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# WeChat Use And Cross-Cultural Adaptation of International Students In China: The Mediating Role of Social Self-Efficacy

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**Abstract:** An increasing number of international students are pursuing studies in China and encounter challenges and uncertainty in a new foreign environment. Cross-cultural adaptation is influenced by social self-efficacy, social interaction, and WeChat use but little is known about the interaction of these three factors in influencing cross-cultural adaptation. The study examined the mediating role of social self-efficacy in the relationship between WeChat use and cross-cultural adaptation for international students in China. Method: Questionnaire data were collected from 215 international students in four universities in China. A majority were from Asian countries and aged 18-25. The students had high levels of WeChat use and cross-cultural adaptation, and a moderately high level of social self-efficacy. Pearson's correlation test results revealed that WeChat use was a positive predictor of social self-efficacy and cross-cultural adaptation. Similarly, social self-efficacy was a positive predictor of cross-cultural adaptation. Linear regression analyses showed that the association between WeChat use and cross-cultural adaptation was partially mediated by social self-efficacy. The findings suggest that social self-efficacy has the potential to act as a protective factor in the cross-cultural adaptation of international students in China because, in the event of low WeChat use, the students may still be better able to adapt to cross-cultural environments if they have high social self-efficacy.

## 1.    Introduction

With the continued growth of globalization and international mobility in recent years, the phenomenon of venturing out of one's home country to pursue higher education has become increasingly common (Hofhuis et al., 2019; Pang & Wang, 2020; Yang, 2018). Currently, there are more than five million international students worldwide (ICEF Monitor, 2017). In China, the latest official statistics from 2019 indicate that there are 492,185 international students from 196 countries and regions enrolled at 1,004 higher education institutions, and these figures are expected to continue to rise (MOE, 2019).

For international students, studying abroad presents an invaluable opportunity to enhance their cross-cultural competence, personal development, and career prospects (Nguyen & Hartz, 2020). Nevertheless, international students who move across cultural boundaries inevitably encounter daunting challenges and uncertainties in a new foreign environment (Pang, 2020). These include social, cultural, academic, and daily life adaptation (Polat & Arslan, 2022). A proactive approach is needed to deal with the expected difficulties, such as language barriers, cultural differences, feelings of loneliness and homesickness, social pressures, and academic issues (English & Zhang, 2020; Gong et al., 2021; Li et al., 2023; Pang & Wang, 2020). In this context, social media technologies, particularly WeChat in China, may play a crucial role in aiding international students in navigating these challenges and facilitating their cross-cultural adaptation.

This study aims to explore the relationship between social media use, particularly WeChat, and international students' cross-cultural adaptation and social self-efficacy, filling an important gap in the existing literature on intercultural education.

## 2.    Literature Review And Hypothesis Development

### 2.1. Social media use in China

Technologies can help individuals adapt cross-culturally to a new environment (Kramer, 2019). Social media technologies help individuals stay connected, gain social capital, and adapt to differences in educational systems and approaches during cross-cultural adaptation (Alamri, 2018). For international students in China, the social media platform that is applicable is WeChat because several internationally popular social media platforms (e.g., Facebook, Google, Twitter and WhatsApp) have been banned since 2009, due to concerns surrounding political and censorship issues (Athukorala, 2021). Thus, international students have to rebuild new networks through local

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social media after arriving in China. They are inclined to choose local digital networks that are highly popular in order to adapt to the new socio-cultural environment (Çömlekçi, 2020). In China, WeChat is the most popular social media, with over one billion monthly active users (Cao et al., 2024; Negro et al., 2020).

For a significant portion of international students, social media is an important communication platform that shapes the process of intercultural adaptation (Wong & Liu, 2024). Among international students in China, WeChat is also the most popular social media and a majority of them have positive attitudes towards its use (Wang et al., 2019). WeChat helps international students understand social relations in the host country and the latest developments in the process of cross-cultural adaptation (Athukorala, 2021). The use of social media can also reduce culture shock for international students (Goh et al., 2019; Hassan et al., 2021), promote academic development, and facilitate socialization and integration (Çömlekçi, 2020). Social media can lessen cross-cultural adaptation difficulties (Xiong, 2017; Yu & Guo, 2021). Insights into how individuals use social media to navigate cultural differences, build support networks, and develop intercultural competence provide a contemporary dimension to established theories such as communication accommodation theory (Kim, 2001), which were proposed before the digital era.

**H1:** *There is a significant correlation between WeChat use and cross-cultural adaptation of international students in China.*

## 2.2. Social self-efficacy

Self-efficacy is an individual's perceived competence and confidence in social activities (Bandura, 1986). The use of social media contributes to the formation of a positive psychological state that enhances an individual's perception of social competence and confidence, and researchers have found that the self-beliefs can be enhanced by online interactions in the social domain (Hu et al., 2018; Rogala et al., 2020; Safdar et al., 2003). Social media use can increase individuals' self-efficacy in various domains, including general self-efficacy (Hu et al., 2018), communication self-efficacy (Pekkala & van Zoonen, 2022), academic self-efficacy (Boahene et al., 2019) and coping self-efficacy (Cao & Jia, 2024). Together, social media use and social self-efficacy represent key coping resources for international students to overcome the challenges of cross-cultural adaptation (Cao & Jia, 2024; Çömlekçi, 2020; Carmeli et al., 2021).

