

Foregrounding peer versus parental effects in adolescent emotional development

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Abstract: Adolescence is a critical developmental stage in which emotional intelligence plays a fundamental role in psychological well-being, interpersonal relationships, and academic adjustment. This study examined the influence of parent-child communication and peer friendship quality on the emotional intelligence of students at Senior High School X Jakarta. A quantitative explanatory study with a cross-sectional survey design was conducted involving 73 students selected through total sampling. Parent-child communication, peer friendship quality, and emotional intelligence were measured using standardized questionnaires. The data were analyzed using multiple linear regression with IBM SPSS Statistics. The results of the partial (t-test) analysis indicated that parent-child communication did not significantly predict emotional intelligence, whereas peer friendship quality had a significant positive effect. Furthermore, the simultaneous (F-test) analysis demonstrated that parent-child communication and peer friendship quality jointly exerted a statistically significant influence on emotional intelligence ($F = 5.112$, $p = 0.008$), explaining 12.7% of the variance in emotional intelligence ($R^2 = 0.127$). These findings indicate that adolescents' emotional intelligence is influenced by the combined contribution of family and peer environments, with peer friendship quality emerging as the stronger predictor. The findings contribute to the understanding of adolescent emotional development by highlighting the importance of examining multiple social contexts simultaneously and provide empirical evidence to support the development of school-based social-emotional learning initiatives aimed at strengthening students' emotional competence.

Keywords: Adolescence, Emotional intelligence, Parent-child communication, peer friendship quality

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INTRODUCTION

Adolescence represents a critical developmental stage characterized by rapid biological, cognitive, social, and emotional changes that significantly influence an individual's psychological adjustment and future well-being. During this period, adolescents are required to cope with increasingly complex developmental tasks, including identity formation, academic achievement, interpersonal relationship development, and emotional regulation (Santrock, 2019; Sawyer et al., 2018). These developmental transitions expose adolescents to various emotional challenges, making emotional

competence an essential psychological resource for maintaining healthy social functioning and academic success. Consequently, emotional intelligence has become one of the most important competencies supporting adolescents in responding adaptively to internal and external developmental demands (Mauroy et al., 2025).

Emotional intelligence (EI) has been conceptualized through several theoretical perspectives, including the ability model, the trait model, and the mixed model, each emphasizing different aspects of emotional functioning. The ability model proposed by Salovey and Mayer (1990) conceptualizes EI as a set of cognitive abilities involving the perception, understanding, regulation, and utilization of emotions. In contrast, the trait model views emotional intelligence as a constellation of self-perceived emotional dispositions embedded within personality, whereas the mixed model, popularized by Goleman (1995), combines emotional abilities with motivational, social, and behavioral competencies. Because the present study focuses on adolescents' capacity to recognize, regulate, and utilize emotions within interpersonal interactions, it adopts the ability model proposed by Salovey and Mayer (1990). This conceptualization is also consistent with the Schutte Emotional Intelligence Scale (SEIS), which was developed based on the ability model and is employed as the measurement instrument in this study (Peng, 2025).

Recent empirical evidence supports the importance of emotional intelligence during adolescence (Piccerillo et al., 2025). A systematic review by Angelini et al. (2024) concluded that adolescents with higher emotional intelligence demonstrate better emotional regulation, social competence, academic adjustment, and psychological well-being. Moreover, recent longitudinal studies have shown that emotional intelligence functions as a protective factor against emotional distress and facilitates adaptive coping and resilience during adolescence. These findings indicate that emotional intelligence represents a fundamental psychological resource that supports healthy adolescent development.

Despite the recognized importance of emotional intelligence, adolescent mental health problems continue to increase globally. According to the World Health Organization (2025), approximately one in seven adolescents aged 10–19 years experiences a mental health disorder. In Indonesia, the Indonesia National Adolescent Mental Health Survey (I-NAMHS, 2022) reported that nearly one-third of adolescents experience emotional or behavioral problems, while UNICEF Indonesia (2021) documented high rates of bullying and cyberbullying among secondary school students. These findings illustrate a clear discrepancy between the expectation that adolescents possess adequate emotional competencies (*das sollen*) and the empirical reality (*das sein*), emphasizing the need to identify contextual factors that contribute to emotional intelligence development.

