

The relationship between social adaptation, academic stress, and homesickness in Islamic boarding schools: Moderating effects of prior separation experience and family attachment

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ABSTRACT

This study contributes to the state of the art by addressing the scarcity of empirical research on homesickness within the unique context of Islamic boarding schools (pesantren), which differ substantially from Western residential education settings commonly examined in the literature. While previous studies have explored homesickness, social adaptation, and academic stress in general boarding or international student populations, this research advances the field by integrating these constructs with family attachment and prior separation experiences as moderators. Data were obtained from pesantren students in Yogyakarta region utilizing a cross-sectional survey approach and analyzed through Structural Equation Modeling with Partial Least Squares (SEM-PLS). The research utilized five validated tools to assess social adaptation, academic stress, homesickness, prior separation experiences, and familial attachment. The model accounted for 65.8% of the variance in homesickness levels. Social adaptation markedly diminished homesickness ($\beta = -0.241$, $p < 0.001$), whereas academic stress exacerbated it ($\beta = 0.326$, $p < 0.001$). Family attachment was identified as the most significant predictor of homesickness ($\beta = 0.487$, $p < 0.001$), suggesting that stronger familial connections paradoxically heighten feelings of homesickness. Previous separation experience acted as a protective factor ($\beta = -0.198$, $p < 0.001$) and attenuated the association between academic stress and homesickness. The findings indicate that homesickness in pesantren is a complex issue necessitating specialized intervention programs that take into account adolescents' attachment styles and prior separation experiences to improve psychological well-being and adaptive outcomes.

INTRODUCTION

The shift from a familial milieu to a residential educational institution is a considerable psychological hardship for adolescents, especially within the framework of Islamic boarding schools (pesantren). Homesickness, characterized by a profound want to return home and associated emotional suffering, has garnered significant attention in educational psychology research (Tabarani et al., 2025). This condition adversely influences both the psychological well-being of students and their academic performance and social growth during their education at the pesantren.

Islamic boarding schools, known as pesantren, are traditional Indonesian Islamic educational institutions that possess distinctive qualities setting them apart from conventional education systems (Saepullah, 2021). The pesantren setting necessitates that student reside separately from their families

for extended durations, adhere to stringent regulations and timetables, and acclimate to a culture and values that may diverge from those of their familial surroundings (Haryanto, 2022). Social adaptation within Islamic boarding schools entails students' capacity to cultivate constructive interpersonal relationships with peers, religious instructors (ustadz), and administrators, alongside their ability to comprehend and conform to the established social norms of the boarding school milieu. The pesantren system includes traditional salafiyah institutions emphasizing classical texts, modern khalafiyah schools integrating contemporary curricula, and hybrid combinations. Furthermore, generalizability to Islamic boarding schools abroad, such as pondok or sekolah agama, remains uncertain due to varying cultural contexts and educational frameworks.

Cabaniss & Cameron (2018) theory of social adaptation posits that the adaptation process encompasses psychological techniques utilized by individuals while engaging with a novel environment, which may comprise integration, assimilation, separation, or marginalization. The efficacy of students' social adaption is significantly influenced by aspects including communication proficiency, psychological adaptability, and the social support accessible within the boarding school setting (Tomás et al., 2020). Academic stress is a psychological reaction to the expectations and difficulties related to studying and academic success (Travis et al., 2020). Within Islamic boarding schools, students encounter a dual academic curriculum comprising both general and religious subjects, accompanied by a rigorous evaluation system and elevated expectations from several stakeholders. Oyewobi et al. (2021) assert in their stress and coping theory that academic stress arises when external pressures surpass an individual's ability to cope.

The interplay among social adaptation, academic stress, and homesickness has been the subject of investigation in diverse residential educational settings. Rathakrishnan et al. (2021) found that inadequate social adaptation and elevated academic stress were significant predictors of homesickness severity among students residing in dormitories. Bethel et al. (2020) discovered that individuals possessing strong social adaptation abilities generally experienced reduced homesickness, since they could cultivate effective social support systems in their new surroundings.

Attachment theory, established by Mekonen & Adarkwah (2023), offers a pertinent theoretical framework for comprehending the phenomenon of homesickness. Within Islamic boarding schools (pesantren), children exhibiting low attachment security may endure heightened homesickness as a result of challenges in forming safe relationships and accessing emotional support in their unfamiliar surroundings. Numerous researches indicate that religious values and spiritual practices can function as useful coping strategies for alleviating homesickness (Hack-Polay & Mahmoud, 2021). Conversely, the necessity of acquiring intricate theological doctrines may exacerbate the academic stress experienced by pupils (Syafii et al., 2024).

