Predicting Santri Engagement by Attachment to Caregiver

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Abstract

This study explores the predictive relationship between santri (students in Islamic boarding schools, pesantren) engagement and their attachment to caregivers. Drawing upon a sample of 99 santris (65 males and 34 females, aged 10 to 20 years; M = 15.75, SD = 2.16), this research employs convenience sampling and sophisticated questionnaire analysis. Applying the graded response model (GRM) for calibration, the study precisely estimated the santris' scale scores of engagements and attachment, which were subsequently analyzed through regression to examine the predictive capacity of attachment to the caregiver on student engagement. Results indicated a significant relationship (b=0.43, p<0.01), emphasizing the importance of attachment to caregivers in predicting santri engagement within the pesantren context. The application of GRM enhanced the precision of scaling attachment and engagement. It bolstered the regression analysis's validity, confirming the hypothesis that caregiver attachment can reliably predict student engagement in boarding school settings. These findings suggest that pesantren should prioritize caregiver attachment strategies to improve student engagement and overall educational success.

Keywords*: attachment to caregiver, engagement, santri*

1. INTRODUCTION

Engagement is a psychological attribute that delivers a wide range of student academic success and has been recognized by many researchers (e.g., Nkomo et al., 2021; Salmela-Aro et al., 2021; Wang & Hofkens, 2020). According to Ridho (2023, 2024), engagement in the context of education is "*the drive, intention, and positive evaluation of studies at boarding schools to achieve a healthy mental state.*" By having a high engagement, students find it easier to develop their potential, undergo the educational process well, and obtain satisfactory results (Soffer & Cohen, 2019).

It is essential to research the factors influencing students' engagement in pesantren (Islamic boarding schools) to understand these institutions' unique educational and social dynamics. These institutions are fundamental to young Muslims' moral, spiritual, and academic development (Jaenullah & Sudadi, 2018). However, significant challenges must be overcome to enhance student engagement in pesantren. Many students experience a sense of detachment and disengagement in the general boarding school context (Blau & Blau, 2019), which is also specific to the Indonesian traditional Islamic boarding schools (Karimah et al., 2021), which can harm their academic performance and overall wellbeing (Luta et al., 2021). This problem is compounded by the rigid structure and traditional approaches often used in these schools (Sulthon et al., 2023), which may not adequately address students' emotional and psychological needs. Understanding the impact of attachment with caregivers on student engagement can provide valuable insights into fostering supportive and nurturing environments that promote academic success and personal growth. This research is critical as it can inform policies and practices that can improve educational experiences and outcomes for students, ensuring they are better prepared for their future roles in society.

As students, an engaged santri appears eager to participate in learning, enthusiastically discussing material or concepts that need clarification with caregivers or friends (Van Ryzin & Roseth, 2020), working on their obligations enthusiastically (García-Rodríguez et al., 2023), and directing the priority of thought, emotional, and social resources for educational success (Mahoney et al., 2021). Along with the importance of engagement, santri needs to develop personal resources to keep them engaged with all activities in boarding schools and help them achieve their learning goals while achieving psychological wellbeing.

Studies on student engagement in boarding schools still need to be expanded, so researchers have a limited range of information. One of the well-known boarding school models is a boarding school. Boarding school is an old traditional educational institution (Hefner, 2011; Lukens-Bull, 2010). Since students spend almost all of their time in dormitories in this educational model, a sense of security and environmental support is more important than in regular educational institutions (Martin et al., 2016).

Given that recent studies have shown student engagement to be associated with academic stress (Azmi, 2024) and self-efficacy (Agustina & Rusmawati, 2022; Fachmi, 2022), this study contributes to complement the research on student engagement in boarding schools. In addition to the scarcity of research addressing engagement in the context of life in boarding schools, our study introduces methodological innovations. We applied Samejima's (1997) Graded Response Model (GRM) from an Item Response Theory (IRT) perspective to scale Engagement and Attachment before conducting regression analysis.

Santri Engagement and Their Attachment to Caregivers
Pesantren has distinctive characteristics compared to general education, including being Kiai-centered. A Kiai has the most central role in pesantren as a role model, a reference when there is a problem, and the main inspiration for students. Because of the Kiai's central role, pesantren in the past were known as primordial-traditional educational institutions. Although the culture is still centred on Kiai as the primary role model (Karim et al., 2023), recently, pesantren have been moving slowly from traditional management to modern management, thus slowly improving the quality of pesantren over time (Rohman et al., 2023).

