

International Student Adjustment Scale (ISAS): Toward a Holistic Understanding of Adjustment Experience

Sarifah Nurhanum Syed Sahuri^{1*} , Rachel Wilson² 

¹Faculty of Major Language Studies, Universiti Sains Islam Malaysia, 71800 Nilai, Negeri Sembilan, Malaysia.

Email: sh.nurhanum@usim.edu.my

²School of Management, UTS Business School, University of Technology Sydney, 2008 New South Wales, Australia.

Email: Rachel.Wilson@uts.edu.au

CORRESPONDING AUTHOR (*):

Sarifah Nurhanum Syed Sahuri
(sh.nurhanum@usim.edu.my)

KEYWORDS:

ISAS
International student
Adjustment
Academic
Social
Psychological

CITATION:

Sarifah Nurhanum Syed Sahuri, & Wilson, R. (2024). The International Student Adjustment Scale: Integrating the Academic, Social, and Psychological Adjustment Experiences. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 9(5), e002808.
<https://doi.org/10.47405/mjssh.v9i5.2808>

ABSTRACT

Previous research has established that how students feel and make practical adjustments in international education settings is pivotal to their educational and personal progress. This study introduces the International Student Adjustment Scale (ISAS), a novel instrument designed to capture the multifaceted adjustment experience of international students abroad. Qualitative analysis of interviews and diaries (n=26) underscored the need for a more nuanced understanding of adjustment as a dynamic process encompassing academic, sociocultural, and psychological domains. Informed by existing adjustment theories and validated measures, we crafted a comprehensive 30-item scale – the ISAS. To assess its efficacy, the ISAS was administered to a cohort of Malaysian students studying in Australia (N=371). Exploratory Factor Analysis confirmed the presence of three distinct sub-scales: academic adjustment, sociocultural adjustment, and psychological adjustment, each containing two to three further factors. Additionally, the scale demonstrated strong internal consistency ($\alpha = .72$ to $.87$). These results are encouraging for future research endeavours that delve deeper into the concept of international student adjustment. With further validation across diverse student populations, the ISAS holds significant potential as a tool for developing optimal learning environments and experiences that support successful student adjustment within the international higher education landscape.

Contribution/Originality: This study contributes to the existing literature on international students' adjustment experiences, with a particular focus on developing a method for measuring and evaluating their real-time experiences through a self-report questionnaire. Employing a mixed-methods research design, the study presents a novel questionnaire that captures a holistic view of adjustment, encompassing academic, sociocultural, and psychological dimensions.

1. Introduction

Extensive international student adjustment research has focussed on the student experience, including their cognitive, emotional, and behavioural coping with the positive and negative events during the acculturation process while studying and living in a host country (Ward & Kennedy, 1993; Berry, 2006). The adjustment phenomenon has been acknowledged in the last four decades as a strong subject for guiding the development of international student policy in higher education (Marginson, 2015; Marginson 2014; Hanassab & Tidwell, 2002).

This paper presents a new perspective into the international student adjustment experience in confronting a cross-cultural contact and experiences in a foreign country by considering academic, sociocultural, and psychological adjustment. Each of these has been explored in previous research, but as separate concepts (Wan, Chapman & Biggs, 1992; Gerdes & Mallinckrodt, 1994; O'Reilly, Ryan & Hickey, 2010).

1.1. Research Objectives

We present a new measure that captures and integrates these three components of international student's adjustment. The analysis presented here contributes a broader understanding of contemporary student adjustment, especially for ongoing research into international student adjustment among undergraduate students.

2. Literature Review

International student statistics show an increasing trend around the world. Fostering adjustment through living and studying experiences in the early stages of residence in the new country is seen as a crucial foundation for success in later year study (Schartner, 2014). The previous work of Sandhu and Asrabadi (1994), Wilson (2013), Biggs et al. (2001) and Baker and Siryk (1984) has drawn consideration to the concept of adjustment and its role in understanding international students' experiences in coping with cross-cultural adjustment.

The well-established concept of adjustment embraces a detailed understanding of the connection between the sociocultural and psychological (Ward & Kennedy, 1993; Zhang & Goodson, 2011). While the effect of cross-cultural contact is a key focus in this literature, the academic adjustment aspect has not been directly integrated into these perspectives. In previous research, sociocultural and psychological adjustment components have been typically treated as distinctive and separate to academic adjustment- which may (O'Reilly, Ryan & Hickey, 2010; Gerdes & Mallinckrodt, 1994) or may not (Jackson, Ray & Bybell, 2013; Rienties, Beusaert, Grohnert, Niemantsverdriet, & Kommers, 2012; Ladd & Ruby Jr., 1999) have been considered. Because it is evident these components interact (Zhang & Goodson, 2011; Zhou et al., 2008; Sam, 2001), the idea of combining all components should be seen as positive. There is potential to acknowledge the impact of the relationship between the components and provide a more comprehensive account of the process of adaptation.

Various factors that contribute to international student adjustment have been identified in research (Zhang & Goodson, 2011; Smith & Khawaja, 2011). Based on these student-identified issues from the literature, as well as a qualitative research phase with interviews and diaries, the new measure of International Student Adjustment Scale (ISAS) was

developed, piloted, and tested among international students from Malaysia studying across Australia. This group was selected as they are one of the largest, yet most under researched, groups of international students in Australia. The adjustment concept has previously been explored, albeit in a less holistic way as described above, among other international students from China (Briguglio & Smith, 2012; Pan & Wong, 2011; Pan, Wong, Joubert & Chan 2008; Wang & Shan, 2007), Japanese (Kudo & Simkin, 2003) and Indonesia (Novera, 2004). Furthermore, there is a growing view that comprehensive sampling of international students from various nations and backgrounds, poses challenges both methodologically and in relation to cultural sensitivity (Hendrickson, Rosen & Aune, 2011; Barron & Arcodia, 2002; Chalmers & Volet, 1997).

