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The Impact Of Cross-Strait Modern College Academy Exchanges On National Identity: The Mediating Effect Of Cultural Transmission

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Abstract
In the context of globalization and multicultural interaction, this study investigates how modern college academy exchanges between Mainland China and Taiwan influence university students' national identity, with a focus on the mediating role of cultural transmission. Drawing on intercultural interaction theory and social identity theory, a mixed-methods design was adopted, including literature review, case studies, and a survey of 528 valid samples from multiple universities. Structural equation modeling (SEM) with bias-corrected bootstrap tests was employed to ensure robust estimation. The results show that cross-strait academy exchanges significantly enhance students' national identity both directly and indirectly through cultural transmission. The mediating role of cultural transmission is evident in knowledge acquisition, value internalization, and behavioral practice, highlighting a dual-pathway effect that links academic exchange to identity formation. Theoretically, the study extends social identity theory to the context of cross-regional higher education integration; methodologically, it demonstrates the effectiveness of SEM with bootstrap correction for testing mediation; practically, it proposes institutionalized exchange platforms, immersive curriculum design, and multi-level cultural transmission systems as strategies to strengthen cultural identity and youth integration across the Strait.

Keywords: *Cross-Strait academy exchanges; national identity; cultural transmission; mediation; social identity theory*

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I. Introduction

Since the early 21st century, global higher education has emphasized "learning communities" as a central approach to pedagogical innovation. The Residential College (RC) model, integrating academic mentoring, cultural transmission, and community interaction, has been widely adopted in North America, Europe, and Asia, with participation linked to students' persistence, sense of belonging, and learning outcomes (Kuh, 2008; Tinto, 1997). In Mainland China and Taiwan, RCs have been localized into platforms combining "residential communities + tutorial systems + projects/courses + cultural practices," thereby facilitating cross-campus exchange, faculty–student co-learning, and cultural immersion (Cavalli-Sforza & Feldman, 1981; Chou & Ching, 2020; Knight, 2004). Yet in the context of globalization, youth identities have become increasingly fragmented. Studies in developmental and cross-cultural psychology warn that identity fluidity weakens cultural belonging (Phinney, 1990; Smith, 1991). In East Asia, the tension between cosmopolitan influences and cultural heritage underscores the urgency of fostering stronger youth identification with national culture (Hwang, 2023).

Modern RCs embody the historical spirit of Chinese academies (书院, shuyuan), which emphasized

dialogic learning (hui jiang) and mentorship-based exploration (cong you) (Chen, 2018). Today's RCs integrate ritual participation (e.g., Confucius commemoration) and classical co-reading to shape values (Yang, 2015; Zhao, 2020), while also leveraging modern pedagogy and digital tools to sustain cultural memory. Recent research has operationalized "cultural transmission" through scales measuring ritual participation and symbolic cognition (Lin & Wang, 2024), confirming its role as a bridge between structured learning and identity formation. In the cross-strait context, RCs bear dual responsibilities: transmitting Confucian heritage and grassroots culture, and fostering youth cultural interaction (Adoui, 2023). Shared cultural memory, including festivals, canonical texts, and historical narratives, predicts national identity (Chen & Li, 2023), although divergent political socialization can attenuate this effect. RC exchanges thus emerge as mechanisms to activate cultural memory, foster recognition, and build identity through co-reading, ritual practice, and intangible heritage engagement.

Institutionalization further strengthens this process. In 2014, the Alliance of Residential Colleges was founded by leading universities in Mainland China, Taiwan, Hong Kong, and Macau, including CUHK United College, Tsinghua University's Houde College (Taiwan), and Fudan University's Ren Zhong College. The alliance provides a platform for collaboration, resource sharing, and long-term development. Government policies echo this trend: the Ministry of Education's Guidelines on Strengthening Chinese Cultural Education for Students from Hong Kong, Macao, and Taiwan (2024) emphasized embedding classical reading and study tours in exchange programs, aligning with RCs' academic and cultural missions. Nonetheless, significant gaps remain. First, the causal relationship between RC exchanges and national identity lacks systematic testing (Wu et al., 2023). Second, the mediating role of cultural transmission—though theorized—requires clearer operationalization (Lin & Wang, 2024). Third, traditional academy research emphasizes insularity and moral function but neglects the openness and collaboration that characterize modern RCs. Moreover, national identity is shaped simultaneously by macro-level institutions and micro-level cultural practices (Giddens, 1991; Tajfel & Turner, 1979). While RCs' role in talent development and cultural guidance has been noted (Chen, 2011), systematic empirical evidence linking RC exchanges, cultural transmission, and national identity is still lacking.

