# Creating an Improvement Model of Chuanxi Hall for the Inheritance of Arts and Crafts by Young People of the Lisu Ethnic Group

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## Abstract

Amidst the accelerating pace of globalization and modernization, the transmission of Lisu traditional culture faces serious challenges, particularly as younger generations show declining interest in cultural learning. This study aimed to (1) investigate the design issues present in existing Lisu ethnic cultural Chuanxi Halls and (2) identify the key spatial design factors that influence the learning motivation of Lisu youth. Employing a mixed-methods approach, the research combines in-depth interviews with 30 stakeholders (including Lisu youth, community leaders, and spatial design experts) and a questionnaire survey of 227 young users of the Tengchong Lisu Cultural Chuanxi Hall. The study analyzed how design elements such as site selection, functional zoning, circulation design, social interaction areas, and accessibility influence youth engagement.

The findings revealed that spatial layout, especially circulation design, significantly affects expectation confirmation and cultural learning motivation. Additionally, autonomy support and competence-enhancing activities contribute to sustained participation, while convenience facilities have a limited impact. Based on these results, the study proposed a design optimization model to improve youth participation in cultural learning spaces. This research offered both theoretical and practical contributions to the preservation of intangible cultural heritage and the spatial design of minority cultural learning environments.

**Keywords:** Lisu ethnic group; Cultural heritage; Chuanxi Hall; Youth engagement; Spatial design; Learning motivation.

## Introduction

Ethnic cultural heritage plays a crucial role in sustaining cultural identity and fostering social cohesion. As the crystallization of historical memory and collective wisdom, it serves as a spiritual anchor for communities and a foundation for intercultural understanding (Ahmad, 2006). However, the rapid progression of globalization and modernization has disrupted the continuity of many ethnic traditions, particularly in developing regions where traditional knowledge systems struggle to resonate with younger generations (Sun et al., 2021; Lin et al., 2024). In China, the demographic imbalance among intangible cultural heritage inheritors—where over 60% are above 60 years old—reflects this generational crisis, with youth participation dropping to under 10% (Liu, 2024).

Within this context, Chuanxi Halls have emerged as a key institutional response to the urgent need for heritage transmission. Designed as spaces for skill learning, cultural exhibition, and community engagement, these halls hold the potential to revitalize traditional practices among youth. However, many of them face spatial and functional limitations: they often adopt rigid exhibition models, lack interactivity, and fail to consider the behavioral habits and learning preferences of younger users. Particularly for the Lisu ethnic group in southwest China, such limitations hinder cultural inheritance and alienate the very group most needed for its continuity.

Given these issues, this study focuses on the spatial design of Lisu cultural Chuanxi Halls, aiming to investigate how physical environment influences youth engagement in traditional cultural learning. Specifically, it seeks to: (1) Identify spatial design problems in existing Lisu Chuanxi Halls; (2) Determine which spatial elements—such as circulation design, functional zoning, and interactive features—impact learning motivation and cultural identity among Lisu youth.

By addressing these objectives, the study intends to propose an improvement model that aligns spatial design with youth behavioral characteristics and cultural needs. The anticipated benefits of this research are multifaceted. For local governments and cultural institutions, it provides actionable design strategies for building more inclusive and engaging cultural spaces. For Lisu communities, it contributes to the preservation of their intangible cultural heritage through youth-centered design. For educators and spatial designers, it offers a theoretical and empirical foundation for integrating cultural relevance into public learning environments.

Ultimately, this research responds to a broader social imperative: to bridge the gap between tradition and modernity, and to empower youth as active inheritors of cultural memory through thoughtful and responsive spatial design.

## Research Objectives

1. To investigate the design issues present in the existing Lisu ethnic cultural Chuanxi Halls.

2. To identify the key factors in the design of the Lisu Chuanxi Halls that influence the learning motivation of young people.

## Literature review

Chuanxi Hall as an Important Medium for Cultural Transmission and Education. The design rationality of Chuanxi Halls, as key mediums for cultural transmission and education, directly affects the learning motivation and cultural identity of adolescents. Currently, Chuanxi Halls generally face issues such as simplistic design, insufficient interactivity, and lack of youth participation (Zhao, 2024). Many spaces still use traditional exhibition models, failing to fully consider the learning preferences of young people, which results in a dull experience (National Academies of Sciences, Engineering, and Medicine, 2018). Furthermore, the absence of systematic research guidance makes it difficult for these spaces to achieve the dual goals of cultural transmission and education.