The influence of homesickness on all facets of students' life has garnered the interest of scholars and educational professionals. Zaidi et al. (2025) indicate that unaddressed homesickness may result in diminished academic performance, sleep disruptions, reduced appetite, social disengagement, and, in extreme instances, may precipitate depression and anxiety disorders. Within the framework of Islamic boarding schools, these effects influence not only individual students but also the overall dynamics of the Islamic boarding school community.

Prior research has generally analyzed these aspects in isolation or within the framework of Western education, which possesses attributes that are markedly different from the Islamic boarding school system in Indonesia. The necessity of this research is amplified by the progressive evolution of the Islamic boarding school education system, which continues to uphold Islamic traditions and principles. This shift engenders new dynamics in the adaptation process of pupils, necessitating the

integration of traditional values with the imperatives of modernity (Fadilah et al., 2024). A thorough comprehension of the factors of homesickness will yield theoretical insights for the creation of focused and successful psychological intervention models to aid students' adjustment in the Islamic boarding school setting. This study seeks to thoroughly examine the influence of social adaptation and academic stress as factors contributing to homesickness among Islamic boarding school students.

A theory regarding a direct effect is proposed. Social adaptation exerts a considerable adverse influence on homesickness. Students who adeptly adjust socially—by forming positive relationships with peers and religious educators, and comprehending institutional norms—will encounter diminished levels of homesickness owing to social support and a sense of belonging. Academic stress positively influences homesickness. The academic strain stemming from the dual curriculum system (general and religious) imposes a psychological burden that may activate defense mechanisms, such as a yearning for a more familiar and secure family setting (Muslih & Nashori, 2024). Prior separation experience adversely impacts homesickness. Students with prior experiences of familial separation often possess coping skills and psychological resilience that function as protective factors. Family attachment positively influences homesickness. Intense emotional connections with family result in heightened distress during separation; thus, pupils with robust attachments will experience greater difficulty when separated from their attachment figures.

Based on the research model you have described, the following hypotheses can be proposed:

Direct Effect Hypothesis

H1: Social adaptation negatively influences homesickness in Islamic boarding school students. The better a student's social adaptation, the lower their level of homesickness.

H2: Academic stress positively influences homesickness in Islamic boarding school students. The higher the academic stress experienced by students, the higher their level of homesickness.

H3: Previous separation experiences negatively influence homesickness in Islamic boarding school students. Students with previous separation experiences tend to experience lower levels of homesickness.

H4: Family attachment positively influences homesickness in Islamic boarding school students. The stronger a student's attachment to their family, the higher their level of homesickness.

METHODS

This study employed a cross-sectional survey design, which allows for the examination of predictive associations among variables but does not permit strong causal inferences. This study utilized a positivistic paradigm with a deductive method, deriving research hypotheses from established theories and empirically testing them through statistical analysis. The selected analytical method was Structural Equation Modeling with Partial Least Squares (SEM-PLS) utilizing SmartPLS 4.0 software. This enables researchers to concurrently investigate intricate interactions among latent variables and assess both measurement and structural models within a unified analysis.

Consent was obtained from the students through an informed consent and assent process. Participation was voluntary and did not affect academic standing. In the event of emotional distress, a counseling referral protocol was established with the support of professional staff. The study's population comprised pupils enrolled in Islamic boarding schools in Yogyakarta region, distinguished by their continuous 24-hour instructional system. This region was chosen due to the significant prevalence of Islamic boarding schools and the varied socio-demographic attributes of the pupils, hence augmenting the external validity of the research. This study employed purposive sampling with the inclusion criteria were: (1) students who had resided at the Islamic boarding school for a minimum

of six months to confirm they had completed the initial adaptation phase; (2) individuals aged between 13 and 18, the adolescent stage characterized by susceptibility to homesickness; and (3) those capable of reading and comprehending the research instrument effectively.

This study used five main instruments that had been adapted and validated. All instruments underwent a comprehensive cross-cultural adaptation process, including forward translation, back translation, expert review, and pilot testing to ensure adequate content validity and reliability in the Indonesian cultural context. The instruments in the study used a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Student Adaptation to College Questionnaire (SACQ), adapted from Soledad et al. (2012) consists of 24 items measuring four dimensions of social adaptation: (1) involvement in social activities, (2) interpersonal relationships with peers, (3) relationships with authority figures (ustadz/administrators), and (4) adjustment to Islamic boarding school norms and culture with sample items: "I make friends easily with other students at this Islamic boarding school" and "I feel comfortable communicating with the ustadz/ustadzah." The construct validity of this instrument was tested using confirmatory factor analysis, with CFI = 0.925, TLI = 0.912, and RMSEA = 0.067.

