

EFFECTS OF CULTURAL INTELLIGENCE AND SOCIAL SUPPORT ON  
ADJUSTMENT OF INTERNATIONAL STUDENTS

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The purpose of this study was to investigate direct and interaction effects of cultural intelligence and social support on the adjustment of international students to U.S. higher education. Hierarchical multiple regression analyses were conducted to test (a) if cultural intelligence was a predictor for adjustment of international students to U.S. higher education; (b) if social support was a predictor for adjustment of international students to U.S. higher education; and (c) if there was an interaction effect between cultural intelligence and social support on international students' adjustment to U.S. higher education. The participants included 262 international students from a southwestern university. The results found only social support from the university was a significant predictor of international students' adjustment. There was no interaction effect between cultural intelligence and social support from any sources on international students' adjustment.

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# EFFECTS OF CULTURAL INTELLIGENCE AND SOCIAL SUPPORT ON ADJUSTMENT OF INTERNATIONAL STUDENTS

## Introduction

International students are students who move to another country for purpose of education (Shapiro, Farrelly, & Thomas, 2014). Since the late 1940s, the United States has become the global leader in hosting the largest number of international students from all over the world (Institution of International Education [IIE], 2016). Based on the 2016 IIE report, by the 2015-2016 academic year, the number of international students in the U.S. increased to over 1 million, representing 5% of enrollment in U.S. higher education. International students in higher education not only need to adjust to college life like other domestic students, but also, they are more removed from family and friends, and must adjust to cultural differences in the country of study (Kaczmarek, Matlock, Merta, Ames, & Ross, 1994). Thus, international students entering higher education will encounter difficulties common to all college students as well as unique to their international status (Kaczmarek et al., 1994).

To better serve this population, educators and staff at academic institutions must be knowledgeable about the needs of international students during their transition to a U.S. college and provide support for international students in adjusting to campus life. Thus, the current study will focus on factors that may influence international students' adaptation to U.S. higher education by examining the impact of cultural intelligence (CQ) and social support on international students' adjustment in a U.S. higher education institution. CQ refers to one's ability to effectively adapt to novel cultural contexts (Earley & Ang, 2003). It has been demonstrated as a powerful predictor for success in cross-cultural business (Earley & Ang, 2003). However, little research has extended the understanding of CQ to university settings

(Harrison & Brower, 2011; Zhang & Goodson, 2011). Social support is defined as resources in social environments that promote one's survival in stressful events (Lin, Dean, & Ensel, 1986). Social support has been emphasized in adjustment to college (Halamandaris & Power, 1999; Rahat, & Ilhan, 2016). However, the direct and interactional effects of these two factors on the adaptation of international students to a U.S. college experiences have not been completely explored (Zhang & Goodson, 2011). Regarding international students' experience in the higher education setting, only one study examined direct and indirect effects of both CQ and social support on cross-cultural adaptation among international students (Mao & Liu, 2016).

Based on previous research and theory on personal and contextual factors on adjustment (Berry, 1992; Berry, 1997; Earley & Ang, 2003; Mesidor & Sly, 2016; Zhang & Goodson, 2011), this study investigated the role of CQ on international students' adjustment to college to further the understanding of how individual differences among international students influence transitioning to a U.S. university. Also, the study examined social support to understand how social environments influence personal adjustment to higher education in a foreign country. Finally, this study explored whether there was any interactional effects of social support on how contextual factors may influence the relation between CQ and adjustment to college.

## Background

To understand the adjustment experience, it is crucial to consider the cultural contact between international students and the host society (Berry, 1997). Previous studies indicated that international university students had more difficulty adjusting than national counterparts because of cultural differences (Kaczmarek et al., 1994; Mallinckrodt & Leong, 1992). Thus, it is necessary to consider international students' cultural backgrounds when studying their

adjustment to university. With the consideration of cultural influences, this study applies an acculturation framework based on a cross-cultural psychology theory developed by Berry (Berry, 1992). Berry's and colleagues' work shows cross-cultural psychology entailing two crucial features for the study of human behaviors: the diversity of human behaviors across cultures and the relation between individual behaviors and circumstances where they occur (Berry, 1976; Berry, Poortinga, Segall, & Dasen, 1992). The central focus of Berry's research is on how individuals, such as immigrants who have lived and developed in one cultural context, manage to adjust to other cultural contexts (Berry, 1976; Berry, 1992; Berry, 1997; Berry, 2001; Berry, 2003; Ward, 1996). The process of change in individuals influenced by another culture is an important part of cross-cultural experiences (Berry, 1992). In cross-cultural psychology, the concept of acculturation is used to define the cultural changes resulting from continuous contact between two or more cultural groups. On an individual level, psychological acculturation and adaptation are used to refer to individual psychological changes and outcomes due to the acculturation (Berry, 1997).

To illustrate the process of individual adaptation to new cultural contexts, Berry and colleagues developed the acculturation framework that presents both configuration and course features (Berry, 1997; Berry, Trimble, & Olmedo, 1986). Acculturation originally was used to describe culture changes as a result of direct and continuous contacts between different cultural groups (Berry, 1994; Wang & Mallinckrodt, 2006). Applied to individuals, acculturation refers to psychological and behavioral changes to adapt to another culture (Wang & Mallinckrodt, 2006). Berry's acculturation model was used as foundation for an adjustment process and outcomes model specifically for international students (Schartner & Young, 2016). Adjustment describes the process of transition experience while adaptation in practice reflects outcomes of



transition (Schartner & Young, 2016). Adjustment is multifaceted and distinguishes between psychological and sociocultural adjustment (Berry, 1997; Berry, 2003; Searle & Ward, 1990). Psychological adjustment refers to a set of psychological outcomes and physical well-being, including personal satisfaction, physical and mental health, and a sense of cultural identity; sociocultural adjustment represents acculturating individuals' outcomes of fitting in new environments, including abilities to deal with daily life, school, and work (Berry, 1994; Berry, 1997; Berry, 2003; Ward & Kennedy, 1993). To capture international students' adjustment experience, academic adjustment is included as one important adjustment domain (Schartner & Young, 2016). Academic adjustment describes international students' adjustment to academic environments and demands, and their satisfaction with general experience of attending the host university (Baker & Siryk, 1999; Gómez, Urzúa, & Glass, 2014; Schartner & Young, 2016; Yu & Wright, 2016).

To understand individual similarities and differences in the acculturation process, the acculturation model distinguishes the group-level and the individual-level of variables (Berry, 1997). The group-level factors include culture of origin and contexts of the host culture. In practice, the culture of origin is usually represented as the original country and social background (Wang & Mallinckrodt, 2006). Studies focusing on variables of cultural contexts demonstrated attitudes towards other cultures and social support in the society of settlement (Berry, 1997; Berry, Kim, Minde, & Mok, 1987). Individual-level variables are categorized as factors prior to acculturation and factors during cultural contacts (Berry, 1997). From the model, antecedent individual factors include demographic variables (e.g., age, gender, pre-experience, etc.), language, and personal characteristics (Berry, 1994; Berry, 1997; Berry et al., 1992; Ward, 1996). During acculturation, influencing variables include length of stay, acculturation strategies,

and coping styles (Berry, 1997). In practice, Berry (1997) emphasized that it is not possible to incorporate all variables into the acculturation framework in one study.

The acculturation framework is a comprehensive model used to investigate individuals' adaptation to new cultural environments with regard to both contextual impact and personal characteristics. Because human beings are viewed as active participants in their environments (Berry, 1992), studies examining individual's experiences of cultural adaptation should consider both cultural context and personal variables. Therefore, this study will employ Berry's acculturation framework to explore the impacts of personal and contextual variables on individuals' acculturation.