**H2:** *There is a significant correlation between WeChat use and social self-efficacy among international students in China.*

## 2.3. Cross-cultural adaptation

Thus far, research has found the direct impact of various factors on cross-cultural adaptation of international students. Communication apprehension and social contact predict adaptation (Swagler & Ellis, 2003). An increase in WeChat usage intensity is associated with an increase in behavioral engagement in academic learning, and also with better academic adjustment over six months (Cao et al., 2024).

The social self-efficacy of international students in interactive environments has been identified as an effective predictor of cultural adaptation stress (Lin & Betz, 2009). Individuals with higher self-efficacy in the social domain are more likely to build relationships, demonstrate confidence to cope with conflicts and difficulties, and have better social, academic, and psychological adaptations (Cao et al., 2024; Lin & Betz, 2009).

In the social domain, international students' self-efficacy correlates significantly with their level of adaptation to the new cultural environment (Hechanova-Alampay et al., 2002). Consequently, international students who possess a high degree of social self-efficacy are better equipped and more sure of their ability to confront the cultural, social, and academic obstacles and challenges associated with cross-cultural adaptation (Constantine et al., 2004).

**H3:** *There is a significant correlation between social self-efficacy and cross-cultural adaptation of international students in China.*

## 2.4. Social self-efficacy, WeChat use and cross-cultural adaptation

The frequent use of social media has been shown to directly contribute to an individual's cross-cultural adjustment at both the psychological and behavioral levels (Pang, 2020). The results of a highly positive correlation between WeChat use and cross-cultural adaptation also suggest that there is a direct pathway for the impact of WeChat use on cross-cultural adaptation, which is consistent with the results of other studies (e.g., Wenwe & Osman, 2022). These studies have explored the direct links between social media and cross-cultural adaptation, and social media and social self-efficacy, but there is still a lack of research on the possibility of indirect relationships among the three.

Pang and Wang (2020) reported that social media use may be a distal predictor of the cultural adaptation process of international students, and that there may be other proximal predictors related to it. It is reasonable to posit that both social media use and social self-efficacy may serve as potential predictors of international students' cross-cultural adaptation (Cao & Jia, 2024).

However, the indirect influence mechanisms by which social media facilitates cross-cultural adaptation are not yet understood (Li & Peng, 2019). While social media can serve as a distal coping resource to facilitate cross-

cultural adaptation through the promotion of social self-efficacy, few studies have systematically investigated the complex mediating variables that link social media use with cross-cultural adaptation (Chen et al., 2018). Social competence and confidence are important components in helping international students adapt cross-culturally, but social self-efficacy has not been studied as an indirect influence on cross-cultural adaptation (Wang, 2013). There is a chain mechanism of causality between the three variables of social media use, social self-efficacy and cross-cultural adaptation, giving rise to the following hypothesis:

**H4:** *Social self-efficacy significantly mediates the relationship between social media use and cross-cultural adaptation.*

## 3. Methodology

### 3.1. Participants

The participants were 215 international students from universities in Southwestern China. A total of 216 students completed the online survey, but one participant was excluded for not filling out the participant consent form. The selection criteria included students from foreign countries pursuing college or university education in China. The length of stay in China and familiarity with Chinese culture and language were not exclusion criteria.

Among the participants, 77.7% were female and 22.3% were male. The sample comprised 139 undergraduate students, 72 postgraduate students, and four non-degree students. The majority of participants had attained level 4 in the Chinese Proficiency Test (M=4.24, SD=1.02). The mean length of stay in China was 3.59 months (SD=1.10). Most participants were from Asian countries (71.6%) and were primarily aged 18-25 (89.8%). All participants were pursuing academic studies and developing their professional skills, and all utilized the WeChat social media platform.

### 3.2. Measures

The questionnaire comprised measures of demographic information, prior exposure to China, WeChat use, social self-efficacy, cross-cultural adaptation, and a consent section. Since the international students met the basic requirements of English language proficiency to study in China, the questionnaire was in English.

The WeChat Use Scale measures the positive adaptive behaviors of WeChat use among international students in China. The scale consists of 19 items that assess media usage intensity, media acceptance, socio-cultural adaptation, and psychological adaptation. The media usage intensity subscale includes three items (e.g., "I have a lot of WeChat friends"), adapted from Wang et al. (2019) and Hassan et al. (2021). The media acceptance subscale has three items (e.g., "WeChat is free to use"), adapted from Kuang and Wu (2019) and Athukorala (2021). The socio-cultural adaptability subscale contains seven items (e.g., "I use WeChat to keep in touch with friends"), and the psychological adaptability subscale has six items (e.g., "I use WeChat to overcome homesickness or loneliness"), both adapted from Kuang and Wu (2019). The WeChat Use Scale is a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). All measures of the scale show good psychometric properties, as indicated by Cronbach's alpha coefficient of .966 with high reliability. The KMO value was .954 and Bartlett's test is significant, indicating good construct validity. Kuang and Wu's (2019) WeChat use scale was used in two other studies on social media among international students in China (Li, 2020) and the interaction with cross-cultural communication (Yu & Guo, 2021). In Yu and Guo's (2021) study, the scale also had high internal consistency (Cronbach alpha coefficient of .876).

