

Exploring the Mediating Role of Academic Adjustment in Influencing the Link Between Spiritual Well-Being and Institutional Attachment

Alvina K. Sulankey^{1*}  and Bejoy K. Sulankey² 

Department of ESL, Faculty of Arts and Humanities, Asia-Pacific International University^{1*},
Saraburi, 18180, Thailand

Independent Researcher², Ward No. 3, Khalisamari, Falakata, Alipurduar, West Bengal, 735211, India

*Corresponding Author: alvina@apiu.edu

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Abstract

Aim/Purpose: This study aimed to examine the structural relationships among Spiritual Well-Being (SWB), Academic Adjustment (AA), and Institutional Attachment (IA) among undergraduate students at a faith-based international university in Thailand. Specifically, the study sought to determine whether SWB functions as a psychological resource that facilitates AA, whether AA promotes IA, whether AA mediates the SWB-IA relationship, whether year of study moderates the AA-IA link, and whether SWB has a direct effect on IA independent of AA. These objectives address inconsistencies in prior literature regarding pathways through which spirituality influences student academic outcomes.

Introduction/Background: The transition to university involves significant academic, social, and emotional demands. Poor adjustment is consistently linked to disengagement, distress, and attrition. Spiritual well-being has been proposed as a resilience-enhancing resource that facilitates coping and meaning-making, yet empirical evidence on its role in student outcomes is mixed. Some studies have reported positive associations with academic adjustment, while others suggest indirect or negligible effects. Moreover, most research has been conducted in Western secular contexts, leaving a gap in understanding how spirituality operates within faith-based Asian higher education settings where spiritual values are embedded in institutional cultures. This study addressed these gaps by testing a theoretically grounded mediation-moderation model in a Thai faith-based university.

Methodology: A quantitative, cross-sectional design was employed. Participants were 252 undergraduates recruited via convenience sampling from a private faith-based international university in Thailand. Three validated instruments were used: the 10-item short form of the Spiritual Well-Being Scale (SWBS; $\alpha = .674$), an 8-item academic adjustment subscale from the Student Adaptation to College Questionnaire (SACQ; $\alpha = .549$), and an 8-item institutional attachment scale ($\alpha = .506$). Data were analyzed using Pearson's correlation, simultaneous multiple regression, PROCESS Macro Models 4 (mediation) and 1 (moderation) with 5,000 bootstrap resamples (Hayes, 2018), and Structural Equation Modelling (SEM) in AMOS. Model fit was assessed using CFI, TLI, RMSEA, and SRMR with established cut-off criteria.

Findings: **Hypothesis 1** (SWB $\rightarrow$ AA positive) was not supported: the bivariate correlation was negligible and non-significant ($r = -.006, p = .920$). **Hypothesis 2** (AA $\rightarrow$ IA positive) was supported ($r = .257, p < .001$). In simultaneous multiple regression ($R^2 = .088, F(2, 249) = 11.99, p < .001$), both AA ($\beta = .258, p < .001$) and SWB ($\beta = .148, p = .015$) uniquely predicted IA – contrary to Hypothesis 5, which proposed no direct SWB effect. **Hypothesis 3** (mediation via AA) was not supported: the indirect effect was negligible ($ab = -.002, 95\% \text{ bootstrap CI } [-.055, .049]$), and the a-path (SWB $\rightarrow$ AA) was non-significant. **Hypothesis 4** (moderation of AA-IA by year of study) was also not supported (AA $\times$ Year interaction $p = .297, R^2 = .004$). SEM fit was acceptable for absolute indices (RMSEA = .072, SRMR = .061) but marginal for incremental fit (CFI = .89, TLI = .87). Overall, spiritual well-being did not predict

academic adjustment but did directly predict institutional attachment; academic adjustment also independently predicted attachment but did not serve as a mediator.

Contribution/Impact on Society: The findings challenge mediation models that treat AA as the primary mechanism linking SWB to IA, instead supporting a domain-specificity model in which spiritual resources directly foster institutional bonds. They offer empirical evidence from a non-Western, faith-based context, extending the generalizability of student development theories, and reinforcing the distinction between internal psychological resources (SWB, AA) and external relational drivers of belonging, consistent with self-determination theory and the need-to-belong framework. Practically, spiritual programming alone appears insufficient for institutional attachment; institutions should pair it with peer mentoring, faculty engagement, and developmentally targeted community-building programs.

Recommendations: For higher education practitioners, especially in faith-based Asian contexts, a holistic support model is recommended that integrates academic, spiritual, and social dimensions. Specific interventions include structured peer-mentoring schemes, faculty-student relationship initiatives, and campus community-building events that foster belonging. Institutions should also consider culturally responsive approaches that emphasize collective harmony and relational engagement rather than academic performance alone. For researchers, it is recommended to use full-length validated measures (e.g., the complete SACQ) and to include explicit assessments of social integration to better capture the drivers of institutional attachment.

Research Limitations: The cross-sectional design precluded causal inference, and the single-institution convenience sample limited external validity. The year-of-study distribution was severely imbalanced (senior $n = 7$), undermining the moderation analysis, while internal consistency for academic adjustment (Cronbach's $\alpha = .549$) and institutional attachment (Cronbach's $\alpha = .506$) fell below acceptable thresholds, introducing possible measurement error. No social integration measures were included, measurement invariance across year groups was untested, and common method bias may have inflated correlations given single-timepoint self-reported data.

Future Research: Future studies should use longitudinal, multi-wave designs to establish causal pathways, and multi-institutional, cross-cultural replication to assess generalizability. Balanced samples across year levels, full-length validated instruments (Cronbach's $\alpha \geq .70$), and explicit measures of social integration (e.g., Sense of Belonging Instrument) are recommended. A moderated mediation model (PROCESS Model 14 or 58) could test whether the indirect effect of SWB on IA via AA varied by year of study, with a mixed methods follow-up to add contextual richness.