## Research Questions

International students usually experience difficulties in various adjustment areas during transition to the institutions of higher education outside their home country. Although the role of CQ has been demonstrated as a crucial predictor for cross-cultural adjustment in business field, there are few empirical studies focusing on this construct among international students (Zhang & Goodson, 2011). Theories and literature demonstrated the direct and indirect role of social support on adjustment to higher education among international students. However, with a consideration of the individual characteristic, little has been known about the interaction effects of CQ and social support (Mao & Liu, 2016; Schartner & Young, 2016). In order to extend the understanding of individual and contextual effects on international students' adjustment, this study investigated how both CQ and social support influenced international students' adjustment to a U.S. university in one model.

Following Berry's acculturation model, the current study extended the previous research by investigating relationships among international students' CQ, social support, and overall adjustment to U.S. higher education. The following research questions were addressed:

1. Is CQ a predictor of international students' adjustment to the U.S. higher education setting in regard to psychological, social, and academic adjustment?
2. Is social support a predictor of international students' adjustment to the U.S. higher education setting in regard to psychological, social, and academic adjustment?
3. Is there an interaction effect between CQ and international students' levels of social support on their adjustment to the U.S. higher education setting in regard to psychological, social, and academic adjustment?

Based on the acculturation model and previous research on international students' adjustment, hypotheses include:

1. CQ will account for statistically significant variance in international students' adjustment to the U.S. higher education setting in regard to psychological, social, and academic adjustment.
2. Level of social support will account for statistically significant variance in international students' adjustment to the U.S. higher education setting in regard to psychological, social, and academic adjustment.
3. Social support will moderate the relation between CQ and international students' adjustment to the U.S. higher education setting in regard to psychological, social, and academic adjustment. With more social support, the relationship between CQ and international students' adjustment will become stronger.

## Methodology

### Students

Based on the definition from the United States Citizenship and Immigration Services (USCIS, 2017), international students in the U.S. are full-time students admitted by American academic institutions with an F-1 visa. Students in this study were international students recruited from a large-size southwestern university. In 2018, this University enrolled over 2,000

international students from 121 countries. Of these international students, over 900 were undergraduate and over 1350 were graduate students. More than 70% of the international students came from Asian countries, identifying these students as representing a majority of international students on this university campus.

After receiving approval by the University's institutional review board, an invitation email was distributed to all international students through the University's International Office. Leaders of several international students organizations distributed an invitation emails to their members. The invitation email included a description of the study, an online survey link to Qualtrics based questionnaires. Participating students were eligible to enter a drawing for one of two \$50 gift cards as compensation for their participation. To enter drawings, students were provided their email addresses at a separate location, thus maintaining confidentiality of students' responses.

A total of 332 students responded to the survey. Two students were excluded based on incomplete survey responses; 34 students were excluded based on status other than an F1 visa; and 34 students were excluded due to previous experience as an international student. After excluding ineligible students, the final participants included 262 students. Table 1 presents demographics of the 262 participants. Their ages ranged from 17 to 47 years ( $M = 26$ ,  $SD = 5.75$ ). 61.5% were graduate students and 77.1% were single. Over 70% of the participants came from Asian countries ( $n = 190$ ), about 16% from Africa ( $n = 36$ ), and the rest from Americas ( $n = 19$ ), Europe ( $n = 15$ ), and Oceania ( $n = 2$ ). In order to compare cultural differences, participants were grouped into Asian and non-Asian. The percentages of participant's educational levels and countries of origin were similar to the international student population at the participating university, indicating a high level of representativeness.

Table 1

*Demographics (N = 262)*

	<i>n</i>	
Gender	Female	145
	Male	117
Educational level	Graduate	161
	Undergraduate	101
Marital status	Single	202
	Married	55
	Divorced	5
Region of origin	Asia	190
	Africa	36
	Americas	19
	Europe	15
	Oceania	2

### Instruments

All questionnaires were presented online. Participants completed a demographic questionnaire reporting their gender, current age, country of origin, educational level, marital status, length of stay in the United States, and English language fluency. English fluency was assessed by participants' self-reported scores on three direct questions.

Adjustment to university was measured by the International Student Adjustment to College Scale (ISACS; Gómez et al., 2014), which was modified from the Students Adjustment to College Questionnaire (SACQ; Baker & Siryk, 1999). The ISACS has 23 items that are rated on a 9-point Likert scale where 1 = *doesn't apply to me at all* and 9 = *applies very closely to me*. A higher score indicates a better adjustment to university. ISACS in this study had an alpha coefficient of .89.

CQ was measured using a 12-item questionnaire comprising three dimensions of CQ: cognitive, behavioral, and emotional/motivational (Earley & Mosokowski, 2004). All items are rated on a 5-point Likert scale where 1 = *strongly disagree* and 5 = *strongly agree*. A higher score indicated a higher CQ. The alpha coefficient in this study was .78.

Using a scale developed by Koeske and Koeske (1989), students rated the amount of emotional and practical social support they received from 11 sources, i.e., families in home country, friends in home country, significant others in home country, families in the United States, friends in the United States, friends in the United States who were international students from their home country, friends in the United States from countries other than t home country, significant others in the United States, academic advisor(s), the University's International Office, other students service (e.g., school counseling). These support sources were grouped as three distant supports sources, five local sources, and three official university sources. Students rated their level of support for each of the 11 sources using a Likert scale from 1 = *none at all* to 5 = *a great deal*. If students did not have a type of source on the social network, they could indicate not applicable. Total scores for items from each source were computed to indicate the total amount of social support for the grouped sources. The alpha coefficients in this study were .59, .51, and .77 for distant, local, and official university sources, respectively.

## Results

### Correlation Analysis

The results showed that educational level, length of stay and English proficiency were significantly correlated with participants' adjustment scores (see Table 2). Thus, these three demographic variables were included as control variables in the following analyses.

Table 2

*Correlations among Demographic Variables, CQ, Social Support, and Adjustment (N = 262)*

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	--											
2. Age	-.01	--										
3. Educational level	.78	.54**	--									
4. Marital status	.14*	.63**	.27**	--								
5. Length of stay	-.01	.38**	-.003	.24*	--							
6. English proficiency	.05	-.01	-.09	-.01	.04	--						
7. Asian/non-Asian	.10	-.07	-.24**	.00	.04	.46**	--					
8. CQ	.001	-.08	-.17**	-.04	-.05	.28**	.20**	--				
9. SS from home country	.01	-.01	-.01	.03	.001	.09	-.05	-.02	--			
10. SS from local	.05	.04	.01	.10	.06	.07	-.13*	.11*	.37**	--		
11. SS from university	-.08	-.02	.05	.01	-.13*	.05	-.22**	-.04	.39**	.49**	--	
12. Adjustment	.03	.02	.11*	.06	-.13*	.35**	.07	.13*	.08	.14**	.25**	--
Mean		26.0			33.42	12.11		42.86	6.52	8.41	4.42	143.24
SD		5.75			28.94	2.34		6.12	3.07	4.30	3.35	28.99

Note. SS = social support. \*  $p < .05$ . \*\*  $p < .01$

## Hierarchical Multiple Regression Analyses

Hierarchical multiple regression analyses were performed to examine the hypotheses for the direct and interaction effects of CQ and social support on adjustment to the U.S. university among international students. Table 3 presents the results of hierarchical multiple regression analyses.

