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The role of student–university value alignment in international student acculturation in Australia

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ABSTRACT

This study integrates acculturation and person–environment fit theories to investigate the role of student–university value alignment in international student cross-cultural adjustment to host universities in Victoria, Australia. The study used a mixed methods design with the quantitative data collected from a student survey and the qualitative data generated from interviews with university staff. Structural equation modelling and thematic analysis were employed to analyse the quantitative and qualitative data respectively. The results of the study indicated that international students who possess similar values to their host university, adjust better, both psychologically and socially into the university environment as well as feel satisfaction with their host university. The study also confirmed the mediating role of international student social adjustment in the relationship between student–university value fit and student overall satisfaction with their host university. The findings highlight the key role of international student–university value alignment in contributing to the success of students' cross-cultural adjustment to the new cultural environment they experience. Therefore, universities should constantly communicate and deliver on their values during both the promotional stage of international student recruitment and the student journey with the university.

Introduction

Cross-border study involves a process of acculturation where international students experience psychological and sociocultural adjustment in a new cultural environment (Ward & Geeraert, 2016). Successful acculturation occurs when international students, as sojourners, culturally fit well in the host environment (Nolan & Morley, 2014; Selvarajah, 2000). In an education context, a dissimilarity (poor fit) between the cultures of the individual student and the institution may result in stress and isolation and thus prevents the student from integrating into the host environment (Tinto, 1993). This phenomenon becomes even more pronounced in the context of international education where the host university and its environment are often alien and with very little resemblance to students' personal experiences in the home country (Rienties & Tempelaar, 2012).

Person–environment (PE) culture fit has been widely researched in organisational studies with strong evidence to support the positive effect of PE culture fit on individuals' outcomes (Kristof-Brown & Billsberry, 2013). In the acculturation domain, though studies have examined the role of culture in international student cross-cultural adjustment, they rarely capture the cultural

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interaction between international students and host universities and its impact on the student acculturation. This article addresses this gap in the existing literature by integrating acculturation and PE fit theories as a theoretical framework to explore the effect of cultural value alignment between international students and host university in the student acculturation process. The article draws on the findings of a mixed methods study into international student acculturation and PE fit with data collected from a student survey representing the perspective of 'person' and university staff interviews representing the perspective of 'environment'. The focus of this article is first to examine the direct effect of student and university value alignment in the students' psychological and social adjustment to university, and second, the indirect effect of student and university value alignment in the students' overall satisfaction with university through students' psychological and social adjustment.

Theoretical framework and hypotheses development

Acculturation is a process of change occurring when there is contact of two or more different cultural systems, which often results in the adjustment of both the minority and majority groups (Berry, 2005). Berry (1997) holds that an individual acculturation involves the experience of psychological adjustment as major life events, which can either be appreciated as opportunities or perceived as obstacles. Negatively perceived changes are often referred to as stressors that require appropriate coping strategies to help the individuals overcome and gradually adapt into the new society. This ongoing stress, adaptation and growth movements of an acculturating individual is not a smooth and linear progression, but rather a cyclical and continual "draw-back-to-leap" movement that functions like the movement of a wheel (Kim, 2001). That is, when facing stress, acculturating individuals respond to such an experience by drawing back, which then activates energy to help them reorganise themselves and leap forward (Kim, 2001). This whole adjustment process is often influenced by changes in the environment level that consists of physical, biological, economic, social and cultural changes (Berry, 1997) referred to by Ward and Geeraert (2016) as an ecological context where acculturation takes place.

Groups of people undergoing the process of acculturative adjustment include immigrants and refugees who have a permanent contact with the host culture and temporary migrants such as sojourners (e.g., international students, diplomats, and business executives) who come to the host countries for a certain period and have a temporary contact with another cultural group (Sam, 2006). Not every individual experiences the same acculturation process as they may adopt different coping strategies such as assimilation (the individual discards their heritage culture and fully merges into the receiving culture), separation (the individual preserves their original and reject the receiving culture), integration (the individual participates in the new society while maintaining their heritage culture) and marginalisation (the individual rejects both the heritage and receiving cultures) (Berry, 1997). While immigrants participate more permanently in the new society and have high motivation and expectations to fulfil in their new country (Van Oudenhoven, Ward, & Masgoret, 2006), short term sojourners are on a mission and thereby may have little need to acculturate including their hesitation to fully assimilate because they will eventually leave the host country (Berry, 2006; Bochner, 2006).

Sojourner's acculturation is a cyclical process consisting of four stages (Selvarajah, 2000). They are (1) *pre-departure preparation* where push and pull factors including personal, family and cultural factors from home country and intended host country determine the level of excitement, expectation and uncertainty of the individual; (2) *initial experience* which is formed by the first interaction between the individual and the host environment; (3) *gestation* where sojourners experience a continuum between frustration and contentment as a result of their negative and positive experience in the host environment; and (4) *adjustment* where outcomes of the acculturation process are determined by the sojourner's sum of total experience in the previous stages. As such, a sojourner's cross-cultural adjustment comprises two components: psychological adjustment (emotional/affective) which leads to "well-being and satisfaction," and sociocultural adjustment which involves the ability to "acquire culturally appropriate skills and to negotiate interactive aspects of the host environment" (Ward & Kennedy, 1999, p.660).