Keywords: *Spiritual well-being, academic adjustment, institutional attachment, spirituality*

Introduction

University adjustment is a critical determinant of student success, retention, and psychological well-being, as the transition to higher education imposes significant academic, social, and emotional demands. Poor adjustment has been consistently linked to academic disengagement, distress, and attrition. Among the psychosocial resources that support adjustment, spiritual well-being (SWB)—defined as a sense of meaning, purpose, inner peace, and transcendent connection—has gained scholarly attention for enhancing resilience, coping, motivation, and emotional stability. In faith-based institutions, particularly in Thailand where spirituality is culturally embedded in educational practice, SWB has been integrated into institutional life. Yet empirical research on its influence on student adjustment in Thai higher education remains limited and theoretically underdeveloped, with evidence pointing only to indirect or negligible direct effects.

This divergence highlights a critical gap: the need to identify pathways through which spirituality influences student experiences. One promising mechanism is academic adjustment—the capacity to meet educational demands, cope with academic stress, and maintain effective study behaviors—

which is closely tied to institutional attachment (a student's emotional connection, sense of belonging, and commitment to an institution). The present study therefore examined whether academic adjustment mediates the link between SWB and institutional attachment, and whether year of study moderates that mediation.

Literature Review

The study drew on Self-Determination Theory (SDT) (Deci & Ryan, 2000) and the Need-to-Belong Framework (Pedler et al., 2022). SDT holds that academic adjustment and spiritual well-being satisfy distinct psychological needs—competence versus relatedness/meaning—suggesting separate, additive pathways to institutional attachment rather than a sequential chain.

Spiritual Well-Being in Higher Education Contexts

Spiritual well-being (SWB) is a multidimensional construct comprising religious well-being (relationship with a higher power) and existential well-being (meaning, purpose, life satisfaction) (Ellison, 1983). In higher education, SWB has been linked to psychological resilience, emotional stability, and adaptive coping (Ano & Vasconcelles, 2005; Koenig, 2012; Leung & Pong, 2021). In culturally embedded settings like Thailand, however, SWB may function as a background condition with compressed variance and limited incremental predictive power over academic outcomes (Božek et al., 2020; Fuertes & Dugan, 2021).

Academic Adjustment and Student Achievement

Academic adjustment refers to a student's capacity to handle academic demands, maintain motivation, and employ effective learning strategies (Credé & Niehorster, 2012), and it is strongly associated with achievement, persistence, and psychological well-being (Richardson et al., 2012). Faith-based settings may enhance adjustment by integrating spiritual meaning with academic tasks (Kornas-Biela et al., 2020), yet the empirical evidence suggests that SWB contributes to internal academic processes—such as self-efficacy and purpose—rather than directly affecting institutional outcomes (Asghari et al., 2014; Pérez-Fuentes et al., 2023).

Institutional Attachment

Institutional attachment is a student's perceived sense of belonging, emotional connection, and dedication to their educational institution, and is a key determinant of retention and success (Lubis & Atmoko, 2025; Van der Zanden et al., 2018). Theoretical perspectives emphasize that attachment is primarily shaped by social integration—peer relationships, faculty interactions, and campus climate (Pedler et al., 2022; Tinto, 1993). Korpershoek et al.'s (2020) meta-analytic review confirmed that school belonging correlates most strongly with motivational and social-emotional outcomes, reinforcing that institutional attachment is a relational, multi-determined phenomenon.

Mediating and Conditional Mechanisms

Academic adjustment is a promising pathway between SWB and institutional attachment. Studies by Zhu et al. (2025) and Lan et al. (2026) support mediation; psychological resources predict academic adjustment, which in turn strengthens institutional belonging. However, Gilbertson et al. (2022) found that direct effects of psychological resources on attachment remained significant even after controlling for adjustment, and Kahu and Nelson (2018) proposed that the adjustment-attachment relationship is time-contingent, with year of study acting as a boundary condition. The present study tests both the mediating effect of academic adjustment (H_3) and the moderating role of year of study (H_4).

Hypotheses

Based on the theoretical framework and a review of related literature, the following hypotheses were formulated:

H_1 : Spiritual well-being is positively related to academic adjustment (Koenig, 2012; Leung & Pong, 2021).

H_2 : Academic adjustment is positively related to institutional attachment (Ramsay et al., 2007; Van der Zanden et al., 2018).

H_3 : Academic adjustment mediates the relationship between spiritual well-being and institutional attachment. SWB is expected to enhance adjustment, which in turn fosters belonging and commitment (Kahu & Nelson, 2018).