Table 3

*Hierarchical Multiple Regression Analyses Predicting Adjustment to University (N = 262)*

	R <sup>2</sup>	ΔR <sup>2</sup>	p	Predictors	β	p
Step 1	.16			Educational level	.14	.01*
				Length of stay	-.14	.01*
				English proficiency	.37	.00**
Step 2	.21	.05	.003**	CQ	.06	.36
				SS from home country	-.05	.45
				SS from local	.03	.7
				SS from university	.23	.001**
Step 3	.22	.01	.64	CQ X SS from home country	.21	.65
				CQ X SS from local	-.63	.27
				CQ X SS from university	.44	.35

Note. SS = social support. \*  $p < .05$ . \*\*  $p < .01$

Educational level, length of stay, and English proficiency were included in the first step as control variables. CQ and social support from home country, local source, and the University were independent variables and the score of ISACS was dependent variable. Categorical variables could be coded and included with other continuous variables as independent variables in multiple regression analysis (Cohen, Cohen, West, & Aiken, 2003).

In the second step, students' CQ scores and the amounts of social support from different sources were added to the multiple regression model to test the first two hypotheses. The total



variance of the adjustment score explained by variables included increased to 21%. By adding the CQ score and three sources of social support, the change of explained variable of the adjustment score was significant ( $\Delta R^2 = .05, p = .003$ ). The amount of social support from the University was the most significant predictor for the adjustment score ( $\beta = .23, p < .01$ ). CQ marginally predicted the adjustment score ( $\beta = .06, p = .36$ ). Participants' levels of social support from home country and local sources did not have a direct effect on the participants' adjustment. The results partially supported the first and second hypotheses in that CQ and social support accounted a large variance in participants' adjustment score. Only social support from the University was significantly associated with international students' adjustment to university.

To examine the interaction effect of CQ and social support, the products of CQ and each source of social support, as predictors, were added to the model in the third step. After adding the products, the increment of accounted variance of the adjustment score by the overall model was not significant ( $\Delta R^2 = .01, p = .64$ ), indicating no interactional effect between CQ and social support on adjustment to the University. The result did not support the third hypothesis that social support moderated the effect of CQ on international students' adjustment to the University.

## Discussion

The aim of this study was to investigate the relation among CQ, social support, and international students' adjustment in the United States. The findings did not provide evidence for the direct and indirect effects of CQ, distant social support, or local social support on the adjustment among international students in the University. Social support from the University was found to be a significant positive predictor of students' adjustment to the University.

The existing studies on the relation between CQ and international students' adjustment to academic institutions were limited, but many of associations indicated CQ was a positive predictor of international students' psychological, cultural, and work adjustment (Chen, Wu & Bian, 2014; Lin, Chen, & Song, 2012). The result in this study was inconsistent with previous studies. The possible reason for the inconsistency might be that many of the previous studies were conducted in Asian countries (Chen et al., 2014; Lin et al., 2012; Mao & Liu, 2016) while this study focused on international students in an American university. Besides individual characteristics, contextual factors of the society of the international location were demonstrated in acculturation process (Berry, 1997). The United States is more ethnically diverse than Asian countries. In this background, international students might be more likely to find ethnic groups similar to theirs (e.g., classmates and teachers from their home countries) in universities in the United States and even in their living areas. If they studied and lived in familiar cultural environments, students might be able to adjust to their new setting even with a low level of CQ. Future studies should consider characters of cultural environments where international students study and live.

Regarding the second hypothesis, social support from the University was the only significant predictor of international students' adjustment to the University. This finding was consistent with some of previous research that demonstrated the positive role of the academic institution support on a healthy adjustment among international students (Bai, 2016; Ye, 2006). It is suggested that academic institutions should take responsibilities in providing accessible services for international students, like counseling service in different languages and immigration advisors. To establish supportive academic environments, academic institutions could increase diversity of faculty members and organize activities involving both faculty and international

students. It is important for academic advisors to understand the differences and needs of international students in order to assist them to achieve their academic goals.

The third hypothesis was not supported by this study. Only one study in the existing literature identified social support as having an enhancing effect on the relation between CQ and international students' adjustment to college (Mao & Liu, 2016). In the present study, social support sources were not found to have a significant moderating effect on adjustment. Considering the lack of studies on the role of contextual variables on the relations between CQ and international students' adjustment, future studies on CQ could examine the moderation effects of social support from specific sources. Future findings might contribute to Berry's theory by providing evidences that advantages of contexts could change negative effects of individual characteristics.

### Conclusions and Limitations

In consistent with hypotheses, this study found no significant relation between CQ and adjustment among international students. Among all sources of social support, only official university support showed a significantly positive effect on international students' adjustment to U.S. higher education. This study contributed to the existing literature on international students' adjusting experience by investigating the relationships between CQ, social support, and adjustment to the U.S. campus even if results did not provide strong evidences for determining how CQ and social support from different sources were associated to international students' adjustment. Future studies are needed to explore individual and contextual factors in international students' experience.

A few limitations should be noted for generalizing the results. First, the data was collected in only one university, limiting representation of international students' experiences in

other academic institutions. Academic institutions are like smaller society settled in a bigger one (Bai, 2016). Academic institution cultures and practices in serving international students might vary across different universities. The results of the participants in the academic institution in this study might not be representative of international students' experience in other academic institutions.

Secondly, the accuracy of self-reported English fluency was unknown even though this method had been used in several studies (Yeh & Inose, 2003). Future studies may employ more professional and exact methods to assess language variable (like TOEFL score). Moreover, all the questions were in English. International students perceiving low language skills were probably less likely to participate in the survey. The average level of English proficiency of the participants was high with the self-rating scale. Culturally sensitive scales with different language should be used to increase possibility of recruiting more diverse students.

## References

- Bai, J. (2016). Perceived support as a predictor of acculturative stress among international students in the United States. *Journal of International Students*, 6(1), 93-106.
- Baker, R. W., & Siryk, B. (1999). *Student adaptation to college questionnaire (SACQ) manual*. Los Angeles, CA: Western Psychological Services.
- Berry, J. W. (1976). *Human ecology and cognitive style: Comparative studies in cultural and psychological adaptation*. Beverly Hills: Sage Publications.
- Berry, J. W. (1992). *Cross-cultural psychology: Research and applications*. Cambridge England; New York: Cambridge University Press.
- Berry, J. W. (1994). Acculturation and psychological adaptation: An overview. In A. Bouvy, F. J. R. van de Vijver, K. Boski, & P. G. Schmitz (Eds.), *Journeys into cross-cultural psychology* (pp. 129-141). Lisse, Netherlands: Swets & Zeitlinger Publishers.
- Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology*, 46(1), 5-34. doi:10.1111/j.1464-0597.1997.tb01087.x

- Berry, J. W. (2001). A psychology of immigration. *Journal of Social Issues, 57*(3), 615-631. doi:10.1111/0022-4537.00231
- Berry, J. W. (2003). Conceptual approaches to acculturation. In K. M. Chun, P. B. Organist a, & G. Marín (Eds.), *Acculturation: Advances in theory, measurement, and applied research* (pp. 17-37). Washington, DC: American Psychological Association Press.
- Berry, J. W., Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. *International Migration Review, 21*(3), 491-511.
- Berry, J. W., Poortinga, Y. H., Segall, M. H., & Dasen, P. R. (1992). *Cross-cultural psychology: Research and applications*. New York, NY: Cambridge University Press.
- Berry, J. W., Trimble, J., & Olmedo, E. (1986). The assessment of acculturation. In W. J. Lonner & J. W. Berry (Eds). *Field methods in cross-cultural research* (pp. 291-324). Thousand Oaks, CA: Sage Publications.
- Chen, A. S., Wu, I., & Bian, M. (2014). The moderating effects of active and agreeable conflict management styles on cultural intelligence and cross-cultural adjustment. *International Journal of Cross Cultural Management, 14*(3), 270-288. doi:10.1177/1470595814525064
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah, N.J: L. Erlbaum Associates.
- Earley, P. C., & Ang, S. (2003). *Cultural intelligence: Individual interactions across cultures*. Stanford, CA: Stanford Business Books.
- Earley, P. C., & Mosakowski, E. (2004). Cultural intelligence. *Harvard Business Review, 82*(10), 139-146.
- Gómez, E., Urzúa, A., & Glass, C. R. (2014). International student adjustment to college: Social networks, acculturation, and leisure. *Journal of Park & Recreation Administration, 32*(1), 7-25.
- Halamandaris, K. F., & Power, K. G. (1999). Individual differences, social support, and coping with the examination stress: A study of the psychosocial and academic adjustment of first year home students. *Personality and Individual Differences, 26*(4), 665–685.
- Harrison, J. K., & Brower, H. H. (2011). The impact of cultural intelligence and psychological hardiness on homesickness among study abroad students. *Frontiers: The Interdisciplinary Journal of Study Abroad, 21*, 41-62.
- Institution of International Education (2016). *United States*. Retrieved from <https://www.iie.org/Research-and-Insights/Project-Atlas/Explore-Data/United-States>
- Kaczmarek, P. G., Matlock, G., Merta, R., Ames, M. H., & Ross, M. (1994). An assessment of international college student adjustment. *International Journal for the Advancement of Counseling, 17*(4), 241-247.

