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# Perceived Cultural Authenticity and Chinese Cultural Identity among University Calligraphy Students in Shijiazhuang: The Moderating Role of Behavioural Audience Engagement

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**Abstract**

This study examines the moderating role of behavioural audience engagement in the relationships between perceived cultural, artistic, and media-based authenticity of digital Chinese calligraphy cultural identity. This study employed a quantitative, cross-sectional design. Study collected 400 valid questionnaires from university calligraphy students in Shijiazhuang, China. Study employed Partial Least Squares Structural Equation Modelling (PLS-SEM) to analyze the data. In order to test the hypothesized moderation effects, we used 5,000 bootstrap resamples. The findings revealed that behavioral audience engagement was significant and positive in moderating the relationship between perceived cultural authenticity and Chinese cultural identity ($\beta = 0.216$, $p < 0.001$), perceived artistic authenticity and Chinese cultural identity ($\beta = 0.150$, $p < 0.001$), and perceived media-based authenticity and Chinese cultural identity ($\beta = 0.171$, $p < 0.001$). The strongest moderating effect was found for the dimension of cultural authenticity, followed by media-based and artistic authenticity. Although the direct effect of behavioral audience engagement on fans' identification with Rihanna was insignificant ($\beta = 0.006$, $p = 0.890$), it had significant moderating effects on all three dimensions of authenticity. These findings suggest that active engagement with digital calligraphy content increase the already positive association between perceived authenticity and cultural identity. The study contributes to the understanding of digital heritage engagement by focusing on behavioral participation as a relevant contextual factor in the relationship between authenticity perceptions and cultural identification. Practical implications strengthen the support for the cultural identity of university students more emphasis should be placed on the digital calligraphy experiences.

**Keywords:** Perceived Cultural Authenticity, Artistic Authenticity, Media-Based Authenticity, Behavioural Audience Engagement, Chinese Cultural Identity, Digital Chinese Calligraphy

## Introduction

Chinese calligraphy is one of the key components of China's intangible cultural heritage. It embodies a particular set of traditional aesthetics and philosophical views, and, more

importantly, embodies Chinese culture as a whole. Digital media and social media are changing the ways by which university students experience calligraphy, read calligraphy, and interact with calligraphy. The digital environment creates new avenues for cultural communication and artistic appreciation, and facilitates participation in culture (Chen et al., 2025; Wang & Yu, 2026). Shared representations of culture, collective memory of the past and current experiences of and with heritage all construct and influence cultural identity (Assmann, 2011; Hall, 1997).

The increasing digital exposure to Chinese calligraphy does not necessarily result in empirical evidence of how perceived authenticity of Chinese culture is associated with Chinese cultural identity of university students. The authenticity of culture, art and media could have different effects on cultural identity. The moderating effects of various forms of audience engagement such as liking, sharing, commenting and repeated viewing on the relationships between authenticity and digital Chinese calligraphy are still under-researched. The relationships between various forms of authenticity and digital engagement, which have been established in previous research (Kolar & Zabkar, 2010; Hollebeek et al., 2014), need to be investigated in the context of digital Chinese calligraphy.

*Purpose of the Study*

This study examines whether behavioural audience engagement moderates the relationships between three perceived authenticity constructs and Chinese cultural identity among university calligraphy students in Shijiazhuang, China.

*Research Hypotheses*

H1: Behavioural audience engagement significantly moderates the relationship between perceived cultural authenticity and Chinese cultural identity.
H2: Behavioural audience engagement significantly moderates the relationship between perceived artistic authenticity and Chinese cultural identity.
H3: Behavioural audience engagement significantly moderates the relationship between perceived media-based authenticity and Chinese cultural identity.

The digital evolution of Chinese calligraphy is transforming how university students engage with cultural heritage and develop their cultural identity. However, existing research has rarely explored the moderating role of behavioral engagement in the relationships between perceived cultural, artistic, and media authenticity and the formation of a Chinese cultural identity. Focusing on university students majoring in calligraphy in Shijiazhuang, China, this study aims to address this research gap. Given the growing influence of digital platforms on cultural participation and the preservation of cultural heritage, this study holds significant practical relevance. Academically, it expands the understanding of the interplay between authenticity, digital engagement, and cultural identity. In practical terms, the findings offer valuable insights for universities, educators, and cultural institutions to inform the design and development of interactive digital calligraphy experiences, ultimately strengthening university students' sense of identification with Chinese culture.