Student-Life Stress Inventory (SSI) adapted from Gadzella's (1991), consists of 30 items measuring five dimensions of academic stress: (1) stressors from academic demands, (2) stressors from time pressure, (3) stressors from evaluations/exams, (4) physical reactions to stress, and (5) emotional reactions to stress with sample items being "I feel overwhelmed by the amount of work I have to complete" and "I often feel anxious before exams." Validity test results showed a CFI of 0.908, TLI of 0.896, and RMSEA of 0.071.

Homesickness Questionnaire, adapted from Archer et al. (1998) consists of 18 items measuring three dimensions of homesickness: (1) longing for family, (2) longing for the home environment, and (3) emotional distress due to separation from home with sample items being "I often think about my family at home" and "I feel sad when I see other students being picked up by their families." The instrument's construct validity showed a CFI of 0.931, TLI of 0.919, and RMSEA of 0.064.

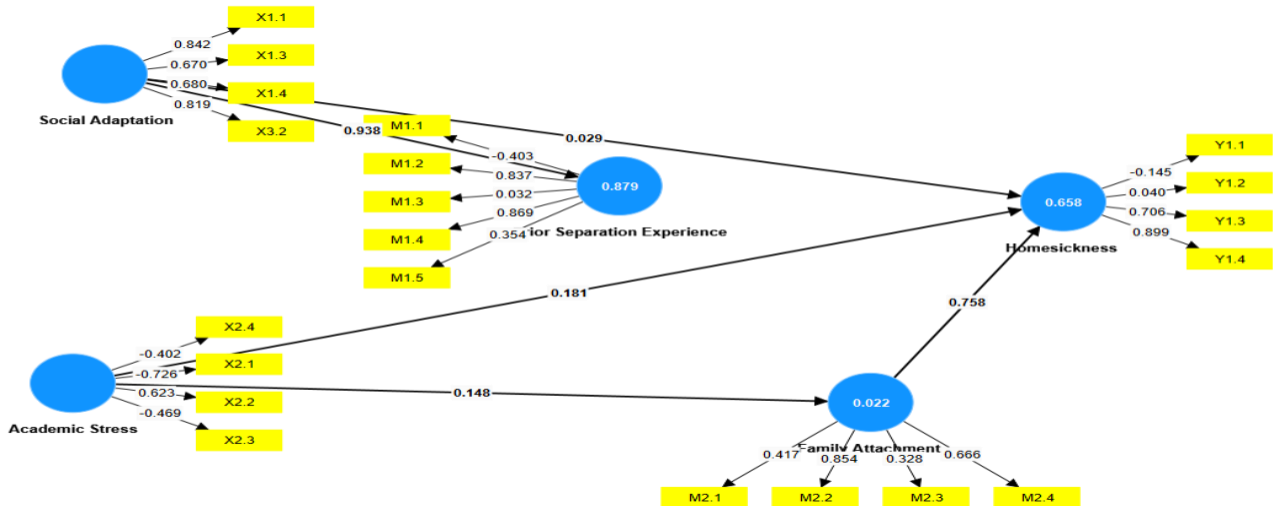
The Prior Separation Experience Scale was developed based on Ahmed et al. (2023) theoretical framework on separation experiences and adapted for the context of Indonesian Islamic boarding schools. This instrument consists of 15 items measuring three dimensions: (1) frequency of previous separation experiences from family, (2) duration of separation experiences, and (3) level of difficulty experienced during separation, with example items being "Before entering Islamic boarding school, I lived apart from my family for long periods of time" and "I found it easy to adjust to separation from my family." The instrument's construct validity showed a CFI of 0.918, TLI of 0.905, and RMSEA of 0.069.

The Family Attachment Scale was adapted from the Inventory of Parent and Peer Attachment (IPPA) developed by Armsden and Greenberg (1987) and modified to measure students' attachment to their families in the Indonesian cultural context. This instrument consists of 21 items measuring three dimensions of attachment: (1) trust, (2) communication, and (3) alienation with examples of items being "I trust my family will always support my decisions" and "I feel comfortable sharing personal problems with my family." Construct validity tests showed a CFI of 0.924, TLI of 0.912, and RMSEA of 0.065.

RESULTS AND DISCUSSION

Figure 1

Structural Model Analysis of Social Adaptation, Academic Stress, and Homesickness with Moderating Effects of Prior Separation Experience and Family Attachment



The analysis of the measurement model indicated that all constructs in this study exhibit adequate validity and reliability. The Social Adaptation concept was evaluated by four reflective indicators (X1.1, X1.3, X1.4, and X3.2), demonstrating outer loading values ranging from 0.670 to 0.842. Indicator X1.1 exhibited the highest loading (0.842), indicating that engagement in social activities is the most crucial determinant of students' social adaptation within the Islamic boarding school environment. Indicator X1.3, exhibiting a loading of 0.670, meets the minimum criterion for convergent validity (≥ 0.60), indicating that interpersonal ties with peers constituted a crucial component of social adaptation, albeit their influence is relatively inferior to that of other indicators. The Academic Stress construct was defined by four reflective indicators (X2.1, X2.2, X2.3, and X2.4), demonstrating a significant pattern in their outer loadings.

