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Data Mining-driven Multiple Regression Analysis of Cultural Identity in International Students' Perceptions of Chinese Culture



Abstract: - A multiple regression fitting analysis was conducted to investigate the level of cultural identification of 222 international students studying in China with respect to Chinese culture. The dependent variables are the Chinese Culture Integration Will (CCIW) and the Chinese Culture Integration Degree (CCID). A number of independent variables are taken into account, including gender, age, and religion. A cost-benefit approach is employed, with management convergence (MC) on the cost side, and the intention to work in China (IWC) on the benefit side. Based on data mining and regression model fitting, we use the software program of SPSS to compute the KMO of the questionnaire data, make factor analysis, and then utilize the econometrics software package to make stepwise ordinary least squares estimation. The results indicate that active involvement in school cultural clubs, as well as aspirations for employment within China, significantly influence students' willingness to comprehend Chinese culture. In contrast, personal characteristics such as gender, age, and nationality appear to have a negligible impact. In order to significantly strengthen students' cultural identities, they need to become proficient in Chinese language, interact more frequently with Chinese peers, participate in cultural activities at school, and develop effective assimilation strategies. The desire to work in China does not significantly contribute to the integration of cultures. It should be noted that the quality of instruction in courses related to Chinese culture as well as participation in extracurricular activities off-campus do not significantly enhance the level of cultural identification among students. By analyzing big data on international students in China, it is possible to gain insight into international student education and Sino-foreign exchanges.

Keywords: Multiple Regression Fitting Analysis; International Students; Cultural Identity; Cost-benefit Approach; Data Mining.

I. INTRODUCTION

In the contemporary scholarly landscape, techniques such as data mining, data visualization, and machine learning have been extensively employed to delve into the inherent relationships and patterns within large-scale data systems, with the ultimate goal of augmenting our understanding of complex entities. Among these methodologies, multiple regression analysis stands out as a conventional analytical tool, frequently utilized for the dissection of multifaceted factors within big data systems. Regression analysis is the most commonly used method for examining relationships between cultural variables and perceptions of justice (Palocsay S W, White M M.2004). Wang, ZS and Gao, SH (2022) carried out data mining on the data of international students, to construct the cross-cultural interaction model of international students. This study employs multiple regression analysis to investigate the phenomenon of international students' identification with Chinese culture, constructing an analytical data model to explore the underlying motivations and reasons that drive this cultural alignment.

Oberg's 1960 [1] concept of "cultural shock" posits that individuals encounter cultural discord when they immerse themselves in unfamiliar cultural milieus. This discord can impede effective cross-cultural communication and identity formation, with impacts varying based on personal traits, cultural backgrounds, and cross-cultural skills. A tendency towards cultural ethnocentrism may exacerbate this, leading to a retreat into the familiarity of one's original cultural identity. Consequently, addressing cultural shock, aiding international students in acclimating to Chinese culture, and nurturing cultural exchanges between China and other nations are critical for the enrichment of intercultural understanding across diverse societies.

In recent years, China has emerged as a significant destination for students from countries along the Belt and Road. The year 2019 saw nearly half a million international students flock to China, a trend expected to surge post-pandemic. Yet, the intricate tapestry of Chinese culture, steeped in millennia of history, presents significant cross-cultural communication hurdles for these students. Presently, Chinese universities are intensifying their focus on educating international students about China's national context to bridge cultural gaps. However, barriers like religious beliefs and inherent cultural variances continue to challenge the seamless integration of these students

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into Chinese society. Scholarly research in this domain has evolved in three key directions: exploration of cross-cultural identity, mechanisms of cross-cultural adaptation, and strategies to enhance cross-cultural identity.

In exploring cross-cultural identity, researchers like Shen and Han (2018) [2] and Zhu and Yao (2019) [3] have examined the influence of Chinese culture on international students' identities and their perceptions of this culture. Yao (2021) [4] probed the link between internet use and cultural identity development among foreign students, while Wang (2023) [5] analyzed the impact of curricula, educational philosophies, and administrative practices on their understanding of Chinese culture.

