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The Influence of Psychological Adjustment on Academic Performance of International Students: The Moderating Role of Social Support

¹Abdul Kadir Othman, ²Yusliza Mohd Yusoff, ³Muhammad Iskandar Hamzah, ⁴Mohd Zulkifli Abdullah

^{1,3,4}Universiti Teknologi MARA Puncak Alam, Faculty of Business Management, 42300 Selangor, Malaysia

²Universiti Sains Malaysia, Institute of Graduate Studies 11800 Penang, Malaysia

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ABSTRACT

Background: In the era of globalization, people are moving from one place to another without or with minimum restriction for diverse purposes including to further studies in higher educational institutions in the selected country. Malaysia is also promoting its higher education worldwide expecting a significant growth in the number of international students pursuing their tertiary education in the country. However, there is an issue regarding the academic performance of the students as some students are unable to perform well due to various reasons. This phenomenon might create negative perception of the potential students who plan to further their studies in the country. **Objective:** The present study was conducted to investigate the dimensions of psychological adjustment that might contribute to students' academic performance by looking at the moderating effect of social support. **Results:** Using the data collected via questionnaire survey from 498 international students studying in four public universities in Malaysia, the results of hierarchical regression analysis indicate that cognitive adjustment is the most significant predictor of academic performance. Besides, family support was found to enhance the relationship between affective adjustment and academic performance and the relationship between cognitive adjustment and academic performance. Friend support, on the other hand, moderates the relationship between attitudinal adjustment and academic performance. Finally, lecturer support was found to influence the relationship between affective adjustment and academic performance and the relationship between attitudinal adjustment and academic performance. **Conclusion:** The management should organize programs such as adopted family scheme, mentor-mentee program, or appointment of academic advisors where these students can have someone to discuss various academic as well as non-academic matters. Besides, when these students' degree of attitudinal adjustment is high, they seriously need friends' support to guide them in living in the foreign country. The management can provide assistance in establishing an association for them so that they can get together frequently supporting each other, organizing healthy activities and participating in various programs that improve their wellbeing and subsequently contribute to their academic excellence.

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INTRODUCTION

Countries are using various strategies to attract foreign visitors including international students in order to increase the foreign exchange rate. To become the educational hub in the region, the number of these students plays a significant role in promoting the country as the most favorable destination of choice (Arambewela & Hall, 2009). Other than that, the performance of these students is also imperative to attract other students who are searching for the placement. If the current students perform well other students are more likely to come to the country because of the positive word-of-mouth promotion (Arambewela & Hall, 2009). This type of promotion has been regarded as the most effective way of promoting products or services as it serves as the endorsement by the third party.

The international students' academic performance is dependent on their ability to make appropriate adjustment with regards to cognitive, affective and attitudinal and behavioral adjustments (Malaklolunthu & Selan, 2011). Cognitive adjustment refers to their confidence level in starting a new life in a new environment. Affective adjustment concerns the feeling of satisfaction or dissatisfaction associated with living in the country. Attitudinal and behavioral adjustments involve perception and actions which the students are able to partake

Corresponding Author: Dr. Abdul Kadir Othman, Universiti Teknologi MARA, Center for Postgraduate Studies, Faculty of Business Management, 40450 Shah Alam, Selangor, Malaysia.
Phone: 6013-9823953 E-mail: abdkadira@yahoo.com

during their stay in the country. The velocity of adjustment on these three categories might determine their level of academic performance and different students might have dissimilar abilities to adjust their lives accordingly.

To facilitate the adjustment process of the international students, they need to be assisted. The higher educational institutions where these students are studying should play a significant role in providing the necessary support in terms of infrastructure, which includes accommodation and transportation; special services such as insurance coverage, counselling and work assistance; and academic support that includes personal consultation, special courses arrangement and tuition fees arrangement. Other than that, social support is also important to help them adjust their lives appropriately as it is closely related to the cognitive and affective abilities of the students.

Since there are limited studies on the adjustment process of the international students, this study is intended to investigate the influence of social support on the relationship between psychological adjustment and academic performance of the international students studying in the country. The findings are expected to assist the higher academic institutions especially in the country to devise programs or activities that can lead to the achievement of the national agenda; to the increase the number of international students in the country.

Literature Review:

Academic Performance:

Academic performance is the indicator of the ability of the students to appraise, demonstrate and display the competencies learnt in the classroom to the real setting. Most higher learning institutions apply the cumulative grade point average (CGPA) to reflect students' academic performance. There are a lot of factors that determine students' academic performance, which can be categorized into individual, group and institutional. Individual factors include those related to individual student's ability such as IQ or cognitive level, affective or emotional states, and attitude and/or behavior. Group factors reflect the influence of group affiliation on individual student ability to learn such as group cohesiveness, composition, structure and values. Institutional factors, on the other hand, concerns the physical facilities, students' support services, and the rules and regulations to facilitate learning. This paper focuses on the influence of individual factors as the determinants of students' academic performance due to their importance.

