

School and Family Support for Social–Emotional Competence Among Higher Vocational Students: The Mediating Role of Basic Psychological Need Satisfaction

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Abstract

This study aimed to examine: (1) the direct relationships of school climate and parental autonomy support with social–emotional competence among higher vocational students in Chongqing, China; (2) the mediating role of autonomy satisfaction, relatedness satisfaction, and competence satisfaction in these relationships; and (3) the fit of an integrated structural model linking school climate, parental autonomy support, basic psychological need satisfaction, and social–emotional competence. Grounded in ecological systems theory, self–determination theory, and stage–environment fit theory, the study used cluster sampling to collect questionnaire data from 656 higher vocational students. Structural equation modeling and bootstrap analysis were used to test the proposed model. The results showed, first, that both school climate and parental autonomy support significantly and positively predicted social–emotional competence. Second, both school climate and parental autonomy support significantly and positively predicted satisfaction with autonomy, relatedness, and competence, and the three need–satisfaction dimensions each significantly predicted social–emotional competence. Bootstrap results further confirmed that all six indirect paths were significant, indicating that autonomy satisfaction, relatedness satisfaction, and competence satisfaction functioned as parallel partial mediators. Third, the integrated model demonstrated satisfactory fit, with $CMIN/DF = 1.056$, $CFI = 0.992$, $TLI = 0.992$, $SRMR = 0.066$, and $RMSEA = 0.009$. These findings suggest that supportive school and family contexts are important external resources for higher vocational students’ social–emotional competence, and that

basic psychological need satisfaction is a key psychological mechanism linking contextual support to competence development.

Keywords: school climate; parental autonomy support; Chongqing, China; social–emotional competence; higher vocational students

Introduction

Against the backdrop of the ongoing restructuring of the global skill landscape and the acceleration of digital transformation, educational goals are shifting from the mere acquisition of knowledge to the cultivation of comprehensive competencies. The World Economic Forum reports that most of the fastest-growing skills by 2030 fall within the social and emotional domain, highlighting the increasing importance of individuals' ability to collaborate, communicate, and regulate emotions in complex contexts (World Economic Forum, 2025). The OECD further states in the Learning Framework 2030 that future education should build a developmental system around foundational competencies, student agency, and transformative competencies, within which social–emotional competence is regarded as a key foundation for lifelong development (OECD, 2019; Jones et al., 2015).

This shift is particularly evident in the field of vocational education in China. With industrial upgrading and the pursuit of high-quality regional economic development, higher vocational students need not only professional skills but also a sense of responsibility, teamwork competence, and emotional regulation skills to adapt to highly uncertain occupational environments. Existing research shows that vocational education reform is moving from a skill-oriented approach to one that places equal emphasis on skills and comprehensive qualities (Lu & Wang, 2023; An & Abdrahim, 2024). However, current research on the development of higher vocational students still focuses mainly on academic achievement and employability. In contrast, systematic inquiry into the mechanisms underlying the development of social–emotional competence remains limited (Mahoney et al., 2021).

From a theoretical perspective, individual development does not occur in isolation but is embedded in multiple environmental systems. Bronfenbrenner's ecological systems theory suggests that family and school, as the two most important microsystems, exert direct and lasting influences on adolescent development. In the school context, school climate shapes students' emotional experiences and social adjustment through teacher–student interaction, peer relationships, and

organizational culture. In the family context, parental autonomy support is shown to promote adolescents' intrinsic motivation and positive emotional development (Soenens et al., 2007).

Although previous studies confirm the positive roles of school climate and parental autonomy support in student development, there remains a lack of systematic integration of how these two factors jointly influence social-emotional competence through internal psychological mechanisms. Self-determination theory proposes that the satisfaction of three basic psychological needs, namely autonomy, competence, and relatedness, is the core mechanism through which environmental support is transformed into high-quality motivation and adaptive behavior. (Deci & Ryan, 2000b). Stage-environment fit theory further emphasizes that when educational environments align with the psychological needs associated with individuals' developmental stages, students are more likely to demonstrate higher levels of engagement and psychological well-being (Eccles, 2004). This match is especially important in higher vocational education, because students at this stage face the dual challenge of constructing occupational roles and transitioning into broader social roles.

Within the framework of ecological systems theory, family and school function as two core microsystems that shape individual developmental trajectories through everyday interaction processes (Bronfenbrenner, 1979; Zhang et al., 2026). Existing studies indicate that supportive school climate and parental autonomy support are both significantly positively associated with students' social adjustment, emotional regulation, and prosocial behavior. However, the pathways through which these influences operate are not singular. Environmental support may promote positive developmental outcomes by satisfying individuals' basic psychological needs. It may also affect competence through direct socialization mechanisms, such as behavioral norms, social modeling, and value transmission.