Investigations into the mechanisms of cross-cultural adaptation have been spearheaded by Wen, Chen, Chen and Wu (2014) [6], delving into adaptation factors in Chinese universities. Wang (2016) [7] and Maeder-Qian J (2018) [8] explored multifaceted challenges faced by international students, spanning language, daily life, psychology, and cultural adaptation. Focused studies by Wang and Zhao (2019) [9], Bond (2019) [10] and Chen (2021) [11] have highlighted the experiences of Central Asian students and the role of Chinese cultural education in fostering cultural identities, respectively.

In examining the pathways to developing a cultural identity with Chinese culture, Perry and Southwell (2011) [12] explored the mechanism of cross-cultural learning, understanding and communication. Scholars have emphasized the curriculum's central role (Zhang and Zhao, 2014; Wen, 2014) [13-14], the influence of cultural background and language proficiency (Tang, 2016) [15], and the impact of administrative standards and educational quality (Han, 2017) [16]. Advocates of an intercultural educational approach like Li and Liu (2020) [17] recommend enriching campus culture, developing teaching models, and enhancing teachers' competencies in cultural education. Tan (2020) [18] proposes a comprehensive cross-cultural educational strategy encompassing knowledge, skills, attitudes, and values.

While existing literature extensively covers cross-cultural communication, employing both qualitative (Slaten, Elison, Lee, Yough, and Scalise: 2016; DADY & SANG, 2022) [19-20] and quantitative methodologies (Chen, 2003; Yang, 2009) [21-24], it often overlooks the core motivations driving international students in China to embrace Chinese culture. This study aims to unravel these foundational motivations and the reasoning behind international students' decisions to identify with Chinese culture. By analyzing these students as micro-individuals in a cost-benefit context, this research scrutinizes the mechanisms influencing their cultural identification. Utilizing principal component analysis for categorizing variables and regression analysis to probe the micro-mechanisms of cross-cultural identity, this study sheds light on the motivational factors propelling international students towards cultural identification with China.

II. THEORETICAL MECHANISM

The cognitive divergences rooted in varied cultural backgrounds are substantial barriers to efficacious cross-cultural communication (BERRY, 1997; 2003; CHARTNER & YOUNG, 2016) [25-27]. Scholarly discourse has predominantly focused on understanding the formation and evolution of cross-cultural identity and integration, viewed through the prism of cognitive differences, often drawing from linguistics and psychology. Yet, this angle frequently neglects the economic drivers at play. While some international students are driven by a sheer fascination with Chinese culture and a quest to deepen their understanding of China, a significant proportion also weigh the economic perks tied to embracing and assimilating into Chinese culture. This includes nurturing connections with Chinese nationals, grasping the intricate cultural nuances, and navigating the challenges of cross-cultural communication. From a rational choice perspective, the decision of international students to align with and integrate into Chinese culture can be interpreted as a deliberate, economically rooted decision-making process (Dorai G C, 1969; 1697) [28-29]. Factor analysis serves as a statistical technique designed to categorize variables based on their interconnected relationships. The immersion into Chinese culture, thus, is a delicate equilibrium of economic gains and expenditures.

For these international students, the allure of comprehending and melding into Chinese culture includes both tangible and intangible rewards. The intangible benefits are embodied in the sense of belonging and satisfaction achieved through cultural enlightenment – these, though intangible, are very real. Tangible rewards, conversely, are directly linked to career opportunities. A refined grasp of Chinese culture, aspirations for employment in China, or prospects of employment with Chinese enterprises after returning home, all enhance economic prospects. However, these benefits may vary depending on the student's area of study, nationality, and their city of residence. Typically, these rewards are proportionate to China's economic clout; a more open and influential Chinese economy spells greater potential advantages.