Psychological Adjustment:

The words adjustment, acculturation and assimilation have been extensively to reflect attitudinal and emotional adjustments of foreigners to the host countries and social integration of an individual into the social interaction of the new culture (Thomas & Althen, 1989). Psychological adjustment, on the other hand, refers to general feelings of wellbeing and satisfaction the foreigners come to experience because of reduction of the stress of living in the new culture. It is broadly affected by personality, life changes, coping styles and social support (Ward & Kennedy, 1999).

International students studying in the foreign countries are normally facing with cross cultural challenges in terms of languages, life styles, food, accommodation, customs and practices, and physical environment. They need to adapt to these cultural aspects in order to live comfortably in the host countries (Centinkaya-Yildiz, Cakir & Kondakci, 2011). Cross-cultural adaptation involves two major components; psychological and socio-cultural. Psychological adjustment refers to emotional and affective components whereas socio-cultural refers to the behavioral component of the construct (Ward & Kennedy, 1999). Psychological adjustment focuses on psychological well-being and satisfaction, and socio-cultural adaptation stresses on the ability of the students to ascertain culturally appropriate skills and deal with interactive components of the host environment (Centinkaya-Yildiz et al., 2011).

Previous studies have established that psychological adjustment is associated with flexibility (Searle & Ward, 1990), internal locus of control (Ward & Kennedy, 1992), humor (Ward & Kennedy, 1999), approach coping styles (Searle & Ward), and relationship satisfaction (Ward & Kennedy, 1992). Socio-cultural adaptation, on the other hand, is related to the length of residence in host culture, knowledge of host culture, interaction and identification with host-nationals, host language fluency, cultural distance, and acculturation strategies (Ward & Kennedy, 1999). In this study, psychological adjustment is conceptualized as comprising cognitive, affective and attitudinal or behavioral adjustments of the international students.

Cognitive Adjustment:

Cognitive adjustment refers to the ability of the students to engage in mental adjustment so that they are able to focus on the main objective of being in the host country. Studies have indicated that cognitive adjustment of the students is related to their academic performance. McKenzie and Schweitzer (2001) in their study on the academic, psychosocial, cognitive, and demographic predictors of academic performance of first year Australian university students found that integration into university, self-efficacy, and employment responsibilities were predictive of university grades. However, Furnham, Chamorro-Premuzic & McDougall (2002) in their study on personality, cognitive ability, and beliefs about intelligence as predictors of academic

performance found that personality explains the more variance in academic performance than other predictors. In the case of international students, it is expected that cognitive adjustment plays a significant role in affecting their academic performance since it is the major requirement for the students to adapt to the local learning environment in order to succeed in their academic pursuit. Based on the discussion, the following hypothesis is highlighted:

H1: Cognitive adjustment significantly influences academic performance of the international students

Affective Adjustment:

Affective adjustment concerns the ability of the students regulate their emotional states so that they are able to stay composed although they are in the country foreign to them. As a result, they are able to excel in their academic endeavors. Studies have proven that affective adjustment of the students is related to their academic performance. A study conducted by González, Donolo, Rinaudo and Paoloni (2011) found that emotions predicted performance, i.e., positive emotions predicted pleasant performance and negative emotions predicted unpleasant performance. Another study supported the relationship by highlighting that self-awareness, self-regulation, social relationships and coping skills are significantly related to school adjustment and performance (Bustin, 2007). Wiswell (2011) in her study on superintendent emotional intelligence and student achievement found that managing emotions branch scores of the MSCEIT results were statistically significant in influencing student achievement. Based on the discussion, the hypothesis below is developed:

H2: Affective adjustment significantly influences academic performance of the international students

Attitudinal Adjustment:

Behavioral adjustment reflects the ability of the students to act appropriately according to the socio-cultural requirements of the host country. Studies have provided the evidence that behavioral or attitudinal adjustment of the students is related to their academic performance (Ward & Kennedy, 1999). Results of a longitudinal study involving two university samples suggest that Neuroticism may impair academic performance, while Conscientiousness may lead to higher academic achievement (Chamorro-Premuzic & Furnham, 2003). Therefore, attitudinal adjustment is highly required for the international students to excel in their academic. Based on the preceding discussion, the following hypothesis is made:

H3: Attitudinal adjustment significantly influences academic performance of the international students

Social Support:

The relationships between psychological adjustment dimensions and students' academic performance are expected to be moderated by social support. Social support refers to the support received by the students from family members, friends, lecturers and those who are perceived important to them (Zimet, Dahlem, Simit & Farley (1988). Social support is required to facilitate or assist the students during their difficult time dealing with various matters including academic, social, financial and personal issues. A study conducted by Lin (2008) provides evidence that support from social networks is significantly correlated with academic outcomes and that students with broader social networks develop better academic outcomes. Further, when students encounter challenges and conflicts, the broader social networks covariate with the positive psychological adjustment to lead to the greater academic outcomes. Another study by Nicpon, Huser, Blanks, Sollenberger, Befort and Kurpius (2006/2007) found that social support was negatively related to loneliness and positively related to academic persistence decisions.