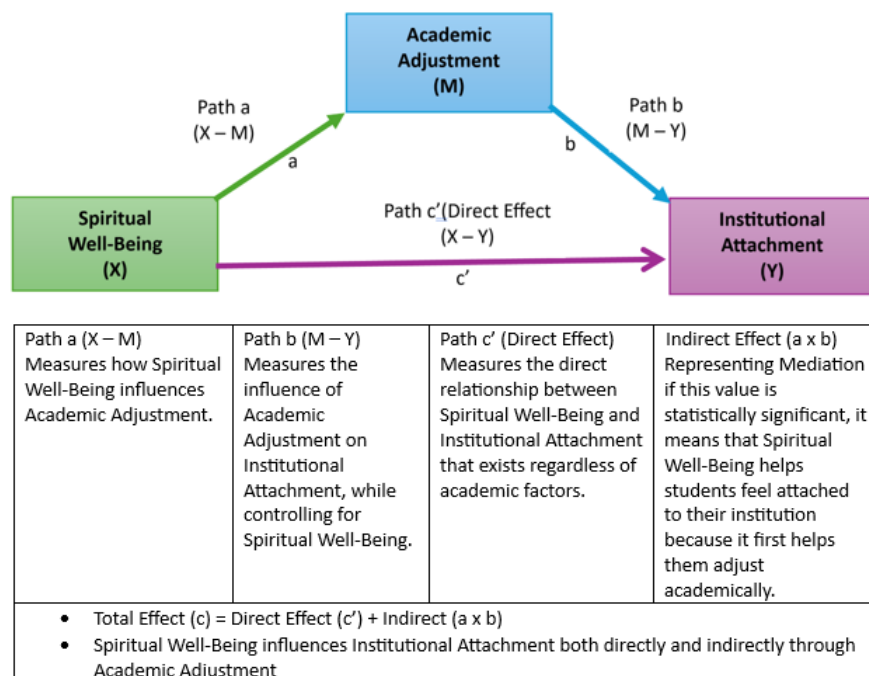
H_4 : Year of study moderates the relationship between academic adjustment and institutional attachment. Senior students' accumulated social capital may alter the strength of the AA–IA link (Kahu & Nelson, 2018).

H_5 : Spiritual well-being does not have a significant direct effect on institutional attachment when controlling for academic and social mediators. Institutional attachment is primarily social and relational (Tinto, 1993), so SWB may not independently bind a student to the institution.

Conceptual Framework

Figure 1 presents a conceptual framework for a simple mediation model (H_3), in which Spiritual Well-Being (SWB; X) influences Institutional Attachment (IA; Y) both directly (path c') and indirectly through Academic Adjustment (AA; M). *Path a* captures the SWB $\rightarrow$ AA effect; *Path b* captures the AA $\rightarrow$ IA effect controlling for SWB; and the indirect (mediation) effect equals the product $a \times b$.

Figure 1 Conceptual Framework: Academic Adjustment as Mediator



Research Methodology

Research Design

In this study, a quantitative, cross-sectional design was employed to examine relationships among spiritual well-being (SWB), academic adjustment (AA), and institutional attachment (IA), wherein 252 undergraduates from a private faith-based university in Thailand who were willing to participate in the study were recruited via convenience sampling (Etikan et al., 2016). Analysis included Pearson's correlation, mediation and moderation using PROCESS Macro Models 4 and 1 (Hayes, 2018),

simultaneous multiple regression, and structural equation modelling (SEM) to test direct, indirect, and conditional effects (Kline, 2016). The sample, drawn from diverse disciplines and year levels, met SEM's recommended minimum of 200 cases for stable parameter estimation.

Research Instrument/Validity and Reliability

Data were collected using three standardized instruments. Spiritual well-being was measured with the 10-item short form of the Spiritual Well-Being Scale (SWBS) (Paloutzian & Ellison, 1982), which captures religious well-being (the perceived relationship with God) and existential well-being (a sense of purpose and life satisfaction). Tavel et al. (2022) demonstrated its continued psychometric validity across populations. This short form demonstrated acceptable internal consistency with Cronbach's $\alpha = .674$ (see Table 2).

Academic adjustment was assessed using an 8-item short form of the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989), which measures students' ability to meet academic demands, maintain motivation, and sustain performance, with satisfactory reliability (Cronbach's $\alpha = .549$). Institutional attachment was measured with an 8-item self-reported scale adapted from prior studies on student integration and belongingness, capturing the emotional bond, commitment, identification, and perceived fit with the institution. The adapted scale demonstrated good reliability (Cronbach's $\alpha = .506$), and prior research has confirmed that institutional attachment significantly predicts student retention and engagement (Tinto, 1993).

Data Analysis

Data analysis was performed using IBM SPSS, PROCESS macro, and AMOS. Descriptive statistics, reliability analyses (Cronbach's alpha), and Pearson's correlation coefficients were computed to assess internal consistency and preliminary relationships. Simultaneous multiple regression was then conducted with institutional attachment (IA) as the outcome and spiritual well-being (SWB) and academic adjustment (AA) as predictors, controlling for their intercorrelation ($r = -.006$) and allowing assessment of potential suppressor effects.

Mediation analysis (PROCESS Macro Model 4) tested the indirect effect of SWB on IA via AA using 5,000 bootstrap resamples. Moderation analysis (PROCESS Macro Model 1) examined whether year of study moderated the AA-IA relationship, with simple slope analyses planned for significant interactions. Finally, structural equation modelling (SEM) in AMOS evaluated overall model fit using the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) based on established cutoffs (Hu & Bentler, 1999).

No formal post-hoc statistical test for common method bias (e.g., Harman's single-factor test) was administered. However, several procedural safeguards were employed to mitigate this threat; survey responses were collected anonymously with no incentive linked to particular response patterns, participation was entirely voluntary, and scale items measuring predictor and criterion constructs were ordered non-adjacently within the survey instrument. These measures are consistent with procedural remedies recommended for cross-sectional self-reported designs (Podsakoff et al., 2003).

Ethics Statement

The conduct of this research adhered to established ethical standards for the protection of human participants. Ethical approval was granted by the Institutional Review Board and Research and Development Committee (IRB/RRDC) under Action No. RRDC2024-225, dated November 27, 2024. Before data collection, participants were informed about the study's purpose, voluntary participation, and right to withdraw without penalty. Data were collected anonymously, with no identifying information linked to responses. The study followed institutional guidelines for quantitative, cross-sectional research, using validated instruments to ensure data integrity and scientific rigor.

Research Results

Table 1 presents the demographic characteristics of the 252 participants.

