

Family Environment and Social-emotional Competence of Primary School Students

Shuyang Li, Jie Wang, Suling Ma

Lishui University, Lishui City, Zhejiang Province, China, 323000

Abstract: Objective: Based on the ecological systems theory, this study explores the mechanism by which the family environment affects the social-emotional competence of primary school students and examines the mediating role of the parent-child relationship. Methods: Using the Family Environment Scale (FES), the Child-Parent Relationship Scale (CPRS), and the Primary School Students' Social-Emotional Competence Scale, a survey was conducted among 1145 primary school students. Results: (1) The development of various dimensions of primary school students' social-emotional competence was unbalanced: self-awareness, awareness of others, and interpersonal skills were relatively well-developed, while self-management and self-regulation were weaker. (2) Cohesion had a stronger positive predictive effect on social-emotional competence than free expression. (3) The intimate parent-child relationship played a partial mediating role. (4) Conflict expression was beneficial to the development of social-emotional competence but showed no significant correlation with the parent-child relationship. Conclusion: The family environment affects social-emotional competence through both direct pathways and the mediating pathway of the parent-child relationship. Cohesion has a direct enhancing effect, while the parent-child relationship serves as a crucial bridge connecting the family environment and the development of social-emotional competence.

Keywords: Family environment; Primary school students; Social-emotional competence; Parent-child relationship

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Social-emotional competence significantly impacts an individual's physical and mental health, academic performance, and interpersonal relationships [1]. In recent years, basic education across various countries has increasingly emphasized the cultivation of students' social-emotional competence [2]. Although research indicates that the family environment plays a key role in children's social-emotional development [3], existing studies have largely focused on school factors [4], with insufficient exploration of the mechanisms within non-left-behind children family. Therefore, this study focuses on the impact of the family environment (cohesion, free expression, and conflict expression) on the social-emotional competence of primary school students and examines the mediating role of the parent-child relationship to supplement previous research and provide a better theoretical basis for guiding family education practices.

1.Literature Review and Research Hypotheses

1.1 Defining Core Concepts

The family environment in this study specifically refers to the subjective environmental dimension proposed by Moos et al [5], which is the interpersonal relationships and emotional atmosphere formed through interaction within the family. It encompasses three core dimensions [6]: cohesion, defined as the mutual commitment, help, and support among family members; free expression, the degree to which members are open and directly express their feelings; and conflict expression, the open expression of anger, aggression, or contradiction among members.

Social-emotional competence is the core outcome variable of this study. Synthesizing definitions from CASEL [7], OECD [8], and China's Ministry of Education [9], this paper defines it as a comprehensive ability, acquired through learning, related to emotional cognition, management, and interpersonal interaction. It consists of five dimensions: self-awareness, self-management, self-regulation, awareness of others, and interpersonal skills.

The parent-child relationship is the mediating variable. From a psychological perspective, the parent-child relationship is the most fundamental and important emotional bond within a family, significantly influencing children's interpersonal relationships, physical and mental development, and behavior [10]. This study focuses on the closeness of this emotional bond [11], which reflects the level of love, trust, and support within the parent-child

relationship.

1.2 The Family Environment, Intimate Parent-Child Relationship, and Primary School Students' Social-Emotional Competence

As the primary setting for socialization, the family lays the foundation for children's emotional and cognitive development [12]. Studies show that family cohesion can effectively enhance adolescents' self-control [13], a concept homologous to the self-regulation and self-management dimensions of social-emotional competence. Thus, cohesion should positively predict social-emotional competence (H1a). Similarly, free expression, the degree of emotional expression within the family, can promote emotional perception and self-control behaviors in adolescents [12], corresponding to the self-awareness and awareness of others dimensions. Therefore, it is expected to positively predict social-emotional competence (H1b). Conversely, conflict expression may weaken adolescents' self-control [13], leading to the hypothesis that it negatively predicts social-emotional competence (H1c).