In this research context, international student adjustment is conceptualized as a dynamic, ongoing learning process that fosters equilibrium between the student and their new environment. The individual, in this case student, acts as an active agent to control themselves, the environment, and the adjustment process based on their perceptions, emotions and behaviours during the adjustment period (Ramsay, Jones, Barker, & Al, 2007). Follows here an introduction to each concept, consideration of dynamic between adjustment and maladjustment, and the nature of adjustment as a process of coping. Meta-analysis of international students' adjustment reveal a three dimensional process encompassing a psychological, sociocultural and academic domains. (Cemalcilar & Falbo, 2008; Kambouropoulos, 2014). Despite this, there remains a gap in the literature, with a lack of research exploring the concept holistically, with conceptual and measurement development of the three subtypes of adjustment.

2.1. Academic adjustment

The differences in learning and teaching cultures and values between the home and host country create challenges for international students. One of the major hurdles experienced by international students is the high competency requirement for English language skill, especially in regard to abilities in writing, reading, and speaking. Students frequently also have problems in the classroom, such as unsupportive classmates and lecturers, as well as a disparity between the quality of the environment and the experience of learning (Andrade, 2006; Kambouropoulos, 2014). Many studies have examined the psychological factors, linked to these experiences, that contribute to successful academic adjustment, including: self-regulation, self-efficacy, and motivation (Miquelon, Vallerand, Grouzet, & Cardinal, 2005; Yusoff, 2012). In addition it is broadly understood that positive learning experiences, in high quality and well-organised courses which knowledgeable and culturally sensitive academic staff, help students to overcome the adjustment problems at university (Li, Chen, & Duanmu, 2009; Ramsay et al., 1999; Zhang & Mi, 2009; Bianchi, 2013). This is one example of how academic components interact with psychological components.

2.2. Sociocultural adjustment

The root of the sociocultural adjustment is the cultural distance between international students' home country and host country- in how they deal with the difference in values, behaviours and lifestyles (Pan, Fu, & Wong, 2011). These differences may become a barrier for them in communicating with the host students and other international students. In this situation, international students may prefer to strengthen their relationships with students of the same nationality. As a result, international students experience less social interaction with their hosts and only have a small number of local friends at the university

(Coles & Swami, 2012). Sociocultural adjustment can affect international students' satisfaction and happiness to live in a new place in many ways, both within and outside the education institutions (Bianchi, 2013). For example, international students' satisfaction can increase with the locals' response and acceptance towards their social presence in the community, despite experience of discrimination or racism, due to the cultural and religion differences, felt in the broader host community (Novera, 2004). In other words, students' experience within their immediate, proximate environment, including academic environment can counter experiences in their more distal community. Furthermore, students experience emotional difficulties when they perceive their origin culture as of low status compared to the host culture (Terry, 2006). Where socio cultural problems arise, they have a significant impact on psychological adjustment. Previous studies have reported that international students feel disturbed with their social status in the new environment (Li & Gasser, 2005) and are at increased risk psychological isolation (McLachlan & Justice, 2009).

2.3. Psychological adjustment

In the early phase of adjustment, international students usually feel excited and happy during their arrival at the new place. However, after several weeks, some of them start to experience culture shock (Furnham, 2004; Brown & Holloway, 2008) because of the significant cultural differences which cause them emotional and psychological problems. Their psychological well-being might deteriorate if they do not have strong coping skills, with which to adapt to a new and different academic and socio cultural environment (Brown & Holloway, 2008). The initial stages of adjustment can be emotionally turbulent. Loneliness, homesickness, and isolation often coalesce, triggering a cascade of negative emotions: nervousness, fear, frustration, anxiety, embarrassment, and uncertainty. The cumulative weight of these feelings can eventually lead to overwhelm and depression (Sawir, Marginson, Deumert, Nyland, & Ramia, 2007; Tananuraksakul & Hall, 2011). For some international students, perfectionist tendencies, academic pressure, and a strong desire to excel can contribute to the development of psychological conditions like obsessive-compulsive disorder (OCD) (Khawaja & Dempsey, 2007). Mori (2000) reviews the psychological experiences of international student and argues that international students remain impoverished regarding mental health services.

2.4. Maladjustment and stress

Investigating student adjustment involves identifying the diverse activities and environmental factors that influence their academic success, sociocultural integration, and psychological well-being. Previous studies of international student adjustment have shown that there are some key ideas or variables consistently discussed as predictors of academic, sociocultural, and psychological adjustment processes. Similar research has also identified variables which contribute to the maladjustment through academic, social, and psychological experiences.

Research suggests that international students may face challenges adjusting to the specific academic demands of their new environment. This can include navigating unfamiliar teaching and learning styles, as well as developing effective study management skills for the classroom (Burns, 1991; Hellsten, 2002; Rienties, Beusaert, Grohnert, Niemantsverdriet, & Kommers, 2012). Biggs provides a model of student learning that stresses the importance of the student's personal experience of teaching and learning activities (Biggs, 1993). In addition, students may also have a problem with English skills

such as writing, reading, listening, and speaking which also contributes to sociocultural adjustment problems (Khawaja & Stallman, 2011; Kim, 2011).

In relation to international student sociocultural adjustment, variables like cultural distance and types of newly formed friendships, can be both risk and protective factors. Besides English skills, isolation and loneliness, the absence of home culture, international students also experience difficulties mixing with the community (Bianchi, 2013; Swami, 2009). In addition, individual students' unique pattern of friendship may obstruct them from creating quality friendships with other students, especially those from different national groups (Bista, 2013), which can aid in sociocultural and academic adjustment. International students also experienced psychological problems dynamically during the adjustment process, patterns of adjustment over time are another important area of research.

2.5. Adjustment as a process

In the early stage of adjustment, international students usually experience homesickness, loneliness and isolation (Pedersen et al., 2011; Kambouroopoulos, 2014; Novera, 2004). The research consistently highlights a strong interplay between these three predictors: academic preparedness, sociocultural adaptation, and psychological well-being. They are frequently examined together in the literature to understand their combined influence on international student maladjustment. International students have to confront stress in this painful and testing process (Brown & Holloway, 2008).