- Koeske, G. F., & Koeske, R. D. (1989). Work load and burnout: Can social support and perceived accomplishment help? *Social Work, 34*(3), 243-248.
- Lin, N., Dean, A., & Ensel, W. M. (1986). *Social support, life events, and depression*. New York: Academic Press.
- Lin, Y., Chen, A. S., & Song, Y. (2012). Does your intelligence help to survive in a foreign jungle? The effects of cultural intelligence and emotional intelligence on cross-cultural adjustment. *International Journal of Intercultural Relations, 36*(4), 541-552. doi:10.1016/j.ijintrel.2012.03.001
- Mallinckrodt, B., & Leong, F. T. L. (1992). International graduate students, stress, and social support. *Journal of College Student Development, 33*(1), 71-78.
- Mao, R. & Liu, Y. (2016). Social support: A moderator between cultural intelligence and crosscultural adaptation of international students in Chinese universities. *International Forum of Teaching & Studies, 12*(2), 32-36.
- Mesidor, J. K., & Sly, K. F. (2016). Factors that contribute to the adjustment of international students. *Journal of International Students, 6*(1), 262-282.
- Rahat, E., & Ilhan, T. (2016). Coping styles, social support, relational self-construal, and resilience in predicting students' adjustment to university life. *Educational Sciences: Theory and Practice, 16*(1), 187-208.
- Schartner, A., & Young, T. J. (2016). Towards an integrated conceptual model of international student adjustment and adaptation. *European Journal of Higher Education, 6*(4), 372-386. doi:10.1080/21568235.2016.1201775
- Searle, W. & Ward, C. (1990). The prediction of psychological and sociocultural adjustment during cross-cultural transitions. *International Journal of Intercultural Relations, 14*, 449-464.
- Shapiro, S., Farrelly, R., & Thomas, Z. (2014). *Fostering international student success in higher education*. Alexandria, VA: TESOL.
- The United States Citizenship and Immigration Services (2017). Glossary of terms. Retrieved from <https://www.uscis.gov/i-9-central/customer-support/glossary-terms>.
- Wang, C. D., & Mallinckrodt, B. (2006). Acculturation, attachment, and psychosocial adjustment of Chinese/Taiwanese international students. *Journal of Counseling Psychology, 53*(4), 422-433. doi:10.1037/0022-0167.53.4.422
- Ward, C. (1996). Acculturation. In D. Landis & R. Brislin (Eds.), *Handbook of intercultural training* (pp. 124-147). Thousand Oaks, CA: Sage.

- Ward, C., & Kennedy, A. (1993). Psychological and socio-cultural adjustment during cross-cultural transitions: A comparison of secondary students overseas and at home. *International Journal of Psychology*, 28(2), 129-147.
- Ye, J. (2006). Traditional and online support networks in the cross-cultural adaptation of Chinese international students in the United States. *Journal of Computer-Mediated Communication*, 11(3), 863-876. doi:10.1111/j.1083-6101.2006.00039.x
- Yeh, C. J., & Inose, M. (2003). International students' reported English fluency, social support satisfaction, and social connectedness as predictors of acculturative stress. *Counselling Psychology Quarterly*, 16(1), 15-28.
- Yu, B., & Wright, E. (2016). Socio-cultural adaptation, academic adaptation and satisfaction of international higher degree research students in Australia. *Tertiary Education and Management*, 22(1), 49-64. doi:10.1080/13583883.2015.1127405
- Zhang, J., & Goodson, P. (2011). Predictors of international students' psychosocial adjustment to life in the United States: A systematic review. *International Journal of Intercultural Relations*, 35(2), 139-162. doi:10.1016/j.ijintrel.2010.11.011

APPENDIX A  
CONSENT FORM



Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

**Title of Study:** Effects of Cultural Intelligence and Social Support on Adjustment of International Students to U.S. Higher Education

**Student Investigator:** Guang Li, University of North Texas (UNT) Department of Educational Psychology. **Supervising Investigator:** Dr. Wendy Middlemiss.

**Purpose of the Study:** You are being asked to participate in a research study that aims to investigate factors influencing your adjustment to the U.S. campus.

**Study Procedures:** You will be asked to answer a few of questions related to your demographic information, cultural intelligence, social support, and adaptation to U.S. higher education that will take less than 20 minutes of your time.

**Foreseeable Risks:** No foreseeable risks are involved in this study.

**Benefits to the Subjects or Others:** This study is not expected to be of any direct benefit to you, but we hope to learn more about international students' experience in studying and living in the U.S.

**Compensation for Participants:** You will have an opportunity to win one of two \$50 gift cards.

**Procedures for Maintaining Confidentiality of Research Records:** Your survey answers will be sent to a link at Qualtrics where data will be stored in a password protected electronic format. Qualtrics does not collect identifying information such as your name, phone number, or IP address. Your email address is only for drawing a gift card and will be stored separately from your survey. Therefore, your responses will remain anonymous. No one will be

able to identify you or your answers, and no one will know whether or not you participated in the study. The confidentiality of your individual information will be maintained in any publications or presentations regarding this study.

**Questions about the Study:** If you have any questions about the study, you may contact Guang Li at [guangli@my.unt.edu](mailto:guangli@my.unt.edu), or Dr. Wendy Middlemiss at [Wendy.Middlemiss@unt.edu](mailto:Wendy.Middlemiss@unt.edu).

**Review for the Protection of Participants:** This research study has been reviewed and approved by the Institutional Review Board (IRB).

**Research Participants' Rights:**

Your participation in this study indicates that you have read all of the above and that you confirm all of the following:

- Guang Li has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.

APPENDIX B  
DEMOGRAPHIC QUESTIONNAIRE

Are you a F1 student?

- Yes
- No

Have you been living or studying in the U.S. before going to college (like enrolling in an American high school)?

- No
- Yes

Your gender is

- Male
- Female
- Other

Your age is

Which degree are you current studying for?

- Graduate
- Undergraduate
- IELI
- Other

What is your program?

Which country/region are you from?

How long have you been in the US?

Years

Months

Why did you choose to study in the U.S.? (Please check all that apply.)

- |   |   |
|---|---|
| <input type="checkbox"/> Quality of education                           | <input type="checkbox"/> Government scholarship                       |
| <input type="checkbox"/> Research environment                           | <input type="checkbox"/> Opportunity to experience different cultures |
| <input type="checkbox"/> Language study                                 | <input type="checkbox"/> Family expectations                          |
| <input type="checkbox"/> A specific study or research program           | <input type="checkbox"/> Opportunity to get a job in the U.S.         |
| <input type="checkbox"/> Recommendation by families, friends, or others | <input type="checkbox"/> Other  |
- 

What is your marital status?