The three dimensions of the family environment are also key factors influencing the quality of the parent-child relationship. Mutual support and commitment among members form the emotional foundation for parent-child interaction [14]. Maternal emotional support can effectively strengthen the parent-child bond [15]; hence, cohesion positively predicts an intimate parent-child relationship (H2a). Free expression facilitates emotional communication among members, deepening mutual understanding [15]; therefore, it positively predicts an intimate parent-child relationship (H2b). However, conflict expression can lead to family discord, reducing the quality of the parent-child relationship. Negative emotional expressions by parents can also harm this relationship [16]; thus, it negatively predicts an intimate parent-child relationship (H2c).

A positive parent-child relationship is crucial for child development. Intimate interactions not only foster children's emotional management skills but also promote the development of their emotional cognitive abilities [17][18]. Primary school is a critical period for the development of social-emotional competence [19]; therefore, an intimate parent-child relationship positively predicts primary school students' social-emotional competence (H3).

More importantly, the family environment may indirectly influence child development by shaping the quality of parent-child interaction. Positive parent-child communication not only strengthens emotional bonds but also promotes the development of children's social cognition and interpersonal skills [20]. Zhang (2024) [21] has confirmed the significant mediating effect of the parent-child relationship in the link between parenting styles and primary school students' social-emotional competence. Accordingly, this study proposes that the intimate parent-child relationship mediates the relationship between the family environment and social-emotional competence (H4). Based on these hypotheses, the conceptual framework for this study is established (Figure 1).

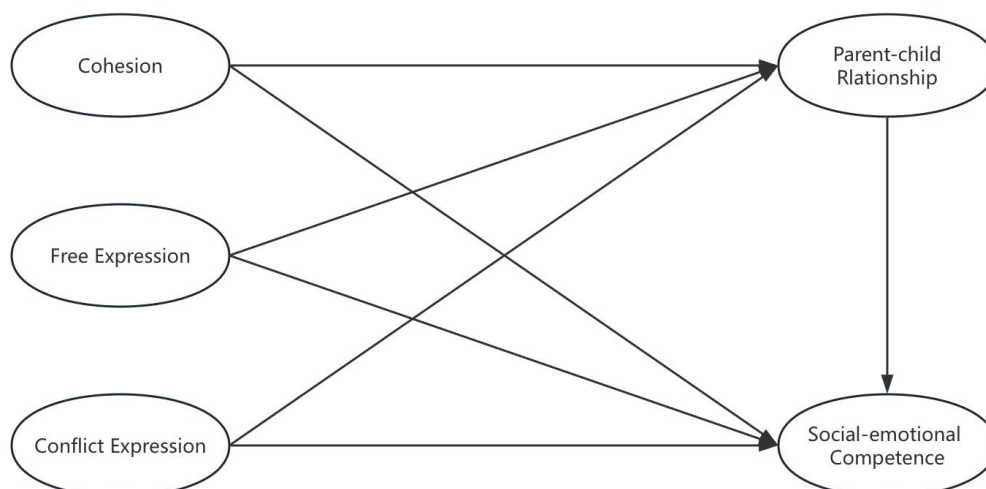


Figure 1. Theoretical framework of the relationship between family environment and social-emotional competence of primary school students.

2. Research Design

2.1 Participants

Using purposive sampling, this study selected 1145 primary school students from one school in Lishui City, Zhejiang Province, China. Their parents completed the questionnaires, which were then matched to the students. A total of 1145 valid questionnaires were collected, with an effective rate of 100%. The sample comprised 48.8% boys and 51.2% girls. The distribution across grades was relatively balanced: Grade 1 (12.1%), Grade 2 (18.9%), Grade 3 (15.0%), Grade 4 (15.0%), Grade 5 (18.8%), and Grade 6 (20.2%).

