The academic adjustment scale: measuring the adjustment of permanent resident or sojourner students.

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Abstract

In this paper we developed and validated the Academic Adjustment Scale (AAS) - a new scale for measuring the academic adjustment of individuals, which was developed with a focus on student sojourners who temporarily relocate to a new culture for the purpose of tertiary education. Exploratory factor analysis (Study 1) demonstrated that the AAS comprises 9-items that highly and accurately factor onto the three hypothesized subscales: academic lifestyle, academic achievement, and academic motivation. We verified the structure using Confirmatory Factor Analyses (Studies 1-2) while controlling for acquiescent responding. Evidence of the validity (convergent, discriminant, criterion, known-groups, and face validities; Study 2), and evidence of reliability (internal consistency: Studies 1-3; test-retest reliability: Study 3) suggest stable psychometric properties for this new measure. In summary, we provide evidence for the validity and reliability of the AAS in permanent resident and student sojourner samples, and present self-report findings by sojourner students that this scale is preferred to existing academic adjustment scales.

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Keywords: sojourner, student sojourner, permanent resident, student adjustment, academic adjustment, AAS, scale construction.

The academic adjustment scale: measuring the adjustment of permanent resident or sojourner students

The concepts of measuring and monitoring the cross-cultural adjustment of sojourners (i.e., individuals residing in a foreign culture without intention of permanent settlement; Church, 1982) are not new to psychology. Originating from concepts of culture shock (Oberg, 1960), *sojourner adjustment* has contemporarily been conceptualized as an outcome of inter-cultural relocation (Ward & Kennedy, 1993), and is typically considered in terms of stress and coping (see Berry, 1997; Ward, 1996).[1] Researchers have developed a series of psychometrically stable measures to capture sojourner adjustment (e.g., Demes & Geeraert, 2014; Pedersen, Neighbors, Larimer, & Lee, 2011). Individuals who reside abroad to pursue higher education are *student sojourners*. This very specific case differs from other sojourners in several important ways, including their goals, expectations upon them for success, motivations for leaving home, and post-sojourn intentions.

An important component of a successful student sojourn is how they manage their social, psychological, and scholarly challenges as they transition to tertiary education. Processes around managing these challenges are broadly referred to as *academic adjustment* (Gerdes & Mallinckrodt, 1994). Early research focused on academic abilities, with the assumption that this was indicative of all aspects of adjustment (Klineberg & Hull, 1979). However, researchers quickly realized that academic performance was only a small component of this transition. Satisfaction with the student lifestyle, management of expectations, and levels of motivation are examples of related aspects that form contemporary conceptualizations of academic adjustment (Baker, McNeil, & Siryk, 1985; Baker & Siryk, 1999; Gerdes & Mallinckrodt, 1994). Of course, all students transitioning to tertiary education face an array of barriers to successfully adjust to their new role as a university student. However, comparatively little is known about the specific processes of academic adjustment for sojourner students. Indeed, the literature yields several scales that measure either the academic adjustment of local students (Pennebaker, Colder, & Sharp, 1990; Vallerand et al., 1992) *or* acculturation stress for sojourner students (Sandhu & Asrabadi, 1994). To our knowledge, there is no existing scale designed that crosses this nexus, and thus the major aim of this paper is to develop and validate a measure of the academic adjustment that is equally suitable for use with sojourner students and permanent resident students.

[1] It is worth noting that conceptual distinctions have sometimes been made between adjustment as a process, and adjustment as an outcome.

The measures of student adjustment that exist are not necessarily valid in a sample of student sojourners. These scales tend to measure issues specific to local students, and therefore miss problems that are unique for student sojourners (e.g., whether being away from their family and friends impacts their ability to study). Moreover, the items are typically underpinned with cultural specifities (an immediately apparent example is "Enjoys living in a dormitory"; Baker & Siryk, 1999. This item is futile in cultures where students lodge in solitude). Given that the academic experience of sojourner students is qualitatively different to that of local students, a measure that captures differences in academic adjustment is needed that can be used with either sojourner students or permanent resident students.