Caregivers play a central role in boarding schools in fostering students' sense of security and comfort. Concerning the roles of 'Kyai' and caregivers, as described by Karim et al. (2023), one aspect of pesantren management that is still maintained today includes the presence of caregivers. Caregivers directly accompany students in pesantren, a kind of mentor. Each caregiver is responsible for accompanying several students so that the implementation and activities that the pesantren has programmed can be followed by students optimally. Therefore, intensive interaction with students occurs, and caregivers have the opportunity to encourage the creation of a sense of meaning and security for students (Yaqin et al., 2024).

Although students likely support each other socially and emotionally (Li et al., 2023), not all problems can be solved only by working together between students. Often, students need help or support from institutional authorities, which caregivers or companions can play. Student attachment to caregivers will positively impact student engagement in education (Ahmed et al., 2018; Romano et al., 2021); the more attached to the caregiver, the more engaged students are because students can openly discuss academic and personal problems with caregivers. The sense of security and meaning built from a harmonious relationship between students and caregivers supports students' engagement in their activities at the boarding school. If caregivers and students can develop a familiar and close relationship, it will create a sense of security in students. A secure

sense of attachment tends to make students mentally and socially supported, allowing them to be more engaged (Hart et al., 2015; Havik & Westergård, 2020). Thus, attention to the extent to which students can be attached to caregivers needs to get the attention of pesantren.

The attachment between students and caregivers in boarding schools plays a crucial role in encouraging students to engage and achieve. As Byrne et al. (2017) argued, student attachment figures can encourage realizing a sense of security for students through close relationships; conversely, low attachment triggers student burnout and drop-out (Bumbacco & Scharfe, 2020). Students in this situation need support to avoid insecurity (Humphreys, 2020). Caregivers' emotional support helps students overcome challenges, doubts, and difficulties (Hanafi et al., 2021). Students' closeness to caregivers makes them feel that they have a reliable and supportive figure who can help them cope with the uncertainties and pressures of daily life. Caregivers' affection becomes the foundation for positive development, resulting in more confident and motivated individuals contributing positively within the boarding school environment. Santris feels emotionally connected to caregivers and is more motivated to learn and participate in educational activities. Close attachment allows caregivers to provide moral guidance and religious values, helping Santri develop positive and responsible attitudes. In addition, caregivers can be a source of practical support, such as assisting in completing tasks, providing advice related to daily problems, and providing guidance in decision-making.

Being close to a caregiver also reduces the sense of loneliness and loss, creating an atmosphere similar to that of a family, where Santri feels they have a place they call "home." With emotional security and support from caregivers, santri tend to be better able to form healthy social relationships with fellow santri. It can improve the social atmosphere (Martinez-Fuentes et al., 2021) in boarding schools and contribute to shared happiness. Therefore, with strong attachments between students and caregivers, boarding schools can be an environment that supports students' holistic growth spiritually, emotionally, and academically. The security, support, and sense of acceptance provided by this attachment help students undergo activities at the boarding school in an engaged and productive manner.

Considering the previous arguments, the author argues that students' attachment to caregivers will encourage student engagement in boarding school's educational process to grow and develop well. So, the author hypothesizes: "Attachment to caregivers contributes positively to student engagement."

2. METHODS
2.1. Participants
The study involved 99 Santris (65 males and 34 females) living and studying at the boarding school, selected based on convenience sampling. These participants voluntarily engaged in the research process. The student was 10 to 20 years old, with a mean of 15.75 years and a standard deviation of 2.16 years.

2.2. Instruments
The Attachment Scale consists of 24 items designed to measure the student's level and nature of attachment. The scale reveals the dimensions of communication, trust, and alienation, which are essential in forming attachments in a boarding education environment. This scale is based on the frameworks created by Armsden and Greenberg (1987), Gallarin and Alonso-Arbiol (2013), and Pinquart (2023), which are adapted for use in the context of pesantren. Next, to measure Santri's engagement, a 19-item scale covering cognitive, behavioural, and social dimensions was used.

This scale is based on recent research on engagement (Ridho, 2023, 2024), adapted and applied in a permanent environment.

All participating students received a consent form before participating in the survey. This form explained in detail the purpose of the study, the nature of their participation, the guarantee of confidentiality, and the voluntary nature of their involvement. The students needed to understand their rights, including the ability to withdraw from their studies without any consequences. The survey was conducted in a controlled environment within the pesantren. Care was taken to ensure that the environment was conducive to providing thoughtful and honest responses, free from distractions or potential influence from peers or staff.