Unlike other sojourners such as expatriates or asylum seekers, international students' acculturation takes place not only in a wider host society but also within the host university context as an immediate environment they are attached to. Research into international students' acculturation have reported different influential factors and acculturation outcomes related to their institutional environment. The factors include academic and social adjustment challenges (Wang & Hannes, 2014), the role of cultural distance in international students' academic and social integration and academic performance (Rienties & Tempelaar, 2012), and the role of friendships and host institutions' social support from academic staff, international office and other staff in the students' acculturation (Cho & Yu, 2015; Mak, Bodycott, & Ramburuth, 2015). Young people often have different understandings of acculturation orientations in the school context shaped by complex perceptions of educational policy, interpersonal relationships and individual motivations that informs their evaluation (Ward & Geeraert, 2016). Given that the host university is the focal environment international students are affiliated to during their overseas study, this study investigates the impact of the interaction between international students and host universities on the students' cross-cultural adjustment within their institutional environment.

International student cross-cultural adjustment is an ongoing cultural negotiation process of which the outcomes are significantly influenced by the quality of the interaction between the students and the host environment (Berry, 1997; Ward & Geeraert, 2016). In this study, culture is referred to as patterned ways of thinking that are based on values as cultural dimensions, shared across people in a society and influence an individual's cognitions, attitudes and behaviours (Schwartz, 1999; Straub, Loch, Evaristo, Karahanna, & Srite, 2002). Successful acculturation occurs when the acculturating individual has found "a balance between their own lifestyle and that of the host environment and are happy to be in the host environment" (Selvarajah, 2000, p. 2113). This article uses the lens of PE value fit to understand the effect of the balance sought described by Selvarajah (2000) as the "fit" between international student and host university values in the student's cross-cultural adjustment.

According to Samuel Craig and Douglas (2006, p. 325) "values are intangible elements of culture that characterise a society or culture and guide the patterning of behaviour in that society". They are desirable goals that vary in importance and that guide

principles in an individual's life (Schwartz & Bardi, 2001). Schwartz (1994) posited that each person holds numerous values with varying degrees of importance and that people across countries often possess values from the ten value types categorised into four groups that reflect commonalities and differences: 1) openness to change consisting of *self-direction, stimulation and hedonism*; 2) conservation (also referred to as conservatism) consisting of *security, conformity and tradition*; 3) self-transcendence consisting of *universalism and benevolence*; and 4) self-enhancement consisting of *power and achievement* (see Appendix A for value descriptions). Arguing that every value has a social or a person focus, Schwartz (2006) proposed additional ways to denote patterns of similarities and dissimilarities among these ten values. That is, the self-enhancement and openness to change comprising *power, achievement, hedonism, stimulation and self-direction* values regulate the expression of an individual's abilities and interests, known as '*person focus*'. In contrast, the self-transcendence and conservation comprising *universalism, benevolence, tradition, conformity and security* values regulate concerns of social entities, known as '*social focus*'

PE value fit comprises two components, the person (P) and the environment (E). In organisational studies, value fit concerns the degree of alignment between an individual's values and the cultural value system of an organisation they are working for (Cable & Edwards, 2004). In this study, value fit as a dimension of culture fit is defined as the degree of alignment between international students' and their host university values and consists of two value fit components following Schwartz's value system: *person-focused value fit* and *social-focused value fit*. Given that the research population of this study is international undergraduate students of different cultural backgrounds, Schwartz's value system was selected as it has the advantage of being integrative and universally capturing values of numerous diverse cultures from around the globe.

Value fit as a predictor of international student adjustment and overall satisfaction

Using 'extraversion,' defined as a person's outgoing and social personality trait as a dimension of culture, Ward and Chang (1997) reported that a dissimilarity in extraversion between international students and host members as a cultural poor fit results in high levels of international student depression. Similarly, findings from a study of students in Argentina, Bulgaria and Finland revealed the positive association between value alignment and student well-being, such that value alignment results in student pleasant experience whereas value misalignment leads to student unpleasant experience (Sortheix & Lönnqvist, 2015). Thus, an increasing culture dissimilarity not only makes it more difficult for an acculturating individual to integrate but also increases acculturative stress, mental health problems and negatively impacts on the individual's psychological and socio-cultural adaptation (Forbes-Mewett, 2019; Hong, Zhan, Morris, & Benet-Martínez, 2016).

Individual satisfaction has also been reported as an outcome of PE value fit. An alignment between personal and organisational values affects the individual's job satisfaction (Verquer, Beehr, & Wagner, 2003) and life satisfaction (Khaptsova & Schwartz, 2016; Sagiv & Schwartz, 2000; Sortheix & Lönnqvist, 2015). Cennamo and Gardner's (2008) study on employees in a range of industries in New Zealand examined value differences between three generational groups (baby boomers, generation X and generation Y) in the workforce and the impact of person–organisation value fit on job satisfaction, affective organisational commitment and intentions to leave. The authors reported job satisfaction and affective organisational commitment are positively related to most of the studied value alignment (such as extrinsic and status values). Therefore, the following hypotheses are advanced for testing.

Hypothesis 1. International student–university person-focused value fit is positively related to student psychological adjustment (H1a), student social adjustment (H1b) and student overall satisfaction (H1c)

Hypothesis 2. International student–university social-focused value fit is positively related to student psychological adjustment (H2a), student social adjustment (H2b) and student overall satisfaction (H2c).