Adjustment is a complicated, challenging, and self-transforming process (Marginson, 2014). In this process, it is important for international students to identify the best techniques or strategies as tools – for both defence and attack. Previous studies show that there are some effective coping strategies that work for international students to overcome adjustment challenges. Research suggests that effective study management skills, thorough learning preparation, and active participation in class can significantly aid international students in adapting to the new teaching and learning environment (Ramburuth & McCormick, 2001; Kennett, Reed, & Stuart, 2013; Bianchi, 2013). In addition, high self-efficacy and proficiency in English communication equip international students for academic achievement. (Yusuf, 2011; Sherry et al., 2010; Khawaja & Stallman, 2011).

The literature identifies five coping strategies directly related to international students' sociocultural adjustment, which are also related to academic and psychological adjustment. These are: students' preparation (Moores & Popadiuk, 2011), participation (Wingenbach, Chmielewski, Smith, Piña Jr, & Hamilton, 2006), self-efficacy (Constantine, Okazaki, & Utsey, 2004), communication (Redmond & Bunyi, 1993), and social support (Zhai, 2002; Olivas & Li, 2006). However, in the sociocultural context, the students' preparation to understand the host country culture and the maximisation of participation in the society, are seen as the most important and significant variables. In the same way, international students with high cultural self-efficacy have regular communication or interaction with the host society and strong social support systems; they also have the ability to adapt to the different or new culture (Kağnıcı, 2012; Yan & Berliner, 2013).

For psychological adjustment, there are three important factors that help international students to optimise well-being: self-efficacy; strong social support from other people, friends or university support (Baker & Hawkins, 2006); and religious factors (like faith,

identity, values, and beliefs) all help international students to overcome psychological problems (Russell, Thomson, & Rosenthal, 2008; Abdullah, 2011).

3. Research Methods

The ISAS was developed as a Likert scale, following the procedures outlined by Robson (2016), Coates and Radloff (2012), Sandhu and Asrabadi, (1994), with some minor amendments. These are laid out below:

3.1. Create a pool of items related or important to the adjustment issues

To develop a comprehensive instrument, a two-pronged approach was employed. First, a thorough literature review identified key themes related to adjustment, drawing on both quantitative and qualitative research. Second, to incorporate student perspectives and experiences with intercultural contact and adjustment, in-depth interviews were conducted with 14 international students (10 female, 4 male) from three universities in New South Wales. The 90 items generated, including positive and negative represent three scales academic, sociocultural, and psychological. The purpose of negative items was to increase the sensitivity of the instrument in measuring the respondent experience.

3.2. Decide on a response format

The instrument utilized a 5-point Likert scale, with 1 denoting 'strongly disagree' and 5 signifying 'strongly agree'. An intermediate option of 'not sure' was offered at the midpoint (3). Following an iterative process involving five drafts and feedback from three experts in psychology and instrument development, the scale was refined to enhance clarity and eliminate redundancy. A total of 26 items were removed or revised to address potential confusion, duplication, and ambiguity in meaning. The final instrument comprises 64 items, with a balanced distribution of approximately 20-22 items within each of the component areas.

3.3. Check the future respondent's attitude to the list of the statement

The talk aloud session and cognitive interview have been conducted among 5 students as a pilot test. The participants were encouraged to give a feedback on the structure, meaning, interpretation, phrasing and they also were given a chance to make a suggestion. The instrument has been reviewed by three experts in cross-cultural psychological and research methods. Two of them have experience in conducting research of international student adjustment in Australia and also another two of them were experts in the instrument development process.

3.4. Transform into an online questionnaire

The draft scale was transformed into the online survey form by using RedCAP (Harris et al., 2009). It has been divided into four main sections: demographic information, academic adjustment, sociocultural adjustment, and psychological adjustment. After the participants completed the online survey, they were directed to the feedback form. More than 500 international students were asked to complete the online survey. With the help of several international offices and student associations at 10 universities across Australia, the online survey was promoted among the international students.

3.5. Obtain a good sample size

From 500 invitations, 471 Malaysian international students responded to the questionnaire. However, only 371 international students complete all sections of the online survey. Among these, a few participants had missing values and these were replaced by using an estimation technique in SPSS (Pallant, 2013). All respondents aged from 19 to 33 years old, taking a various field of study and almost 70% studying in New South Wales and living in urban areas. They are also a mix of sponsored and self-funding students. All participants were from Malaysia and the distribution of academic year was 33.3% for each group: first year, second year and third year and above.

3.6. Conduct analysis

The data was analysed using correlation and factor analysis – principal component analysis with Varimax rotation. In interpreting the factors structure, two sources of information were used as a guideline. First, the correlation matrix that showed the relationship and magnitude between the items for each scale and second, the factor loading pattern yielded from the rotation.

4. Results

The final International Student Adjustment Scale (ISAS) included 30 items. Some of the 64 original items were removed from the scale because of low reliability and factor loading (below 0.50), high correlation between items, incoherence with factors emerged and repetition. This section focuses on the psychometric properties and effectiveness of the three adjustment scales, including their inter-relationships. The following section will delve into the factor structure of each individual scale.

4.1. Psychometric properties of the adjustment scales

The initial 64 items principal component analysis- with Varimax rotation yielded more than 30 factors using eigenvalues exceeding 1. Since the number of factors was too large compared to the number of items in each part, a scree plot was used to reveal the number of factors in the slope line before it reaches zero point. Based on the factor loadings structure, it was decided to retain 10 components (3 factors of academic adjustment, 3 factors of sociocultural adjustment, and 2 factors of psychological adjustment) for further investigation.

Table 1 summarizes the construct validity and reliability measures for the three final adjustment scales within the ISAS. It presents the factor loadings (λ) of each item on the underlying construct for each component, the percentage of variance explained by the items ($\sigma^2\%$), and the Cronbach's alpha coefficient (α) for internal consistency of each scale. Notably, two to three distinct factors were identified for each adjustment scale. The reliability of all scales is above 0.70 and the overall reliability of ISAS is very high at 0.89.