Self-determination theory further indicates that the satisfaction of the needs for autonomy, competence, and relatedness is an important mechanism through which environmental resources are converted into high-quality motivation and adaptive behavior (Vansteenkiste et al., 2020). At the same time, for competence-related outcomes, environmental factors often do not operate solely through psychological transformation pathways, but may also retain some direct influence. Therefore, when social-emotional competence is treated as a comprehensive indicator, it is necessary to examine both the direct and indirect pathways through which environmental support influences it.

Based on this theoretical logic, the present study develops an integrated model that includes both direct and parallel mediating pathways. It examines how school climate and parental autonomy support are associated with the social–emotional competence of higher vocational students through basic psychological need satisfaction. This integrated perspective is consistent with recent work suggesting that social–emotional development should be understood through the joint operation of contextual support and internal psychological functioning (Collie & Martin, 2024). By clarifying these structural relationships, the study provides practical insights for educators, families, and policymakers seeking to strengthen social–emotional development through coordinated school–family support systems.

Research Objectives

Based on theoretical analysis and the practical context of higher vocational education, this study examined how school climate and parental autonomy support are associated with the social–emotional competence of higher vocational students in Chongqing, China. Specifically, The study pursued the following objectives:

1. To examine the direct relationships of school climate and parental autonomy support with students' social–emotional competence.
2. To determine the mediating role of basic psychological need satisfaction, including autonomy satisfaction, relatedness satisfaction, and competence satisfaction, in the relationships between school climate, parental autonomy support, and social–emotional competence.
3. To test an integrated structural model linking school climate, parental autonomy support, basic psychological need satisfaction, and social–emotional competence among higher vocational students.

The findings of this study are expected to provide empirical evidence for understanding how school and family support contribute to the social–emotional development of higher vocational students. They may also offer practical implications for higher vocational colleges, teachers, parents, and student support services by identifying psychosocial pathways through which supportive educational and family environments can promote students' social–emotional competence.

Literature Review

Theoretical Framework

Ecological systems theory argues that individual development is embedded in multilayered environmental systems, among which family and school constitute the most immediate microsystems shaping adolescents' emotional, behavioral, and social development (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006). In educational contexts, school climate reflects students' perceptions of interpersonal relationships, academic norms, organizational culture, and learning support. A positive school climate can strengthen students' sense of belonging and security, thereby supporting social adjustment and emotional regulation (Eccles & Roeser, 2011). Family environments also influence adolescents' self-concept and emotional stability through parent-child interaction and emotional support. For higher vocational students undergoing identity construction and occupational transition, the joint influence of school and family contexts may be especially relevant to the development of social-emotional competence.

Self-determination theory provides a psychological explanation of how environmental support translates into adaptive development. According to SDT, individuals have three basic psychological needs: autonomy, relatedness, and competence. When these needs are satisfied, students are more likely to show intrinsic motivation, emotional stability, engagement, and adaptive social behavior (Deci & Ryan, 1985; Ryan & Deci, 2017). Supportive teaching environments and autonomy-supportive parenting practices can enhance satisfaction of basic psychological needs, which in turn promotes students' learning engagement, emotional regulation, and positive social functioning (Niemic & Ryan, 2009; Soenens & Vansteenkiste, 2010). Therefore, SDT offers a useful framework for explaining how school climate and parental autonomy support may influence social-emotional competence by satisfying basic psychological needs.

School climate is closely associated with social-emotional competence because it provides the relational and organizational conditions within which students learn to manage emotions, interact with others, and participate in collective activities. Previous studies have shown that classroom belonging, perceived relatedness, and supportive school environments are positively linked to students' motivation, engagement, prosocial behavior, and social-emotional development (Goodenow, 1993; Furrer & Skinner, 2003; Collie, 2020; Hoskins & Schweig, 2024). In vocational education, this relationship may be particularly salient because students often learn in practical, collaborative, and occupation-oriented contexts. Teacher-student relationships, peer interaction, and

cooperative learning tasks may therefore directly shape students' emotional regulation, interpersonal communication, and social responsibility (Xiang et al., 2022). On this basis, school climate is expected to be positively associated with higher vocational students' social-emotional competence.

Parental autonomy support is another important contextual factor. It refers to parenting practices through which parents respect adolescents' perspectives, encourage autonomous decision making, and provide guidance without excessive control. SDT suggests that autonomy-supportive parenting promotes satisfaction of autonomy and relatedness needs, thereby fostering intrinsic motivation and positive psychological functioning (Ryan & Deci, 2017). Empirical research further indicates that parental autonomy support is associated with adolescents' emotional regulation, empathy, and socially responsible behavior (Soenens et al., 2007; Soenens & Vansteenkiste, 2010). Although higher vocational students are gradually entering early adulthood, family support continues to influence their value identification and emotional adjustment, especially when they face uncertainty in academic and occupational pathways (Bülow et al., 2022). Accordingly, parental autonomy support may be positively related to social-emotional competence.