Indonesia faces similar challenges regarding adolescent emotional well-being. Findings from the Indonesia National Adolescent Mental Health Survey (I-NAMHS, 2022) revealed that nearly one-third of Indonesian adolescents experience psychological problems ranging from anxiety symptoms and depressive tendencies to behavioral difficulties. Moreover, UNICEF Indonesia (2021) reported that approximately 41% of adolescents aged 15 years have experienced repeated bullying, while around 45% have encountered cyberbullying. These findings indicate that emotional problems among Indonesian adolescents are influenced not only by individual characteristics but also by the quality of their interactions within family and peer environments (Zhou et al., 2025). Therefore, identifying social factors contributing to emotional intelligence has become an important issue in educational and developmental psychology (Xu et al., 2025).

Within educational settings, emotional intelligence contributes substantially to students' academic engagement, psychological adjustment, and interpersonal competence. Students with well-developed emotional intelligence demonstrate greater resilience when facing academic pressure, more adaptive coping strategies, stronger motivation, and healthier relationships with

teachers and classmates (Angelini et al., 2024). Consequently, schools are increasingly expected not only to facilitate students' cognitive development but also to cultivate emotional competencies that prepare adolescents to navigate academic demands and broader social challenges. Understanding the factors that shape emotional intelligence is therefore essential for developing evidence-based educational interventions that promote students' holistic development. From the perspective of Bronfenbrenner's Ecological Systems Theory (1979), adolescents' emotional development is shaped by continuous interactions between individuals and their immediate social environments. Among the various ecological systems, the microsystem—comprising family and peer relationships—exerts the most direct influence on adolescents' psychological development because these environments provide daily emotional experiences, behavioral models, and interpersonal feedback. Positive interactions within these proximal contexts facilitate emotional competence, whereas dysfunctional relationships may hinder adolescents' ability to regulate emotions and adapt to social demands. Consequently, examining family and peer environments simultaneously provides a more comprehensive understanding of emotional intelligence development during adolescence.

Parent-child communication constitutes one of the most fundamental interpersonal processes within the family environment (Townsend et al., 2024). Effective communication enables parents to provide emotional support, guidance, validation, and opportunities for adolescents to express their feelings openly (Steinberg, 2001). Through supportive communication, adolescents gradually develop emotional awareness, emotional regulation, and constructive coping strategies that contribute to emotional intelligence. Conversely, ineffective communication characterized by criticism, emotional distance, or limited openness may reduce adolescents' emotional security and hinder healthy emotional development. Recent empirical evidence supports this perspective. Bi and Wang (2021) found that positive parent-adolescent communication significantly enhances adolescents' psychological adjustment and subjective well-being. Likewise, Liu et al. (2024) demonstrated that democratic family communication promotes adolescents' psychological well-being by strengthening trust, emotional security, and supportive family relationships. These findings suggest that effective parent-child communication provides an essential foundation for developing emotional competence throughout adolescence (Zapf et al., 2024).

In addition to family influences, peer relationships become increasingly salient during adolescence as individuals spend more time interacting with friends than with family members. High-quality peer friendships provide emotional support, reciprocal trust, empathy, acceptance, and opportunities to develop interpersonal skills that contribute to emotional growth. Adolescents who experience supportive friendships generally exhibit stronger emotional regulation, higher self-esteem, and greater social competence than those involved in conflictual or unstable peer relationships. Wang et al. (2023) reported that positive peer relationships significantly facilitate adolescents' emotional and social development by fostering empathy and interpersonal competence. Similarly, Peng et al. (2025) concluded that peer friendship quality contributes positively to adolescents' psychological adjustment through sustained emotional support and constructive social interactions. These findings reinforce the notion that peer relationships serve as an essential social context for emotional intelligence development beyond the family environment (Boele et al., 2019).

In this study, emotional intelligence is conceptualized based on the ability model proposed by Salovey and Mayer (1990). Accordingly, adolescents' emotional intelligence is operationalized as the ability to perceive, understand, regulate, and utilize emotions effectively. This construct is assessed using the Schutte Emotional Intelligence Scale (SEIS), an instrument developed from the ability-based framework that has been widely applied in adolescent research. Establishing this operational definition at the outset ensures conceptual consistency between the theoretical framework and the empirical investigation Cao & Chen (2025).

