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Social Media Use on Cross-Cultural Adaptation of Chinese Overseas Students Impact Studies

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Abstract:
With the internationalization of higher education and the further development of the Internet, cross-cultural adaptation has increasingly become an important issue that Chinese overseas students have to face, and social media has become an important tool for Chinese overseas students to integrate into the local society. In order to fully understand the influence mechanism of social media in the process of cross-cultural adaptation of Chinese international students, this study collected questionnaire data by snowballing, and conducted the test of variance and second-order structural equation modeling on the data, which found that age is inversely related to cross-cultural adaptation ability of international students; the intensity of social media use of Chinese international students is inversely related to socio-cultural and psychological adaptation barriers, i.e., social media use of international students is inversely related to social and psychological adaptation barriers. The study found that in the Chinese overseas student group, age is inversely related to international students' cross-cultural adaptation ability; the intensity of Chinese international students' social media use is inversely related to socio-cultural adaptation barriers and psychological adaptation barriers, i.e., the greater the intensity of international students' social media use, the stronger their cross-cultural adaptation ability.

Keywords:
social media use; cross-cultural adaptation; psychological adaptation; sociocultural adaptation; second-order structural equation modeling

1 Introduction

With the development of the Internet, social media has penetrated into every aspect of people's lives. A large number of Chinese students go to different countries and regions to study in different nationalities, races and beliefs, as well as multiple native languages and cultures, and one of the major problems they have to face is cross-cultural adaptation. Social media has become one of the most important tools for Chinese students to understand local culture, communicate with local people and integrate into local life.

Therefore, exploring the relationship between the use of social media platforms by Chinese overseas students and their cross-cultural adaptation not only helps to better utilize new media social platforms for cross-cultural communication in the future, but also is of great significance in enriching and developing related theories and practices.

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2. Research design

2.1 Literature review and proposal of relevant variables

2.1.1 Studies related to social media use and variables proposed

Social media use is a broad concept, Correa et al. define social media use as the special consumption of digital media, Internet or information media unrelated to traditional media[1], which as a consumption behavior has different dimensions such as the time, intensity, and mode of use, and generates specific behaviors such as chatting, posting statuses, liking, and commenting.

Social media, as a part of information system, and its usage behavior has been concerned by scholars[2], and a large number of scholars have studied the positive impact of social media usage from the perspective of usage and satisfaction. On the one hand, it affects the subjective life status of users, and social media use can improve life satisfaction and subjective well-being by obtaining information, emotional support or entertainment. For example, social media use provides a bridge for new urban immigrants to obtain information and contact with the outside world[3], strengthens family comfort and friendship for empty nesters, and enhances the sense of well-being[4], enhances job satisfaction for employees[5], and provides a convenient way of socializing self-control and maintaining social interaction and interpersonal relationships[6], and so on. On the other hand, the use of social media in fact has a positive impact on users, as social media facilitates political, cultural and recreational activities, better self-image construction and socialization[7], and social media use provides a new impetus to career management, as the use of social media is positively correlated with employability skills[8], and graduates can learn the latest skill sets through social media to improve employability, and graduates can learn the latest skill sets through social media to improve employability, and graduates can learn the latest skill sets through social media to improve employability, as well as to improve employability. ability[9], increase the probability of job search success[10], and help to improve the competitiveness, cooperation efficiency, income and stability of the employed[11]. In addition, and from an intercultural perspective, interpersonal and group communication established through the mediation of social media can play a positive role in the process of acculturation.

Social media use as a variable, most of the studies refer to the social media use questionnaire developed by Ellison and Lampe et al. in 2007 for measurement, Ellison et al. developed the questionnaire items mostly designed for the intensity of social media use, and less related to the type of social media use as well as the maintenance of relationship, Deng, Yana (2019), and Qu, La (2020) had also referred to this questionnaire to measure the WeChat's use intensity,which was tested to have high reliability and validity[12]. Therefore, this paper focuses on the relationship between the dimension of social media use intensity and cross-cultural adaptation in combination with previous studies, while the type of social media use is measured by means of the difference test.

2.1.2 Cross-cultural Adaptation Related Research and Proposed Variables

Cross-cultural adaptation research originated in the early 20th century, and a survey on the mental health of immigrants in the U.S. was the beginning of the research in this field[13]. From the 1970s onwards, the research on cross-cultural adaptation entered a developmental stage, focusing on the adverse consequences

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of cross-cultural contact, and most of the research in this period was inclined to theoretical explanations and lacked of detailed empirical data. After the 1980s, the methodology of the research on cross-cultural adaptation has been enriched, and the scope of research has been expanded continuously. After the 1980s, the methodology of cross-cultural adaptation research has been enriched and the scope of research has been expanded, and the focus of research has shifted from cultural change and cultural integration at the group level to the exploration of cross-cultural communication and its related factors at the individual level[14].Anthropology, sociology, linguistics, psychology and communication science have all included the issue of cross-cultural adaptation into their research horizons, demonstrating the rich connotation and diversified framework of multidisciplinary and multifaceted mutual reference and joint exploration.

