



RESEARCH ARTICLE

Adolescent Emotional Intelligence Based on Perceptions of Parenting Styles

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Abstract. Middle adolescents are highly vulnerable to emotional regulation difficulties, necessitating supportive parental guidance. This study aims to examine the contribution of adolescents' perceptions of paternal and maternal parenting styles to their emotional intelligence, evaluated both as individual predictors (partially) and through two-predictor combined models. It was hypothesized that both paternal and maternal parenting styles significantly contribute to middle adolescents' emotional intelligence, both partially and within combined linear models. A quantitative approach was employed, involving 410 adolescents aged 15–18 years in Karawang Regency, selected via convenience sampling. Data were gathered using the Assessing Emotions Scale (AES) and the Parental Authority Questionnaire (PAQ). Data analysis was performed using linear regression analysis. The results indicated that when analyzed as individual predictors, only maternal authoritative parenting style contributed significantly, whereas all dimensions of paternal parenting styles showed no significant independent effect. However, the two-predictor combined models demonstrated that pairs of paternal and maternal parenting dimensions jointly contributed significantly, particularly when the maternal figure implemented an authoritative parenting style, which acted as the primary anchor of the model. The largest combined variance was contributed by the combination of maternal authoritative and paternal authoritarian styles ($R^2 = .141$). This study underscores the critical role of maternal authoritativeness in buffering adolescent emotional outcomes within industrial contexts, while highlighting the need for enhanced paternal quality of involvement.

Keywords: Indonesian Adolescent, Adolescent Emotional Intelligence, Perceived Parenting Styles, Maternal Authoritative Parenting, Paternal Parenting

INTRODUCTION

Emotional intelligence represents a critical psychological construct underlying human adaptation and psychological well-being. Historically grounded in the pioneer framework of Salovey and Mayer (1990), emotional intelligence has evolved through distinct contemporary theoretical lenses: ability emotional intelligence, which conceptualizes emotional competencies as a set of cognitive-intellectual abilities tested through performance measures (Mayer et al., 2016), and trait or self-report emotional intelligence, which views emotional competencies as a constellation of personality traits and self-perceived behavioral dispositions (Petrides et al., 2016).

The present study strictly adopts the theoretical position of self-report emotional intelligence, utilizing the Assessing Emotions Scale (AES) originally developed by Schutte et al. (2009). Consequently, emotional intelligence in this research is defined not as an objective cognitive capacity, but as adolescents' subjective perception and self-assessment of their own emotional competencies, encompassing how they appraise, express, regulate, and utilize emotions across daily life situations (Yang et al., 2024; Keefer, 2015).

Clarifying this self-assessment capacity becomes exceptionally urgent during adolescence, a developmental milestone characterized by profound physical, cognitive, social, and emotional transitions, as originally postulated by Arnett (2014). Monks (2004) categorize adolescence into several sub-phases, including middle adolescence which spans from 15 to 18 years of age and typically corresponds to senior high school or equivalent vocational education levels (Faisal & Wati, 2023). During this particular phase, adolescents undergo rapid neurobiological modifications and shifting social roles, making them highly vulnerable to rapid mood swings, heightened emotional sensitivity, and substantial difficulties in emotional regulation (Steinberg, 2016; Sabrina, 2025). When adolescents' self-perceived emotional intelligence is underdeveloped, they exhibit clear

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maladaptive behaviors, including emotional suppression, avoidant strategies, social withdrawal, and a distinct inability to express personal distress adaptively (Gross, 2015; Faisal & Wati, 2023).

While peer systems and broader social institutions play expanding roles during middle adolescence, the family system remains the primary micro-environment and foundational ecological anchor where individuals first learn to comprehend, govern, and navigate their affective experiences, in line with Bronfenbrenner's ecological systems theory (Corcoran et al., 2004). Empirical literature consistently emphasizes that peer-reviewed studies across various cultures link high emotional intelligence to stable, supportive family dynamics, whereas unharmonious or highly stressful domestic conditions frequently compromise an adolescent's capacity for emotional self-regulation (McDaniel et al., 2018). Within the family ecology, the operational patterns through which parents guide, educate, control, and respond to their children's behaviors are conceptualized as parenting styles, originally formulated by Baumrind (1971). According to this classic typology, these patterns are constructed across two primary dimensions: parental responsiveness (warmth and support) and parental demandingness (control and structure) which manifest into three distinct typologies: authoritative, authoritarian, and permissive (Baumrind, 2013; Sulistyawati & Kartasasmita, 2025).

Crucially, contemporary developmental psychology emphasizes that maternal and paternal parenting practices do not function as a homogenous, undifferentiated unit, but rather contribute to adolescent emotional development through distinct, gender-differentiated operational pathways, as outlined by Lamb and Pleck (as cited in Cabrera et al., 2018). Mothers predominantly nurture empathy, verbal emotional processing, and internal affective regulation due to higher historical attachment and intensive daily interactions within domestic spaces (Cahyani et al., 2022). Conversely, fathers primarily drive external autonomy, instrumental problem-solving, and self-control during social stressors, providing a unique masculine framework for emotional adaptation (Pleck as cited in Sulistyawati, 2024). Recent empirical investigations confirm that these maternal and paternal roles yield divergent emotional outcomes based on specific dimensions. For instance, maternal authoritative parenting has been consistently linked to superior emotional intelligence due to its balanced enforcement of warmth and boundaries, while maternal authoritarian and permissive configurations often lead to emotional dysregulation or deficient self-control (Khusnia et al., 2023). Concurrently, positive father involvement and paternal authoritative caregiving significantly optimize adolescent social adaptability, whereas paternal authoritarian practices generate heightened anxiety and restricted emotional expression (Charulatha & Sinha, 2022; Uriarte, 2023).

Despite the established documentation linking general parental involvement to adolescent affect, significant empirical gaps persist in the international and local literature. First, the majority of existing studies continue to treat parental involvement as a homogenous construct or focus on simple bivariate relationships, neglecting the simultaneous, relative predictive weights of both maternal and paternal figures within a unified analytical model. Studies that specifically contrast the unique individual dimensions of the father versus the mother alongside their combination remain scarce (Sulistyawati, 2024; Khusnia et al., 2023). Second, this empirical gap is heavily compounded by socio-economic and cultural contexts in developing nations. In Indonesia, the phenomenon of low paternal

engagement frequently conceptualized as the fatherless phenomenon denotes not only physical paternal absence due to socio-economic demands but also the lack of emotional presence and psychological involvement of the father in a child's life (Arbiyana & Kholil, 2024). This dynamic is highly pronounced in rapidly expanding industrial regions, such as Karawang Regency. In industrial environments, the dominance of parental employment within manufacturing sectors, often characterized by rigid shift-work structures, significantly alters daily parent-child communication patterns and restricts regular paternal emotional engagement (Sari et al., 2021).

Contextualizing this study in Karawang Regency is empirically supported by severe indicators of adolescent emotional crises in the region. Recent regional data revealed that up to 79.3% of vocational high school students in local industrial districts exhibited underlying symptoms of mental-emotional disorders, including elevated anxiety and acute stress (Azky & Nurfadhilah, 2026). Clinical reports from the Karawang Regional General Hospital (RSUD Karawang) have also documented a steady annual increase in student mental health consultations linked directly to unharmonious family environments, harsh verbal reprimands, and restrictive parenting practices (Zaelani, 2025). Furthermore, persistent societal crises regarding peer violence, student brawls (*tawuran*), and school bullying further indicate ongoing breakdowns in emotional regulation and interpersonal skills among local adolescents (Maulana, 2025). A preliminary multi-method study among 80 local adolescents using a self-report emotional scale confirmed that emotional expression yielded the lowest average competence, with 67.5% of respondents explicitly stating they struggled to communicate personal problems to others. Qualitative field interviews with these adolescents revealed that they deliberately suppressed negative emotions due to a fear of social judgment, displaying avoidant coping behaviors such as social isolation and over-reliance on social media platforms for emotional venting.