Basic psychological need satisfaction may further explain the associations between school and family contexts and social-emotional competence. Autonomy satisfaction supports self-regulation, relatedness satisfaction enhances a sense of belonging and social connectedness, and competence satisfaction strengthens self-efficacy and coping capacity. Prior studies have shown that need satisfaction is positively associated with students' engagement, positive emotions, prosocial behavior, and social-emotional skills (Niemic & Ryan, 2009; Collie, 2024). Recent evidence also suggests that autonomy-supportive environments are systematically linked to positive learning and developmental outcomes through motivational and psychological mechanisms (Mammadov & Schroeder, 2023). Thus, school climate and parental autonomy support may not only have direct relationships with social-emotional competence but also be indirectly associated with it through satisfaction with autonomy, relatedness, and competence.

Based on the above theoretical and empirical evidence, this study examines an integrated model in which school climate and parental autonomy support are associated with social-emotional competence both directly and indirectly through basic psychological need satisfaction among higher vocational students in Chongqing, China.

Table 1: Summary of Research Hypotheses

Category	H	Hypothesis
Direct effects of environmental support on social–emotional competence		
	H1:	School climate positively predicts social–emotional competence among higher vocational students.
	H2:	Parental autonomy support positively predicts social–emotional competence among higher vocational students.
Effects of environmental support on basic psychological need satisfaction		
	H3a:	School climate positively predicts autonomy satisfaction among higher vocational students.
	H3b:	School climate positively predicts relatedness satisfaction among higher vocational students.
	H3c:	School climate positively predicts competence satisfaction among higher vocational students.
	H4a:	Parental autonomy support positively predicts autonomy satisfaction among higher vocational students.
	H4b:	Parental autonomy support positively predicts relatedness satisfaction among higher vocational students.
	H4c:	Parental autonomy support positively predicts competence satisfaction among higher vocational students.
Effects of basic psychological need satisfaction on social–emotional competence		
	H5a:	Autonomy satisfaction positively predicts social–emotional competence among higher vocational students.
	H5b:	Relatedness satisfaction positively predicts social–emotional competence among higher vocational students.
	H5c:	Competence satisfaction positively predicts social–emotional competence among higher vocational students.
Specific mediation effects		
	H6a:	Autonomy satisfaction mediates the relationship between school climate and social–emotional competence.
	H6b:	Relatedness satisfaction mediates the relationship between school climate and social–emotional competence.
	H6c:	Competence satisfaction mediates the relationship between school climate and social–emotional competence.
	H7a:	Autonomy satisfaction mediates the relationship between parental autonomy support and social–emotional competence.
	H7b:	Relatedness satisfaction mediates the relationship between parental autonomy support and social–emotional competence.
	H7c:	Competence satisfaction mediates the relationship between parental autonomy support and social–emotional competence.

Category	H	Hypothesis
Parallel mediation effects		
	H8:	Autonomy satisfaction, relatedness satisfaction, and competence satisfaction jointly mediate the relationship between school climate and social-emotional competence.
	H9:	Autonomy satisfaction, relatedness satisfaction, and competence satisfaction jointly mediate the relationship between parental autonomy support and social-emotional competence.

Research Methodology

Population and Sample

The target population of this study was students enrolled in three-year higher vocational colleges in Chongqing, China. This population was selected because higher vocational students are in a transitional stage between school-based learning and occupational preparation, during which school climate, parental autonomy support, basic psychological need satisfaction, and social-emotional competence are closely related to their academic adaptation and future career development.

The accessible population consisted of higher vocational students who could be reached through the participating institutions during the data collection period. A total of 700 questionnaires were distributed, and 656 were retained after data screening, yielding a valid response rate of 93.7%. The final sample included 291 male students (44.4%) and 365 female students (55.6%). By grade level, 229 were first-year students (34.9%), 217 were second-year students (33.1%), and 210 were third-year students (32.0%). The participants' ages ranged from 18 to 21 years, with a mean of 19.43 years ($SD = 0.98$).

The sample also covered five major categories. Specifically, 126 students were from engineering and information technology (19.2%), 134 from finance and commerce (20.4%), 132 from medicine and health (20.1%), 127 from education and sports (19.4%), and 137 from culture and arts (20.9%). Regarding only-child status, 247 students were only children (37.7%), whereas 409 were not (62.3%). This sample structure provided a reasonable basis for examining the relationships among school climate, parental autonomy support, basic psychological need satisfaction, and social-emotional competence among higher vocational students in Chongqing.