International student adjustment as a predictor of student overall satisfaction

Selvarajah (2000) noted that during the adjustment stage, a sojourner may experience a continuum of frustration and satisfaction which may lead to corresponding reactions of withdrawal from or proactive participation in the host environment. In an international education context, international student satisfaction has been reported as an outcome of acculturation such as the causal relationships between personal–emotional adjustment and satisfaction of social life (Rienties & Tempelaar, 2012), acculturation and perceived discrimination and educational satisfaction (Wadsworth, Hecht, & Jung, 2008), and acculturative stress and individual satisfaction with life (Taušová, Bender, Dimitrova, & van de Vijver, 2019). In the same vein, focusing on international student satisfaction with social support services, Brisset, Safdar, Lewis, and Sabatier (2010) argued that the more psychological distress the students have, the less satisfied with social support they are.

Similarly, the association between student social adjustment and student wellbeing and satisfaction has been supported by many scholars. For example, Heng (2018) reported that international students with high level of expectations and participation in extra-curricular activities generally achieve better work-life balance and enjoy diverse experiences. In addition, social connectedness including friendships with students of different cultural backgrounds also results in international student satisfaction (Du & Wei, 2015). Thus, the following hypothesis is forwarded for testing.

Hypothesis 3. International student overall satisfaction is predicted by student psychological adjustment (H3a) and student social adjustment (H3b).

The mediating role of international student adjustment in the relationship between value fit and student satisfaction

Studies of student integration into university reported the influence of student–university culture fit on student outcomes including student satisfaction and retention through the underlying effect of student adjustment to university. That is, students entering university bring with them pre-existing characteristics including their culture, and those who find a similarity between their culture and the university culture often adjust well to the university environment and subsequently feel satisfaction and are unlikely to drop out of their university (Mannan, 2007; Tinto, 1993). From the preceding discussions of existing literature on international student–university value alignment, student adjustment and overall satisfaction, it is expected that international students whose values are aligned with their university values are able to psychologically and socially adjust well into their university environment and subsequently achieve their overall satisfaction with their university. Based on this rationalisation, the following hypotheses are proposed for testing.

Hypothesis 4. International student psychological adjustment mediates the relationship between international student–university person-focused value fit and student overall satisfaction (H4a), and the relationship between student–university social-focused value fit and student overall satisfaction (H4b).

Hypothesis 5. International student social adjustment mediates the relationship between international student–university person-focused value fit and student overall satisfaction (H5a), and the relationship between student–university social-focused value fit and student overall satisfaction (H5b).

Methodology

This article is derived from a broader mix methods research project consisting of a quantitative study with data collected from a student survey and qualitative study with data collected from semi-structured interviews with university staff. One of the primary advantages of mixed methods research is that when statistical trends as quantitative data are combined with personal stories and experiences as qualitative data, deeper insights into the research problem are produced (Creswell, 2014). As this study investigates the interaction between international students and their host university and its impact in the context of student acculturation, the use of a mixed methods study allows the researchers to capture both international student's and host university's perspectives, therefore strengthen the research validity and gain deeper insights into the research problems. The study was approved by the Human Research Ethics Committee of Swinburne University of Technology.

The quantitative and qualitative data were triangulated in different stages including the research design stage where the sequential explanatory study was employed that consists of two distinct phases: quantitative followed by qualitative (Creswell, 2003). The data were collected over a six-month period in two consecutive phases of quantitative (student survey) and subsequent qualitative (university staff interviews). The quantitative data was first collected from the student survey to test the hypothetical research model, and the analysis informed the development of the interview protocols. The qualitative data was then collected from university staff interviews and analysed to explain why certain hypothetical relationships had not been confirmed from the quantitative study. Thus, the statistical analysis of the quantitative data provided a general understating of the impacts of the interaction between international students and host universities on the students' acculturation, and the qualitative data analysis provided further insights and explanations of the quantitative results. This approach allows us to capture the perspectives from both international students as a person and their host universities as an environment. In the discussion section, we combined the findings of both phases of the study and used qualitative analysis to clarify and explain the statistical results that underscores the elaborating purpose of this type of mixed methods study.

Student survey

Measurement

The measurement scales used in this study were adapted from previous studies, as detailed below, using a 7-point Likert scale to measure the five latent constructs of the study model.

Student–university value fit

The value scale of 10 value items (*power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity and security*) was adapted from the Short Schwartz's Value Survey (SSVS) which was empirically tested and validated by Lindeman and Verkasalo (2005) with good internal consistency and temporal stability. The SSVS is convenient for conducting value comparisons which is highly relevant to this study that surveyed both students' values and their perceptions of their university's values for value alignment assessment. This study used atomistic approach that involves the measurement of "the perceived person and environment separately and combine them in some fashion to represent the concept of P-E fit" (Edwards, Cable, Williamson, Lambert, & Shipp, 2006, p. 803). That is, student–university value fit items were measured using a commensurate measurement which describes both student and university in the same content dimensions. For each item, students were asked to rate the extent to which each value is important to them (1 = not important at all to 7 = very important), and the extent to which they think each value is true to their university's value (1 = never true to 7 = always true). Student–university value fit was then calculated by taking the absolute value of the difference between student responses of their values and their perceived university's values. Larger difference scores (for the absolute value) represent poorer fit and smaller difference scores represent better fit. The fit indices were subsequently reverse-scored so that greater scores represent better fits, and smaller scores represents poorer fits.