Family Support:

A number of studies have established that family support contributes significantly to heightened academic performance. A study conducted by Chohan and Masrur Khan (2010) discovered that parents' contribution to their children's education has a consistent and positive effect on academic achievement and on the self-concept. Cheng, Ickes and Verhofstadt (2012) supported the earlier study that the level of perceived family social support was important not only as a main predictor of the magnitude and stability of the students' GPA scores across three successive semesters, regardless of the level of economic support. Rueger, Malecki and Demaray (2010) found that there were significant associations between all sources of support with depressive symptoms, anxiety, self-esteem, and academic adjustment with parental support as a robust unique predictor of adjustment for both boys and girls. Moreover, Crockett, Iturbide, Stone, McGinley, Raffaelli, Carlo (2007), in their study among Mexican American college students found that parental support and active coping buffered the effects of high acculturative stress on anxiety symptoms and depressive symptoms. Based on the above discussion, the following hypothesis is highlighted:

H4a: Family support significantly moderates the relationship between cognitive adjustment and academic performance of the international students

H4b: Family support significantly moderates the relationship between affective adjustment and academic performance of the international students

H4c: Family support significantly moderates the relationship between attitudinal adjustment and academic performance of the international students

Friend Support:

Support from friends and availability of special persons are significant to contribute to psychological adjustment among the international students (Yusliza & Abdul Kadir, 2011). Another study found that a lack of peer acceptance in the classroom in 4th grade predicted lower academic self-concept and more internalizing symptoms the following year, which in turn, predicted lower academic performance in 6th grade (Flook, Repetti & Ullman, 2005). Besides, Nielsen (2006) found that peer support is crucial to facilitate students to cope with school adjustment. Rueger et al. (2010) also found that classmates' support as a robust unique predictor for boys in influencing depressive symptoms, anxiety, self-esteem, and academic adjustment. In addition, Crockett et al. (2007), in their study among Mexican American college students also found that peer support moderated the relation between acculturative stress and anxiety symptoms. Rejected children were more likely to experience negative peer treatment, more likely to show decreases in classroom participation, and more likely to report loneliness, to express a desire to avoid school, and to perform less well on achievement measures (Buhs & Ladd, 2001). Based on the preceding discussion, the following hypothesis is formulated:

H5a: Friend support significantly moderates the relationship between cognitive adjustment and academic performance of the international students

H5b: Friend support significantly moderates the relationship between affective adjustment and academic performance of the international students

H5c: Friend support significantly moderates the relationship between attitudinal adjustment and academic performance of the international students

Lecturer Support:

Support from lecturers is critical in assisting the international students to cope with their daily matters as evidenced in a study that discovered that both academic and social/emotional outcomes are unambiguously influenced by the quality of the relationships between teachers and students which, when compared with family and peers, exert the strongest influence, on well-being and achievement outcomes for students (Murray-Harvey, 2010). Another study by Eggen, van der Werf and Bosker (2008) using multinomial logistic regression shows that social support has no effect on study attainment, but that personal networks do have an effect on attainment among the university students. Moore, Armstrong and Pearson (2008) found that lecture attendance is significantly associated with academic performance. By attending lectures, students are able to articulate their problems and obtain necessary solutions from the lecturers, and subsequently, their academic achievement will improve. Based on the discussion, the subsequent hypothesis is presented:

H6a: Lecturer support significantly moderates the relationship between cognitive adjustment and academic performance of the international students

H6b: Lecturer support significantly moderates the relationship between affective adjustment and academic performance of the international students

H6c: Lecturer support significantly moderates the relationship between attitudinal adjustment and academic performance of the international students

Methodology:

This study is intended to investigate the influence of social support on the relationship between psychological adjustment and academic performance of the international students studying in the country. Thus, correlational research design is deemed appropriate. Regarding research instrument, a self-developed questionnaire was used to collect the required data. The questionnaire was developed by referring to the instrument used by the existing similar studies and according to the number of variables identified in this study; the independent variables comprise psychological adjustment that constitutes cognitive, affective and behavioral and attitudinal adjustments; the dependent variable is the academic performance; and the moderating variable is social support that constitute family, friend and lecturer supports.

Data were collected within the period of three months starting from September to November 2012. International students from four public universities; namely International Islamic University, Universiti Malaya, Universiti Putra and Universiti Kebangsaan Malaysia, were selected as samples because the population of international students at these universities are sizeable as compared to other universities.