Overview of Studies and Predictions

The academic adjustment scale (AAS) and its psychometric properties are presented here. After consultation with sojourner students, we derived three conceptual components to academic adjustment, which are: (a) academic lifestyle: AAS-L - conceptualized as the fit between the individual and their temporary role as a student; (b) academic achievement: AAS-A - conceptualized as satisfaction with academic progress and performance, and; (c) academic motivation: AAS-M - conceptualized as the drive for the student to continue and complete their academic sojourn. Each subscale comprises three items, to be used flexibly as a three-dimensional construct, or as a single factor tapping global academic adjustment. We tested the psychometric properties of the AAS following these hypotheses:

1. *Factor structure hypotheses* – We predict the emergence of a three interrelated, yet distinct factors. In CFA, we expect values of CFI > .90 and RMSEA < .08 (Kline, 1999), and SRMR < .060 (Hu & Bentler, 1999).
2. *Reliability hypotheses* – We predict alpha Cronbach coefficients that are above .70 (demonstrating internal consistency; Kline, 1999)[2], and a test-retest reliability coefficient that is above .70 (demonstrating temporal stability; Cronbach, 1990).
3. *Validity hypotheses* –
    a. Convergent validity: Student academic adjustment is related to positive responses to tertiary education (Pekrun, 2000) and also to increased levels of motivation (Deci, Koestner, & Ryan, 2001). We predict the AAS will positively correlate with the positive affect subscale of the College Adjustment Test (Pennebaker et al.,

[2] We note that some researchers prefer the alpha Cronbach coefficient to be above.80 as originally recommended by Cronbach (1990). However, Kline (1999) has argued that the diverse content that comprises psychological constructs means that a less stringent coefficient is more appropriate.

1990) and with higher motivation scores on the intrinsic and extrinsic motivation subscales of the Academic Motivation Scale (Vallerand et al., 1992).

b. Criterion validity: We predict that higher scores on the AAS will predict higher levels of satisfaction with student's grade point average (GPA).
c. Known-groups validity: Given issues typically associated with a sojourn (i.e., acculturation stress, culture shock, etc.), we expect adjustment scores from non-sojourner students (Study 1) to be higher than scores reported by sojourner students (Study 2).
d. Face validity: We predict that student sojourners will rate this scale as being easier to respond to, and that the content is more relevant for them, than those measures of academic adjustment that are not designed for sojourner students.

Study 1

Study 1 aims to demonstrate (EFA) and then confirm (CFA) that the AAS is comprised of the three expected underlying structures.

Participants and Method

An MTurk™ sample of 355 students (M = 29.55, SD = 8.51, 201 males) participated in exchange for AUD$0.20. Average length of time studying was 3.54 years (SD = 1.81). The sample largely comprised Indians (n = 171) and Americans (n = 168), which is typical geographical distribution of a sample recruited on MTurk. Participants responded to demographic questions followed by the items of the AAS presented in a randomized order to limit order effects (see appendix).

Results and Discussion

Preliminary analysis.

We forced a principle components factor analysis with a varimax rotation to extract three factors. A review of the scree plot and the Eigenvalues revealed the expected three-factor solution comparable to the subscales that were identified from our preliminary discussions with students. In combination, these factors accounted for 72.86% of the variance (see Tables 1 and 2).

TABLE 1 ABOUT HERE

Confirmatory factor analysis.

The scale included both positively and negatively worded items; to control for acquiescent responding, we also modeled an uncorrelated method factor that loaded onto every item fixed at 1 (Welkenhuysen-Gybels, Billiet, & Cambré, 2003). The model showed acceptable fit to the data, $\chi^2(21)$[3] = 59.981, $p < .001$; *CFI* = 0.97; *RMSEA* = 0.072 (90 % CIs, 0.051-0.094); *SRMR* = 0.057. (see Figure 1).

FIGURE 1 ABOUT HERE

TABLE 2 ABOUT HERE

Discussion

In combination, Study 1 provides initial evidence for the internal validity of the AAS. The EFA and CFA each confirm our factorial structure hypothesis; the three expected subscales exist as underlying structures of the AAS. Importantly, the subscales correlate extremely strongly with the scale total and between moderately and strongly with each other. This study also provides support for our (internal consistency) reliability hypothesis.

This study provides initial evidence of the AAS is a stable structure for use in permanent resident students, but has not explored the structure in a sample of student *sojourners*. Thus, in Study 2 we recruited a sample of China-born students who were living in the USA who could validate this scale in a sample of sojourner students. We also extended the research battery to include factors that would provide external validity for the AAS.

Study 2

Study 2 aims to provide more evidence for our factor structure hypothesis in a sample of student sojourners, and to provide evidence for the construct and face validity of the AAS.

[3]Based on modification indices, we allowed the residuals of item 9 to covary with the residuals of item 7 and 8. As well as a statistical suggestion, these modifications are conceptually acceptable and meaningful as they are within the same latent factor.

Method

Participants and Procedure.