Questionnaire Structure

The questionnaire consisted of two major sections. The first section collected demographic information, including gender, age, grade, major category, and only-child status. The second section measured the core research variables, including school climate, parental autonomy support, basic psychological need satisfaction, and social-emotional competence. All scale items were rated on a five-point Likert scale, with higher scores indicating higher levels of the corresponding construct.

Data Collection

Before the formal survey, the questionnaire was reviewed by experts to assess content validity. The Index of Item-Objective Congruence was used to evaluate whether each item was consistent with its intended construct. Items requiring revision were modified according to expert feedback before the questionnaire was finalized.

The formal survey was administered anonymously during class sessions on March 17, 2026. Before completing the questionnaire, students were informed of the research purpose, the confidentiality principle, and the voluntary nature of participation. A total of 700 questionnaires were distributed, and 656 valid responses were retained, yielding a valid response rate of 93.7%.

After data collection, reliability was examined using Cronbach's alpha and composite reliability. The Cronbach's alpha coefficients for the main dimensions ranged from .695 to .836, indicating acceptable to good internal consistency. Composite reliability values ranged from .696 to .837, further supporting the reliability of the measurement model.

Measures

The data in this study were collected using a structured questionnaire with a five-point Likert scale. School climate was measured using the climate dimension of the SCASIM, which comprises four subdimensions: peer relationships, teacher-student relationships, academic emphasis, and shared values and approach to doing things. Parental autonomy support was measured using the PASS, which assesses students' perceived level of autonomy-supportive parental behavior. Basic psychological need satisfaction was measured using the need satisfaction subscale of the BPNSFS, which comprises three dimensions: autonomy, competence, and relatedness. Social-emotional competence was measured using the SEC scale, which covers four dimensions, namely self-related competence, other-related competence, collective-related competence, and responsible decision-making competence. In addition, gender, age, grade, major

category, and only-child status were included as control variables to reduce the potential influence of demographic differences on model estimation.

Data Analysis

Data analysis was conducted using SPSS 26.0 and AMOS 26.0. Pearson correlation analysis was used to examine the associations among the variables. Confirmatory factor analysis was conducted to assess the measurement model, and structural equation modeling was used to test the hypothesized mediation model. Maximum likelihood estimation was used to estimate model parameters. Model fit was evaluated using GFI, AGFI, NFI, TLI, CFI, IFI, RMSEA, and SRMR. In general, fit index values greater than 0.90 indicate acceptable model fit, RMSEA values below 0.05 indicate good fit, and values below 0.08 indicate reasonable fit. Mediation effects were tested using the bootstrap method with 5,000 resamples. A mediation effect was considered significant when the 95% confidence interval did not include zero.

Results

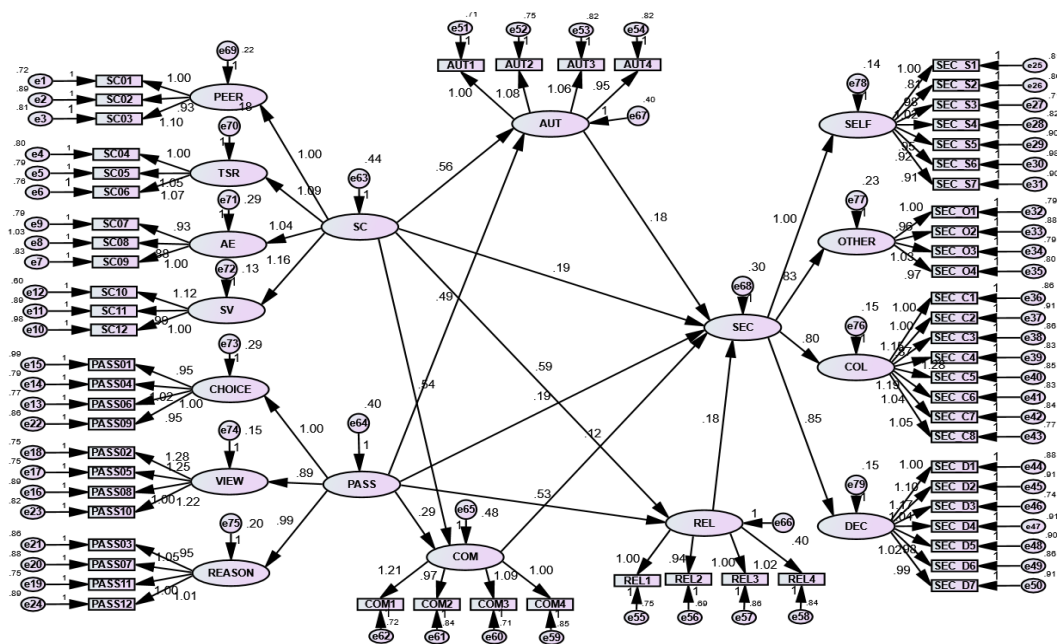


Figure 1 Structural equation model with standardized path coefficients (N = 656)