In terms of theoretical constructs, New Zealand scholar Ward proposed a two-dimensional theoretical model of cross-cultural adaptation in 1994, dividing cross-cultural adaptation into two dimensions: socio-cultural adaptation at the behavioral level and psychological adaptation at the emotional level. Psychological adaptation is based on emotional reactions, and if no or less negative emotions such as depression, anxiety, loneliness, disappointment, etc. are generated in the process of cross-cultural contact, it is counted as psychological adaptation. Social adaptation refers to the ability to adapt to the local socio-cultural environment, which is measured by the ability of the immigrants to have effective contact and communication with the local people[15]. Black further divides cross-cultural social adaptation into three dimensions: general adaptation, work adaptation, and interaction adaptation[16]. General adaptation refers to the adaptation to daily life in an intercultural environment, including food, housing, cost of living, and medical care; work adaptation is the degree of familiarity with new work tasks, work roles, work responsibilities, and the general environment of the work; and interactional adaptation refers to the sense of comfort and proficiency felt in social interactions with the host populations, which is usually the most difficult for sojourners to achieve[17]. This theoretical construct focuses on the many levels of influences that lead to the creation and change of stress in the real process of intercultural adaptation. Internal factors include the immigrant's cognitive appraisal style, coping styles, personality, culturally relevant knowledge and skills, and demographic factors[18]. For example, Barrantt (1994) and others have shown that international students' language proficiency is positively correlated with the amount of social interaction they have and the support they are able to receive from the host country. Lower language proficiency may signal greater difficulty in cross-cultural adaptation. External factors include changes in living environment, social support networks, cultural distance, duration of sojourn, values, discrimination and prejudice[19]. Feng Chao (2014) found that the larger the size of the social support network, the higher the level of cross-cultural adaptation in a study oriented to African international students in Zhejiang Province.Furnham (1982), in examining the effect of cultural distance on cross-cultural adaptation, found that Malaysian students in Singapore had a better experience of acculturation than Malaysian students in New Zealand. Cultural or racial similarity is positively related to better socio-cultural adjustment. On the other hand, from the perspective of cultural distance, it should be easier for Chinese to integrate into Japan, which is also part of the East Asian cultural circle, but a study by Chen Hui, Che Hongsheng, and Zhu Min (2003) found that Chinese people had a poorer level of adjustment in Japan compared to Westerners, and one of the important factors was social discrimination and prejudice. Since Ward's categorization is widely recognized by domestic and foreign researchers, his proposed categorization criteria for the concept of cross-cultural adaptation is the main reference for this paper to draw on for categorization.

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2.1.3 Studies related to social media use and cross-cultural adaptation

"Newspapers are the window to the wider outside world for immigrants who have to live in small neighborhoods[20]" Early studies of immigrants confirmed the important role of media exposure in cultural integration. Television, with its accessibility, has become an important channel for immigrants to learn about the lifestyle and values of the host country, and Yang and other scholars' survey of Chinese students in the U.S. found that those who watched news broadcast on U.S. TV stations more frequently, and who used U.S. news sites, social media, and other platforms, adapted to U.S. culture better. The use of mass media can also effectively enhance immigrants' language proficiency, which in turn helps immigrants develop a sense of social belonging and emotional attachment[21].

Under the background of informationization, the digital and interactive features of new media create conditions for cross-cultural communication and provide new scenarios for testing related theories.Kim et al.'s (2010) survey of Chinese and Korean international students in the U.S. found that the Internet is the main channel of communication with their home and host countries. Social networks provide social support networks for sojourners to help them cope with various difficulties and psychological pressures of cross-cultural adaptation. Through a survey of international students in France, Hu Fining (2014) found that interpersonal communication and social interaction on social networks can enhance sojourners' sense of group belonging and reduce the difficulty of cross-cultural adaptation[22].Li Ling (2018), by investigating the media use of transnational brides in Qingyuan County, Zhejiang Province, found that the media as a community bond can help them gain social support from their compatriots[23].Adikari's (2015) study shows that international students' participation and communication through social networks can reduce the stress of cultural adaptation in the host country. Especially in the early stage of cross-cultural adaptation, social media use can effectively alleviate the culture shock and loneliness produced by international students in the host country. Kuang Wenbo and Wu Xiaoli's (2019) [24]study on WeChat use among international students in China also found that international students' WeChat use has a positive impact on their language, communication and study adaptation. Fu Xiaoyan (2018) [25]explored the use of social media and social integration of Chinese international students abroad through the interview method, and the study found that in the process of social media use, international students would reflect on and adjust to the cultures of both countries, resulting in a new "digital culture clash", which posed new challenges to cross-cultural integration[26].