The collected data were analyzed using descriptive statistics, factor analysis, correlation analysis and hierarchical regression analysis. The significant results of hierarchical regression analysis were further explained using the three dimensional graphs to indicate the moderating influence of social support dimensions on the relationship between psychological adjustment dimensions and academic performance.

Findings and Discussion:

The respondents involved in the study were from the International Islamic University (89), Universiti Malaya (77), Universiti Kebangsaan Malaysia (162) and Universiti Pertanian Malaysia (170), as shown in Table 1. These universities were chosen because they are characterized as Research Universities and having a number of international students pursuing their studies in various academic fields. With regard to gender distribution, 252 of the respondents are male while 184 are female. Majority of the respondents are single (384) whereas only 36 of them are married and five of them are divorced. These students enrolled at varying academic programs with the majority of them are taking up Engineering (104), followed by Information Technology (75), Health Science (64), Agriculture (47), Science (30), Biotechnology (27), Education (25) and others. Most of them are African (207), Arab (116), Asia (33), Southeast Asia (27) and others. The mean age of the respondents is 22.79 years.

Table 1: Demographic Information of Respondents.

		Frequency	Percent
University	IIU	89	17.9
	UM	77	15.5
	UKM	162	32.5
	UPM	170	34.1
Gender	Male	252	50.6
	Female	184	36.9
	Unidentified	62	12.4
Marital Status	Single	384	77.1
	Married	36	7.2
	Divorced	5	1
	Unidentified	73	14.7
Program	Business, Economics & Accounting	21	4.2
	Agriculture	47	9.4
	Biotechnology	27	5.4
	Education	25	5.0
	Engineering	104	20.9
	Human Science	25	5
	Health Science	64	12.9
	Information Technology	75	15.1
	Language	2	.4
	Science	30	6
	Veterinary	4	.8
	Unidentified	74	14.9
	Ethnicity	African	207
Arab		116	23.3
European		6	1.2
Asia		33	6.6
East Asia		11	2.2
Southeast Asia		27	5.4
Age	Unidentified	96	19.3
	Mean = 22.79	SD = 3.64	N=437

Table 2: Factor Analysis for Psychological Adjustment.

Statements	Component		
	1	2	3
I have adequate knowledge with regard to the culture of this country.			.585
I am confident in dealing with others in this new environment.			.818
I can continue living as usual in this new environment.			.787
I am confident to perform my academic responsibilities in this country.			.738
I am satisfied with the way I live my life in this country.	.727		
I seldom feel worry about things that I do not know since I arrived here.	.769		
I rarely feel impatient when dealing with people from diverse cultural background.	.734		
I hardly ever feel depressed living in this country.	.792		
I can move freely in this country without feeling of anxiety/insecure.		.618	
I am able to involve in any activity that I like.		.795	
I am able to find my way around in this country.		.808	
I can perform my academic assignments effectively in this country.		.767	
% of variance explained	20.939	20.262	20.051
KMO			.819
Bartlett's Test of Sphericity	Approx. Chi-Square		2047.343
		df	66
		Sig.	.000
MSA			.774-.882

Principle Component Factor Analysis with Varimax rotation was utilized to analyze the factor structure of the 12 psychological adjustment items. As shown in Table 2: the results of the analysis indicate the existence of three factors to represent the psychological adjustment construct. The KMO value of .819 indicates that the correlations among the items are sufficient for factor analysis to be conducted. The MSA values range from .774 to .882. The three factors; cognitive adjustment, affective adjustment and attitudinal adjustment, explain 20.939, 20.262 and 20.051, respectively. Each factor contains four items with loadings higher than 0.5.

Table 3: Factor Analysis for Academic Performance.

	Component	
	1	2
I feel satisfied with my academic performance in Malaysia.	.834	
My academic achievement truly reflects my ability.	.896	
I am confident that I can excel in my studies in Malaysia.	.778	
I can do better if I were studying in my own country.		.724
I feel regret with my decision to study in Malaysia.		.884
Being a foreign student hinders me from performing well in my academic.		.831
% of variance explained	35.821	33.445
KMO		.614
Bartlett's Test of Sphericity	Approx. Chi-Square	965.614
	df	15
	Sig.	.000
MSA		.570-.661

The six academic performance items were factor analyzed using Principle Component Factor Analysis with Varimax rotation. The results indicate the existence of two factors with KMO values of .614, signifying that the items' correlations are adequate for factor analysis (refer Table 3). The MSA values range from .570 to .661 with percentages of variance explained of 35.821 and 33.445 for the two factors. The first factor contains three positively worded items measuring the extent to which the international students are capable of performing academically in the host country. The second factor contains three negatively worded items measuring of how the international students perform academically if they were in their home country. Since these items were quite distinct from items loaded on the first factor, they were discarded from subsequent analyses.

Table 4: Factor Analysis of Social Support Items.