Based on these empirical, theoretical, and contextual gaps, the present study aims to determine the unique and joint contributions of perceived paternal and maternal parenting styles toward the self-report emotional intelligence of middle adolescents in an industrial region, examined both partially and within integrated linear combined models across dimensions. This study is expected to provide substantial theoretical contributions to developmental psychology by clarifying the comparative roles of each parent within a unified model, while serving as a practical reference for family counseling and parental optimization. To systematically guide this empirical investigation, a series of dimensional directional hypotheses are formulated. It is hypothesized that a perceived maternal authoritative parenting style is positively and significantly associated with adolescent emotional intelligence, whereas maternal authoritarian and permissive configurations are predicted to display divergent, non-positive predictive pathways. Similarly, for paternal dimensions, a perceived paternal authoritative parenting style is hypothesized to maintain a possible positive and significant relationship with the criterion variable, while paternal authoritarian and permissive practices are expected to yield different, restrictive associations. Finally, within the broader scope of the family system, it is hypothesized that perceived maternal and paternal parenting styles, when structurally evaluated through paired two-predictor combined models across dimensions, collectively and significantly contribute to predicting adolescent emotional intelligence.

METHODS

Participant characteristics and research design

The participants in this study were 410 middle adolescents aged 15–18 years in Karawang Regency, enrolled in the 9th grade of junior high school (Sekolah Menengah Pertama [SMP]) and the 10th to 12th grades of senior high/vocational school (Sekolah Menengah Atas/Kejuruan [SMA/SMK]). Demographic mapping focused on assessing age and gender distributions within the sample. Data collection was conducted over a two-month period from April to May 2026. A total of 420 responses were initially compiled through a fully digital administration mode utilizing Google Forms across multiple educational institutions in the region. To ensure the internal validity of the comparative analysis between maternal and paternal parenting styles, strict inclusion and exclusion criteria were applied. Participants were strictly required to have active maternal and paternal figures present in their daily lives. Living in a strictly intact biological family unit was not a rigid requirement; instead, participants were eligible if they cohabited with and were raised by two primary caregivers who actively fulfilled maternal and paternal psychological functions, encompassing biologically intact families, single-parent structures with a co-residing extended family member filling the vacant role, or legal guardians. Adolescents who experienced total paternal or maternal absence without any active surrogate figure fulfilling the parenting functions were excluded from the study, as they could not objectively evaluate both dimensions on the Parental Authority Questionnaire (PAQ). Through the application of these strict criteria, out of the 420 responses initially gathered, 10 questionnaires were subsequently excluded from the primary analysis. All 10 of these excluded questionnaires failed to meet the predefined inclusion criteria because the respondents did not have an active father or mother figure present in their lives (experiencing total parental absence without surrogate caregivers), thereby yielding a final analytical sample of 410 participants ($N = 410$). This study adopted a quantitative approach with a predictive correlational research design to evaluate the relative and joint contributions of perceived parenting styles on adolescent emotional intelligence. The predictor (independent) variables consisted of three sub-dimensions of maternal parenting styles (authoritative, authoritarian, permissive) and three sub-dimensions of paternal parenting styles (authoritative, authoritarian, permissive), while the criterion (dependent) variable was adolescent emotional intelligence.

Sampling procedures

This study employed a non-probability sampling method utilizing the convenience sampling technique. The survey was administered fully digitally, utilizing a single platform (Google Forms) to completely eliminate any data entry errors or mode-of-administration biases. To maximize response rates and ensure broad data diversity, the survey link was distributed through a dual-channel approach: approximately 60% of the participants accessed the Google Form on-site by scanning a generated QR code/barcode posted at participating schools, while the remaining 40% accessed the survey remotely through targeted hyperlink URLs shared across student social media networks. Prior to completing the questionnaire, participants were provided with explanations regarding the research objectives, data confidentiality, and an informed consent form as a formal agreement to participate. As a token of appreciation for their

participation, five participants were selected at random after the data collection process was completed to receive a prize. The distribution of this prize was entirely unrelated to the substance of their answers and was not provided as a reward for any specific response.

Sample size, power, and precision

The intended minimal sample size required for this study was calculated utilizing the Cochran formula tailored for infinite or unknown target populations. The statistical calculation was parameterized with a 95% confidence level ($Z = 1.96$), a 5% margin of error ($e = .05$), and a conservative population proportion estimation of 50% ($p = .5$). Based on these statistical parameters, the actual sample size obtained consisted of 410 participants who rigorously met all inclusion criteria and successfully completed the entire questionnaire without any missing data, thereby providing sufficient statistical power and precision for the parameter estimates. No interim analyses or early stopping rules were applied during the data collection process.

Measures and covariates

Adolescent emotional intelligence was operationalized and measured using the Assessing Emotions Scale (AES), originally developed by Schutte et al. (1998) within the theoretical framework postulated by Salovey and Mayer (1990). The scale had been previously translated and adapted into the Indonesian context by Idriyani (2020), which was subsequently adopted by the researchers for the purpose of this study. While the researchers retained the linguistic properties of the adopted version without conducting any back-translation procedures, a preliminary pilot study (try-out) was stringently executed to verify the psychometric validity and reliability of the instrument specifically within the target population prior to the primary data collection phase. The AES comprehensively evaluates three core dimensions of emotional intelligence: emotional appraisal and expression, regulation of emotion, and utilization of emotion. The scale comprises 33 items, partitioned into 30 favorable items and 3 unfavorable items. Reverse scoring was systematically applied to the unfavorable items prior to statistical analysis.

An illustrative example of a favorable item includes: "I am aware of my emotions as I experience them," whereas an example of an unfavorable item is: "It is difficult for me to understand what others are feeling from what is happening to them." The items are structured on a four-point Likert scale, offering the following response options: Strongly Disagree (Sangat Tidak Sesuai [STS]), Disagree (Tidak Sesuai [TS]), Agree (Sesuai [S]), and Strongly Agree (Sangat Sesuai [SS]). The pilot study results demonstrated adequate item discrimination, with corrected item-total correlation values ranging from .360 to .649. The instrument displayed high internal consistency, as evidenced by a Cronbach's alpha coefficient of .920. Consequently, the AES was deemed psychometrically viable and highly reliable for assessing emotional intelligence among middle adolescents.