On the cost side, several factors crucially shape international students' cultural alignment and integration into Chinese culture. A paramount factor is the model of convergence management. Cultural integration is often an unconscious process, deeply embedded in one's psyche. The absence of convergence management in many educational settings leads to a segregated experience for international students, thereby amplifying the costs associated with cross-cultural communication. In contrast, a convergence management approach that aligns the educational goals, methodologies, and mechanisms for both Chinese and international cohorts can significantly lower these communication barriers and foster a seamless cultural milieu for the international students.

Language proficiency stands out as another critical element. As the vessel of culture, language is a primary conduit of communication. Mastery in Chinese - listening, speaking, reading, and writing - empowers students to connect with both the traditional and modern aspects of Chinese culture, nurturing a genuine appreciation. However, proficiency in language alone does not guarantee positive attitudes towards China; this appreciation needs to be cultivated. Lastly, cultural background is instrumental in forming barriers to intercultural communication, often exacerbated by religious and cultural discrepancies. The uniqueness of religious beliefs can create substantial hurdles in cultural assimilation. The disparity in cultural backgrounds further intensifies the complexity international students encounter in fully grasping Chinese culture.

III. RESEARCH DESIGN AND METHODS

A. Questionnaire Design and Variables

This research conducted a comprehensive survey among international students at several universities, including Zhejiang University of Finance and Economics, Zhejiang Sci-Tech University, Shandong University of Finance and Economics, Wenzhou Medical University, and Hubei University of Economics and Business, among others. Utilizing an online questionnaire, the study garnered 222 valid responses, broadly categorizing them into two primary segments: the respondents' basic demographics and their level of engagement and identification with Chinese culture. Extracting useful information from Big Data is an important task (X Wu, X Zhu, GQ Wu, W Ding: 2013) [30], This study uses data mining (Andrejevic M, Hearn A, Kennedy H: 2015) [31] to solve the questionnaire data. The latter segment probes deeper into aspects relevant to international students in China, such as Chinese language proficiency, instructional methodologies, extracurricular involvement, social interactions, and prospects for employment or internships.

In this analysis, the Chinese Culture Integration Will (CIW) and the Chinese Culture Integration Degree (CID) serve as the dependent variables. The independent variables primarily include personal characteristics such as gender, age, and religion. As for cost side, the variables include Management characteristics focus on Management Convergence (MC), which encompasses convergent teaching, accommodation, and language policies. The exposure to Chinese culture involves the student's presence in China (Inside CHN), duration of stay in the country (Years), Opportunity of contacts with Chinese Culture (OCC) and Whether participation in internships (Internship). Cultural educational factors consist of Chinese language proficiency (CHNL), the frequency of participation in Chinese Culture Practice (PCC), number of school activities (NOA), and the assessment of the quality of these courses (QOC). As for benefit side, the intention to work and stay in China (IWC) are reasonably to denote the benefits one can earn from Identity with Chinese Culture. The questionnaire employs a Likert-type scale for rating relevant variables, ranging from low to high, with higher scores indicating a greater degree of convergent management and superior quality and quantity of Chinese culture exposure. Gender, religious beliefs, and the student's location in China are treated as binary dummy variables for analysis.

B. Research Methods and Analytical Tools

The research employs two principal methodologies to dissect and understand the cultural identity of international students: factor analysis and regression analysis.

Factor analysis serves as a statistical technique designed to categorize variables based on their interconnected relationships (Dillon and Goldstein, 1984; Johnson and Wichern, 2002) [32-33]. At its core, this method clusters variables into distinct groups that are highly correlated within each cluster but display little to no correlation between clusters. Each of these clusters represents an essential construct or factor, characterized by a substantial level of objectivity and minimal informational overlap among its constituent indicators. This approach significantly augments the comparability of the data, as described by Ning and Li (2011) [34]. The process commences with an evaluation of the variables' appropriateness for factor analysis, followed by the generation of factor variables, estimation of factor loadings, identification of the optimal number of factors, rotation of these factors to enhance interpretability, and culminates in the analysis of the results.