	Components		
	1	2	3
My family always contacts me to ask of my condition.			.769
My family shows concern when I talk about my academic problems.			.777
My family is the one who helps me to make my academic decisions.			.632
My family cares about my feelings.			.767
My family is a real source of comfort to me.			.688
Most of my friends are willing to help me when I am in need.	.736		
Most of my friends are willing to share my joys and sorrows.	.841		
Most of my friends really try to help me in doing my assignments.	.706		
I feel comfortable when talking about my problems with my friends.	.761		
I am satisfied with support given by my friends.	.705		
Staff from my faculty/school give proper guidance in my academic study.		.710	
Lecturers from my faculty/school give proper guidance in my academic study.		.724	
Most of the lecturers are available when I need their help in understanding the academic subjects.		.737	
My lecturers gave encouragement to improve my skills in my study.		.800	
My lecturers are willing to help me make academic decisions.		.819	
% variance explained	20.381	20.169	18.423
KMO			.783
	Approx. Chi-Square		3028.640
	df		105
	Sig.		.000
MSA			.703-.850

Principle Component Factor Analysis with Varimax rotation was utilized to analyze the factor structure of the 17 social support items. Table 4 displays the results of the analysis, which indicate the existence of three factors to represent the social support construct. The KMO value of .783 indicates that the correlations among the items are sufficient for factor analysis to be conducted. The MSA values range from .703 to .850. Two items were removed due to high cross loadings. The remaining items create three interpretable factors; namely family support, friend support and lecturer support, which explain 20.381, 20.169 and 18.423, respectively. Each factor contains five items with loadings higher than 0.5.

Table 5: Correlation analysis of psychological adjustment dimensions, social support and academic performance.

No		Mean	SD	1	2	3	4	5	6	7
1	Cognitive Adjustment	3.91	.57	(.763)						
2	Affective Adjustment	3.64	.67	.294**	(.775)					
3	Attitudinal Adjustment	3.80	.70	.496**	.341**	(.801)				
4	Family Support	4.20	.59	.203**	.087	.270**	(.783)			
5	Friend Support	3.70	.70	.111*	.432**	.098*	.128**	(.825)		
6	Lecturer Support	3.65	.70	.310**	.520**	.351**	.133**	.377**	(.837)	
7	Academic Performance	3.70	.77	.187**	.537**	.187**	.092*	.430**	.500**	(.788)

Notes: **. Correlation is significant at the 0.01 level (2-tailed); *. Correlation is significant at the 0.05 level (2-tailed); N=497; Reliability coefficients are displayed in the parentheses along the diagonal.

Table 5 presents the results of correlation analysis of the variables involved in the study; psychological adjustment dimensions (cognitive, affective and attitudinal adjustments), academic performance and social support dimensions (family, friend, and lecturer supports). The significant correlation values for psychological adjustment dimensions indicate convergent validity of the variables. Besides, social support dimensions also signify the significant correlation values, which verify the convergent validity of the constructs. Moreover, all independent and moderating variables correlate significantly with academic performance, denoting concurrent validity of the construct, describing significant possible influence of these variables on the dependent variable. Table 5 also shows the reliability coefficients of the items for each variable, which are in the range of .763 and .837, indicating that the items are highly consistent in measuring the variables concerned.

Table 6 presents the results of hierarchical regression analyses investigating the moderating role of family, friend and lecture support in affecting the relationship between psychological adjustment and academic performance. Model 1 in the table refers to the direct relationship between psychological adjustment and academic performance. Model 2 indicates the extent of additional variance explained when the moderator is included in the regression model. Model 3 reflects the interaction of the moderator variable with the independent variables and their relationship with the dependent variable. The process was carried out in accordance with the procedure outlined by Baron and Kenny (1986) and Judd and Kenny (1981).

Referring to Model 1, the results denote that affective adjustment is a significant predictor of the academic performance ($\beta=.529$, $p<0.01$). Other psychological dimensions are not significant predictors of academic performance. With reference to the moderating effect of family support, the inclusion of the moderator does not significantly contribute to additional explanation of the variance in the regression model. However, the inclusion of the interaction terms between family support and the psychological adjustment dimensions increase significantly the explanation of variance in the model. Specifically, family support significantly moderates the relationship between cognitive adjustment and academic performance ($\beta=1.889$, $p<0.01$) and the relationship between affective adjustment and academic performance ($\beta=-1.501$, $p<0.01$).

Table 6: Hierarchical regression analysis of social support, psychological adjustment and academic performance.