Although previous studies have consistently demonstrated that parent–child communication and peer friendship quality are important determinants of adolescents' psychological development, these factors have largely been examined independently or linked to broader outcomes such as psychological well-being, academic adjustment, life satisfaction, and behavioral problems. Comparatively fewer studies have investigated emotional intelligence as a multidimensional developmental outcome encompassing emotional awareness, emotional regulation, empathy, and social competence (Mancini et al., 2024). This fragmented approach may not fully explain adolescents' emotional development because family and peer environments coexist and interact continuously throughout adolescence. From the perspective of Bronfenbrenner's Ecological Systems Theory (1979), developmental outcomes arise through dynamic interactions among multiple proximal environments rather than isolated social contexts. Therefore, simultaneously examining parent–child communication and peer friendship quality is expected to provide a more comprehensive understanding of how adolescents' immediate social environments jointly contribute to the development of emotional intelligence (Brumariu et al., 2025).

Beyond these theoretical and empirical limitations, a contextual gap also remains. Existing evidence has predominantly been derived from public schools or general educational settings, whereas relatively limited research has examined these relationships within Islamic secondary schools that integrate international academic curricula, Islamic values, and character education. Such educational environments present distinctive emotional demands, requiring students to balance academic achievement, religious commitment, moral responsibility, and social adaptation. Consequently, findings from general educational contexts may not be directly transferable to Islamic international schools. Addressing this gap is important for extending the applicability of Bronfenbrenner's ecological perspective while providing context-specific evidence regarding the combined influence of parent–child communication and peer friendship quality on adolescents' emotional intelligence (Ruíz-Ortega et al., 2023).

Another important gap concerns the educational context in which emotional intelligence has been investigated. Most previous studies have been conducted in public schools or general educational settings, while relatively little attention has been devoted to Islamic schools that simultaneously integrate international academic standards, Islamic character education, and intensive religious learning. Students in such environments may encounter unique emotional demands because they are expected to balance academic excellence, moral responsibility, religious commitment, and social adaptation. These contextual characteristics suggest that findings from general school settings may not be directly applicable to Islamic international schools, thereby highlighting the need for empirical investigation within this educational context.

Senior High School X Jakarta represents an appropriate context for addressing these gaps. As an Islamic international school implementing the Cambridge curriculum alongside Qur'anic memorization and character-building programs, the school emphasizes not only academic achievement but also students' moral and personal development. Nevertheless, preliminary interviews with the school's guidance and counseling teachers indicated that many students experience psychological challenges associated with academic demands, career decision-making, and social adjustment. Several students reportedly encounter difficulties in managing academic pressure, maintaining learning motivation, coping with failure, and regulating emotional responses when facing increasingly complex developmental tasks. These observations suggest that emotional intelligence remains an important developmental issue requiring empirical investigation within this educational context.

Accordingly, the novelty of this study lies in proposing and empirically testing an integrated ecological framework in which parent–child communication and peer friendship quality are simultaneously examined as complementary microsystem factors influencing adolescents'

emotional intelligence. Unlike previous studies that primarily investigated these social environments independently or focused on broader psychological outcomes, this study demonstrates how two immediate interpersonal contexts jointly contribute to emotional intelligence within an Islamic international secondary school. Consequently, this research not only extends Bronfenbrenner's Ecological Systems Theory but also provides contextual evidence for educational environments where academic excellence, religious values, and character education are integrated.

The present study contributes to the existing literature in several ways. First, it simultaneously examines the influence of parent–child communication and peer friendship quality on adolescents' emotional intelligence within a single conceptual framework grounded in Bronfenbrenner's Ecological Systems Theory. By integrating two key components of adolescents' microsystem, this study provides a more holistic understanding of how immediate social environments shape emotional development. Second, this research extends previous findings by examining these relationships in the context of an Islamic international secondary school, thereby enriching empirical evidence regarding emotional intelligence in educational settings characterized by the integration of academic excellence, character education, and Islamic values. This contextual perspective broadens the applicability of ecological and emotional intelligence theories across diverse educational environments. Based on these theoretical considerations and empirical gaps, this study aims to examine the relationship between parent–child communication, peer friendship quality, and emotional intelligence among students at Senior High School X Jakarta. Specifically, the study investigates whether parent–child communication and peer friendship quality individually and simultaneously predict adolescents' emotional intelligence as measured using the Schutte Emotional Intelligence Scale (SEIS). By employing an integrated ecological framework, this study seeks to provide empirical evidence regarding how family and peer microsystems jointly contribute to adolescents' emotional development within an Islamic international secondary school context.