In tandem, regression analysis (Scott,1966;1969) [35-36] is applied, specifically leveraging the ordinary least squares (OLS) method, which is widely used in econometric studies. This approach is instrumental in dissecting the varying influences of diverse factors on the inclination and depth of international students' assimilation into Chinese culture. This analysis provides crucial insights into the dynamic interplay of factors impacting the cultural identity of international students within the context of their educational and social experiences in China.

C. Factor Analysis Method

To conduct factor analysis on the proposed index system, it is imperative to develop a mathematical model that encapsulates the relationships between the indicators (Lawley D N & Maxwell A E, 1962) [37]. The mathematical model established for this study is as follows:

$$X = AF + \theta \tag{1}$$

Here, X=(X1, X2, Xm) denotes the original indicators, F=(F1, F2, LFn) represents the common matrix of X, A is the factor loading matrix, a_{ij} the factor loading, reflecting the importance of the i th variable on the j th factor; the specific factor, indicating the portion of the original variables that cannot be explained by the factors.

The study employs the principal component factor extraction method (cf. Amemiya, 1985) [38], which measures the importance of the i th common factor through its variance contribution rate i . The steps to construct the factor analysis model are as follows:

Develop an indicator system and create the original matrix Z. Standardize the sample data to ensure normalization of all indicators using the following formula:

$$X_{ij} = \frac{X_{ij} - \sqrt{X_j}}{\sqrt{S_j}} \quad (i = 1, 2L, P; j = 1, 2L, n) \tag{2}$$

$$\bar{X}_j = \frac{1}{n} \sum_{i=1}^n X_{ij}, S_j = \frac{1}{n-1} \sum_{i=1}^n (X_{ij} - \bar{X}_j) \quad (j = 1, 2L, p) \tag{3}$$

Obtain the standardized matrix R' and calculate the simple correlation coefficient matrix R for the variables.

Solve the characteristic equation $|R - \lambda I| = 0$ and calculate the eigenvalues q_i of the correlation matrix. If λ of the of t, then the number of common factors P is determined based on the cumulative variance contribution rate, calculate the cumulative variance contribution rate of the first K factors using the formula:

$$a_k = \frac{\sum_{i=1}^k S_i^2}{\sum_{i=1}^p S_i^2} \tag{4}$$

Calculate the initial factor loading matrix and the variance of the common factors. Apply orthogonal or oblique rotation methods to obtain the orthogonal or oblique factor loading matrix. Based on the absolute values of the correlation coefficients of the orthogonal or oblique factor loading matrix, determine and name the common factors. Calculate the scores and comprehensive scores of the common factors. The value of the j th factor on the i th sample can be represented as:

$$F_{ij} = \bar{W}_{j1}X_{i1} + \bar{W}_{j2}X_{i2} + L + \bar{W}_{jp}X_{ip} \tag{5}$$

Among them, \bar{W}_{j1} , \bar{W}_{j2} , L and \bar{W}_{jp} are the factor value coefficients between the j th factor and the 1st, 2nd, Lth, and p th original variables.

The process of factor analysis is linear with respect to the original variables. The scores of the common factors can be regarded as the weighted sum (\bar{W}_{j1} , \bar{W}_{j2} , L, \bar{W}_{jp}) of each variable. The sizes of these weights serve as measures of the variables' importance to the factors. Therefore, it can be expressed as:

$$F_{ij} = \bar{W}_{j1}X_{i1} + \bar{W}_{j2}X_{i2} + L + \bar{W}_{jp}X_{ip} \quad (j=1, 2, 3, L, k) \tag{6}$$

IV. RESULTS AND DISCUSSIONS

A. Analysis of International Students Identification with Chinese Culture

Overall, this research reveals that while international students in China display a robust eagerness to assimilate into Chinese culture, there is a notable discrepancy between this willingness and their actual degree of cultural integration. The data, as illustrated in Table 1, offers significant insights into their attitudes and self-perceptions concerning their cultural integration.