China-born sojourner students who were studying in the USA volunteered for Study 2 (N = 191, M = 23.46, SD = 2.67, 79 males). Average length of time studying in the USA was 4.58 years (SD = 2.24). The majority of students were born in mainland China (n = 185) and the remainder were born in Hong Kong (n = 6).

Participants responded to demographic questions including an item about GPA satisfaction on a 5-point scale. Three measures of academic adjustment were randomly presented. After responding to each measure, and before moving on to the next, the participants evaluated the usability of the measure; First, they were asked how applicable the scale was to them (1 [*item not applicable to me*] to 4 [*item very applicable to me*]), then they were asked about the ease of responding to each scale (1 [*not easy*] to 7 [*very easy*]). Finally, participants were debriefed and thanked for their time.

Materials.

The *academic adjustment scale* was discussed previously in this paper.

The *college adjustment test* (CAT; Pennebaker et al., 1990) measures adjustment to college with 19 items about the feelings and thoughts that students had about their ability to adjust to college in the previous week. The CAT has three subscales that reflect the participants' adjustment-based positive affect (e.g., 'liked your roommate(s)'), negative affect (e.g., 'felt depressed'), and levels of homesickness (e.g., 'missed your home'). Responses were on a 7-point Likert-type scale, with higher scores reflecting a state-based predisposition for the construct being measured.

The *academic motivation scale* (AMS; Vallerand et al., 1992) measures aspects of motivation towards education with 28 items that ask why the participant attends college. We aggregated scores on the AMS to reflect three aspects of academic motivation; intrinsic motivation (e.g., 'To show myself that I am an intelligent person.'), extrinsic motivation (e.g., 'In order to have a better salary later on.'), and amotivation – or the absence of intrinsic and extrinsic motivations (e.g., 'I don't know; I can't understand what I am doing in school.')[4]. Students endorsed how much the presented statements correspond to the reasons that they go

[4] The AMS contains seven subscales. We conducted analyses on the seven subscales, but given that there were no substantial differences in analyses (and in the interest of parsimony) the three subscales of intrinsic motivation and the three subscales of extrinsic motivation were each collapsed into one superordinate scale.

to college on a 7-point Likert-type scale, with a higher score reflecting a higher level of the motivational aspect being measured.

Results

Descriptive statistics and reliabilities are presented in Table 3. Issues with normality were corrected using appropriate logarithmic transformations, and all analyses were conducted on transformed variables. However, for ease of interpretation, raw scores are reported.

TABLE 3 ABOUT HERE

Factor Analysis.

CFA was conducted on data from student sojourner participants. The means, standard deviations, and zero-order correlations of each item are also presented in Table 2. Replicating Study 1, the model showed acceptable fit to the data, $\chi^2(23) = 39.268$, $p = .018$; *CFI* = 0.971; *RMSEA* = 0.061 (90 % CIs, 0.025-0.093); *SRMR* = 0.037 (see Figure 2).

FIGURE 2 ABOUT HERE

Validity.

Convergent validity.

The expected correlations existed between the AAS and the measures used for convergent validity; correlation coefficients are presented in Table 3.

Criterion validity.

Forced entry multiple regression used the subscales of the AAS as predictors of GPA[5]. In combination, the subscales accounted for 31% of the variance, $F(3, 187) = 27.66$, $p < .001$,

[5] A single case on the DV exceeded 3 standard deviations (z = 3.15), and was replaced with x + 2 × *SD* (i.e., new value = 4.35; Tabachnick & Fidell, 2007). This replacement did not affect the results in any substantial manner.

Cohen's $f^2 = .44$[6]. As expected, AAS-A was the strongest predictor of GPA satisfaction, uniquely accounting for 21.16% of the variance. AAS-L was also significant predictor, uniquely contributing 1.60% of variance. Regression coefficients and squared semi-partial correlations are presented in Table 4.

The same regressions were conducted using the subscales of the CAT and the AMS for comparison. The CAT accounted for a non-significant 1.60% of the variance in GPA satisfaction, $F(3,145) = 1.78$, $p = .153$, and the AMS accounted for a significant 4.50% of the variance in GPA satisfaction, $F(3,157) = 3.59$, $p = .017$, in which the intrinsic subscale was the only significant predictor ($Sr^2 = -.22$). These findings both evidence the criterion validity of the AAS and show its predictive strength relative to other available scales.

TABLE 4 ABOUT HERE

Known-groups.