Table 1 *Demographic Characteristics of Respondents (n = 252)*

Variable	Category	n (%)
Gender	Male	91 (36.1%)
	Female	161 (63.9%)
Marital Status	Single	244 (96.8%)
	Married	8 (3.2%)
Year of Study	Freshman	118 (46.8%)
	Sophomore	83 (32.9%)
	Junior	44 (17.5%)
	Senior	7 (2.8%)
Faculty of Study	Arts & Humanities	102 (40.5%)
	Business	12 (4.8%)
	Education	99 (39.3%)
	Information & Technology	7 (2.8%)
	Religion	6 (2.4%)
	Science	22 (8.7%)
	Nursing	4 (1.6%)
Program of Study	Thai	92 (36.5%)
	International	159 (63.1%)
	Other	1 (.4%)
Residence	Dormitory	213 (84.5%)
	On Campus	19 (7.5%)
	Off Campus	18 (7.1%)
	Other	2 (.8%)

The sample consisted primarily of female participants (63.9%), with a majority being single (96.8%). The largest proportion of participants were freshmen (46.8%), followed by sophomores (32.9%), juniors (17.5%), and seniors (2.8%). Regarding academic disciplines, the most represented faculties were Arts & Humanities (40.5%) and Education (39.3%). Most participants were enrolled in the International program (63.1%) compared to the Thai program (36.5%). Most participants resided in dormitories (84.5%), with smaller proportions living in other on-campus residences (7.5%) or off-campus (7.1%). The "Other" category for Program of Study and Residence represents responses that did not fit within the designated categories (e.g., coded as "5" in the original data).

Preliminary Analyses: Descriptive Statistics and Reliability

Before hypothesis testing, descriptive statistics and internal consistency (Cronbach's α) were examined for all study variables. Table 2 presents the means, standard deviations, observed ranges, and reliability coefficients for the three primary constructs.

Table 2 *Descriptive Statistics and Internal Consistency Reliability (n = 252)*

Variable	Items	M	SD	Min	Max	Cronbach's α
Spiritual Well-Being (SWB)	10	2.94	.66	1.40	5.00	.674
Academic Adjustment	8	3.35	.61	1.50	4.50	.549
Institutional Attachment	3	3.38	.95	1.00	5.00	.506

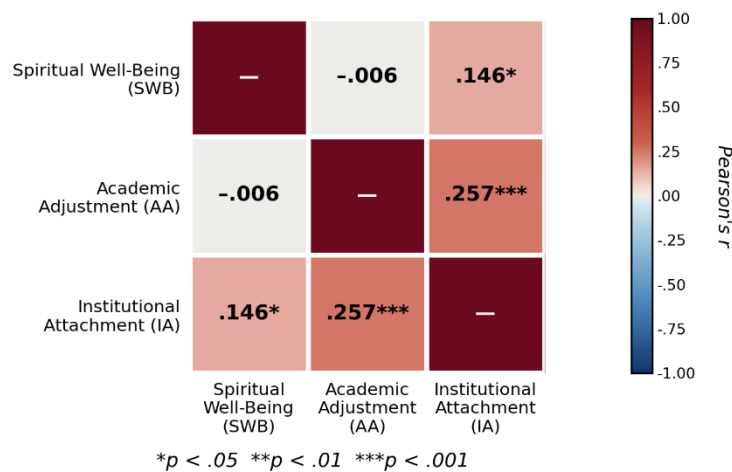
Note. Scales scored 1–5 (5 = Strongly Agree / high construct level). * $p < .05$ ** $p < .01$ *** $p < .001$

The Spiritual Well-Being Scale (SWBS; 10 items) yielded a Cronbach's $\alpha = .674$, which approached the conventional .70 threshold. The Academic Adjustment subscale (8 items) yielded Cronbach's $\alpha = .549$, and the Institutional Attachment subscale (3 items) yielded Cronbach's $\alpha = .506$. While these values were modest, they were consistent with brief subscale measures and the cultural diversity of the sample.

Correlation Analysis

A Pearson's product-moment correlation analysis was conducted to examine bivariate associations among the three study variables. The correlation matrix is presented in Figure 2.

Figure 2 Pearson's Correlation Matrix for Study Variables ($n = 252$)



H_1 : Spiritual well-being was not significantly correlated with academic adjustment ($r = -.006$, $p = .920$).

H_2 : Academic adjustment was significantly and positively correlated with institutional attachment ($r = .257$, $p < .001$).

Table 3 presents the bivariate Pearson correlations (r) reported for H_3 , the moderated regression interaction F -ratio for H_4 with Year of Study: Y1 = Freshman, Y2 = Sophomore, Y3 = Junior, Y4 = Senior, and the 95% Confidence Intervals (CIs) estimated via bootstrapping (5,000 samples).

Table 3 Statistical Tests for Hypotheses H_3 and H_4

H	Predictor	Outcome	Statistic	p	95% CI
H_3	Spiritual Well-Being (SWB)	Institutional Attachment (IA)	$r = .146$	.029*	[.024, .266]
	Academic Adjustment (AA)	Institutional Attachment (IA)	$r = .257$	< .001***	[.139, .370]
H_4	AA $\times$ Year of Study	Institutional Attachment (IA)	$F(3, 247) = 1.22$	.297	—

The bivariate correlations showed that spiritual well-being and academic adjustment were significantly associated with institutional attachment. However, the moderation analysis for H_4 indicated that the interaction between academic adjustment and year of study was not significant, suggesting that year of study did not moderate the relationship between academic adjustment and institutional attachment.

Multiple Regression Analysis

A simultaneous multiple regression was conducted to estimate the unique contributions of SWB and AA to IA while controlling for their shared variance ($r = -.006$). Table 4 presents the unstandardized (B) and standardized (β) coefficients along with model fit statistics.