2.2 Instruments

Three standardized scales were employed: Family Environment Scale (FES)^[22], Child-Parent Relationship Scale (CPRS)^[23], Primary School Students' Social-Emotional Competence Scale^[24]. All scales used a 5-point Likert format. Reliability and validity indices met psychometric standards, with acceptable model fit indices, Cronbach's α coefficients for all dimensions ranged from 0.773 to 0.957, indicating good internal consistency. According to the research focus, the "closeness" dimension of the CPRS was selected for analysis. All dimensions were positively scored except for the "conflict expression" dimension, which was reverse-scored.

2.3 Data Analysis

Data processing, model construction, and hypothesis testing were performed using SPSS 27.0 and AMOS 27.0 software.

3. Results

3.1 Common Method Bias Test

Harman's single-factor test was used to examine common method bias. The principal component analysis extracted two factors with eigenvalues greater than 1. The first factor accounted for 59.471% of the variance, slightly exceeding the 40% threshold. However, subsequent CFA results indicated a good model fit (e.g., GFI = 0.911, RMSEA = 0.073), suggesting that common method bias did not significantly impact the validity of the conclusions.

3.2 Descriptive Statistics

The overall family environment level for primary school students was relatively high ($M = 4.000$). Specifically, cohesion ($M = 4.481$) and free expression ($M = 4.440$) were significantly higher than conflict expression ($M = 3.078$), indicating strong family cohesion and freedom of expression but a lower level of open conflict. This may be influenced by traditional Chinese culture, where parents often hold absolute authority, making children less involved in family affairs, particularly major conflicts^[25].

Primary school students' social-emotional competence was generally high ($M = 4.277$), but variations existed across dimensions. Self-awareness ($M = 4.603$), awareness of others ($M = 4.321$), and interpersonal skills ($M = 4.438$) were relatively well-developed, while self-management ($M = 4.032$) and self-regulation ($M = 3.990$) lagged behind. This discrepancy may stem from three factors: (1) cognitive developmental limitations——primary school students can understand interpersonal interaction but may not fully grasp or adhere to rules for self-control; (2) an educational emphasis on skill——based knowledge transmission over systematic emotional education^[26]; (3) the overprotective nature of Chinese parenting, which may hinder children's ability to cope with setbacks and regulate their emotions^[27].

The level of parent-child relationship was high ($M = 4.545$), indicating close ties between the students and their parents.

3.3 Correlation Analysis

Table 1 shows the correlations among the main variables. Family environment was significantly positively correlated with cohesion ($r = 0.608$, $p < 0.001$), free expression ($r = 0.669$, $p < 0.001$), and conflict expression ($r =$

0.705, $p < 0.001$). The intimate parent-child relationship ($r = 0.461$, $p < .001$) and social-emotional competence ($r = 0.583$, $p < .001$) were also significantly positively correlated with the overall family environment. The results satisfy the basic conditions for mediation analysis, and all correlation coefficients were below 0.75, indicating no significant multicollinearity issue.

Table 1. Matrix of correlations between variables (n = 1054).

Variable	1	2	3	4	5	6
1. Cohesion	1					
2. Free Expression	0.729***	1				
3. Conflict Expression	-0.067*	0.009	1			
4. Family Environment (Total)	0.608***	0.669***	0.705***	1		
5. Parent-Child Relationship	0.673***	0.641***	-0.055	0.461***	1	
6. Social-Emotional Competence	0.693***	0.642***	0.103***	0.583***	0.613***	1

Note: $p < 0.05$; * $p < 0.01$; ** $p < 0.001$.

3.4 Model Fit and Path Analysis

Confirmatory factor analysis was performed using AMOS 27.0 to test the theoretical model. For a large sample ($n = 1054$), the χ^2/df ratio was relatively high. However, other fit indices met the recommended criteria: GFI = 0.911, RMSEA = 0.073, CFI = 0.956, etc.