2.3. Analysis Data

In the data analysis process, participants were not scored by summing up the total score, but their responses were calibrated by applying the graded response model (GRM, Ferrando & Navarro-González, 2021; Samejima, 1997) to scale the choices on each scale statement (1: Strongly Disagree, 2: Disagree, 3: Agree, 4: Strongly Agree). Since the total score does not consider the weight of the content of the statement items in the questionnaire with the assumption that each statement item has an equal contribution in exploring the measured attributes that are the variables in the study (McNeish & Wolf, 2020), through GRM, each item has its contribution weight that reveals engagement and attachment. Furthermore, we used GRM to obtain a more accurate estimate of the magnitude of each participant's attributes/ proficiency. Measurement accuracy on these two variables is essential so that scale scores truly reflect attribute scores. In other words, through GRM, the contribution weight of each item is considered so that measurement bias becomes smaller.

Following the GRM scaling process, the next step of data analysis is to analyze it more profoundly using regression analysis, where the engagement score is regressed on the attachment score. This step is crucial to determine the magnitude of the contribution between attachment to Santri engagement in the context of pesantren.

3. RESULTS

The descriptive statistical analysis of this study provides a basic understanding of the variables of attachment and engagement among the santris. As expected, the standardizing of the scores resulted in a mean of zero for both variables, given the methodological approach of centring the scores around a common point to facilitate comparison and interpretation between the two measures in this study.

Table 1 presents the descriptive statistics of the attachment and engagement scaling results. For attachment, the standard deviation (SD) of 0.95 reflects moderate variability in the students' attachment level. It indicates a diverse experience of attachment within the santri population. The range of scores is quite extensive, from -2.28 to 1.68, which indicates significant breadth in the data, capturing a broad spectrum of attachment experiences from low to high. The skewness coefficient, at only 0.14, indicates a largely symmetrical distribution, with a slight skew towards higher attachment levels. The kurtosis value of -0.51, while indicating a slightly less peaked distribution than a normal curve, does not indicate a problematic level of flatness. It is further reinforced by the standard error (SE) of 0.1, underscoring the stability of the mean attachment score as a metric representative of the sample.

Table 1.
Descriptive Statistics

	M	SD	Min	Max	Skew	Kurt
Attachment to Caregivers	0	0.95	-2.28	1.68	0.14	-0.51
Santri Engagement	0	0.91	-1.89	1.28	-0.3	-0.96

Note. M = Mean, SD = Standard Deviation; Min = Minimum; Max = Maximum; Skew = Skewness; Kurt = Kurtosis

The engagement score, with an SD of 0.91, shows a similar level of spread to attachment. Scores ranged from -1.89 to 1.28, presenting a slightly narrower scope of engagement levels but still reflecting considerable diversity in how students engage with their boarding school environment. The skewness of -0.3 indicates a modest tendency of the distribution to gravitate towards lower engagement scores. In addition, the kurtosis of -0.96 indicates a flatter distribution, which indicates a more uniform spread of engagement scores across the sample. This more balanced distribution, as evidenced by kurtosis, implies the rarity of outliers, which may facilitate a more straightforward interpretation for further analysis. The SE of 0.09 for engagement validates the accuracy of the mean score as a parameter of central tendency for this variable.

This descriptive measure offers a comprehensive statistical portrait of the construct under study. The descriptive information of the attachment and engagement scores builds a strong foundation for subsequent inferential analyses to explain the relationship and potential predictive power between the attachment of santri to their caregivers and their engagement within the pesantren environment. This study presents the central tendency and dispersion alongside the correlation between the two variables to better understand the distribution of attachment and engagement among the santri. The calculated means for attachment and engagement are aligned with the expectation of zero, a direct result of the GRM scaling adopted in this study. The standard deviations for attachment (SD = 0.95) and engagement (SD = 0.91) showed close symmetry in the dispersion of responses, indicating a uniform distribution of attachment and engagement scores among participants.

An essential component of the results is the moderate positive correlation between attachment and engagement, with a moderate value of 0.45. This number is not just an estimate. However, it is contextualized within the 95% confidence interval [.26, .60]. The lower bound of this interval, .26, indicates a moderately positive relationship, while the upper bound, .60, indicates a stronger relationship. This range ensures that the observed correlation is statistically significant and not derived from random chance in the sample.

Table 2.
Regression Analysis Summary

Predictor	b	b 95% CI	β	β 95% CI	Fit
(Intercept)	-.00	[-,16; .16]			
Kelekatan	.43**	[,26; .60]	.45	[.27, .63]	
					adj R² = .19**
					95% CI[,07; ,33]

Note. A significant *b*-weight indicates that the *β*-weight is also significant. *b* represents unstandardized regression weights. *β* indicates the standardized regression weights.
* Indicates *p* < .05. ** indicates *p* < .01.