	Social Support (Moderators)								
	Family Support			Friend Support			Lecturer Support		
Variables	M1	M2	M3	M1	M2	M3	M1	M2	M3
Cognitive	.037	.032	1.007**	.037	.035	.056	.037	.003	-.145
Affective	.529**	.530**	-.929**	.529**	.420**	.537**	.529**	.395**	1.272**
Attitude	-.012	-.022	-.385	-.012	.003	-.519*	-.012	-.057	-.451*
Moderator		.045	-.369		.244**	-.157		.308**	.592**
Cognitive* Moderator			-.1501**			-.018			.313
Affective* Moderator			1.889**			-.246			-1.629**
Attitude* Moderator			.552			.823*			.713*
R	.537	.539	.571	.537	.580	.591	.537	.595	.614
R ²	.288	.290	.326	.288	.337	.349	.288	.354	.377
R ² change	.288	.002	.036	.288	.048	.012	.288	.065	.023
F change	66.755	1.303	8.744	66.620	35.731	3.054	66.620	49.537	6.032
Sig F change	.000	.254	.000	.000	.000	.028	.000	.000	.000
Durbin Watson			1.928			1.911			1.961

With regard to the moderating effect of friend support on the relationship between psychological adjustment and academic performance, Model 2 indicates significant contribution of the moderator variable in explaining the additional variance in the model ($\beta=.244$, $p<0.01$). Thus, friend support can be regarded as having direct significant relationship with academic performance. Model 3 signifies that the interaction between friend support and attitudinal adjustment is significant in explaining the additional variance in the regression model. Therefore, friend support significantly moderates the relationship between attitudinal adjustment and academic

performance ($\beta=.823$, $p<0.01$). Other interaction terms do not significantly add to the explanation of variance in the model.

In relation to the moderating effect of lecturer support on the relationship between psychological adjustment and academic performance, the inclusion of the moderator variable in Model 2 adds significantly to the explanation of the variance in the regression model. Thus, lecturer support can be regarded as a significant predictor of academic performance ($\beta=.308$, $p<0.01$). Furthermore, the inclusion of interaction terms enhances significantly the explanation of variance in the model. Particularly, lecturer support significantly moderates the relationship between affective adjustment and academic performance ($\beta=1.629$, $p<0.01$) and the relationship between attitudinal adjustment and academic performance ($\beta=.713$, $p<0.05$). Lecturer support does not significantly moderate the link between cognitive adjustment and academic performance.

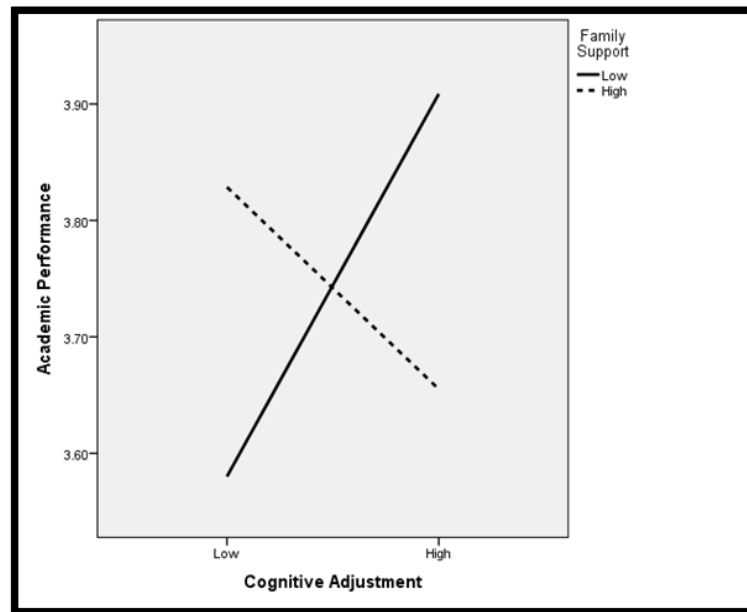


Fig. 1: The Moderating Effect of Family Support on the Relationship between Cognitive Adjustment and Academic Performance.

Figure 1 presents the interaction effect of family support, cognitive adjustment and academic performance. It denotes that the international students are required to make appropriate cognitive adjustment so that they can achieve high academic performance. High family support is extremely required when their cognitive adjustment level is low. However, if their cognitive adjustment level is high, excessive family support would make them too complacent with their life that would result in losing focus on their academic requirement, resulting in low academic performance.

Figure 2 illustrates the interaction effects of family support, affective adjustment and academic performance. To perform academically, the international students have to properly adjust their affective state or their feelings associated with being in the foreign country. Failure to make appropriate adjustment, although with high family support, will result in low academic performance. These students can perform better if they can make the required affective adjustment and receive high support from their family because as human beings, these students need encouragement from the family members to deal with uncertain feelings that emerge when being in the foreign country.

Figure 3 displays the interaction effects of friend support, attitudinal adjustment and academic performance. Without friend support, the attitudinal adjustment made by the international students will result in reduced academic performance because attitudinal adjustment makes them feel comfortable and secure to move around and to involve in activities they love. As a result, their academic performance suffers. However, with high support and guidance received from their friends, these students are able to control their attitude and behaviors from getting involved in activities that might negatively affect their academic performance. As a result, their academic performance improves significantly.

