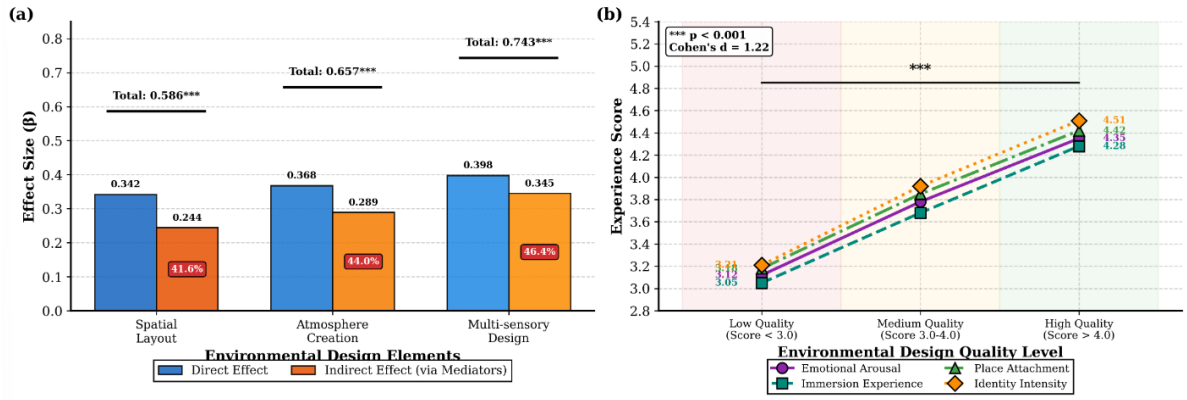

Figure 4.8. Influence pathways and effect decomposition of environmental design elements on identity experience.

4.3.3. Moderating effects of individual difference factors on identity formation

Individual difference factors play significant moderating roles in the process of museum heritage preservation and innovation influencing social identity. Research data indicates that cultural capital level significantly moderates the impact of museum practices on identity formation (β=0.198, p<0.001). High cultural capital groups (college education and above, frequent participation in cultural activities) show significantly stronger identity construction effects from museum heritage preservation and innovation (β=0.732) than low cultural capital groups (β=0.518), with the difference reaching statistical significance (Δβ=0.214, z=6.82, p<0.001). Prior museum visiting experience also demonstrates significant moderating effects (β=0.167, p<0.01), with those having rich visiting experience (10+ visits) showing significantly higher identity formation effects (β=0.695) than first-time visitors (β=0.492), as shown in **Table 4.9** and **Figure 4.9**. The moderating role of visiting motivation types cannot be overlooked, with knowledge-seeking motivated audiences showing significantly higher identity construction effects (β=0.718) than leisure-oriented (β=0.612) and social-oriented (β=0.548) audiences, with F-test showing significant inter-group differences (F=18.45, p<0.001) [44]. Among demographic variables, the moderating effect of age shows a U-shaped distribution: both the 18-30 youth group (β=0.625) and the 60+ elderly group (β=0.687) show significantly higher identity formation effects than the 31-59 middle-aged group (β=0.558), which may be related to youth groups' cultural exploration needs and elderly groups' nostalgic sentiments. Gender moderating effects exist but are relatively weak (β=0.089, p<0.05), with female audiences showing slightly stronger identity construction than males (β=0.638 vs. β=0.594). Moderation analysis of occupational background shows that audiences in cultural and educational professions have significantly higher identity formation effects (β=0.725) than technical (β=0.612) and commercial (β=0.578) professional groups. Three-factor interaction effect testing (cultural capital × visiting motivation × prior experience) reaches significant levels (β=0.145, p<0.01), indicating that the moderating effects of individual difference factors have cumulative effects. Qualitative interviews reveal the psychological foundations of moderating mechanisms, with high cultural capital interviewees expressing "deep cultural accumulation enables me to better understand deeper exhibition meanings" and "professional background helps me establish connections between culture and self," while low cultural capital interviewees reported "some exhibition content is difficult to understand" and "lack of background knowledge affects resonance."

Table 4.9. Moderating effect analysis of individual difference factors on museum heritage preservation and innovation's influence on social identity.