Before testing the structural model, common method bias, reliability, and bivariate relationships among the variables were examined. Harman's single-factor test showed that the first unrotated factor accounted for 20.54% of the variance, suggesting that common method bias was

not serious. At the dimension level, Cronbach's alpha coefficients ranged from .695 to .836. At the construct level, Cronbach's alpha coefficients ranged from .779 to .919, indicating acceptable to good internal consistency. Descriptive statistics and correlation analysis further showed that school climate, parental autonomy support, autonomy satisfaction, relatedness satisfaction, competence satisfaction, and social-emotional competence were all significantly and positively correlated.

Objective 1. Direct relationships between environmental support and social-emotional competence

The first objective was to examine the direct relationships of school climate and parental autonomy support with students' social-emotional competence. As shown in Table 2, both school climate and parental autonomy support were significantly and positively associated with social-emotional competence. Specifically, school climate significantly predicted social-emotional competence (H1: $\beta = 0.194$, $p < .01$), and parental autonomy support also significantly predicted social-emotional competence (H2: $\beta = 0.188$, $p < .01$). These findings indicate that students who perceived a more supportive school climate and higher parental autonomy support tended to report higher levels of social-emotional competence.

Objective 2. Mediating role of basic psychological need satisfaction

The second objective was to determine whether satisfaction with autonomy, relatedness, and competence mediated the relationships between environmental support and social-emotional competence. Before testing the indirect effects, the structural paths from environmental support to the three dimensions of basic psychological need satisfaction and from these need-satisfaction dimensions to social-emotional competence were examined.

As shown in Table 2, school climate significantly and positively predicted autonomy satisfaction (H3a: $\beta = 0.560$, $p < .001$), relatedness satisfaction (H3b: $\beta = 0.591$, $p < .001$), and competence satisfaction (H3c: $\beta = 0.541$, $p < .001$). Parental autonomy support also significantly and positively predicted autonomy satisfaction (H4a: $\beta = 0.485$, $p < .001$), relatedness satisfaction (H4b: $\beta = 0.529$, $p < .001$), and competence satisfaction (H4c: $\beta = 0.293$, $p < .001$).

In addition, all three dimensions of basic psychological need satisfaction significantly and positively predicted social-emotional competence. Specifically, autonomy satisfaction significantly predicted social-emotional competence (H5a: $\beta = 0.176$, $p < .001$), relatedness satisfaction also showed a significant positive association with social-emotional competence (H5b: $\beta = 0.177$, $p <$

.001), and competence satisfaction remained a significant predictor of social-emotional competence (H5c: $\beta = 0.117$, $p < .01$). Comparing the magnitude of coefficients, school climate showed slightly stronger associations with the three need-satisfaction dimensions than parental autonomy support. Among the three need dimensions, autonomy satisfaction and relatedness satisfaction showed slightly stronger associations with social-emotional competence than competence satisfaction.

Table 2 Standardized path coefficients of the structural equation model

Hypothesized Path	β	S.E.	C.R.	Sig.
H1: SC $\rightarrow$ SEC	0.194	0.073	2.666	**
H2: PASS $\rightarrow$ SEC	0.188	0.069	2.714	**
H3a: SC $\rightarrow$ AUT	0.560	0.066	8.481	***
H3b: SC $\rightarrow$ REL	0.591	0.068	8.680	***
H3c: SC $\rightarrow$ COM	0.541	0.068	8.002	***
H4a: PASS $\rightarrow$ AUT	0.485	0.069	7.079	***
H4b: PASS $\rightarrow$ REL	0.529	0.071	7.414	***
H4c: PASS $\rightarrow$ COM	0.293	0.063	4.636	***
H5a: AUT $\rightarrow$ SEC	0.176	0.052	3.362	***
H5b: REL $\rightarrow$ SEC	0.177	0.053	3.324	***
H5c: COM $\rightarrow$ SEC	0.117	0.044	2.664	**

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

Bootstrap analysis was then conducted to test the specific mediation effects. As shown in Table 3, all six indirect paths were statistically significant. For school climate, the indirect effect through autonomy satisfaction was significant (H6a: $\beta = 0.060$, 95% CI [0.035, 0.087], $p < .001$), the indirect effect through relatedness satisfaction was significant (H6b: $\beta = 0.061$, 95% CI [0.037, 0.088], $p < .001$), and the indirect effect through competence satisfaction was also significant (H6c: $\beta = 0.042$, 95% CI [0.019, 0.066], $p < .001$). The direct effect of school climate

on social-emotional competence remained significant after the mediators were included ($\beta = 0.163$, 95% CI [0.124, 0.205], $p < .001$).