1. Key Factors Influencing Adolescent Learning Motivation

Adolescents' preferences for Chuanxi Halls are closely linked to their cognitive, emotional, and social development. A survey by China Youth Daily (2022) shows that 94.7% of the surveyed youth believe that Chuanxi Halls help enrich cultural life. However, existing spaces suffer from insufficient functional zoning, poor environmental order, and an inability to meet diverse needs. Public spaces are not just physical places; they also carry the mission of cultural transmission, interactive communication, and emotional experiences (Shanxi Normal University, 2024). To enhance their appeal, a flexible spatial layout combined with digital interactive technologies should be employed to improve the educational experience.

2. Theoretical Support for Space Design and Optimization Directions

2.1 Place Identity Theory

Proshansky et al. (2014) suggested that individuals form self-identity through interaction with their environment. In the design of ethnic cultural spaces, site selection, functional zoning, and circulation design are crucial. A well-chosen site can enhance a sense of cultural

belonging, while clear functional layouts and traffic flows can improve the recognizability of the space (Lynch, 1964).

2.2 Social Space Theory

Goffman (2021) emphasized the impact of spatial layout on interpersonal interactions. Chuanxi Halls should incorporate flexible social nodes that encourage spontaneous communication among adolescents (Sundstrom, 1986). Participatory design can incorporate user feedback and strengthen cultural identity (Ren, 2024).

2.3 Environmental Psychology

The layout of social nodes (such as public seating areas and greenery zones) can foster gathering and communication (Whyte, 1980). The integration of cultural interactive experiences can enhance community cohesion (Gehl, 2020).

2.4 Universal Design Principles

Burgstahler (2009) proposed that design should accommodate the needs of different groups. Accessible pathways, clear signage systems, and well-configured facilities can ensure an equitable experience for all users.

3. Research Gaps and Future Directions

Current research primarily focuses on general public spaces and lacks systematic exploration of ethnic cultural learning spaces (Gehl, 2011). In the context of the disruption of traditional cultural inheritance, enhancing adolescent learning motivation through spatial design has become an urgent issue. Future research should incorporate the characteristics of ethnic cultures and explore more attractive space optimization strategies.

In summary, the reviewed theories—such as Place Identity Theory, Social Space Theory, Environmental Psychology, Universal Design Principles, and Expectation Confirmation Theory—have been systematically integrated into this research framework. These theories guided the development of research dimensions, including site selection, circulation layout, social interaction zones, and accessibility design. For example, Place Identity Theory informed the investigation of spatial features that foster youth cultural belonging, while Expectation Confirmation Theory shaped the analysis of satisfaction and motivation outcomes. By translating theoretical constructs into measurable variables, the study ensures conceptual consistency and enhances the analytical depth of both qualitative and quantitative findings.

## Conceptual Framework

The framework of this study is shown in Figure 1.