Student psychological and social adjustment

Likert type scale measurement of student psychological adjustment (9 items) and social adjustment (7 items) which were the subsets of the Student Adjustment to College Questionnaire (SACQ) (Baker & Siryk, 1999) were adapted. SACQ was developed to measure students' adjustment to university and was confirmed as an appropriate measurement of student adjustment to university of both local and international students (e.g., Beyers & Goossens, 2002; Rienties & Tempelaar, 2012). Cronbach alphas of the scales ranged between .82 and .85. In this study, the scales were adjusted to a 7-point Likert scale to be consistent with other scales of the study.

Student overall satisfaction

Likert type scale measurement of student overall satisfaction with their host university was adapted from the 3-item overall satisfaction scale modified by Gilbreath, Kim, and Nichols (2011) from the scale developed by Edwards and Rothbard (1999). These authors reworded this satisfaction scale to make it relevant to satisfaction with university rather than satisfaction with a job (see Appendix A).

Participants

The research population of the survey was international undergraduate students studying at universities in Victoria. Online and paper-based surveys were used to collect data. The student respondents were recruited via social media, with the invitation and survey link posted on Facebook, LinkedIn and Instagram of international student associations and universities in Victoria. A paper-based survey questionnaire was distributed at international student welcome-back and cultural events in Victoria. There were 154 and 230 valid responses from the online survey and paper-based survey respectively, resulting in 384 total useable responses.

Analytical strategy

This study uses a two-step approach employing structural equation modelling (SEM), which includes the application of confirmatory factor analysis (CFA) as the first step to test the fit and construct validity of the proposed measurement model, followed by a test of the model fit of the full structural model using AMOS 26. These two steps fully assess fit and validity, and the measurement model fit provides a basis for assessing the validity of the structural model to confirm the proposed hypotheses (Hair, Black, Babin, & Anderson, 2010). The model was evaluated by several goodness-of-fit indices with recommended cut-off values: Normed chi-square ($\chi 2/df$) (CMIN/df) less than 3, Adjusted Goodness of Fit Index (AGFI) greater than 0.8, Tucker-Lewis index (TLI) greater than 0.95, comparative fit index (CFI) greater than 0.95, Root-mean-square error of approximation (RMSEA) less than 0.05 and standardized root-mean-square residual (SRMR) less than 0.08 (Hair et al., 2010; Hu & Bentler, 1999).

Prior to analysis, data were screened to detect missing values and outliers which resulted in the removal of 18 cases with data missing completely at random and the replacement of missing values on six variables with medium. The final dataset consisted of 366 responses was subsequently tested to detect violation of normality assumption which reported negatively skewed data. Therefore, bootstrapping was used for data analysis to overcome this issue.

The 366 international students were from seven universities in Victoria who participated in the study. Among them, 51.6 % were female, 48.4 % were male. These students were from 27 different countries of which students from Vietnam, China, Indonesia and Malaysia made up over 60 % of the total participating students. With regard to length of stay in Australia, students who have been in Australia less than one year accounted for 30.3 % of respondents, 26.2 % from one year to less than two years, 17.2 percent from two years to less than three years, 11.2 % from three years to less than four years, and 15.1 % more than four years.

University staff interviews

Participants

There were 12 interviews conducted as a qualitative data collection method. All nine public universities in Victoria were invited to participate in this project of which seven accepted the invitation. The 12 interviewees were international student services, facilities management and academic staff with 11 interviews conducted face-to-face and one interview conducted via telephone. Each interview took approximately 30−45 min.

Data analysis

Once the data collection was completed, data analysis was conducted using NVivo 12 software based on thematic analysis. Thematic deductive analysis was used to analyse the qualitative data as the interview questions were developed based on the results of the quantitative data analysis which provided the preconceived knowledge as initial themes before commencing an in-depth analysis of the data for subthemes emerged (Fereday & Muir-Cochrane, 2006). This study used a template in a form of codes from a codebook outlined by Crabtree and Miller (1992). Only themes and subthemes that are relevant to this article are included.

Data analysis of the qualitative study was an integral part of the research project, and the discussion of the overall research findings integrated findings of both the quantitative and qualitative data.

Model testing

Test of the measurement model

Before the model analysis was performed, all nine negatively worded items of the psychological adjustment construct were reversely scored so that high scores represented less psychological adjustment issues and vice-versa.

Subsequently, a pooled CFA test consisting of five factors was performed to assess the measurement model with 2000 bootstrap data samples at a confidence interval of 95 %. The test result reported poor model fit ($\chi 2(340) = 819.231$; CMIN = 2.410; AGFI = 0.813; TLI = 0.885, CFI = 0.897; RMSEA = 0.062, SRMR = 0.060). Therefore, factor loadings of all the constructs of the measurement model were examined. The psychological adjustment construct had five observed items with high factor loadings ranging between 0.65 and 0.74 and four with low factor loadings between 0.47 and 0.54. This psychological adjustment scale was empirically tested and validated by Bui, Selvarajah, Vinen, and Meyer (2020) and the result confirmed that the nine observed items loaded on two factors: (1) psychological adjustment (stress) measured by five items that reflected students' stress associated with their acculturation and (2) psychological adjustment (coping) measured by four items that represented students' effort to overcome stress, explaining the poor fit of the initial measurement model of the present study. Therefore, an analysis of a five-factor measurement model with psychological adjustment as a second-order factor constructed by the two first-order factors of stress and coping was conducted. The model demonstrated adequate fit as presented in Table 1.