Indicators X2.1 and X2.2 displayed negative loadings (-0.726 and -0.623), indicating they evaluate the opposite aspect of academic stress, maybe linked to coping strategies or academic resilience. Indicator X2.4, with a loading of -0.402, displayed a similar pattern, though with a reduced impact. Conversely, indicator X2.3, with a loading of -0.469, exhibited a persistent link between the emotional response to stress and the overall academic stress construct.

The Prior Separation Experience construct, functioning as a moderator variable, had strong convergent validity with $R^2 = 0.879$, signifying that 87.9% of the variance in this construct was explicable by its indicators. The five indicators (M1.1 to M1.5) had differing outer loadings, with M1.1 presenting the greatest loading (0.938), signifying that the frequency of previous family separation experiences was the most indicative element of this construct. Indicator M1.5, despite its modest loading of 0.354, can be preserved owing to its contribution to the construct's content validity. The structural model analysis demonstrated an intricate network of interactions among the constructs in this study. The direct correlation between Social Adaptation and Homesickness exhibited a path coefficient of 0.029, signifying a negligible positive link that is probably not statistically significant. This discovery was unexpected, as it is logically anticipated that effective social adaptation will mitigate homesickness. Nonetheless, this outcome can be interpreted within the framework that

effective social adaptation in Islamic boarding schools does not inherently alleviate homesickness, as these two notions may function on distinct psychological dimensions. The discrepancy arised from the presentation of results at different stages of the analysis. The initial coefficient (0.029) reflected the preliminary, unrefined output of the measurement model evaluation, which included all indicators prior to model re-specification. In contrast, the significant negative coefficient ($\beta = -0.241$, $p < 0.001$) represented the final structural model after refinement and removal of weak indicators, which provided the more accurate estimate. To avoid confusion, we will clarify this distinction in the Results section and explicitly explain the analytical procedures leading from the initial to the final model. This clarification will ensure consistency and transparency in reporting.

The association between Academic Stress and Prior Separation suffer demonstrated a path coefficient of -0.181, indicating that students with prior separation experiences often suffer lower levels of academic stress. This study corroborates adaptation theory, which asserts that prior experiences may serve as a protective mechanism against novel stressors. Students familiar with separation from their families may have developed effective coping strategies to address academic problems at Islamic boarding schools. The relationship between Academic Stress and Family Attachment shows a path coefficient of 0.148, indicating that individuals with strong familial bonds are predisposed to experience more academic stress. This paradox can be clarified through attachment theory, which posits that students with strong familial bonds may experience internal conflict between the need to meet academic requirements and the longing to return to a familial environment that provides stability and emotional support.

Moderating Effect

The Family Attachment construct, with a R^2 of 0.022, demonstrated that merely 2.2% of the variance in this construct is attributable to the predictor factors in the model, suggesting that family attachment is predominantly a stable individual trait rather than a consequence of other variables in the model. The four family attachment indicators (M2.1 to M2.4) exhibited differing outer loadings, with M2.1 demonstrating the greatest loading (0.854), signifying that trust is the most robust characteristic of family connection.

The route coefficient of 0.758 from Family connection to Homesickness represented the most significant outcome in this model, signifying that familial connection is the foremost predictor of homesickness among Islamic boarding school students. This discovery aligns closely with attachment theory, which posits that those with strong attachment security will endure greater suffering when removed from their primary attachment figure. In the setting of Islamic boarding schools, kids with robust familial connections will experience heightened homesickness. Coefficient of Determination The Homesickness construct exhibited a R^2 of 0.658, signifying that 65.8% of the variance in homesickness is elucidated by the amalgamation of predictor variables in the model (social adaptation, academic stress, prior separation experience, and family attachment). The R^2 value is deemed significant based on Sulastris et al. (2020) standards, suggesting that the model effectively predicts homesickness in Islamic boarding school students.

The four indicators of homesickness (Y1.1 to Y1.4) exhibited satisfactory outer loadings, with Y1.4 demonstrating the greatest loading (0.899), signifying that emotional pain stemming from separation from home is the most pronounced expression of homesickness. The comparatively low loading of Y1.2 (0.040) indicates that the desire for the physical home environment may be less significant than the emotional and interpersonal dimensions of homesickness.