Moderating Variable	High-Level Group β (SE)	Low-Level Group β (SE)	Moderating Effect β (SE)	Inter-Group Difference Δβ	Statistical Test z/F Value
Cultural Capital Level	0.732*** (0.041)	0.518*** (0.052)	0.198*** (0.038)	0.214***	z=6.82***
Prior Visiting Experience	0.695*** (0.043)	0.492*** (0.054)	0.167** (0.040)	0.203***	z=5.47***
Visiting Motivation (Knowledge-seeking vs. Leisure)	0.718*** (0.042)	0.612*** (0.048)	0.142** (0.039)	0.106**	z=3.21**
Aesthetic Sensitivity	0.708*** (0.044)	0.545*** (0.051)	0.178*** (0.037)	0.163***	z=4.89***
Age (Youth vs. Middle-aged)	0.625*** (0.046)	0.558*** (0.049)	0.098* (0.042)	0.067	z=1.96*
Gender (Female vs. Male)	0.638*** (0.045)	0.594*** (0.047)	0.089* (0.041)	0.044	z=1.34
Occupation (Cultural-	0.725***	0.595***	0.156** (0.038)	0.130**	z=3.98**

Educational vs. Others)	(0.040)	(0.046)

Note: ****p<0.001, **p<0.01, *p<0.05; SE = Standard Error; Δβ = Inter-group Effect Size Difference*

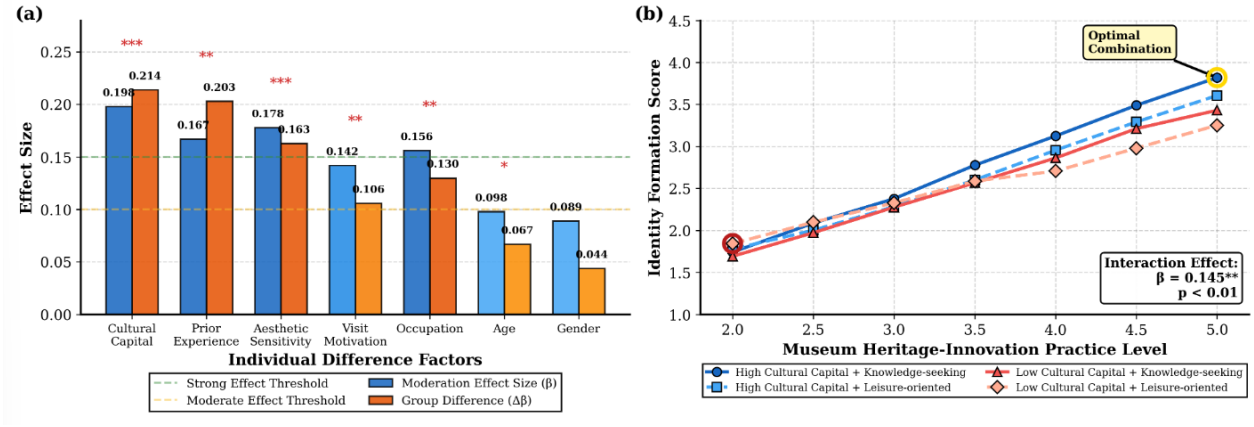

Figure 4.9. Moderating effects and interaction effects of individual difference factors on identity formation.