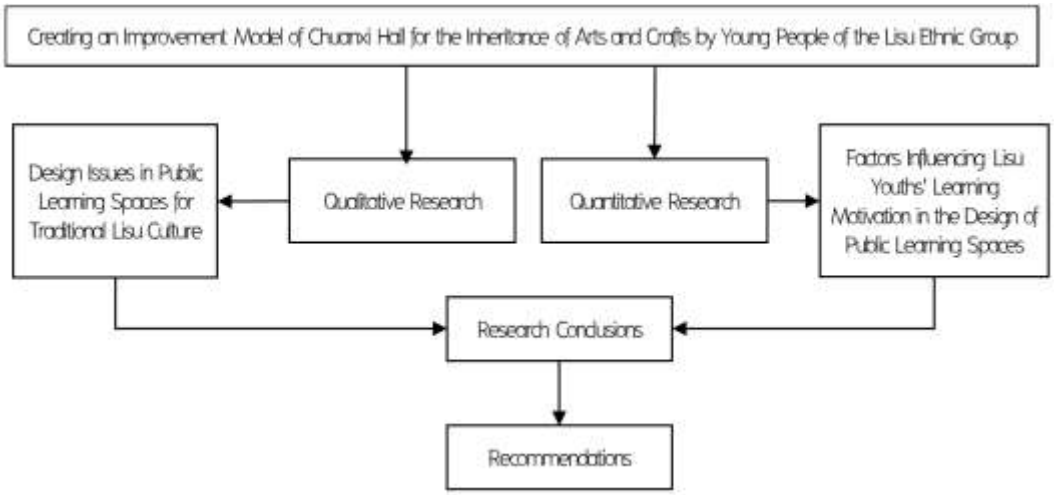



**Figure 1** Conceptual Framework.

Source: Constructed by the author

## Research Methodology

This study adopts a spatial design perspective and employs a mixed-methods approach, integrating both qualitative and quantitative research methods to explore how design elements in Chuanxi Halls for Lisu traditional culture influence youth learning motivation. To thoroughly investigate this issue, the research primarily uses in-depth interviews and questionnaire surveys, aiming to uncover the potential relationship between spatial design and youth engagement in learning from multiple dimensions and perspectives.

1. Research Design

The core of this study lies in exploring how spatial design affects Lisu youth's engagement and behavior in learning traditional culture. Therefore, the research design is divided into three main steps:

STEP 1: Identify existing design problems in current Lisu cultural Chuanxi Halls through in-depth interviews.

STEP 2: Conduct a case study of the Tengchong Lisu Culture Exhibition Hall using questionnaire surveys to identify the spatial design elements that influence youth learning motivation.

STEP 3: Summarize the findings and propose design optimization strategies for traditional culture Chuanxi Halls.

2. Population and Sampling

For the in-depth interviews, the sample includes 20 Lisu youths aged 18–29 who frequently participate in art and cultural learning activities at Chuanxi Halls, 5 Lisu community leaders, and 5 spatial design experts, totaling 30 participants.

For the questionnaire survey, the target population consists of Lisu youths aged 18–29 who regularly engage in cultural and craft learning activities at Chuanxi Halls. Proportionate stratified sampling was used, and based on the sample size calculation method proposed by Krejcie and Morgan, an estimated sample size of approximately 230 was determined.

3. Data Collection

3.1 In-depth Interviews

In the initial phase of the study, data were collected through in-depth interviews. The interviews focused on identifying design issues in existing Lisu cultural Chuanxi Halls, particularly concerning spatial layout, functional zoning, and the integration of cultural elements. A semi-structured interview format was used to allow for the in-depth exploration of participants' perceptions and experiences. The data were coded and analyzed using thematic analysis to uncover design-related factors that affect youth engagement in traditional culture learning.

3.2 Questionnaire Survey

In the second phase, the Tengchong Lisu Culture Chuanxi Hall was selected as a case study, and questionnaires were distributed to youth users of the space. The questionnaire covered topics such as spatial layout and circulation design, social space and activity planning, and accessible and convenient facilities. A five-point Likert scale was used to quantify youth preferences and learning interest regarding each design element. The questionnaire design was informed by relevant literature and theories, including environmental psychology, spatial behavior studies, place identity theory, social space theory, universal design, and user experience theory, ensuring its scientific validity and reliability.

4. Data Analysis

4.1 Qualitative Analysis

Interview data were processed using thematic analysis to identify core needs and preferences of youth regarding learning space design, revealing their cultural identity and emotional experiences within the space. NVivo qualitative analysis software was used for coding and theme extraction to ensure analytical rigor and systematic processing.

4.2 Quantitative Analysis

The questionnaire data were analyzed using SPSS 25.0 statistical software. Analytical methods included descriptive statistics, correlation analysis, and regression analysis. Correlation analysis was used to explore the relationships between spatial design elements and youth learning motivation, while regression analysis further examined the influence of each design factor on youth interest in cultural learning.

## Research Results

**Objective 1. To investigate the design issues present in the existing Lisu ethnic cultural Chuanxi Halls.**

Based on the data collected through in-depth interviews, the qualitative data were coded using NVivo 11, and thematic analysis was employed to extract the core indicators. The coding analysis table is presented as follows:

**Table 1** Thematic Analysis of Design Problems in Lisu Traditional Cultural Public Learning Spaces

| Interview Text (Original Data) | Open Coding | Axial Coding | Selective Coding |
|---|---|---|---|
| The cultural transmission hall is a bit far from my home, and it takes a long time to get here every time. It feels inconvenient.<br>The transportation is inconvenient, especially with fewer public transportation options and long waiting times.<br>There is no direct transportation, and multiple transfers are required, which increases both the travel time and cost. | Convenience of location and long transportation time | Rationality of the site selection | |
| The exhibition area and the learning area are mixed together, making it easy to be disturbed while studying. I hope there can be clearer zoning.<br>The noise in the exhibition area is loud, which affects the quiet environment of the learning area.<br>The lighting design in the learning area is unreasonable, with either too dim or too bright lighting, which affects the learning effect. | Unclear functional zoning, learning distractions | Functional Zoning and Layout | Space layout and circulation design |
| The passageways feel very crowded, making it difficult to walk.<br>The passageways are too narrow, especially during peak hours.<br>Too many exhibits or facilities are placed on both sides of the passageways, causing congestion. | Traffic flow is congested, and the movement line design is unreasonable | Traffic flow line | |

| Interview Text (Original Data) | Open Coding | Axial Coding | Selective Coding |
|---|---|---|---|
| I like areas where I can choose the learning content myself.<br>The range of learning content available is limited and should be more diverse.<br>The equipment in the learning area is insufficient, and some are outdated, affecting the learning experience. | Autonomous selection of learning content, support for autonomy | Support for autonomy | |
| I made new friends during the activities, and my relationship with others became closer.<br>The activity formats are monotonous and lack innovation.<br>The interactive experience area is rather dull, and I didn't experience the joy of communication. | Activities enhance social connections.<br>The relevance of interactive experiences increases engagement. | Enhance relevance | Social space and activity planning |
| I learned weaving at the Chuanxi Hall and feel more capable than before.<br>The scheduling of learning sessions is not flexible enough, making it difficult to balance other commitments.<br>The course content is relatively basic; I hope that advanced courses will be offered as options. | Enhancement of Competence and Learning Achievement | Increased Sense of Competence | |
| The design of the accessible passage is inadequate, making it difficult for wheelchair users to enter and exit conveniently.<br>The slope of the accessible passage is not properly designed, posing safety risks for wheelchair users when going up or down.<br>The signage for the accessible passage is not clearly visible, making it easy to overlook or difficult to locate. | Accessibility Passage Design Issues and Inconvenience for Special Groups | Accessible Passage and Route Design | |
| The seating in the rest area is insufficient, making it difficult to find a place to rest after studying.<br>The environment of the rest area is not comfortable enough, lacking greenery and decorations, which makes it appear monotonous.<br>The hygiene conditions in the rest area are suboptimal, with seating and tabletops not being cleaned in a timely manner. | Insufficient Resting Area and Lack of Convenient Facilities | Configuration of Convenient Facilities | Accessible and Convenient Facilities |
| The information signs are too small to read, making it difficult to find the way.<br>The placement of the information signs is unreasonable; some signs are obstructed or hard to notice.<br>The language used on the signs is not clear and concise, which may cause misunderstandings. | Unclear Signage and Difficulty in Navigation | Signage and Wayfinding System | |

| Interview Text (Original Data) | Open Coding | Axial Coding | Selective Coding |
|---|---|---|---|
| I hope the design of the public learning space can be more reasonable, with clear separation between the display area and the learning area. I also hope the passageways are spacious and not crowded, while adding more areas for independently choosing learning content. | Overall expectations for future public learning spaces for traditional culture. | Degree of expectation alignment. | Expectation confirmation. |
| The environment of some learning areas does not match expectations. The overall experience differs from expectations. | Current experience of public learning spaces for traditional culture. | Confirmation (Experience alignment). | |
| Transportation is inconvenient, the space layout and navigation system need optimization, the activities in the interactive experience area are monotonous, and the design of convenience facilities is unreasonable. Overall satisfaction is low. | Overall Satisfaction with the Current Public Learning Space for Traditional Culture | Satisfaction | |

The analytical results presented in the table above indicate that the design problems of Lisu traditional cultural Chuanxi Halls are primarily concentrated in the following aspects: spatial layout and circulation design (e.g., inconvenient location, unclear functional zoning, and congested pathways); social space and activity planning (e.g., limited variety of activities and monotonous interactive experiences); accessible and convenience facilities (e.g., poorly designed barrier–free passages and insufficient resting areas); and signage and wayfinding systems (e.g., unclear signage and navigation difficulties).