1) *Willingness and self-assessment of integration*

A considerable majority of international students surveyed (78%) exhibit a high or very high willingness to immerse themselves in Chinese culture, indicating a strong initial inclination to interact with and understand the host culture.

However, in terms of actual cultural integration or identification, only 45.5% perceive their level of integration as high or very high. This gap between expressed willingness and perceived integration levels is noteworthy.

2) *Mismatch between willingness and integration level*

The data highlights that numerous students, despite their strong willingness to integrate, do not perceive themselves as having achieved significant integration levels. This gap could be attributed to various unexplored reasons. Typically, willingness is influenced by the perceived benefits of integration into Chinese culture, whereas the self-assessment of integration is considerably impacted by factors related to the costs of identifying with Chinese culture, such as practical challenges, cultural divergences, or personal experiences hindering complete cultural assimilation.

3) *Dissatisfaction with the current situation*

The finding that 102 students display the highest willingness to integrate but rate their integration lower suggests a segment of students highly motivated to engage with Chinese culture but encountering barriers to full integration. This observation warrants further investigation and potential targeted intervention.

4) *Improvement in cultural identification*

Comparative analysis with a 2017 survey (Huang, 2017) [39] which showed only 28.2% of respondents acknowledging an understanding of Chinese culture, indicates a progressive increase in the level of cultural identification among international students in China.

These insights imply that despite a profound interest among international students to blend into Chinese culture, there exists a significant disparity between their intentions and lived experiences. This phenomenon underscores the need for more effective educational programs, supportive services, and cultural exchange initiatives to foster deeper integration and comprehension of Chinese culture. It also highlights the necessity for comprehensive strategies to assist international students in overcoming the challenges they encounter in their journey to integrate into Chinese society.

Table 1: Overall Situation of CIW and CID of International Students in China

	Very Low	Relatively Low	Average	Relatively High	Very High
CIW	4	1	45	70	102
CID	3	17	100	78	24

The information provided offers insights into how gender and religious beliefs influence the willingness to integrate into Chinese culture among international students, as well as the self-assessment of their level of integration. Here’s an analysis of the key findings:

5) *Gender perspective*

The survey indicates that female students exhibit a higher propensity to assimilate into Chinese culture, with 81% expressing a high or relatively high willingness, compared to 71.7% of their male counterparts. This disparity could stem from various influences such as societal norms, personal inclinations, or the perceived significance of cultural immersion within educational contexts.

In terms of actual integration, despite their higher willingness, female students report a lower degree of cultural integration than males. Specifically, only 43.8% of female students consider their level of integration as high or very high, in contrast to 50% of male students. This finding suggests that male students might either be more content with their cultural integration experiences or employ different criteria in assessing their integration levels.

6) *Religious beliefs perspective*

Regarding the willingness to integrate, students with religious beliefs show a marginally lower inclination towards cultural assimilation into Chinese culture, with 74.5% demonstrating a high willingness, as opposed to 84.8% among non-religious students. This variation may be attributable to potential conflicts between individual religious practices and the prevailing host culture, which could render the integration process more complex.

Contrastingly, the self-assessment of integration levels does not significantly differ between students with and without religious beliefs. This observation suggests that, despite initial reservations or challenges linked to religious beliefs, these do not drastically impact the overall degree of cultural integration.

These insights imply that factors such as gender and religious beliefs may influence the initial willingness to integrate into Chinese culture, yet the actual integration process is likely affected by a broader spectrum of factors. Educational institutions and cultural exchange programs should acknowledge these variances and strive to offer

tailored support that caters to the unique needs of both female students and those holding religious beliefs. This approach might include fostering inclusive environments that respect religious diversity, providing culture-specific adaptation programs, and enhancing intercultural dialogue to foster mutual understanding and respect across diverse backgrounds.