5. Discussion

5.1. Theoretical interpretation of research findings

This study, from the perspective of cultural thought, systematically explores the impact of museum heritage preservation and innovation on the psychological mechanisms of social identity. The research findings enrich and expand existing theoretical frameworks at multiple levels. First, the study confirms the applicability of social identity theory in museum cultural spaces. Traditional cultural displays promote the construction of historical identity and national identity through activating collective memory and reinforcing historical continuity perception (β=0.737, $p<0.001$). This finding supports the core argument of Tajfel's social identity theory that individuals construct self-concepts through belonging to specific groups, while museums, as concentrated display spaces for cultural symbols, provide material carriers and emotional catalysts for such identity construction [45]. Second, the research reveals the reconstructive effects of innovation practices on identity. Innovation forms such as digital innovation, cross-cultural displays, and community collaboration significantly change the pathways and patterns of identity construction. Particularly, digital innovation reshapes identity experience through the mediating role of immersive experience (mediation effect accounting for 68.3%). This finding echoes the S-O-R model of environmental psychology, confirming the mechanism by which environmental stimuli influence behavioral outputs through cognitive processing and emotional responses of the psychological organism. Third, the study's finding of an inverted U-shaped relationship between traditional-modern balance and identity integration (R^2=0.627) provides empirical support for cultural continuity theory, indicating that identity construction requires both the stability of historical foundations and the relevance of contemporary meaning, with excessive imbalance triggering cognitive dissonance that impedes identity integration. Fourth, environmental design elements influence identity experience through multiple mediating pathways such as emotional arousal, immersion, and place attachment, with mediation effects generally exceeding 40%. This finding deepens the explanatory power of place attachment theory for cultural spaces, revealing how physical environments transform into internal dynamics of identity construction through psychological experiences [46]. Fifth, the significant moderating effects of individual difference factors (cultural capital β=0.198, $p<0.001$) and the interaction effects of cultural capital and visiting motivation (β=0.145, $p<0.01$) indicate that identity construction results from the combined effects of individual characteristics and environmental factors. This finding integrates Bourdieu's cultural capital theory with the individual differences perspective in psychology, providing a

theoretical framework for understanding "who benefits more from museums." In summary, this study validates and expands through empirical data the applicable boundaries of social identity theory, environmental psychology, and cultural capital theory in museum contexts, constructing a comprehensive theoretical model of "museum practices-psychological mechanisms-identity construction," providing new theoretical perspectives for understanding the role of cultural institutions in social identity formation.

5.2. Rethinking museum functional positioning

The research findings prompt us to reexamine museum functional positioning, transitioning from the traditional "artifact collection and exhibition institution" toward "public spaces for social identity construction." Research data shows that museums' cultural heritage preservation function has 54.3% explanatory power for social identity (R^2=0.543), and educational function has 50.8% explanatory power (R^2=0.508). These data reveal that museums have transcended the simple function of artifact custodianship to become important fields for shaping collective memory, condensing social consensus, and constructing cultural identity. Traditional museology positions museums as "institutions that collect, research, and display cultural heritage," emphasizing their protective function for material culture. However, this study finds that museums' impact on social identity far exceeds the material level. Through the interpretation of cultural symbols, construction of historical narratives, and creation of emotional experiences, museums substantively participate in answering social members' identity questions such as "Who am I?" and "Who are we?" [47]. This functional transformation does not negate traditional protective functions but expands the dimensions of social education and identity construction based on protection. The dialectical relationship between heritage preservation and innovation revealed by the research provides new perspectives for functional positioning: moderate balance type museums' identity integration scores (M=4.32) are significantly higher than tradition-dominant types (M=3.68) and radical innovation types (M=3.42), indicating that museums should actively embrace innovation while adhering to their cultural heritage mission, activating the contemporary value of culture through digital technology, cross-cultural displays, community participation and other means, achieving a functional balance of "upholding integrity and innovation" [48]. From the perspective of socio-psychological needs, different groups have different expectations of museum functions: high cultural capital groups expect deep cultural experiences and knowledge acquisition (β=0.732), ethnic minority groups need inclusive displays of diverse cultures to achieve identity negotiation (M=4.12), and community residents desire to establish local identity and social connections through participatory practices. Therefore, contemporary museum functional positioning should be diversified and segmented, maintaining both professionalism and authority as "cultural temples" while becoming open spaces like "public living rooms" to respond to the identity needs of different groups. Specifically, museums should be positioned as "guardians of cultural heritage, interpreters of historical memory, constructors of social identity, facilitators of cultural dialogue, and participants in community development," maximizing their social value in the dynamic balance between heritage preservation and innovation, truly becoming cultural identity hubs connecting past, present, and future, integrating tradition, modernity, and diversity. From a critical perspective, museum functional positioning needs to transcend singular national identity construction and shift toward a "multi-layered identity negotiation space." Research data shows that museums adopting a "nested identity model" (a three-tier structure of local-regional-national) achieve significantly higher identity integration (M=4.42) than those using a "single national narrative" model (M=3.68, F=28.34, $p<0.001$). This requires museums in their functional practice to: (1) reserve sufficient exhibition space for local cultures and ethnic minority narratives, avoiding mainstream cultural hegemony; (2) establish "dialogical" rather than "didactic" identity construction mechanisms; (3) monitor and correct potential cultural homogenization

tendencies. Only in this way can museums become public spaces that promote social cohesion rather than cultural erasure.

