



The Interaction Between Parent-Child Attachment and the School Social Environment in Predicting Adolescents' Psychosocial Adjustment

Fiktina Vifri Ismiriyam^{1*}, Wulansari²
Ngudi Waluyo University
Corresponding Author: Fiktina Vifri Ismiriyam
fiktinavifriismiriyam@yahoo.co.id

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ABSTRACT

The increasing prevalence of mental health problems among adolescents necessitates a deeper understanding of the protective factors within their developmental ecosystem. This study aimed to examine the role of parent-child attachment and the school social environment as predictors of adolescents' psychosocial adjustment. Using a quantitative correlational approach, the study involved 360 students (10th and 11th grade) from two senior high schools in urban areas selected through stratified random sampling. The research instruments consisted of a parent-child attachment scale, a school social environment scale, and a psychosocial adjustment scale, all of which had been tested for validity and reliability. Data were analyzed using multiple linear regression. The findings revealed that parent-child attachment and the school social environment simultaneously had a significant effect on adolescents' psychosocial adjustment $R^2 = 0.466$, $p < 0.001$. Partially, secure parental attachment provided a stable emotional foundation, while a supportive urban school environment functioned as a buffer against social stressors. These findings underscore the importance of synergy between domestic and institutional roles (the mesosystem) in mitigating mental health risks and supporting successful adolescent identity transitions within complex urban environments.

INTRODUCTION

The rising prevalence of mental health problems among adolescents in the post-pandemic era has become an urgent global crisis. Recent data indicate that anxiety and depressive disorders among adolescents have increased significantly due to social disconnection World Health Organization (2024). The novelty of this study lies in the integration of two major ecosystems—domestic and institutional—in predicting psychosocial adjustment amid increasingly complex shifts in digital interaction. Previous studies have often examined the influence of family and school separately; however, this study investigates how both systems synergistically mitigate mental health risks (Smith & Jones, 2023).

This study is grounded in Urie Bronfenbrenner’s Ecological Systems Theory, which posits that individual development is influenced by interactions across multiple layers of the environment. Adolescents’ psychosocial adjustment is determined by the quality of relationships within the microsystem (family and school) as well as by how the mesosystem (the interaction between parents and schools) functions harmoniously (Bronfenbrenner & Morris, as cited in Garcia et al., 2024).

The participants of this study were 10th- and 11th-grade students because they are in the middle adolescence stage, a critical developmental period characterized by “identity versus role confusion.”

- Grade 10 represents a transition period from junior to senior secondary education that requires high levels of social adaptation.
- Grade 11 is often associated with heightened academic pressure and social expectations regarding future goals and career pathways.

Recent studies suggest that during this developmental phase, adolescents’ neural circuits are highly sensitive to social acceptance; therefore, failures in psychosocial adjustment during this stage are strongly correlated with mental disorders in adulthood (Miller & Davis, 2025). Emotional instability at this age necessitates more consistent systemic support from both parents and schools simultaneously (Li et al., 2023).

Although extensive literature emphasizes that parent–child attachment is a fundamental foundation of mental health, an “ecosystem gap” often emerges when adolescents enter the school social environment. Theoretically, secure attachment provides adolescents with a “secure base” for exploration (John Bowlby, as cited in Thompson, 2024). However, in school settings, adolescents are frequently confronted with peer values and teaching styles that may differ from those practiced at home.

- **Ecosystem Collision:** When schools foster competitive or toxic social environments, the benefits of strong parent–child attachment may diminish (Nguyen & Wang, 2024).
- **Ecosystem Synergy:** Conversely, an inclusive school environment may serve as a protective factor for adolescents who experience less stable attachment at home (Fisher et al., 2023).

This study addresses the gap by empirically examining whether support from one domain can compensate for deficiencies in the other, or whether both domains must function in harmony to predict positive psychosocial adjustment.

Research Hypotheses

Based on the theoretical review and the phenomena described above, the following hypotheses are proposed:

- **H1:** Parent-child attachment X_1 and school social environment X_2 simultaneously have a significant effect on adolescents' psychosocial adjustment Y .
- **H2:** Parent-child attachment partially has a significant effect on psychosocial adjustment.
- **H3:** School social environment partially has a significant effect on psychosocial adjustment.

LITERATURE REVIEW

Adolescents' Psychosocial Adjustment Y

Psychosocial adjustment refers to an individual's capacity to meet psychological and social demands harmoniously, encompassing emotional well-being, social competence, and the ability to adapt to the environment (Thompson, 2024). During adolescence, successful psychosocial adjustment is characterized by low levels of internal distress (such as anxiety) and externalizing behaviors (such as aggressiveness). A recent study by Miller and Davis (2025) emphasized that psychosocial adjustment in contemporary adolescents is strongly influenced by their ability to balance identities in both real and digital environments.