A similar pattern was found for parental autonomy support. The indirect effect through autonomy satisfaction was significant (H7a: $\beta = 0.046$, 95% CI [0.023, 0.071], $p < .001$), as was the indirect effect through relatedness satisfaction (H7b: $\beta = 0.047$, 95% CI [0.025, 0.072], $p < .001$) and the indirect effect through competence satisfaction (H7c: $\beta = 0.031$, 95% CI [0.013, 0.050], $p < .001$). The direct effect of parental autonomy support on social-emotional competence also remained significant after the mediators were included ($\beta = 0.128$, 95% CI [0.060, 0.196], $p < .001$).

Because none of the bootstrap confidence intervals included zero, all six indirect effects were statistically significant. These results indicate that autonomy satisfaction, relatedness satisfaction, and competence satisfaction functioned as parallel partial mediators in the relationships between school climate, parental autonomy support, and social-emotional competence. In terms of relative magnitude, the mediating effects of autonomy satisfaction and relatedness satisfaction were slightly stronger than those of competence satisfaction for both school climate and parental autonomy support.

Table 3 Bootstrap Tests of Parallel Mediation Effects (N = 656)

Hypothesized Path	β	95% Boot CI LL	95% Boot CI UL	P (Bootstrap)
H6a: SC $\rightarrow$ AUT $\rightarrow$ SEC	0.060	0.035	0.087	***
H6b: SC $\rightarrow$ REL $\rightarrow$ SEC	0.061	0.037	0.088	***
H6c: SC $\rightarrow$ COM $\rightarrow$ SEC	0.042	0.019	0.066	***
H7a: PASS $\rightarrow$ AUT $\rightarrow$ SEC	0.046	0.023	0.071	***
H7b: PASS $\rightarrow$ REL $\rightarrow$ SEC	0.047	0.025	0.072	***
H7c: PASS $\rightarrow$ COM $\rightarrow$ SEC	0.031	0.013	0.050	***

Note: BootLLCI and BootULCI indicate the 95% bootstrap confidence interval. Mediation effects are significant when the interval does not include zero. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Objective 3. Testing the integrated structural model

The third objective was to test the integrated structural model linking school climate, parental autonomy support, basic psychological need satisfaction, and social-emotional competence. The model fit indices showed that the structural equation model fit the data satisfactorily, with CMIN/DF = 1.056, GFI = 0.870, AGFI = 0.864, IFI = 0.992, TLI = 0.992, CFI = 0.992, RMSEA = 0.009, and SRMR = 0.066. Overall, these results suggest that the proposed framework adequately represented the structural relationships among school climate, parental autonomy support, basic psychological need satisfaction, and social-emotional competence.

From the overall structural pattern, the findings supported a dual-pathway explanation. On the one hand, school climate and parental autonomy support were directly associated with social-emotional competence, as shown by the significant direct paths reported in Table 2. On the other hand, these two forms of environmental support were also indirectly associated with social-emotional competence through satisfaction with autonomy, relatedness, and competence, as shown by the bootstrap results reported in Table 3. Therefore, the integrated model suggests that social-emotional competence among higher vocational students is linked to both contextual support and the satisfaction of psychological needs.

Taken together, the results support the theoretical proposition that supportive school and family contexts are associated with social-emotional competence through both direct structural paths and indirect need-satisfaction pathways. These findings further imply that efforts to promote social-emotional competence among higher vocational students should consider not only the quality of school and family support, but also the extent to which such support is reflected in students' experiences of autonomy, relatedness, and competence satisfaction.

Discussion

The results for Objective 1 indicated that school climate and parental autonomy support were both positively associated with social-emotional competence among higher vocational students. School climate significantly predicted social-emotional competence ($\beta = 0.194$), as did parental autonomy support ($\beta = 0.188$). Students who perceived their school environment as more supportive and reported stronger parental autonomy support also tended to report higher levels of social-emotional competence.

This result is in line with previous empirical work showing that supportive school and family contexts are closely tied to students' social-emotional development. Regarding schools, Collie (2020) suggested that social and emotional competence develops within an integrated school ecology, in which interpersonal relationships, engagement, and emotional functioning are interconnected. Hoskins and Schweig (2024) similarly found that school context was associated with students' social-emotional learning trajectories, suggesting that the quality of school experiences matters for social-emotional development. The present study adds evidence from higher vocational students in Chongqing and suggests that school climate continues to matter beyond primary and secondary education.