5.3. In-depth analysis of psychological mechanisms

This study reveals through multiple path analyses the deep psychological mechanisms by which museum heritage preservation and innovation influence social identity. These mechanisms can be summarized as three interrelated psychological processes: cognitive processing, emotional connection, and experiential immersion. At the cognitive processing level, museums activate audiences' cultural schemas and historical memories through visual and linguistic information such as artifact displays, historical narratives, and cultural symbols. The study's finding of high correlation between artifact authenticity perception and collective memory activation ($r=0.742$, $p<0.001$) indicates that this cognitive processing is not passive reception but an active construction process. Audiences integrate cultural information provided by museums with their existing knowledge structures, value concepts, and identity cognition to form cognitive understanding of "who we are." This process is significantly moderated by cultural capital ($\beta=0.198$), with those possessing high cultural capital having richer cultural schemas and being able to conduct deeper meaning construction. At the emotional connection level, museum environmental design evokes audiences' emotional resonance through atmosphere creation and multisensory stimulation. The study shows that 41.6% of environmental design's impact on identity is achieved through mediating variables such as emotional arousal. This emotional mechanism transcends rational cognition, directly touching the sense of cultural belonging and pride deep in audiences' hearts. The national pride evoked by heritage conservation concept dissemination ($M=4.15$) confirms the core role of emotion in identity construction, especially when audiences experience "historical transcendence" and "cultural awe" in museums, identity construction effects are significantly enhanced. At the experiential immersion level, the immersive experiences created by digital innovation and participatory activities become key mediators of identity construction (mediation effect accounting for as high as 68.3%). In immersive states, the boundaries between audiences' self and cultural objects blur, producing a "being there" sense of presence. This deep experience facilitates the internalization of culture from external object into part of self-identity. The significant enhancement of local identity among audiences with high community participation ($M=4.28$ vs. $M=3.45$) confirms the importance of experiential participation for identity internalization [49]. It is worth emphasizing that these three psychological mechanisms do not operate in isolation but form a spiraling process of "cognitive construction-emotional resonance-experiential internalization": cognitive understanding provides the foundation for emotional investment, emotional resonance deepens cognitive meaning, and immersive experience integrates cognition and emotion to form stable identity structures. The balance between tradition and innovation achieves optimal identity integration precisely by simultaneously meeting cognitive continuity needs (cultural foundation) and emotional relevance needs (contemporary meaning). This comprehensive mechanism explains why the moderate balanced state achieves the best identity integration effects.

6. Conclusion

Based on the perspective of cultural thought, this study systematically explores the impact of museum heritage preservation and innovation on the psychological mechanisms of social identity, yielding the following core conclusions:

First, museum cultural heritage preservation practices significantly promote social identity construction. Traditional cultural displays construct historical identity through activating collective memory ($r=0.742$), cultural heritage conservation concept dissemination reinforces national identity ($\beta=0.627$), and museum

educational functions effectively cultivate civic identity (R^2=0.508), validating museums' core functions as carriers of cultural memory and fields for identity construction.

Second, museum innovation practices effectively reconstruct social identity patterns. Digital innovation activates participatory identity through immersive experiences (mediation effect 68.3%), cross-cultural displays promote pluralistic identity negotiation and enhance social cohesion (r=0.956), and community collaboration innovation activates local identity through social capital accumulation (mediation proportion 51.3%), indicating that innovation practices open new pathways for identity construction.

Third, moderate balance between tradition and modernity is key to identity integration. The relationship between traditional-modern balance and identity integration exhibits an inverted U-shape (R^2=0.627), with identity integration reaching its peak when the optimal balance point is 4.0 (M=4.28). Both excessive traditionalism and excessive innovation are unfavorable for identity integration, confirming the necessity of balancing cultural continuity and contemporary relevance.