B. Analysis of International Students' Identification with Chinese Culture

Initially, the gathered data underwent rigorous tests for reliability and validity. Like Bolton P. did 2011 (Bolton P,2011) [40], employing SPSS 27.0, the standardized Cronbach's Alpha coefficient was calculated to be 0.729, significantly surpassing the standard threshold of 0.6. This high value implies robust reliability within the data dimensions, as further supported by the individual item coefficients in Table 2, all of which fall within acceptable ranges.

Table 2: Cronbach-alpha Coefficient

	Scale average	Scale variance	Correlation between item and total	Square multiple correlation	Cronbach-Alpha
CIW	15.08	15.278	0.276	0.215	0.733
CID	14.35	14.202	0.495	0.329	0.688
CHNL	13.93	14.637	0.288	0.105	0.735
Chinese friends	14.18	14.1	0.434	0.316	0.699
OCC	14.25	12.334	0.567	0.42	0.664
PCC	14.85	13.515	0.489	0.65	0.686
NOA	14.69	12.831	0.559	0.668	0.668

The validity of the research scale was affirmed through the KMO test and Bartlett's test of sphericity, as detailed in Table 3. The KMO value stood at 0.651, exceeding the minimum criterion of 0.5, and the Bartlett's test yielded a statistic of 456.296 with a p-value substantially less than 0.001. These results suggest a strong suitability of the data for factor analysis, with the KMO value's proximity to 1 indicating solid structural validity and the near-zero significance of the sphericity test reinforcing the robustness of the scale's validity.

Table 3: KMO Value and Bartlett's Test of Sphericity

KMO value	Bartlett's sphere value	DF	P value
0.651	456.296	21	0.000

In delineating factor dimensions, four were selected based on initial eigenvalues greater than 1. The cumulative variance reached an impressive 83.882%, signifying the effective extraction of the principal components from the original variables. The factor load coefficients and eigenvalues of the principal components, alongside the component matrix division (Table 4), all met the necessary criteria, further confirming the validity of the questionnaire.

Table 4: The Component Matrix

	Components			
	1	2	3	4
CIW			0.914	
CID			0.714	
MC				0.746
CHNL				0.976
Chinese Friends		0.895		
OCC		0.793		
PCC	0.935			
NOA	0.922			
Initial eigenvalue variance	2.740	1.276	1.001	0.855
Variance percentage	25.814	22.923	20.326	14.820
Percent of the cumulative variance	83.882			

Extraction method: principal component analysis.

C. Regression Analysis

Table 5 presents the outcomes of the regression analysis. Models 1 and 2 focus on the propensity of international students to understand Chinese culture, while Models 3 and 4 delve into their actual comprehension.

Model 1, devoid of control for individual student characteristics, revealed no multicollinearity among the independent variables, as indicated by a mean VIF under 10. The regression model displayed significant statistical relevance, highlighted by an F-statistic of 3.576 and a p-value markedly below 0.001, suggesting a substantial influence of at least one independent variable on students' willingness to engage with Chinese culture. Notably,

the frequency of participation in off-campus activities (PCC) and the number of such participations (NOA) emerged as crucial determinants of cultural understanding, while career aspirations in China (IWC) also showed a significant correlation with cultural comprehension. In contrast, variables like Chinese language proficiency (CHNL) and the school’s convergent management (MC) had minimal impact.

Model 2, considering individual differences like gender, age, and nationality, revealed that participation in school-organized cultural activities (NOA) notably enhances willingness to integrate into Chinese culture, whereas general extracurricular involvement (PCC) loses its significance. This highlights the importance of specific types of activities, particularly those fostering cultural exchange, in shaping students’ intentions to integrate. Interaction with local students (OCC) is significantly linked to cultural understanding, supporting the critical role of cross-cultural communication. The continuing significant influence of the intention to work or develop in China (IWC) aligns with the ‘benefit hypothesis’ of cultural integration.