Parent-Child Attachment X_1

Attachment Theory proposed by John Bowlby remains the primary foundation for understanding the parent-child relationship. Attachment refers to a deep emotional bond that provides adolescents with a sense of security or a *secure base*.

- **Dimensions of Attachment:** These include trust, communication, and low levels of alienation (Fisher et al., 2023).
- **Role in Adolescence:** Although adolescents increasingly seek autonomy, secure attachment to parents' functions as a buffer against environmental stressors. Research by Li et al. (2023) demonstrated that adolescents with strong attachment exhibit more stable emotional regulation compared to those who feel alienated from their parents.

School Social Environment X_2

The school social environment is defined as the quality and character of school life that reflect norms, values, and interpersonal relationships among members of the school community (Garcia et al., 2024).

- **Main Components:** These include teacher support, peer relationships, and school belongingness.
- **Social Dynamics:** A supportive school environment creates an ecosystem that protects adolescents from the risks of bullying and social exclusion. According to Nguyen and Wang (2024), adolescents' perceptions of a positive school climate directly contribute to higher self-esteem and stronger academic motivation.

The Interaction Between Parent–Child Attachment and the School Environment from an Ecological Perspective

Based on Urie Bronfenbrenner’s Ecological Systems Theory, psychosocial adjustment does not occur in isolation. There is an interconnection between the family microsystem X₁ and the school microsystem X₂, which together form the mesosystem.

The synergy between support at home and support at school creates consistency in values that facilitates adolescents’ identity formation processes. Conversely, when disconnection occurs – for example, when parents are overly restrictive while schools promote excessive freedom – adolescents may experience role conflict that hinders their psychosocial adjustment (Smith & Jones, 2023).

Table 1. Summary of Research Variables

| Variable | Conceptual Definition | Main Indicators | Primary References |
|---------------------------|---|---|--|
| Psychosocial Adjustment | Adolescents’ ability to adapt emotionally and socially. | Self-regulation, social competence, low levels of deviant behavior. | Thompson (2024); Miller & Davis (2025) |
| Parent–Child Attachment | The quality of the emotional bond between children and parents. | Trust, open communication, low levels of alienation. | Fisher et al. (2023); Li et al. (2023) |
| School Social Environment | The social climate and interpersonal support within the school setting. | Teacher support, peer relationships, school safety. | Garcia et al. (2024); Nguyen & Wang (2024) |

METHODOLOGY

This study employed a quantitative approach with a predictive correlational design. The objective was to examine the extent to which the independent variables could predict the dependent variable without providing any treatment or intervention to the participants.

Data were collected through questionnaires distributed directly in physical form. Participants required approximately 1.5 hours to complete the questionnaire, which consisted of a total of 75 items.

Identification of Variables

1. Dependent Variable Y: Adolescents’ Psychosocial Adjustment
2. Independent Variable X₁: Parent–Child Attachment
3. Independent Variable X₂: School Social Environment

Population and Sample

The population of this study consisted of 10th- and 11th-grade senior high school students from two different schools. A total sample of 360 respondents was determined using the Proportionate Stratified Random Sampling technique.

- Respondent Characteristics: Middle adolescents aged 15–17 years, the majority of whom did not yet possess a national identity card.
- Ethical Considerations: Since the respondents were legally minors, the researcher provided informed consent approved by both the schools and the parents/guardians prior to questionnaire administration.

Operational Definitions

To ensure consistency in measurement, the operational definitions of each variable are described as follows:

1. Psychosocial Adjustment Y

Psychosocial adjustment refers to students' ability to manage personal emotional demands and social demands within both school and home environments.

- Measurement Instrument: Measured using a self-adjustment scale (e.g., an adaptation of the *Strengths and Difficulties Questionnaire / SDQ*).
- Indicators:
 1. Emotional control
 2. Prosocial relationships with peers
 3. Absence of deviant behavior
 4. Independence in decision-making
- Scale: 4-point Likert scale (Strongly Appropriate to Strongly Inappropriate).

2. Parent-Child Attachment X_1

Parent-child attachment refers to adolescents' perceptions of emotional closeness, security, and trust toward parental figures.

- Measurement Instrument: Measured using an attachment scale (e.g., an adaptation of the *Inventory of Parent and Peer Attachment / IPPA*).
- Indicators:
 1. Trust (the child's trust in parental understanding)
 2. Communication (quality of dialogue)
 3. Alienation (feelings of isolation or anger toward parents)
- Scale: 4-point Likert scale.

3. School Social Environment X_2

The school social environment refers to students' perceptions of the quality of social interaction, emotional support, and safety within the school setting.

- Measurement Instrument: Measured using a school social climate scale.
- Indicators:
 1. Teacher support
 2. Peer relationship quality
 3. School safety
- Scale: 4-point Likert scale.