This study addresses these gaps by proposing a three-stage theoretical model: Cross-Strait RC Exchanges → Cultural Transmission → National Identity. The contributions are threefold. Theoretically, it clarifies both direct and mediated pathways, extending social identity theory to cross-regional higher education. Methodologically, it draws on Lin and Wang's (2024) cultural transmission framework and Cavalli-Sforza and Feldman's (1981) transmission theory, applying bias-corrected bootstrap methods for robust mediation testing (Hayes, 2013; Wu et al., 2025). Practically, it recommends strategies combining institutionalized exchange platforms, tutor-guided immersive curricula, and multi-level cultural transmission systems to embed RC collaboration in identity cultivation. The remainder of the article is organized as follows: Section 2 reviews the literature and develops hypotheses; Section 3 details research design; Section 4 presents empirical results; Section 5 discusses findings and implications; and Section 6 concludes with directions for future research.

II. Literature Review And Hypothesis Development

Cross-Strait Residential College Exchanges and National Identity

Contemporary cross-strait residential college (RC) exchanges extend beyond traditional academic seminars and cultural observations, incorporating project-based courses, intercollegiate study camps, immersive cultural experiences, and online virtual academies. These diverse formats provide students with comprehensive and systematic platforms for cultural learning and social interaction (Knight, 2004; Hall, 1976). Drawing upon Tinto's (1997) learning community theory, RC environments cultivate close faculty–student and peer relationships that strengthen learning motivation and belonging. In combination with Kuh's (2008) "high-impact educational practices," study camps and immersive activities have been shown to significantly enhance cultural identity and collective belonging. From a theoretical perspective, Bourdieu's (1986) cultural capital theory highlights how individuals accumulate cultural capital (e.g., classical reading, ritual participation) in intercultural settings to strengthen self-identity. Putnam's (2000) concept of social capital emphasizes that networks built through RC alliances and joint projects promote resource sharing and trust accumulation, providing institutional support for the cultivation of national identity.

Intergroup contact theory further clarifies the mechanisms of identity reconstruction. Allport's (1954) contact hypothesis posits that sustained interaction under conditions of equal status reduces prejudice and fosters group identity. Cross-strait RC exchanges—through joint curriculum design and reciprocal faculty–student visits—satisfy critical conditions of "equal status," "common goals," and "institutional support" (Pettigrew & Tropp, 2006). Stephan and Stephan's (1985) intergroup anxiety theory complements this view, suggesting that RC exchanges reduce anxiety and misunderstanding, creating a psychologically safe environment for identity reconstruction. Similarly, Dovidio et al.'s (2000) recategorization strategy indicates that interaction within the shared category of "RC community" promotes the merging of "us" and "them" into a unified "we," thereby strengthening cultural identity across regions.

From a policy perspective, the 2010 Cross-Strait Agreement on Educational Cooperation institutionalized educational exchanges, while the 2018 Measures to Promote Cross-Strait Economic and Cultural Exchanges and Cooperation (known as the "31 Taiwan Measures") expanded opportunities for Taiwanese students to participate in cultural programs in Mainland universities (Taiwan Affairs Office, 2018). Historically, academies have served as vital carriers of Chinese education since the Song dynasty, embodying the traditions of hui jiang (lectures and debates) and cong you (learning through companionship), which continue to influence modern RCs in fostering cultural heritage (Fei, 1998).

Empirical evidence also supports the role of RC exchanges in strengthening national identity. The International Confucian Association (2021) reported that Taiwanese participants in the Siku Quanshu facsimile donation ceremony significantly enhanced their cultural identification, with scholars on both sides emphasizing the role of "cultural ties" in fostering mutual trust. A survey conducted by Tsinghua University's School of Journalism (2024) found that 72% of Taiwanese students studying in Mainland China perceived their experience as enhancing their identification with Chinese culture. Classic cross-cultural studies reinforce these findings: Savicki and Cooley (1987) demonstrated that effective reentry processes enable participants to maintain identity gains after returning to their home environments. Likewise, a report from the Fujian Provincial Government (2023) documented that cultural activities such as Mazu pilgrimages and lion-dance festivals increased national identity by 81% among participants from both sides of the Strait.

Taken together, theoretical frameworks and empirical evidence strongly support the hypothesis that cross-strait RC exchanges foster national identity at cognitive, affective, and behavioral levels.

H1: Cross-strait residential college exchanges significantly and positively influence national identity.

Cross-Strait Residential College Exchanges and Cultural Transmission

Cross-strait RC exchanges operate as a collaborative mechanism structured around "residential community–tutorial system–projects/courses–cultural practices," emphasizing sustained, structured, and high-quality interactions within a learning community (Inkelas & Soldner, 2011). Cultural transmission refers to the dynamic process through which knowledge, values, and practices are continuously re-created and sustained across generations and groups, particularly through participatory practices and contextual reproduction (UNESCO, 2022). Cultural evolution theory explains that culture spreads vertically, obliquely, and horizontally across networks, with higher interaction frequency and normative orientation increasing the likelihood of imitation and retention (Boyd & Richerson, 1985). Complementarily, the community of practice framework posits that individuals move from peripheral to central participation through "learning by doing," constructing and internalizing knowledge and identity in the process (Wenger, 1998). Similarly, meta-analyses of intergroup contact show that when interaction occurs under conditions of equal status, shared goals, institutional support, and cooperation, attitudes and identities improve, creating fertile ground for cultural learning and transmission (Allport, 1954; Pettigrew & Tropp, 2006).

