



# Investigating the role of perceived emotional support in predicting learners' well-being and engagement mediated by motivation from a self-determination theory framework

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## ABSTRACT

Teaching endeavors to improve learners' well-being and educational engagement, as both factors contribute to progress facilitated by the integration of PP into the learning procedure, enhancing success in the academic cycle. Some studies have affirmed the significant effect of teacher support on learners' academic performance. Nevertheless, the precise mechanism linking teacher support, particularly emotional support, to student learning remains unclear. This research was structured to scrutinize the mediating influence of learner motivation in the connection between perceived emotional support and learners' engagement and well-being, employing the perspective of, a widely acknowledged psychological theory that centers on human motivation and the determinants influencing individuals to participate in specific behaviors, including learning. Consequently, the objective of this research was to assess the relationship between perceived emotional support, well-being, and student engagement with particular attention to the mediating role of motivation among 590 college students in Chinese universities. The results of the Structural Equation Model (SEM) indicate approximately 72% of the variations in perceived emotional support, well-being, engagement, and motivation. These relationships are significant at the 95% confidence level, indicating the robustness of the model in capturing the intricate dynamics among the variables within the educational context. Consequently, several implications are suggested for teachers, learners, teacher trainers, and other academic stakeholders.

## 1. Introduction

Some learners experience fatigue in their learning journey and lack of connection to the school, leading to low accomplishment and a heightened rate of failure (Xie & Xiao, 2018). Confronted with this pressing issue in educational practice, numerous investigations seek to identify factors influencing both poor and strong scholastic performance, with well-being emerging as a notably significant aspect (Mercer, 2020). In essence, well-being stands as a pivotal concept examined within the realm of Positive Psychology (PP), given

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its link with a widespread range of educational and mental consequences such as lower degrees of pressure, boredom, and exhaustion, coupled with increased levels of achievement, positive behavioral conduct, and adaptability to changes (Derakhshan et al., 2021; Derakhshan, Wang et al., 2021; Wang et al., 2023). Indeed, there is a growing emphasis on students' well-being, recognizing its association with a wide range of educational and intellectual outcomes. This includes higher levels of accomplishment, constructive social tendencies, and adaptability to alteration (Putwain et al., 2019). Engagement is recognized as a crucial predictor of dropout or academic underachievement (Guo et al., 2023; Wang & Pan, 2023; Wu et al., 2024), garnering considerable attention from researchers globally (Fredricks et al., 2019; Reeve & Cheon, 2021). Student engagement (SE), influenced by a myriad of internal and external aspects, sees internal elements encompassing needs, enthusiasm, and personality traits (Cilliers et al., 2018; Derakhshan & Fathi, 2023; Li et al., 2024; Martin et al., 2016), while external aspects comprise the learning environment, school and family support (Derakhshan et al., 2022; Kelly & Zhang, 2016; Mazurenko & Hearld, 2015).

Several factors impact SE and well-being, with teacher support as a crucial one (Liu & Li, 2023; Tennant et al., 2015; Wang & Kruk, 2024; Zhao & Qin, 2021). Learners' contentment with teacher support correlates positively with heightened SE, increased inner motivation, enhanced skill progress, educational accomplishment, and general well-being (Reeve & Cheon, 2021). Teacher support fosters a feeling of intimacy and commitment between teachers and students (Derakhshan & Zare, 2023; Mercer & Z. Dörnyei, 2020; Peng, 2021; Wang & Derakhshan, 2023; Wang & Hemchua, 2022; Wang et al., 2022; Wu et al., 2023; Zhi et al., 2023). Perceived teacher emotional support (ES) typically involves learners' views of teachers' eagerness, friendliness, and care (Wentzel et al., 2016). Abundant studies highlight the significance of students' perception of teachers' ES in enhancing social-emotional well-being, promoting increased engagement in the educational path, and contributing to learner accomplishment (Derakhshan et al., 2022; Hu & Wang, 2023; Li & Huang, & Li, 2021; LoCasale-Crouch et al., 2018; Pianta et al., 2021; Pishghadam et al., 2021; Tennant et al., 2015). While emotionally supportive communication can manifest in diverse settings, Li et al. (2023) contend that teacher ES encompasses the perception students have regarding their instructor's availability and capability to offer ES on subjects directly and indirectly associated with school.

The concept of SE and well-being can be elucidated through the framework of motivation, where motivation serves as the driving power that propels learners to actively participate in a specific task (Chiu et al., 2020; Tennant et al., 2015; Yin & Wang, 2016; Wang & Wang, Pan, et al., 2023). The term "learning motivation" pertains to both inner and ecological factors that influence individuals' inclination, enthusiasm, and receptivity to the learning process (Al-Hoorie, 2017). Motivation is also recognized as a pivotal individual characteristic that can contribute significantly to learners' academic success. It is extensively explored within the educational context, considering various scopes and viewpoints, and its power on learners' satisfaction and educational upshots is well-established (Al-Hoorie, 2017).