At present, domestic scholars' research on social media use and cross-cultural adaptation mainly focuses on two aspects: one is to explore the relationship between social media and cross-cultural adaptation from the perspectives of social support, social integration, etc.; the other is to explore the relationship between media use and cross-cultural adaptation of international students and its influencing factors[27]. Most of the related studies focus on a specific social media and analyze the role of local social media use behavior in the process of cross-cultural adaptation. These studies have explored what support social media use brings to international students' cross-cultural adaptation, and have also provided a relevant basis for universities' future education and cross-cultural adaptation of international students. However, the types of social media examined in the studies are relatively single, and there is a lack of complete research on the factors influencing the degree of cross-cultural adaptation of international students and the construction of theoretical models of media use[28].Therefore, based on the findings of the existing literature, this paper attempts to further explore the

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relationship between local social media use and cross-cultural adaptation of Chinese international students living in various countries.

2.2 Research hypotheses

The Global Digital Report 2021 shows that social media users have surpassed 4.2 billion, an increase of 13 per cent year-on-year, and that social media has become an indispensable part of people's daily lives around the world. Unlike interpersonal and mass communication in the traditional media era, social media breaks the limitations of face-to-face communication, and the Internet allows communication across time and space. Widespread social contact can increase people's social participation and facilitate the formation of new social relationships between different groups of people (McKenna, Bargh, 1998) [29].

According to statistics, the total number of international students going abroad in China in 2021 will be about 523,700, and the problem of cross-cultural adaptation of international students caused by cultural differences has increasingly become a topic of concern for researchers at home and abroad[30].

On the one hand, there is a focus on the impact of social media on sociocultural adaptation. For example, some studies have found that the use of a range of social media platforms, such as Twitter, Facebook, and Instagram, provides a convenient way for these individuals to interact with their families, classmates, peers, and other support networks in their hometowns and host countries (Li and Peng, 2019; Rui and Wang, 2015, among others). Specifically, Ellison, Lampe (2007) suggested that social networks provide college students with significant social capital, providing a strong foundation for cross-culturally adapted groups to maintain their original relational networks and build host country relational networks. For example, Wan Lihua (2018) took Southeast Asian international students in universities in Kunming as the research object, and found that the use of social media by international students can help international students accelerate the process of cultural adaptation, which is reflected in all aspects of academics, values, daily life, interpersonal interactions, and linguistic adaptation (Ding Lu, 2018) [31].

To summarize, this paper proposes hypotheses H1-1 to H1-4: Chinese overseas students' social media intensity negatively affects their five socio-cultural adaptation barriers: academics, values, daily life, interpersonal interactions, and language.

On the other hand, when scholars at home and abroad study the problem of cross-cultural adaptation, most of them start from the psychological level, for example, Adler redefines culture shock as "a series of emotional reactions, such as helplessness, incompetence, and fear, resulting from the loss of one's own cultural resources and inability to comprehend the experiences of the new cultural environment in the face of an unfamiliar cultural environment. " Similarly Hua Qi and Hanwu Liu, in their study of Vietnamese students coming to China, found that international students do not have much problem in adapting to life, but they are prone to depression in the emotional aspect,In addition to this, Fu Xiaoyan (2018) explored the use of social media and the social integration of Chinese international students in foreign countries, which found that the process of international students' social media use, the general emergence of the conflict of the cognition of a foreign culture. This results in a sense of frustration and anxiety in the process of cultural adaptation. Further, this anxiety can be reflected physiologically in the form of persistent physical fatigue, chronic mental stress, discomfort at the loss of familiar food and companionship, antipathy toward the host country, dissatisfaction

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with the desecration of one's own values, discomfort at the confusion of one's own role identity, and a sense of inability to cope with one's environment."

In summary, this paper proposes hypotheses H2-1 to H2-3: Social media intensity of Chinese overseas students negatively affects their psychological adjustment disorders in three aspects: affective disorder, cognitive disorder, and physical disorder.