In addition, discrepancies were observed between users' expectations and their actual experiences and satisfaction levels regarding the space. Overall, users expressed a desire for future spatial designs to be more rational in layout, functionally complete, and richer in interactive experiences. Therefore, future design improvements should prioritize spatial layout optimization, innovative activity planning, and enhancement of accessibility features, in order to improve user experience and strengthen the effectiveness of cultural transmission.

**Objective 2. To identify the key factors in the design of the Lisu Chuanxi Halls that influence the learning motivation of young people.**

This study draws upon Place Identity Theory, Social Space Theory, Environmental Psychology, Universal Design Principles, and Expectation Confirmation Theory to establish the research dimensions and variables. The conceptual model is illustrated as follows:

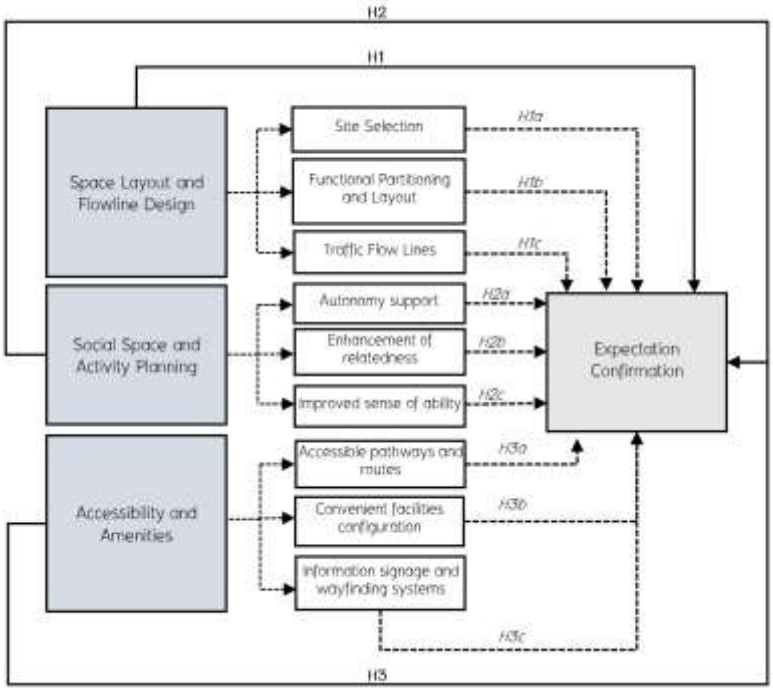



**Figure 2** Model components.

Source: Constructed by the author

2.1 Research Hypotheses

Hypothesis Group 1: Spatial layout and circulation design are positively correlated with users' expectation confirmation.

H1a: Site planning is positively related to the realization of user expectations.

H1b: The rational design of functional zoning positively affects users' expectation fulfillment.

H1c: The scientific planning of circulation routes has a positive impact on users' expectation confirmation.

Hypothesis Group 2: Social spaces and activity planning positively influence expectation confirmation.

H2a: The degree of autonomy support has a positive effect on expectation confirmation.

H2b: Strengthening social connectivity design can effectively enhance the level of expectation fulfillment.

H2c: The quality of skill development activity planning has a positive effect on users' expectation confirmation.

Hypothesis Group 3: The completeness of accessibility and convenience facilities has a positive impact on users' expectation confirmation.

H3a: The provision of barrier-free access and routes positively affects users' expectation confirmation.

H3b: The adequacy of convenience facilities is positively associated with expectation fulfillment.

H3c: The effectiveness of information signage and wayfinding systems promotes the realization of user expectations.

2.2 Data Collection and Analysis

A total of 230 questionnaires were distributed in the quantitative study, with 227 valid responses collected, resulting in a response rate of 98.7%. Data analysis was conducted using SPSS 26.0, covering descriptive statistics, reliability and validity testing, correlation analysis, and regression analysis.