Numerous theories have been employed to elucidate the power of teacher ES on SE and well-being. According to Self-determination theory (SDT), positive teacher ES is regarded as a motivational factor (Ryan & Deci, 2017). SDT stands as a widely acknowledged theory of motivation, proposing that people inherently harbor essential psychological needs for autonomy, relatedness, and competence, influencing their decision to take action or abstain from it (Ryan & Deci, 2020). Learning atmospheres that effectively address these three needs are more prone to shift students' motivational alignment from amotivation to extrinsic and ultimately to intrinsic motivation that serves as a potent reservoir of energy that propels students towards active engagement in the educational route (Siu et al., 2014). Consequently, the fulfillment of these three needs is intricately interrelated to diverse types of engagement (Goldman et al., 2017). Given the current research knowledge, limited attention has been devoted to understanding the impact of teacher ES on students' well-being and engagement. Additionally, while the significance and role of motivation have been established in prior investigations predicting crucial educational outcomes (Acosta-Gonzaga & Ramirez-Arellano, 2022; Pishghadam et al., 2021), there is a noticeable gap in studies exploring its potential role as a mediator in aiding learners in their learning progress. Consequently, the question of whether teacher-supportive behaviors can enhance SE and well-being through the mediating influence of motivation warrants further investigation. Hence, this study aims to scrutinize the impact of teacher ES on SE and well-being in Chinese contexts and to explore whether motivation serves as a mediator in this relationship based on SDT. Accordingly, these research questions were articulated.

Q1. What is the relationship between perceived ES, SE, well-being and motivation?

Q2. Does motivation mediate the predictability of engagement by perceived ES?

Q3. Does motivation mediate the predictability of well-being by perceived ES?

## 2. Review of the literature

### 2.1. Teacher emotional support

Teacher ES stands as a fundamental element within the realm of educational support provided by educators (Jin & Wang, 2019). This involves demonstrating care, concern, and respect for learners, displaying a willingness to comprehend their thoughts, emotions, and behaviors, and fostering an overall warm atmosphere and compassion (Roorda et al., 2017; Ruzek et al., 2016). It aids students in acquiring skills for proficiently handling their emotions and behaviors, complemented by parental support (Romano et al., 2020). Teachers' ES functions as a valuable protective resource, empowering students to address challenges and enhance their capacity to navigate difficulties that consequently fosters increased confidence and resilience, enabling students to deal with setbacks, thereby playing an indispensable function in advancing and cultivating their learning capabilities (Ruzek et al., 2016). It elevates learners' feeling of security and diminishes anxiety, thereby empowering them to respond constructively to academic challenges (Federici & Skaalvik, 2014). Teachers collectively express their ES to students through two primary forms of interactions: individual interactions

with students and interactions with the entire classroom (Liu & Li, 2023; Zhi & Wang, 2023).

Teacher ES entails their capacity to cultivate constructive relations with learners and foster their autonomy and socioemotional well-being (Schenke et al., 2015). As delineated by Yang et al. (2019), it encompasses three dimensions: the first is the positive climate that reflects an educator's commitment to fostering positive interactions with students, the second is teacher sensitivity that assesses the teacher's ability to respond to students' academic and emotional needs, and the last, regard for the adolescent perspective that gauges the extent to which a teacher encourages students' autonomy, peer interaction, and attentiveness to their social needs (Romano et al., 2020),

## 2.2. Well-being

The main aim of PP is to promote happiness and well-being that does not ignore an individual's challenges but addresses them from a perspective of social empowerment rather than weakness (Seligman, 2018). Well-being, connected with life satisfaction, encompasses self-esteem, positive relationships, autonomy, competence, and purpose. Emphasizing personal growth is vital for learners as it fosters optimal thriving and engagement (Pan et al., 2023). As Cooke et al. (2016) stated, there are two well-being approaches: the hedonistic approach, emphasizes desires and pleasures, with a primary emphasis on well-being, including life satisfaction and the manifestation of positive emotions (MacIntyre & Mercer, 2014). The other is the eudaimonic approach, which delves into various aspects of life, involving continuous self-growth through values and self-actualization (Giuntoli et al., 2021). Both approaches highlight positive experiences, yet the hedonic approach centers on individuals' momentary feelings of affection, pleasure, and happiness, while the eudaimonic approach is more comprehensive (Disabato et al., 2016).

Furthermore, Seligman (2011) defines the construct of well-being through five key aspects forming the positive continuum of well-being known as PERMA, which stands for positive emotion, engagement, relationships, meaning, and accomplishment. Positive emotions, encompassing happiness, hopefulness, and well-being, contribute to the hedonic continuum of emotional states, serving as indicators of success. Engagement is often characterized as a state of flow, representing insightful involvement that inherently motivates task completion (Derakhshan, 2021; Dixson et al., 2017). Well-being throughout the life sequence is influenced by goal setting, observation, and success (Giuntoli et al., 2021). Positive relationships refer to the feeling of social integration, recognition, and support from others, contributing to a person's satisfaction with their social connections. The presence of social support has been linked to constructive outcomes in well-being (Greenier et al., 2021). Meaning pertains to the concept that a person's life possesses purpose and direction in the life cycle, along with a sense of connection to something more than oneself. Meaning has been correlated with positive well-being results and positive emotions across various age groups (Pan et al., 2023). Achievement is typically associated with goal setting, progression, and the capacity to succeed, thus contributing to the pursuit of well-being (Croom, 2015).