Table 2 shows the descriptive statistics of all factors. Cronbach's coefficient alphas for all factors were 0.81–0.87 in this sample, which was above the critical value of 0.70, confirming internal consistency of the observed variables representing each construct.

Table 3 presents the bivariate correlations among the study variables which were significant at the 0.01 and 0.05 level confirming the correlations latent variables, except the correlation between psychological and social adjustment which was insignificant.

As shown in Table 4, the average variance extracted (*AVE*) of all five factors were above the cut-off value of 0.50 establishing the construct convergent validity. The discriminant validity of all factors was also confirmed as the square roots of the *AVE* values were greater than the inter-factor correlations. In addition, the composite reliability (*CR*) was above the cut-off value of 0.70 in all cases confirming the adequate reliability of the studied factors.

Test of the structural model

SEM with maximum likelihood was employed to test the proposed hypotheses. The analysis confirmed that the study model achieved a good model fit with the fit indices satisfied the cut-off values suggested by Hu and Bentler (1999) ($\chi 2(390) = 574.736$, CMIN = 1.474, AGFI = 0.887, TLI = 0.956, CFI = 0.960, RMSEA = 0.036, SRMR = 0.048), establishing that the model fit the data well.

The results of regression analysis of the direct paths are presented in Table 5 below. Most of the proposed direct paths between the variables were confirmed except the path between student psychological adjustment and student satisfaction, resulting in the rejection of H3a.

Test of mediating effect using bootstrapping

For a mediation effect to be tested, variations in the dependent variable have to significantly account for variations in the expected mediator (Baron & Kenny, 1986). However, the result of statistical analysis showed that student psychological adjustment did not affect student satisfaction which did not satisfy mediation test condition. Therefore, H4a and H4b were rejected.

Bootstrapping with 2000 bootstrapped samples and a bias corrected 95 % confidence interval level was performed to test the indirect effects. The result of bootstrapping showed the indirect effect between person-focused value fit and student overall satisfaction via student social adjustment was statistically significant (CI 95 %, 0.001−0.051; $\beta = 0.085$, $p = 0.005$) and the indirect effect between social-focused value fit and student overall satisfaction via student social adjustment was statistically significant (CI 95 %, 0.079−0.579; $\beta = 0.072$, $p = 0.032$), confirming H5a and H5b.

In addition, the model's explanatory power was assessed by the R-Square values. Based on analysis results, student–university value fit explained 19 %, 11 % and 35 % of the variance in student psychological adjustment, social adjustment and student overall satisfaction respectively. Furthermore, psychological adjustment (stress) and psychological adjustment (coping) explained 72 % and 41 % of the variance in the student psychological adjustment. Control variables gender ($\beta = 0.085$, p = 0.381) and length of stay in Australia ($\beta = -0.039$, p = 0.256) had no significant relationship with student overall satisfaction. Fig. 1 presents the study model with significant and insignificant paths.

In summary, the SEM test confirmed that international student social adjustment mediated the relationship between international student–university value fit both—person-focused value and social-focused value—and student overall satisfaction. However, international student psychological adjustment did not have any relationship with student satisfaction and therefore did not satisfy the test of mediation effect.

Table 1
Comparison of measurement models.

	$\chi 2$	CMIN	AGFI	TLI	CFI	RMSEA	SRMR
5-factor measurement model with psychological adjustment as one first-order factor	819.231	2.410	0.813	0.885	0.897	0.062	0.060
5-factor measurement model with psychological adjustment as one second-order factor	525.993	1.552	0.889	0.951	0.956	0.039	0.047

Table 2
Descriptive statistics results (N = 366).

Variables	No of items	Cronbach's alpha	M	SD
1 Person-focused value fit	5	0.84	5.65	0.84
2 Social-focused value fit	5	0.83	5.94	0.84
3 Psychological adjustment	9	0.85	5.25	0.82
a Psychological Adjustment (stress)	5	0.85	5.56	0.86
a Psychological Adjustment (coping)	4	0.81	5.26	0.80
4 Social adjustment	6	0.85	4.84	0.98
5 Satisfaction	3	0.87	5.12	1.03

Note. M = Mean, SD = Standard Deviation.

Table 3
Bivariate correlation results.

Variables	1	2	3	4	5
1 Person-focused value fit	1				
2 Social-focused value fit	0.31**	1			
3 Psychological adjustment	0.12*	0.11*	1		
4 Social adjustment	0.17**	0.21**	$0.055^{(ns)}$	1	
5 Satisfaction	0.29**	0.27**	0.27**	0.22**	1

Note. ** $p < 0.01$; * $p < 0.05$; $^{(ns)}$ $p > 0.05$.

Table 4
Construct validity and reliability test results.

	CR	*AVE*	1	2	3	4	5
1 Psychological adjustment	0.72	0.57	**0.75**				
2 Social-focused value fit	0.86	0.56	0.40	**0.75**			
3 Person-focused value fit	0.86	0.55	0.33	0.46	**0.74**		
4 Satisfaction	0.89	0.72	0.32	0.46	0.41	**0.85**	
5 Social adjustment	0.86	0.51	0.16	0.24	0.30	0.41	**0.71**

Note. CR = Composite Reliability, AVE = Average Variance Extracted.