The Social Self-efficacy Measurement scale was adapted from Smith and Betz (2000) who developed a 25-item scale on measuring social self-efficacy. This scale was selected on the basis of its high reliability, as indicated by a Cronbach coefficient of 0.90. It has been employed extensively to assess cross-cultural adaptation in college students and adults, and it is applicable to international students (Çankaya et al., 2017). The measure assesses the respondent's capacity to engage in assertive behaviour in six social contexts: the formation of friendships, the pursuit of romantic relationships, the assertion of a social position, the performance in public, the performance in a group or at a social gathering, and the provision and receipt of assistance. The items are on a five-point Likert scale, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). The objective of our study was to assess the social self-efficacy of international students. We focused on the social self-efficacy aspects associated with social interaction, psychological adaptation, and academic aspects of cross-cultural adaptation (Carmeli et al., 2021). Consequently, we excluded some questions related to the pursuit of romance from the Smith and Betz (2000) scale (e.g., "I feel confident asking a potential friend out for coffee", "I feel confident calling someone I have met but want to get to know better"). The 16-item social self-efficacy scale has a Cronbach's alpha coefficient of .976. The KMO measure for these items is .967, indicating well-fitted sample statistics. The results of the Bartlett's test are significant (p=.000 < .05), indicating that the questionnaire is structurally valid.

The Cross-cultural Adaptation Measurement scale was largely adapted from Polat and Arslan (2022) to assess international students' overall adjustment to the host country. This scale consists of four subscales and 30 items, with six items in the subscale for academic adaptation (e.g., "I am satisfied with the support at my university"), seven items in the subscale for social-cultural adaptation (e.g., "I respect the values and cultural norms of China"), 10 items in the psychological adaptation (e.g., "I know how to cope with anxiety "), and the subscale for daily life adaptation has seven items (e.g., "I know what to do in an emergency in China'). Response categories ranged from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha for the Cross-Cultural Adaptation Measurement

scale is .982 with good internal consistency. The KMO measure is .971 and Bartlett's test is significant (p=.000 < .05) showing good validity. The Cronbach's alpha coefficient is high at .839 in the original study and .728 in Arslan and Polat (2023). It is suitable for use in the present study because the items cover academic adaptation, social-cultural adaptation, psychological adaptation and daily life adaptation which are applicable across cultural contexts.

### 3.3. Data Collection Procedures

The survey was conducted using Sojump, a well-known online survey website in China. The questionnaire for the online survey was constructed in accordance with the methodology proposed by Regmi et al. (2016). Four universities with a high number of international students in Southwestern China were selected. The questionnaire link was shared via WeChat groups of international students. The questionnaire was shared with the assistance of the administrators and lecturers responsible for international education in Southwest China, based on the snowball sampling method. The participants were informed of the purpose and voluntary nature of the study and were assured that all responses would be anonymized. All responses were treated in strict confidence. Participants were informed that they could withdraw from the study at any point, and only those who completed the full questionnaire were included in the subsequent data analysis. In order to encourage students to participate in the survey, each student was given a random WeChat red packet upon completion of the survey. Participants may get some monetary incentive for their participation but not everyone can get it because it is like a lucky draw. WeChat red packet is a digital adaptation of the traditional Red Envelope gift, a new feature in WeChat's social media that helps to encourage forwarding reciprocity (Ji, 2023).

### 3.4. Data Analysis Procedures

Descriptive statistics (mean, standard deviation) were computed for the three scales. Means of above four on a five-point Likert scale indicate a very high level. The relationships between WeChat use, social self-efficacy, and cross-cultural adaptation were computed using Pearson's correlation coefficient. Based on the correlation model, linear regression analyses were conducted using SPSS 24.0 to test predictions for WeChat use on cross-cultural adaptation, WeChat use on social self-efficacy, and combined WeChat use and social self-efficacy on cross-cultural adaptation for international students in China. The results of the linear regression analyses were extended using the SPSS process macros (Hayes, 2022; Wen & Ye, 2014) in order to test whether social self-efficacy indirectly contributes to the link between WeChat use and cross-cultural adaptation. The estimation of test results for mediating variables can be achieved through the utilization of a mediation model, which employs a regression equation and subsequent stepwise tests of regression coefficients to ascertain the mediating effect (Wen & Ye, 2014).

## 4. Results

This section presents the findings on the level of WeChat use, social self-efficacy and cross-cultural adaptation, and the relationships among the variables. It also examines the mediating role of social self-efficacy in the relationship between WeChat use and cross-cultural adaptation.

### 4.1. Levels of WeChat Use, Social Self-Efficacy, and Cross-Cultural Adaptation

#### 4.1.1. Level of International Students' WeChat Use

Table 1 shows that international students in China frequently use WeChat and have a positive attitude towards its use (overall M=3.82). To them, WeChat streamlines their lives in China (M=4.23), serves as a free utility (M=4.07), and expedites integration into Chinese life (M=4.02) while maintaining communication with friends (M=4.01). For the respondents, using WeChat helps them to adapt to the new cultural environment.