Table 1: International Student Adjustment Scale

Scales and items	λ	σ^2 %	α
1.Academic Adjustment scale (AAS)		55.77	.72
<i>a) Communication (COM)</i>		29.92	.68
I have a problem in understanding what the lecturers or tutors say	0.74		
I am afraid to give my opinion in the class	0.73		
I feel comfortable speaking English in my classroom	0.62		
I understand the accents used by the lecturers or tutors	0.70		
<i>b) Institutional relationship (INS)</i>		15.63	.68
The administrative staff help me to solve the problems at the university	0.61		
I learn how to cooperate with other people during group work	0.57		
The lecturers or tutors encourage me to ask questions in the classroom	0.79		
The lecturers or tutors help me to understand the topic	0.80		
<i>c) Performance (PER)</i>		10.22	.52
I have high expectations for my performance in assessments	0.69		
I order and prioritise the study requirement effectively	0.82		
2.Sociocultural Adjustment Scale (SAS)		55.78	.73
<i>a) Relationship with locals (LOC)</i>		20.51	.49
I experience warm relationships with local people in my new environment	0.75		
I am comfortable making friends with local people	0.70		
I am comfortable making friends with other international students	0.57		
I am comfortable with the attitude of the local people in my new environment	0.56		
<i>b) Cultural Attitude (CUL)</i>		19.68	.66
I am learning to understand cultural differences	0.68		
I continue to practise my own cultural values in my new environment	0.77		
<i>c) Relationship with co-national (CON)</i>		15.59	.60
I am comfortable making friends with people from my home country	0.72		
I enjoy social gatherings organised by people from my home country	0.79		
I enjoy doing outdoor activities with my friends	0.53		
I enjoy participation in clubs and associations in my current education institution	0.52		
3.Psychological Adjustment Scale (PAS)		50.60	.87
<i>a) Positive emotions (PE)</i>		18.87	.66
I feel happy living in this new environment	0.81		
I feel proud that I am an international student	0.80		
I feel satisfied with my current social relationships	0.69		
<i>b) Negative emotions (NE)</i>		31.74	.80
Being far away from family makes me feel lonely	0.60		

I feel sad because I am not being able to do the same activities that I did back home	0.66
I feel I am treated unfairly because I cannot speak English well	0.69
I feel I am treated unfairly because of my appearance	0.71
I am worried about the local people accepting me in this new environment	0.72
I doubt my ability to adapt to this new environment	0.58
I feel it is hard to survive in this new environment	0.72

4.2. Empirical properties of ISAS

Table 2 presents information on the national distribution of international student adjustment in Australia. It shows scale means (X), standard deviation (σ), minimum (min) and maximum (max). Table 3 shows the correlation among the adjustment scales and factors. The academic adjustment scale (AAS) and sociocultural adjustment scale (SAS) are positively correlated with the psychological adjustment scale (PAS). The emerging construct components structure of the ISAS is highlighted in Figure 1 and discussed in the following section.

Table 2: National Distribution of Malaysian International Students in Australia of ISAS Qualities.

Scales	X	σ	Min.	Max.
AAS	3.75	0.42	2.08	4.92
SAS	4.03	0.36	2.42	5.00
PAS	3.66	0.51	2.14	5.00
*COM	4.06	0.43	1.00	5.00
*INS	3.33	0.66	1.25	5.00
*PER	3.84	0.63	1.00	5.00
*LOC	4.08	0.47	2.50	5.00
*CUL	3.86	0.52	1.75	5.00
*CON	4.13	0.45	2.50	5.00
*PE	3.36	0.70	1.00	5.00
*NE	3.97	0.54	2.00	5.00

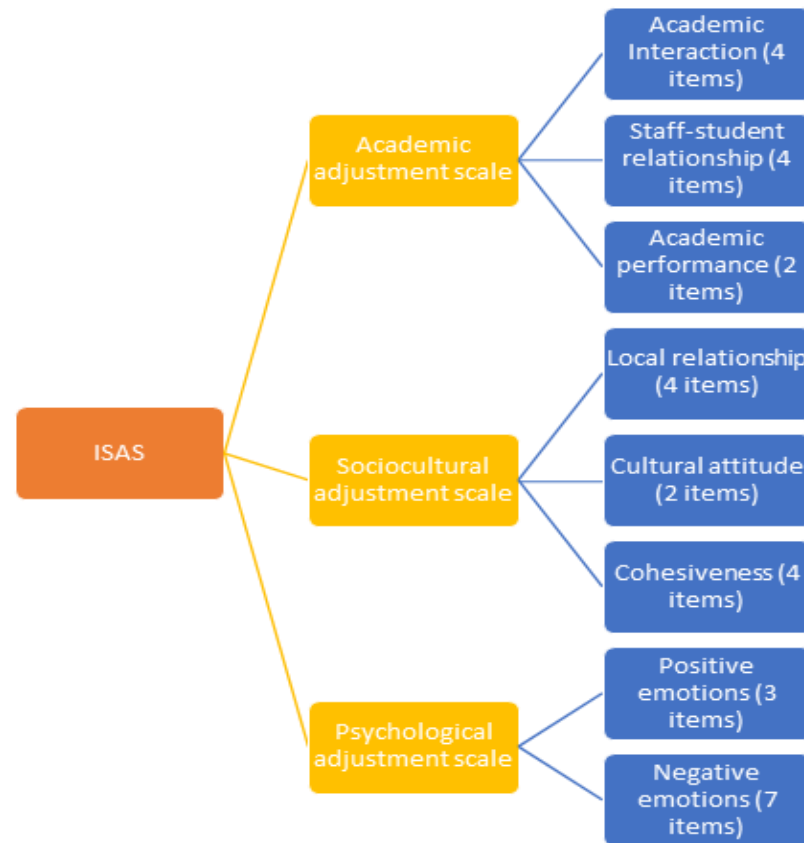
Table 3: Relationship among Adjustment Scales and Factors (see Table 1 for code description)

Scales/ subscales	AAS	SAS	PAS	COM	INS	PER	LOC	CUL	CON	PE
AAS										
SAS	.46*									
PAS	.47*	.45*								
COM	.64*	.45*	.33*							
INS	.76*	.23*	.39*	.25*						
PER	.77*	.37*	.31*	.34*	.31**					
LOC	.35*	.75*	.36*	.37*	.13*	.31*				
CUL	.44*	.78*	.44*	.37*	.31*	.30*	.39*			
CON	.23*	.70*	.20*	.27*	.06	.21*	.29*	.33*		
PE	.40*	.28*	.86*	.19*	.47*	.20*	.18*	.33*	.10**	
NE	.36*	.48*	.76*	.37*	.14*	.32*	.44*	.39*	.23*	.32*

*Correlation is significant at $p < .01$

**Correlation is significant at $p < .05$

Figure 1: Exploration of International Students Adjustment Scale



5. Discussion

This section focused on patterns recorded by each adjustment scale and provided justification, informed by consistent literature, for the development of each factor. Overall, 8 components for three adjustment scales are discussed.