- Single, never married
- Married
- Widowed
- Divorced
- Separated

If you are married, is your partner in the U.S.?

- Yes
- No
- NA

What is your present level of English fluency?

Terrible

Poor

Average

Good

Excellent

How comfortable are you communicating in English?

Extremely  
uncomfortable

Somewhat  
uncomfortable

Neither comfortable  
nor uncomfortable

Somewhat  
comfortable

Extremely  
comfortable

How often do you communicate in English?

Never

Sometimes

About half the time

Most of the time

Always

APPENDIX C  
EXTENDED LITERATURE REVIEW

## Adjustment to Higher Education in a Foreign Country

Adjustment is a dynamic process where individuals adjust or change their thoughts or behaviors in order to make a good fit between themselves and their new environments (Berry, 1997; Ramsay, Jones, & Barker, 2007). During the adjustment process, individuals have to pay attention to and observe their contexts; then they need to respond to their observation and make changes (Earley & Ang, 2003; Ramsay et al., 2007). The adjusting process usually involves balancing one's needs and overcoming obstacles in new environments. This triggers learning cycles (Anderson, 1994; Mesidor & Sly, 2016). In Berry's acculturation framework, adjustment is multifaceted and distinguishes between psychological and sociocultural adjustment (Berry, 1997; Berry, 2003; Searle & Ward, 1990). Psychological adjustment refers to a set of psychological outcomes and physical well-being, including personal satisfaction, physical and mental health, and a sense of cultural identity; sociocultural adjustment represents acculturating individuals' outcomes of fitting in new environments, including abilities to deal with daily life, school, and work (Berry, 1994; Berry, 1997; Berry, 2003; Ward & Kennedy, 1993).

International students attending a university in a country other than their home country have to overcome a variety of difficulties in adjusting to novel environments during their cross-culture transition (Kaczmarek et al., 1994; Mesidor & Sly, 2016). The most common stressor in studying and living in a different country is acculturation. International students have to adjust to host cultures that influence living environments and interpersonal interactions. Geographically distant from familiar environments and social support, many international students experience a divergence between their original cultures in areas of roles, values, norms, attitudes, and expectations. The greater the difference between the original culture and the host culture, the more difficult and stressful the adjustment experience (Berry, 1997; Furnham, 2004). The



response to a situation learned in one culture most likely will not be effective in addressing for the same situation in a different culture (Earley & Ang, 2003). Research on adjustment of international students has demonstrated acculturation stress has a long-term influence on their well-being (Berry, 1997; Zhang & Goodson, 2011).

Besides adjusting to the host culture, international students, with the main purpose of attaining an academic degree, experience some mutual issues with students who are living in the country of the institution (Halamandaris & Power, 1999). These can include academic pressures, financial stress, new environments and changes, self-autonomy development, loneliness, self-doubts about academic capacities, and interpersonal conflicts (Duru, 2008; Kaczmarek et al., 1994; Ramsay et al., 2007). In addition to these possible difficulties, international students with fewer resources also encounter language barriers, homesickness, loss of social support, and unfamiliarity with new educational systems (Kaczmarek et al., 1994; Ramsay et al., 2007).

With the purpose of pursuing higher education, quality of adjustment to their academic environments is very important for international students' success (Rienties, Beusaert, Grohnert, Niemantsverdriet, & Kommers, 2012; Zhou, Jindal-Snape, Topping, & Todman, 2008). Often, the educational environment at the academic institution are unfamiliar and very different from their past experiences (Baba & Hosoda, 2014). Most international students used to study in teacher-oriented classes and depend on teachers' instructions while American higher education encourage collaborative and self-directed tasks (Young, 2011). Therefore, the students must adjust both their learning styles (Yu & Wright, 2016). Most international students also have to adjust to new educational systems, including registration, curriculum, evaluation methods, and the credits system (Mesidor & Sly, 2016; Yu & Wright, 2016). In addition, they may lack skills in effectively communicating with teachers and advisors (Mesidor & Sly, 2016). International

students usually place high-performance expectations on themselves and can experience academic stress (Baba & Hosoda, 2014). In a study of international doctoral students in Australia, Yu and Wright (2016) found international students faced a range of academic challenges, including barriers in using English language and learning styles. Factors influencing academic adjustment include language proficiency, self-efficacy, motivation, and learning styles (Kuo, 2011; Lowinger, He, Lin, & Chang, 2014; Mesidor & Sly, 2016; Rienties et al., 2012).

As the host for international students, Universities have direct and indirect influences on their daily lives, academic development, and social networks (Berry, 1997; Mesidor & Sly, 2016). The quality of adjustment in a specific university is a critical facet in evaluating one's adjustment to university that is usually described as institutional attachment (Baker & Siryk, 1999; Glass, Gómez, & Urzúa, 2014; Gómez et al., 2014). According to Baker and Siryk (1999), institutional attachment refers to one's satisfaction with general experience of attending the university in which they are enrolled. A fit between students' various needs and institutional environment increases students' commitment to the school (Baker & Siryk, 1999). Previous research presented some factors that influence students' institutional attachment (Baker & Siryk, 1999; Johnson et al., 2007). For example, gender and the country of origin were found to be related to international students' institutional attachment to a western university (Rienties et al., 2012). Also, the university environment, especially the racial climate, can influence students' sense of belonging to the academic institution (Johnson et al., 2007). Moreover, the diversity and accessibility of university services and support are important to increase satisfaction among international students (Cho & Yu, 2015; Mesidor & Sly, 2016).

With a loss of social networks at home, international students may encounter difficulties in social adjustment. Social adjustment describes to what extent and how successfully

international students deal with relocation—the separation from home, family and friends—and their engagement in local social activities and environments (Gómez et al., 2014). The factors related to social adjustment include English proficiency, country of origin, length of residence in host country, social support, self-efficacy, and gender (Mesidor & Sly, 2016; Zhang & Goodson, 2011). Social network is practically important for international students to promote social adjustment (Berry, 2006). For international students, social networks can be or are grouped into three basic types of social ties: monocultural social ties (contact with students from the same national or cultural background), multicultural social ties (contact with other international students and faculty in general), and bicultural social ties (contact with domestic students) (Gómez et al., 2014). Internet use was found to benefit broadening social networking with local friends that in turn contributed to better social adjustment among international students (Lin, Peng, Kim, Kim, & LaRose, 2012). Also, leisure activity participation, like social events and sports, helps international students establish a social network, and can significantly predict social adjustment to academic institutions (Gómez et al. 2014).

Moreover, previous research demonstrated that international students experience more psychological problems than their domestic counterparts (Leong & Chou, 1996; Yeh & Inose, 2003). Psychological problems usually appear and increase during the early transition period and decrease over time (Berry, 1997; Ward & Kennedy, 1993; Zhang & Goodson, 2011). Variables predicting a successful psychological adjustment to acculturation include personal characteristics, original cultures, social support, host cultures' attitudes towards newcomers, and experience of discrimination (Berry, 1997; Berry et al., 1987; Mesidor & Sly, 2016; Zhang & Goodson, 2011).

Adjustment to higher education in a foreign country is a complicated and comprehensive process involving acculturation, social adjustment, psychological adjustment, and academic adjustment (Baker & Siryk, 1999; Glass et al., 2014). These adjustment dimensions are related and cannot be separated when investigating an overall adjustment to academic institutions (Gómez et al., 2014). Although psychological and sociocultural adaptations are distinct in conceptual level, they are moderately correlated in research (Berry, 1997). Empirical studies provided evidence of an association between psychological and social adjustment while stressful acculturation and academic difficulties were strongly related to mental health (Lee, Koeske, & Sales, 2004; Mesidor & Sly, 2016; Ying & Liese, 1991). Therefore, the present study will view the adjustment to the academic institution as a whole and employ an instrument measuring integrated adjusting experience.