Table 4 Simultaneous Multiple Regression: SWB and AA Predicting Institutional Attachment ($n = 252$)

Predictor	B	SE B	β	t	p
Constant	1.405	.413	—	3.403	.001***
Spiritual Well-Being (SWB)	.214	.088	.148	2.443	.015*
Academic Adjustment (AA)	.402	.094	.258	4.260	< .001***

Note. $R^2 = .088$; Adjusted $R^2 = .081$; $F(2, 249) = 11.99$, $p < .001$. * $p < .05$ *** $p < .001$

H_5 : Contrary to the hypothesis, SWB demonstrated a significant direct effect on IA after controlling for AA ($\beta = .148$, $t(249) = 2.44$, $p = .015$). The overall model was significant, $F(2, 249) = 11.99$, $p < .001$, accounting for 8.8% of the variance in IA.

Mediation Analysis: H_3 (PROCESS Model 4)

Mediation analysis was conducted using the bootstrapping approach (5,000 resamples) equivalent to PROCESS Macro Model 4 (Hayes, 2018) to test whether academic adjustment mediated the effect of spiritual well-being on institutional attachment. Table 5 reports all path coefficients and the bootstrap confidence interval for the indirect effect.

Table 5 Mediation Analysis: Academic Adjustment as Mediator of SWB $\rightarrow$ IA

Path	Coeff.	SE	t	p	95% CI
a: SWB $\rightarrow$ AA	-.006	.059	-.101	.920	[-.122, .110]
b: AA $\rightarrow$ IA (controlling SWB)	.402	.094	4.260	< .001	[.216, .588]
c: Total effect (SWB $\rightarrow$ IA)	.211	.090	2.337	.020	[.034, .389]
c': Direct effect (SWB $\rightarrow$ IA AA)	.214	.088	2.443	.015	[.041, .386]
Indirect effect a $\times$ b	-.002	—	—	—	[-.055, .049] [†]

Note. [†]95% bias-corrected bootstrap CI based on 5,000 resamples. CI includes zero $\rightarrow$ mediation not supported.

H_3 : The path from SWB to AA (path $a = -.006$, $p = .920$) was non-significant, rendering the indirect effect negligible ($ab = -.002$, 95% bootstrap CI [-.055, .049]). Because the confidence interval includes zero, mediation was not supported.

Moderation Analysis: H_4 (PROCESS Model 1)

A moderation analysis was performed to test whether the study year moderated the relationship between academic adjustment and institutional attachment. Both AA and Year of Study were mean centered before computing the interaction term. Table 6 displays the regression coefficients.

Table 6 Moderation Analysis: Year of Study as Moderator of AA $\rightarrow$ IA

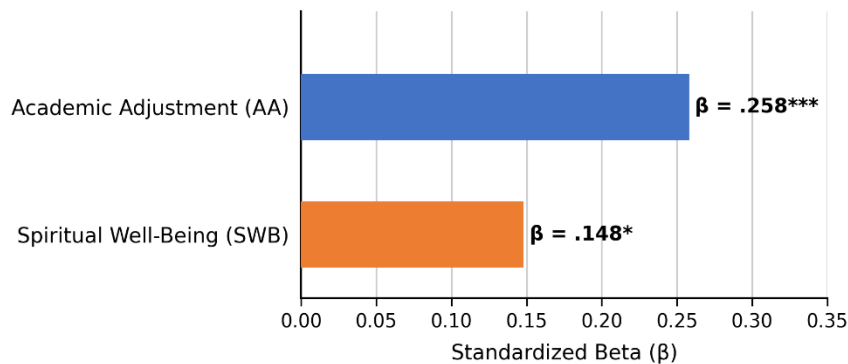
Predictor	B	SE B	t	p	R^2
Constant	3.382	.058	58.50	< .001***	
AA (mean-centered)	.401	.096	4.194	< .001***	
Year of Study (mean-)	.034	.069	.491	.624	
AA $\times$ Year of Study	-.123	.118	-1.046	.297	.004

Note. Overall $R^2 = .071$, $F(3, 248) = 6.31$, $p < .001$. *** $p < .001$. Simple slope analyses not conducted (interaction non-significant).

H_4 : The AA $\times$ Year of Study interaction was not significant ($B = -.123$, $t(248) = -1.05$, $p = .297$; $R^2 = .004$, $F(1, 248) = 1.09$, $p = .297$). Year of study did not significantly moderate the AA-IA relationship.

Figure 3 presents the standardized regression coefficients (β) from the simultaneous multiple regression predicting Institutional Attachment from AA and SWB.

Figure 3 Standardized Regression Coefficients (β) for Predictors of Institutional Attachment



$$R^2 = .088, F(2, 249) = 11.99, p < .001$$

$$*p < .05 \quad ***p < .001$$

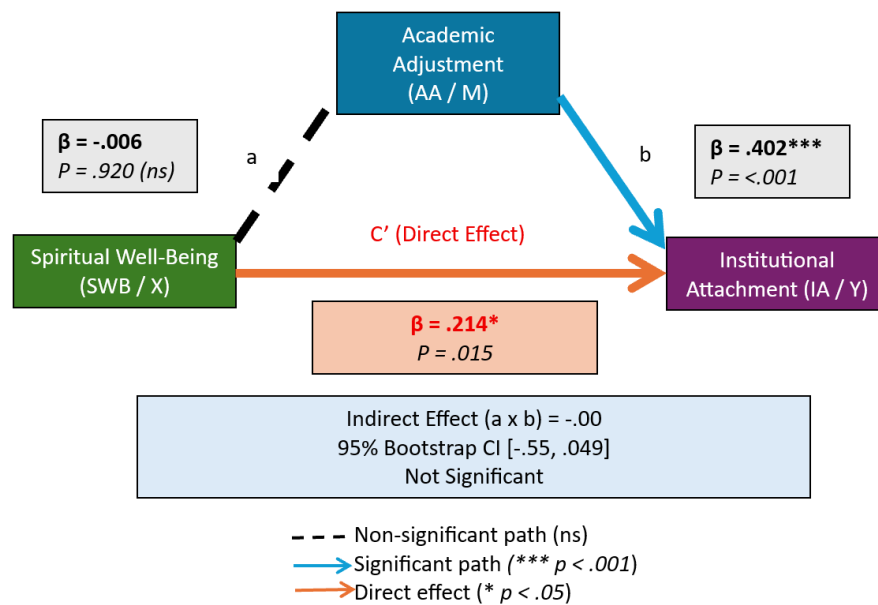
Academic Adjustment emerged as the stronger predictor ($\beta = .258$, $p < .001$), while Spiritual Well-Being made a significant, comparatively modest independent contribution ($\beta = .148$, $p < .05$). The overall model explained 8.8% of the variance in Institutional Attachment, $R^2 = .088$, $F(2, 249) = 11.99$, $p < .001$.