There were statistically significant differences between the average scores of the students in Study 1 and Study 2 on all subscales (academic lifestyle: $t(483) = 3.12$, $p = .002$; academic achievement: $t(483) = 14.95$, $p < .001$; academic motivation: $t(483) = 18.14$, $p < .001$). Specifically, sojourner students (Study 2) reported lower levels of academic adjustment than non-sojourner students (Study 1).

Face validity.

We asked the sample to respond to questions about how applicable each scale was, and the ease of responding to each scale. Descriptive statistics are presented in Table 5. Repeated measures ANOVAs were conducted, and revealed that sojourner students found differences in ease of responding $F(2, 147) = 24.25$, $p < .001$, $\eta_p^2 = .25$, and in applicability $F(2, 147) = 11.54$, $p < .001$, $\eta_p^2 = .14$ between the AAS, CAT, and AMS scales. Post-hoc analysis revealed that the AAS and the CAT were easier to respond to than the AMS (p's$<.001$), but that there was no differences in ease of responding between the AAS and the CAT ($p = .49$). It was also revealed that the sample found the content of the AAS more applicable to them than that of the AMS ($p < .001$) and the CAT ($p = .01$), but that the content of the AMS and the CAT were

[6] Effect sizes for were calculated from the observed R^2 using software by Soper (2015) based on the work of Cohen (1988).

equally as applicable (p = .47). Thus, the AAS not only has higher levels of face validity than other measures of academic adjustment, but it is preferred by a sample of sojourner students.

TABLE 5 ABOUT HERE

Discussion

Study 2 explored the AAS in a sample of student sojourners. The CFA demonstrated that the three sub-dimensions of the AAS also exist in a sojourner student sample, circumventing the sampling issue associated with the first study. Convergent validity was demonstrated by higher scores on the AAS positively correlated with the positive affect subscale of the CAT and with higher motivation scores on the AMS. In accordance with the literature (Reeve, 2002; Reeve & Halusic, 2009), intrinsically motivated resources should be more strongly linked to academic adjustment and success than extrinsically linked resources. Indeed, our data revealed stronger correlations between the AAS and the intrinsic AMS subscale than the extrinsic AMS subscale. Criterion validity was demonstrated by the ability for the achievement subscale to predict large amounts of unique variance in student satisfaction with their GPA.

The utility of the AAS is demonstrated by the finding that student sojourners find the scale more applicable to them and easier to respond to than the alternative scales in the study. Arguably, this finding could be a result of the brief nature of the 9-item AAS compared to the 19-items of the CAT and the 28-items of the AMS; we explored for order effects and none existed. Thus, not only does this finding provide evidence of the face validity of the scale, it also suggests that this scale is the preferred measure of academic adjustment for sojourner students. Finally, known-groups validity was demonstrated with a comparison between AAS scores of sojourner and non-sojourner students; sojourner students reported lower levels of academic adjustment than non-sojourner students.

Study 2 reaffirms our factor structure hypotheses in a sample of student sojourners, and confirms our construct validity hypotheses; however, we have yet to completely address our reliability hypotheses. Thus, in Study 3 we conduct a repeated measures study, in which a survey of the AAS was administered to the same sample of students at two different time points.

Study 3

Study 3 aims to assess the test–retest reliability of the AAS and its three component scales.

Method and Procedure

We gave a paper and pencil version of the 9-item AAS to 58 undergraduate students (M = 20.93, SD = 4.71, 45 female) as part of a class exercise in an undergraduate elective unit in psychology in Australia. They also provided demographic information. Two weeks later, these students were offered the opportunity to complete the scale again, and then were reminded again after one more week. The order of the subscales (but not the items) was randomized.

Results and Discussion

Scores between time-points were similar, as evidenced by the strength of test-retest correlation coefficients (rs > .72). Descriptive statistics, correlation coefficients, and reliability diagnostics are presented in Table 6. These findings suggest that this scale has temporal stability and internal consistency.

TABLE 6 ABOUT HERE

General Discussion

Limitations

It is worth considering limitations around the samples used across these studies, which might impact the cross-cultural validity of the scale. For example, Study 2 reported the majority of the validation data from a sample of China-born student sojourners who might be qualitatively different to student sojourners from other cultures and permanent resident students in China or other cultures. Given that the same factor structures exist in samples of local (Study 1) and sojourner (Study 2) students, this is of limited concern; however, it is worth noting any etic-derived construct might miss specific and unique features of academic adjustment that vary as a function of culture. Future research can consider the extent to which this measure applies to diverse samples.