METHOD

This study employed a quantitative explanatory research design to examine the influence of parent–child communication and peer friendship quality on adolescents' emotional intelligence. A cross-sectional survey design was adopted because the data were collected at a single point in time to investigate the relationships among the study variables. The study was conducted at Senior High School X Jakarta, an Islamic international secondary school integrating the Cambridge curriculum with Islamic character and Qur'anic education. The target population comprised all students enrolled in Grades X, XI, and XII during the 2025/2026 academic year, totaling 183 students. Considering the relatively small population size, this study employed a total sampling (census) technique, whereby all members of the population were invited to participate. Consequently, the sample consisted of 183 students representing the entire population of the school. Prior to the main survey, a pilot study involving 30 students with characteristics similar to the target population was conducted to evaluate the validity and reliability of the research instruments. Of the 183 eligible students invited to participate, 73 students completed the questionnaire, yielding a response rate of 39.9%. Participation was voluntary, and no significant demographic differences were identified between respondents and the accessible student population based on school records. Nevertheless, the relatively modest response rate should be considered when interpreting the generalizability of the findings.

Data were collected using three standardized self-report questionnaires that had been translated and culturally adapted into Indonesian. Parent–child communication was measured using the adapted Parent–Adolescent Communication Scale (PACS) developed by Barnes and Olson (1982), consisting of 20 items measuring communication openness and communication problems. Peer friendship quality was assessed using the adapted Friendship Quality Questionnaire (FQQ)

developed by Parker and Asher (1993), consisting of 23 items covering companionship, help and support, closeness, security and trust, and conflict. Emotional intelligence was measured using the adapted Schutte Emotional Intelligence Scale (SEIS) developed by Schutte et al. (1998), consisting of 33 items measuring emotional perception, emotional understanding, emotion regulation, emotional utilization, and social competence. All instruments employed a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating higher levels of the measured construct.

The adaptation process followed the cross-cultural adaptation procedures proposed by Beaton et al. (2000), including forward translation, synthesis, backward translation, expert committee review, pilot testing, and final revision. Minor wording modifications were introduced to improve linguistic clarity and cultural relevance for Indonesian senior high school students while preserving the conceptual meaning of the original instruments. No construct dimensions were modified during the adaptation process. Prior to the main survey, a pilot study involving 30 students with characteristics similar to the target population was conducted to evaluate the psychometric properties of the adapted instruments. Item validity was examined using corrected item-total correlations, with items exceeding 0.30 considered acceptable. Internal consistency reliability was assessed using Cronbach's alpha, with coefficients above 0.70 indicating satisfactory reliability.

Instrument validity was assessed through item-total correlation analysis using Pearson's Product-Moment correlation during the pilot study. Items that failed to meet the acceptable validity criteria were excluded from the final instruments. Internal consistency reliability was evaluated using Cronbach's alpha coefficient. The final instruments demonstrated satisfactory reliability, with Cronbach's alpha values of 0.893 for the Parent-Adolescent Communication Scale, 0.961 for the Friendship Quality Questionnaire, and 0.928 for the Schutte Emotional Intelligence Scale, indicating high internal consistency. Data collection was conducted after obtaining permission from the school administration. Participation was voluntary, and respondents completed the questionnaires anonymously after receiving information regarding the study objectives and confidentiality of their responses. Ethical principles, including informed consent, voluntary participation, confidentiality, and anonymity, were maintained throughout the research process. In the pilot study, the adapted Parent-Adolescent Communication Scale, Friendship Quality Questionnaire, and Schutte Emotional Intelligence Scale demonstrated satisfactory internal consistency, with Cronbach's alpha coefficients of 0.893, 0.961, and 0.928, respectively. Although confirmatory factor analysis (CFA) was not conducted because of the relatively small pilot sample size, the retained items demonstrated acceptable corrected item-total correlations and were reviewed by a licensed clinical psychologist to ensure conceptual equivalence and content validity within the Indonesian educational context. Consequently, all retained items were included in the main survey.

The collected data were analyzed using IBM SPSS Statistics. Descriptive statistics were first computed to summarize participants' demographic characteristics and variable distributions. Prior to hypothesis testing, multiple regression assumptions, including normality, multicollinearity, and homoscedasticity, were examined to ensure the suitability of the regression model. Multiple linear regression analysis was subsequently employed to examine the individual and simultaneous effects of parent-child communication and peer friendship quality on emotional intelligence. Statistical significance was determined at the 5% significance level ($p < .05$). The coefficient of determination (R^2) was also calculated to evaluate the proportion of variance in emotional intelligence explained by the independent variables. Several methodological limitations should be acknowledged. First, the cross-sectional design limits causal inference between the study variables. Second, all variables were measured using self-report questionnaires, which may introduce social desirability and common method bias. Third, because the study was conducted in a single Islamic international secondary

school, the findings should be generalized cautiously to adolescents from different educational or cultural settings.