The positive correlation ($\beta = .45$) implies that higher levels of attachment among the Santris are systematically associated with increased levels of engagement. This relationship is supported by the confidence intervals, which are all above zero, confirming the positive direction of this relationship with a high degree of probability. This finding strengthens the evidence of the hypothesized relationship that attachment to caregivers, as measured in this study, can play an essential role in influencing santri engagement as their educational and social endeavours in pesantren.

Next, the regression analysis results provide more explicit information about the contribution of attachment to engagement among the santris, which allows us to understand the predictive power of attachment to engagement. This Ordinary Least Squares (OLS) linear regression model involves 99 observations, corresponding to the number of participants in this study.

The regression model fit index $F(1, 97) = 24.12$, and $p < .01$ can be interpreted as rejecting the null hypothesis that attachment does not predict engagement. This robust model fit is also supported by the R^2 value of .20, which indicates that the variance in attachment scores can explain 20% of the variance in engagement scores. The adjusted R^2 value of .19 is very close to the R^2 value, which indicates that the loss of predictive power is negligible when adjusting for the number of predictors in the model.

The regression coefficients, namely the intercepts and regression coefficients, provide a clearer picture of the interpretation of the regression results. The intercept, essentially the predicted value of engagement when attachment is zero, was estimated at -.00, with a standard error (S.E.) of .08. The t-value for the intercept is -.00, leading to a p-value of 1.00, which is expected given the standardization of scores to a mean of zero.

The regression coefficient for attachment was estimated at 0.43, with an S.E. of .09. The t-value of 4.91 for attachment significantly exceeded the critical value typically used to assess statistical significance. With a p-value of $< .01$, this indicates that as attachment increases, there is a corresponding and significant increase in engagement. These results indicate that attachment is a significant predictor of engagement. The positive coefficient for attachment informs that an increase in the level of attachment is associated with an increase in the level of engagement among the students. The large t-value associated with the coefficient of attachment reflects the strength and reliability of this predictor.

4. DISCUSSION

Using the Graded Response Model (GRM) in our study represents a significant methodological advance in measuring attachment and engagement among students in pesantren. This approach allows for a more precise and in-depth understanding of these constructs, ensuring that the measures accurately reflect variations in levels of attachment and engagement among the students. The precision provided by GRM, evidenced in the results section of our study, is critical to understanding the complex dynamics of student life in a pesantren environment.

The positive regression coefficient estimates imply that the data supports the research hypothesis, stating that Santri's attachment to caregivers can predict Santri's engagement. Thus, santri with higher attachment levels will also have higher engagement.

The continuity of these results adequately implies information to relevant parties about the dynamics underlying santri engagement in the pesantren environment. The results of this study also provide a basis for further investigation of the causal mechanisms that can explain this relationship. It leads to interventions that foster stronger attachment and, thus, higher engagement in educational contexts.

The significant regression analysis suggests that while attachment plays a vital role in shaping engagement, other factors also contribute to how students engage with their environment. Based on these results, it is essential to consider the implications for educational practices in pesantren. The findings confirm the benefits of fostering strong attachment relationships, which can increase santri engagement. It can positively impact academic achievement and social integration in the pesantren environment, as found in similar research (Ridho et al., 2023).

As revealed in the results section, the existing literature supports this link between attachment and engagement. This positive relationship corroborates the findings of García-Rodríguez et al. (2023). It aligns with the broader understanding that parenting and attachment experiences can have a lasting impact on relationships and educational outcomes. Nonetheless, Roorda et al. (2021) remind us that while beneficial, attachment must be carefully managed so as not to foster dependency, which can hurt students' school adjustment and autonomy. In addition, Charteris and Page (2021) found the adaptability of attachment and engagement strategies across different educational contexts during the pandemic. It is very relevant for the pesantren environment as an educational institution.

In closing, this study has strengths and weaknesses. This study's advantages are mainly in applying the graded response model (GRM) to obtain precise variable measurement data, compared to just summing the score. In addition, the pesantren context complements the specific context of engagement, which is more widely studied in formal education settings in schools. The participants were drawn from a single pesantren, which represents a limitation of this study. In future research, it would be beneficial to involve more pesantren to enhance the generalizability of the findings.

The significant predictive relationship between attachment and engagement confirms the importance of fostering positive caregiver-student relationships within educational institutions, especially boarding schools such as pesantren. By fostering secure attachment, these institutions increase students' active participation in education and community life, leading to improved academic outcomes and mature personal development. For the subsequent study, one area for improvement is the number of pesantren. Although the sample size content was representative, the participants in the study only came from one pesantren. Therefore, we recommend that future research expand the study to include more than one pesantrens.

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