The results of the structural equation model are presented in Figure 2 and Table 7. Cohesion ($\beta = 0.499$, $p < 0.001$), free expression ($\beta = 0.192$, $p < 0.001$), and conflict expression ($\beta = 0.164$, $p < 0.001$) all had significant positive direct effects on primary school students' social-emotional competence, with cohesion having the strongest effect. Thus, H1a and H1b were supported, while H1c was rejected, a finding consistent with Lee et al^[28].

Regarding the parent-child relationship, cohesion ($\beta = 0.467$, $p < 0.001$) and free expression ($\beta = 0.336$, $p < 0.001$) positively predicted a parent-child relationship, whereas conflict expression showed no significant effect ($p > 0.05$). Therefore, H2a and H2b were supported, but H2c was rejected.

Finally, the parent-child relationship positively predicted social-emotional competence ($\beta = 0.172$, $p < 0.001$), confirming its role as a significant factor in developing social-emotional competence. Hence, H3 was supported.

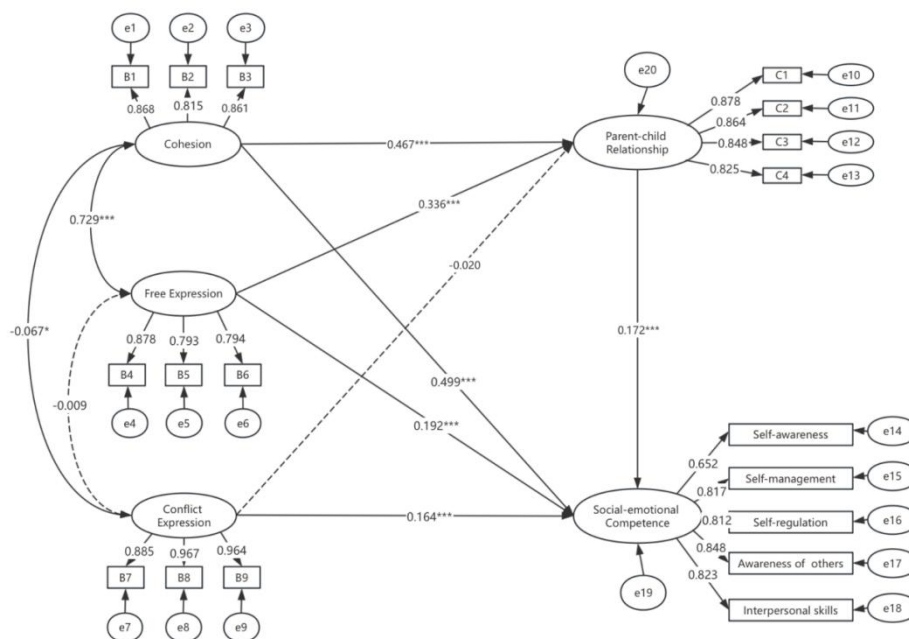


Figure 2. Structural equation model with standardized path

3.5 Mediation Analysis

To test the mediating role of the parent-child relationship, a bootstrap analysis (5000 samples) was conducted. As shown in Table 2, the indirect effect of cohesion on social-emotional competence through the parent-child relationship was significant (indirect effect = 0.080, 95% CI [0.037, 0.145]). Similarly, the indirect effect of free expression through the parent-child relationship was significant (indirect effect = 0.058, 95% CI [0.027, 0.120]). However, the indirect effect of conflict expression through this mediator was not significant (indirect effect = -0.003, 95% CI [-0.012, 0.004]), as the confidence interval included zero. These results indicate that the parent-child relationship partially mediates the link between cohesion/free expression and social-emotional competence, but not the link between conflict expression and social-emotional competence. Therefore, H4 was partially supported.

Table 2. Bootstrap analysis results for testing the significance of mediating effects.