Advanced psychometric quality evaluations on the primary sample ($N = 410$) were executed via internal consistency mapping (macro and local reliability metrics) and construct validity verification using Confirmatory Factor Analysis (CFA) within a One-Factor Model. Macro reliability indices proved highly satisfactory for the unidimensional emotional intelligence construct, yielding a McDonald's Omega of $\omega = .8170$ and a Cronbach's Alpha of $\alpha = .8162$. At the local level (Frequentist Individual Item Reliability Statistics), the majority of the 33 items

maintained solid corrected item-rest correlations exceeding the > 0.30 psychometric benchmark, led by item AES 20 ($r = .4541$). Minor local variations emerged, primarily among reverse-scored items such as AES 5 ($r = .1743$) and AES 33 ($r = .2526$), as well as a few positive items like AES 8 ($r = .2197$) and AES 27 ($r = .2063$). Item AES 11 demonstrated an isolated negative correlation ($r = -.0130$). Structural validity via CFA confirmed that 32 out of 33 items yielded statistically significant standardized factor loadings ($\lambda = .1974$ to $.5307$; $p < .001$). Lower-performing items identified during local reliability tests including AES 5 ($\lambda = .2097$), AES 33 ($\lambda = .2949$), AES 8 ($\lambda = .2478$), AES 12 ($\lambda = .2870$), AES 26 ($\lambda = .2437$), AES 27 ($\lambda = .1974$), and AES 29 ($\lambda = .2815$) remained statistically valid indicators due to their highly stable significance values ($p < .001$). Conversely, CFA confirmed that item AES 11 did not fit the global model, producing an insignificant negative loading ($\lambda = -.0237$, $p = .660$). These localized mathematical fluctuations (especially in AES 11, AES 5, and AES 33) indicate minor method effects caused by negative sentence structures or fatigue effects stemming from a lengthy unidimensional questionnaire administered to adolescents. Nonetheless, to preserve the structural integrity of Schutte's original framework and maintain standard total score computation methods, all 33 items were retained for the primary hypothesis testing.

Perceived parenting styles were measured using the Parental Authority Questionnaire (PAQ) developed by Buri (1991), which operationalizes Baumrind's (1971) foundational parenting typologies. The scale had been previously adapted into Indonesian by Kamila (2025) and was adopted in its exact form for this study. The researchers did not perform any additional replication of translation procedures, though a rigorous pilot test (try-out) was similarly conducted to ensure empirical validity and reliability. The PAQ delineates three distinct parenting typologies: authoritarian, authoritative, and permissive, which are evaluated through independent subscales for the father and the mother. Each distinct parenting typology comprises 10 items, resulting in a 30-item configuration for each parental figure. Consequently, the overall cross-parent instrument yields a total of 60 items (30 items dedicated to maternal practices and 30 items dedicated to paternal practices), all of which are formulated as favorable statements. Sample items include: "My mother always encouraged verbal interaction whenever I felt that family rules and restrictions were unreasonable" and "As the children in my family were growing up, my father consistently gave direction and guidance in a rational and objective manner." The items are arranged on a five-point Likert scale with response choices including: Strongly Disagree (Sangat Tidak Setuju [STS]), Disagree (Tidak Setuju [TS]), Neutral (Netral [N]), Agree (Setuju [S]), and Strongly Agree (Sangat Setuju [SS]).

The pilot analysis demonstrated excellent item discrimination indices, with corrected item-total correlation values ranging from .303 to .683 for maternal authoritarianism, .398 to .673 for maternal authoritative, .392 to .580 for maternal permissiveness, .455 to .647 for paternal authoritarianism, .576 to .729 for paternal authoritative, and .398 to .577 for paternal permissiveness. Cronbach's alpha reliability coefficients for the pilot test were recorded at $\alpha = .956$ (maternal authoritarian), $\alpha = .830$ (maternal authoritative), $\alpha = .817$ (maternal permissive), $\alpha = .862$ (paternal authoritarian), $\alpha = .913$ (paternal authoritative), and $\alpha = .803$ (paternal permissive). Based on these indices, the PAQ was verified as an empirically sound and robust instrument for evaluating

perceived parenting practices in the middle adolescent demographic.

Psychometric evaluations of the Maternal PAQ on the primary sample ($N = 410$) combined internal consistency metrics with structural validity analysis via CFA using a Weighted Least Squares Mean and Variance-adjusted (WLSMV) estimator to account for the ordinal structure of the data. Reliability analyses indicated highly satisfactory internal consistency for Maternal Authoritativeness ($\omega = .8107$, $\alpha = .8055$) and Maternal Authoritarianism ($\omega = .8086$, $\alpha = .8053$), with all items exceeding the standard $> .30$ item-rest correlation threshold. The Maternal Permissive sub-scale generated lower coefficients ($\omega = .6153$, $\alpha = .6584$), yet successfully surpassed the acceptable threshold ($\geq .60$) required for psychological sub-dimensions in behavioral research. Global CFA fit indices for the Maternal PAQ generated a Comparative Fit Index (CFI) of .3088 and a Tucker-Lewis Index (TLI) of .2521. While these global fit values reflect cross-cultural adaptation complexities and sample-size sensitivities, local factor loadings confirmed strong construct validity. All items under Maternal Authoritarianism ($\lambda = .3332$ to $.6194$, $p < .001$) and Maternal Authoritativeness ($\lambda = .4320$ to $.6330$, $p < .001$) demonstrated highly significant, robust loadings. Within the Maternal Permissive sub-scale, six items emerged as valid and significant ($p < .001$): PAQ MATERNAL 1 ($\lambda = .5834$), PAQ MATERNAL 6 ($\lambda = .4261$), PAQ MATERNAL 14 ($\lambda = .6272$), PAQ MATERNAL 17 ($\lambda = .4676$), PAQ MATERNAL 19 ($\lambda = .4149$), and PAQ MATERNAL 24 ($\lambda = .4350$). Four items exhibited poor or non-significant loadings: PAQ MATERNAL 10 ($\lambda = .2217$, $p < .001$), PAQ MATERNAL 13 ($\lambda = -.0280$, $p = .564$), PAQ MATERNAL 21 ($\lambda = .0792$, $p = .100$), and PAQ MATERNAL 28 ($\lambda = -.0101$, $p = .834$). To preserve the cross-cultural comparability and theoretical integrity of Buri's (1991) original global model, an academic decision was made to retain all 30 maternal items. This approach allows the model to act as an empirical reflection of localized cultural variations and shifting definitions of permissive parenting within the Indonesian context.

Psychometric testing of the Paternal PAQ ($N = 410$) revealed robust internal consistency across all dimensions. Paternal Authoritativeness scored the highest reliability coefficients ($\omega = .8803$, $\alpha = .8784$), followed by Paternal Authoritarianism ($\omega = .8237$, $\alpha = .8204$). In contrast to the maternal data, Paternal Permissiveness exhibited highly stable internal consistency values ($\omega = .7605$, $\alpha = .7607$). Item-rest correlations for all paternal statements consistently remained above the $> .30$ baseline. Local CFA factor loadings using the WLSMV estimator further validated the instrument, with all 30 paternal items demonstrating highly significant standardized estimates ($\lambda \geq .30$, $p < .001$). Standardized loadings spanned from .3161 to .7284 for Paternal Authoritarianism, and from .4578 to .7440 for Paternal Authoritativeness. Paternal Permissiveness operated cleanly without statistical anomalies or negative distortions, with loadings ranging between .3384 and .6140, including critical items such as PAQ PATERNAL 13 ($\lambda = .3384$), PAQ PATERNAL 21 ($\lambda = .3582$), and PAQ PATERNAL 28 ($\lambda = .3762$) at a significance level of $p < .001$. Consequently, the original 30-item paternal structure was retained entirely without modifications.

Data analysis

The collected quantitative datasets were processed and analyzed using the IBM SPSS Statistics software application (Version 25.0 for Windows 64-bit) and JASP software. Initial stages comprised a comprehensive screening of multi-

variable linear regression assumptions. This process included checking residual normality (via histogram profiles and Normal Q-Q Plots), linearity profiles, homoscedasticity distributions (via residual scatterplots), error independence (using the Durbin-Watson statistic), and multicollinearity risks (via Tolerance and Variance Inflation Factor [VIF] assessments). Influential data points and extreme multivariate outliers were evaluated using Cook's Distance calculations.