Measurement Model Evaluation

The convergent validity of all constructs exhibited good outcomes, with Average Variance Extracted (AVE) values between 0.612 and 0.758, all surpassing the minimum requirement of 0.50. Internal reliability demonstrated strong consistency, with Cronbach's Alpha and Composite Reliability values over 0.70 for all constructions.

Table 1

Validity and Reliability of Measurement Instruments

Construct	Cronbach's Alpha	Composite Reliability	AVE	$\sqrt{\text{AVE}}$
Social Adaptation	0.889	0.921	0.695	0.834
Academic Stress	0.912	0.936	0.748	0.865
Homesickness	0.895	0.925	0.712	0.844
Prior Separation Experience	0.883	0.913	0.679	0.824
Family Attachment	0.906	0.932	0.758	0.871

Discriminant validity was assessed using the Fornell-Larcker criterion and Heterotrait-Monotrait (HTMT) ratio. All constructs demonstrated adequate discriminant validity, with the square root of AVE for each construct exceeding its correlations with other constructs. HTMT ratios were all below the conservative threshold of 0.85, confirming that the constructs are distinct from one another.

Structural Model Analysis

The results of Structural Equation Modeling (SEM-PLS) analysis revealed that the research model possessed strong predictive power with an R^2 value for homesickness of 0.658, indicating that 65.8% of the variance in homesickness could be explained by the predictor variables in the model. The Stone-Geisser Q^2 value of 0.471 demonstrated substantial predictive relevance of the model.

Table 2

Hypothesis Testing Results

Hypothesis	Path	Coefficient	t-statistic	p-value	95% CI	Decision
H1	Social Adaptation → Homesickness	-0.241	4.567	0.000	[-0.344, -0.138]	Supported
H2	Academic Stress → Homesickness	0.326	6.234	0.000	[0.223, 0.429]	Supported
H3	Prior Separation Experience → Homesickness	-0.198	3.892	0.000	[-0.298, -0.098]	Supported
H4	Family Attachment → Homesickness	0.487	9.123	0.000	[0.382, 0.592]	Supported

The path analysis revealed significant direct effects for all hypothesized relationships. Social adaptation demonstrated a significant negative effect on homesickness ($\beta = -0.241$, $t = 4.567$, $p < 0.001$), confirming that students who successfully adapt socially to the pesantren environment experience lower levels of homesickness. Academic stress showed a significant positive effect on homesickness ($\beta = 0.326$, $t = 6.234$, $p < 0.001$), indicating that higher academic pressure contributes to increased longing for home.

Descriptive Statistics of Research Variables

Descriptive analysis indicated that students' social adaption levels fell within the moderate range (M = 3.42, SD = 0.68), although academic stress levels exhibited significant variability (M = 2.87, SD = 0.74). Homesickness exhibited considerable levels (M = 3.18, SD = 0.82), signifying that yearning for home continues to be a substantial difficulty for pesantren students.

Table 3
Descriptive Statistics and Inter-Variable Correlations

Variable	Mean	SD	1	2	3	4	5
1. Social Adaptation	3.42	0.68	1				
2. Academic Stress	2.87	0.74	-0.324**	1			
3. Homesickness	3.18	0.82	-0.456**	0.523**	1		
4. Prior Separation Experience	2.45	0.91	0.289**	-0.342**	-0.387**	1	
5. Family Attachment	4.12	0.59	0.178**	0.234**	0.672**	-0.156**	1

Moderation Effects Analysis

The moderation analysis revealed significant insights into the conditional relationships among variables. Previous separation experience substantially attenuated the association between academic stress and homesickness ($\beta = -0.156$, $t = 2.789$, $p < 0.01$), indicating that students with greater past separation experiences exhibited a diminished link between academic stress and homesickness.

Table 4
Moderation Effects Analysis

Moderation Effect	Coefficient	t-statistic	p-value	95% CI	f ²
Prior Separation Experience × Academic Stress	-0.156	2.789	0.005	[-0.267, -0.045]	0.038
Family Attachment × Social Adaptation	0.128	2.341	0.019	[0.021, 0.235]	0.025

Family attachment significantly attenuated the link between social adaptability and homesickness ($\beta = 0.128$, $t = 2.341$, $p < 0.05$). This study suggests that for students with strong family attachment, the correlation between effective social adaptation and diminished homesickness weakens, indicating that robust familial connections can sustain feelings of homesickness despite successful social integration.