## 2.3. Student engagement

As a conceptual framework, SE is a multifaceted construct encompassing various interconnected scopes, including learner behaviors, emotions, and intellectual views regarding school and learning (Derakhshan et al., 2022; Guo et al., 2023; Han et al., 2021). SE is perceived as an integral component of a larger motivational process, wherein the learning environment contributes to shaping a person's self-concept (Fredricks et al., 2019). A complex construct influencing learning, SE encompasses three scopes: behavioral, intellectual, and emotional engagement (Reeve & Cheon, 2021). The first pertains to participation, effort, intensity, or persistence in educational activities; the second involves students' willingness and ability to undertake the learning task at hand; and the third involves learners' moods toward educators, classmates, learning tasks, educational experience, and their connectedness (Sinatra et al., 2015). These three scopes were aligned with the educational procedures of performing, thinking, and feeling, correspondingly (Yin & Wang, 2016).

## 2.4. Student motivation

In line with Gopalan et al. (2018), motivation has been recognized as a pivotal element for achievement in personal and educational spheres. It serves as the driving force behind tasks, making achievements possible. Motivation incorporates passion, determination, and an exhilarating sense that encourages persistence in the pursuit of superiority, regardless of an individual's life path (Al-Hoorie, 2017). This driving force resides internally, compelling individuals to take actions aligned with their desired objectives (Wulf & Lewthwaite, 2016). Assurance lies in the multifaceted role of motivation, embodying distinct aims, epitomizing steadfastness, and upholding a conscientious demeanor in endeavors. Put differently, motivation, when directed toward a specific objective, refines actions, instilling purposeful and methodical movements, and showcasing an exceptional level of commitment and constancy (Ryan & Deci, 2020). Moreover, motivation functions as a sieve for an individual's conduct, warding off aberrant and aimless actions that might veer away from their predetermined goals (Skinner & Wellborn, 2019). Ryan and Deci (2020) introduced the SDT as a framework to expound on the role and dynamics of motivation in individuals. This theory categorizes human behavioral motivation based on the degree of internalization, with a particular focus on distinguishing between intrinsic motivation, introjected regulation, identified regulation, external regulation, and amotivation (Ryan & Deci, 2020). Consistent with SDT, intrinsic motivation hinges on three essential psychological needs: autonomy, competence, and relatedness (Dincer et al., 2019; Ryan & Deci, 2020). The fulfillment of these needs is crucial for promoting learners' well-being and SE (Cuevas et al., 2018).

Autonomy pertains to the desire for free will or choice in an individual's activities. The need for autonomy serves as a motivational foundation for SE (Derakhshan et al., 2020). Individuals experience autonomy when they perceive their actions as an expression of

their own independence (Ryan & Deci, 2020). Competence denotes proficiency in activities, making it a crucial motivating factor for learners' mental engagement (Ryan & Deci, 2017). Experiencing competence in enduring communications within a social milieu is described as feeling capable. Individuals feel competent when they encounter demanding chances that let them showcase their genuine abilities (Deci & Ryan, 2016). Competence can serve as a motivational foundation for engagement. It is practical to undertake that a sense of mastery about the studied issue would not only inspire learners to actively participate in related activities but also nurture positive emotions about the issue. Relatedness, on the other hand, pertains to the feeling of being associated with others (Ryan & Deci, 2017). This sense of relatedness can foster students' emotional engagement by positively influencing their emotions toward a lesson, and it can also encourage behavioral engagement by motivating them to vigorously take part in the class (Ruzek et al., 2016). Relatedness is perceived when people improve a sense of connectedness with their classmates or others they hold in high respect (Jin & Wang, 2019).

### 2.5. Related studies

Romano et al. (2021) explored the connections between resilience, perceived ES, and SE. The study, involving 205 Italian high school students who completed self-report questionnaires, specifically delved into the intervening role of teacher ES. Employing SEM to examine the mediation hypothesis, the results demonstrated associations between resilience and perceived teacher ES, and both factors were found to be linked to school engagement. Moreover, perceived teacher ES was identified as a partial facilitator in the correlation between resilience and SE. The study highlighted the significance of cultivating individuals and related issues in the educational setting to enhance their well-being. Han et al. (2022) investigated the association between perceived teacher autonomy support and SE, considering the power of motivation and the class environment among 1517 Chinese students in China. Data were collected through questionnaires and the findings designated a positive influence of teacher support on SE. Additionally, motivation partially mediated the association between these two constructs, and class environment moderated the association between teacher support and motivation. In a study conducted by Lobo (2023), the interconnection between resilience and SE was investigated in the context of teacher ES. Employing data from 910 students and utilizing SEM, the research uncovered several key relationships. The results indicated a positive influence of resilience on engagement, with resilience positively impacting teacher ES. Additionally, teacher ES was found to affect engagement, and it had a partial role in the connection between students' resilience and engagement. The findings underscore the significance of instructors' ES in fostering both resilience and engagement among college students. Also, Pan et al. (2023) explored the influence of EFL educators' affective scaffolding on SE and well-being. Through a questionnaire survey involving 1968 participants, the study revealed a positive and significant prediction, indicating that EFL teachers' affective scaffolding has a beneficial impact on SE and well-being. Gao et al. (2023) scrutinized the influence of teachers' affective support on students' academic performance and the research also aimed to examine whether teacher ES has an impact on or predicts learners' social-emotional competence and well-being. The study involved 370 EFL students from China. The findings, obtained through SEM, indicated that perceived teacher ES had the predictive ability for both concepts.