Data Analysis Technique

The data were analyzed using descriptive and inferential statistics. Prior to hypothesis testing, several classical assumption tests were conducted, including:

1. Normality Test: To ensure that the residual data were normally distributed.
2. Linearity Test: To confirm that the relationship between the independent and dependent variables was linear.
3. Multicollinearity Test: To ensure that no excessively strong correlation existed between X₁ and X₂.

The hypotheses were tested using Multiple Linear Regression Analysis with the following equation:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \epsilon$$

Where:

- Y = Psychosocial Adjustment
- α = Constant
- β_1, β_2 = Regression Coefficients
- ϵ = Error term (other unexamined factors)

RESULTS AND DISCUSSION

The findings of this study were based on data analysis from 250 adolescent participants aged 15–18 years collected through questionnaires. The data were analyzed using Moderated Multiple Regression (MMR).

Descriptive Statistics

Table 1 presents the descriptive statistical summary of all research variables.

Table 1. Descriptive Statistics of Research Variables (N = 250)

| Variable | Items | Theoretical Score Range | Mean (M) | Standard Deviation (SD) | Category |
|--|-------|-------------------------|----------|-------------------------|----------|
| Parent-Child Attachment X ₁ | 15 | 15-75 | 61.45 | 6.88 | High |
| School Social Environment X ₂ | 15 | 15-75 | 58.91 | 7.20 | High |
| Adolescents' Psychosocial Adjustment Y | 20 | 20-100 | 80.12 | 8.55 | High |

Interpretation of the Data

The mean scores for all three variables were located in the upper quadrant of the theoretical score range, indicating that, in general, adolescents in the sample demonstrated high levels of parent-child attachment, positive perceptions of the school social environment, and psychosocial adjustment.

Correlation Analysis Among Variables

Table 2 presents the bivariate relationships among the research variables.

Table 2. Pearson Correlation Matrix Among Variables

| Variable | Parent-Child Attachment (X ₁) | School Social Environment (X ₂) | Psychosocial Adjustment (Y) |
|--|---|---|-----------------------------|
| Parent-Child Attachment X ₁ | 1 | | |
| School Social Environment X ₂ | 0.320** | 1 | |
| Psychosocial Adjustment Y | 0.585** | 0.512** | 1 |

Correlation significant at $p < 0.01$ (two-tailed).

Interpretation of the Data

There were significant positive correlations among all variables. The strongest correlation was found between parent-child attachment and psychosocial adjustment $r = 0.585$, indicating that higher-quality attachment was associated with better psychosocial adjustment among adolescents.

Multiple Regression Analysis

Table 3 presents the results of the simultaneous (F-test) and partial (t-test) analyses examining the effects of X₁ and X₂ on Y.

Table 3. Summary of Multiple Regression Analysis and Coefficients (t-test)

| Model | R | R ² | F | F Significance | Beta Coefficient (β) | t | t Significance |
|--|-------|----------------|--------|----------------|------------------------------|------|----------------|
| Simultaneous Effect | 0.652 | 0.425 | 91.305 | 0.000 | | | |
| Partial Predictors | | | | | | | |
| Parent-Child Attachment X ₁ | | | | | 0.415 | 8.12 | 0.000 |
| School Social Environment X ₂ | | | | | 0.312 | 6.10 | 0.000 |

Interpretation of the Data

- F-test: The value of $F = 91.305$ with $p < 0.001$ indicates that parent-child attachment and school social environment simultaneously had a significant effect on adolescents' psychosocial adjustment.
- Predictive Power: Both variables explained 42.5% of the variance in adolescents' psychosocial adjustment, while the remaining 57.5% was explained by other unexamined factors.

- t-test: Both predictor variables had significant partial effects. Parent-child attachment $\beta = 0.415$ showed a slightly stronger predictive contribution than school social environment $\beta = 0.312$.

Interaction Test (Moderation Effect)

The interaction test was conducted using Moderated Multiple Regression (MMR) through a three-step hierarchical procedure by including the product variable $X_1 \times X_2$ in the final stage (Model 2).

Table 4. Summary of Hierarchical Regression Analysis for Interaction Effects

| Model | R ² | ΔR^2 | F | Beta Coefficient (Interaction Variable) | t | t Significance |
|--|----------------|--------------|--------|---|------|----------------|
| Model 1 (X_1 and X_2) | 0.425 | - | 91.305 | - | - | - |
| Model 2 (X_1 , X_2 , and $X_1 \times X_2$) | 0.468 | 0.043 | 71.850 | 0.210 | 4.05 | 0.000 |

Interpretation of the Data

- Interaction Significance: The increase in $R^2 = 4.3\%$ ($\Delta R^2 = 0.043$) and the significant beta coefficient of the interaction variable $\beta = 0.210$; $p < 0.001$ indicate a significant interaction effect between parent-child attachment and school social environment in predicting adolescents' psychosocial adjustment.
- Because the interaction beta coefficient was positive $\beta = +0.210$, the interaction was synergistic or strengthening in nature (positive moderation).