Experiential learning theory further highlights the cyclical process of "experience–reflection–conceptualization–reapplication" as a driver for mastering and transferring complex cultural elements (Kolb, 1984). RC exchanges embed students and faculty in dense interactive settings—shared tasks, ritualized events, and intercollegiate collaborations—facilitating the shared memory and reproduction of cultural meanings and norms (Whitehouse, 2004; Assmann, 2011). Evidence from international higher education demonstrates that residential learning communities enhance belonging, engagement, and academic involvement, which are strongly correlated with cultural transmission outcomes (Inkelas & Soldner, 2011).

Notably, immersion alone is insufficient. Deardorff (2006) argued that guided immersion—including faculty mentorship, reflective assignments, and structured dialogue—yields stronger outcomes in intercultural competence and identity learning, thereby sustaining cultural practices. Since national identity reflects individuals' cognitive, affective, and behavioral sense of belonging to an ethnic community (Tajfel & Turner, 1979; Barth, 1969), structured cultural practices embedded within RC exchanges can effectively reinforce students' psychological connection to the nation (Giddens, 1991).

Thus, we hypothesize:

H2: Cross-strait residential college exchanges positively predict cultural transmission.

Cultural Transmission and National Identity

Cultural transmission refers to the process by which individuals or groups acquire, internalize, and reproduce cultural knowledge, values, norms, and symbols through intergenerational, peer, or institutional pathways (Cavalli-Sforza & Feldman, 1981). This process involves not only preservation and reproduction but also the construction of meaning and identity (Smith, 1991). Cultural transmission functions as a bridge connecting historical memory with contemporary identity, shaping the mechanisms through which national identity is generated (Anderson, 2006). According to social identity theory (Tajfel & Turner, 1979), national

identity is a form of social identity rooted in belonging and affective commitment, whose strength depends on the degree of identification with group characteristics. Cultural transmission enhances this process by deepening understanding of cultural symbols and fostering emotional connections, thereby increasing the stability of group identity (Phinney, 1990; Hwang, 2023). Ritual participation, classical reading, and engagement with intangible cultural heritage not only convey knowledge but also foster the internalization of collective values (Yang, 2015; Zhao, 2020).

Empirical studies confirm this relationship. Cross-cultural education programs demonstrate significant positive correlations between cultural transmission activities and national identity (Chen & Li, 2023). Specifically, knowledge-based (e.g., historical learning), value-based (e.g., core values recognition), and behavioral (e.g., willingness to preserve and promote traditions) dimensions of cultural transmission effectively predict the affective and behavioral components of national identity (Lin & Wang, 2024; Dolby, 2004). Policy initiatives reinforce this emphasis; for example, the Ministry of Education of China (2024) highlighted "cultural immersion" in higher education exchange programs to enhance cultural confidence and national belonging.

Thus, we hypothesize:
H3: Cultural transmission positively predicts national identity.

The Mediating Role of Cultural Transmission

Cross-strait RC exchanges, centered on residential communities, mentorship, intercollegiate courses, and cultural practices, provide high-frequency, high-quality, and context-rich interactions. These interactions align with intergroup contact conditions—cooperative goals, equal status, institutional support, and sustained interaction (Allport, 1954; Pettigrew & Tropp, 2006)—which strengthen exposure to shared cultural elements and set the stage for cultural transmission (Dolby, 2004; Pascarella & Terenzini, 2005). Mechanistically, cultural transmission can be conceptualized as a dynamic process comprising knowledge acquisition, value internalization, and ritual/practice enactment (Cavalli-Sforza & Feldman, 1981; Lin & Wang, 2024). RC exchanges transform cultural experiences into sustainable community norms via pathways of "input–understanding–identification–practice." This process not only disseminates cultural content but also reproduces identity meaning: individuals' joint decoding of cultural symbols and shared memories enhances affective commitment and group belonging (Anderson, 2006; Smith, 1991; Phinney, 1990).

Comparative evidence underscores this mechanism: the degree of shared "cultural memory" predicts the strength of national identity, while differentiated political socialization may weaken this effect (Chen & Li, 2023). Thus, cultural transmission serves as the proximal psychosocial mechanism translating RC exchanges into identity formation (Tajfel & Turner, 1979).

Empirical studies lend further support. Immersive intercultural learning significantly enhances cultural understanding, value identification, and identity reflection (Dolby, 2004; Wang, 2023). Learning-community-based arrangements produce robust effects on student persistence and belonging (Pascarella & Terenzini, 2005). In the cross-strait context, institutionalized exchange platforms and curriculum-based cultural immersion strengthen the "knowledge–value–behavior" triad of cultural transmission, thereby reinforcing both affective and behavioral dimensions of national identity (Lin & Wang, 2024; Chen & Li, 2023). If the statistical influence of RC exchanges on national identity operates partially or fully through the mediating variable of cultural transmission, then both theoretical reasoning and empirical precedent for mediation are satisfied (Hayes, 2013; Preacher & Hayes, 2008).