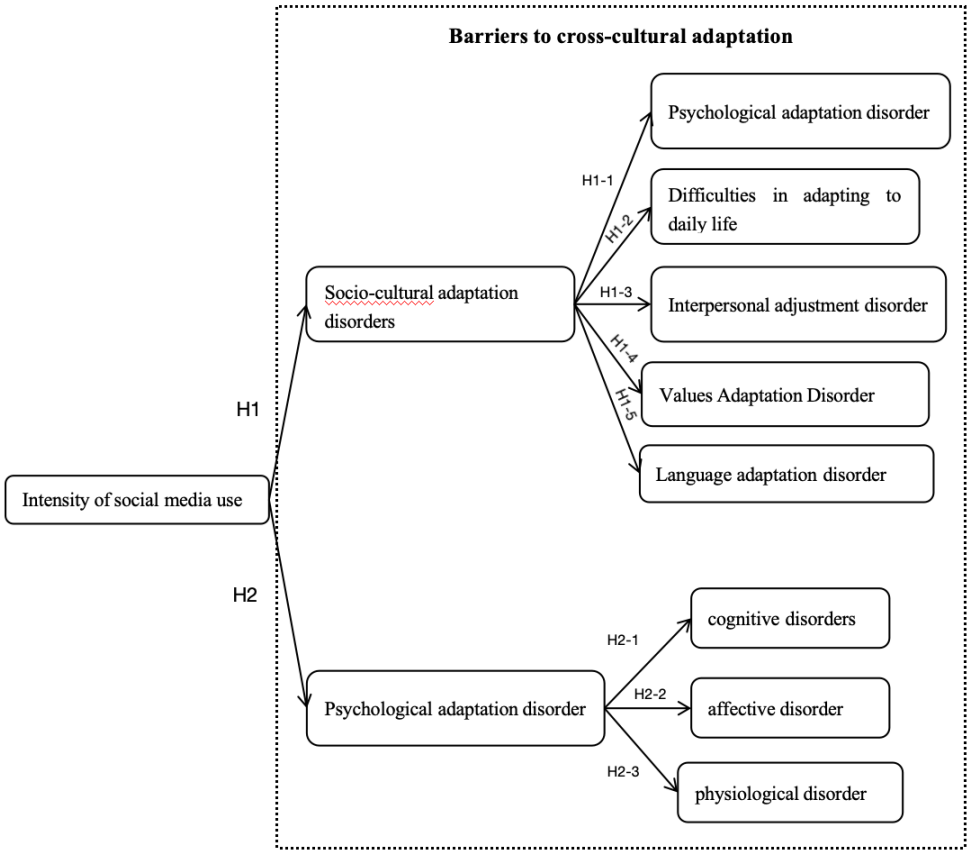


Figure 1 Theoretical model diagram

2.3 Research methodology

2.3.1 Measurement of variables

(1) Demographic factors

Demographics-related factors are mainly examined in six aspects: gender, age, education, total length of study, country or region of study, and major of study, all of which are investigated in the form of single-choice questions. Together with the type of social media use, a difference test analysis was adopted with the cross-cultural adaptation of Chinese international students, focusing on the cross-cultural adaptation of Chinese overseas students in different countries of study.

(2) Social media use

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In the research about social media use, the main investigation of social media use type, time and frequency, etc., because the focus of this study is on the basic social media use of the respondents, so the main research on the type of social media use and intensity of use, in order to ensure the content validity of the variables measured, the variables related to the dimensions of social media use were adapted from Ellison NB , Steinfield C et al (2007) . Steinfield C et al. (2007), the type of social media use was investigated in the form of single-item multiple-choice questions, and the intensity of social media use was investigated by using a 5-point Likert scale, with 1 to 5 representing "Strongly Disagree" to "Strongly Agree" respectively. The higher the score, the greater the intensity of social media use.

(3) Cross-cultural adaptation

Based on the relevant studies on cross-cultural adaptation in the literature, cross-cultural adaptation is proposed to be measured from two aspects: psychological adaptation and socio-cultural adaptation. Psychological adaptation is measured by three potential variables, namely, affective disorder, physical disorder and cognitive disorder, which are adapted from the W.K. Zung (1965) self-assessment depression scale widely recognized at home and abroad, with 1 to 4 standing for "none or seldom" to "most of the time", and 1 to 4 representing "no or little" to "most of the time", respectively. Sociocultural adjustment was measured by five latent variables, namely, academic, values, daily life, interpersonal, and linguistic adjustment, which were adapted from the Ward C, Kennedy A. (1999), and the questions of this part of the questionnaire were set up on a 5-point Likert scale, with 1 to 5 representing "no difficulty" to "very much difficulty", and 1 to 5 representing "no difficulty" to "very much difficulty", respectively. The questions in this section of the questionnaire were set up using a 5-point Likert scale, with 1 to 5 representing "no difficulty" to "great difficulty" respectively, as shown in Table 1. The higher the scores on these two scales, the greater the difficulty of socio-cultural adaptation and psychological adaptation.

Table 1 Measurement of variables related to cross-cultural adaptation

Variable classification	variable name		corresponding item
Demographic factors	Sex, age, education, total length of study, country or region of study, major of study		T1, T2, T3, T4, T5, T6
Social media use	typology		T1
	dissociation		T2-7
Barriers to cross-cultural adaptation	Psychological adaptation disorder	emotional disorder	T1, T9, T11, T15
		cognitive impairment	T7, T8, T10, T12, T13, T14
		physiological barrier	T2, T3, T4, T5, T6
	Socio-cultural adaptation disorders	Academic adjustment disorders	T4, T7, T11, T13
		Values-based adaptation disorder	T1, T8, T15
		Difficulties in adapting to daily life	T6, T9, T12
		Interpersonal adjustment disorder	T3, T5, T10, T6
		Language adaptation disorder	T2, T14

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2.3.2 Questionnaire distribution