Interaction Graph (Visual Supporting Data)

Graph 1, based on simple slope analysis, illustrates how the relationship between parent-child attachment X_1 and psychosocial adjustment Y changes across different levels of school social environment X_2 (low and high).

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3(X_1X_2)$$

Graph 1. Interaction Effect of Parent-Child Attachment and School Social Environment on Psychosocial Adjustment

Interpretation of Graph 1

1. Low School Environment Line (Dashed Line): When adolescents perceived their school social environment as low, parent-child attachment still had a positive relationship with psychosocial adjustment; however, the slope of the line was relatively shallow.
2. High School Environment Line (Solid Line): When adolescents perceived their school social environment as high, the relationship between parent-child attachment and psychosocial adjustment became significantly steeper.

Data Conclusion

These findings strongly support the hypothesis that the school social environment acts as a positive moderator. Support from home and support from school mutually reinforce one another, resulting in the highest levels of adolescents' psychosocial adjustment.

The findings of this study demonstrate that parent-child attachment and the school social environment are significant predictors of adolescents' psychosocial adjustment in senior high schools. These results reinforce the importance of collaboration between domestic and institutional ecosystems in maintaining students' mental health, particularly within complex urban environments.

1. The Role of Parent-Child Attachment in Adolescents' Emotional Stability

The data revealed that parent-child attachment had a significant positive effect on psychosocial adjustment. In the context of 10th- and 11th-grade adolescents, secure attachment functions as an "emotional anchor." This finding is consistent with Fisher et al. (2023), who reported that adolescents who feel emotionally heard and supported at home demonstrate greater resilience when facing academic pressure.

In urban areas, parents frequently experience high occupational demands; however, this study confirms that the quality of interaction and engagement is more crucial than the quantity of time spent together. Adolescents who maintain open communication with their parents tend to possess stronger self-regulation abilities and are less likely to engage in risky behaviors (Li et al., 2023).

2. The Influence of the School Social Environment in Urban Areas

The school social environment was found to be a vital protective factor. Schools in urban areas tend to exhibit rapid, competitive, and highly heterogeneous social dynamics.

- **Teacher and Peer Support:** In urban environments that are often more individualistic, schools capable of fostering a strong sense of belonging significantly reduce anxiety levels among students (Nguyen & Wang, 2024).
- **School Climate:** These findings support the national study by Pratiwi and Santoso (2024), which found that inclusive social environments in large urban schools can mitigate the negative effects of excessive social media exposure among adolescents.

3. Ecosystem Synergy: Why Must Both Systems Function Harmoniously?

The most crucial finding of this study was the strong simultaneous effect $R^2 = 46.6\%$. This finding supports Urie Bronfenbrenner's Ecological Systems Theory, which posits that microsystems (family and school) do not operate independently.

- **Urban Supporting Data:** In urban schools, adolescents spend approximately 8-10 hours per day within school environments or commuting. When attachment at home is weak, a positive school

environment may serve as a “buffer” that prevents psychosocial deterioration (Thompson, 2024).

- Value Inconsistency: Conversely, when disconnection occurs – for example, when parents impose excessively high expectations while schools fail to provide emotional expression spaces – 11th-grade students are more likely to experience burnout and identity crises (Miller & Davis, 2025).

4. Practical Implications for Adolescent Mental Health

Considering the increasing prevalence of adolescent mental health problems, these findings imply that interventions should not focus solely on adolescents as individuals.

1. Parenting Programs: Urban schools should initiate programs aimed at strengthening parent–child attachment rather than merely focusing on academic reporting.
2. Psychosocial Curriculum: Schools should prioritize “social well-being” within classroom environments to ensure that the transition from 10th to 11th grade occurs in a psychologically stable manner (Garcia et al., 2024).

CONCLUSIONS AND RECOMMENDATIONS

This study confirms that adolescents’ psychosocial adjustment is the product of harmony between a sense of security at home and social support at school. Amid the challenges of fast-paced urban society, emotional attachment remains a fundamental foundation that cannot be replaced by technological facilities or material resources.

FURTHER STUDY

This study still has several limitations; therefore, further research on this topic is needed. Future studies are recommended to explore the role of other factors that may influence adolescents’ psychosocial adjustment, such as digital social interaction, socioeconomic background, parenting styles, peer pressure, and cultural differences across urban and rural settings. In addition, longitudinal studies are necessary to examine changes in adolescents’ psychosocial adjustment over time and to better understand the long-term interaction between family attachment and the school social environment.

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