Thus, we hypothesize:
H4: Cultural transmission mediates the relationship between cross-strait residential college exchanges and national identity.

III. Research Design

This study aims to construct and empirically test a mediation model of "Cross-Strait Modern Residential College Exchanges → Cultural Transmission → National Identity," clarifying both the direct and indirect pathways linking exchange activities to national identity. The following section introduces the research participants, instruments, and methodology.

Participants and Data Collection

The survey participants were students who had attended the Cross-Strait Residential College Alliance Forum, a population highly representative of the research topic since these students had engaged directly in the learning and living environments of modern RCs and actively experienced cross-strait cultural immersion. By 2024, the Forum had been held nine times since its launch in 2014. Using a snowball sampling strategy, former participants were invited to complete an online questionnaire. The survey was conducted in August 2024,

yielding 132 valid responses from Mainland Chinese students and 101 from Taiwanese students, approximately balanced at a 1:1 ratio, with a total of 233 valid questionnaires collected. This sample size meets the conventional requirement for structural equation modeling (SEM), namely at least 10 cases per estimated parameter (Kline, 2016). Data analysis was conducted with SPSS 24.0 and AMOS 24.0, employing (a) confirmatory factor analysis (CFA), (b) SEM, and (c) bootstrap confidence interval estimation.

Measurement of Variables

To ensure alignment between measurement and theoretical framework, this study operationalized the constructs according to the hypotheses (H1–H4): Cross-Strait RC Exchange (A) → Cultural Transmission (B; mediator) → National Identity (C). All items were measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), and subscale scores were calculated as means, with higher scores indicating stronger latent constructs. Two pilot tests (N = 50 each) were conducted to assess semantic clarity and reliability (all Cronbach's $\alpha > .70$), and minor revisions were made before finalization.

(a) Cross-Strait Modern Residential College Exchange Activities (A, 6 items). Defined as the frequency and quality of students' participation in intercollegiate academic/cultural activities, joint courses/projects, study camps, cultural dialogues, and research collaborations. Items were developed by adapting frameworks on higher education internationalization and learning communities (Knight, 2004; Tinto, 1997; Kuh, 2008; Inkelas & Soldner, 2011), combined with intergroup contact measures of quantity/quality (Allport, 1954; Pettigrew & Tropp, 2006). Questionnaire items A1–A6 included examples such as participation in cross-campus academic seminars, exchange programs, cultural festivals, dialogues, and collaborative research.

(b) Cultural Transmission (B, mediator, 5 items). Defined as students' acquisition of cultural knowledge, internalization of values, and willingness to practice/disseminate traditions in the RC context (Cavalli-Sforza & Feldman, 1981; UNESCO, 2022; Assmann, 2011). Items followed the tripartite "knowledge–values–behavior" structure and incorporated scale development work from higher education contexts (Lin & Wang, 2024). Questionnaire items B1–B5 covered cultural understanding, value identification, willingness to transmit traditions, recognition of significance, and external sharing. The items emphasized participatory and reproductive aspects of "living heritage," consistent with theories of communities of practice and experiential learning (Wenger, 1998; Kolb, 1984; Whitehouse, 2004).

(c) Ethnic/National Identity (C, 6 items). Defined as individuals' overall identification with their ethnic group at cognitive, affective, and behavioral commitment levels (Tajfel & Turner, 1979; Smith, 1991). Based on the Multigroup Ethnic Identity Measure (MEIM) (Phinney, 1992), items were contextualized at the national level. Questionnaire items C1–C6 measured pride in ethnic identity, interest in cultural history, positive emotions toward cultural promotion, behavioral inclinations to defend national interests, connectedness with group members, and recognition of customs and traditions. This construct aligns with the theoretical logic that cultural transmission promotes identity formation.

(d) Scale Compilation and Quality Control. All items were originally developed in Chinese, following a three-step validation procedure: expert review, cognitive interviews, and small-scale pilot testing. Reliability was evaluated using Cronbach's α and Composite Reliability (CR), with .70 as the threshold (Kline, 2016). Validity was examined through CFA in AMOS, assessing standardized loadings ($\geq .70$), average variance extracted (AVE $\geq .50$), and model fit indices (e.g., CFI/TLI $\geq .90$, RMSEA $\leq .08$; Hu & Bentler, 1999). Discriminant validity was verified using the Fornell–Larcker criterion, requiring that the square root of AVE for each construct exceed its correlations with other constructs.

Finally, the SEM was specified with the hypothesized pathways A → B → C to test H1–H4. The mediation effect was assessed using bias-corrected bootstrap estimation with at least 2,000 resamples, evaluating whether the 95% confidence interval of indirect effects excluded zero (Hayes, 2013; Preacher & Hayes, 2008). To enhance clarity, the conceptual research framework is illustrated in Figure 1.