RESULTS AND DISCUSSION

The results are presented in two stages. First, preliminary analyses were conducted to assess whether the data met the assumptions required for multiple linear regression. Second, hypothesis testing was performed to examine the individual and combined effects of parent–child communication and peer friendship quality on students' emotional intelligence. The findings are presented according to the proposed hypotheses and are subsequently discussed in relation to relevant theoretical perspectives and previous empirical studies.

Table 1. Skewness Score

Variable	Skewness Score
Parental Communication (X1)	-0.153
Peer Quality (X2)	-0.165
Emotional Intelligence (Y)	-1.571

Sources: Data processed from the results of research data collection

Referring to Table 1, it is identified that all skewness values are still within the tolerance range of the normal distribution, which is between -2 and +2. This indicates that the data distribution of the studied variables can still be considered empirically normal. Based on further evaluation using skewness values, it can be concluded that the data in this study still meets the assumption of normality and is suitable for proceeding to the multiple linear regression stage.

Table 2. Linearity Test Results

	Sig. Linearity	Deviation from Linearity
Parental Communication (X1) - Emotional Intelligence (Y)	0.142	< 0.001
Peer Quality (X2) - Emotional Intelligence (Y)	0.009	0.911

Sources: Data processed from the results of research data collection

The linearity test results indicate that the relationship between parental communication and emotional intelligence was not linear, as evidenced by a non-significant linearity value ($p = 0.142$) and a significant deviation from linearity ($p < 0.001$). In contrast, peer friendship quality demonstrated a significant linear relationship with emotional intelligence ($p = 0.009$), while the deviation from linearity was not significant ($p = 0.911$). These findings suggest that only the relationship between peer friendship quality and emotional intelligence satisfied the linearity assumption.

Table 3. Multicollinearity Test Results

Independent Variable	Tolerance	VIF
Parental Communication (X1)	0.992	1.009
Peer Quality (X2)	0.992	1.009

Sources: Data processed from the results of research data collection

Table 3 presents the results of the multicollinearity test for the independent variables included in the regression model. The tolerance values for both parent–child communication and peer friendship quality were 0.992, while the corresponding Variance Inflation Factor (VIF) values were 1.009. According to the commonly accepted criteria, tolerance values greater than 0.10 and VIF values below 10 indicate that multicollinearity is not a concern. Therefore, the two independent variables

were not highly correlated with one another and contributed unique information to the regression model. The absence of multicollinearity suggests that parent-child communication and peer friendship quality represent distinct constructs rather than overlapping dimensions of adolescents' social experiences. Consequently, the estimated regression coefficients can be interpreted independently, allowing the unique contribution of each predictor to emotional intelligence to be examined without statistical distortion. These findings confirm that the regression model satisfies the multicollinearity assumption and that the subsequent hypothesis testing can be interpreted with confidence.