### Cultural Intelligence

CQ is generally used in business literature and describes, assesses and evaluates employee's ability in completing tasks in other countries or with diverse colleagues (Earley, 2002; Earley & Ang, 2003; Tan, 2004). This construct has been demonstrated as a powerful predictor for success in cross-cultural business (Earley & Ang, 2003), but little research has extended the understanding of CQ in university settings (Harrison & Brower, 2011; Zhang & Goodson, 2011). Thus, this study will examine the effects of CQ on outcomes among international university students who have to complete studying tasks in cross-cultural contexts.

CQ refers to one's ability to effectively adapt to novel cultural contexts (Earley & Ang, 2003). Traditional cognitive intelligence describes how people employ existing frames of reference to generalize appropriate responses to certain situations (Earley & Ang, 2003). In a

cross-cultural situation, learning only the norms and behaviors in a new culture is insufficient for successful adjustment to the new environments. A high traditional intelligence quotient could not guarantee a successful fit in a multicultural setting (Mesidor & Sly, 2016). More than just understanding a foreign language or cultural differences, CQ requires individuals to create a mental framework for new situations involving unfamiliar cultures (Earley & Ang, 2003). CQ also is reflected by intention and action. People with high CQ not only learn and understand what they are experiencing and witnessing, but also possess the motivation and capability to respond appropriately to cross-cultural situations (Earley & Ang, 2003). Thus, CQ includes three interactional elements: cognitive, motivational, and behavioral. These elements were described as head, heart, and body (Earley & Mosakowski, 2004).

Cognitive CQ, described as head, refers to cognitive processes in cultural differences. This facet of CQ is the most closely related to the traditional explanation of cognitive intelligence, such as acquiring knowledge of norms and practices in other cultures (Ang et al., 2007; Earley & Ang, 2003; Harrison & Brower, 2011). A high cognitive CQ reflects realization and understanding of similarities and differences across cultures (Ang et al., 2007). Motivational CQ, described as the heart, is one's desire and energy to learn and adapt to new cultural surroundings (Ang, et al., 2007; Earley, 2002; Earley & Ang, 2003). With a high motivational CQ, people are willing to direct their attention and cognition toward learning and functioning in new cultures, and they have confidence in their effectiveness in across-cultural situations (Ang, et al., 2007). Behavioral CQ, described as the body, reflects an ability to acquire and exhibit specific responses to cross-cultural situations. A highly behavioral CQ person is able to verbally or nonverbally interact with people from different cultures, such as using appropriate words and facial expressions (Ang, et al., 2007; Earley & Ang, 2003). These three facets make up the

overall CQ as an aggregate multicomponent construct. A person will be described as a low CQ if one or more of the three elements are weak (Earley & Ang, 2003).

CQ has been well documented in literature on relationships with cross-cultural tasks and adjustment in global business settings (Earley & Ang, 2003; Harrison & Brower, 2011).

Although CQ is a relatively new concept used in understanding the studying abroad experience, CQ has been identified as a significant predictor of adjustment among international university students (Harrison & Brower, 2011; Lin et al., 2012; Mesidor & Sly, 2016). CQ, especially in the motivational dimension, was a significant predictor for psychological adjustment among international students (Harrison & Brower, 2011). CQ also was found to have a positive relationship with cross-cultural and social adjustment among international students after controlling gender, age, previous overseas experience, and length of stay (Chen et al., 2014; Lin et al., 2012).

Although these studies demonstrated the role of CQ in predicting cultural and psychological adjustment among international students, more studies are needed on the relationship between CQ and an overall adjustment (Harrison & Brower, 2011). Thus, this study will investigate the predicting effect of CQ on international students' fit in higher education in multiple domains.

### Social Support

Social support is listed as a significant factor in the acculturation model (Berry, 1992; Berry, 1997). In the field of individual adjustment during acculturation, supportive relationships with members of both heritage culture and host society have positive effects on one's psychological well-being (Berry, 1997). Social support is defined as resources in social

environments that promote one's survival in stressful events (Lin et al., 1986). Individuals with a more supportive social network are more resilient to adverse circumstances compared to ones with less support. In fact, people who perceive more social support tend to have more positive adjustment and less psychological distress (Cohen & Wills, 1985; Ensel & Lin, 1991; Taylor, Doane, & Eisenberg, 2014).

The significant role of social support in adaption to university life has been well documented in literature. Research demonstrated perceived social support from different sources (families, friends, student services, etc.) was a significant predictor for overall adjustment to university life among undergraduate students (Grant-Vallone, Reid, Umali, & Pohlert, 2004; Halamandaris & Power, 1999; Rahat, & Ilhan, 2016). In fact, social support from friends and families was found to be related to psychological, social and academic adjustment (Grant-Vallone et al., 2004; Taylor et al., 2014). Besides, perceived supportive relationships with faculty and peers could increase college students' attachment to the academic institution (Freeman, Anderman, & Jensen, 2007; Johnson et al., 2007). Participation in support programs benefited students' psychological well-being and social connectedness (Grant-Vallone et al., 2004).

In respect to international students, the positive role of social support in adjustment to college life is likewise emphasized in literature (Baba & Hosoda, 2014; Yeh & Inose, 2003). Social support is found to have directly predicting effects on adjustment difficulties to academic institutions and cross-cultural adjustment, and a mediating effect between loneliness and adjustment difficulties (Baba & Hosoda, 2014; Duru, 2008). The perception of supportive contexts will help students reduce the impacts of transitional stress on psychological well-being (Ramsay et al., 2007). In a study of Korean international students in US, Lee et al. (2004) found perceived social support buffered the impact of acculturative stress on psychological adjustment.

With a high level of acculturative stress, international students having more social support reported lower levels of mental health symptoms than their peers with less social support.

The sources of social support are considered important to international students in adjustment to a university outside their home country (Chavajay, 2013), but the relations are inconclusive. Families, partners, and old friends are main sources of emotional and practical support (Baba & Hosoda, 2014). Some research found support from families and friends in home countries benefited international students' academic performance and mental health (Cemalcilar et al., 2005; Mallinckrodt & Leong, 1992). Although these sources of support are physically distant, receiving more distant support was related to a better adjustment to higher education among international students (Ramsay et al., 2007). However, some studies found there was no significant relation between familial support and international students' adjustment in a U.S. university (Ye, 2006).

In a new environment and far away from home, international students lose physical contact with distant families and friends (Kaczmarek et al., 1994). In order to meet the needs of social connections and receive support, international students have to face the tasks of establishing new social networks in the host country (Chavajay, 2013; Chen, Mallinckrodt, & Mobley, 2002; Kaczmarek et al., 1994). With a sense of safety and belonging, many international students tend to establish relationships with other international students, especially co-nationals. With similar cultural values or shared experience, it's easy for international students to build deeper friendships with other international students than with host nationals (Chen et al., 2002; Hendrickson, Rosen, & Aune, 2011). Social support from international friends can provide international students informational and emotional help when needed (Hendrickson et al., 2011). Research found international students are more likely to perceive



emotional and practical social support from other international students rather than from Americans (Chavajay, 2013). With a systematical review of previous studies on international students' psychological adjustment to U.S. university life, Zhang and Goodson (2011) concluded that social interactions with co-nationals had mediation and moderation effects on reducing acculturating stress and psychological disorders.

On the contrary, some studies indicated that friendship networks with a majority of international students could provide short-term support, but inhibit acculturation and harm long-term adjustment (Hendrickson et al., 2011). Compared with international students with more American friends, Poyrazli, Kavanaugh, Baker, & Al-Timimi (2004) found those who interacted mainly with non-Americans received less social support and experienced more acculturative stress. In a longitudinal study of transition among international students, Wang et al. (2012) found a balanced array of social support from different sources rather than a social network mostly with international students was related to a better psychological adjustment.