*Literature Review*

This study examines perceived authenticity of cultural, artistic and media-based aspects and their relationship to Chinese cultural identity by drawing upon three heritage-related theories

including Cultural Memory Theory (Assmann, 2011), Cultural Representation Theory (Hall, 1997) and Heritage-as-Practice Theory (Smith, 2006). Within this framework of heritage studies, Chinese calligraphy is used as a cultural medium that conveys values of traditional culture and historical heritage by means of artistic expressions. These theories be applied in order to explain how perceived authenticity influences Chinese cultural identity. These theoretical perspectives explore the role of traditional values, artistic representations of the past and practices of heritage within cultures and examine how the behaviors of audience members can affect these perceptions of authenticity in relation to Chinese cultural identity. The study focuses on university students of calligraphy in Shijiazhuang, China.

Previous studies have investigated relations between perceived authenticity of a cultural heritage experience and audience engagement (Kolar & Zabkar, 2010; Beverland & Farrelly, 2010). In addition, research has mapped the relations between various forms of online engagement by consumers and their online behavior (Hollebeek et al., 2014). Studies have also investigated online consumer participation and how it generates engagement within online communities (Dessart et al., 2015). Moreover, previous studies have focused on the applications of digital technologies for Chinese cultural heritage including Chinese calligraphy communication (Chen et al., 2025). In terms of Chinese contexts, attitudes towards Chinese cultural heritage including Chinese calligraphy among higher education students have been studied (Chun et al., 2025). More recently, studies have started to explore the applications of and audiences' perceptions of and resonance with artistic works generated by AI including calligraphy (Wang & Yu, 2026). These studies are related to the current study in terms of concepts of authenticity, digital participation and cultural identity.

However, current studies on cultural authenticity, digital engagement and heritage conservation are largely fragmented and lack systematic and in-depth study of their interrelationship within the digital platform of Chinese calligraphy. Specifically, previous studies on Chinese calligraphy were mainly focused on cultivating appreciation for Chinese culture and exploiting technological innovations for the heritage, as well as on audience participation in heritage conservation in general, without exploring the moderating effects of behavioral engagement.

*Hypothesis Development*

Behavioral audience engagement for strengthening the relationship between perceived cultural authenticity and Chinese cultural identity by means of students' participation and interaction within digital environments of traditional calligraphy. The cultural heritage acquires meaning by means of human interaction as well as by means of human practices (Smith, 2006). Through meaningful exposure to the cultural symbols and the historical values of Chinese culture, students may develop stronger Chinese cultural identity. Therefore, H4: Behavioural audience engagement significantly moderates the relationship between perceived cultural authenticity and Chinese cultural identity.

Artistic authenticity is perceived in terms of originality, handcrafted quality and aesthetic integrity. Students' active participation in digital media can foster appreciation of authentic artistic works and therefore of culture (Beverland & Farrelly, 2010). Therefore, H5: Behavioural audience engagement significantly moderates the relationship between perceived artistic authenticity and Chinese cultural identity.

Authenticity concerns about the media's credibility to represent faithful, Chinese calligraphy online. Fans' behavior of expression such as liking, sharing, commenting, and repeated viewing can strengthen fans' interpretation and identification of Chinese calligraphy (Hollebeek et al., 2014). Therefore, H6: Behavioural audience engagement significantly moderates the relationship between perceived media-based authenticity and Chinese cultural identity.

## Methodology

This study employed a quantitative and cross-sectional research design was employed because it enables the systematic measurement of relationships among multiple variables and the testing of hypotheses using statistical analysis. (Creswell & Creswell, 2023). The research framework consisted of three independent variables includes perceived cultural authenticity, perceived artistic authenticity, and perceived media-based authenticity and one dependent variable Chinese cultural identity. The study also included one moderating variable, behavioral audience engagement. A total of 420 questionnaires were completed by participants. 400 completed questionnaires were used for the analysis. The number of participants in the final sample exceeded the minimum required sample size for the study's model, as determined by G*Power analysis. Data analysis was conducted by means of PLS-SEM with the recommended procedures of Hair et al. (2022). The study investigated the moderation effects of the aforementioned behavioral audience engagement on the relationships between the three types of perceived authenticity and Chinese cultural identity by using two-stage approaches that included the multiplicative interaction terms between behavioral audience engagement and the three types of perceived authenticity, followed by hypothesis testing (H1, H2, and H3) via 5,000 bootstrap resamples with two-tailed tests at .05 significance level and associated 95% confidence intervals.