Figure 4 describes the interaction effects of lecturer support, attitudinal adjustment and academic performance. Similar to the effect of friend support, lecturer support serves as a control mechanism hindering the international students from involving in unintended activities that might negatively affect their academic performance. Without support and encouragement from their lecturers, students who are successful at adjusting their attitude and behaviors according to socio cultural requirements of the country might be unable to restrain

their scorching desire to travel and involve in many activities. They might forget about their academic requirements. However, with high support and guidance from lecturers, the movement of the students might be limited toward certain extent and these support and encouragement enhance their academic performance.

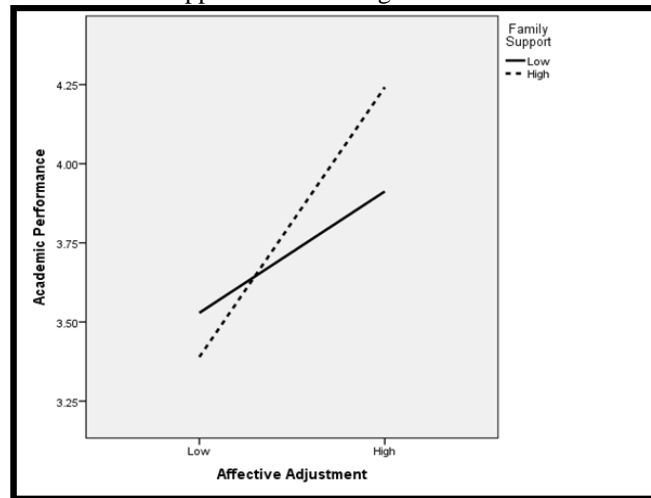


Fig. 2: The Moderating Effect of Family Support on the Relationship between Affective Adjustment and Academic Performance.

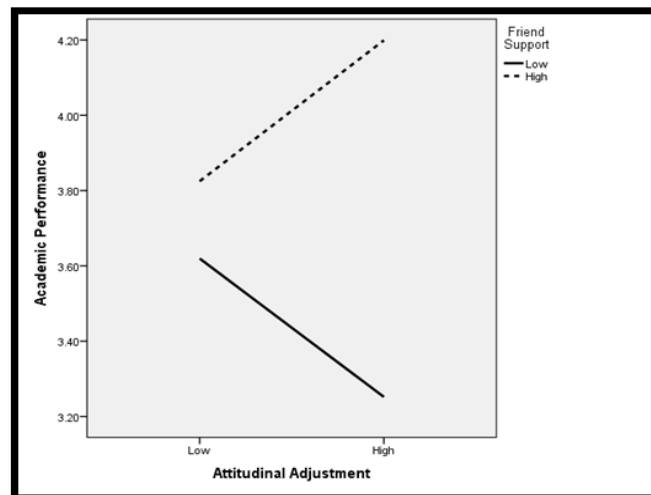


Fig. 3: The Moderating Effect of Friend Support on the Relationship between Attitudinal Adjustment and Academic Performance

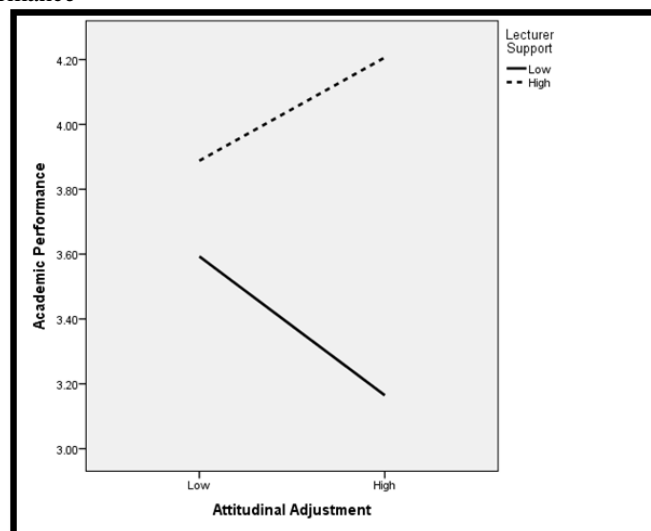


Fig. 4: The Moderating Effect of Lecturer Support on the Relationship between Attitudinal Adjustment and Academic Performance.