Hypothesis testing was executed utilizing additive multiple linear regression models to evaluate the joint predictive capacity of paternal and maternal parenting style dimensions on adolescent emotional intelligence. The analytical execution proceeded in two steps: an assessment of two-predictor combined models via ANOVA F-tests to analyze the significance of combined linear contributions from paired parenting dimensions, and an evaluation of partial regression coefficients via t-tests to isolate the direction and unique predictive weight of individual parenting styles within the paired equations. The scope of explained variance was determined through the coefficient of determination (R^2 and Adjusted R^2). Finally, descriptive categorization for each parenting dimension (authoritarian, authoritative, and permissive for both mothers and fathers) was classified into two levels: "High" versus "Low." This classification layout was harmonized with the emotional intelligence variable to maintain analytical parameter consistency. The threshold for the "High" category was determined using empirical norming formulas based on group distributions ($X > M + 1SD$), respondents whose accumulated scores fell below or at this threshold ($X \leq M + 1SD$) were assigned to the "Low" category.

RESULTS

This study involved 410 adolescent participants aged 15–18 years in Karawang Regency (Table 1). The age distribution was relatively even, with a majority of female participants (65%), high school/vocational school students (82%), and 12th-grade students (29%). In terms of parents' occupations, most worked as private sector employees/workers (27%) and laborers (24%).

Prior to hypothesis testing, a descriptive statistical analysis was conducted to assess the mean (M), standard deviation (SD), minimum and maximum values, skewness, and kurtosis for adolescent emotional intelligence and all maternal and paternal parenting dimensions (See table 2). To evaluate data distribution profiles, formal shape normality benchmarks were applied, using the standard acceptable threshold of -2 to +2 for both skewness and kurtosis indices. The empirical findings for all evaluated variables fully satisfied these parametric criteria, with skewness values ranging from -.468 to .695 and kurtosis values spanning from -.263 to 1.926. Consequently, the raw

data verified compliance with shape normality requirements, justifying the use of parametric statistical procedures.

The adolescent emotional intelligence variable yielded a mean score of 100.70 ($SD = 10.303$). The slight negative skewness coefficient (-.200) indicates a distribution moderately skewed to the left, demonstrating that participant scores were predominantly concentrated around the upper-middle range. Additionally, the kurtosis value (1.236) revealed a slightly leptokurtic distribution curve, which nonetheless remained well within safe statistical boundaries for normal distribution. Within the parenting style domains, a consistent operational pattern emerged across both caregivers. Adolescents perceived authoritative practices as the most dominant upbringing style from both mothers ($M = 35.04$, $SD = 6.290$) and fathers ($M = 34.40$, $SD = 7.592$). This dimension was sequentially followed by authoritarian and permissive styles for both parental figures. This descriptive trend indicates that caregivers within the sample are primarily perceived as warm, democratic, and responsive, while concurrently balancing these traits with firm household regulations.

Table 1. Participant Demographic Characteristics (N= 410)

Characteristics	Frequency (<i>f</i>)	Percentage (%)
Age		
15 Years Old	103	23
16 Years Old	99	24
17 Years Old	97	26
18 Years Old	111	27
Grade		
9 th Grade	73	21
10 th Grade	111	24
11 th Grade	97	26
12 th Grade	129	29
Education Level		
SMA/K (Senior High/Vocational School)	337	82
SMP (Junior High School)	73	18
Gender		
Male	144	35
Female	266	65
Parents' Occupation		
Private Sector Employee/ Worker	109	27
Laborer/Construction Worker	97	24
Merchant/Entrepreneur	88	21
Civil Servant	69	17
Housewife	36	9
Unemployed	6	1
Others	5	1

Notes: N = 410. SMA/K = Sekolah Menengah Atas/Kejuruan; SMP = Sekolah Menengah Pertama.

Table 2. Descriptive Statistics

Variable	<i>M</i>	<i>SD</i>	Min	Max	Skewness	Kurtosis
Emotional Intelligence	100.70	10.303	65	129	-.200	1.236
Authoritarian Maternal	32.91	6.799	16	50	.105	-.263
Authoritative Maternal	35.04	6.290	14	50	.113	.187
Permissive Maternal	32.14	5.518	17	50	.695	.930
Authoritarian Parental	32.36	7.003	10	50	-.294	1.077
Authoritative Parental	34.40	7.592	10	50	-.468	1.172
Permissive Parental	32.24	6.361	10	50	-.173	1.926

Notes. *SD*= Standard Deviation

The correlation matrix presented in Table 3 confirms close empirical associations among the evaluated parenting dimensions. Robust and highly significant positive correlations emerged between identical parenting styles across both caregivers, demonstrating strong cross-caregiver convergence. This shared parenting pattern was most pronounced within the authoritarian dimension ($r = .642, p < .01$), followed closely by the permissive ($r = .599, p < .01$) and authoritative ($r = .525, p < .01$) dimensions. These significant bivariate linear relationships indicate a high degree of parenting alignment between mothers and fathers within the household, while concurrently underscoring the necessity of checking for multicollinearity in subsequent regression modeling. Regarding the baseline relationships between the predictors and the criterion variable, maternal authoritative parenting exhibited the strongest positive correlation with adolescent emotional intelligence ($r = .368, p < .01$), followed sequentially by paternal authoritative ($r = .236, p < .01$), maternal permissive ($r = .156, p < .01$), and paternal permissive ($r = .135, p < .01$) styles. Conversely, neither maternal authoritarian ($r = .035, p > .05$) nor paternal authoritarian ($r = .004, p > .05$) parenting styles demonstrated statistically significant baseline bivariate relationships with adolescent emotional intelligence.

As summarized in Table 4, a comprehensive suite of diagnostic tests verified that the multiple linear regression model fully satisfied all rigorous parametric assumptions, ensuring stable and unbiased parameter estimates. To assess variance overlap among the six parenting predictors, Tolerance and Variance Inflation Factor (VIF) values were evaluated. The analysis showed that Tolerance values moved consistently above the .10 minimum threshold (ranging from .471 to .587), while VIF values for all maternal and paternal dimensions remained well below the critical baseline of 10 (ranging from 1.704 to 2.337). These metrics confirm that the model is entirely free from multicollinearity, guaranteeing independent partial regression coefficients.

Furthermore, the formal normality of residuals evaluated via the Kolmogorov-Smirnov test yielded a statistic of .080 ($p < .001$). Although statistically significant,

this does not compromise the model's validity; grounded in the Central Limit Theorem, the large sample size ($N = 410$) guarantees that the residual distribution is asymptotically normal, securely retaining its Best Linear Unbiased Estimator (BLUE) status. Independence of errors was also confirmed, as the Durbin-Watson (D-W) statistic was recorded at 1.778. Falling within the ideal theoretical range of 1.5 to 2.5, this value confirms the absence of autocorrelation and demonstrates that the error terms across observations are completely independent. Additionally, the evaluation of multivariate anomalies using Cook's Distance yielded a maximum value of .253. Because this index falls far below the absolute critical threshold of 1.0, the dataset is verified to be clean of extreme influential outliers that could distort the regression line.