**Table 1:** Level of WeChat Use among International Students in China (N=215)

| | Item | Mean | SD |
|---|---|---|---|
| 1 | WeChat is useful to make life easier in China. | 4.23 | 1.00 |
| 2 | WeChat is free to use. | 4.07 | 1.08 |
| 3 | I find that using WeChat can help me integrate into life in China faster. | 4.02 | 1.01 |
| 4 | I use WeChat to keep in touch with friends. | 4.01 | 1.01 |
| 5 | I use WeChat to participate in Chinese social activities. | 3.97 | 1.01 |
| 6 | I find that using WeChat can strengthen social ties. | 3.96 | 1.00 |
| 7 | I use WeChat to improve my Chinese language skills. | 3.93 | 1.02 |
| 8 | I use WeChat to get to know Chinese culture. | 3.93 | 1.01 |
| 9 | I use WeChat to talk about life problems. | 3.87 | 1.07 |
| 10 | WeChat is easy to use. | 3.86 | 1.08 |
| 11 | I find that using WeChat can strengthen emotional support. | 3.86 | 1.06 |
| 12 | I find that using WeChat can strengthen social support. | 3.79 | 1.03 |
| 13 | I find that using WeChat can bring me closer to my friends in other countries. | 3.77 | 1.08 |
| 14 | I use WeChat to talk about study problems. | 3.77 | 1.04 |
| 15 | I use WeChat to get study resources. | 3.68 | 1.10 |
| 16 | I have a lot of WeChat friends. | 3.60 | 1.10 |
| 17 | I find that using WeChat can overcome homesickness or loneliness. | 3.51 | 1.15 |
| 18 | I am proud to tell people that I'm on WeChat. | 3.47 | 1.11 |

| | | | |
|---|---|---|---|
| 19 | I feel out of touch when I haven't logged onto WeChat for some time. | 3.26 | 1.17 |
| | **Overall** | **3.82** | **1.05** |

Source: Author's own work. Note: 1 for Strongly disagree and 5 for Strongly agree

A greater proportion of respondents indicated that WeChat is convenient (M=3.86), and they are willing to utilize WeChat to engage in social activities, reinforce social connections and emotional support, enhance their Chinese language proficiency, and gain insight into Chinese culture and way of life (range of 3.86 to 3.97). These international students not only use WeChat to obtain social support (M=3.79) but also to foster connections with friends in other countries (M=3.77). WeChat is useful for their studies, to talk about study problems (M=3.77) and get access to academic resources (M=3.68). Two items have means close to the mid-point of three. The international students may have other media resources to stay connected, which may be why they do not feel out of touch when they do not log into WeChat for an extended period of time (M=3.26). It can also explain why WeChat is marginally useful for mitigating loneliness (M=3.51).

### 4.1.2. Level of International Students' Social Self-Efficacy

Table 2 shows that the students exhibit a moderately high level of social self-efficacy (overall M=3.80). They feel confident about establishing friendships within groups who know one another (M=3.94). In addition, they also have strong confidence to establish friendships with peers (M=3.93) and seek help (M=3.92). When they have to talk with people in China, the students feel relatively less confident, although the mean scores are still above the mid-point of three. They are quite confident in sharing experiences, expressing opinions, and engaging in conversation with unfamiliar individuals (range of 3.65 to 3.79). Interactions in the social media environment can lead to an increase in confidence and competence in actual social interactions (Hocevar et al., 2014).

**Table 2:** Level of Social Self-Efficacy among International Students in China (N=215)

| | Item | Mean | SD |
|---|---|---|---|
| 1 | I am confident to make friends in a group where everyone knows each other. | 3.94 | 0.97 |
| 2 | I am confident to make friends with people my own age. | 3.93 | 0.96 |
| 3 | I am confident to ask for help when I need it. | 3.92 | 0.98 |
| 4 | I am confident to ask someone to go out for a meal or to spend time together. | 3.87 | 1.03 |
| 5 | I am confident to attend parties or social events where there are people I know. | 3.87 | 0.99 |
| 6 | I am confident to work with unfamiliar people on school, work, community or other projects. | 3.82 | 0.95 |
| 7 | I am confident to express my feelings to others. | 3.80 | 1.01 |
| 8 | I am confident in responding to an invitation to a party hosted by a well-known or popular person. | 3.80 | 1.01 |
| 9 | I am confident to make acquaintances feel comfortable in my circle of friends. | 3.80 | 1.00 |
| 10 | I am confident to share interesting experiences I have had with a group of people. | 3.79 | 1.00 |
| 11 | I am confident to put myself in a new and different social situation. | 3.75 | 1.00 |
| 12 | I am confident to express my opinion in a group of people discussing a topic that interests me. | 3.74 | 1.03 |
| 13 | I am confident in volunteering to help organize an event. | 3.72 | 0.96 |
| 14 | I am confident to join a table at lunch or dinner when there are already people sitting and talking. | 3.71 | 1.06 |
| 15 | I am confident in volunteering to lead a group or organization. | 3.70 | 1.04 |
| 16 | I am confident to start a conversation with someone I don't know well. | 3.65 | 1.09 |
| | **Overall** | **3.80** | **1.01** |