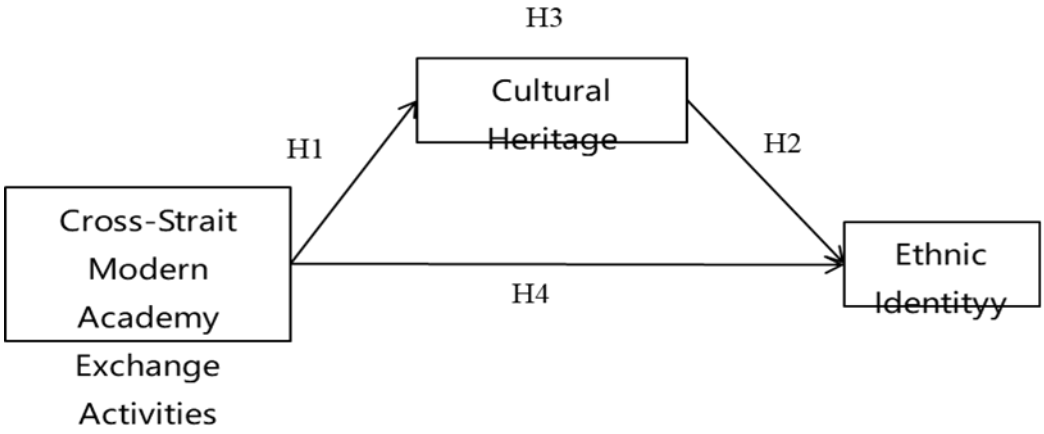

Figure 1. Research Framework Diagram

IV. Data Processing And Statistical Analysis

1. Sample Data Analysis

As previously noted, this study obtained a total of 233 valid samples. Using SPSS 24, frequency and percentage analyses were conducted to summarize the distribution characteristics of participants' disciplinary backgrounds, forum participation frequency, and gender. Results showed that the majority of respondents came from science and engineering backgrounds (56.7%), while non-science/engineering accounted for 43.3%. Regarding forum participation, most participants joined only once (76.0%), followed by those who participated twice (23.6%). Gender distribution was nearly balanced, with 50.2% male and 49.8% female. Overall, the sample structure demonstrated good representativeness, providing a solid foundation for subsequent analyses.

2. Basic Characteristics of Variables

To verify whether the collected sample data followed a normal distribution, skewness and kurtosis were examined for all observed variables, and the Mardia coefficient was further calculated to determine whether the dataset met the assumption of multivariate normality. Before conducting structural equation modeling (SEM), the 233 valid questionnaires were imported into AMOS 24. Descriptive statistics for 17 observed variables were generated to capture the basic distribution characteristics. Skewness and kurtosis values were specifically examined to test univariate normality. As shown in Table 1, all variables had $|\text{skewness}| < 3$ and $|\text{kurtosis}| < 10$, indicating distributions reasonably close to normal, with no need for further transformation. These results satisfied Kline's (2016) criteria for univariate normality.

Subsequently, multivariate normality was assessed, as both confirmatory factor analysis (CFA) and SEM employed maximum likelihood estimation, which requires the assumption of multivariate normality. According to Mardia's (1970) test, both skewness and kurtosis should be evaluated. In this study, the number of variables was $p = 17$, and the theoretical threshold was $p(p+2) = 17 \times 19 = 323$. The actual Mardia kurtosis coefficient was 3.577 (unstandardized value), and its critical ratio (c.r.) was computed as $3.577 / \sqrt{(323/233)} \approx 3.577 / 1.1774 \approx 3.07$. Because this exceeded 1.96, the data deviated significantly from normality.

According to West et al. (1995), skewness greater than 2 and kurtosis greater than 7 indicate "severe" non-normality. By AMOS convention, a multivariate kurtosis c.r. greater than 5 is also considered "serious." In this study, the value of 3.07 was statistically significant ($p < 0.05$) but fell below the threshold of 5, suggesting a moderate, rather than extreme, level of non-normality.

Therefore, the data significantly deviated from multivariate normality, necessitating the use of bootstrap or robust estimation methods for correction. To address this issue, the Bollen–Stine bootstrap procedure (2,000 samples) was applied to adjust the chi-square test of model fit. The Bollen–Stine test yielded a p-value of 0.124, indicating that under non-normality, the hypothesized model could not be rejected.

Table 1. Tests of Univariate and Multivariate Normality

Variable	skew	c.r.	kurtosis	c.r.
EI6	.013	.078	-1.043	-3.249
EI5	-.008	-.049	-1.074	-3.348
EI4	.015	.091	-.859	-2.678

Variable	skew	c.r.	kurtosis	c.r.
EI3	.012	.072	-.932	-2.903
EI2	-.046	-.286	-1.062	-3.310
EI1	-.024	-.148	-1.066	-3.323
CH5	.047	.290	-.848	-2.642
CH4	.014	.089	-.768	-2.393
CH3	.057	.356	-.742	-2.311
CH2	-.072	-.446	-.740	-2.307
CH1	-.064	-.399	-.811	-2.527
EA6	.041	.253	-.713	-2.222
EA5	-.079	-.490	-.857	-2.672
EA4	.062	.386	-.745	-2.320
EA3	-.015	-.094	-.702	-2.187
EA2	.025	.154	-.706	-2.200
EA1	.041	.257	-.838	-2.610
Multivariate			11.911	3.577