2.2.1 Descriptive Statistics

**Table 2** Descriptive Statistics of Demographic Variables

| Variable | Category | Count | Percentage |
|---|---|---|---|
| Ethnic Minority Culture | Very Familiar | 96 | 42.3 |
| | Quite Familiar | 120 | 52.9 |
| | Somewhat Familiar | 7 | 3.1 |
| | Slightly Familiar | 4 | 1.8 |
| Residential Area | Very Close (Walking Distance) | 141 | 62.1 |
| | Quite Close (Bike Distance) | 68 | 30 |
| | Quite Far (Accessible by Car or Public Transport) | 11 | 4.8 |
| | Very Far (Requires Long-Distance Travel) | 7 | 3.1 |
| Frequency of Visiting the Heritage Center | 1-5 Times | 128 | 56.4 |
| | 6-10 Times | 91 | 40.1 |
| | More than 10 Times | 8 | 3.5 |
| Purpose of the Visit | Learning Crafts and Arts | 82 | 36.1 |
| | Participating in Activities or Workshops | 100 | 44.1 |
| | Sightseeing | 33 | 14.5 |
| | Socializing or Leisure | 7 | 3.1 |
| | Other | 5 | 2.2 |

As shown in Table 2, the majority of respondents are familiar with ethnic minority cultures, with over 95% indicating they are "very familiar" or "fairly familiar." In terms of residential proximity, more than 90% reported being able to reach the Chuanxi Hall by walking or cycling, suggesting high geographical accessibility. Regarding visitation frequency, approximately 96% of

respondents had visited the Chuanxi Hall between 1 and 10 times. The primary purposes of these visits were to participate in events/workshops (44.1%) and to learn traditional arts and crafts (36.1%), highlighting the significant role of the Chuanxi Hall in cultural education and practical engagement.

2.2.2 Reliability and Validity Test

The Cronbach's alpha coefficient for the dimensions of the questionnaire used in this study was greater than 0.7, with the overall Cronbach's alpha coefficient for the questionnaire being 0.832, which indicates good internal consistency and strong reliability of the questionnaire results. The KMO value was 0.681, which meets the basic requirement for factor analysis. The data passed Bartlett's test of sphericity ($p<0.05$), indicating it is suitable for exploratory factor analysis. A factor analysis was conducted, resulting in the extraction of 10 factors, all with eigenvalues greater than 1, and after rotation, the cumulative variance explained was 85.896%, suggesting a good fit between the questionnaire design structure and the data results. To further identify the correspondence between the factors and research items, the data were rotated using the varimax method, and the correspondence between the items and factors was consistent with theoretical expectations, confirming the structural validity of the questionnaire.

2.2.3 Correlation Analysis

Correlation analysis using SPSS 25.0 showed that the correlation coefficients between location selection, functional zoning and layout, traffic flow, and expectation confirmation were all statistically significant, with coefficients of 0.254, 0.247, and 0.334, respectively, and p-values less than 0.01. This indicates a significant positive correlation between location selection, functional zoning and layout, traffic flow, and expectation confirmation. Similarly, autonomy support, improved competence, and enhanced relatedness were all significantly positively correlated with expectation confirmation, with correlation coefficients of 0.369, 0.209, and 0.225, respectively, and p-values less than 0.01. Additionally, except for convenience facility configuration, the accessibility routes, information signs, and wayfinding systems were all significantly positively correlated with expectation confirmation, with correlation coefficients of 0.349 and 0.187, and p-values less than 0.01. However, there was no significant correlation between the convenience facility configuration and expectation confirmation.

2.2.4 Regression Analysis

**Table 3** Linear Regression Analysis Table

| | Unstandardized Coefficients | | Standardized Coefficients | *t* | *p* |
|---|---|---|---|---|---|
| | ***B*** | **Std. Error** | ***Beta*** | | |
| (Constant) | 3.905 | 0.724 | | 5.390 | 0.000 |
| Site Selection | 0.235 | 0.085 | 0.173 | 2.753 | 0.006 |
| Functional Zoning and Layout | 0.204 | 0.085 | 0.152 | 2.385 | 0.018 |
| Traffic Flow Lines | 0.368 | 0.088 | 0.266 | 4.192 | 0.000 |
| $R^2$ | | | 0.170 | | |
| Adjusted $R^2$ | | | 0.159 | | |
| *F* | | | 15.236** | | |

Dependent Variable: Expectation Confirmation; p<0.05

As shown in Table 3, a multiple linear regression analysis was conducted with location selection, functional zoning and layout, and traffic flow lines as independent variables, and expectation confirmation as the dependent variable. The model yielded an $R^2$ value of 0.159, indicating that these three variables collectively explain 15.9% of the variance in expectation confirmation. An F-test was performed on the model, and the results showed that it passed the significance test ($F = 15.236$, $p < 0.01$), suggesting that location selection, functional zoning and layout, and traffic flow lines have a significant influence on expectation confirmation. The regression equation is: Expectation Confirmation = 3.905 + 0.235 X Location Selection + 0.204 X Functional Zoning and Layout + 0.368 X Traffic Flow Lines. The results indicate that location selection ($\beta = 0.235$, $t = 2.753$, $p < 0.01$), functional zoning and layout ($\beta = 0.204$, $t = 2.385$, $p < 0.05$), and traffic flow lines ($\beta = 0.368$, $t = 4.192$, $p < 0.01$) all exert significant positive effects on expectation confirmation, thereby supporting Hypotheses H1a, H1b, and H1c.