Besides social support from individuals, contexts of settlement are also important sources for international students to seek support (Berry, 1997). International students are dependent on the host institution for their Visa status and establishing of social networks, thus the host higher education institution is the most important source of support for international students (Cho & Yu, 2015). The host university support was found to have direct influences in international students' satisfaction on academic life and psychological well-being (Bai, 2016; Cho & Yu, 2015). The institutions' academic advisors and counseling services were found to buffer the effects of acculturative stress on psychological symptoms (Lee et al., 2004). The study by Mallinckrodt & Leong (1992) demonstrated a significant buffering role of social support from a graduate program (relationships with faculty, advisors' interest in professional development, and

quality of instructions) on mental health due to adjusting to stress among international graduate students.

## REFERENCES

- Anderson, L. E. (1994). A new look at an old construct: Cross-cultural adaptation. *International Journal of Intercultural Relations*, 18(3), 293-328. doi:10.1016/0147-1767(94)90035-3
- Ang, S., Dyne, L. V., Koh, C., Ng, K. Y., Templer, K. J., Tay, C., & Chandrasekar, N. A. (2007). Cultural intelligence: Its measurement and effects on cultural judgment and decision making, cultural adaptation and task performance. *Management and Organization Review*, 3(3), 335-371.
- Baba, Y., & Hosoda, M. (2014). Home away home: Better understanding of the role of social support in predicting cross-cultural adjustment among international students. *College Student Journal*, 48(1), 1-15.
- Bai, J. (2016). Perceived support as a predictor of acculturative stress among international students in the United States. *Journal of International Students*, 6(1), 93-106.
- Baker, R. W., & Siryk, B. (1999). *Student adaptation to college questionnaire (SACQ) manual*. Los Angeles, CA: Western Psychological Services.
- Berry, J. W. (1976). *Human ecology and cognitive style: Comparative studies in cultural and psychological adaptation*. Beverly Hills: Sage Publications.
- Berry, J. W. (1992). *Cross-cultural psychology: Research and applications*. Cambridge England; New York: Cambridge University Press.
- Berry, J. W. (1994). Acculturation and psychological adaptation: An overview. In A. Bouvy, F. J. R. van de Vijver, K. Boski, & P. G. Schmitz (Eds.), *Journeys into cross-cultural psychology* (pp. 129-141). Lisse, Netherlands: Swets & Zeitlinger Publishers.
- Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology*, 46(1), 5-34. doi:10.1111/j.1464-0597.1997.tb01087.x
- Berry, J. W. (2001). A psychology of immigration. *Journal of Social Issues*, 57(3), 615-631. doi:10.1111/0022-4537.00231
- Berry, J. W. (2003). Conceptual approaches to acculturation. In K. M. Chun, P. B. Organist a, & G. Marín (Eds.), *Acculturation: Advances in theory, measurement, and applied research* (pp. 17-37). Washington, DC: American Psychological Association Press.
- Berry, J. W. (2006). Stress perspectives on acculturation. In D. L. Sam, & J. W. Berry (Eds.), *The Cambridge handbook of acculturation psychology* (pp. 43-57). Cambridge: Cambridge University Press.
- Berry, J. W., Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. *International Migration Review*, 21(3), 491-511.

- Berry, J. W., Poortinga, Y. H., Segall, M. H., & Dasen, P. R. (1992). *Cross-cultural psychology: Research and applications*. New York, NY: Cambridge University Press.
- Berry, J. W., Trimble, J., & Olmedo, E. (1986). The assessment of acculturation. In W. J. Lonner & J. W. Berry (Eds). *Field methods in cross-cultural research* (pp. 291-324). Thousand Oaks, CA: Sage Publications.
- Cemalcilar, Z., Falbo, T., & Stapleton, L. M. (2005). Cyber communication: A new opportunity for international students' adaptation? *International Journal of Intercultural Relations*, 29(1), 91-110. doi:10.1016/j.ijintrel.2005.04.002
- Chavajay, P. (2013). Perceived social support among international students at a U.S. university. *Psychological Reports*, 112(2), 667-677.
- Chen, A. S., Wu, I., & Bian, M. (2014). The moderating effects of active and agreeable conflict management styles on cultural intelligence and cross-cultural adjustment. *International Journal of Cross Cultural Management*, 14(3), 270-288. doi:10.1177/1470595814525064
- Chen, H., Mallinckrodt, B., & Mobley, M. (2002). Attachment patterns of East Asian international students and sources of perceived social support as moderators of the impact of U.S. racism and cultural distress. *Asian Journal of Counselling*, 9(1&2), 27-48.
- Cho, J., & Yu, H. (2015). Roles of university support for international students in the United States: Analysis of a systematic model of university identification, university support, and psychological well-being. *Journal of Studies in International Education*, 19(1), 11-27. doi:10.1177/1028315314533606
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah, N.J: L. Erlbaum Associates.
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310-357. doi:10.1037/0033-2909.98.2.310
- Duru, E. (2008). The predictive analysis of adjustment difficulties from loneliness, social support, and social connectedness. *Educational Sciences: Theory & Practice*, 8(3), 849-856.
- Earley, P. C. (2002). Redefining interactions across cultures and organizations: Moving forward with cultural intelligence. In B. M. Staw & R. I. Sutton (Eds.), *Research in organizational behavior* (pp. 271-299). New York, NY: JAI Press.
- Earley, P. C., & Ang, S. (2003). *Cultural intelligence: Individual interactions across cultures*. Stanford, CA: Stanford Business Books.
- Earley, P. C., & Mosakowski, E. (2004). Cultural intelligence. *Harvard Business Review*, 82(10), 139-146.

- Ensel, W. M., & Lin, N. (1991). The life stress paradigm and psychological distress. *Journal of Health and Social Behavior, 32*(4), 321-341.
- Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of belonging in college freshmen at the classroom and campus levels. *Journal of Experimental Education, 75*(3), 203.
- Furnham, A. (2004). Foreign students: Education and culture shock. *The Psychologist, 17*(1), 16-19.
- Glass, C. R., Gómez, E., & Urzúa, A. (2014). Recreation, intercultural friendship, and international students' adaptation to college by region of origin. *International Journal of Intercultural Relations, 42*, 104-117. doi:10.1016/j.ijintrel.2014.05.007
- Gómez, E., Urzúa, A., & Glass, C. R. (2014). International student adjustment to college: Social networks, acculturation, and leisure. *Journal of Park & Recreation Administration, 32*(1), 7-25.
- Grant-Vallone, E., Reid, K., Umali, C., & Pohlert, E. (2004). An analysis of the effects of self-esteem, social support, and participation in student support services on students' adjustment and commitment to college. *Journal of College Student Retention: Research, Theory & Practice, 5*(3), 255-274.
- Halamandaris, K. F., & Power, K. G. (1999). Individual differences, social support, and coping with the examination stress: A study of the psychosocial and academic adjustment of first year home students. *Personality and Individual Differences, 26*(4), 665-685.
- Harrison, J. K., & Brower, H. H. (2011). The impact of cultural intelligence and psychological hardiness on homesickness among study abroad students. *Frontiers: The Interdisciplinary Journal of Study Abroad, 21*, 41-62.
- Hendrickson, B., Rosen, D., & Aune, R. K. (2011). An analysis of friendship networks, social connectedness, homesickness, and satisfaction levels of international students. *International Journal of Intercultural Relations, 35*(3), 281-295. doi:10.1016/j.ijintrel.2010.08.001
- Institution of International Education (2016). *United States*. Retrieved from <https://www.iie.org/Research-and-Insights/Project-Atlas/Explore-Data/United-States>
- Johnson, D. R., Soldner, M., Leonard, J. B., Alvarez, P., Inkelas, K. K., Rowan-Kenyon, H., & Longerbeam, S. (2007). Examining sense of belonging among first-year undergraduates from different racial/ethnic groups. *Journal of College Student Development, 48*(5), 525-542. doi:10.1353/csd.2007.0054
- Kaczmarek, P. G., Matlock, G., Merta, R., Ames, M. H., & Ross, M. (1994). An assessment of international college student adjustment. *International Journal for the Advancement of Counseling, 17*(4), 241-247.