Model 3, analyzing individual factors, shows an R2 value indicative of a well-fitting linear regression model, suggesting reliability in the factors affecting students’ understanding of Chinese culture. With no detected multicollinearity among the independent variables (all VIF values below 2), and a highly significant regression equation (F-value of 8.583 and p-value well below 0.001), the model confirms the positive impacts of Chinese proficiency (CHNL), participation in school cultural activities (NOA), Management Convergence (MC), and interaction with local students (OCC). Other variables like the number of Chinese friends, intentions regarding China-based employment (IWC), and the quality of Chinese culture courses (QOC) also positively influence the outcome, albeit less significantly.

Finally, Model 4, which incorporates further control for individual characteristics, validates the findings of the previous models. Key factors influencing international students’ cultural understanding, including Chinese proficiency (CHNL), opportunities for interaction with local students (OCC), frequency of participation in cultural club activities (NOA), and the school’s convergence management approach (MC), remain consistent and pivotal.

Table 5: Regression Analysis

	CIW		CID	
	Model 1	Model 2	Model 3	Model 4
Constant	0.628	0.992	0.940**	1.514**
CHNL	0.068	0.079	0.142***	0.140***
OCC	0.094	0.126*	0.222***	0.211***
PCC	-0.199**	-0.148	-0.01	0.003
NOA	0.265***	0.229**	0.185**	0.169**
IWC	0.461**	0.381**	0.196	0.204
MC	0.064	0.058	0.153***	0.112**
QOC	0.511	0.433	0.564	0.375
Gender		0.2		0.106
Age		0		-0.007
Nationality		0.008		0.042
University		-0.016		0.025
Religion		0.021		-0.008
Mother language		0.016		-0.007
Chinese Friends	-0.012	0.049	0.051	0.071
Inside CHN		-0.416**		-0.173
Study type		-0.013		-0.127
R ²	0.105	0.159	0.219	0.244
F Value	3.576	2.603	8.583	4.438
P Value	0.001	0.001	<0.001	<0.001
Mean VIF	1.720	1.641	1.720	1.641

V. RESEARCH IMPLICATIONS

With the goal of fostering cultural identity and value recognition in international students, the present study aims to reshape course content according to the connotations and spiritual symbols of fine Chinese culture. The program create an integrated online and offline cultural education model based on story-based teaching methods. This involves cultivating international students’ cultural and innovative literacy and building a cultural cultivation mechanism through the in-depth integration of specialized delivery classroom, master teacher classroom, and elite school online classroom. The program enriches the carriers of diversified cultural activities and build a cultural cultivation platform through the organic integration of on-campus and off-campus resources. By promoting a “four-

in-one” approach of curriculum teaching, practical activities, cultural experiences, and innovation and entrepreneurship, our program helps international students realize the multi-dimensional construction of Chinese culture and cultivate young people who understand and are friendly towards China worldwide.

A. *All-round Immersive Cultural Education*

Firstly, the use of story-based teaching methods to guide students in immersive cultural experiences. The organic combination of constructivism, immersion learning, and storytelling solves the problem of cultural abstraction. By integrating Chinese historical and cultural stories and employing a problem-oriented approach, students can engage in analysis and discussion from a cultural perspective, design situational simulations, and establish immersive cross-cultural cognitive connections. This approach fosters social and emotional resonances, thereby promoting the cross-cultural construction of international students in China.

Secondly, we employ the “Blended Learning Teaching Method” to foster students’ immersive cultural thinking. By combining the blended teaching method with layered cultural resources and categorized themes, we create an immersive environment where students can learn and contemplate in Chinese. A wealth of online cultural texts and video resources assist students in overcoming time and spatial constraints. The synergy between online independent reading, thematic exchanges, and offline discussions mutually enhances the process of constructing international students’ cultural course learning.

B. *Multi-scene Integrated Cultural Cultivation*

Firstly, we aim to establish an educational pathway that integrates a comprehensive range of cultural courses, diverse practical activities, and multi-dimensional experiences. This approach seamlessly connects curriculum instruction with hands-on endeavors, creating a rich tapestry of cultural education through both real-life and virtual experiences. We collaboratively develop cultural practice bases, organize traditional cultural thematic experiences, conduct field visits, and facilitate exchanges. Additionally, we produce videos documenting these cultural exchanges for students to engage with virtually, thereby guiding them towards a profound understanding of Chinese culture.