**Table 4** Linear Regression Analysis Table

| | Unstandardized Coefficients | | Standardized Coefficients | *t* | *p* |
|---|---|---|---|---|---|
| | ***B*** | **Std. Error** | ***Beta*** | | |
| (Constant) | 4.317 | 0.700 | | 6.170 | 0.000 |
| Autonomy Support | 0.431 | 0.089 | 0.317 | 4.865 | 0.000 |
| Competence Enhancement | 0.179 | 0.086 | 0.132 | 2.082 | 0.038 |
| Increased Relatedness | 0.123 | 0.091 | 0.090 | 1.356 | 0.176 |
| $R^2$ | | | 0.165 | | |
| Adjusted $R^2$ | | | 0.154 | | |
| *F* | | | 14.669** | | |

Dependent Variable: Expectation Confirmation; p<0.05

As shown in Table 4, a multiple linear regression analysis was conducted with autonomy support, competence enhancement, and relatedness enhancement as independent variables, and expectation confirmation as the dependent variable. The model yielded an $R^2$ value of 0.154, indicating that these three variables collectively explain 15.4% of the variance in expectation confirmation. The model passed the F–test ($F = 14.669$, $p < 0.01$), indicating that the overall regression model is statistically significant. The regression equation is:Expectation Confirmation = 4.317 + 0.431 X Autonomy Support + 0.179 X Competence Enhancement + 0.123 X Relatedness Enhancement. The results show that autonomy support ($\beta = 0.431$, $t = 4.865$, $p < 0.01$) and competence enhancement ($\beta = 0.179$, $t = 2.082$, $p < 0.05$) have significant positive effects on expectation confirmation, supporting Hypotheses H2a and H2c. However, the effect of relatedness enhancement is not statistically significant ($\beta = 0.123$, $t = 1.356$, $p > 0.05$), and thus Hypothesis H2b is not supported.

**Table 5** Linear Regression Analysis Table

| | Unstandardized Coefficients | | Standardized Coefficients | *t* | *p* |
|---|---|---|---|---|---|
| | *B* | *Std. Error* | *Beta* | | |
| (Constant) | 4.169 | 0.823 | | 5.065 | 0.000 |
| Accessible Pathways and Routes | 0.460 | 0.087 | 0.330 | 5.300 | 0.000 |
| Facility Configuration | 0.095 | 0.093 | 0.065 | 1.023 | 0.308 |
| Information Signage and Wayfinding System | 0.181 | 0.088 | 0.132 | 2.069 | 0.040 |
| $R^2$ | | | 0.147 | | |
| Adjusted $R^2$ | | | 0.135 | | |
| *F* | | | 12.790** | | |

Note: *p<0.05, **p<0.01

As shown in Table 5, a multiple linear regression analysis was conducted with accessible pathways and routes, facility convenience, and signage and wayfinding systems as independent variables, and expectation confirmation as the dependent variable. The model yielded an $R^2$ value of 0.135, indicating that these three factors collectively explain 13.5% of the variance in expectation confirmation. The model passed the F-test ($F = 12.790$, $p < 0.01$), demonstrating that the overall regression is statistically significant. The regression equation is: Expectation Confirmation = 4.169 + 0.460 X Accessible Pathways and Routes + 0.095 X Facility Convenience + 0.181 X Signage and Wayfinding Systems. The results show that accessible pathways and routes ($\beta = 0.460$, $t = 5.300$, $p < 0.01$) and signage and wayfinding systems ($\beta = 0.181$, $t = 2.069$, $p < 0.05$) have significant positive effects on expectation confirmation, supporting Hypotheses H3a and H3c. However, the effect of facility convenience is not statistically significant ($\beta = 0.095$, $t = 1.023$, $p > 0.05$), and thus Hypothesis H3b is not supported.