- Koeske, G. F., & Koeske, R. D. (1989). Work load and burnout: Can social support and perceived accomplishment help? *Social Work, 34*(3), 243-248.
- Kuo, Y. (2011). Language challenges faced by international graduate students in the United States. *Journal of International Students, 1*(2), 38-42.
- Lee, J., Koeske, G. F., & Sales, E. (2004). Social support buffering of acculturative stress: A study of mental health symptoms among Korean international students. *International Journal of Intercultural Relations, 28*(5), 399-414.  
doi://doi.org/10.1016/j.ijintrel.2004.08.005
- Leong, F. T. L. & Chou, E. L. (1996). Counseling international students. In P. B. Pedersen, J.G. Draguns, W. J. Lonner, & J. T. Trimble (Eds.), *Counseling across cultures* (pp. 210–242). Thousand Oaks, CA: Sage.
- Lin, J., Peng, W., Kim, M., Kim, S. Y., & LaRose, R. (2012). Social networking and adjustments among international students. *New Media & Society, 14*(3), 421-440.  
doi:10.1177/1461444811418627
- Lin, N., Dean, A., & Ensel, W. M. (1986). *Social support, life events, and depression*. New York: Academic Press.
- Lin, Y., Chen, A. S., & Song, Y. (2012). Does your intelligence help to survive in a foreign jungle? The effects of cultural intelligence and emotional intelligence on cross-cultural adjustment. *International Journal of Intercultural Relations, 36*(4), 541-552.  
doi:10.1016/j.ijintrel.2012.03.001
- Lowinger, R. J., He, Z., Lin, M., & Chang, M. (2014). The impact of academic self-efficacy, acculturation difficulties, and language abilities on procrastination behavior in Chinese international students. *College Student Journal, 48*(1), 141-152.
- Mallinckrodt, B., & Leong, F. T. L. (1992). International graduate students, stress, and social support. *Journal of College Student Development, 33*(1), 71-78.
- Mao, R. & Liu, Y. (2016). Social support: A moderator between cultural intelligence and crosscultural adaptation of international students in Chinese universities. *International Forum of Teaching & Studies, 12*(2), 32-36.
- Mesidor, J. K., & Sly, K. F. (2016). Factors that contribute to the adjustment of international students. *Journal of International Students, 6*(1), 262-282.
- Neri, F. V. & Ville, S. (2008). Social capital renewal and the academic performance of international students in Australia. *Journal of Socio-Economics, 37*, 1515-1538.  
doi:10.1016/j.socec.2007.03.010
- Poyrazli, S., Kavanaugh, P. R., Baker, A., & Al-Timimi, N. (2004). Social support and demographic correlates of acculturative stress in international students. *Journal of College Counseling, 7*(1), 73-82. doi:10.1002/j.2161-1882.2004.tb00261.x

- Rahat, E., & Ilhan, T. (2016). Coping styles, social support, relational self-construal, and resilience in predicting students' adjustment to university life. *Educational Sciences: Theory and Practice*, 16(1), 187-208.
- Ramsay, S., Jones, E., & Barker, M. (2007). Relationship between adjustment and support types: Young and mature-aged local and international first year university students. *Higher Education*, 54(2), 247-265.
- Rienties, B., Beausaert, S., Grohnert, T., Niemantsverdriet, S., & Kommers, P. (2012). Understanding academic performance of international students: The role of ethnicity, academic and social integration. *Higher Education*, 63(6), 685-700. doi:10.1007/s10734-011-9468-1
- Schartner, A., & Young, T. J. (2016). Towards an integrated conceptual model of international student adjustment and adaptation. *European Journal of Higher Education*, 6(4), 372-386. doi:10.1080/21568235.2016.1201775
- Searle, W. & Ward, C. (1990). The prediction of psychological and sociocultural adjustment during cross-cultural transitions. *International Journal of Intercultural Relations*, 14, 449-464.
- Shapiro, S., Farrelly, R., & Thomas, Z. (2014). *Fostering international student success in higher education*. Alexandria, VA: TESOL.
- Sullivan, C., & Kashubeck-West, S. (2015). The interplay of international students' acculturative stress, social support, and acculturation modes. *Journal of International Students*, 5(1), 1-11.
- Tan, J. (2004). Cultural intelligence and the global economy. *Issues and Observations*, 24(5), 19-21.
- Taylor, Z. E., Doane, L. D., & Eisenberg, N. (2014). Transitioning from high school to college: Relations of social support, ego-resiliency, and maladjustment during emerging adulthood. *Emerging Adulthood*, 2(2), 105-115. doi:10.1177/2167696813506885
- The United States Citizenship and Immigration Services (2017). Glossary of terms. Retrieved from <https://www.uscis.gov/i-9-central/customer-support/glossary-terms>.
- Wang, C. D., & Mallinckrodt, B. (2006). Acculturation, attachment, and psychosocial adjustment of Chinese/Taiwanese international students. *Journal of Counseling Psychology*, 53(4), 422-433. doi:10.1037/0022-0167.53.4.422
- Wang, K. T., Heppner, P. P., Fu, C., Zhao, R., Li, F., & Chuang, C. (2012). Profiles of acculturative adjustment patterns among Chinese international students. *Journal of Counseling Psychology*, 59(3), 424-436. doi:10.1037/a0028532
- Ward, C. (1996). Acculturation. In D. Landis & R. Brislin (Eds.), *Handbook of intercultural training* (pp. 124-147). Thousand Oaks, CA: Sage.

- Ward, C., & Kennedy, A. (1993). Psychological and socio-cultural adjustment during cross-cultural transitions: A comparison of secondary students overseas and at home. *International Journal of Psychology, 28*(2), 129-147.
- Ye, J. (2006). Traditional and online support networks in the cross-cultural adaptation of Chinese international students in the United States. *Journal of Computer-Mediated Communication, 11*(3), 863-876. doi:10.1111/j.1083-6101.2006.00039.x
- Yeh, C. J., & Inose, M. (2003). International students' reported English fluency, social support satisfaction, and social connectedness as predictors of acculturative stress. *Counselling Psychology Quarterly, 16*(1), 15-28.
- Ying, Y. W., & Liese, L. H. (1991). Emotional well-being of Taiwan students in the U.S.: An examination of pre- to post-arrival differential. *International Journal of Intercultural Relations, 15*, 345-366.
- Young, A. S. (2011). First time international college students' level of anxiety in relationship to awareness of their learning-style preferences. *Journal of International Students, 1*(2), 43-49.
- Yu, B., & Wright, E. (2016). Socio-cultural adaptation, academic adaptation and satisfaction of international higher degree research students in Australia. *Tertiary Education and Management, 22*(1), 49-64. doi:10.1080/13583883.2015.1127405
- Zhang, J., & Goodson, P. (2011). Predictors of international students' psychosocial adjustment to life in the United States: A systematic review. *International Journal of Intercultural Relations, 35*(2), 139-162. doi:10.1016/j.ijintrel.2010.11.011
- Zhou, Y., Jindal-Snape, D., Topping, K., & Todman, J. (2008). Theoretical models of culture shock and adaptation in international students in higher education. *Studies in Higher Education, 33*(1), 63-75. doi:10.1080/03075070701794833