Although the above mentioned studies have been in this domain, no studies were done to scrutinize the influence of teacher ES on SE and well-being in Chinese contexts and to explore whether motivation acts as a mediator in this relationship based on SDT.

## 3. Method

### 3.1. Participants

A total of 620 EFL college learners were initially engaged, and after data cleaning, 590 participants (268 males and 322 females) were retained for further analysis. Their age ranged from 21 to 29. The students who filled out the questionnaire were mainly from Yunnan Province, and students from other provinces also participated, such as Henan Province, Fujian Province, Sichuan Province, and so on. Prior to data collection, they were provided with informed consent, allowing them to indicate their willingness by selecting Yes or No after understanding the research purpose. Additionally, participants were assured that their responses and personal information would be kept private and solely used for research determinations.

### 3.2. Instruments

#### 3.2.1. Perceived teacher ES

To gauge learners' view of their educators' ES, the researchers employed the validated scale developed by Romano et al. (2020). It consists of 15 items rated on a 5-point Likert scale (ranging from 1 = "Not at all true" to 5 = "Very true"). It comprehensively evaluates three interlinked facets of teacher ES: Positive Climate, Teacher Sensitivity, and Regard for Adolescent Perspective. Cronbach's alpha was 0.82 ensuring high reliability.

#### 3.2.2. Well-being questionnaire

The scale utilized in this study, developed by Dupuy (1970), comprises 18 items integrated to yield a general well-being indicator and six sub-scales named apprehension, constructive well-being, self-monitoring, depression, vitality, and overall health. Participants were instructed to respond to items 1 to 14 using a 6-point score scale and items 15 to 18 on a 10-point scoring scale. Greater scores indicated greater mental well-being and reduced mental agitation. Its reliability in this study was assessed using Cronbach's Alpha, resulting in a value of 0.89, denoting satisfactory internal consistency.

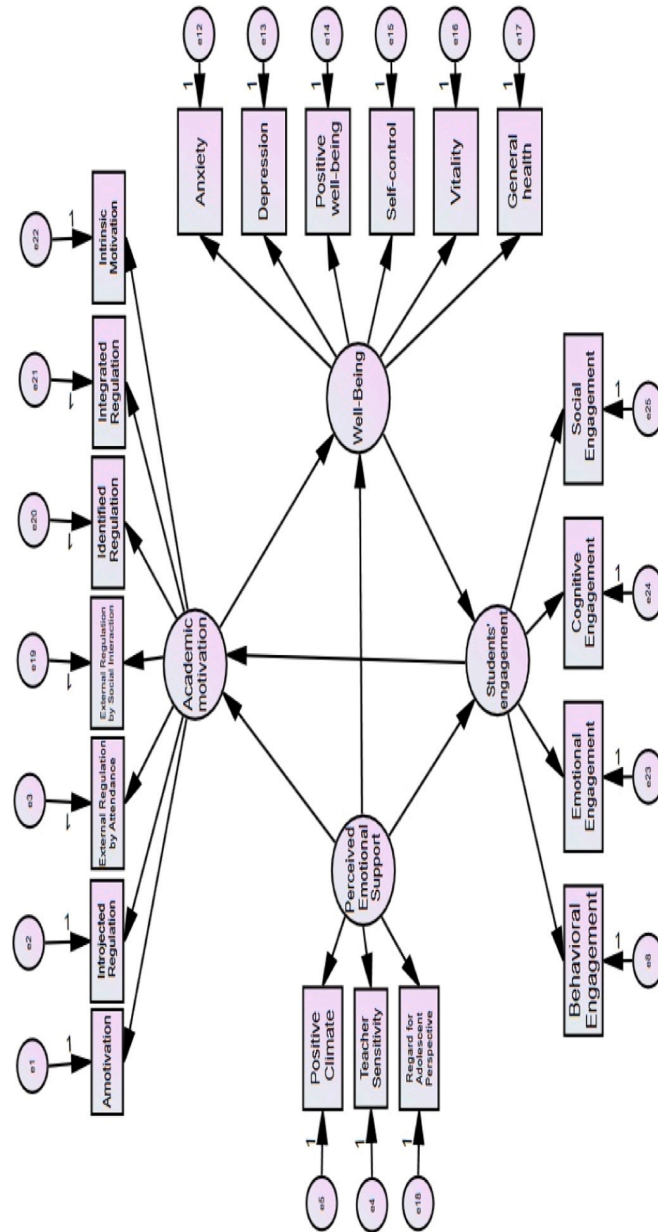


Fig. 1. SEM Model.