3. Confirmatory Factor Analysis (CFA) and Reliability–Validity Testing

Confirmatory Factor Analysis (CFA) is an essential component of Structural Equation Modeling (SEM). Before testing the structural model, it is necessary to analyze the measurement model to ensure that the latent constructs are accurately reflected by their observed indicators. In this study, three latent constructs—Cross-Strait Modern Academy Exchange, Cultural Transmission, and National Identity—were examined. The CFA was conducted in AMOS using the Maximum Likelihood (ML) estimation method, and the robustness of the results was further verified through 2,000 Bootstrap resamples. The analysis revealed that all standardized factor loadings were close to or above 0.70 (the lowest being 0.68, still exceeding the minimum acceptable threshold of 0.50). Indicator reliability also reached 0.70. Model fit indices demonstrated strong adequacy, with CFI = 0.99 and RMSEA = 0.036, both meeting the criteria proposed by Hu and Bentler (1999), thereby indicating a well-fitting model (see Figure 2).

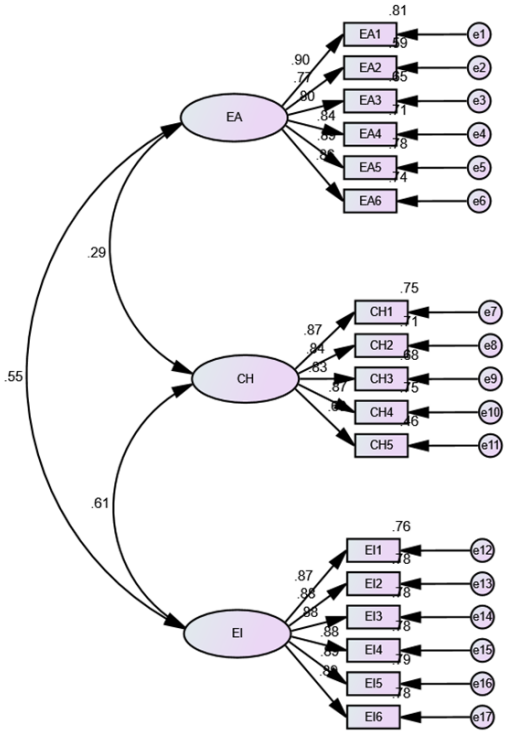

Figure 2. Confirmatory Factor Analysis

Regarding the test of convergent validity, it is generally recognized that composite reliability (CR) should exceed 0.70 and the average variance extracted (AVE) should exceed 0.50. In this study, the CR and AVE values for the three latent constructs were as follows: Cross-Strait Modern Academy Exchange: CR = 0.937, AVE = 0.713; Cultural Transmission: CR = 0.910, AVE = 0.672; National Identity: CR = 0.955, AVE = 0.778. All values were substantially above the recommended thresholds, indicating excellent convergent validity of the scales employed.

For discriminant validity testing, two complementary methods were adopted. First, based on the Fornell–Larcker criterion, the square roots of AVE for the three latent constructs (0.844, 0.820, and 0.882, respectively) were compared with the inter-construct correlations. Results showed that each construct's AVE square root exceeded its correlations with other constructs. Second, correlation significance tests were performed to examine the 95% confidence intervals and p-values of the inter-construct correlations. If the confidence interval did not include 1 and $p < .05$, the constructs were considered related but not conceptually identical. According to the results in Table 2, none of the confidence intervals crossed the value of 1, and all correlation tests yielded $p < .05$. From a statistical perspective, this effectively excluded the possibility of complete overlap among constructs, thereby strongly supporting discriminant validity. Even for the construct pair with the highest correlation, the upper bound of the confidence interval remained clearly below 1, further affirming the theoretical and practical distinctiveness of the three constructs.

Taken together with the structural model results in Figure 2 and the convergent validity indices shown in Table 2, all standardized factor loadings exceeded 0.70, all AVE values surpassed 0.50, and all CR values were above 0.70. Additionally, the square root of AVE for each construct was greater than its inter-construct correlations, thereby fully meeting the dual criteria of convergent and discriminant validity. In summary, the scales demonstrated strong convergence and discrimination across all three latent constructs, confirming their robust construct validity.

Table 2. Confidence Intervals of Correlation Coefficients and Discriminant Validity

Parameter			Estimate	Lower	Upper	P
EA	<-->	CH	.291	.155	.418	.001
EA	<-->	EI	.551	.459	.634	.001
CH	<-->	EI	.606	.490	.696	.001

4. Structural Equation Modeling and Hypothesis Testing

In AMOS, a mediation model was specified as Cross-Strait Modern Academy Exchange → Cultural Transmission → National Identity, clarifying both the direct and indirect pathways from exchange to national identity. Following the confirmatory factor analysis, the structural model was tested. Using 2,000 Bootstrap resamples, the 95% bias-corrected and accelerated (BCa) confidence intervals for all path coefficients and loadings were stable and did not include zero, indicating robustness of the estimates. The verification results are illustrated in Figure 3.