The association between parental autonomy support and social-emotional competence is also consistent with research on autonomy-supportive parenting. Soenens et al. (2007) argued that parental autonomy support refers to support for volitional functioning rather than simple independence. Soenens and Vansteenkiste (2010) further linked autonomy-supportive parenting with healthier emotional and social functioning, and Bülow et al. (2022) showed that the quality of parent-adolescent interaction is related to adolescents' affective experiences. In the present study, this pattern suggests that family support remains relevant to emotional regulation, interpersonal adjustment, and responsible decision-making, even as higher vocational students move toward adulthood.

The results for Objective 2 showed that basic psychological need satisfaction served as a parallel partial mediator. School climate and parental autonomy support were both significantly associated with satisfaction with autonomy, relatedness, and competence, and each of these three dimensions significantly predicted social-emotional competence. Bootstrap analyses confirmed that all six indirect paths were significant. For school climate, the indirect effects through autonomy satisfaction ($\beta = 0.060$), relatedness satisfaction ($\beta = 0.061$), and competence satisfaction ($\beta = 0.042$) were significant. For parental autonomy support, the corresponding indirect effects through autonomy satisfaction ($\beta = 0.046$), relatedness satisfaction ($\beta = 0.047$), and competence satisfaction ($\beta = 0.031$) were also significant. Because the direct effects remained significant after the mediators were added, the results support partial rather than full mediation.

These findings are consistent with self-determination theory and with recent empirical research. Self-determination theory proposes that supportive environments are linked to adaptive functioning when they satisfy individuals' needs for autonomy, relatedness, and competence (Ryan

& Deci, 2000b; Vansteenkiste et al., 2020). Empirical studies have reached similar conclusions. Wang et al. (2024) found that students' basic need support was associated with stronger socio-emotional skills across cultural contexts, which is consistent with the present finding that autonomy, relatedness, and competence satisfaction all predicted social-emotional competence. Collie (2024) also reported that satisfaction of social-emotional needs was positively related to students' academic engagement and social-emotional skills. Taken together, these findings suggest that basic psychological need satisfaction is not only a motivational factor but also a mechanism linking supportive contexts to social-emotional functioning.

The relative size of the indirect effects is also informative. In both the school climate pathway and the parental autonomy support pathway, autonomy satisfaction and relatedness satisfaction showed slightly stronger mediating effects than competence satisfaction. This pattern suggests that, for higher vocational students, the experience of volition and interpersonal connection may be especially important for social-emotional development. The strong association between school climate and relatedness satisfaction is consistent with Castro et al. (2025), who found that school climate influences students' social and emotional skills, in part, through relationship quality. This interpretation is also reasonable in higher vocational education, where students often take part in collaborative learning, practical training, peer interaction, and teacher-guided occupational preparation. In these settings, social-emotional competence is likely to develop not only through individual confidence but also through a sense of belonging, support, and relational security.

The results for Objective 3 showed that the integrated model linking school climate, parental autonomy support, basic psychological need satisfaction, and social-emotional competence fit the data well. The fit indices were satisfactory: CMIN/DF = 1.056, GFI = 0.870, AGFI = 0.864, IFI = 0.992, TLI = 0.992, CFI = 0.992, RMSEA = 0.009, and SRMR = 0.066. These results indicate that the proposed model adequately captured the structural relationships among the study variables.

The overall pattern supports a dual-pathway explanation. School climate and parental autonomy support were directly associated with social-emotional competence and indirectly associated with it through satisfaction with autonomy, relatedness, and competence. This result aligns with recent conceptual work suggesting that social-emotional development is better understood as the joint product of contextual support and internal psychological functioning, rather than as the result of isolated predictors (Collie & Martin, 2024). The present study, therefore, contributes to the literature by showing that school and family support function as complementary

contextual resources, with links to students' competence development through both direct and psychological pathways.

These findings also have practical implications for higher vocational education. Improving school climate may help strengthen students' social-emotional competence, particularly when schools foster positive teacher-student relationships, constructive peer interaction, clear academic expectations, and shared values. Family support should also remain a focus, even though higher vocational students are older adolescents or emerging adults. Parents' respect for students' perspectives, opportunities for choice, and meaningful guidance may still matter for students' emotional and social functioning. Interventions should therefore attend not only to external sources of support but also to students' actual satisfaction with autonomy, relatedness, and competence. Supportive environments are more likely to be associated with social-emotional competence when students feel they have choice, connection, and a sense of effectiveness.

These findings should nevertheless be interpreted in light of the study design. Because the study used cross-sectional questionnaire data, the results indicate structural associations rather than definitive causal effects. All variables were also measured through student self-reports, which may have introduced shared method variance, although Harman's single-factor test suggested that common method bias was not serious. Future research could use longitudinal designs, multi-informant data, or intervention-based approaches to examine more closely how school climate, parental autonomy support, and basic psychological need satisfaction are linked to the development of social-emotional competence over time.