5.1. Academic Adjustment Scale (AAS)

Under AAS, 10 items were categorised into three factors: a) communication, b) institutional relationship, and c) performance became a main pillar of the academic adjustment. The correlations in [Table 3](#) make it evident that the AAS components hold the strongest relationship with the other components. In other words, academic adjustment appears to be most central to overall International students' adjustment in Australia.

a) Interaction

Communication is one of the international students' major difficulties in academic adjustment ([Khawaja & Stallman, 2011](#); [Kim, 2011](#)). This factor comprises four items (see [Table 1](#), point 1a) that measure the international students interaction in the academic setting, and in particular during teaching and learning activities. These items also signify students' ability to speak and listen to other students and instructors. When studying in the host country, international students are exposed to a new communication atmosphere, the environment becomes a challenge, especially for non-English speaking background students, like International students. Based on the earlier findings in Phase 1, English language is the major barrier of communication in the classroom. Besides, the different English language accents articulated by other students and instructors from different cultural background affect international students' self-efficacy and confidence to interact and convey their message and opinion to other people ([Sherry et al., 2010](#); [Khawaja & Stallman, 2011](#); [Yusuf, 2011](#); [Zhou & Cole, 2016](#)). Also, this is further evidence of the interaction between academic, sociocultural, and psychological components much of which is related to language ability.

b) Institutional relationship

This factor reflects the institutional relationship that helps International students adjust to the different academic settings in the host country. This relationship is present in four items (see [Table 1](#), point 1b) including supportive instructors, peers, and administration staff at the learning institution. Based on the earlier findings in Phase 1, International students reported that supportive instructors and peers encourage international students to have a stable learning process and increase their positive emotional well-being. Consistent with the existing literature, this factor addresses the important role of a supportive learning environment to enhance international students' learning experience in the host country ([Andrade, 2006](#); [Kambouropoulos, 2014](#)). Also, this factor measures international students' interpersonal skill, especially in cooperating and dealing with other people inside and outside the classroom.

c) Performance

Adapting to a different learning culture often requires international students to hone their academic task management skills (Ramburuth & McCormick, 2001; Kennett et al., 2013; Bianchi, 2013). This factor encompasses two items designed to assess international student expectations and behaviours associated with academic success (see Table 1, point 1c). Based on the earlier findings in Phase 1, international students were very concerned with the academic task impact on their learning performance and achievement. They work hard to get a good academic result by understanding the task at hand and performing optimally in it. In this factor, the learning management aspect focuses on the international students planning and organising the academic work over time. Learning management is a key aspect to help students to perform better in their study and minimises stress. Students who spend time effectively become more focused and engaged with the learning process and avoid distraction.

5.2. Sociocultural Adjustment Scale (SAS)

Under SAS, there are three factors produced by EFA: a) relationship with locals, b) cultural attitude, and c) relationship with co-national. The correlations in Table 3 make it evident that the SAS components have a strong relationship with all three sub components ($r > .70$, $p < .01$). SAS also demonstrated a positive relationship with a few components in academic and psychological adjustment.

a) Relationship with locals

This factor comprises four items to measure international students' relationship with locals in form of interaction, friendship, and activities (see Table 1, point 2a). Consistent with previous literature, a strong relationship and engagement with the locals helps international students to have a better adjustment experience (Kağnıcı, 2012; Yan & Berliner, 2013). As discussed above in academic adjustment, communication plays an important role to build a relationship or friendship between International students and others including locals. Based on the earlier finding in Phase 1, some of International students found that communication in the classroom expands their friendship circle with the local students, thus improving international student's sociocultural adjustment experience in the host country. From the activity's aspect, this factor addresses the international student's participation in any activities that builds or strengthens the relationship between International students and locals. These activities include social gathering organised by a community or students' club or association inside and outside the university.

b) Cultural attitude

The interaction between the cultures, especially origin culture (home country) and new culture (host country), leads to culture shock, or acculturative stress (Berry, 1997). This factor addresses attitude and behaviour towards the differences within both cultures in the host country. Two items outlined under this factor include international students commitment to constantly practise their own culture, values and religions, but at the same time do not put up a barrier to learning the new culture (see Table 1, point 2b). In this context, self-conflict emerged within International students' stance and value towards their own culture and towards the new culture. The international student's response

might be in various ways: integration, assimilation, separation, and marginalisation (Berry, 2006). However, this factor most likely represented the integration strategies that focused on mutual understanding and high recognition of both international student's origin culture and host country culture.

c) Relationship with co-national

This factor explains the important role of co-national people (Malaysian) towards international students' adjustment in the host country. There are four items measuring international students' social engagement and friendship with other co-national (see Table 1, point 2c). Based on the earlier finding in Phase 1, a strong relationship or networking between International students and co-national helps international students to feel safe and secure in the new environment (Coles & Swami, 2012). In addition, the existence of this group of people reduces the acculturative stress experience among international students, as both have a common ground of cultural understanding. By participating in social activities, international students are exposed to knowing more about how their own people or society survives in the new environment. Thus, these situations reduced the emotional difficulties (Li & Gasser, 2005; Terry, 2006) and psychological isolation (McLachlan & Justice, 2009) in the host country.