## Finding

In this section report the results of the moderation test of the effect of behavioral audience engagement on the relationships between perceived cultural authenticity, perceived artistic authenticity and perceived media-based authenticity and Chinese cultural identity. A PLS-SEM analysis was conducted on data collected from 400 university students from China learning calligraphy, with 5,000 bootstrap resamples.

### *Testing H1-H3: Moderating Role of Behavioural Audience Engagement*

This section addresses Research Question 4, which examines whether behavioural audience engagement moderates the relationship between perceived authenticity in digital Chinese calligraphy and Chinese cultural identity. In this study, behavioural audience engagement (ENG) refers to the extent to which students actively interact with digital calligraphy content on social media platforms, such as liking, sharing, commenting, or repeatedly viewing calligraphy-related posts.

### *Bootstrap Inference for Moderation*

The complete structural equation includes CA, AA, MA, ENG, and three interaction terms estimated using the two-stage approach. The first stage estimates construct scores; the second uses those scores to estimate the interaction paths. Inference uses 5,000 bootstrap resamples, a fixed random seed, two-tailed testing at $\alpha = 0.05$, and 95% percentile confidence intervals. H4-H6 are evaluated from the interaction coefficients and their intervals. A

significant ENG main effect is not a prerequisite for a significant interaction (Hair et al., 2022). Table 1 presents the results of the moderation analysis.

Table 1
*Moderation Analysis Results*

| Interaction path | β | t-value | p-value | 95% Bootstrap CI | Decision |
|---|---|---|---|---|---|
| ENG × CA → CCI | 0.216 | 6.103 | <0.001 | [0.144, 0.282] | Supported |
| ENG × AA → CCI | 0.150 | 3.686 | <0.001 | [0.066, 0.229] | Supported |
| ENG × MA → CCI | 0.171 | 4.295 | <0.001 | [0.090, 0.245] | Supported |

Table 1 presents the ENG × CA interaction was positive and significant (β = 0.216, t = 6.103, p < 0.001, 95% bootstrap CI [0.144, 0.282]). Thus, the positive CA-CCI slope was stronger at higher reported levels of behavioural audience engagement, supporting H1. The ENG × AA interaction was also positive and significant (β = 0.150, t = 3.686, p < 0.001, 95% bootstrap CI [0.066, 0.229]). H2 was supported. The ENG × MA interaction was positive and significant (β = 0.171, t = 4.295, p < 0.001, 95% bootstrap CI [0.090, 0.245]). H3 was supported.

All three interaction confidence intervals excluded zero. Higher reported ENG was associated with steeper positive authenticity-identity slopes. For ENG at one standard deviation below the mean, at the mean, and at one standard deviation above the mean, respectively, the CA → CCI slopes were 0.224, 0.441, and 0.657; the AA → CCI slopes were 0.147, 0.297, and 0.447; and the MA → CCI slopes were 0.072, 0.243, and 0.413. These conditional coefficients describe the fitted model; significance of each individual simple slope requires its own interval. The ENG main effect was not significant (β = 0.006, t = 0.138, p = 0.890, 95% CI [-0.071, 0.091]). This does not contradict the significant interactions: its coefficient describes ENG at the reference levels of the authenticity predictors. The cross-sectional results do not establish within-person change or a before-after effect. Among H1-H3, H1 has the largest reported standardised interaction coefficient (0.216), followed by H3 (0.171) and H2 (0.150).

**Discussion**

The findings of this study demonstrate that that behavioral audience engagement significantly moderated the relationships between perceived cultural, artistic and media-based authenticity and Chinese cultural identity among university calligraphy students in Shijiazhuang, China. The three hypotheses (H1–H3) were supported. Higher levels of behavioral audience engagement were found to be positively related to the three stronger relationships between perceived authenticity and Chinese cultural identity. These findings extend previous research on authenticity of cultural heritage in relation to digital participation (Kolar & Zabkar, 2010; Hollebeek et al., 2014) by showing the role of behavioral engagement as a moderator in a digital environment of Chinese calligraphy.