## Discussions

Through in-depth interviews, questionnaire surveys, and data analysis, this study identified the main spatial design issues affecting the effectiveness of Lisu ethnic cultural Chuanxi Halls and the core factors influencing youth learning motivation. Results show that spatial layout, social interaction, and accessibility are key elements shaping user experience and cultural transmission outcomes. Specifically, site selection, functional zoning, and circulation design have a strong positive impact on expectation confirmation. In addition, autonomy support, a sense of

competence, improved relatedness, and effective signage systems also help enhance youth engagement in traditional learning.

These findings align with previous research highlighting the importance of spatial environments in influencing cultural identity and participation. For example, Goffman (2021) emphasized how space affects social behavior, which supports our conclusion that better social and activity planning can increase youth interaction. Similarly, Proshansky et al. (2014) noted that place identity plays a vital role in personal connection and belonging, consistent with our finding that thoughtful site planning and layout support cultural attachment.

However, the study also shows that convenience facilities—such as rest areas and seating—have limited influence on expectation confirmation. While Burgstahler (2009) argued for the importance of inclusive design, our findings suggest that once basic needs are met, youth place more value on learning atmosphere and interaction than on additional comfort. This may reflect a shift in user priorities, where spatial and cultural experiences outweigh convenience.

Overall, the results emphasize that improving spatial layout, supporting autonomy, and fostering social connection are essential to encouraging youth participation in traditional culture. This study adds to current research on cultural learning spaces by offering specific evidence from the Lisu context and providing a reference for optimizing Chuanxi Hall design in minority regions.

## Knowledge from Research

This study contributes new knowledge to the interdisciplinary fields of cultural heritage preservation, spatial design, and youth education by developing an improvement model of Chuanxi Hall tailored to the learning needs of Lisu ethnic youth. The research identifies spatial layout, functional zoning, circulation planning, and social interaction as critical design variables that significantly influence expectation confirmation and learning motivation. By integrating theories such as Place Identity, Social Space, Environmental Psychology, Universal Design, and Expectation Confirmation Theory into a unified analytical framework, the study offers a theoretical basis for optimizing ethnic cultural learning environments. Moreover, the research provides empirical evidence showing that while facility convenience has a limited effect on learning outcomes, spatial legibility, cultural relevance, and interactive autonomy play decisive roles in sustaining youth engagement. These insights advance the discourse on minority cultural transmission by demonstrating how space design can directly support cultural identity formation and intergenerational continuity.

## Conclusion

This study found that poor spatial layout, limited interactivity, and inadequate accessibility hinder youth participation in Lisu Chuanxi Halls. Quantitative analysis confirmed that circulation design, autonomy support, and competence-building activities significantly influence learning motivation. Among them, circulation design had the strongest impact. These findings suggest that future designs should prioritize spatial clarity, interactive experiences, and inclusive access to strengthen cultural engagement among youth.

## Suggestions

1. Actionable Design Guidelines for Local Governments and Cultural Institutions

Government departments and heritage preservation organizations should use the findings to develop spatial planning guidelines for Chuanxi Halls. These should include selecting culturally central and easily accessible locations, designing clear functional zones for learning and display, and ensuring fluid circulation that aligns with youth behavioral patterns. Design templates and evaluation checklists can be formulated based on the three most impactful spatial elements identified in this study.

2. Youth-Centered Programming for Community and Educational Organizations

Cultural centers and local schools should integrate participatory learning formats—such as hands-on craft workshops, flexible scheduling, and peer-led sessions—into Chuanxi Hall activities. These approaches promote autonomy and competence, which the study identified as essential motivational drivers. Regular feedback from youth participants should be collected to adjust programming in real-time.

3. Accessibility and User Experience Enhancements for Design Teams

Architects and spatial designers should incorporate universal design features from the planning stage, including barrier-free access routes, visible and multilingual wayfinding systems, and inclusive rest areas. Since accessibility and signage were proven to influence user satisfaction, these aspects should be evaluated using post-occupancy assessments with youth users.

4. Strategic Cultural Revitalization for Minority Affairs Bureaus

Departments responsible for ethnic affairs may adopt this model as part of broader cultural revitalization strategies. By linking spatial optimization with youth cultural identity reinforcement, these bureaus can frame Chuanxi Hall upgrades as both heritage preservation and youth development initiatives—qualifying for cross-sector funding and partnerships.

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