Source: Author's own work. Note: 1 for Strongly disagree and 5 for Strongly agree

### 4.1.3. Level of International Students' Cross-Cultural Adaptation

Table 3 shows a very high level of cross-cultural adaptation of Chinese international students (overall M=3.91). The students expressed the greatest satisfaction with the academic support they received, with an average rating of (M=4.08) on the academic adaptation outcome scale. The means of items 2 to 9 (M > 4.00) show that they have high levels of cross-cultural adaptation in that they respect the values and cultural norms of China, appreciate the cuisine and music and can handle daily challenges related to necessities and transportation. They have the support of their classmates when they need help (M=4.05). In general, they reported a sense of fulfilment and adaptation to daily life in China.

**Table 3:** Level of Cross-Cultural Adaptation among International Students in China (N=215)

| | Item | Mean | SD |
|---|---|---|---|
| 1 | I am satisfied that my teachers provide the necessary support when I need it. | 4.08 | 0.91 |
| 2 | I respect the values and cultural norms of China. | 4.07 | 0.93 |
| 3 | I know where to buy basic necessities in China. | 4.05 | 0.94 |
| 4 | My classmates are there for me when I need help. | 4.05 | 0.92 |
| 5 | I am adapting to the way of life in China. | 4.05 | 0.91 |
| 6 | I had a full life in China. | 4.03 | 0.93 |
| 7 | I enjoy the local food and music of China. | 4.03 | 0.91 |
| 8 | I can handle the daily problems I face in China. | 4.02 | 0.94 |
| 9 | I know how to travel in China. | 4.00 | 0.96 |
| 10 | I know how to survive on my own budget in China. | 3.97 | 0.91 |
| 11 | I am satisfied with my new teacher's teaching style. | 3.96 | 0.89 |
| 12 | I know what to do in an emergency in China. | 3.95 | 0.99 |
| 13 | I feel close to China's social environment. | 3.93 | 0.93 |

| 14 | I am satisfied with working with my classmates on school projects. | 3.93 | 0.90 |
| 15 | I am satisfied with the support at my university. | 3.92 | 0.96 |
| 16 | I still enjoy the things I used to enjoy in China. | 3.92 | 0.94 |
| 17 | I am satisfied with my academic progress. | 3.90 | 0.93 |
| 18 | I know the basic legal regulations in China. | 3.88 | 0.99 |
| 19 | I find it easy to make decisions in China. | 3.86 | 0.98 |
| 20 | I understand the holidays and rituals of China. | 3.86 | 0.94 |
| 21 | I believe I have integrated into the culture in China. | 3.86 | 0.96 |
| 22 | I feel powerful in China. | 3.84 | 1.02 |
| 23 | I feel that I fit in China. | 3.83 | 0.97 |
| 24 | I can deal with unsatisfactory service. | 3.82 | 0.92 |
| 25 | I feel capable in China. | 3.81 | 0.95 |
| 26 | I can insist on anything. | 3.80 | 0.99 |
| 27 | I felt at ease about talking to locals. | 3.79 | 1.02 |
| 28 | I can make others understand me. | 3.78 | 0.95 |
| 29 | I can deal with unpleasant/excessive/aggressive people. | 3.75 | 0.98 |
| 30 | I know how to cope with anxiety. | 3.73 | 1.03 |
| | **Overall** | **3.91** | **0.95** |

Source: Author's own work. Note: 1 for Strongly disagree and 5 for Strongly agree

Items 10-30 (means 3.73-3.97) show moderately high self-efficacy with regard to the international students' life in China, their self-esteem, and handling negative situations. With regard to their life as a student, they felt quite confident about surviving on their budget in China and felt satisfied with the collaboration with classmates in projects, university support, and academic progress. The students also reported social competence in making decisions, understanding festivals and ceremonies, talking with locals, and making themselves understood. The students also have good self-esteem, because they reported that they feel powerful and capable in China. As for handling negative situations, the students have confidence in handling daily problems and emergencies, dealing with unsatisfactory service and aggressive people, and coping with anxiety. In short, they have self-efficacy integrating into the culture in China and feel close to the social environment in China.

### 4.2. Correlations Between WeChat Use, Social Self-Efficacy, and Cross-Cultural Adaptation

As shown in Table 4, there is a significant correlation between WeChat use, social self-efficacy, and cross-cultural adaptation among international students from Southwest China, as determined by the Pearson correlation test at a 95% confidence level. The use of WeChat is positively correlated with social self-efficacy (r=.771**, p=.001) and cross-cultural adaptation (r=.792**, p=.001). Social self-efficacy is positively correlated with cross-cultural adaptation (r=.851**, p=.001). It can thus be surmised that international students from universities in Southwest China who frequently use WeChat to obtain information, take part in social interactions, maintain social relationships, and engage in other activities within the social domain will be more likely to experience greater social competence and confidence and to experience a smoother cross-cultural adaptation.