This paper collects the required samples by distributing questionnaires. Before the questionnaires were formally distributed on a large scale, the author first pretested a number of Chinese international students abroad in Hong Kong, the United Kingdom and Singapore, and listened carefully to the suggestions of the respondents and adjusted the questions in the questionnaires that were not clear in their ideology and were difficult to understand. And then in the formal survey the author mainly adopted the Internet dissemination method to distribute the questionnaire. Utilizing personal relationship networks, mainly through the dissemination of classmates, friends, relatives, etc., the author invited Chinese international students abroad to fill in the questionnaire, and invited the relevant people to further disseminate the questionnaire by snowballing, and finally obtained a total of 311 feedback samples, and after manual screening, the final valid samples were 296, with an effective recovery rate of 95%. In order to clarify the role of the relationship between the social media usage of Chinese international students abroad and their intercultural adaptability, this study used SPSS to conduct descriptive analysis and difference test on the samples, and used AMOS to conduct validation factor analysis and model validation to arrive at the final relationship model.

2.3.3 Questionnaire reliability and validity test

Reliability analysis was conducted using the Cronbach's alpha (α) coefficient formula, and through SPSS reliability analysis, the Cronbach's alpha coefficients of the Social Use Intensity Scale, the Socio-Cultural Adaptation Scale, and the Self-Depression Scale were found to be .822, .963, and .976, respectively, which indicates that the reliability of the entire questionnaire and the scales of the observed variables are high and have good reliability .

The validity of the scales was then examined by factor analysis, and the KMO values of the Social Use Intensity Scale, the Socio-Cultural Adaptation Scale, and the Psychological Adaptation Scale were 0.86, 0.975, and 0.982, respectively, with a p-value of less than 0.001. The data from the questionnaires were further imported into Amos for validation of the second-order latent variables, and the model was constructed and corrected based on the fit and Modification Indices. After the model was constructed and corrected based on the fit and Modification Indices, the five question items IA1, UI1, DA2, PD4, and PD5 were deleted to determine the final scale for formal model fitting, at which time, the indicators of structural validity obtained from the validated factor analysis were CMIN/DF=1.261<3, p=0.000<0.001, p=0.000<0.001, p=0.000<0.001, p=0.000<0.001. 0.000<0.001, GFI=0.901>0.9, NFI=0.943>0.9, RFI=0.937>0.9, and RMSEA=0.03<0.08, which are all in line with the model structural validity fit criteria. The combined reliability values (AVE) of the Social Use Intensity Scale, the Sociocultural Adaptation Scale, and the Psychological Adaptation Scale were 0.660, 0.644, and 0.748, respectively, which were all greater than 0.5, and the convergent validity values (CR) were 0.907, 0.813, and 0.922, respectively, which were also greater than 0.5, and the values of each of the AVEs and CRs of the third-order latent variables under the second-order latent variables were all greater than 0.5 (see Table 2), indicating that the convergent validity of the questionnaire as well as the combined reliability are satisfactory.

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Table 2 Table of latent variable convergent validity and combined reliability

corres-ponding item	trails	variable name	Estimate	AVE	CR
UI2	<---	UI (Intensity of Use Social Media) Intensity of social media use	0.825***	0.660	0.907
UI3	<---		0.789***		
UI4	<---		0.841***		
UI5	<---		0.777***		
UI6	<---		0.824***		
AA1	<---	AA (Academic Adaptation Barriers) Academic adjustment disorders	0.828***	0.661	0.880
AA2	<---		0.804***		
AA3	<---		0.789***		
AA4	<---		0.826***		
DA1	<---	DA (Daily Life Adaptation Barriers) Difficulties in adapting to daily life	0.819***	0.640	0.781
DA3	<---		0.780***		
IA2	<---	IA (Interpersonal Adaptation Barriers) Interpersonal adjustment disorder	0.805***	0.633	0.775
IA3	<---		0.786***		
LA1	<---	LA(Language Adaptation Barriers) Language adaptation disorder	0.815***	0.656	0.792
LA2	<---		0.803***		
VA1	<---	VA (Values Adaptation Barriers) Values-based adaptation disorder	0.831***	0.631	0.836
VA2	<---		0.753***		
VA3	<---		0.802***		
CD1	<---	CD (Cognitive Disorders) cognitive impairment	0.860***	0.751	0.947
CD2	<---		0.858***		
CD3	<---		0.872***		
CD4	<---		0.867***		
CD5	<---		0.873***		
CD6	<---		0.872***		
ED1	<---	ED (Emotional Disorders) emotional disorder	0.865***	0.753	0.924
ED2	<---		0.849***		
ED3	<---		0.881***		
ED4	<---		0.866***		
PD1	<---	PD (Physiological Disorders) physiological barrier	0.859***	0.740	0.895
PD2	<---		0.830***		
PD3	<---		0.889***		

*The significance level for the difference in means is 0.05.