Path	Effect	Standardized β	SE	95% CI (LL)	95% CI (UL)
Path 1: Cohesion → Relationship → SEC	Total Effect	0.579**	0.065	0.450	0.723
	Direct Effect	0.449**	0.068	0.356	0.637
	Indirect Effect	0.080*	0.025	0.037	0.145
Path 2: Free Expression → Relationship → SEC	Total Effect	0.250**	0.067	0.104	0.386
	Direct Effect	0.192**	0.069	0.048	0.344
	Indirect Effect	0.058**	0.022	0.027	0.120
Path 3: Conflict Expression → Relationship → SEC	Total Effect	0.161*	0.026	0.110	0.214
	Direct Effect	0.164*	0.026	0.116	0.217
	Indirect Effect	-0.003	0.004	-0.012	0.004

Note: SEC = Social-Emotional Competence. *0.01 < p ≤ 0.05; **0.001 < p ≤ 0.01; ***p ≤ 0.001

4. Discussion and Implications

This study found that while the overall level of social-emotional competence among primary school students was high (M = 4.277), its development was uneven. Dimensions like self-awareness, awareness of others, and interpersonal skills were well-developed, whereas self-management and self-regulation lagged, reflecting the multi-dimensional and asynchronous nature of social-emotional development. The study’s findings on the influence mechanisms of the family environment offer several theoretical and practical insights.

4.1 Lagging Development of Self-Management and Self-Regulation

The slower development of self-management and self-regulation abilities in primary school students points to deficiencies in the existing educational structure. First, neural development constraints: children aged 7-11 years are in the concrete operational stage, and abstract executive functions are not yet fully developed. Second, an imbalanced educational environment: there is a focus on knowledge instruction at the expense of systematic training in emotional skills [29]. Third, intergenerational transmission within the family: if caregivers suppress emotional expression or lack methods for emotional guidance, children may develop maladaptive beliefs about their own emotions, hindering the development of emotion regulation skills [30].

4.2 Dominant Direct Effect of the Family Environment over the Mediating Path

The direct effect of family environment variables on social-emotional competence was stronger than their indirect effect through the intimate parent-child relationship. This suggests that family education functions as a nurturing soil and an integrated system for cultivating children's social-emotional competence, rather than via a single, unidirectional pathway. Social learning theory posits that children internalize social-emotional skills by observing daily family interactions. Furthermore, the stronger effect of action-oriented cohesion compared to communication-oriented free expression indicates that learning through embodied experiences is more effective for

internalizing emotional skills than simple verbal communication.

4.3 Conflict Expression Promotes Social-Emotional Competence

Contrary to the hypothesis (H1c), this study confirmed that conflict expression positively predicts primary school students' social-emotional competence. This supports social cognitive theory, which suggests that children learn social behaviors by observing how their parents resolve conflicts. When parents manage disagreements constructively rather than dysfunctionally, children are better able to learn and internalize these adaptive behavioral patterns, which can be beneficial in their future social interactions^[31].

4.4 Independence of Conflict Expression and the Parent-Child Relationship

The finding that conflict expression showed no significant correlation with the intimate parent-child relationship is noteworthy. It indicates that the quality of parent-child interaction, rather than the mere presence or absence of conflict, is the critical determinant of a close parent-child bond. Parent-child alienation often stems from a lack of trust, inadequate interaction, and communication breakdown. If family conflicts are addressed within a structured and rule-governed framework, open conflict can actually lead to a deeper mutual understanding and foster trust as family members work together to resolve the issue^[32].

5. Conclusion

This study demonstrates that the family environment influences primary school students' social-emotional competence through direct pathways and the mediating pathway of the intimate parent-child relationship. Cohesion directly enhances social-emotional competence, while an intimate parent-child relationship acts as a crucial bridge. These findings have significant theoretical and practical implications. First, they confirm the family environment as the primary arena for the development of social-emotional competence, with direct effects substantially larger than mediated ones. Second, they challenge the notion that "avoiding conflict equates to harmony," suggesting that appropriately addressing conflicts can enhance children's social adaptability. Finally, the study provides empirical evidence for school-family collaborative education, highlighting the synergistic benefits of optimizing the family environment and improving the quality of the parent-child relationship.

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