Structural Equation Modelling

A structural path model was estimated using maximum likelihood in AMOS ($N = 252$), specifying Path a (SWB $\rightarrow$ AA), Path b (AA $\rightarrow$ IA), and a direct path c' (SWB $\rightarrow$ IA), with residual error terms for both endogenous variables and 5,000 bootstrap resamples for the indirect effect. Model fit was mixed: absolute indices were acceptable (RMSEA = .072, SRMR = .061, both $< .08$; Browne & Cudeck, 1993; Hu & Bentler, 1999), while incremental indices were marginal (CFI = .89, TLI = .87), falling short of the $\geq .95$ benchmark (Hu & Bentler, 1999) though approaching the more liberal $\geq .90$ criterion for smaller samples (Marsh et al., 2004).

At the path level, the first-stage path from Spiritual Well-Being to Academic Adjustment (Path a) was negligible and non-significant ($\beta = -.006$, $p = .920$), effectively severing the mediation chain at its origin. The second-stage path from Academic Adjustment to Institutional Attachment (Path b) was positive and highly significant ($\beta = .402$, $p < .001$), while the direct path from SWB to IA (Path c') remained significant after the mediator was controlled ($\beta = .214$, $p = .015$), indicating that SWB exerts an independent direct influence on institutional belonging not transmitted through academic adjustment.

Because Path a was non-significant, the indirect effect of SWB on IA through AA was effectively zero ($ab = -.002$, 95% CI $[-.055, .049]$), confirming that H_3 was not supported and that SWB operates as a direct, independent predictor of Institutional Attachment (see Figure 4).

Figure 4 Final Structural Path Diagram (AA as Mediator of Spiritual Well-Being → Institutional Attachment)

• SEM Fit Indices for the Proposed Structural Model (N = 252)				
Model	CFI	TLI	RMSEA	SRMR
Acceptable threshold	$\geq .95$	$\geq .95$	$< .08$	$< .08$
Proposed structural model	.89	.87	.072	.061

$P < .05$ *** $< .001$ ns = not significant

5,000 bootstrap resample; AMOS maximum likelihood estimation

Red values = marginal fit (below $\geq .95$ benchmark); Green = acceptable fit

Discussion

In this study, five hypotheses were tested examining relationships among Spiritual Well-Being (SWB), Academic Adjustment (AA), and Institutional Attachment (IA) among 252 undergraduates at a faith-based international university in Thailand. H_1 (SWB→AA) was not supported ($r = -.006$, $p = .920$); However, H_2 (AA→IA) was supported ($r = .257$, $p < .001$; $\beta = .258$, $p < .001$). H_3 (mediation via AA) was not supported ($ab = -.002$, 95% CI $[-.055, .049]$), nor was H_4 (year-of-study moderation) ($B = -.123$, $p = .297$; $\Delta R^2 = .004$). Contrary to H_5 , SWB demonstrated a significant direct effect on IA ($\beta = .148$, $p = .015$). Collectively, the findings support a domain-specificity model in which SWB and AA independently predict IA through distinct, non-overlapping mechanisms.

Hypotheses 1 and 3: Non-support for the SWB→AA→IA Mediation Chain

The near-zero SWB–AA correlation most plausibly reflects range restriction; in a faith-embedded institution where chapel attendance and spiritually framed pedagogy are normative, students converged toward uniformly high SWB scores, compressing the variance needed to predict academic outcomes. This is consistent with Gilbertson et al. (2022), who found that closeness to God predicted psychological well-being but not academic process variables, and with domain-specificity arguments that spiritual resources engage existential and relational rather than competence-driven channels (Graça & Brandão, 2024; Pérez-Fuentes et al., 2023). From a Self-Determination Theory perspective (Deci & Ryan, 2000), Spiritual Well-Being satisfies relatedness and meaning needs while Academic Adjustment is tethered to competence—distinct motivational subsystems that typical antecedents feed independently (H_3 not supported). In practice, these results caution administrators that spiritual

formation does not automatically cascade into academic competence; dedicated academic support structures are needed alongside, not instead of, spiritual programming.

Hypotheses 2 and 5: Two Independent Pathways to Institutional Attachment

The AA→IA relationship ($r = .257, p < .001$; $\beta = .258, p < .001$) replicates established integration research (Tinto, 1993; Van der Zanden et al., 2018), confirming that academic competence builds institutional ties, further supported by Korpershoek et al. (2020) and Zhu et al.'s (2025) meta-analytic evidence. More theoretically significant was the rejection of H_5 : SWB retained a direct effect on IA when AA was controlled ($\beta = .148, p = .015$), countering Tinto's (1993) assumption that psychological attributes operate only through integration processes. Under SDT (Deci & Ryan, 2000), AA satisfies the competence need, while SWB satisfies relatedness and meaning—two additive pathways consistent with Pedler et al.'s (2022) need-to-belong framework. Practically, this parallel structure means that faith-based institutions must invest in both academic support services and spiritual community programs as equally necessary, non-substitutable retention strategies.