Table 5
Regression weight estimates.

Independent		Dependent	Std. coefficient
Person-focused value fit	→	Satisfaction	0.159*
Person-focused value fit	→	Psychological adjustment	0.180*
Person-focused value fit	→	Social adjustment	0.236***
Social-focused value fit	→	Satisfaction	0.269**
Social-focused value fit	→	Psychological adjustment	0.319***
Social-focused value fit	→	Social adjustment	0.138*
Social adjustment	→	Satisfaction	0.280***
Psychological adjustment	→	Satisfaction	$0.106^{(ns)}$

Note. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; $^{(ns)}p > 0.05$.

Findings

This study examined the effects of international student–university value alignment in student adjustment to and overall satisfaction with the host university during their sojournment. Most of the proposed relationships were confirmed except the relationship between student psychological adjustment and student overall satisfaction.

International student–university value fit, student psychological adjustment, student social adjustment, and overall satisfaction

The quantitative study confirmed the positive association between international student–university value fit (both person-focused and social-focused values) and student psychological and social adjustment. That is, international students possessing values that align with their university values find themselves part of the university environment, are able to interact with and psychologically and socially adjust well into the university environment. These findings are consistent with previous studies, showing that cultural

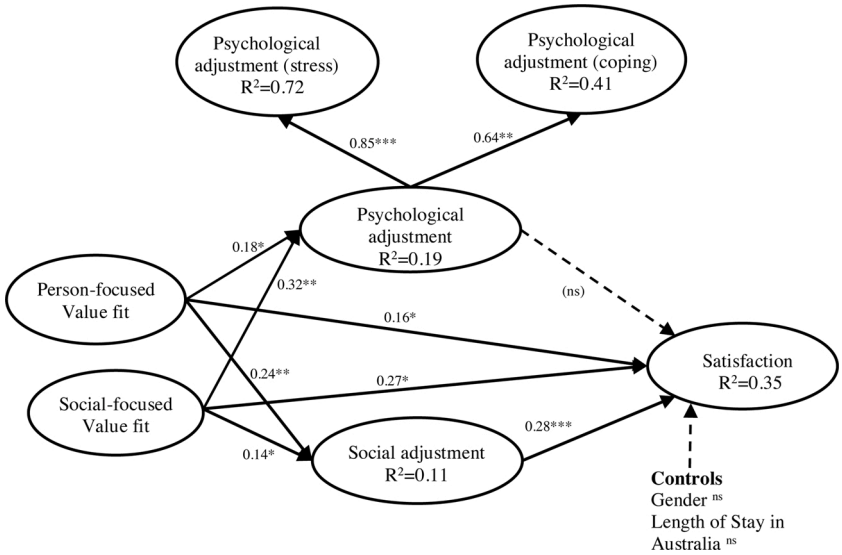

Fig. 1. Structural model with results.
Note: ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; *ns* = not significant

similarities are positively related to student social integration (Rienties, Beausaert, Grohnert, Niemantsverdriet, & Kommers, 2012). In a group work context, Matsunaga, Barnes, and Saito (2020) argued that international students often establish and form their understanding of the normative practices of the group under the forms of beliefs and values and proactively negotiate where there is a mismatch between their values and the groups' values when participating in group work.

This study also revealed that international student–university value alignment positively predicts student overall satisfaction with their university, such that students who possess similar values with that of their university achieve high level of overall satisfaction with their university. This finding lends support to previous studies which held that a value alignment between an individual and an environment results in an individual's job satisfaction (Verquer et al., 2003) and life satisfaction (Sortheix & Lönnqvist, 2015). More recently, Taušová et al. (2019) found that international students with perceived cultural similarity with the host environment achieved more satisfaction with life, and experienced less acculturative stress and mental health problems.

Interviews with university staff show that not all international students suffer from culture shock as reflected in the following excerpt:

> I see a spectrum of students, from the bottom ones that don't adjust very well, to the ones that are thriving and adjust very well into the university. So, the ones that don't adjust very well, they don't integrate into the Australian culture, they don't make an effort at the start to speak to or make friends with domestic students or outside their own culture circle, they are in the low spectrum in relation to adjustment. (International student service officer)

Marginson (2014) holds that international students use both the resources brought from their home country together with those available in the host country to navigate their cross-cultural adjustment process; the extent to which they adjust well depends on how they fit in the new environment. However, the status of being an international student often results in the students' peripheral position to host community and their perceived responsibility to assimilate into the host culture could prevent them from engaging in and negotiating reciprocal and respectful intercultural interactions (Tran & Vu, 2017). Dissimilarities in students' conception of self-relating to their moral and cultural values were associated with different manners of engaging in social interactions with members from different culture (Yang, Luk, Webster, Chau, & Ma, 2016).

One of the underlying reasons that could explain the relationship between student-university value alignment/misalignment and student acculturation is that some international students hesitate to seek support from their university when they encounter problems because they do not want others to know that they are struggling with their cross-cultural adjustment:

> Not many students share their issues with university because it's not easy to walk up to someone you don't know who is … in a public space and tell them what your problems are. I think it was more about the actual culture and the culture and traditions that they bring from home. (Student service manager)

This is consistent with Forbes-Mewett and Sawyer's (2016) proposition that international students often hesitate to seek professional help for mental health problem due to cultural differences and because many international students are unfamiliar with western therapeutic approaches to emotional issues. Perceived culture distance was therefore associated with high level of acculturative stress (Taušová et al., 2019; Ward & Chang, 1997).