As shown in Figure 3, the chi-square value was 149.98 with 116 degrees of freedom, yielding a chi-square/df ratio of 1.293. The p-value was 0.018, RMSEA = 0.036, GFI = 0.932, AGFI = 0.91, NFI = 0.958, CFI = 0.99, and IFI = 0.99. All indices fell within the recommended thresholds for SEM (Jackson & Chen, 2010), confirming that the structural model achieved an excellent fit.

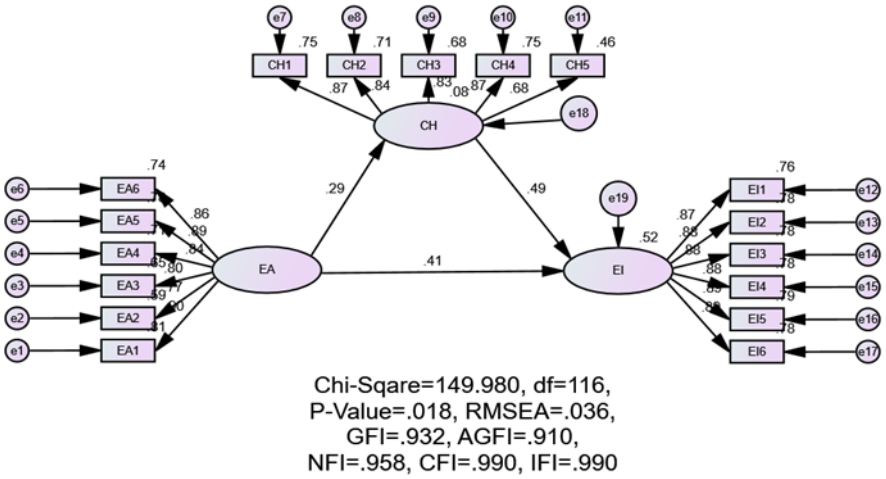

Figure 3. Structural Equation Model Results

To test the proposed hypotheses, this study employed the Bootstrap resampling method. The results indicated that all standardized path coefficients (β) reached statistical significance. As shown in Table 3, Cross-Strait Modern Academy Exchange (EA) exerted a significant positive effect on Cultural Transmission (CH) (β = 0.291, p < .001), suggesting that higher levels of exchange strengthen students' support for cultural transmission, thereby supporting H1. Cultural Transmission (CH) also had a significant positive effect on Ethnic Identity (EI) (β = 0.487, p < .001), indicating that a one standard deviation increase in cultural transmission could enhance ethnic identity by approximately 48.7%, supporting H2. Further analysis revealed that Cross-Strait Modern Academy Exchange (EA) exerted a significant direct effect on Ethnic Identity (EI) (β = 0.410, p < .001). After controlling for the mediating variable, the results demonstrated that exchange not only influenced ethnic identity through the indirect pathway of cultural transmission but also produced a direct positive effect, thus supporting H4.

Table 3. Standardized Regression Coefficients and Significance of Direct Relationship

Parameter			Estimate	Lower	Upper	P
CH	<---	EA	.291	.155	.418	.001
EI	<---	EA	.410	.298	.507	.001
EI	<---	CH	.487	.378	.582	.001

To examine the existence of mediation effects, this study employed 5,000 Bootstrap resamples to obtain the 95% confidence intervals of the indirect effects. As shown in Table 4, Cultural Transmission (HC) functioned as a positive mediator. Specifically, the indirect effect of EA → HC → EI was estimated at 0.142, with Z = 3.74 and 95% BC-CI [0.073, 0.223], which does not include zero, thereby supporting H3.

Table 4. Mediation Effect Analysis of the Model

	Point Estimates	Product of Coefficients		Bias-Corrected CI		Percentile CI	
		SE	Z	Lower	Upper	Lower	Upper
Total effect							
EA→EI	0.552	0.046	12	0.459	0.634	0.458	0.634
Indirect effect							
EA→EI	0.142	0.038	3.74	0.073	0.223	0.073	0.222
Direct effect							
EA→EI	0.41	0.053	7.74	0.298	0.507	0.296	0.505

V. Discussion Of Results And Practical Implications

Academy exchange fosters ethnic identity through both direct effects and indirect pathways via cultural heritage. Evidence of partial mediation suggests that maximizing outcomes requires simultaneous attention to the quality of exchange and the design of heritage practices. The proposed framework provides a comprehensive roadmap—from institutional platforms to student-level supports—for advancing cultural integration and identity development among youth across the Taiwan Strait.

Findings and Theoretical Contributions

This study constructed the theoretical model of Cross-Strait Academy Exchange (EA) → Cultural Heritage (CH) → Ethnic Identity (EI), validated through SEM and Bootstrap analysis. The model demonstrated a good fit ($\chi^2 = 149.98$, df = 116, $\chi^2/df = 1.293$, RMSEA = 0.036, GFI = 0.932, AGFI = 0.910, NFI = 0.958, CFI = 0.990, IFI = 0.990), with stable path coefficients and 95% BCa confidence intervals excluding zero.