Finally, homoscedasticity was evaluated through visual inspection of the residual scatterplot, which showed that the data points were distributed randomly and evenly above and below the zero line on the Y-axis. The formation of this cloud-like cluster without any distinct geometric patterns (such as funneling or waving) confirms that the variance of the residuals remains constant and homoscedastic across all levels of the predictors. In sum, the successful fulfillment of these classical assumptions validates the methodological integrity of the empirical data, establishing a solid foundation for the subsequent multiple linear regression hypothesis testing.

The regression model's residual normality assumption was evaluated graphically by examining the distribution of the standardized residuals. As illustrated in Figure 1, the Normal Q-Q Plot of Standardized Residuals demonstrates that the empirical data points consistently cluster and align closely along the primary diagonal reference line. Although minor and expected fluctuations appear at the extreme tails of the distribution, the overall data pattern reveals no severe outliers that could distort parameter estimations. This visual profile confirms that the assumption of residual normality has been satisfied, validating the model for subsequent statistical inference.

Table 3. Bivariate Correlation Matrix

Variable	1	2	3	4	5	6	7
1. Emotional Intelligence	1						
2. Authoritarian Maternal	.305**	1					
3. Authoritative Maternal	.368**	.161**	1				
4. Permissive Maternal	.156**	.440**	.486**	1			
5. Authoritarian Parental	.004	.642**	.205**	.384**	1		
6. Authoritative Parental	.236**	.219**	.525**	.295**	.357**	1	
7. Permissive Parental	.135**	.362**	.380**	.599**	.539**	.542**	1

Table 4. Multicollinearity

Variable	Tolerance	VIF	Conclusion
Authoritarian Maternal	.530	1.888	No Multicollinearity
Authoritative Maternal	.587	1.704	No Multicollinearity
Permissive Maternal	.477	2.095	No Multicollinearity
Authoritarian Parental	.471	2.124	No Multicollinearity
Authoritative Parental	.550	1.819	No Multicollinearity
Permissive Parental	.428	2.337	No Multicollinearity

Notes.

Residual Normality Test (Kolmogorov-Smirnov) = .080 ($p < .001$; assumption theoretically satisfied via CLT)

Independence of Errors Test (Durbin-Watson) = 1.778 (free from autocorrelation).

Outlier Detection (Maximum Cook's Distance) = 0.253 (free from extreme influential outliers).

Homoscedasticity Test (Visual Scatterplot) = residual plots are randomly and homogeneously dispersed.

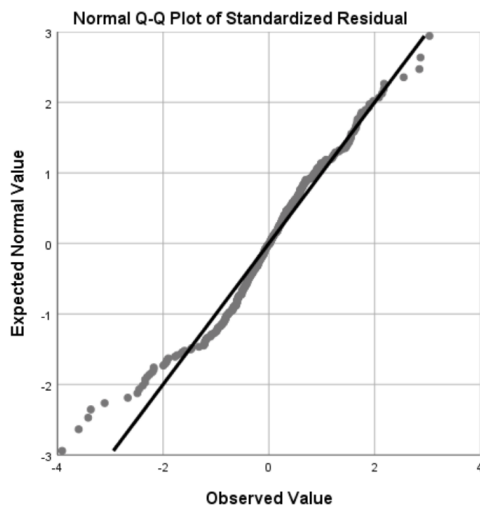


Figure 1. Normal Q-Q Plot of Standardized Residuals

The linearity assumption diagnostics compiled in Table 5 confirm that the evaluated models satisfy the required parametric standards. All parenting dimensions yielded statistically significant values below the .05 threshold on the linearity axis. Specifically, robust linear relationships with adolescent emotional intelligence were empirically verified for maternal authoritative ($F = 69.033$, $p < .001$), maternal permissive ($F = 10.765$, $p = .001$), and paternal authoritative ($F = 26.026$, $p < .001$) practices, establishing a highly stable

linear trend across these primary predictors. In contrast, the Deviation from Linearity parameters captured more nuanced variations within the empirical data. Paternal permissive parenting satisfied the linearity assumption perfectly, showing no significant model distortion ($p = .195$, $p > .05$). Conversely, maternal authoritative ($p = .001$), maternal permissive ($p = .010$), and paternal authoritative ($p = .001$) styles registered significant deviations from linearity.

This emergence of significant deviation indices highlights minor non-linear fluctuations within the field dataset. Methodologically, such patterns are expected in formal ANOVA tests when dealing with large sample sizes ($N = 410$). In large samples, the formal F-test becomes highly over-sensitive, causing even minor variations or small ripples in data distribution to be flagged as model deviations. Therefore, to ensure a comprehensive and objective verification of this assumption, the statistical proof was further cross-evaluated visually using graphical scatterplots.

The visual analysis using scatterplots (Figure 2) confirms that the actual field data points consistently align along the linear trend lines of their respective variables. The data exhibits stable diagonal upward or constant trends without forming extreme curvilinear distributions, such as U-shaped or parabolic patterns. Based on the superior statistical significance of the primary Linearity parameters ($p < .05$) combined with this visual validation from the integrated scatterplots, all parenting dimensions are confirmed to satisfy the linearity prerequisites safely and validly for subsequent multiple linear regression modeling.

Table 5. Linearity Test Results

Variable	F	Sig. Linearity	Sig. Deviation from linearity	Description
Maternal Authoritarian	.541	.463	.000	Non-Linear
Maternal Authoritative	69.033	.000	.001	Non-Linear
Maternal Permissive	10.765	.001	.010	Non-Linear
Paternal Authoritarian	.009	.927	.000	Non-Linear
Paternal Authoritative	26.026	.000	.001	Non-Linear
Paternal Permissive	7.724	.006	.195	Linear