International student cohort is not homogenous because they come from different countries with all diverse background as observed by an interviewee:

> Within the international cohort of students, there are different cohorts within that, and so you have people from different backgrounds and religions, and different cultures who traditionally may not have spoken about certain issues. It's culturally inappropriate to talk about sex, to talk about relationships, to talk about themselves [including] their health, with a stranger. And then there's a cohort within that openly talk about themselves. So, they might seek information a little bit differently, they might be more comfortable searching online for that type of information. (Senior student counsellor)

Host universities thus should tailor their student services including their teaching approach that could meet diverse needs of different international student cohorts to assist their cross-cultural adjustment.

> You can't provide a one-size-fits-all. Even within our local students you can't do that, because we have such a diverse group, you know … people from so many different backgrounds without even considering the international students, so they've got all the diverse backgrounds (Senior lecturer)

In this respect, Tran (2020) argued that international students' sense of belonging to the classroom and university are critical and that teaching, learning, and engagement for international students need to emphasize people-to-people empathy and people-to-people connections. This will help facilitate the achievement of international student-university fit that subsequently supports international students' wellbeing during for their cross-cultural adjustment.

In contrast to the authors' prediction, this study did not support studies that highlighted the role of international student psychological adjustment as impacting on overall student satisfaction. This could possibly be because international student satisfaction is often determined by social adjustment through social support services provided by host university (Hendrickson, Rosen, & Aune, 2011) that makes the student psychological adjustment less sensitive with their overall satisfaction compared to student social adjustment. In addition, in a study of student overall satisfaction among American students as local students and international students, Zhou and Cole (2016) found that while loneliness is negatively associated with American students' overall satisfaction, it does not predict international student overall satisfaction. In this light, another possible explanation for the current study's finding of the insignificant relationship between international student psychological adjustment and their overall satisfaction is that international students are often aware of the inevitable stress and coping as part of their psychological adjustment during their sojourn, and that challenges can be prepared for and stress can be coped with via proactive attitude towards their psychological and social adaptation and predeparture preparation (Hernandez Lopez, 2021). Future studies are needed to elucidate this finding.

Mediating effects of international student social adjustment

Consistent with authors' expectations, the findings of this study reported that student–university value alignment affects student overall satisfaction directly and indirectly through student social adjustment. That is, the value alignment between international students and their host university enables the students to adjust well in the university's social environment, which in turn results in student overall satisfaction with their host university. When international students find their values are similar to their university's values, they tend to engage more in their study and social activities (Dylag, Jaworek, Karwowski, Ko, & Marek, 2013), actively seek support (Gloria, Castellanos, Park, & Kim, 2008) and cope well with the new culture, therefore socially integrate in the university environment. In turn, successful social adjustment results in high overall satisfaction among students. Thus, student social adjustment functions as a catalyst in the relationship between student–university value alignment and student overall satisfaction during the acculturation process.

This mediating role of social adjustment in the relationship between student-university value alignment and student satisfaction was further elaborated by interviewed university staff, as reflected in the following excerpts:

> Yes, I think values are important given that when students [international students] see their values reflected in embedded in the way the universities treat them, for example, they are respected, they are inclusive, you know….it will build the student's trust and their confidence for they will be able to integrate in the university environment and enjoy their university life. (Associate Director-International student support)

While acknowledging the importance of student-university value alignment, interviews with university staff also reported that university values have not been communicated and reinforced throughout the student life, as shown in the following quote:

> Ah… I think a lot of communicating that of the values of [name of university], and what we are, and what we stand for, what we strive for, what we expect of students, a lot of that is to do with the marketing of our materials…Do we keep transferring that through the student journey? probably not, no… I guess the focus changes a little bit, once they are enrolled, it's the focus that turns to more of what's required of them, and their course, and of their visa. (Senior student counsellor).

In summary, the analysis of data from the student survey and university staff interviews highlights the critical role of value alignment between international students and host university in the students' cross-cultural adjustment. Given that international students possess a diverse cultural background, students who find a similarity of value tend to psychologically and socially adjust well to the host university environment and therefore feel more satisfied within that environment. A mismatch between the students' culture and that of the host university could prevent students from openly speaking about their problems, and seeking university support which may as a consequence lead to student poor cross-cultural adjustment.

Conclusion

This study highlights the critical role of student–university value alignment in international student acculturation, such that those

students who find a similarity between their values and their host university values adjust well psychologically and socially in their university environment as well as feel satisfaction with their university. In addition, the catalyst role of student social adjustment is also emphasized in facilitating the positive relationship between student–university value alignment and student satisfaction. This study provides the following theoretical and practical contributions.

Whilst being different in nature, the integration of acculturation and PE theories provides an interdisciplinary framework that allows this study to capture both international student and host university perspectives, advancing an insight of understanding of international student cross-cultural adjustment. The findings confirmed the importance of value alignment between international students and their host university in facilitating the student's cross-cultural adjustment and satisfaction, highlighting the key role of student–university interaction in support of a smooth international student cross-cultural adjustment process. In addition, while PE fit theory has been extensively researched in organisational studies, there has been limited application of the theory in education research. Gilbreath et al. (2011); Sortheix and Lönnqvist (2015) and Suhlmann, Sassenberg, Nagengast, and Trautwein (2018) are among a few studies that have employed this theory. However, the research population of these studies are students in general whose adjustment to university are often different from international students (Rienties & Tempelaar, 2012). Therefore, the present study contributes to the extant literature by extending the use of PE fit theory in the international student acculturation research domain.