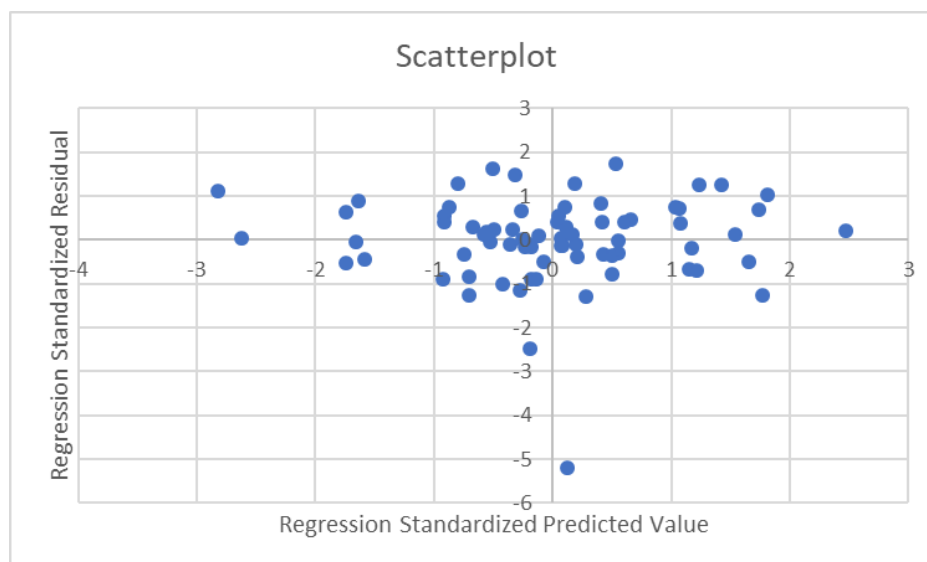


Figure 1. Heteroscedasticity Test Results

The heteroscedasticity assumption was evaluated through visual inspection of the scatterplot of standardized residuals against standardized predicted values. As illustrated in Figure 1, the residuals were randomly dispersed around the horizontal axis without forming any systematic pattern, funnel shape, or clustering. Instead, the observations appeared to be evenly distributed across the range of predicted values. This random distribution indicates that the variance of the residuals remained relatively constant throughout the regression model, suggesting the absence of heteroscedasticity. Consequently, the homoscedasticity assumption required for multiple linear regression was satisfied. Meeting this assumption implies that the estimated regression coefficients and their corresponding significance tests are reliable and unbiased, thereby increasing confidence in the validity of the statistical conclusions drawn from the regression analysis.

Table 4. Hypothesis Test Results

Variable	Constant	B	Beta (β)	t	Sig.
Parental Communication (X1)	67.401	0.111	0.095	0.848	0.399
Peer Quality (X2)	67.401	0.266	0.335	2.992	0.004

Sources: Data processed from the results of research data collection

Table 4 summarizes the results of the multiple linear regression analysis examining the effects of parent-child communication and peer friendship quality on students' emotional intelligence. The findings indicate that parent-child communication did not significantly predict emotional intelligence ($\beta = 0.095$, $t = 0.848$, $p = 0.399$). Although the regression coefficient was positive, the effect was not statistically significant because the probability value exceeded the 0.05 significance level. Therefore, the first hypothesis (H1) was not supported, suggesting that variations in parent-child communication were not associated with significant differences in students' emotional intelligence

within the present sample. In contrast, peer friendship quality demonstrated a statistically significant positive effect on emotional intelligence ($\beta = 0.335$, $t = 2.992$, $p = 0.004$). The positive regression coefficient indicates that students who reported higher-quality friendships also tended to exhibit higher levels of emotional intelligence. Because the significance value was below the conventional threshold of 0.05, the second hypothesis (H2) was supported. Furthermore, the standardized regression coefficient ($\beta = 0.335$) indicates that peer friendship quality exerted a stronger influence on emotional intelligence than parent-child communication within the proposed regression model.

Overall, these findings suggest that although both family and peer environments are important developmental contexts, peer friendship quality emerged as the more influential predictor of emotional intelligence among students at Senior High School X Jakarta. This pattern may reflect the increasing importance of peer relationships during adolescence, a developmental stage characterized by greater social interaction, emotional support from friends, and increased independence from parents.

Table 5. ANOVA Results

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	972.452	2	486.226	5.112	0.008
Residual	6659.055	70	95.129		
Total	7631.507	72			

Sources: Data processed from the results of research data collection

The ANOVA results indicate that the overall regression model is statistically significant ($F = 5.112$, $p = 0.008$), confirming that the model adequately explains the variation in students' emotional intelligence. Since the significance value is below the 0.05 threshold, the null hypothesis is rejected, indicating that parent-child communication and peer friendship quality collectively have a significant influence on the emotional intelligence of high school students. These findings demonstrate that the combination of the two predictor variables contributes meaningfully to explaining differences in emotional intelligence among the participants.

Table 6. Results of the Coefficient of Determination

Statistik	Score
R	0.357
R Square	0.127
Adjusted R Square	0.103

Sources: Data processed from the results of research data collection

The coefficient of determination analysis produced an R value of 0.357, indicating a weak to moderate positive relationship between the independent variables and emotional intelligence. The R^2 value of 0.127 indicates that parent-child communication and peer friendship quality jointly explained 12.7% of the variance in students' emotional intelligence, while the remaining 87.3% was attributable to other variables not included in the present study. Furthermore, the adjusted R^2 value of 0.103 suggests that, after adjusting for the number of predictors, approximately 10.3% of the variance in emotional intelligence was explained by the regression model.