A strength of this scale is its brevity. However, we acknowledge that this brings some restriction to the ability of the scale to capture both broad and nuanced conceptualizations of academic adjustment. For example, academic motivation is multifaceted and includes both intrinsic and extrinsic motivations (Deci et al., 1991); the brief nature of our scale does not allow these to be distinguished. After acknowledging such limitations, we remain happy with our decision to provide a concise measure which compromises meticulousness with efficiency.

Conclusions

In this paper we developed a theoretically derived, brief measure of academic adjustment for specific use with either permanent resident or sojourner students. Study 1 used data from local students to demonstrate the existence of the hypothesized subscales (academic lifestyle, academic achievement, and academic motivation). Study 2 confirmed that the scale structure also existed with a sample of students during an international sojourn. With the knowledge that the scale structure also exists for sojourning students, we then demonstrated additional evidence of the validity of the AAS as a concise and preferred measure of student sojourner academic adjustment. Finally, in Study 3, we demonstrated the temporal stability of the scale in a sample of students from Australia. Thus, across three studies, we confirmed our factor structure, and presented the evidence supporting our validity and reliability hypotheses, thus confirming the AAS as a psychometrically stable measure.

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The student sojourner academic adjustment scale

This measure has been designed specifically for measuring academic adjustment in individuals who are living abroad to study. There are three (3) sub-scales; order is to be randomized to eliminate order-effects.

Please indicate the level of endorsement to which each of the following questions apply to you:

Rarely applies to me	Occasionally applies to me	Neither does or doesn't apply to me	Sometimes applies to me	Always applies to me
1	2	3	4	5

Academic Lifestyle:

1. I am enjoying the lifestyle of being a university student.
2. I sometimes feel as though my education is not worth time away from my work or my family. (R)
3. I sometimes worry I do not have the academic skills needed to enjoy being a student. (R)

Academic Achievement:

4. I am satisfied with the level of my academic performance to date.
5. I think I am as academically able as any other student.
6. I am satisfied with my ability to learn at university.

Academic Motivation:

7. I expect to successfully complete my degree in the usual allocated timeframe.
8. The reason I am studying is to lead to a better life style.
9. I will be disappointed if my studies don't lead me to the career I want.