Unlike subjective fit measurement where respondents are asked to make judgment about the extent to which they fit in the environment, for example, 'I feel that I have to change myself to fit in at school' (Gloria et al., 2008, p. 422), the present study employed commensurate measurement by asking students to report on the importance of each of the value items to them and the extent that these values are true to their university. Therefore, the student–university value fit was captured through the difference between these two ratings, not through a subjective report of where students feel a good fit or a poor fit. By this way, the present study's findings are more objective and the validity of the result is enhanced (Bowman & Denson, 2014; Ward & Chang, 1997)

While other studies in acculturation measured culture fit dimension by a singular value (e.g., Ward & Chang, 1997) or by a mental model fit (e.g., Zhu, Liu, & Fink, 2016), this study employed Schwartz's universal human value system (Schwartz, 2012; Schwartz & Bilsky, 1987) to measure student–university value alignment. The robustness of Schwartz's universal human value system lies in the fact that it contains a comprehensive set of cultural dimensions with data collected from diverse regions (Imm Ng, Anne Lee, & Soutar, 2007). Given that international students participating in this study coming from 27 countries with substantial cultural diversity, the use of Schwartz's universal values allowed us to capture most of the cultures inherited by participating international students to avoid biased results. The value dimensions of the present study are therefore well represented, and the validity of the result is enhanced. In addition, the significant relationships between value fit and student outcomes are confirmed for both person-focused and social-focused value fits, meaning that regardless of which values individuals (international students) have, it is the alignment of student and host university values per se that was determinative.

With regard to practical implications for universities hosting international students, in an educational context, institutional values are communicated through numerous institutional channels including administrative processes, academic programs and policies, and student services (Ferrari & Cowman, 2004). Given the crucial role of international student–university value alignment to the student psychological and social adjustment as well as student overall satisfaction, universities that host international students should frequently communicate and demonstrate their values through their daily interaction with international students.

As social adjustment plays an underlying role in facilitating the impact of student–university value alignment on international student satisfaction, host universities should extend social support resources to international students; For example, providing social skills training, and creating programs and activities that encourage an integration of students from different cultures within the university. This social support could be used as an intervention measure to facilitate a smooth acculturation process for international students through their successful adjustment to the university social environment (Yu, Bodycott, & Mak, 2019).

Finally, during the preparation of their overseas study journey, international students should be equipped with knowledge of the university where they will study so as to obtain an understanding of the university values and better manage their expectations. This will assist to shorten cultural distance and support students to experience a smoother acculturation process and thus achieve a higher satisfaction. In addition, attending pre-departure preparation and cultural training is another way to familiarise themselves with their host culture and environment that could help international students cross-culturally adjust well (Taušová et al., 2019)

Limitation and further research

This study captures the interactions between international students and their host university measured by student – university values fit to understand the students' cross-cultural adjustment from both the individual and environment perspectives. However, as this study is a cross-sectional study of data collected at a specific point in time, it could not capture any changes over the time during the international student acculturation process. Thus, a longitudinal study would provide an understanding of the research problem from a different perspective and capture how international students adjust differently at different points of time in the acculturation process. In addition, given the fast growing and increasingly popular usage of social media in young people, it would be worthwhile considering the role of social media as a tool used to support international student adjustment to the new environment apart from the traditional social support provided by host universities.

Appendix A

Survey instrument

STUDENT–UNIVERSITY VALUE FIT

1 Power

(Power means social status and prestige, control or dominance over people and resources)

2 Achievement

(Achievement means personal success through demonstrating competence according to social standard)

3 Hedonism

(Hedonism means pleasure and enjoying life)

4 Stimulation

(Stimulation means a challenging, daring and exciting life)

5 Self-direction

(Self-direction means creativity, freedom, curiosity, independence)

6 Universalism

(Universalism means understanding, appreciation, tolerance and protection for the welfare of all people and for nature)

7 Benevolence

(Benevolence means kindness, helpfulness, honesty, forgiveness, loyalty, responsibility)

8 Tradition

(Tradition means respect, commitment and acceptance of the customs and ideas, traditional culture or religion provide you)

9 Conformity

(Conformity means self-discipline, politeness, obedience)

10 Security

(Security means national security, family security, social order, cleanliness)

STUDENT ADJUSTMENT

Psychological adjustment

1 I feel tense or nervous
2 I feel downhearted.
3 Being independent has not been easy.
4 I am not able to control emotions well lately.
5 I have thought about seeking psychological help recently.
6 I get angry too easily lately
7 Sometimes thinking gets muddled too easily.
8 I worry a lot about university expenses.
9 I have trouble coping with university stress.

Social adjustment

1 I fit in well with the university environment.
2 I am very involved with university social activities.
3 I am adjusting well to university.
4 I have developed close relationships with local and other international students at university
5 I have adequate social skills.
6 I am satisfied with the extent to which I am participating in social activities at university.

OVERALL SATISFACTION

1 All in all, the university I attend is great.
2 In general, I am satisfied with my university
3 My university is very enjoyable.

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