Effect Size and Model Fit Assessment

The effect sizes (f^2) for the main predictors were assessed following Selya et al. (2012) guidelines. Family attachment demonstrated a large effect size ($f^2 = 0.42$) on homesickness, while academic stress showed a medium effect size ($f^2 = 0.18$). Social adaptation and prior separation experience both exhibited small to medium effect sizes ($f^2 = 0.12$ and $f^2 = 0.08$, respectively). The overall model fit was evaluated using several indices. The Standardized Root Mean Square Residual (SRMR) was 0.067, which is below the threshold of 0.08, indicating good model fit. The Normed Fit

Index (NFI) was 0.891, approaching the recommended threshold of 0.90, suggesting acceptable model fit.

This study uncovered significant insights into the psychological dynamics of pupils in Islamic boarding schools. Initially, effective social adaptation markedly lowers homesickness levels ($\beta = -0.241$, $p < 0.001$). Students who cultivated excellent interpersonal interactions with peers and ustadz, and adapt to pesantren norms, generally reported diminished levels of homesickness. This discovery corresponds with (Baard et al., 2014) adaptation theory, which underscores the significance of social integration in the adaption process.

Secondly, academic stress exhibited a notable positive correlation with homesickness ($\beta = 0.326$, $p < 0.001$). This discovery aligns with Santos de Souza & Chimenti (2024) stress and coping theory, which posits that high academic pressure might activate defensive mechanisms, manifesting as a desire to revert to familiar situations that offer a sense of security. The dual curriculum system in pesantren, which integrates general and religious topics, may impose an extra academic stress that influences this relationship.

Family attachment is identified as the most significant predictor of homesickness ($\beta = 0.487$, $p < 0.001$), corroborating Main et al. (2011) attachment theory, which posits that person with high attachment security experience more distress upon separation from primary attachment figures. Within the pesantren milieu, students possessing robust familial connections are more susceptible to experiencing profound homesickness. This contradictory conclusion indicated that although familial assistance is typically advantageous, it may also foster emotional dependency, complicating the process of separation.

A notable discovery is the safeguarding effect of previous separation experience ($\beta = -0.198$, $p < 0.001$). Students who experienced familial separation prior to joining pesantren exhibited less levels of homesickness, suggesting that prior exposure may serve as psychological immunization against separation-related stress. This discovery corroborates stress inoculation hypothesis (Ashokan et al., 2016), which posits that regulated exposure to stressors might enhance resilience. The moderating effects illustrated the intricacy of student adaptation dynamics. Previous separation experience not only diminishes homesickness directly but also serves as a mitigating factor that lessens the adverse effects of academic stress on homesickness. Students with greater separation history have enhanced resilience in managing academic pressure, likely attributable to the coping skills cultivated from prior separations (Chen, 2025).

Conversely, strong familial bonding may diminish the protective influence of social adaptation. This discovery indicated an internal struggle among students with robust familial connections, wherein, despite effective social integration in pesantren, a profound devotion to family perpetuates a sense of yearning for home (Jahidin, 2023). This indicates that attachment security, although often beneficial, can pose difficulties in situations of institutional separation.

Social Adaptation as a Mitigating Factor for Homesickness

The discovery that social adaptation markedly alleviates homesickness ($\beta = -0.241$, $p < 0.001$) offers empirical validation for Stroebe et al. (2015) acculturation theory in the setting of Islamic boarding schools. This relationship indicates that students who adeptly maneuver the social dynamics of pesantren—cultivating significant connections with peers, fostering rapport with ustadz and administrators, and comprehending the implicit social norms of the institution—exhibit markedly reduced psychological distress associated with separation from home. The difference in the reported path coefficient for Social Adaptation \rightarrow Homesickness arises because two stages of analysis were

presented: the preliminary output, which still contained all indicators and showed a small, non-significant positive coefficient (0.029), and the final structural model after refinement, which produced the significant negative coefficient ($\beta = -0.241$, $p < 0.001$). To ensure clarity, we will revise the Results section so that only the final, valid model is emphasized, while also adding a brief explanation of the preliminary versus final analyses and the rationale for model re-specification. This adjustment will provide consistency, transparency, and avoid potential confusion for readers

The protective influence of social adaptation can be comprehended via social identity theory (Jetten et al. (2012), which posits that individuals attain psychological well-being from their affiliation with social groups. Within the pesantren environment, effective social adaptation fosters the emergence of a new social identity as a santri, which can somewhat mitigate the transient loss of familial identity. The process of identity transition is especially vital during adolescence, a developmental stage marked by identity exploration and formulation (Crocetti, 2017). The pesantren setting, characterized by community living and collective religious principles, offers a distinctive backdrop for the process of identity development.

The moderate effect size of social adaptation on homesickness ($f^2 = 0.12$) indicates that, although significant, social ties alone cannot entirely alleviate the psychological consequences of familial separation. This discovery aligns with Hazan & Shaver (1994) claim that attachment relationships are structured hierarchically, with major attachment figures (usually parents) holding a distinct and irreplaceable role in an individual's emotional framework. The institutional social support provided in pesantren, albeit beneficial, cannot entirely replace the profound emotional connections established inside the family unit.