Hypothesis 4: Year of Study Moderation

The AA–IA interaction was non-significant (H_4 not supported; $B = -.123, p = .297$; $\Delta R^2 = .004$), but senior students comprised only 2.8% of the sample ($n = 7$), rendering the test statistically inadequate. This null result reflects a data-adequacy problem; the theoretical rationale for moderation remains compelling, as Kahu and Nelson (2018) and Ruedas-Gracia et al. (2023) have documented meaningful variation in belonging trajectories across cohorts. A balanced-cohort, properly powered replication would be needed before developmental moderation could be meaningfully evaluated.

Theoretical Synthesis: A Domain-Specificity Model for Faith-Based Contexts

The overall pattern is best captured by a domain-specificity model: Spiritual Well-Being operates through existential meaning and transcendent community belonging, while Academic Adjustment operates through academic competence and performance identity, and the two pathways converge additively on Institutional Attachment without one mediating the other. This aligns with SDT's premise that relatedness, meaning, and competence are distinct need-satisfaction systems (Deci & Ryan, 2000) and with the need-to-belong framework (Pedler et al., 2022). The present study extends this multi-determination model in a non-Western, spiritually embedded context, suggesting that the parallel-pathways configuration is particularly pronounced where institutional spirituality is structurally embedded.

Conclusion

This study explored how Spiritual Well-Being, Academic Adjustment, and Institutional Attachment connect with one another among students at a faith-based university in Thailand. Rather than finding that spiritual well-being helps students feel they belong by first improving how they cope academically, the results showed that these two factors work separately. Spiritual Well-Being helps students feel at home through a sense of meaning and community, while Academic Adjustment does so by building confidence in their studies. Neither one depended on the other to have an effect. Whether students were new or close to graduating did not appear to change this pattern, though the very small number of senior students in the sample means this finding should be read with caution. Taken together, this study challenges the idea that spiritual and academic experiences work in a step-by-step sequence. Instead, they operate through different but equally important channels — one rooted in meaning and belonging, the other in academic competence — pointing to the value of offering both spiritual and academic support together as part of a holistic approach in faith-based university settings.

Summary

In sum, this study challenges sequential mediation models by demonstrating that SWB and AA independently predict institutional attachment through distinct psychological channels—meaning and belonging versus academic competence—underscoring the value of integrated, holistic support in faith-based university settings.

Research Limitations

The cross-sectional, single-institution design limited causal inference, and the convenience sample from one faith-based university in Thailand restricts generalizability. The severely imbalanced year-group distribution (senior $n = 7$, 2.8%) limited statistical power for the moderation analysis. Additionally, internal consistency for Academic Adjustment ($\alpha = .549$) and Institutional Attachment ($\alpha = .506$) fell below the recommended threshold, potentially increasing measurement error and Type II error risk (Baker & Siryk, 1989; Paloutzian & Ellison, 1982). The absence of validated social integration measures limited assessment of relational factors central to institutional attachment (Pedler et al., 2022; Tinto, 1993), and single-occasion self-reported data without formal common method variance testing may have introduced bias in this faith-based context (Podsakoff et al., 2003).

Future Research

Multi-wave longitudinal designs with year-balanced sampling—including deliberate oversampling of senior students—are needed to establish causal sequencing and test developmental moderation; latent growth curve or cross-lagged panel models would distinguish genuine change from measurement artifact. Future studies should also incorporate validated social integration measures (peer belonging, faculty–student contact, campus climate) as additional mediators and moderators, enabling moderated mediation analyses (PROCESS Macro Models 14/58; Hayes, 2018) and including measurement invariance testing as a standard analytical step.

Replication across faith-based and secular institutions in diverse cultural contexts is necessary to determine whether the parallel-pathways pattern is context-specific or more broadly generalizable. Full-length validated instruments—the complete SACQ (Baker & Siryk, 1989) and the full Spiritual Well-Being Scale (Paloutzian & Ellison, 1982; $\alpha \geq .70$)—should replace the abbreviated forms used here, and mixed methods designs triangulated against objective institutional data (GPA, re-enrollment records) would provide behavioral validation of the self-reported constructs.

Author Contributions

Alvina Kullu Sulankey: Conceptualization, methodology, investigation, resources, project administration, visualization, validation, writing—original draft, writing—review & editing; **Bejoy Kumar Sulankey:** Formal analysis, data curation, validation, writing—review & editing.

References

- Ano, G. G., & Vasconcelles, E. B. (2005). Religious coping and psychological adjustment to stress: A meta-analysis. *Journal of Clinical Psychology*, 61(4), 461–480. <https://doi.org/10.1002/jclp.20049>
- Asghari, F., Saadat, S., Atefi Karajvandani, S., & Janalizadeh Kokane, S. (2014). The relationship between academic self-efficacy and psychological well-being, family cohesion, and spiritual health among students of Kharazmi University. *Iranian Journal of Medical Education*, 14(7), 581–593. https://www.researchgate.net/publication/402924677_The_Relationship_between_Academic_Self-Efficacy_and_Psychological_Well_Being_Family_Cohesion_and_Spiritual_Health_Among_Students_of_Kharazmi_University
- Baker, R. W., & Siryk, B. (1989). *Student adaptation to college questionnaire manual*. Western Psychological Services.
- Bożek, A., Nowak, P. F., & Blukacz, M. (2020). The relationship between spirituality, health-related behavior, and psychological well-being. *Frontiers in Psychology*, 11, Article 1997. <https://doi.org/10.3389/fpsyg.2020.01997>
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Sage Publications.