### 3.2.3. Student engagement scale

The survey designed by [Appleton et al. \(2006\)](#) comprises 35 items utilizing a 4-point Likert-type scale, ranging from 1 (strongly disagree) to 4 (strongly agree). It evaluates three subcategories of affective engagement, namely teacher-student relations, support from peers, and also family in learning. Additionally, it assesses three subcategories of intellectual engagement, exploring the quality of school tasks, future aspirations, and intrinsic motivation. The scale demonstrated robust internal consistency, as indicated by a reliability coefficient of 0.91, ensuring reliability in gauging engagement in this setting.

### 3.2.4. Motivation questionnaire

In this study, the motivation questionnaire, a tool created by [Vallerand et al. \(1992\)](#), was utilized and consisted of 29 items. The learners rated on a 7-point scale, fluctuating from (1) "Does not correspond at all" to (7) "Corresponds exactly." The questionnaire encompasses various components, including amotivation, introjected regulation, external regulation related to attendance and social interaction, integrated regulation, identified regulation, and intrinsic motivation. The scale demonstrated a reliability coefficient of 0.88, indicating strong internal consistency.

### 3.3. Procedure

In the initial phase, authorities thoroughly reviewed the scales to eliminate any potential ambiguity that could hinder participants' comprehension. To ensure a clear understanding of the items, the questionnaires were translated into Chinese, their mother tongue, by a translation expert. Subsequently, an expert examined the Chinese version to detect and rectify any probable misunderstandings. Following this, the Chinese version was integrated into Questionnaire Star. In the next stage, QR codes generated by this application, encompassing all the necessary information, were distributed to them via WeChat with the assistance of colleagues. The data collection spanned 5 days, closing on December 8, 2023, and was conducted in both English and Chinese. The research adhered to fundamental ethical principles, with participants being fully cognizant of their privileges and the confidential nature of the information they provided for research purposes. There was no prior interaction between researchers and learners, and no conflicts of interest were present. Lastly, a meticulous review and organization of the collected data were conducted to ensure its accuracy and reliability.

### 3.4. Data analysis

The study achieved its objectives by utilizing SEM to analyze the collected data. Moreover, the reliability and CFA of each scale were assessed, affirming the connection between variables through the model's existing covariance. The investigation went a step further employing Multiple Regression analysis to examine the analytical roles of these constructs.

## 4. Results

Reliability was calculated using Cronbach's Alpha to determine the internal consistency of each scale which indicates satisfactory reliability. The subsequent sections will delve into more detailed analyses and explore the relationships between these key constructs. Based on the Confirmatory Factor Analysis (CFA), the association between each sub-factor of the proposed model was analyzed and the results can be seen in [Fig. 1](#).

The preliminary analysis includes an assessment of the model's goodness of fit indices and explores the relationships between key variables. Fit indices, such as  $\chi^2/df$ , GFI, CFI, and RMSEA, were utilized to evaluate the adequacy of the SEM. Also, Pearson correlations were computed to understand the associations between well-being, SE, motivation, and teacher ES. As shown in [Table 1](#).

All CR values exceed the recommended threshold of 0.70, indicating good reliability. Well-being, SE (Mood), motivation, and teacher ES have CR values of 0.85, 0.88, 0.91, and 0.84, respectively. AVE values surpass 0.50 for all constructs, confirming adequate convergent validity. Well-being, SE (Mood), motivation, and teacher ES exhibit AVE values of 0.82, 0.87, 0.88, and 0.80, respectively. For discriminant validity, MSV should be lower than AVE. In [Table 2](#), all MSV values are below the corresponding AVE values, indicating acceptable discriminant validity. A MaxR(H) value close to 1 suggests that the constructs measure similar underlying concepts. Well-being, SE (Mood), motivation, and teacher ES exhibit MaxR(H) values of 0.977, 0.978, 0.976, and 0.973, respectively, indicating a substantial overlap in the variance they capture.

In this context,  $\chi^2/df$  is the chi-square to degrees of freedom ratio, GFI is the Goodness of Fit Index, CFI is the Comparative Fit Index, and RMSEA is the Root Mean Square Error of Approximation. The criteria for an acceptable fit include a  $\chi^2/df$  ratio less than 3, GFI and CFI greater than 0.90, and RMSEA less than 0.08. The presented model demonstrates good fit with a  $\chi^2/df$  ratio of 2.29, GFI of .93, CFI of .91, and RMSEA of .07. [Table 3](#).