Parent-Child Communication and Emotional Intelligence

The findings revealed that parent-child communication did not have a statistically significant effect on students' emotional intelligence. Although the regression coefficient indicated a positive relationship, the effect was not sufficiently strong to support the proposed hypothesis. This finding suggests that variations in communication between parents and adolescents were not associated with significant differences in emotional intelligence among students at Senior High School X Jakarta. From the perspective of Bronfenbrenner's Ecological Systems Theory (1979), the family

represents the primary microsystem in which children initially develop emotional competencies through continuous interaction with their parents. Positive parent–child communication is generally expected to foster emotional awareness, emotional regulation, empathy, and adaptive coping. However, Bronfenbrenner also emphasized that adolescents' development is influenced simultaneously by multiple microsystems. As adolescents mature, peer groups, school environments, and broader social interactions gradually become increasingly influential. Therefore, although parent–child communication remains an important developmental factor, its influence may become less dominant during late adolescence when students spend more time interacting with peers and educational environments.

The present finding differs from those reported by Bi and Wang (2021), who found that supportive parent–adolescent communication significantly enhanced adolescents' subjective well-being and psychological adjustment. Likewise, Liu et al. (2024) demonstrated that democratic family communication contributes positively to adolescents' psychological well-being by strengthening trust, emotional security, and openness within the family. The discrepancy between previous studies and the present findings may be attributed to contextual differences. Unlike previous studies that involved broader adolescent populations, this study focused exclusively on students attending an Islamic international secondary school characterized by structured academic activities, intensive character education, and strong peer interaction. Consequently, students' emotional development may be shaped by multiple educational and social experiences that reduce the relative contribution of family communication.

Another possible explanation is that adolescents in this developmental stage have become increasingly independent in managing emotional experiences. Students preparing for higher education often rely more on personal coping strategies, friendships, teachers, and school counselors when facing academic pressure and social challenges. Therefore, emotional intelligence may be influenced by broader social support systems beyond parent–child communication alone. This finding suggests that although family communication remains valuable, its influence on emotional intelligence may operate indirectly through other psychological variables, such as self-esteem, resilience, emotional regulation, or perceived social support.

Peer Friendship Quality and Emotional Intelligence

The findings demonstrated that peer friendship quality had a positive and statistically significant effect on students' emotional intelligence. This result indicates that adolescents who experience supportive, trusting, and high-quality friendships tend to demonstrate higher emotional intelligence than those with less supportive peer relationships. Therefore, the second hypothesis was supported. This finding is consistent with Bronfenbrenner's Ecological Systems Theory (1979), which argues that peer relationships become one of the most influential components of adolescents' microsystem. During adolescence, friendships provide opportunities to develop empathy, cooperation, emotional expression, conflict resolution, and interpersonal communication. Through repeated interactions with peers, adolescents learn to recognize emotional cues, regulate emotional responses, and respond appropriately to others' feelings, thereby strengthening emotional intelligence.

The findings also support the conceptualization of emotional intelligence proposed by Salovey and Mayer (1990), who argued that emotional intelligence involves the ability to perceive, understand, regulate, and utilize emotions effectively in interpersonal situations. High-quality friendships provide adolescents with meaningful opportunities to practice these emotional abilities through everyday social interactions. Likewise, Goleman (1995) emphasized that empathy, social skills, and relationship management represent core components of emotional intelligence, all of which are continuously developed within peer relationships. The present findings are consistent with previous empirical studies. Wang et al. (2023) reported that supportive friendships significantly promote adolescents' emotional competence, empathy, and interpersonal skills. Similarly, Peng et

al. (2025) concluded that friendship quality positively contributes to adolescents' psychological adjustment by providing emotional support, trust, and social acceptance. The consistency between the present findings and previous studies strengthens the argument that peer friendship quality represents one of the most important determinants of adolescents' emotional development. Within the context of Senior High School X Jakarta, students spend considerable time participating in collaborative learning, extracurricular activities, religious programs, and other school-based interactions. These shared experiences encourage the development of mutual trust, cooperation, and emotional support among classmates. Consequently, positive peer relationships become an important source of emotional learning that helps students cope with academic demands, manage interpersonal conflicts, and develop adaptive emotional responses.