Meanwhile, the discriminant validity of the three scales was further analyzed. Table 3 shows that the square root of the AVE for socio-cultural adjustment disorder is 0.803, which is greater than the absolute maximum of the correlation coefficient between the factors of 0.748, the square root of the AVE for psychological adjustment disorder is 0.865, which is greater than the absolute maximum of the correlation coefficient between the factors of 0.732, and the square root of the AVE for the intensity of social media use is 0.865, which is greater than the absolute maximum of the correlation coefficient between the factors of 0.737. 0.865, which is greater than the maximum value of the absolute value of the inter-factor correlation coefficient of 0.737, indicating that the three scales have good discriminant validity and are ready for the next step of data analysis.

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Table 3 Table of latent variable discriminant validity and AVE square root

	Socio-cultural adaptation disorders	Psychological adaptation disorder	Intensity of social media use
Socio-cultural adaptation disorders	0.646***		
Psychological adaptation disorder	0.737***	0.748***	
Intensity of social media use	-0.748***	-0.732***	0.660***
AVE square root	0.803	0.865	0.812

*The significance level for the difference in means is 0.05.

3. Empirical analysis and research findings

3.1 Sample descriptive statistics

In the valid sample of N=296, the proportion of male and female Chinese overseas students in the total number of students is 44.26% and 55.74% respectively, which is a relatively balanced proportion of men and women.Chinese overseas students aged 18-25, 26-30, and over 35 years old account for a higher proportion of the sample of this paper, which is 31.76%, 24.66%h, and 25% respectively, which indicates that the data are in line with the Chinese overseas international student group's age distribution. Among all the samples who answered this questionnaire, the group with the most educational level is the undergraduate group, accounting for a total of 36.49%, the master's and doctoral degrees account for a total of 35.14%, and the undergraduate degree accounts for 28.38%, which indicates that the educational level of the Chinese overseas students in general is on the high side. As for the total duration of study abroad, 7-12 months (including 12 months) accounted for the most, accounting for about 39.53%, while 1-3 years and more than 3 years accounted for 22.97% and 20.61% respectively. As for the countries and regions of study, this paper counts 13 countries and regions, among which the UK has more Chinese students, accounting for 14.19%, followed by the US, accounting for 12.84%, and Europe and the United States account for 54.05%, which is also more in line with the distribution of the countries and regions of China's current overseas students studying in China. In terms of majors studied, literature and history accounted for 22.97%, science and technology accounted for 31.08%, medicine accounted for 16.89%, economics and management accounted for 22.97%, and art accounted for 6.08%. In terms of social media platforms, the social media platforms frequently used by Chinese international students are Instagram, accounting for 23.31%, Twitter accounting for 15.88%, and WhatsApp, Facebook, YouTube, and LinkedIn accounting for close to the same proportion of 12.16%, 11.82%, 11.15%, respectively, 11.15%. Overall, the sample data is basically in line with the overall distribution of Chinese overseas students.

3.2 Difference-in-differences test

The test of variance is used to compare whether the differences between two or more samples are significant or not, and this paper focuses on testing the differences in cross-cultural adjustment disorder (the sum of socio-cultural adjustment disorder and psychological adjustment disorder) in terms of gender, age, country (region) of study, length of study, major of study, and frequent use of social media platforms among the re-

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spondents to the questionnaire. The test of variance for gender was conducted using the independent samples test, and the one-way ANOVA test was used for the remaining items. The results of the variance test show that there are significant differences among Chinese overseas students only in age (p=0.000<0.001), and the p-values of gender, country (region) of study, length of study, majors studied, and social media platforms are 0.111, 0.851, 0.088, 0.379, and 0.217, which are greater than 0.05, respectively, indicating that the intercultural adaptation barriers of Chinese international students in these factors are all greater than 0.05, which indicates that the intercultural adaptation barriers of Chinese international students in these factors are all greater than 0.05. adaptation barriers are not significantly different in these factors.

The one-way ANOVA test of "age-intercultural adaptation" was tested for chi-square, and LSD and Tammany calculation methods were chosen. The p-value in the chi-square test was 0.006<0.05, so the original hypothesis was rejected, and the results of the Tammany test were accepted, which can be seen in Table 4. , the stronger the cross-cultural adaptation barrier and the worse the cross-cultural adaptation ability of international students, and the younger the international students, the stronger the cross-cultural adaptation ability.

Table 4 One-way ANOVA test table for age-cross-cultural adaptation

age groups	average value	(statistics) standard deviation	95% confidence interval of the mean	
			lower limit	limit
Under 18	107.000	2.040	106.092	107.908
18-25 years	68.915	28.530	63.071	74.758
26-30 years	43.795	5.991	42.397	45.192
31-35 years	43.576	3.775	42.237	44.914
Over 35 years old	43.243	4.394	42.225	44.261
P	0.000***			
Tammany	Over 35 < 31-35 < 26-30 < 18-25 < under 18			

*The significance level for the difference in means is 0.05.