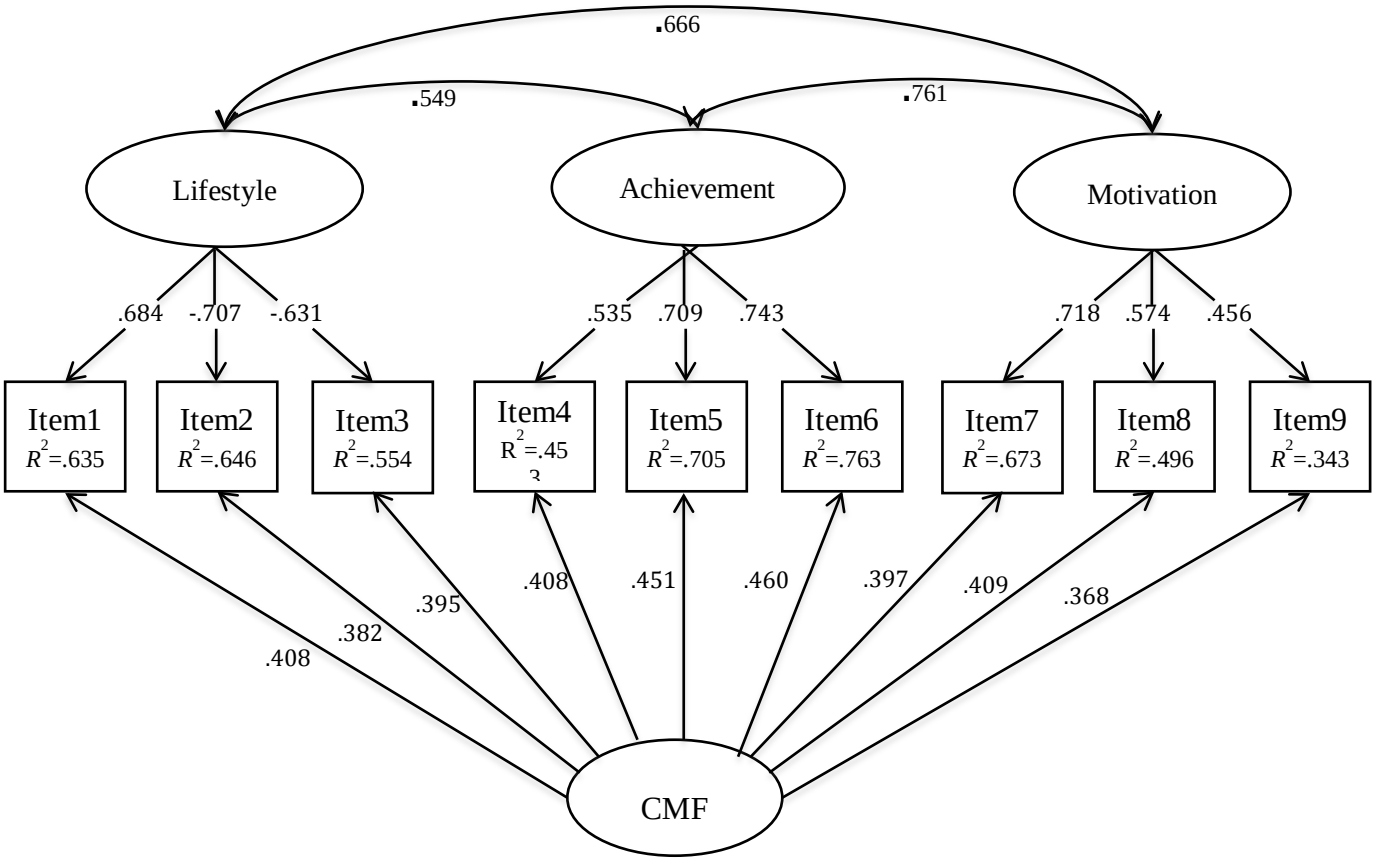

Figure 1. Confirmatory factor analysis in a student sample (Study 1), standardized estimates (all *p*'s < .001) $N = 355$, $\chi^2(21) = 59.981$, $p < .001$; CFI = 0.970; RMSEA = 0.072 (90 % CIs, 0.051-0.094); SRMR = 0.057.