**Table 4:** Descriptive Statistics and Inter-Correlations of Variables (N=215)

| Variable | WeChat Use | Social Self-Efficacy | Cross-Cultural Adaptation |
|---|---|---|---|
| WeChat Use | 1 | .771** | .792** |
| Social Self-Efficacy | .771** | 1 | .851** |
| Cross-Cultural Adaptation | .792** | .851** | 1 |
| Mean | 3.82 | 3.80 | 3.91 |
| Standard Deviation (SD) | 1.05 | 1.01 | 0.95 |
| Cronbach's α | .966 | .976 | .982 |

Note: **Significantly correlated at the .01 level. "r" represents the correlation coefficient, and Cronbach's α represents the reliability of each scale, ranging from 0 to 1, with higher coefficients indicating better internal consistency. Source: Author's own work.

### 4.3. The Mediating Role of Social Self-Efficacy in the Relationship Between WeChat Use and Cross-Cultural Adaptation

Figure 1 illustrates the mediation model for testing the mediating role of social self-efficacy in the relationship between WeChat use and cross-cultural adaptation, based on Wen and Ye (2014). In the regression equation shown in Figure 1, the coefficient a is the direct effect of X on M, the coefficient b is the direct effect of M on Y after controlling for the effect of X, the coefficient c is the total effect of X on Y, and the coefficient c' is the direct effect of X on Y after controlling for the effect of M. The standardized coefficients a*b in the regression analysis are the mediating effects through the mediator variable, M, and is the value of the mediated path regression coefficient a*b divided by the overall total effect coefficient c, that is, M = a*b/c (Wen & Ye, 2014).

In our study, the independent variable X is WeChat use, the dependent variable Y is cross-cultural adaptation, and the mediating variable M is social self-efficacy. According to Wen and Ye's (2014) mediation effect test procedure, firstly we tested the significance of the coefficient c in the regression equation test equation Y=c*X+e1, which is the regression of WeChat use on cross-cultural adaptation in our study. Then the significance of the regression coefficient c was tested.
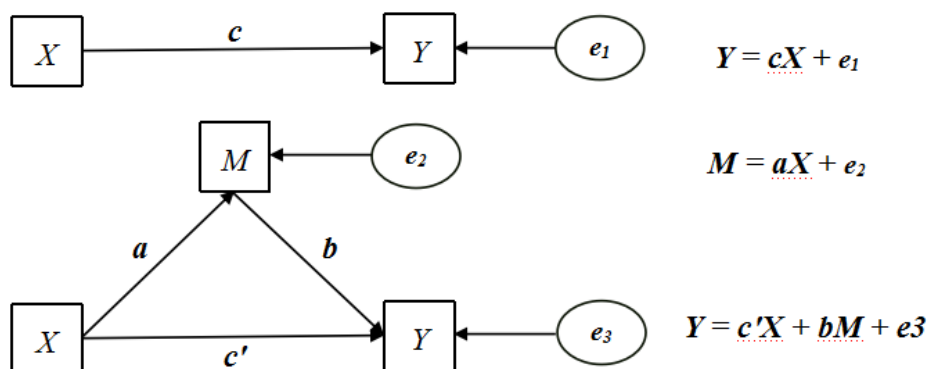
**Figure 1**: Schematic diagram of the mediation model with the regression equation (Source: Hayes, 2022; Wen & Ye, 2014)

Table 5 shows the regression equation Model 1, Y=c*X+e1, which is statistically significant. The regression of X (WeChat use) on Y (cross-cultural adaptation) yielded a total regression effect c=.792 (p < .01). WeChat use significantly predicts the cross-cultural adaptation level.

Then, a linear regression analysis was conducted to test the significance of the coefficient a in the equation M=a*X+e2, which is a regression of social self-efficacy through WeChat use (Table 6). Table 6 indicates that the regression equation Model 2 (M=a*X+e2) is statistically significant. The regression of X (WeChat use) on Y (social self-efficacy) is significant (p < .01), with a direct effect of a=.771. WeChat use significantly predicts social self-efficacy.

**Table 5**: Linear Regression Analysis of WeChat Use and Cross-Cultural Adaptation among International Students in China (N=215)

| Model | | Non-standardized Coefficient | | Standardized coefficient | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Standard error | | | |
| 1 | (constant) | 1.097 | .152 | | 7.206 | .000 |
| | WeChat use | .738 | .039 | .792 | 18.938 | .000 |

Source: Author's own work. Note: Dependent variable: Cross-cultural adaptation

**Table 6:** Linear Regression Analysis of Social Self-Efficacy through WeChat Use among International Students in China (N=215)

| Model | | Non-standardized coefficient | | Standardize coefficient | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Standard error | | | |
| 2 | (constant) | .745 | .177 | | 4.209 | .000 |
| | WeChat use | .799 | .045 | .771 | 17.645 | .000 |

Source: Author's own work. Note: Dependent variable: Social self-efficacy.