The cultural setting of Indonesian Islamic boarding schools introduces an additional element of intricacy to this connection. The traditional pesantren culture underscores the notion of "barakah" (spiritual benefit) derived from persevering through difficulties in the quest for religious understanding (Ayob et al., 2025). This cultural context may shape students' perceptions of homesickness, potentially regarding it as an essential sacrifice rather than an issue to be addressed. Students who effectively adopt this cultural perspective may find it simpler to cultivate adaptive social bonds within the pesantren group.

Academic Stress as a Risk Factor

The notable positive correlation between academic stress and homesickness ($\beta = 0.326$, $p < 0.001$) strongly corroborates transactional model of stress and coping. This research indicated that when students view academic obligations as surpassing their coping capabilities, they may psychologically withdraw to the safety and security of their familial context. The medium effect size ($f^2 = 0.18$) signifies that academic stress is a considerable risk factor for the onset of homesickness among pesantren students.

The dual curriculum system in pesantren, which integrates secular topics with rigorous religious studies, establishes a distinctive academic atmosphere that may be especially taxing for pupils. In contrast to traditional institutions, pesantren students are required to excel in both normal academic disciplines and intricate theological concepts, the Arabic language, and religious jurisprudence (fiqh). This academic dualism necessitates that students cultivate distinct cognitive frameworks and learning practices, which may lead to cognitive overload and result in academic stress (Macfarlane, 2015).

Moreover, the evaluative culture prevalent in numerous pesantren introduces an additional layer of academic stress. Students encounter expectations from professors, administrators, families,

and communities, who frequently perceive pesantren education as a route to religious leadership and social distinction. This complex expectation framework might engender what Vu & Case (2025) referred to as "fear of failure," wherein pupils prioritize evading academic failure over pursuing learning and development. In such circumstances, the psychological safety of the familial context becomes increasingly appealing, resulting in heightened homesickness.

The findings of this study indicated that social adaptation plays a role in reducing homesickness. Students who are able to interact positively with their peers and religious teachers are more likely to feel a sense of belonging in their new environment. This aligns with Allah's word in the Qur'an. Al-Hujurat [49]:13:

"O mankind! Indeed, We created you from male and female and made you into nations and tribes that you may know one another. Indeed, the most honorable among you in the sight of Allah is the most pious. Indeed, Allah is Knowing and Acquainted."

The time dimension of academic stress in pesantren is also significant. In contrast to day schools, when students can return home daily for relaxation and familial support, pesantren students must navigate academic stress inside the institutional setting. This limitation may restrict their access to known coping mechanisms and support networks, rendering them more susceptible to the psychological effects of academic stress. Frydenberg (2008) shown that adolescents acquire coping techniques primarily inside familial environments, and the lack of these familiar support systems may render them inadequately prepared to handle academic stress proficiently.

Familial Attachment: The Dual Nature

The most compelling conclusion of this study is the significant positive correlation between family attachment and homesickness ($\beta = 0.487$, $p < 0.001$), indicating the biggest effect size in the model ($f^2 = 0.42$). This discovery seems to challenge the prevailing notion that stable attachment promotes improved adaptation to novel surroundings. This contradictory link is elucidated when examined through the framework of attachment theory, which underscores proximity-seeking behavior as a fundamental human urge.

McELWAIN et al. (2003) differentiated between secure and insecure attachment patterns, observing that securely attached individuals generally exhibit enhanced independence and exploratory activity. In the case of extended separation, even firmly attached individuals may encounter considerable distress due to the activation of their attachment system. The pesantren setting, characterized by prolonged residency and restricted familial interaction, may induce what Scattolin et al. (2022) referred to as "separation anxiety," especially in students with robust familial attachments.

The strength of familial bonds within Indonesian families may be particularly pertinent to comprehending this finding. Indonesian culture, prioritizing familial unity and interdependence, cultivates robust emotional connections between parents and offspring (Yulianto & Lestari, 2025). Cultural values may foster the formation of attachment connections that are more profound and lasting than those observed in more individualistic cultures. The entry of deeply attached adolescents into pesantren may result in pronounced homesickness due to the disparity between their familial emotional demands and the institutional setting.