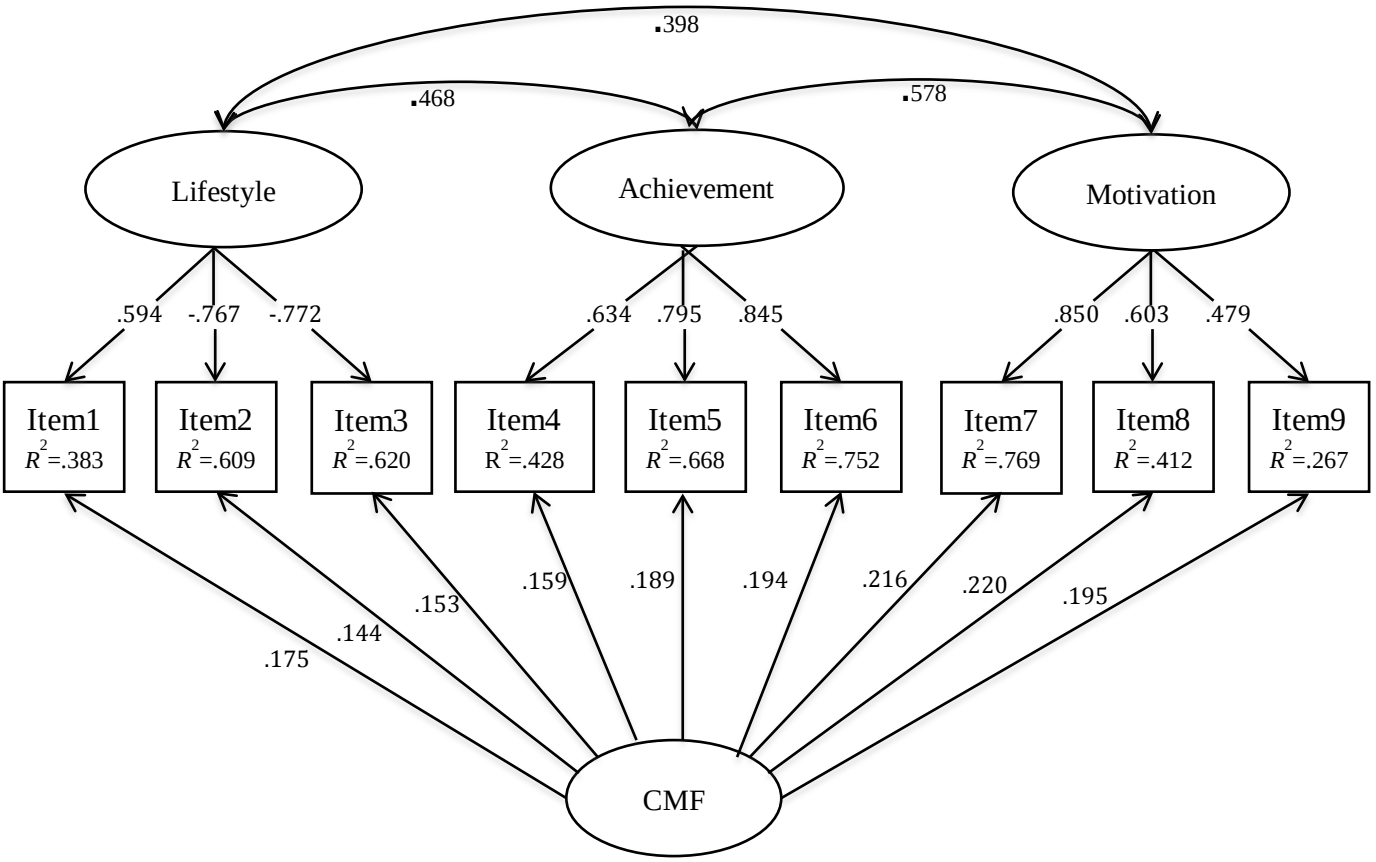

Figure 2. Confirmatory factor analysis in a sample of student sojourners (Study 2), standardized estimates (all *p*'s < .001) $N = 191$, $\chi^2(23) = 39.268$, $p = .018$; CFI = 0.971; RMSEA = 0.061 (90 % CIs, 0.025-0.093); SRMR = 0.037.

Table 1

Descriptive statistics, correlation coefficients, and internal reliability coefficients for the subscales and scale of the academic adjustment scale (AAS) in Study 1 (N = 355).

	AAS-L	AAS-A	AAS-M	*M* (*SD*)	α
AAS-L	-			3.02 (1.03)	.80
AAS-A	.39	-		3.54 (0.97)	.83
AAS-M	.44	.62	-	3.48 (1.05)	.79
AAS	.76	.82	.85	3.35 (0.82)	.86

Notes: All correlations are significant at the level of $p < .001$. AAS-L = academic lifestyle, AAS-A = academic achievement, AAS-M = motivation; Correlations were conducted using transformed variables, but for ease of interpretation the untransformed descriptive statistics are reported.

Table 2

Means, standard deviations, and zero-order correlations for items in Study 1 (N = 355) *and Study 2* (*N = 191).*

	1	2	3	4	5	6	7	8	*M* (*SD*)
Study 1									
Item 1	-								3.37 (1.22)
Item 2	-.32**	-							3.21 (1.29)
Item 3	-.27**	.60**	-						3.31 (1.26)
Item 4	.39**	-.18**	-.10	-					3.49 (1.16)
Item 5	.43**	-.13*	-.02	.55**	-				3.68 (1.09)
Item 6	.52**	-.08	.02	.57**	.74**	-			3.66 (1.12)
Item 7	.49**	-.17**	.10	.44**	.59**	.62**	-		3.56 (1.26)
Item 8	.44**	-.13*	-.05	.32**	.49**	.55**	.58**	-	3.68 (1.21)
Item 9	.36**	-.19**	-.16**	.19**	.36**	.38**	.39**	.57**	3.41 (1.29)
Study 2									
Item 1	-								2.20 (1.08)
Item 2	-.43**	-							3.11 (1.30)
Item 3	-.44**	.61**	-						2.93 (1.23)
Item 4	.19*	-.19*	-.17*	-					2.41 (1.19)
Item 5	.24**	-.17*	-.30**	.55**	-				2.18 (0.97)
Item 6	.30**	-.56**	-.32**	.56**	.71**	-			2.12 (0.94)
Item 7	.22*	-.37**	-.15*	.36**	.43**	.47**	-		1.76 (0.89)
Item 8	.08	-.13*	-.07	.28**	.29**	.33**	.56**	-	1.83 (0.56)
Item 9	.14*	-.14	-.03	.24**	.30**	.31**	.44**	.35**	2.14 (0.97)

Notes: *$p < .05$, **$p < .001$. Items 2 and 3 were not reverse scored for these analyses.

Table 3

Means, standard deviations, validity coefficients, and internal consistency coefficients for the academic adjustment scale (AAS), the college adjustment test (CAT), and the academic motivation scale (AMS) in Study 2 (N = 191).