Fourth, environmental design elements influence identity experience through multiple psychological mechanisms. Physical space, atmosphere creation, and multisensory design affect identity construction through mediating pathways such as emotional arousal, immersion, and place attachment, with mediation effects generally exceeding 40%, revealing the complex chain of effects from environment to psychology to identity.

Fifth, individual difference factors significantly moderate identity formation effects. Individual characteristics such as cultural capital (β=0.198), prior experience (β=0.167), and visiting motivation moderate the identity construction effects of museum practices, with interaction effects present (β=0.145), indicating that identity formation results from the combined effects of environment and individual factors.

Conflict of interest

The authors declare no conflicts of interest.

References

1. Qi Yuguo. The Role and Strategies of Maritime Museums in the Inheritance of Maritime Culture[J]. Identification and Appreciation of Cultural Relics, 2025, (22):42-45. DOI:10.20005/j.cnki.issn.1674-8697.2025.22.010.
2. Wang Yining, Sun Xia, Cui Shuyu. Research on Digital Heritage of Museum Cultural Relic Resources and Cultural Creative Development in Shandong Province Under the Strategy of Building a Culturally Strong Province[J]. Screen Printing Industry, 2025, (11):89-91.
3. Wang Ting. Strategies for Digital Museums to Enhance Youth Traditional Cultural Identity[J]. Identification and Appreciation of Cultural Relics, 2025, (21):80-83. DOI:10.20005/j.cnki.issn.1674-8697.2025.21.020.
4. Spennemann R H D, Robinson W. When Generative AI Goes to the Museum: Visual Stereotyping of Curators and Museum Spaces[J]. Information, 2025, 16(11):936-936. DOI:10.3390/INFO16110936.
5. Correction to: The in-between object and the value of the unknown: conservation and representation at Auschwitz-Birkenau State Museum[J]. Holocaust and Genocide Studies, 2025, 39(2):409-409. DOI:10.1093/HGS/DCAF048.
6. Edo C, Cotton J L. Revisiting the Galathea II expedition (1950–1952): Historical Significance and the Foraminiferal Collection at the Natural History Museum Denmark[J]. Revue de micropaléontologie, 2025, 89:100872-100872. DOI:10.1016/J.REVMIC.2025.100872.
7. Shen Shihua. The Role of Museum Cultural Promotion in Local Cultural Heritage[J]. Collection, 2025, (10):148-150.
8. Zhuang Lijuan. The Role of Grassroots Museums in the Inheritance of Excellent Traditional Culture[J]. China National Expo, 2025, (15):244-246.
9. Gao Jinhong. The Inheritance and Transformation of Ancient Culture in Jinxiang from the Perspective of Museum Collections[J]. Identification and Appreciation of Cultural Relics, 2025, (16):128-131. DOI:10.20005/j.cnki.issn.1674-8697.2025.16.031.
10. Mou Lian. Application of Guangxi Distinctive Traditional Culture in Museum Picture Book Design[J]. Toy World, 2025, (10):155-157.