Notes: $N = 410$

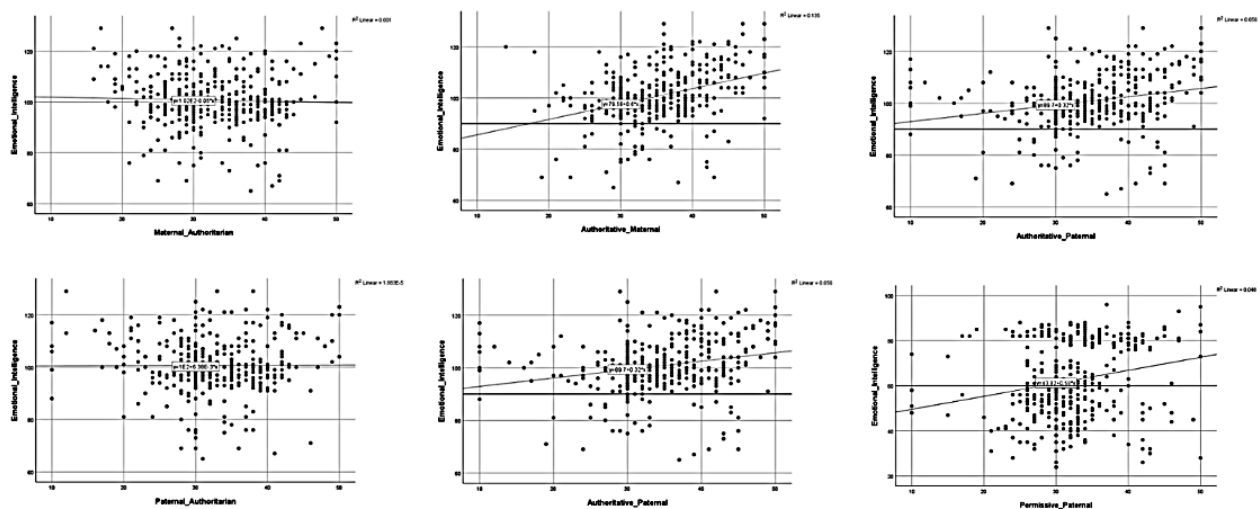


Figure 2. Scatter Plot Parenting Styles

The partial coefficient evaluations complemented by 95% Confidence Intervals (CI) summarized in Table 6 demonstrate varying predictive capacities across the dimensions. Perceived maternal authoritative parenting emerged as the sole statistically significant positive predictor of adolescent emotional intelligence ($\beta = .333$, $t = 5.551$, $p < .001$). Its unstandardized coefficient ($B = .545$) generated a 95% CI spanning from .352 (Lower Bound) to .738 (Upper Bound). Because this interval excludes zero, it establishes the empirical stability, direction, and high precision of maternal authoritative parenting in consistently enhancing emotional intelligence competencies across the target population. Conversely, none of the remaining maternal or paternal parenting dimensions exhibited unique statistically significant partial contributions. Paternal authoritative parenting failed to reach significance ($p = .155$), with its confidence interval crossing zero. A matching non-significant pattern was confirmed within the permissive domains for both maternal ($p = .737$) and paternal ($p = .923$) practices, as well as the authoritarian styles for both mothers ($B = -.131$, $p = .173$) and fathers ($B = -.077$, $p = .435$). The overlapping boundaries crossing zero within these non-significant paths systematically underscore the statistical limits of their independent predictive weights. Collectively, reporting these interval parameters offers high methodological transparency regarding the precision limits of the regression estimates within the sampled population.

To evaluate the collective contribution of specific maternal and paternal parenting configurations, a series of two-predictor combined models was executed. This

analytical approach tested nine paired combinations of maternal and paternal parenting dimensions against adolescent emotional intelligence. The resulting model fit parameters (via ANOVA F-tests) and coefficients of determination (R^2) are consolidated in Table 7. Methodologically, these paired equations were designed strictly to assess simultaneous linear predictive capacities and must not be interpreted as interaction or coparenting effects, given that no interaction terms were included in the regression models. The empirical findings from Table 7 indicate that eight of the nine paired configurations yielded statistically significant collective contributions ($p < .05$) to adolescent emotional intelligence, explaining varying degrees of criterion variance. The highest predictive capacity was produced by the combined model of maternal authoritative and paternal authoritarian parenting $F = 33.301$, $p < .001$, $R^2 = .141$, which accounted for a 14.1% effective variance in adolescent emotional intelligence. This was followed closely and consistently by the pairing of maternal authoritative and paternal authoritative styles at 13.8% ($F = 32.536$, $p < .001$, $R^2 = .138$), and the maternal authoritative and paternal permissive model at 13.5% ($F = 31.863$, $p < .001$, $R^2 = .135$). Theoretically, this statistical pattern underscores that the maternal authoritative dimension operates as a highly dominant predictor and functions as the primary psychological anchor in shaping adolescent emotional competence, regardless of the parenting style configuration implemented by the paternal figure.

Table 6. Partial Test Results

Variable	B	SE	β	t	Sig.	95% CI Lower	95% CI Upper	Description
(Constant)	82.579	3.504		23.567	.000	75.691	89.468	
Maternal Authoritarian	-.131	.096	-.086	-1.365	.173	-.318	.057	Non-Significant
Maternal Authoritative	.545	.098	.333	5.551	.000	.352	.738	Significant
Maternal Permissive	.042	.124	.022	.335	.737	-.202	.286	Non-Significant
Paternal Authoritarian	-.077	.098	-.052	-.781	.435	-.270	.117	Non-Significant
Paternal Authoritative	.120	.084	.088	1.425	.155	-.045	.285	Non-Significant
Paternal Permissive	.011	.114	.007	.096	.923	-.213	.234	Non-Significant

Notes. SE = Standard Error.

Only Maternal Authoritative dimension is significant ($p = .000$), contributing 13.5% to the partial variance.

Table 7. Model Fit and Coefficient of Determination for Paired Maternal-Paternal Parenting Models

Combination of Variables	F	Sig.	R	R Square	Adjusted R Square	Contribution (%)
Maternal Authoritarian & Paternal Authoritative	13.764	.000 ^b	.252 ^a	.063	.059	6.3%
Maternal Authoritarian & Paternal Permissive	5.494	.004 ^b	.162 ^a	.026	.022	2.6%
Maternal Authoritative & Paternal Authoritarian	33.301	.000 ^b	.375 ^a	.141	.136	14.1%
Maternal Authoritative & Paternal Authoritative	32.536	.000 ^b	.371 ^a	.138	.134	13.8%
Maternal Authoritative & Paternal Permissive	31.863	.000 ^b	.368 ^a	.135	.131	13.5%
Maternal Permissive & Paternal Authoritarian	5.868	.003 ^b	.167 ^a	.028	.023	2.8%
Maternal Permissive & Paternal Authoritative	13.859	.000 ^b	.253 ^a	.064	.059	6.4%
Maternal Permissive & Paternal Permissive	5.668	.004 ^b	.165 ^a	.027	.022	2.7%

Notes.

Maternal Authoritarian & Paternal Authoritarian combination is excluded because it is non-significant ($p > .05$) with a variance contribution near zero.

Table 8. Categorization Results

Variable	Cut-Off	Low		High		Total	
		f	%	f	%	f	%
Emotional Intelligence	$X \leq 111,00$	171	41,7	239	58,3	410	100%
Maternal Authoritarian	$X \leq 39,71$	282	68,8	128	31,2	410	100%
Maternal Authoritative	$X \leq 41,33$	252	61,5	158	38,5	410	100%
Maternal Permissive	$X \leq 37,36$	330	80,5	80	19,5	410	100%
Paternal Authoritarian	$X \leq 39,36$	299	72,9	111	27,1	410	100%
Paternal Authoritative	$X \leq 41,99$	257	62,7	153	37,3	410	100%
Paternal Permissive	$X \leq 38,60$	324	79,0	86	21,0	410	100%

Note. The high category is determined using the empirical norming formula $X > M + 1SD$. Scores below or equal to this threshold are grouped into the low category.

The categorization analysis revealed that for the emotional intelligence variable (table 8), the majority of the respondents fell into the high category, encompassing 239 adolescents (58.3%). In contrast, the general distribution of adolescents' perceptions across all parental upbringing dimensions was predominantly occupied by the low category, with percentages ranging from 61.5% to 80.5%. This baseline trend indicates that most caregivers of the targeted subjects implement parenting practices aligned with the normative group average. However, closer inspection of the high-score category revealed that the highest prevalence for the maternal figure was observed within the authoritative style at 38.5% ($f = 158$), followed sequentially by the authoritarian (31.2%) and permissive (19.5%) styles. A matching operational profile emerged for the paternal figure, where the highest proportion within the high category was also commanded by authoritative practices at 37.3% ($f = 153$), followed by the authoritarian (27.1%) and permissive (21.0%) dimensions. Taken together, these descriptive metrics demonstrate that within the context of this sampled population, when caregiving orientations exceed the group average, authoritative parenting stands out as the most prominent style experienced by adolescents. This pattern reflects a widespread tendency among caregivers to maintain democratic, warm, and highly responsive interactions while concurrently setting clear and structured behavioral boundaries for their adolescents.