The results supported all four hypotheses: EA significantly influences CH ($\beta = 0.291$, $p < .001$, supporting H1); CH significantly influences EI ($\beta = 0.487$, $p < .001$, supporting H2); CH serves as a significant mediator between EA and EI (indirect effect = 0.142, Z = 3.74, 95% BC-CI [0.073, 0.223], supporting H3); EA directly influences EI even after controlling for CH ($\beta = 0.410$, $p < .001$, supporting H4). Decomposition of the total effect (0.552) revealed that approximately 25.7% of the impact occurred through CH, while the remainder was direct, indicating a dual-path mechanism of "Exchange–Heritage–Identity."

These findings contribute to theory in several ways: (1) they integrate learning community and intergroup contact theories, showing that sustained, high-quality interactions (residential communities, mentorship, cross-institutional collaboration) enhance cultural participation and internalization; (2) they confirm cultural heritage as the proximal psychosocial mechanism linking exchange to identity, bridging "historical memory" and "contemporary identity"; (3) they reveal a dual-path, partial mediation structure in which academy exchange shapes identity both through cultural heritage and through community belonging, mentorship, and cross-campus networks; and (4) they reinforce the methodological credibility of the study, with CFA confirming validity and Bootstrap with Bollen–Stine corrections ensuring robust results.

Mechanisms and Explanations

Why does exchange translate into identity? Three mechanisms are proposed:

(1) Heritage chain (input–understanding–identification–practice): Academy exchange situates students in immersive contexts (classics reading, rituals, intangible heritage workshops, cross-campus projects), providing dense cultural cues that are repeatedly discussed, reflected upon, and reproduced in communities of practice.

(2) Psychological recategorization: The "academy community" serves as a superordinate category that weakens intergroup boundaries. Shared symbols and collective memories foster value congruence and strengthen ethnic identity.

(3) Resource accumulation of social and cultural capital: Cross-campus alliances and mentorship systems accumulate trust and cooperation norms, lower cultural learning costs, and enhance the availability and salience of cultural cues in identity construction. The model remains robust under mild-to-moderate non-normality, with 2000–5000 Bootstrap samples and Bollen–Stine corrections confirming stability. However, boundary conditions should be acknowledged: the sample (N = 233) was drawn from students who participated in academy alliance forums, and cultural heritage measurement focused on knowledge–value–behavior dimensions. Future research should expand to ritual intensity, shared memory, and cross-institutional interaction quality, using longitudinal

designs to test causal persistence.

Policy and Practical Implications

The findings offer actionable insights for institutional governance, curriculum design, student support, and evaluation:

(1) Institutional platforms: Establish a normalized exchange platform 2.0 combining joint courses, workshops, cultural festivals, and cross-campus credit recognition; implement annual monitoring of cultural heritage and identity development; and build a shared cultural memory database for teaching and evaluation.

(2) Curriculum and teaching: Develop guided immersion modules with structured cycles (introduction–experience–reflection–action); foster cross-campus, cross-disciplinary learning groups to redesign traditional culture for modern contexts; and incorporate formative assessments (e-portfolios, reflective diaries) to trace cultural-to-identity pathways.

(3) Mentorship and student support: Provide workshops for academy mentors on heritage pedagogy; cultivate peer leaders as cultural navigators in cross-campus teams; and offer reentry support for returning students through follow-up mentoring, community curation, and teaching assistance to sustain identity development.

(4) Evaluation and incentives: Integrate CH and EI into assessment and course credits; create special funds for cross-campus heritage projects, prioritizing initiatives with transferable outcomes (e.g., joint memory, digital preservation); and uphold principles of equity and cultural sensitivity to avoid symbolic tokenism.

VI. Conclusions

This study developed and validated a mediation model linking cross-strait modern college academy exchange, cultural inheritance, and ethnic identity. The findings provide several key insights.

First, academy exchange exerts both direct and indirect positive effects on ethnic identity, with cultural inheritance serving as a crucial mediating mechanism. These results demonstrate that immersive cross-regional exchange not only fosters academic networks and emotional bonds but also reinforces identification with Chinese culture and shared values.

Second, by integrating the cultural inheritance framework (Lin & Wang, 2024) with cultural transmission theory (Cavalli-Sforza & Feldman, 1981), this study conceptualizes cultural inheritance as a multidimensional process encompassing knowledge, values, and practices. The use of bias-corrected bootstrap methods (Hayes, 2013; Wu et al., 2025) further ensured the robustness of the mediation analysis, contributing methodological rigor to cross-regional educational research.

Third, the findings underscore the importance of institutionalized exchange platforms, immersive curricula, and multi-level cultural transmission systems as practical strategies to translate academy collaboration into sustainable pathways for strengthening ethnic identity.

Overall, this study extends Social Identity Theory (Tajfel & Turner, 1979) to the context of cross-regional higher education and enriches the literature on academy-based cultural exchange. Future research should adopt longitudinal and multi-regional designs to capture the dynamic evolution of cultural inheritance and test the generalizability of these findings across diverse higher education contexts.

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