5.3. Psychological Adjustment Scale (PAS)

Under PAS, there are two factors: a) negative feelings and b) positive feelings. Both subscales contribute to the psychological and emotional well-being of international students, as emotional recognition predicts successful psychological adjustment (Yoo, Matsumoto & LeRoux, 2006). The correlations in Table 3 make it evident that the PAS components have a strong relationship with all two sub components ($r > .75, p < .01$).

a) Negative feelings

This factor describes the negative emotions experienced by International students during their adjustment in the host country. There are seven items measuring international students emotional well-being, especially stress, that is produced from various issues or problems in academic and sociocultural adjustment and has a major contribution towards psychological adjustment (see Table 1, point 3a). The feeling of loneliness and sadness also surrounds the emotional atmosphere, since some international students experience difficulties fitting into the new environment and society as reported in Phase 1. Based on a meta-analysis of international students' emotional well-being during the adjustment process, the items outlined in this factor were lined up in major studies of negative emotional well-being (Sawir et al., 2007; Tananuraksakul & Hall, 2011).

b) Positive feelings

Opposite to the negative emotions, this factor comprises 3 items to measure positive emotions experienced by international students during adjustment in the host country (see Table 1, point 3b). There are three elements outlined in this factor: pride, satisfaction, and happiness. Based on the earlier findings in Phase 1, international students enjoy engagement with the new people and environment, and thus build a positive self-esteem towards this cross-cultural contact. The positive psychology elements also contribute to student life satisfaction and strengthen their determination to overcome various problems during adjustment (Yakunina et al., 2012).

6. Conclusion

Importantly, this paper presents an international student's perspective on adjustment in Australia, with a particular focus on the undergraduate student experience. The development of ISAS is built upon literature in the field but also an in-depth qualitative interview with Malaysian international students. The ISAS emphasizes the need for a multifaceted perspective on international student adjustment during acculturation. Notably, the psychological adjustment scale offers a unique dimension by incorporating positive emotions – an aspect often neglected in existing instruments. This focus on well-being strengthens our understanding of international student experiences. This also suggests that the adjustment process is not a monotone, dark process as it has often been portrayed in the literature. Our students' account is a more colourful, up and down, but challenging process that will open up another side of human resilience.

The ISAS scale was designed to assess this comprehensive adjustment experience of international students and was unique in combining the three major scales under one instrument. Correlations suggest that academic adjustment is the most central aspect in the ISAS measure as it shows the most distributed relationships with sociocultural and psychological adjustment.

The ISAS might be useful for future research and practitioners in counselling, or for student support areas to identify the adjustment experiences and needs of international students in foreign countries. It should be highlighted that the present findings are preliminary: replication studies to verify further validity and reliability of the new scales on a range of international student populations is needed.

Ethics Approval and Consent to Participate

The researchers used the research ethics provided by the University of Sydney Human Research Ethics Committee (2016/001). All procedures performed in this study involving human participants were conducted in accordance with the ethical standards of the institutional research committee. Informed consent was obtained from all participants according to the National Statement on Ethical Conduct in Human Research (2007).

Acknowledgement

Part of this article was extracted from the doctoral dissertation submitted to The University of Sydney, Australia.

Funding

This work was supported by the NSW Institute for Educational Research under Student Research Grant.

Conflict of Interest

The authors declare no conflicts of interest.

References

- Abdullah, S. S. (2011). Help seeking behavior among Malaysian international students in Australia. *International Journal of Business and Social Science*, 2(23), 286–291.
- Andrade, M. S. (2006). International students in English-speaking universities: Adjustment factors. *Journal of Research in International Education*, 5, 131–154. doi:10.1177/1475240906065589
- Baker, G., & Hawkins, K. (2006). The international student journey. *Australian Universities Review*, 48(2), 20–25.
- Baker, R. W., & Siryk, B. (1984). Measuring adjustment to college. *Journal of Counseling Psychology*, 31(2), 179–189. doi:10.1037/0022-0167.31.2.179
- Barron, P., & Arcodia, C. (2002). Linking learning style preferences and ethnicity: International students studying hospitality and tourism management in Australia. *Journal of Hospitality, Leisure, Sport and Tourism Education*, 1(2), 15–27.
- Berry, J. W. (2006). Acculturation: A conceptual overview. *Acculturation and parent-child relationships*, 13–32.
- Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied psychology*, 46(1), 5–34.
- Bianchi, C. (2013). Satisfiers and dissatisfiers for international students of higher education: an exploratory study in Australia. *Journal of Higher Education Policy and Management*, 35(4), 396–409. doi:10.1080/1360080X.2013.812057
- Biggs, J., Kember, D., & Leung, D. Y. (2001). The revised two-factor study process questionnaire: R-SPQ-2F. *British journal of educational psychology*, 71(1), 133–149.
- Biggs, J. (1993). From theory to practice: A cognitive systems approach. *Higher Education Research & Development*, 12, 73–85. doi:10.1080/0729436930120107
- Bista, K. K. (2013). *Asian international students' college experiences at universities in the united states: relationship between perceived quality of personal contact and self-reported gains in learning*. Bista, Krishna K. Arkansas State University.
- Briguglio, C., & Smith, R. (2012). Perceptions of Chinese students in an Australian university: are we meeting their needs? *Asia Pacific Journal of Education*, 32(1), 17–33.
- Brown, L., & Holloway, I. (2008). The initial stage of the international sojourn : excitement or culture shock? *British Journal of Guidance and Counselling*, 36(1), 33–49. doi:10.1080/03069880701715689
- Burns, R. B. (1991). Study and Stress among First Year Overseas Students in an Australian University. *Higher Education Research & Development*, 10(1), 61–77. doi:10.1080/0729436910100106
- Cemalcilar, Z., & Falbo, T. (2008). A Longitudinal Study of the Adaptation of International Students in the United States. *Journal of Cross-Cultural Psychology*, 39(6), 799–804. doi:10.1177/0022022108323787
- Chalmers, D., & Volet, S. (1997). Common misconceptions about students from South-East Asia studying in Australia. *Higher Education Research & Development*, 16(1), 87–99.
- Coates, H., & Radloff, A. (2012). Measurement of student engagement in learning. In *Encyclopedia of the Sciences of Learning* (pp. 2143–2145). Springer United States.
- Coles, R., & Swami, V. (2012). The sociocultural adjustment trajectory of international university students and the role of university structures: A qualitative investigation. *Journal of Research in International Education*, 11(1), 87–100. doi:10.1177/1475240911435867
- Constantine, M. G., Okazaki, S., & Utsey, S. O. (2004). Self-concealment, social self-efficacy, acculturative stress, and depression in African, Asian, and Latin American international college students. *American Journal of Orthopsychiatry*, 74(3), 230.