Secondly, we foster a learning environment where cultural education is deeply integrated with innovation and entrepreneurship competitions. Our integration of culture and creativity approach blend cultural creativity with entrepreneurial contests, offering specialized courses and salon discussions. This enables students to immerse themselves in Chinese culture, reflecting upon and establishing a cognitive appreciation, emotional dialogue, and value identity through various stages of these competitions, such as theme refinement, text composition, and speech delivery.

C. *Interdisciplinary and Multifaceted Cultural Nurturing*

First, the establishment of an interdisciplinary research and teaching team. The team should consist of members from various disciplines, including Chinese, foreign languages, economics, and others. By leveraging the expertise of teachers from different subject areas, this team merges traditional Chinese culture with contemporary civilization. It effectively communicates Chinese stories in foreign languages, disseminate Chinese experiences, and showcase China’s outstanding enterprise culture to the world.

Secondly, the establishment of an off-campus cultural mentor team. This team includes influential off-campus cultural tutors whose roles are to facilitate the execution of extracurricular activities, lectures, and other programs. These activities are seamlessly integrated with first-class teaching to enhance international students’ cultural communication abilities.

Thirdly, the establishment of an entrepreneurship mentor team. This team are composed of high-quality entrepreneurship mentors who conduct innovation and entrepreneurship guidance salons. These salons organically blend cultural creativity with innovation and entrepreneurship practice, thereby elevating the educational goals to a higher level.

VI. CONCLUSIONS

The statistical and multiple fitting regressions conducted by SPSS computer software of SPSS based on questionnaire data reveal that participation in school-sponsored cultural clubs and aspirations for career opportunities in China are key drivers of international students’ zeal to understand Chinese culture, thus supporting the ‘benefit hypothesis’ in cross-cultural interactions. In contrast, individual characteristics like gender, age, and nationality appear less influential in shaping their inclination to merge with Chinese culture. Additionally, proficiency in Chinese, interactions with local peers, engagement in cultural activities, and effective convergence

management strategies are significantly linked to a deeper understanding of Chinese culture. Yet, the mere intention to work and grow in China doesn't considerably affect cultural integration, implying that true assimilation relies more on personal attributes than on intentions alone. Likewise, factors such as gender, age, and nationality do not show significant impacts.

This research underscores several crucial implications for enhancing international students' cultural identification with China. First, it advocates for bolstering international Chinese education, laying a robust groundwork for cross-cultural communication. Second, it highlights the underutilized potential of Chinese culture courses in aiding cultural integration, calling for curriculum and teaching enhancements to improve these courses' effectiveness. Third, the study emphasizes the need for more dynamic convergent management strategies to create ample cross-cultural exchange opportunities, thus elevating the level of cultural integration. Finally, establishing a comprehensive cultural engagement framework for international students is critical, enabling them to actively participate in cultural activities and interact more with Chinese students and the broader culture, fostering a deeper cultural identity with China.

Although the conclusions drawn are constructive, there remain aspects that warrant further exploration. The underlying assumption of multiple regression analysis is that all explanatory variables are independent and do not correlate with the error term; otherwise, the results may lack robustness. Constraints in time and financial resources have limited our study to a single time period with only cross-sectional data, precluding the incorporation of a time factor to address individual heterogeneity effects in the multiple regression analysis. Future research endeavors are anticipated to include high-quality, longitudinal investigations, and techniques such as data mining, Monte Carlo simulation or bootstrapping may prove instrumental in advancing these studies. Furthermore, the variables influencing international students' identification with Chinese culture may exhibit interactive effects, with some variables demonstrating complex forward or backward relationships with others. Consequently, a detailed delineation of the mechanisms by which these factors affect identification with Chinese culture is meritorious and requires further characterization. Additionally, the application of structural equation modeling may provide a more comprehensive and insightful understanding of these dynamics.

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