3.3 Model fitting and hypothesis testing

In this paper, we constructed a model of the effects of social media use intensity on social and cultural adjustment disorder and psychological adjustment disorder of Chinese overseas students based on relevant theories, and the model was modified according to the Modification Indices after fitting, and three corrections were made, which were connected to the residual items corresponding to questions 3 and 4 of the Social Media Use Intensity Scale with the correlation line, to the residual items corresponding to questions 5 and 6, and to the residual items corresponding to social and cultural adjustment disorder and psychological adjustment disorder with the correlation line, respectively. The first two are due to the less distinctive design of the questions, and the latter is due to the fact that socio-cultural adaptation scales and psychological adaptation scales are often used together to measure cross-cultural adaptive competence, and their internal correlations are also strong. The fit coefficients of the corrected model are shown in Table 5, which shows that all the fit indicators of the model are in line with the fit indicators, and all of them pass the goodness-of-fit test, so the model fit is good. As a result, the model of the actual influence of Chinese overseas students' social media usage intensity on their social and cultural adaptation and psychological adaptation is shown in Figure 2.

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Table 5 Table of model fit coefficients

norm	CMIN/DF	GFI	AGFI	PGFI	NFI	RFI	IFI	TLI	CFI	RMSEA
present value	1.235	0.9	0.884	0.778	0.943	0.939	0.989	0.988	0.989	0.028
recommended value	<3.0	>0.9	>0.8	>0.5	>0.9	>0.9	>0.9	>0.9	>0.9	<0.08
fitness judgment	be	be	be	be	be	be	be	be	be	be

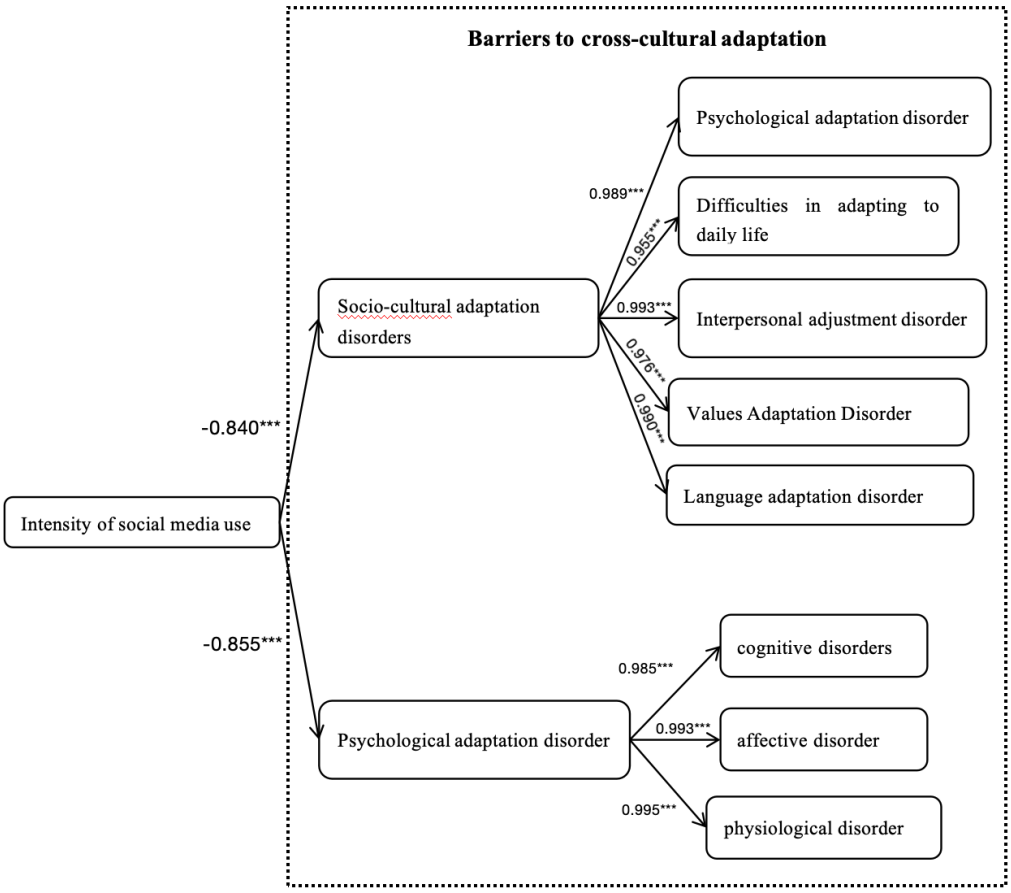


Fig. 2 Diagram of the actual model

The path coefficients of the intensity of social media use on socio-cultural adaptation disorder and psychological adaptation disorder are -0.840 and -0.855, respectively, with p-values less than 0.001, indicating that the more enthusiastic Chinese overseas students are in using overseas social media, the stronger their socio-cultural adaptation ability and psychological adaptation ability are (as shown in Table 6). In addition, both socio-cultural adjustment disorder and psychological adjustment disorder have a positive effect on their re-

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spective secondary latent variables, which suggests that the intensity of overseas social media use by Chinese overseas students has a significant positive effect on enhancing all aspects of cross-cultural adjustment ability. Therefore, the research hypotheses H1, H1-1, H1-2, H1-3, H1-4, H2, H2-1, H2-2, and H2-3 are all valid.