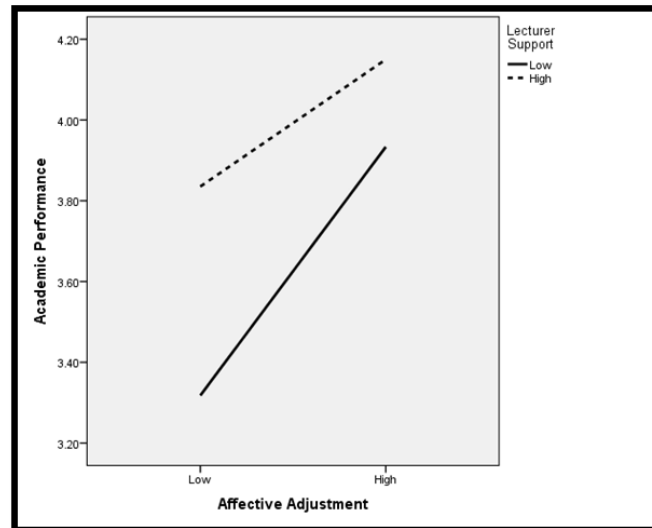


Fig. 5: The Moderating Effect of Lecturer Support on the Relationship between Affective Adjustment and Academic Performance.

Figure 5 depicts the interaction effects of lecturer support, affective adjustment and academic performance. Affective adjustment is compulsory for the international students to be successful in their academics. They have to put aside the feelings of loneliness, anxiety, and poignant, and move forward by focusing on the main purpose of coming to the country. Thus, high affective adjustment will result in high academic performance. Coupled with support from the lecturer, their academic performance can further be enhanced because although these students are able to adjust their affective state accordingly, they still need someone to rely on, to share their feelings, and to get opinion on certain aspects of life. Therefore, support from lecturers is imperative to their academic excellence.

Conclusion:

The academic performance of the international students is important to attract other students to pursue their studies in the country (Arambewela & Hall, 2009). One of the aspects that can help to achieve high academic performance of these students is the psychological adjustment factors (Centinkaya-Yildiz *et al.*, 2011; Malaklolunthu & Selan, 2011). The present study found that affective adjustment is significant to influence the academic performance of the international students studying in the country as their ability to adjust or regulate their emotions or feelings is critical to facilitate the achievement of their academic excellence. The findings are consistent with those of Gonzalez *et al.* (2011) that discovered the positive association between emotions and academic performance.

The findings of the present also indicate that social support is also important to enhance the relationship between psychological adjustment factors and academic performance. It is supported by Lin (2008) who said that social networks are significantly correlated with academic outcomes and that students with broader social networks develop better academic outcomes. Family support significantly affects the link between cognitive adjustment and academic performance but in a negative manner. High family support is needed when the cognitive adjustment level is low and it is not required when the cognitive level is high. High family support is also required even though the students' affective adjustment level is high. The findings are in line with those found by Cheng *et al.* (2012), Crockett *et al.* (2007) and Reuger (2010) that parental support is crucial for the students to achieve high academic excellence.

On the other hand, friend support is necessary to facilitate the academic performance of the international students especially when their attitudinal adjustment is high. Similar to friend support, lecturer support is also imperative to assist these students to achieve academic excellence when they engage in great attitudinal adjustment. Besides, lecturer support is highly needed regardless of the students' affective adjustment level so that they are able to successfully accomplish their academic mission in the foreign country. These findings are consistent with Flook *et al.* (2005), Nielsen (2006), Reuger *et al.* (2010), and Yusliza and Abdul Kadir (2011) who found that social support especially from friends are imperative to ensure that the students are able to achieve favorable academic performance.

Managerial Implication:

In order to facilitate the achievement of the international students' academic performance, the management of the universities where these students are studying is required to accurately assess the level of psychological adjustment of these students that comprises cognitive, affective and attitudinal adjustments so that necessary actions can be taken to align these adjustments with the achievement of great academic performance. When their cognitive adjustment level is high, family support is minimally required. Thus, these students should be involved in extracurricular activities to fully utilize their available time. In another situation, when their affective adjustment level is high, family and lecturer supports are greatly helpful in assisting them to achieve academic excellence. The management should organize programs such as adopted family scheme, mentor-mentee program, or appointment of academic advisors where these students can have someone to discuss various academic as well as non-academic matters. Besides, when these students' degree of attitudinal adjustment is high, they seriously need friends' support to guide them in living in the foreign country. The management can provide assistance in establishing an association for them so that they can get together frequently supporting each other, organizing healthy activities and participating in various programs that improve their wellbeing and subsequently contribute to their academic excellence.

Future Research Implication:

The present study was conducted with the main intention to develop and validate the instrument measuring the psychological adjustment of the international students studying in the country. Four public universities were selected where 498 international students participated in the survey. Although rigorous analysis technique was applied, the newly developed research instrument is still in its infancy level. It is recommended that future research should further validate the instrument in terms of its convergent, divergent, discriminant and concurrent validities. This instrument should be utilized together with other established instrument measuring the same or contrasting construct so that its convergent and divergent validities can be verified. The instrument should also be further tested to accurately assess its ability to differentiate the respondents according to their adjustment levels. Moreover, the concurrent validity of the instrument can be further demonstrated by looking at the influence of psychological adjustment on other aspects of the international students' lives such as wellbeing, drugs abuse, and other phenomena of interest.

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