DISCUSSION

This study evaluated the perceived parenting styles of fathers and mothers in relation to the emotional intelligence of middle adolescents in Karawang Regency, examining both single-predictor (partial) effects and two-predictor combined models. The hypothesis testing demonstrated that, when examined partially, only maternal authoritative parenting exerted a statistically significant effect on adolescent emotional intelligence. Conversely, none of the paternal parenting dimensions demonstrated a significant independent effect when tested separately as single predictors. The combined modeling revealed that pairs of maternal and paternal parenting dimensions collectively contributed to adolescent emotional intelligence within specific linear combinations. However, joint models that included maternal authoritarian parenting consistently failed to yield significant contributions. These findings indicate that within the context of this study, the quality of maternal parenting maintains a much stronger and more dominant link to adolescent emotional development than paternal parenting.

The lack of an independent, single-predictor effect for paternal parenting indicates an important phenomenon. The literature emphasizes that emotional closeness, consistent presence, and active involvement in daily caregiving are essential components of father involvement. In the context of fatherlessness, attention must be paid not only to the physical presence of the father but also to his emotional and functional presence in the child's life (Arbiyana & Kholil, 2024). The absence of a partial paternal effect due to limited daily caregiving involvement within this industrial region aligns with the argument by Sari et al (2021) that a Paternal contribution to emotional development requires an active presence in daily upbringing.

The context of Karawang as a major industrial region in West Java (Silitonga, 2022) provides an additional explanation regarding the non-significant independent role of the father. The dominance of parental occupation in the private sector/employees (27%) and laborers (24%) sociologically indicates a tendency toward high workloads, which can restrict the intensity of daily family interactions. The characteristics of industrial occupations, which commonly utilize shift systems and production-driven working hour demands, allow for constrained daily interaction intensity between fathers and adolescents. From an ecological systems theory perspective, child development is shaped by relations with the broader environment, including parental work demands and the social conditions surrounding the family (Stormshak et al, 2011). Therefore, the non-significant partial effect of paternal parenting is more likely linked to daily emotional involvement that is not yet intense enough due to limited shared time. In contrast, the strong role of mothers is closely tied to the substantial amount of time they spend with adolescents at home. As the primary daily caregiver, the mother engages in a much larger volume of interaction, allowing the adolescent to fully observe and absorb positive behavioral modeling.

The positive link between maternal authoritative parenting and emotional intelligence aligns with Baumrind's developmental theory (Baumrind, 2013), which posits that an authoritative style facilitates autonomy within clear behavioral boundaries while blending warmth and support. This finding is also consistent with studies by Martínez et al. (2020) and Pinquart (2017), which proved a positive relationship between authoritative parenting and socio-emotional development and psychological adjustment during adolescence. An adolescent's need to recognize, express, and adaptively manage emotions is highly compatible with maternal interactions, which tend to be more intense in daily emotional matters. This interaction manifests as affective support, emotional validation, and open communication regarding the child's psychological

experiences. Maternal authoritative parenting provides a secure psychological environment for adolescents to explore emotions without fear of rejection. This responsiveness supports the development of self-awareness and emotion regulation, which are core components of emotional intelligence (Pinquart & Kauser, 2018). Unlike the maternal patterns, the authoritative dimension for fathers did not yield a significant partial effect.

On the other hand, maternal authoritarian parenting did not show a significant effect, and maternal permissive parenting similarly failed to show a meaningful influence. Theoretically, both styles reflect an imbalance between rules and warmth. In the authoritarian style, the mother overly restricts the child through rigid rules lacking warmth, whereas in the permissive style, the mother provides excessive warmth but over-indulges the adolescent without clear guidance or boundaries (Baumrind, 2013). This imbalance disrupts the adolescent's process of internalizing emotion regulation values. The non-significant effects of maternal authoritarian and permissive styles align with the arguments of Hosokawa and Katsura (2018) and Pinquart & Kauser (2018), which suggest that upbringing environments that are either overly controlling or excessively lenient fail to facilitate autonomous emotion regulation, thereby hindering the formation of positive emotional intelligence in middle adolescents.

This study reveals a unique phenomenon where the maternal authoritative dimension acts as an anchor (anchor effect) in predicting adolescent emotional intelligence. Through the two-predictor combined models, the framework evaluated the linear collective contribution of two variables in pairs without assuming a direct, lived psychological interaction (coparenting) between the parents. Based on this linear combined modeling, the pairing of an authoritative mother and an authoritarian father yielded the highest contribution at 14.1%. This combination likely emerged as the largest predictor because, given a Paternal limited interaction time in an industrial region, firm paternal rules (authoritarian) are perceived as effective in establishing clear behavioral boundaries, provided they are balanced by warmth and emotional mediation from an authoritative mother. The next highest contribution was commanded by the joint authoritative mother and authoritative father model at 13.8%. Meanwhile, the combination of an authoritative mother and a permissive father provided the smallest contribution within its group at 13.5%. This phenomenon demonstrates that whenever the maternal authoritative dimension is present in a combined model, the explained variance of adolescent emotional intelligence consistently locks at the highest tier (above 13%), regardless of the paternal parenting dimension paired with it.

Conversely, when the two-predictor combined models did not include maternal authoritative characteristics, the predictive capacity dropped drastically to a lower range between 2.6% and 6.4%, even if the father practiced authoritative parenting. This phenomenon is closely linked to the sociocultural context in Indonesia, where mothers traditionally hold a central role in the domestic sphere. The intensity of daily interaction and emotional attachment in adolescents is generally much stronger toward the maternal figure. Consequently, if a mother fails to display warm and responsive (authoritative) caregiving, positive parenting from the father cannot optimally compensate for or boost adolescent emotional intelligence within this linear system. This data pattern reveals that maternal authoritative parenting is an essential, consistently present element that plays a far more dominant role in influencing adolescent emotional intelligence than any other combination of

parenting dimensions. Although paternal parenting did not stand out independently, the simultaneous test results show that parental upbringing styles operate as an interconnected unit within the family system. Grounded in Ecological Systems Theory and Family Systems Theory, a child's emotional development is shaped by the cooperative relationship (coparenting) between both parents. The importance of this collective contribution supports the study by Beyazit et al. (2024), which emphasized that parental emotional involvement is an important predictor in shaping adolescent emotional intelligence. The simultaneous analysis confirms that the combination of maternal and paternal parenting styles collectively exerts a significant influence on adolescent emotional intelligence across specific caregiving pairings.

The data categorization results reinforce these findings when viewed through their distribution. Authoritative parenting emerged as the most dominant high-category dimension implemented by parents, standing at 38.5% for mothers and 37.3% for fathers. This phenomenon indicates that the majority of the participants' parents have attempted to build healthy, two-way communication that respects adolescent autonomy. This aligns with classical parenting theory from Baumrind (1971), which states that the defining characteristic of authoritative parenting is a balanced combination of rational demandingness and warm responsiveness. This type of upbringing is empirically proven to give adolescents the space to explore themselves and learn independent decision-making without losing parental direction or protection. Authoritarian parenting occupied the second highest position in the high category (31.2% for mothers and 27.1% for fathers), showing that rigid and strict control is still practiced by some parents, though it does not serve as the primary foundation of their daily caregiving. Meanwhile, permissive parenting was the least selected style within the high category (19.5% for mothers and 21% for fathers). This indicates that parents tend to avoid granting absolute freedom without oversight, recognizing that adolescent self-regulation at this developmental stage still requires normative structures and clear boundaries from the family environment.