Finally, a regression of cross-cultural adaptation combining WeChat use and social self-efficacy was conducted to determine the significance of the coefficients b and c' in the equation Y=c'*X+b*M+e3. Table 7 shows that the regression equation represented by Model 3, Y=c'*X+b*M+e3, is statistically significant. When the effect of X (WeChat use) is controlled, the direct effect of M (social self-efficacy) on Y (cross-cultural adaptation) is b=.592 (p<.01). In other words, the effect of social self-efficacy on cross-cultural adaptation is mediated by WeChat use. Next, when the effect of M (social self-efficacy) is controlled, the direct effect of X (WeChat use) on Y (cross-cultural adaptation) is found to be c'=.336 (p<.01). This means that the effect of WeChat use on cross-cultural adaptation is mediated by social self-efficacy.

**Table 7:** Linear regression analysis of cross-cultural adaptation combining WeChat use and social self-efficacy among international students in China (N=215)

| Model | | Non-standardized Coefficient | | Standardized coefficient | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Standard error | | | |
| 3 | (constant) | .701 | .125 | | 5.615 | .000 |
| | WeChat use | .313 | .048 | .336 | 6.495 | .000 |
| | Social self-efficacy | .532 | .046 | .592 | 11.452 | .000 |

Source: Author's own work. Note: Dependent variable: Social self-efficacy.

Based on Wen and Ye's (2014) mediation effect test procedure, the coefficients a, coefficients b, and coefficients c of the regression equation are all significant, indicating that this study represents a partial mediation effect. The mediating impact works at least partially through the mediating variable on the dependent variable (Wen et al., 2022). It can thus be argued that social self-efficacy offers a partial explanation of the relationship between

WeChat use and cross-cultural adaptation. The mediating effect of social self-efficacy on the total effect is estimated to be M=a*b/c=57.63%. This indicates that nearly 60% of the influence of WeChat use on the cross-cultural adaptation of international students in China can be attributed to social self-efficacy, which reveals an indirect path of influence. When social self-efficacy levels are different, it will contribute to different levels of cross-cultural adaptation. The results are presented in Figure 2.
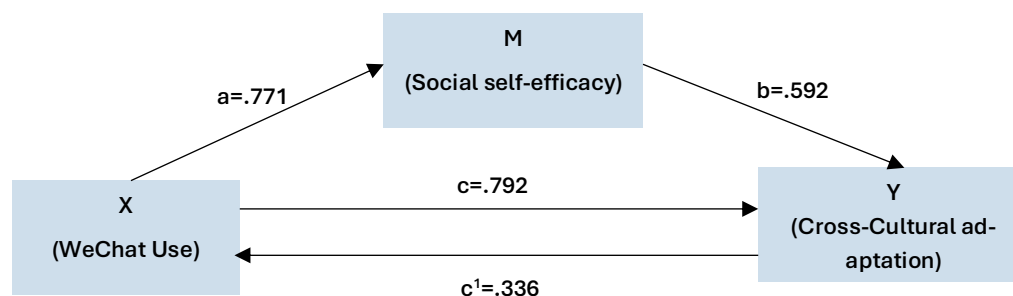


**Figure 2**: Mediating path of WeChat use and cross-cultural adaptation of international students in China through social self-efficacy

## 5. Discussion

This study shows high levels of WeChat use, social self-efficacy and cross-cultural adaptation among international students in Southwest China, and that the relationship between WeChat use and cross-cultural adaptation was partially mediated by social self-efficacy. These two findings will be discussed next.

For international students, social self-efficacy is significantly associated with WeChat use and cross-cultural adaptation. Put simply, the international students' perceived competence and confidence in social activities improves with the intensity of WeChat use, which in turn helps them adapt to the challenges of being in another culture. Pang and Wang (2020) reported that social media use can influence the cultural adaptation process of international students through mediated coping resources, but they did not pinpoint social media use as one of the coping resources. Our findings show that the utilization of WeChat is the key to adaptation for international students new to China. This finding is not new as Kuang and Wu (2019) found that WeChat is an indispensable tool for international students in China to integrate into Chinese society. However, Kuang and Wu (2019) investigated the direct impact of WeChat use on cross-cultural adaptation and the direct impact of social self-efficacy on cross-cultural adaptation. Other researchers like Hassan et al. (2021) and Zhao (2019) studied the direct effects of WeChat use and social self-efficacy on cross-cultural adaptation. They did not investigate the possibility of a variable having an indirect impact on cross-cultural adaptation and, in the process, enhancing the effect of an independent variable on cross-cultural adaptation. Social media is a dynamic and rapidly expanding information resource that may not directly cause, but contributes, to an increase in an individual's perceived competence and beliefs in the context of cross-cultural adaptation (Hocevar et al., 2014).

Our study advanced the investigation of factors that contribute to cross-cultural adaptation by adopting Wen and Ye's approach (2014), that is, to elucidate the path of the relationship between the three variables by calculating the value of the mediation effect to reveal an indirect path of influence. We found that the relationship between WeChat use and cross-cultural adaptation was partially mediated by social self-efficacy. Partial mediation means that the effect of the independent variable on the dependent variable is realized at least in part through a mediating variable (Wen & Ye, 2014). If the effect of the independent variable on the dependent variable completely disappears, the mediating variable fully mediates between the independent and dependent variables (full mediation) but this rarely happens in practice; If the effect of the independent variable on the dependent variable still exists, but in a smaller magnitude, the mediating variable partially mediates between the independent and dependent variables (partial mediation) (University of Virginia, 2024). In the present study, there is a significant relationship between social self-efficacy and cross-cultural adaptation, and there is also some direct relationship between WeChat Use and cross-cultural adaptation variables. Social self-efficacy accounts for some but not all of the effects on cross-cultural adaptation.