[Table 3](#) presents the Pearson correlations among key variables in our study, well-being, SE, motivation, and teacher ES. In the relationship between well-being and SE, a correlation of 0.51 is observed. This moderate positive correlation implies that as well-being

**Table 1**  
Goodness of Fit Indices.

Model	$\chi^2/df$	GFI	CFI	RMSEA
Acceptable fit	< 3	> .90	> .90	< .08
Model	2.29	.93	.91	.07

**Table 2**  
Reliability and Validity of the Variables.

	CR	AVE	MSV	MaxR (H)	Well-being	SE (Mood)	Motivation	Teacher ES
Well-being	0.85	0.82	0.920	0.977				
SE (Mood)	0.88	0.87	0.903	0.978	0.711 * **			
Motivation	0.91	0.88	0.825	0.976	0.561	0.614 * **		
Teacher ES	0.84	0.80	0.961	0.973	0.521	0.449 * **		

\* \*\* It is significant at.000 level

increases, there is a tendency for SE to increase as well. The statistical significance of this correlation indicates the reliability of the relationship ( $p < 0.05$ ). Similarly, the correlation between well-being and motivation is 0.56, indicating a moderate positive association. This suggests that higher levels of well-being are linked to increased motivation among students. The statistical significance ( $p < 0.05$ ) reinforces the reliability of this relationship. Examining the correlation between well-being and teacher ES, a coefficient of 0.52 is observed. This indicates a moderate positive relationship, suggesting that individuals experiencing higher well-being are likely to perceive higher levels of ES from teachers. The statistical significance ( $p < 0.05$ ) adds credibility to this association. Moving to the correlation between SE and motivation, a coefficient of 0.61 is noted. This strong positive correlation indicates that as SE increases, there is a corresponding increase in motivation. The statistical significance ( $p < 0.05$ ) underscores the robustness of this relationship. Examining the correlation between SE and teacher ES, a coefficient of 0.44 is observed. The statistical significance ( $p < 0.05$ ) reinforces the credibility of this connection. Analyzing the relationship between motivation and teacher ES, a correlation coefficient of 0.52 is observed. The statistical significance ( $p < 0.05$ ) emphasizes the reliability of this relationship. Furthermore, the positive correlation between SE and motivation emphasizes the synergy between these two constructs. Additionally, the correlation between SE and teacher ES underscores the role of educators in fostering an environment that enhances SE. The findings also suggest that motivation is not only influenced by personal factors but also is positively associated with perceived teacher ES. Fig. 2 indicates that students who feel supported by their teachers are more likely to be motivated academically. Table 5.

To delve into the intricate relationships among well-being, SE, motivation, and teacher ES, an SEM was executed using SPSS and AMOS. The model’s goodness of fit is presented in Table 4.

Table 4 reveals that the model fits well within acceptable criteria, with CMIN/DF at 2.178, PNFI at 0.712, and RMSEA at 0.067. These values indicate a satisfactory fit, supporting the validity of the proposed SEM.

The comprehensive evaluation of the structural model, as illustrated in Table 5, unveils a nuanced comprehension of the intricate relationships within our study’s focal constructs: perceived Emotional Support (ES), well-being, self-efficacy (SE), and motivation. Commencing with the correlation between perceived ES and well-being, the path coefficient of 0.458 suggests a moderate positive relationship ( $P = 0.001$ ), emphasizing a meaningful association that contributes to individuals’ overall well-being. The effect size of 0.68 underscores the practical significance of this relationship. Expanding our scrutiny to the association between perceived ES and SE, the estimated coefficient of 0.441 signifies a positive connection ( $P = 0.001$ ). The corresponding effect size of 0.79 emphasizes the substantial impact of ES on individuals’ self-efficacy, contributing to a more profound understanding of this constructive relationship. Continuing our exploration, the path coefficient of 0.526 between perceived ES and motivation reveals a moderately strong positive relationship ( $P = 0.001$ ). The associated effect size of 0.91 accentuates the noteworthy influence of perceived ES on motivation, highlighting its importance as a driving force in educational contexts. Turning our attention to the relationship between SE and well-being, the estimated path coefficient of 0.518 indicates a positive connection ( $P = 0.001$ ). This positive association is further underscored by an effect size of 0.88, elucidating the substantial impact of individuals’ Self-Efficacy on their overall well-being. In assessing the model’s overall effectiveness, it adeptly elucidates approximately 72% of the variations in perceived ES, well-being, SE, and motivation. These relationships maintain statistical significance at the 95% confidence level, underscoring the robustness of the model in capturing the intricate dynamics among the variables within the educational context. The inclusion of effect sizes enhances the interpretability of the findings, providing a more nuanced perspective on the practical significance of the observed relationships.