- Gerdes, H., & Mallinckrodt, B. (1994). Emotional, social, and academic adjustment of college students: A longitudinal study of retention. *Journal of Counseling and Development: JCD*, 72(3), 281.
- Gunawardena, H., & Wilson, R. (2012). *International students at university: Understanding the student experience*. Bern: Peter Lang.
- Hanassab, S., & Tidwell, R. (2002). International students in higher education: Identification of needs and implications for policy and practice. *Journal of Studies in International Education*, 6(4), 305-322.
- Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of biomedical informatics*, 42(2), 377-381.
- Hellsten, M. (2002). Students in Transition: Needs and Experiences of International Students in Australia. Paper presented at the 16 th Australian International Education. *Paper Presented at the 16th Australian International Education Conference, Hobart, Tasmania, 1-13*. Retrieved from <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Students+in+transition+:+Needs+and+Experiences+of+International+Students+in+Australia+Paper+presented+at+the+16+th+Australian+International+Education#3>
- 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.
- Jackson, M., Ray, S., & Bybell, D. (2013). International students in the US: Social and psychological adjustment. *Journal of International Students*, 3(1), 17-28.
- Kağnıcı, D. Y. (2012). The Role of Multicultural Personality in Predicting University Adjustment of International Students in Turkey. *International Journal for the Advancement of Counselling*, 34(2), 174-184. doi:10.1007/s10447-012-9149-5
- Kambouropoulos, A. (2014). An examination of the adjustment journey of international students studying in Australia. *The Australian Educational Researcher*, 41(3), 349-363. doi:10.1007/s13384-013-0130-z
- Kennett, D. J., Reed, M. J., & Stuart, A. S. (2013). The impact of reasons for attending university on academic resourcefulness and adjustment. *Active Learning in Higher Education*, 14(2), 123-133. doi:10.1177/1469787413481130
- Khawaja, N. G., & Dempsey, J. (2007). Psychological Distress in International University Students: An Australian Study. *Australian Journal of Guidance and Counselling*, 17(1), 13-27. doi:10.1375/ajgc.17.1.13
- Khawaja, N. G., & Stallman, H. M. (2011). Understanding the Coping Strategies of International Students: A Qualitative Approach. *Australian Journal of Guidance and Counselling*, 21(2), 203-224. doi:10.1375/ajgc.21.2.203
- Kim, H. Y. (2011). International graduate students' difficulties: graduate classes as a community of practices. *Teaching in Higher Education*, 16(3), 281-292. doi:10.1080/13562517.2010.524922
- Kudo, K., & Simkin, K. A. (2003). Intercultural friendship formation: The case of Japanese students at an Australian university. *Journal of intercultural studies*, 24(2), 91-114.
- Ladd, P. D., & Ruby Jr, R. (1999). Learning style and adjustment issues of international students. *Journal of Education for Business*, 74(6), 363-367.
- Li, A., & Gasser, M. B. (2005). Predicting Asian international students' sociocultural adjustment: A test of two mediation models. *International Journal of Intercultural Relations*, 29(5), 561-576.
- Li, G., Chen, W., & Duanmu, J.-L. (2009). Determinants of International Students' Academic Performance: A Comparison Between Chinese and Other International Students.

- Journal of Studies in International Education*, 14(4), 389–405.
doi:10.1177/1028315309331490
- Marginson, S. (2014). Student self-formation in international education. *Journal of Studies in International Education*, 18(1), 6-22.
- Marginson, S. (2015). Is Australia overdependent on international students?. *International Higher Education*, (54).
- McLachlan, D. A., & Justice, J. (2009). A grounded theory of international student well-being. *Journal of Theory Construction & Testing*, 13(1), 27.
- Miquelon, P., Vallerand, R. J., Grouzet, F. M. E., & Cardinal, G. (2005). Perfectionism, academic motivation, and psychological adjustment: an integrative model. *Personality & Social Psychology Bulletin*, 31(7), 913–24.
doi:10.1177/0146167204272298
- Mori, S. C. (2000). Addressing the mental health concerns of international students. *Journal of counseling & development*, 78(2), 137-144.
- Moore, L., & Popadiuk, N. (2011). Positive aspects of international student transitions: A qualitative inquiry. *Journal of College Student Development*, 52(3), 291-306.
- Novera, I. A. (2004). Indonesian Postgraduate Students studying in Australia: An Examination of their Academic, Social and Cultural Experiences. *International Education Journal*, 5(4), 475–487.
- Olivas, M., & Li, C. (2006). Understanding stressors of international students in higher education: What college counselors and personnel need to know. *Journal of Instructional Psychology*, 33(3), 217.
- O'Reilly, A., Ryan, D., & Hickey, T. (2010). The psychological well-being and sociocultural adaptation of short-term international students in Ireland. *Journal of College Student Development*, 51(5), 584-598.
- Pan, J. Y., Wong, D. F. K., Joubert, L., & Chan, C. L. W. (2008). The protective function of meaning of life on life satisfaction among Chinese students in Australia and Hong Kong: A cross-cultural comparative study. *Journal of American College Health*, 57(2), 221-232.
- Pan, J., Fu, D., & Wong, K. (2011). Strategies as Predictors of Negative Affect Among Chinese International Students in Australia and Hong Kong: A Cross-Cultural Comparative Study. *Academic Psychiatry*, 35(6), 376–381.
- Pallant, J. (2013). *SPSS survival manual*. McGraw-Hill Education (UK).
- Pedersen, E. R., Neighbors, C., Larimer, M. E., & Lee, C. M. (2011). Measuring Sojourner Adjustment among American students studying abroad. *International Journal of Intercultural Relations: IJIR*, 35(6), 881–889. doi:10.1016/j.ijintrel.2011.06.003
- Ramburuth, P., & McCormick, J. (2001). Learning diversity in higher education: A comparative study of. *Higher Education*, 42, 333–350.
- Ramsay, S., Barker, M., & Jones, E. (1999). Academic Adjustment and Learning Processes: a comparison of international and local students in first-year university. *Higher Education Research & Development*, 18(1), 129–144.
doi:10.1080/0729436990180110
- Ramsay, S., Jones, E., Barker, M., & Al, E. T. (2007). Relationship between adjustment and support types: Young and mature-aged local and international first year university students. *Higher Education*, 54, 247–265. doi:10.1007/s10734-006-9001-0
- Redmond, M. V., & Bunyi, J. M. (1993). The relationship of intercultural communication competence with stress and the handling of stress as reported by international students. *International Journal of Intercultural Relations*, 17(2), 235-254.
- Rienties, B., Beusaert, 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.