The first finding revealed that the interaction between behavioral audience engagement and perceived cultural authenticity significantly influenced Chinese cultural identity (β = 0.216, p < .001). The largest of the three moderation coefficients, this found support for H1. As outlined by Assmann (2011), Cultural Memory Theory considers the traditions, knowledge, and symbols of a particular culture that are collectively used and preserved by members of said culture to recollect their past. The findings of the current study revealed that students

who engage in greater levels of behavioral audience engagement tend to form stronger correlations between their perceptions of authenticity and Chinese cultural identity. Such results align with Smith (2006)'s definition of cultural heritage as a social practice, as well as the findings of Chun et al. (2025), who attempted to ensure the preservation of Chinese calligraphy within a university setting. Digital participation in calligraphy therefore has the ability to make traditional cultural values relevant to students today.

The second finding indicated that behavioral audience engagement significantly moderated the relationship between perceived artistic authenticity and Chinese cultural identity ($\beta = 0.150$, $p < .001$) in support of H2. This interaction coefficient was the smallest of the three dimensions of audience engagement, yet it was positive. Thus, artistic authenticity was more strongly associated with Chinese cultural identity among students with higher levels of behavioral audience engagement. This finding is consistent with Beverland and Farrelly (2010) who argued that authenticity cues play a critical role in creating meaningful experiences. Indeed, according to Cultural Representation Theory (Hall, 1997), Chinese calligraphy is characterized by its cultural representations that are embedded in its artistic forms, aesthetic principles and symbols. Digital engagement with these artistic representations could lead to greater appreciation of the artistic craft and the corresponding cultural meanings. Contemporary representations of Chinese calligraphy and their corresponding cultural resonance have also been explored by Wang and Yu (2026).

The third finding demonstrated that the behavioral audience engagement significantly moderated the relationship between media-based perceived authenticity and Chinese cultural identity ($\beta = 0.171$, $p < .001$) for H3. Therefore, it is the most credible and culturally faithful media that can elicit greater Chinese cultural identity from the most engaged students. The result is also in line with previous research by Hollebeek et al. (2014) and Dessart et al. (2015) who highlighted the importance of behavioral participation in digital audiences. Chen et al. (2025) recently explored how digital technologies can be used to present Chinese calligraphy. As for other variables within the study, sharing, commenting and even viewing a post again and again might aid in interpreting and appreciating a particular culture that is presented through the media, yet the study did not investigate each of these separately.

Interestingly, the direct effect of behavioral audience engagement on Chinese cultural identity was not significant ($\beta = .006$, $p = .890$), whereas the three interaction effects were significant. This indicates that engagement functions as a contextual moderator rather than having an independent effect on Chinese cultural identity at the levels of the predictors. Therefore, in line with Heritage-as-Practice Theory (Smith, 2006), digital participation may strengthen authenticity–identity relationships. However, the current study is cross-sectional in nature, which precludes any causal conclusions. Overall, this study provides a novel contribution to the field of cultural heritage studies by linking perceptions of authenticity, digital audience engagement, and Chinese cultural identity in a single empirical study.

**Conclusion**

This study investigates the moderating effect of behavioral audience engagement (BAAE) on the relationships between perceived cultural, artistic, and media-based authenticity and Chinese cultural identity of university calligraphy students from Shijiazhuang, China. The

results show that BAAE significantly and positively moderates all three relationships between authenticity perceptions and Chinese cultural identity. As expected, cultural authenticity shows the largest positive interaction with all three variables, followed by media-based authenticity and artistic authenticity. Thus, in digital environments, BAAE strongly affects the relations between audiences' perceptions of authenticity and their cultural identity.

This study extends the theoretical realm of Cultural Memory Studies, of Cultural Representation and of Heritage-as-Practice by incorporating the variable of behavioral audience engagement. Thus, the study offers also a practical contribution to universities, to calligraphy educators as well as to heritage organizations by proposing an array of interactive digital calligraphy activities for fostering meaningful cultural participation and for promoting artistic and heritage values through proper and authentic representation. Social media enable the fostering of cultural identity by allowing users to share, comment on and discuss traditional calligraphy.

The study was restricted to 400 university students from Shijiazhuang studying calligraphy. The cross-sectional design of the study means that no causal conclusions can be drawn. Also, as with all self-report measures, there is potential for response bias. The measures of behavioral engagement were also collective in nature as opposed to individual digital activities.

Longitudinal or experimental studies could be useful to study changes in the cultural identity of individuals over time. Future studies could also be comparative in nature, conducted at different universities, in different regions of the world and with individuals of different cultural backgrounds. More in depth insights into individuals' experiences of digital cultural heritage could be gained by analyzing specific online behaviors, the characteristics of the online environment and other potential moderating and mediating variables.

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