### 5. Discussion

The present study reveals that heightened perception of teacher ES by learners correlates with increased levels of engagement and well-being. This relationship is partially mediated by students’ motivation. Indeed, those who perceive more ES from teachers tend to experience improved well-being. Also, higher levels of perceived ES correspond to increased SE and individuals perceiving greater ES are likely to exhibit higher motivation levels. One reasonable interpretation is that the perceived ES from teachers provides students with emotional security, motivating them to participate more vigorously in the classroom. It plays a crucial role in establishing and

**Table 3**  
Pearson Correlations.

Variable	Well-being	SE	Motivation	ES
well-being	1	0.51	0.56	0.52
SE	0.51	1	0.61	0.44
motivation	0.56	0.61	1	0.52
teacher ES	0.52	0.44	0.52	1

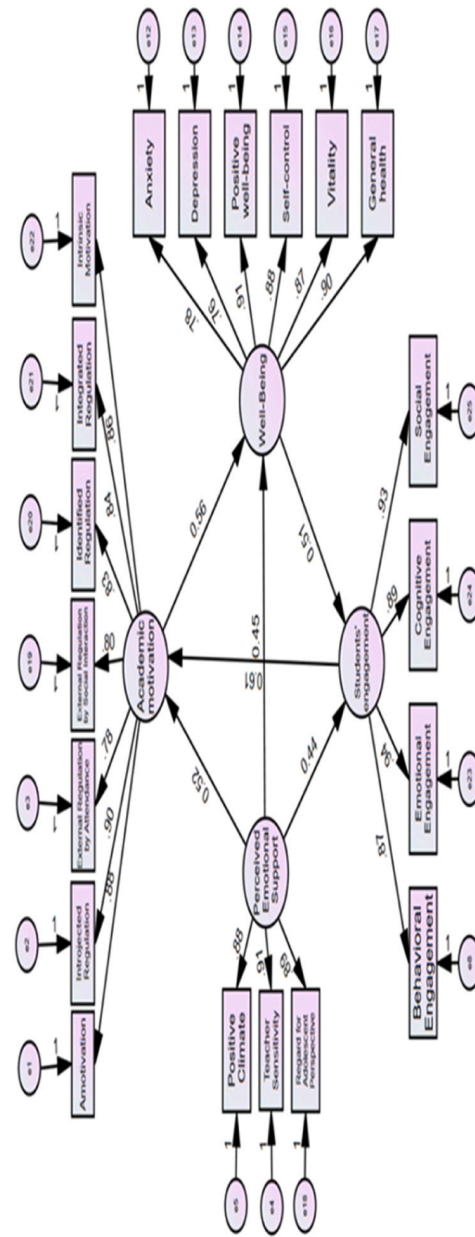


Fig. 2. SEM Model of Variables Top of Form.



**Table 4**  
Goodness of Fit for SEM.

Criteria	Threshold	Value	Terrible	Acceptable	Excellent	Evaluation
CMIN	-	1234.56	-	-	-	-
DF	-	567	-	-	-	-
CMIN/DF	2.17	-	> 5	> 3	Acceptable	-
RMSEA	0.067	-	> 0.08	< 0.08	Acceptable	-
PNFI	0.712	-	< 0.5	> 0.5	Acceptable	-

**Table 5**  
Structural Model Assessment.

Relationships	Estimate	S.E.	C.R.	P	Effect Size
perceived ES → well-being	0.458	0.08	5.63	0.001	0.68
perceived ES → SE	0.441	0.06	6.67	0.001	0.79
perceived ES → motivation	0.526	0.10	5.56	0.001	0.91
well-being → SE	0.518	0.08	7.14	0.001	0.88
motivation → well-being	0.569	0.07	6.68	0.001	0.75
SE → motivation	0.615	0.09	6.00	0.001	0.88

sustaining positive and caring associations between educators and learners and these associations aid teachers in fostering a secure and compassionate educational atmosphere where students are recognized and nurtured as persons (Reyes et al., 2012).

The findings align with earlier investigations (Jin & Wang, 2019; Li et al., 2023; Romano et al., 2021; Ruzek et al., 2016; Tennant et al., 2015) that emphasized the relationship between perceived teacher ES and various positive academic outcomes. Students with stronger connections to their teachers, a key aspect of emotionally supportive climates, demonstrate higher levels of engagement. A prospective clarification for this result may relate to the social and cultural features of Chinese learners, which show that they are inclined to hold a greatly authoritative vision of their teachers, and assume to get more instruction from them (Zhang, 2010). Additionally, learners in emotionally supportive classroom environments exhibit a preference for more complex cognitive activities and tend to achieve better academic performance. The outcomes of the study resonated with prior research (e.g., Gao et al., 2023; Han et al., 2022; Lobo, 2023; Romano et al., 2021), affirming that warm relationships with teachers contribute to increased student motivation, enhanced engagement, and improved well-being. The outcomes mirror the findings of Dörnyei and Ushioda (2021), underscoring that the positive ambiance within classrooms, coupled with adept communication strategies addressing learners' psychological needs, contributes to active and efficient learning. Consequently, the observed results can be ascribed to the learning environment prevalent among Chinese students, influencing their perceptions of well-being and engagement. Within the emotional climate environment, a perceptive and considerate teacher can offer learners a secure foundation to navigate the classroom, enhancing positive peer-to-peer collaborations and teacher-learner engagement (Xie & Derakhshan, 2021). Simultaneously, Chinese learners will feel secure when participating in classroom activities, leading to increased enjoyment and active involvement in the classroom (Li & Dewaele, 2021).