The finding on the mediating role of social self-efficacy indicates that the relationship between social media use and adaptation is more complex than what is assumed in past studies. For example, Cao and Jia (2024) investigated unidirectional links between variables across time. They used coping self-efficacy as a longitudinal mediator to estimate cross-lagged panel models, which is a method of longitudinal data analysis that describes the interrelationships between variables. Earlier, Cao and Meng's (2023) cross-sectional study found that personal coping resources alone may not be sufficient to mitigate cultural adaptation stress, especially for students with low self-efficacy. Our findings suggest that social media use could be an additional personal coping resource and can enhance the social self-efficacy of international students.

Our study has also shown that the mediating role of social self-efficacy has a potentially protective effect on international students in China for cross-cultural adaptation in the event of low-frequency WeChat use. If there are international students who are inactive in WeChat use, they can still adjust well to the new environment, provided they have self-confidence in social interactions. This means that social self-efficacy represents a pivotal coping

resource that exerts a significant influence on international students' cross-cultural adaptation. The findings concur with past studies that investigated the direct relationship between social self-efficacy and cross-cultural adaptation (Carmeli et al., 2021; Cao et al., 2024; Zhao, 2019). The use of social media has been demonstrated to contribute to an individual's psychological level of adaptation and to influence their self-efficacy in the social domain (Safdar et al., 2003).

## 6. Conclusion

The study shows that social self-efficacy is significantly associated with WeChat use and cross-cultural adaptation, which implies that social self-efficacy can be improved by using WeChat, which in turn facilitates cross-cultural adaptation of international students. Our study is probably the first to establish that social self-efficacy is a key factor that mediates the facilitating role of social media use on cross-cultural adaptation because past studies investigated direct relationships between the variables. The findings also contribute to the field of culture by identifying elements of Chinese culture that international students can easily adapt to and elements that pose slight problems in acculturation such as the basic legal regulations applicable in China and coping with anxiety.

## 7. Implications

Our findings showed that social self-efficacy has the potential to act as a protective factor in the cross-cultural adaptation of international students in China. Students with elevated social self-efficacy reported greater resilience in navigating social challenges across cultural contexts, supporting past findings (Constantine et al., 2004; Fan & Mak, 1998; Hechanova-Alampay et al., 2002; Lin & Betz, 2009).

For international students, their own social competence in the social sphere and self-confidence in social interactions are crucial, which could contribute to their cross-cultural adaptation (Swagler & Ellis, 2003). In a cross-cultural context, high social self-efficacy suggests that individuals hold positive evaluations of their social competence and confidence in an unfamiliar cultural environment (Bandura, 1986). Thus, when international students in China have less intense WeChat use, they may still be better able to adapt to cross-cultural environments if they have high social self-efficacy.

## 8. Recommendations For Future Research

The current study is not without limitations. Firstly, the findings are based on a sample of international students in China from the southwestern region. A total of 71.6% of the students were from Asian countries and may be somewhat familiar with Chinese culture, particularly students from Taiwan, Hong Kong, Malaysia and Singapore due to the large Chinese population in these countries. We acknowledge that the students are not representative of international students in China. The findings cannot be generalized to other populations of international students who may have different characteristics. Future research should include a more diverse sample, especially for international students from Western countries like Peking University which is known to have the highest number of international students (China Admissions, 2024). Some variables to study are their exposure to the host country's culture and language. In the present study, the international students in China reported confidence in their communication ability in spite of having only level four out of six on the Chinese Proficiency Test and living in China for an average of three and half months. They might have learnt to use automatic translation apps which greatly eased their communication and adaptation. In future studies, it would be useful to find out their frequency of using automatic translation apps and how it affects their cultural adaptation.

Secondly, the results presented herein are based entirely on cross-sectional data, which is insufficient for investigating the different stages of international students in Southwest China. The students had stayed in China from 2.49 to 3.69 months. In social domains, Cao et al. (2024) found that WeChat usage intensity influences behavioral engagement in academic learning and social adjustment by comparing data collected at two points in time, three months apart. As it may take three to four years for students to complete their degree, longitudinal studies can provide insights into their cross-cultural adaptation at different phases of their stay in China. In fact, the relationships between variables may change.

Thirdly, the present study focussed on the mediating role of social self-efficacy of international students in China in WeChat use and cross-cultural adaptation. However, in practice, there are other indirect factors influencing the impact of WeChat use on cross-cultural adaptation, such as personality types, psychological alienation, online social support, and language abilities (Hofhuis et al., 2019; Pang, 2020; Pang & Wang, 2020). Consequently, future research should prioritize investigating the mediating role and indirect effects of these other factors to obtain better insights into the mechanisms of cross-cultural adaptation instead of focusing on direct links. By identifying these intermediary processes, researchers can understand the phenomenon better and the findings are useful for designing more targeted interventions and policies for better outcomes.

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TING was responsible for conceptualisation, method, project administration, resources, writing - revision and editing, and supervision.

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