Table 6 Table of model path coefficients

pathway			Estimate
Intensity of social media use	--->	Psychological Adaptation Barriers	-0.840***
	--->	Socio-cultural adaptation disorders	-0.855***
Psychological adaptation disorder	--->	emotional disorder	0.993***
	--->	cognitive impairment	0.985***
	--->	physiological barrier	0.995***
	--->	Academic adjustment disorders	0.989***
	--->	Difficulties in adapting to daily life	0.955***
Socio-cultural adaptation disorders	--->	Interpersonal adjustment disorder	0.993***
	--->	Language adaptation disorder	0.990***
	--->	Values-based adaptation disorder	0.976***

*The significance level for the difference in means is 0.05.

4. Research findings

4.1 Cross-cultural adjustment disorders in Chinese international student groups show significant differences in terms of age.

In this questionnaire survey, the demographic factors of gender, age, education, total duration of study, country or region of study, and major studied were included in the study. The results of the statistical analysis of the data showed that several factors, namely, gender, country or region of study, length of study, major studied, and social media platforms, did not have a significant effect on the cross-cultural adaptation of the Chinese overseas student population, while the age factor had a significant effect on the cross-cultural adaptation of the Chinese overseas student population. The results of the study show that among the group of Chinese overseas students, those who are under 18 years old have the strongest intercultural adaptation ability, those who are 18-25 years old are the second strongest, and those who are over 35 years old have the weakest intercultural adaptation ability. In the author's opinion, the reasons for this difference are as follows: compared with older international students, younger international students have shorter contact with the mother

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culture, their ways of thinking and behavioral patterns are in the process of development and formation, and they are better at accepting new things driven by curiosity and are more proficient in the use of social media, so they have a significant advantage in cross-cultural adaptation; moreover, from a universal perspective, the age group above 35 years old has the strongest cross-cultural adaptive ability. In addition, in a universal sense, the 35+ age group is mostly influenced by their families, which makes this group's intercultural adaptation ability relatively weak.

4.2 Intensity of social media use among Chinese overseas students is inversely related to their cross-cultural adjustment barriers.

The results of this questionnaire survey show that the intensity of social media use has a significant negative effect on the cross-cultural adaptation barriers of the Chinese overseas student group, i.e., the higher the intensity of social media use, the stronger the cross-cultural adaptation ability of the Chinese overseas students, and the use of social media can improve the degree of cross-cultural adaptation of this group. In terms of specific dimensions, the intensity of social media use has a significant negative relationship on both socio-cultural adaptation disorder and psychological adaptation disorder.

In terms of socio-cultural adaptation barriers, the author refined to five sub-variables: academics, daily life, interpersonal communication, values and language adaptation barriers. The use of social media is a convenient way for Chinese overseas student groups to quickly learn about unfamiliar environments. International students are able to adapt to different study modes based on mastering and using the local language, understand the academic system and assessment standards, be able to integrate into overseas life situations, adapt to new ways of interpersonal interactions, learn about the etiquette and political system of the country or region where they are studying, understand the cultural differences in different contexts, and gradually adapting to the new cultural environment. The intensity of social media use negatively affects the academic, value, daily life, interpersonal communication, and language adaptation barriers of Chinese overseas students, and the more enthusiastic the use of social media, the stronger their socio-cultural adaptability.

In terms of psychological adaptation barriers, the author refines to three sub-variables: emotional barriers, cognitive barriers and physical barriers. First, Chinese overseas students use social media to learn about local social culture and social habits, which helps them understand and adapt, reduces cognitive barriers, and alleviates their psychological pressure in unfamiliar environments; second, international students urgently need to establish new social relationships in unfamiliar environments in order to support their lives in the future, and the use of social media expands the scope of interpersonal interactions, facilitates participation in more social activities, and reduces Emotional barriers, alleviate loneliness and anxiety, and enhance the sense of psychological belonging; finally, based on the first two factors, the physical discomfort caused by psychological problems of international students decreases significantly, and reduces physiological barriers; the intensity of social media use negatively affects the emotional barriers, cognitive barriers, and physiological barriers of Chinese international students abroad, and the more enthusiastic the use of social media, the greater the ability of their psychological adaptability.

To summarize, the higher the intensity of social media use among Chinese overseas student groups, the higher the degree of socio-cultural adaptation and psychological adaptation, and the stronger the cross-cultur-

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al adaptation ability.

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