In this study, motivation worked as a mediator in the connection between Chinese EFL learners' perceptions of teacher ES, well-being, and engagement. In simpler terms, enhancing learners' perception of teacher ES could elevate their motivation, subsequently contributing to increased well-being and engagement. Indeed, the relationship between teacher ES and the other two variables is mediated by their motivation and this relationship aligns with SDT, where social factors stimulate intrinsic motivation by fulfilling individuals' basic needs. Specifically, a learner's view of teacher ES reflects the extent to which they view their educator's care, understanding of their circumstances, and positive reaction to their efforts (Yang et al., 2019). Drawing on the premise that teacher support can meet the requirements for relatedness and competence; educators have a key role in fostering a robust intrinsic motivational orientation (Federici & Skaalvik, 2014). As students receive ES from their educators, a sense of connection is established, forming a relationship that addresses their need for social connection in the academic setting (Burkley & Burkley, 2018). Consistent with SDT, an emotionally supportive atmosphere that satisfies learners' needs for relatedness, competence, and autonomy will enhance their well-being (Ryan & Deci, 2020). A profound sense of connectedness to the school arises from close interactions with teachers, staff members, supervisors, and other stakeholders.

## 6. Conclusion

The present findings indicate that learners' view of teacher ES has a direct constructive impact on their engagement and well-being. Furthermore, it was revealed that students' high motivation can enhance their engagement and well-being. In summary, the study suggests that learners' emotional connection with a teacher is linked to their classroom engagement (Yin & Wang, 2016). In conclusion, teachers who offer ES create an environment that affords students increased opportunities for autonomy, stronger relational relations, and a sense of competence, all of which contribute to heightened motivation. Students who expressed positive teacher harmony probably encountered a feeling of connectedness, which can have a positive influence on their motivation. Conversely, individuals who indicated disharmony with their teacher may experience a reduced sense of relatedness, potentially impacting their

motivation. Educators who cultivate a positive emotional environment for learning contribute to students feeling secure and viewing the classroom as a valuable and engaging space. This enthusiasm for learning fosters a sense of connection among students, leading to increased engagement and academic success (Han, 2021).

## 7. Implications and future directions

This research offers significant considerations and implications for school practitioners. While the finding that teacher support positively impacts educational outcomes for students is not groundbreaking, this study specifically highlights teacher ES as a distinct kind of support and underscores the mediating role of motivation. Therefore, the present study makes a valuable contribution to available research by enhancing educators' comprehension of the interplay among teacher ES, well-being, and engagement. This understanding is pivotal for boosting students' improvement. The results indicate a positive correlation between perceived teacher ES and their engagement. Consequently, teachers can employ a dual strategy to enhance SE: offering more ES and fostering students' capacity to remark and acknowledge ES. To provide additional ES to learners, teachers are anticipated to employ diverse teaching strategies, including but not limited to praising and inspiring positive behaviors, prioritizing collaboration over competition, establishing high prospects, signifying respect, and training learners' emotions. One approach to boost learners' conscious view of ES is cultivating constructive personality types such as appreciation, hopefulness, and emotional intelligence. The previously mentioned constructive mediation empowers learners to engage more dynamically in the class, cooperate with both educators and classmates, and derive increased enjoyment in the educational process. These outcomes collectively signify a high level of engagement. Consequently, the ES provided by teachers serves as a catalyst for the sustained development of students in both academic and social dimensions. Material developers, in collaboration with educators, can formulate intervention programs and strategies tailored to optimize learners' motivation by addressing their fundamental personal needs.

Educators and administrators should take into account the findings of this research when aiming to enhance SE and well-being. The educational environment has a critical power in this regards, emphasizing the importance of educational institutions focusing on teachers and their capacity to provide ES to students. Instructors, therefore, should extend ES to students through various means, such as understanding their needs (Duckworth, 2016). Customizing teaching methods, offering teacher support, and cultivating a conducive learning environment have the potential to elevate students' motivation and, consequently, their engagement and well-being. Subsequent research and interventions focused on these motivational factors can play a crucial role in fostering more effective and student-centered educational practices.

It is essential to reiterate that the current study has some constraints. Firstly, reliance on self-report questionnaires introduces the potential for response bias, which may affect the validity of the results. Additionally, the hypothesized model was constructed solely within the framework of SDT, and future research endeavors could explore alternative theories, such as social support theory, to provide a more widespread understanding. The generalizability of this research is constrained to China, highlighting the need for future research in diverse contexts. Subsequent studies could delve into demographic factors, including learners' age, gender, and educational level, to explore their potential influence on the interplay among the variables examined in this study.

### Ethics approval and consent to participate

The research project was authorized by the Academic and Ethics Committee of Fujian Normal University and Fujian University of Technology.

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### CRedit authorship contribution statement

**Shen Huajie:** Writing – original draft. **Zhang Jilin:** Formal analysis, Data curation. **Ye Xinzhi:** Writing – review & editing. **Huang Donghai:** Supervision.

### Declaration of Competing Interest

None.

### Data availability

Data will be made available on request.

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