Simultaneous Effects of Parent–Child Communication and Peer Friendship Quality on Emotional Intelligence

The results of the multiple regression analysis revealed that parent–child communication and peer friendship quality jointly exerted a statistically significant influence on the emotional intelligence of high school students ($F = 5.112, p = 0.008$). This finding indicates that the proposed regression model is appropriate for explaining variations in adolescents' emotional intelligence and supports the hypothesis that both social contexts collectively contribute to emotional development. Although the individual analysis showed that parent–child communication was not a significant predictor, the simultaneous effect of both variables demonstrates that emotional intelligence is shaped by the combined influence of family and peer relationships rather than by a single social context. These findings suggest that adolescents develop emotional competencies through continuous interactions with multiple social environments, where the influence of one environment may complement or reinforce the other.

The findings are consistent with Bronfenbrenner's Ecological Systems Theory (1979), which proposes that human development is the result of reciprocal interactions between individuals and the multiple environmental systems surrounding them. Within this framework, the family represents the primary microsystem that provides emotional security, communication patterns, and behavioral guidance, while peer friendships constitute another important microsystem that offers opportunities for social interaction, emotional expression, cooperation, and conflict resolution. The significant simultaneous effect found in this study supports Bronfenbrenner's argument that developmental outcomes cannot be fully understood by examining a single ecological context in isolation. Instead, emotional intelligence emerges through the dynamic interplay between family relationships and peer experiences during adolescence.

These findings are also supported by previous empirical studies reporting that adolescents' emotional intelligence is influenced by multiple interpersonal environments. Effective parent–child communication promotes emotional awareness, empathy, and healthy emotional expression, whereas high-quality peer friendships facilitate emotional regulation, social competence, trust, and interpersonal problem-solving. As adolescents spend increasing amounts of time interacting with peers while maintaining family relationships, both contexts complement each other in fostering emotional growth. Consequently, strengthening emotional intelligence requires support not only from parents but also from positive peer relationships within the school environment.

Despite the statistical significance of the regression model, the coefficient of determination ($R^2 = 0.127$) indicates that parent–child communication and peer friendship quality explain only 12.7% of the variance in emotional intelligence. This relatively modest explanatory power suggests that emotional intelligence is a multidimensional construct influenced by numerous psychological, familial, educational, and social factors beyond those examined in this study. Previous research has identified emotional regulation, personality traits, resilience, parenting style, school climate, teacher support, self-esteem, spirituality, and socioeconomic background as important determinants of

adolescents' emotional intelligence. Therefore, future studies are encouraged to incorporate a wider range of individual and environmental variables to develop a more comprehensive understanding of the factors shaping emotional intelligence among high school students.

CONCLUSIONS

This study examined the influence of parent–child communication and peer friendship quality on adolescents' emotional intelligence among students at Senior High School X Jakarta within the framework of Bronfenbrenner's Ecological Systems Theory. The findings indicate that peer friendship quality has a significant positive influence on adolescents' emotional intelligence, whereas parent–child communication does not demonstrate a statistically significant direct effect. Collectively, both predictors contribute significantly to the regression model; however, the model explains only a modest proportion of the variance in emotional intelligence, suggesting that additional individual, familial, and environmental factors also contribute to adolescents' emotional development. The non-significant effect of parent–child communication should not be interpreted as evidence that family influence is unimportant. Rather, this finding suggests that the influence of the family microsystem may operate indirectly through more complex developmental processes, such as parenting style, emotional attachment, self-esteem, emotion regulation, or family functioning. From Bronfenbrenner's ecological perspective, adolescents develop through dynamic interactions among multiple ecological systems rather than through isolated environmental influences. During late adolescence, peer relationships become increasingly salient because adolescents spend more time interacting with peers, thereby strengthening the influence of the peer microsystem on emotional development. Consequently, the present findings do not contradict Bronfenbrenner's theory but instead highlight that the relative influence of different microsystems may vary according to developmental stage and social context.

Given the relatively modest explanatory power of the regression model, the practical implications of this study should be interpreted with appropriate caution. Schools may consider strengthening peer-support programs, collaborative learning activities, and social-emotional learning initiatives that encourage positive peer interactions, while continuing to promote constructive communication between parents and adolescents. These interventions should complement, rather than replace, family-based efforts to foster adolescents' emotional competence. Future research is encouraged to examine additional variables that may mediate or moderate the relationship between parent–child communication and emotional intelligence, including parenting style, attachment security, family cohesion, self-esteem, emotional regulation, and social support. Employing longitudinal designs, larger and more diverse samples, and advanced analytical approaches such as Structural Equation Modeling (SEM) would also provide a more comprehensive understanding of the ecological factors influencing adolescents' emotional intelligence.

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