- Credé, M., & Niehorster, S. (2012). Adjustment to college as measured by the SACQ. *Educational Psychology Review*, 24, 133–165. <http://doi.org/10.1007/s10648-011-9184-5>
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- Ellison, C. W. (1983). Spiritual well-being: Conceptualization and measurement. *Journal of Psychology and Theology*, 11(4), 330–338. <https://doi.org/10.1177/009164718301100406>
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Fuertes, A., & Dugan, K. (2021). Spirituality through the lens of students in higher education. *Religions*, 12(11), Article 924. <https://doi.org/10.3390/rel12110924>
- Gilbertson, M. K., Brady, S. T., Ablorh, T., Logel, C., & Schnitker, S. A. (2022). Closeness to God, spiritual struggles, and wellbeing in the first year of college. *Frontiers in Psychology*, 13, Article 742265. <https://doi.org/10.3389/fpsyg.2022.742265>
- Graça, L., & Brandão, T. (2024). Religious/spiritual coping, emotion regulation, psychological well-being, and life satisfaction among university students. *Journal of Psychology and Theology*, 52(3), 342–358. <https://doi.org/10.1177/00916471231223920>
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). Guilford Press.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Kahu, E. R., & Nelson, K. (2018). Student engagement in the educational interface: Understanding the mechanisms of student success. *Higher Education Research & Development*, 37(1), 58–71. <https://doi.org/10.1080/07294360.2017.1344197>
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.
- Koenig, H. G. (2012). Religion, spirituality, and health: The research and clinical implications. *ISRN Psychiatry*, 2012(1), 278730. <https://doi.org/10.5402/2012/278730>
- Kornas-Biela, D., Martynowska, K., & Zysberg, L. (2020). Faith conquers all? Demographic and psychological resources and their associations with academic performance among religious college students. *British Journal of Religious Education*, 42(4), 459–470. <https://doi.org/10.1080/01416200.2020.1740168>
- Korpershoek, H., Canrinus, E. T., Fokkens-Bruinsma, M., & de Boer, H. (2020). The relationships between school belonging and students' motivational, social-emotional, behavioural, and academic outcomes in secondary education: A meta-analytic review. *Research Papers in Education*, 35(6), 641–680. <https://doi.org/10.1080/02671522.2019.1615116>
- Lan, Y., Gao, X., & Liu, H. (2026). The role of psychological capital as a mediator in the relationship between school belonging and professional commitment among undergraduate nursing students. *Frontiers in Psychology*, 16, Article 1702516. <https://doi.org/10.3389/fpsyg.2025.1702516>
- Leung, C. H., & Pong, H. K. (2021). Cross-sectional study of the relationship between the spiritual wellbeing and psychological health among university students. *PLoS ONE*, 16(4), e0249702. <https://doi.org/10.1371/journal.pone.0249702>
- Lubis, S. H., & Atmoko, A. (2025). Academic adjustments for first-year students: Influence factors and measurement. *Psychological Science and Education*, 30(1), 130–139. <https://doi.org/10.17759/pse.2025300110>
- Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling*, 11(3), 320–341. https://doi.org/10.1207/s15328007sem1103_2
- Paloutzian, R. F., & Ellison, C. W. (1982). Loneliness, spiritual well-being and the quality of life. In L. A. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research and therapy* (pp. 224–237). Wiley.
- Pedler, M., Willis, R., & Nieuwoudt, J. (2022). A sense of belonging at university: Student retention, motivation and enjoyment. *Journal of Further and Higher Education*, 46(3), 397–408. <https://doi.org/10.1080/0309877X.2021.1955844>
- Pérez-Fuentes, M. C., Núñez, A., Molero Jurado, M. d. M., & Gázquez Linares, J. J. (2023). Examining the influence of meaning in life and religion/spirituality on student engagement and learning satisfaction: A comprehensive analysis. *Religions*, 14(12), Article 1508. <https://doi.org/10.3390/rel14121508>

- Podsakoff, P.M., Mackenzie, S.B., Lee, J.-Y., & Podsakoff, N.P. (2003). Common methods biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Ramsay, S., Jones, E., & Barker, M. (2007). Relationship between adjustment and support types: Young and mature-aged local and international first year university students. *Higher Education*, 54(2), 247–265. <https://doi.org/10.1007/s10734-006-9001-0>
- Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin*, 138(2), 353–387. <https://doi.org/10.1037/a0026838>
- Ruedas-Gracia, N., Jiang, G., & Maghsoodi, A. H. (2023). Is belonging stable over time?: A four-year longitudinal examination of university belonging differences among students. *Emerging Adulthood*, 11(4), 1022–1038. <https://doi.org/10.1177/21676968231181720>
- Tavel, P., Jozefiakova, B., Telicak, P., Furstova, J., Puza, M., & Kascakova, N. (2022). Psychometric analysis of the shortened version of the Spiritual Well-Being Scale on the Slovak population (SWBS-Sk). *International Journal of Environmental Research and Public Health*, 19(1), Article 511. <https://doi.org/10.3390/ijerph19010511>
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). University of Chicago Press.
- Van der Zanden, P. J., Denessen, E., Cillessen, A. H., & Meijer, P. C. (2018). Domains and predictors of first-year student success: A systematic review. *Educational Research Review*, 23, 57–77. <https://doi.org/10.1016/j.edurev.2018.01.001>
- Zhu, Y., Lu, H., Wang, X., Ma, W., & Xu, M. (2025). The relationship between perceived peer support and academic adjustment among higher vocational college students: The chain mediating effects of academic hope and professional identity. *Frontiers in Psychology*, 16, Article 1534883. <https://pmc.ncbi.nlm.nih.gov/articles/PMC11885234/>