Conclusion

This study examined how school climate, parental autonomy support, basic psychological need satisfaction, and social-emotional competence are related among higher vocational students in Chongqing, China. The results showed that school climate and parental autonomy support were both positively associated with students' social-emotional competence. Students who perceived their school climate as more supportive and reported higher parental autonomy support also tended to report stronger social-emotional competence.

The findings further showed that autonomy satisfaction, relatedness satisfaction, and competence satisfaction served as parallel partial mediators. School climate and parental autonomy support were positively associated with all three dimensions of basic psychological need satisfaction,

which in turn were positively associated with social–emotional competence. Because the direct paths from school climate and parental autonomy support to social–emotional competence remained significant after the mediators were included, the results support partial rather than full mediation.

Taken together, the study provides empirical support for a dual–pathway account of social–emotional competence among higher vocational students. School and family support were directly associated with social–emotional competence and indirectly associated with it through students’ satisfaction of their autonomy, relatedness, and competence needs. These findings extend the application of self–determination theory to higher vocational education and underscore the value of considering both contextual support and the satisfaction of psychological needs in explaining students’ social–emotional development. Given the cross–sectional design, however, the findings should be interpreted as structural associations rather than definitive causal effects.

Suggestions

Based on the findings of this study, several suggestions can be made to support the social–emotional competence of higher vocational students.

Higher vocational colleges should continue to build a supportive school climate. Because school climate was positively associated with both social–emotional competence and basic psychological need satisfaction, institutions need to attend to the relational and organizational conditions that shape student development. In practice, this may include improving teacher–student relationships, encouraging positive peer interactions, establishing fair and transparent classroom norms, and creating learning environments where students feel respected, supported, and included.

Families should also provide more autonomy–supportive guidance. The results showed that parental autonomy support was directly and indirectly associated with students’ social–emotional competence. Parents should therefore be encouraged to respect students’ perspectives, offer appropriate choices, explain expectations clearly, and reduce excessive control or pressure in everyday communication. These practices may help students experience greater autonomy, relatedness, and competence in their academic and personal development.

Educational support should place greater emphasis on students’ basic psychological needs. Because autonomy satisfaction, relatedness satisfaction, and competence satisfaction all served as significant mediating pathways, schools and families should consider not only whether support is provided, but also whether students actually experience choice, connection, and effectiveness.

Teachers, for example, can offer meaningful choices in learning tasks, design cooperative activities that strengthen a sense of belonging, and provide constructive feedback that supports students' sense of competence.

Closer school–family collaboration is also needed. Because school climate and parental autonomy support were both associated with social–emotional competence, a coordinated support system may be more beneficial than separate school–based or family–based efforts. Higher vocational colleges can strengthen communication with families, offer guidance on autonomy–supportive parenting, and develop joint support strategies that align school expectations with family support. Such collaboration may create a more consistent psychosocial environment for students' social–emotional development.

New Knowledge

The present study provides new empirical knowledge on how school and family support are associated with the social–emotional competence of higher vocational students in Chongqing, China. The findings show that school climate and parental autonomy support are both positively related to students' social–emotional competence. More importantly, these relationships are not limited to direct associations. They also operate through students' satisfaction of basic psychological needs, including autonomy, relatedness, and competence.

The first contribution of this study is to extend research on social–emotional competence to the context of higher vocational education. Previous studies have mainly focused on primary and secondary school students or students in general higher education. By examining students at three–year higher vocational colleges in Chongqing, this study provides context–specific evidence for a group closely connected to occupational preparation and regional workforce development.

The second contribution is that this study clarifies the joint role of school and family contexts. The results indicate that school climate and parental autonomy support should not be understood as isolated factors. Instead, they represent two complementary sources of external support. A positive school climate provides students with relational support, academic expectations, peer interaction, and shared values, while parental autonomy support provides choice, understanding, and meaningful guidance in the family context. Together, these two forms of support are associated with stronger social–emotional competence among higher vocational students.

The third contribution is that this study identifies basic psychological need satisfaction as an important psychological mechanism. The results show that autonomy satisfaction, relatedness satisfaction, and competence satisfaction are all positively associated with social-emotional competence. This suggests that supportive school and family environments may be linked to students' social-emotional development by strengthening their sense of volition, belonging, and effectiveness. Among these pathways, the role of relatedness satisfaction is particularly meaningful, as it underscores the importance of interpersonal connection in the development of social-emotional competence.

These findings suggest that the development of social-emotional competence among higher vocational students depends not only on direct skill training or formal educational instruction, but also on the psychosocial conditions created by schools and families. Improving teacher-student relationships, peer interaction, academic support, shared school values, and autonomy-supportive parenting practices may therefore provide practical directions for promoting students' social-emotional competence. However, because this study used cross-sectional questionnaire data, the findings should be interpreted as evidence of structural associations rather than definitive causal effects.

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