11. Yang Xiaojian, Zhang Yaya. Research on Museum Cultural Relic Protection and Heritage Measures in the Digital Age[J]. China National Expo, 2025, (16):235-237.
12. Mu Y, Shen M, Pei M. Innovative Development of Museum Digital Collections Driven by XR Technology: A Case Study of the Palace Museum[J]. Journal of Frontier Disciplines Research, 2025, 2(6):7-9. DOI:10.12462/JFDR.ISSN3007-8032.2025.06.003.
13. Chen B, Chu W, Yang X, et al. Voice of artifacts: Evaluating user preferences for artifact voice in VR museums[J]. Computers & Graphics, 2025, 133:104473-104473. DOI:10.1016/J.CAG.2025.104473.
14. Hao X, Xu J, Wang Y. How generative AI shapes user perceived value and adoption intention in digital museum experiences[J]. npj Heritage Science, 2025, 13(1):608-608. DOI:10.1038/S40494-025-02194-9.
15. Yoon H, Kim G M, Kim S, et al. Designing Personalization Cues for Museum Robots: Docent Observation and Controlled Studies[J]. Sensors, 2025, 25(22):7095-7095. DOI:10.3390/S25227095.
16. Hou L, Li W, Yang M, et al. Sustainable design of museum bronze cultural-creative products through an integrated Kano-AHP-TOPSIS approach[J]. Discover Sustainability, 2025, 6(1):1212-1212. DOI:10.1007/S43621-025-02130-8.
17. Schirrmacher A. Museum film as a means of making museums: the Exploratorium's early years through the intermedial lens[J]. British Journal for the History of Science, 2025, 1-17. DOI:10.1017/S0007087425101635.
18. Feldman P J, Huamán P D P. Depicting truth and transition at national memorial museums in Chile and Peru[J]. Memory Studies, 2025, 18(6):1348-1364. DOI:10.1177/17506980241292509.
19. Oudbashi O, Rugiadi M, Lapérouse D F J, et al. Different shades, various metals: A multianalytical investigation on Iranian copper-based artifacts (7th–14th century CE) from the Metropolitan Museum of Art[J]. Archaeological and Anthropological Sciences, 2025, 17(12):237-237. DOI:10.1007/S12520-025-02365-6.
20. Cusan A, Casna M, Magno G. An early twentieth-century case of lower lip cancer from the Morgagni Museum (Padua, Italy)[J]. memo - Magazine of European Medical Oncology, 2025, 18(4):1-4. DOI:10.1007/S12254-025-01072-1.
21. Han Ruoxi. Research on University Museums Promoting the Inheritance and Development of Financial Culture[J]. Journal of Changchun Finance College, 2025, (04):26-32.
22. Li Qian. Cultural Relic Protection and Cultural Heritage in Museums in the New Era[J]. China National Expo, 2025, (13):241-243.
23. Doughan S. Palestinian women on demonic grounds: Holocaust museums, religious difference, and the struggle for citizenship in Germany[J]. Critique of Anthropology, 2025, 45(4):374-400. DOI:10.1177/0308275X251388537.
24. Alberti J S. The afterlife of a nuclear dosimeter: Locality, risk and the Cold War in the museum[J]. Cultures of Science, 2025, 8(4):354-368. DOI:10.1177/20966083251387283.
25. Zilin S, Fenghe M, Chu H. Research on the Functional Expansion and Efficiency Improvement Strategies of Rural (Community) Museums in Hangzhou[J]. Journal of International Education and Science Studies, 2025, 2(12):156-161. DOI:10.62639/SSPJIESS27.20250212.
26. Liu Jing. Exploration of Integrating Regional Culture into Museum Art Design[J]. Identification and Appreciation of Cultural Relics, 2025, (12):90-93. DOI:10.20005/j.cnki.issn.1674-8697.2025.12.021.
27. Yang Yini. The Inheritance and Development of Agricultural Culture from Museum Rice Exhibits[J]. Northern Rice, 2025, 55(03):70-72. DOI:10.16170/j.cnki.1673-6737.2025.03.006.
28. Menon N. Museums as sites of belonging, empowerment, and multimodal literacies for immigrant and racialized families[J]. Journal of Early Childhood Literacy, 2025, 25(4):1094-1112. DOI:10.1177/14687984251380649.
29. Daniele S, Murcia K, Chappell J. Beyond museum walls: A transmedia approach to fostering multimodal literacy and STEM engagement in Science Discovery Children's Museums[J]. Journal of Early Childhood Literacy, 2025, 25(4):1136-1161. DOI:10.1177/14687984251379603.
30. Xie Ruoxi. Discussion on Cultural Heritage Protection and Inheritance Paths Based on Museum Tourism[J]. Western Tourism, 2025, (09):28-30.
31. Xiao Lina, Zhou Du, Wang Lihui. Museum Exploration of Modernized Inheritance of Hunan Shang and Zhou Dynasty Bronze Culture[J]. Collection, 2025, (04):115-117.
32. Heck G, Rocha N J, Bizerra F A, et al. Science capital and accessible museum practices: applying double lenses in a case study with blind and deaf visitors in the Brazilian context[J]. Frontiers in Education, 2025, 10:1681129-1681129. DOI:10.3389/FEDUC.2025.1681129.
33. Bradley H. Bears like us: Blurring species boundaries through embodied experiences of museum skeleton specimen preparation[J]. Journal of Material Culture, 2025, 30(4):461-476. DOI:10.1177/13591835251384875.
34. Baetens J. Picture-Work: How Libraries, Museums, and Stock Agencies Launched a New Image Economy[J]. Leonardo, 2025, 58(6):665-667. DOI:10.1162/LEON.R.2568.
35. Jiang Yi. Research on Innovative Development of Wine Culture Museums Under the Background of Cultural and Tourism Integration[J]. Science Education and Museums, 2025, 11(01):24-30. DOI:10.16703/j.cnki.31-2111/n.2025.01.004.