Overall, the majority of the adolescents in this study (58.3%) possessed emotional intelligence in the high category. This demonstrates that warm, directed, and communicative parenting is far more effective in stimulating positive emotional development than environments that are overly restrictive (authoritarian) or overly loose (permissive). This finding is supported by research from Lestari et al. (2025), which asserts that adolescents raised with authoritative parenting exhibit significantly higher levels of emotional intelligence compared to other styles. Goleman (1995) emphasizes that the capacity to manage emotions, motivate oneself, and empathize is deeply influenced by how the family, as the child's primary environment, validates emotional expression from an early age. A secure attachment between parent and child, as explained in Bowlby's attachment theory, serves as the primary safe base for adolescents to develop mature emotional competencies (Yang et al., 2024). This is further reinforced by Saputri and Hastuti (2025), who state that sound socialization methods implemented by parents within the household play a crucial role in character formation and psychological maturity.

Interestingly, a gap emerged where parenting style scores generally fell into the low category, yet adolescent emotional intelligence placed in the high category. This indicates that the development of emotional intelligence is not driven by a single source, nor does it stem entirely from inside the home. According to Bronfenbrenner's Ecological

Systems Theory (Bronfenbrenner, 1979), within the microsystem setting, it is highly plausible that a teenager's psychological development might be further supported or accelerated by external socialization agents such as the school environment, interactions with teachers, and peer group dynamics experienced in daily life. Although these specific external environmental variables were not directly measured in the current study, they offer a reasonable contextual explanation for why the respondents maintained high emotional intelligence. Furthermore, this elevated emotional intelligence could potentially be linked to the sample's demographic characteristics, where the majority of respondents are in middle adolescence and reside with both biological parents in intact family structures (Lestari et al., 2025). Structurally and functionally intact families provide emotional stability and a consistent support system, thereby minimizing internal conflict within the adolescent (Saputri & Hastuti, 2025).

Despite providing a clear overview, this study contains several academic limitations that must be noted. First, the highest combined contribution value generated by the two-predictor model (authoritative mother and authoritarian father) stood at 14.1%. This figure indicates that 85.9% of the variance in adolescent emotional intelligence is influenced by factors outside the scope of the parenting variables measured in this study. As explained by Nordin et al. (2025), external and internal factors such as self-efficacy, individual cognitive maturity, social media exposure, and school culture hold crucial roles that were not directly explored in this research. Second, this study relied entirely on self-report instruments completed solely by the adolescents. This single-source data collection approach introduces potential limitations, including common method variance, perceptual biases, social desirability, and the participants' immediate mood during the administration. Adolescents might have a generalized tendency to evaluate their family dynamics either overly positively or negatively. Consequently, the findings should be interpreted with caution, as they reflect the subjective perceptions of the adolescents rather than objective family observations. Third, the generalization of these results is limited to the adolescent population in Karawang Regency, which represents an industrial community; thus, the findings may not apply to adolescent populations from regions with different demographic backgrounds.

In terms of practical implications, the results of this study offer recommendations that strengthening adolescent emotional intelligence should focus on warmth, communication, and consistent direction in parenting. Mothers remain a highly decisive figure in building emotional well-being within the family, but paternal caregiving also needs to be reinforced through involvement that is more emotionally and functionally present (Khusnia et al., 2023). Consequently, balanced combined parenting models serve as an important foundation for understanding the dynamics of adolescent emotional development (Gymnastia et al., 2025). In conclusion, this study demonstrates that maternal parenting, particularly the authoritative style, has a much stronger linear link to the emotional intelligence of middle adolescents than paternal parenting. However, paternal caregiving characteristics remain a valuable component within the family constellation and must be understood deeply within the framework of industrial employment and its attendant interaction limits. The findings confirm that the stability and quality of primary daily parenting dimensions are the ultimate determining factors in adolescent emotional development.

CONCLUSION

This study successfully fulfilled its objectives by mapping the predictive associations of perceived parental parenting styles toward adolescent emotional intelligence, evaluating them as single predictors (partially) and within two-predictor combined models. Through single-predictor analysis, a perceived maternal authoritative parenting style emerged as the most consistent and statistically significant linear predictor of adolescent emotional intelligence. Conversely, while none of the paternal parenting dimensions yielded a statistically significant independent weight when tested partially as single predictors, this non-significant statistical layout does not imply that fathers lack an important developmental role rather, it reflects localized restricted variability or overlapping variance within the family system model. Meanwhile, through the two-predictor combined regression models, pairs of paternal and maternal parenting dimensions collectively provided a statistically significant contribution to predicting the criterion variable, particularly when the maternal figure implemented an authoritative style, which acted as a primary anchor for the stability of the model estimates. This finding highlights that the maternal authoritative dimension holds a dominant relative position in predicting self-report adolescent emotional intelligence within the family system of an industrial region, without operating as a direct causal agent.

Based on these findings, practical recommendations are directed toward parents, particularly those in industrial areas with high workloads, to better align their role-sharing strategies in caregiving. Given the constraints of working hours under industrial shift systems, fathers are expected to improve the quality of their direct emotional and functional involvement, rather than deferring daily upbringing solely to mothers. Both parents are advised to prioritize warm, responsive interactions while maintaining clear normative boundaries (authoritative) to facilitate the healthy management and recognition of emotions in adolescents.

Future research is expected to examine other relevant variables associated with adolescent emotional intelligence that were not captured in this predictive regression model, such as self-efficacy, peer group influences, school culture, and the intensity of social media use. Furthermore, to address the common method variance and inherent boundaries of self-report data, future investigations should incorporate multi-informant reporting or observational methodologies. Additionally, future studies should be conducted on adolescent populations with different demographic regional characteristics to obtain a broader comparative understanding of the predictive dynamics underlying adolescent emotional intelligence.

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DECLARATION

Ethics approval and consent to participate

This study was conducted in strict adherence to the ethical principles of psychological research involving human participants. Institutional approval and administrative clearance were obtained from the Faculty of Psychology at Universitas Buana Perjuangan Karawang prior to the data collection process. In accordance with the ethical code of conduct, digital informed consent was obtained voluntarily from each participant before the research instruments were administered. For participants under the age of 17, this process included securing parental consent from their parents or legal guardians.

Consent for publication

All participants provided their consent for the data they supplied to be utilized and published for academic purposes and scientific publication. All participant data were strictly anonymized; thus, no personally identifiable information is disclosed in this manuscript.

Availability of data and materials

The dataset generated and analyzed during the current study is not publicly available to ensure the confidentiality and privacy of the participants. However, the data can be made available from the corresponding author upon reasonable academic request.

Conflicts of interest Statement

The authors declare no conflicts of interest—whether financial, personal, or professional—with any party that could potentially influence the objectivity or introduce bias into the findings of this study.

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Artificial Intelligence-Assisted Technology

The authors declare that no artificial intelligence (AI)-assisted technologies were utilized to analyze the research data, generate empirical statistical values, or interpret psychological findings in this study. The use of AI-assisted technology was strictly limited to grammatical refinement and final text proofreading.

Authors' contributions

- Eli Sandra: Conceptualization of ideas, methodology development, field investigation, data collection, statistical data analysis, and drafting the initial manuscript.
- Puspa Rahayu Utami Rahman: Conceptualization of ideas, academic supervision, methodological verification, validation of data analysis results, and manuscript review and editing.
- Yulyanti Minarsih: Conceptualization of ideas, academic supervision, methodological verification, validation of data analysis results, and manuscript review and editing.

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