- Robson, C., & McCartan, K. (2016). *Real world research*. John Wiley & Sons.
- Russell, J., Thomson, G., & Rosenthal, D. (2008). International student use of university health and counselling services. *Higher Education, 56*, 59–75. doi:10.1007/s10734-007-9089-x
- Sandhu, D. S., & Asrabadi, B. R. (1994). Development of an acculturative stress scale for international students: Preliminary findings. *Psychological reports, 75*(1), 435-448.
- Sam, D. L. (2001). Satisfaction with life among international students: An exploratory study. *Social indicators research, 53*, 315-337.
- Sawir, E., Marginson, S., Deumert, A., Nyland, C., & Ramia, G. (2007). Loneliness and International Students: An Australian Study. *Journal of Studies in International Education, 12*(2), 148–180. doi:10.1177/1028315307299699
- Schartner, A. (2014). *Cross-cultural transition in higher education: The academic, psychological and sociocultural adjustment and adaptation of international postgraduate students at a British university* (Doctoral Thesis, Newcastle University, United Kingdom). Retrieved from <https://theses.ncl.ac.uk/dspace/bitstream/10443/2429/1/Schartner%2C%20A%2014.pdf>
- Sherry, M., Thomas, P., & Chui, W. H. (2010). International students : a vulnerable student population. *Higher Education, 60*, 33–46. doi:10.1007/s10734-009-9284-z
- Smith, R. A., & Khawaja, N. G. (2011). A review of the acculturation experiences of international students. *International Journal of Intercultural Relations, 35*(6), 699-713.
- Swami, V. (2009). Predictors of sociocultural adjustment among sojourning Malaysian students in Britain. *International Journal for the Advancement of Counselling, 44*(4), 266–273. doi:10.1080/00207590801888745
- Tananuraksakul, N., & Hall, D. (2011). International students' emotional security and dignity in an Australian context: An aspect of psychological well-being. *Journal of Research in International Education, 10*(2), 189–200. doi:10.1177/1475240911410784
- Terry, D. J. (2006). Predictors of Cultural Adjustment: Intergroup Status Relations and Boundary Permeability. *Group Processes & Intergroup Relations, 9*(2), 249–264. doi:10.1177/1368430206062080
- 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.
- Wan, T. Y., Chapman, D. W., & Biggs, D. A. (1992). Academic stress of international students attending US universities. *Research in Higher Education, 33*(5), 607-623.
- Wang, T., & Shan, X. (2007). A qualitative study on Chinese postgraduate students' learning experiences in Australia. *Proceedings AARE 2006*.
- Wingenbach, G. J., Chmielewski, N., Smith, J., Piña Jr, M., & Hamilton, W. T. (2006). Barriers to international experiential participation. *Journal of International Agricultural and Extension Education, 13*(3), 79-89.
- Wilson, J. K. (2013). *Exploring the past, present, and future of cultural competency research: The revision and expansion of the sociocultural adaptation construct*. (Doctoral Thesis, Victoria University of Wellington, New Zealand). Retrieved from <http://researcharchive.vuw.ac.nz/xmlui/bitstream/handle/10063/2783/thesis.pdf?sequence=2>
- Yan, K., & Berliner, D. C. (2013). Chinese International Students' Personal and Sociocultural Stressors in the United States. *Journal of College Student Development, 54*(1), 62–84. doi:10.1353/csd.2013.0010

- Yakunina, E. S., Weigold, I. K., Weigold, A., Hercegovac, S., & Elsayed, N. (2012). The multicultural personality: Does it predict international students' openness to diversity and adjustment? *International Journal of Intercultural Relations*, 36(4), 533-540.
- Yoo, S. H., Matsumoto, D., & LeRoux, J. A. (2006). The influence of emotion recognition and emotion regulation on intercultural adjustment. *International Journal of Intercultural Relations*, 30(3), 345-363.
- Yusoff, Y. M. (2012). Self-Efficacy, Perceived Social Support, and Psychological Adjustment in International Undergraduate Students in a Public Higher Education Institution in Malaysia. *Journal of Studies in International Education*, 16(4), 353-371. doi:10.1177/1028315311408914
- Yusuf, M. (2011). *Investigating relationship between self-efficacy, achievement motivation, and self-regulated learning strategies of undergraduate Students: A study of integrated motivational models (Vol. 15, pp. 2614-2617)*. Elsevier B.V. doi:10.1016/j.sbspro.2011.04.156
- Zhai, L. (2002). Studying International Students: Adjustment Issues and Social Support.
- 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.
- Zhang, Y., & Mi, Y. (2009). Another Look at the Language Difficulties of International Students. *Journal of Studies in International Education*, 14(4), 371-388. doi:10.1177/1028315309336031
- Zhou, J., & Cole, D. (2016). Learning and Academic Self-Concept: Comparing International and. *Campus Support Services, Programs, and Policies for International Students*, 77.
- 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.