36. Yu Mengdi. Exploration of the Integration of Ceramic Culture Inheritance and University Museums[J]. Ceramic Research, 2025, 40(01):95-97. DOI:10.16649/j.cnki.36-1136/tq.2025.01.047.
37. Galluccio C, Giambona F. Measuring the Museums' Economic and Social Sustainability: Evidence from the Italian Museum System[J]. Social Indicators Research, 2025, 181(1):5-5. DOI:10.1007/S11205-025-03774-9.
38. Zucker A T, Mesa P M, Bambha P V, et al. Testing the impact of two afterschool museum outreach interventions on elementary children's STEM outcomes: hands-on STEM alone or with STEM stories[J]. Frontiers in Education, 2025, 10:1679669-1679669. DOI:10.3389/FEDUC.2025.1679669.
39. Hu Y. Inconvenient Missionary Legacies in the Contemporary World and Museums: An Inquiry into the Rise and Fall of the Wereldmuseum Berg en Dal[J]. Arts, 2025, 14(6):162-162. DOI:10.3390/ARTS14060162.
40. Jia Ziyi. Research on Museum Cultural Relic Protection and Heritage Paths in the Digital Age[J]. China National Expo, 2025, (01):256-258.
41. Xi Qian. Exploration of the Integration of Museum Cultural and Creative Products with Excellent Traditional Culture[J]. China National Expo, 2024, (22):232-234.
42. Li Y. From Preservation to Commercialization: The Interrelationship Between Museums/Art Galleries and the Global Art Market[J]. Scientific and Social Research, 2025, 7(11):412-420. DOI:10.26689/SSR.V7I11.13090.
43. Chen T, Eftekhary R, Kirilenko P A, et al. From museums to fantasyscapes: user responses to traditional and hyperreality VR in cultural tourism[J]. Information Technology & Tourism, 2025, 28(1):8-8. DOI:10.1007/S40558-025-00351-1.
44. Liew L C, Passau V. The Auckland War Memorial Museum Online Cenotaph: community participation, collective memorialisation and social cohesion[J]. Global Knowledge, Memory and Communication, 2025, 74(9-10):2962-2980. DOI:10.1108/GKMC-08-2023-0299.
45. Gao Meng. The Role and New Models of Museums in the Protection, Inheritance and Utilization of Grand Canal Culture[J]. New Legend, 2024, (41):104-106.
46. Ironside R, Wyatt B, Wight C, et al. Social interaction and dark tourism in prison museums[J]. Annals of Tourism Research, 2026, 116:104102-104102. DOI:10.1016/J.ANNALS.2025.104102.
47. Li Feifei. The Role of Museum Cultural Promotion in Local Cultural Heritage[J]. China National Expo, 2024, (20):232-234.
48. Feldberg C, Natalia I, Ofman D S, et al. Effect of cognitive emotional al social participation status over the emotional state and learning of new information in older adults who attend a museum of science visit: preliminary results[J]. Alzheimer's & Dementia, 2025, 21(S6):e100485-e100485.
49. Khemthong S, Boonyakiet C, Chatthong W. Enhancing Cognitive Engagement Through Museum-Based Psychosocial Rehabilitation for Elders and Caregivers[J]. Journal of Psychosocial Rehabilitation and Mental Health, 2025, (prepublish):1-11. DOI:10.1007/S40737-025-00518-3.