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. AAS-L	-												
2. AAS-A	**.34****	-											
3. AAS-M	**.25****	**.48****	-										
4. AAS	**.74****	**.81****	**.70****	-									
5. CAT-positive	**.26***	**.24***	**.26****	**.34****	-								
6. CAT-negative	-.06	-.02	.15	-.02	.19	-							
7. CAT - homesickness	.02	-.09	**-.34****	**-.18***	**.43****	**.67****	-						
8. AMS-A	.10	-.13	**-.16***	**-.15***	.02	**-.19***	-.02	-					
9. AMS-I	**.39****	**.20***	**.23***	**.36****	**.36****	.12	-.11	.00	-				
10. AMS-E	**.34****	.08	**.20***	**.28****	**.20***	.10	-.08	-.09	**.80****	-			
11. Age	-.06	.01	-.01	-.03	**.24***	-.05	.12	.14	-.13	-.10	-		
12. GPA satisfaction	**.29****	**.53****	**.19****	**.45****	-.06	.10	.07	-.02	**.23***	.12	**.15***	-	
13. Years at University	.06	.01	.10	.09	.02	.01	-.03	-.15	-.08	-.11	**.59****	.06	-
M	2.73	2.24	1.91	2.29	4.45	3.45	3.73	2.64	4.38	4.50	23.65	2.23	4.58
SD	0.98	0.90	0.71	0.65	1.20	1.18	1.13	1.41	4.43	4.41	2.66	1.04	2.24
α	.76	.81	.74	.79	.84	.87	.71	.82	.94	.93	-	-	-

Notes: **p* < .05, ***p* < .001, significant correlations are presented in boldface. AAS-L = academic lifestyle, AAS-A = academic achievement, AAS-M = motivation. AMS-A = amotivation subscale, AMS-I = intrinsic motivation subscale, AMS-E = extrinsic motivation subscale. Descriptive data is non-transformed; correlations conducted on transformed data.

Table 4

Unstandardised (B) and standardised (β) regression coefficients, and semi-partial correlations for predictors in a hierarchical regression model predicting satisfaction with grade point average (GPA) from subscales of the academic adjustment scale.

	B [95% CI]	*SE B*	β	*p*	Sr^2
Constant	0.82 [0.36, 1.28]	0.23			
AAS-L	**0.14 [0.01, 0.28]**	**0.07**	**0.135**	**.038**	**.13**
AAS-A	**0.62 [0.461, 0.79]**	**0.08**	**0.54**	**< .001**	**.46**
AAS-M	-0.17 [-0.37, 0.03]	0.10	-0.12	.091	-.10

Notes: CI, confidence interval; GPA = grade point average. The subscales refer to academic lifestyle (AAS-L), academic achievement (AAS-A), and motivation (AAS-M). Significant findings are presented in boldface. Final model: $F(3,187) = 27.66$, $p < .001$.

Table 5

Mean scores and standard deviation statistics for reported ease of responding and applicability of the content of the academic adjustment scale (AAS), the college adjustment test (CAT), and the academic motivation scale (AMS) in Study 2 (N = 191).

	Ease of responding		Applicability of content	
Scale	*M*	*SD*	*M*	*SD*
AAS	4.60	1.38	2.77	0.72
CAT	3.80	1.58	2.48	0.74
AMS	4.38	1.74	2.62	.882

Note: Ease of responding was measured on a 7-point scale, and applicability was measured on a 4-point scale.

Table 6

Descriptive statistics, correlation coefficients, internal reliability coefficients, and test-retest coefficients for the subscales and scale of the academic adjustment scale (AAS) in Study 3 (N = 58).

					Time 1		Time 2		
	AAS-L	AAS-A	AAS-M	AAS	*M* (*SD*)	α	*M* (*SD*)	α	*r*
AAS-L	-	.43**	.28*	.85**	3.63 (0.92)	.79	3.70 (0.77)	.75	.72**
AAS-A	.42**	-	.22	.65**	3.77 (0.74)	.71	3.81 (0.66)	.71	.74**
AAS-M	.18	.19	-	.54**	4.34 (0.52)	.75	4.29 (0.58)	.70	.94**
AAS	.80**	.75**	.58**	-	3.93 (0.51)	.76	3.93 (0.48)	.76	.84**

Notes: *$p < .01$, **$p < .001$. Statistics presented above the diagonal are correlation coefficients for time 1, and statistics presented below the diagonal are correlation

coefficients for time 2; *r* represents the test-retest coefficient. The subscales refer to academic lifestyle (AAS-L), academic achievement (AAS-A), and motivation (AAS-M).