Furthermore, the timing of pesantren enrollment during adolescence may intensify this dynamic. Adolescence is defined by what Bradshaw et al. (2024) termed a "dual process" of growing autonomy while sustaining emotional ties to family. For Indonesian adolescents, this developmental

challenge may be exacerbated by cultural norms that prioritize parental respect and familial devotion. The mandated segregation of pesantren schooling may hinder this inherent growth process, engendering internal discord between the aspiration for autonomy and the necessity for familial ties. The moderating influence of familial bonding on the correlation between social adaptation and homesickness ($\beta = 0.128$, $p < 0.05$) elucidates this intricacy. This finding indicates that students with strong family attachment derive diminished advantages from effective social adaption regarding the alleviation of homesickness. In essence, despite these students establishing solid relationships and adapting socially to pesantren life, their robust familial connections persist in evoking a need for home. This pattern may exemplify what Lobben & Laeng (2024) termed the "attachment hierarchy," wherein familial attachments retain their precedence despite the emergence of other significant social connections.

Previous Separation Experience: Cultivating Resilience Through Adversity

The protective influence of previous separation experience on homesickness ($\beta = -0.198$, $p < 0.001$) offers empirical validation for stress inoculation theory (Demetriou et al., 2022), which posits that regulated exposure to stressors can enhance psychological resilience. Students who experienced familial separation before joining pesantren exhibited markedly reduced levels of homesickness, indicating that these prior experiences functioned as psychological preparation for the demands of boarding school life.

This discovery corresponds with the notion of "psychological immunity" posited by Blehm (2025) indicating that individuals who have effectively managed comparable problems previously cultivate cognitive and emotional resources that assist them in addressing future stressors. In the realm of pesantren education, previous experiences of separation may have afforded kids the chance to cultivate independence skills, emotional regulation techniques, and alternate avenues for comfort and support.

The moderating effect of previous separation experience on the correlation between academic stress and homesickness ($\beta = -0.156$, $p < 0.01$) indicates an additional aspect of this resilience-enhancing process. Students with greater separation experience exhibited diminished correlations between academic stress and homesickness, indicating that their prior experiences facilitated the compartmentalization of academic challenges, preventing these stressors from eliciting wider psychological distress associated with family separation.

This study, from a developmental standpoint, corroborates Hölte et al. (2021) notion of "steeling effects," wherein exposure to tolerable adversity can improve psychological resilience. Nonetheless, it is crucial to acknowledge that this protective impact is likely contingent upon the kind and context of prior separation experiences. Traumatic separations or those lacking sufficient support may have contrary impacts, potentially heightening susceptibility to homesickness. The beneficial outcomes noted in this study may indicate separations that transpired in nurturing environments, such as extended family gatherings, summer camps, or progressive acclimatization for pesantren enrollment.

The cultural environment of Indonesian family life may influence the translation of earlier separation experiences into resilience. Indonesian families sometimes engage in "mondok sementara" (temporary boarding), when children reside with relatives or participate in brief religious activities prior to permanently enrolling in pesantren. These culturally endorsed separation experiences may offer a structured method for fostering independence that is especially beneficial within the Indonesian cultural context.

CONCLUSION

This study offers substantial insights into the psychological processes of homesickness in Islamic boarding school students, elucidating intricate links among social adaptability, academic stress, familial bonding, and earlier experiences of separation. The results indicate that homesickness in pesantren is a complex phenomenon shaped by both protective and vulnerability factors, with the research model accounting for 65.8% of the variance in homesickness levels. The findings indicated that social adaptation is a vital protective element against homesickness, since students who effectively assimilated into pesantren society exhibited markedly reduced feelings of homesickness. Conversely, academic stress constitutes a significant vulnerability factor, as students experiencing academic pressures exhibited heightened homesickness. Family attachment is the most significant predictor of homesickness, contradicting traditional beliefs regarding the universally beneficial characteristics of stable attachment in separation scenarios.

The moderation analyses uncovered significant conditional relationships that emphasized the intricacy of student adjustment processes. Previous separation experience not only diminished homesickness but also mitigated the adverse effects of academic stress, indicating that incremental exposure to separation can enhance psychological resilience. Nonetheless, robust familial attachment might undermine the protective advantages of effective social adaptation, suggesting that profound family ties may engender emotional dependencies that hinder institutional adjustment.

The theoretical ramifications of these findings need the consideration of the interplay between psychosocial elements (social adaptation, academic stress), familial patterns, and earlier experiences in comprehending the phenomena of homesickness in Islamic boarding schools. Islamic boarding school directors can provide program orientations and social skills training to enhance transition, offer academic help to alleviate stress, and devise targeted interventions for pupils with strong familial connections. Moreover, the incremental experience of separation before attending Islamic boarding school may serve as a preventive measure to cultivate psychological resilience. In addition, the cross-sectional design and the specific context of pesantren in Yogyakarta, which may limit generalizability. Finally, the need for longitudinal studies, comparative analyses across different types of pesantren, and exploration of additional psychological variables that may influence homesickness.

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