



# The Development of School Satisfaction in Chinese Early Adolescents: The Contributions of Peer Liking and Academic Performance

Mengting Li<sup>1,2</sup> · Qinglin Bian<sup>3</sup> · Weiqiao Fan<sup>1</sup> · Xinyin Chen<sup>3</sup>

Received: 3 September 2022 / Accepted: 28 October 2022

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2022

## Abstract

Research in Western countries has shown a general declining trend of school satisfaction over time among adolescents, yet it remains unclear how social and school factors predict the developmental pattern. Moreover, relative to their Western counterparts, adolescents in China tend to report lower levels of school satisfaction, but little is known about how it develops and the predictors of the development. To fill the gaps, this four-wave longitudinal study explored the developmental patterns of school satisfaction and the contributions of peer liking and academic performance. Six hundred and eighty-nine Chinese adolescents ( $M_{age} = 11.39$ ,  $SD_{age} = 0.53$  at Time 1; 53.7% girls) participated in this study from Grade 6 to Grade 9 in 2017 to 2020. School satisfaction was measured each academic year using self-reports. Peer liking was assessed by classroom-based sociometric nominations, and information on academic performance was collected through school records in Grade 6. The conditional growth curve model results showed that peer liking and academic performance positively predicted the intercept of school satisfaction. School satisfaction decreased over time among students with low initial academic achievement, but increased in an exponential manner among students with high initial academic achievement. The results indicated that peer relationships and academic performance might play a role in affecting the level and the development of school satisfaction in the Chinese context.

**Keywords** School satisfaction · Peer liking · Academic performance · Chinese early adolescents

## Introduction

Positive emotions, such as school satisfaction, may support approach behaviors, broaden and strengthen social-cognitive repertoires, serve the function of expanding an individual's continuous engagement in constructive activities, and help cope with challenges in adjustment (Fredrickson, 2001; Moral-Garcia et al., 2021; Takakura et al.,

2010). Grounded in the theoretical work on subjective well-being (Diener, 1984), school satisfaction is defined as the cognitive-affective appraisals of the quality of a student's experiences in the school context (Baker & Maupin, 2009; Huebner et al., 2001). As a major aspect of emotional experiences, school satisfaction reflects how students feel about the school environment and activities (e.g., learning) in school. Research has indicated that students' school satisfaction is associated with adaptive school and psychological functioning (e.g., Jiang et al., 2019; Skrzypiec et al., 2018). Nevertheless, most of the extant studies of school satisfaction have been conducted in samples of American or Western European students (e.g., Karatzias et al., 2002; Moral-Garcia et al., 2021), and little is known about the developmental pattern of satisfaction with school among Chinese adolescents. The purpose of the current study was to examine the developmental pattern of school satisfaction in Chinese adolescents. Moreover, guided by the developmental-ecological perspective (Baker et al., 2003), the roles of academic achievement and peer liking in

---

✉ Weiqiao Fan  
fanweiqiao@shnu.edu.cn

<sup>1</sup> Research Institute for International and Comparative Education, and Department of Psychology, Shanghai Normal University, Shanghai 200234, China

<sup>2</sup> Faculty of Education, The University of Hong Kong, Hong Kong, China

<sup>3</sup> Graduate School of Education, University of Pennsylvania, Philadelphia, Pennsylvania, USA

predicting the pattern have been to be examined in the Chinese context.

As a critical aspect of adolescent well-being (Gómez-Baya et al., 2021), school satisfaction has been found to contribute to school engagement (Elmore & Huebner, 2010). Research has also shown that school satisfaction is positively associated with school adaptation and negatively associated with behavioral and adjustment problems (Elmore & Huebner, 2010; Jiang et al., 2019; Skrzypiec et al., 2018). Given its importance, researchers have explored factors that may predict the development of school satisfaction but found mixed results. For example, findings on the impact of academic performance were unclear, such that students' school attitudes sometimes did not appear to be closely related to their academic achievements (e.g., Magnano et al., 2020), although, in some studies, self-rated academic performance was shown as one of the most significant predictors of children's school satisfaction across grade levels (e.g., Hui & Sun, 2010) and having a positive reciprocal relationship with adolescents' appraisals of school experiences (e.g., Simões et al., 2010). Moreover, although peers' role in individual development becomes increasingly crucial from childhood to adolescence (Gorman, 2002), most studies examined the influence of specific relationships with close peers, such as friends, on school satisfaction (e.g., Jiang et al., 2013); only a few explored the contributions of overall liking by peers (e.g., classmates) to school satisfaction (e.g., Vasalampi et al., 2018). As an important component of peer relationships, how peer liking predicts school satisfaction should be further investigated.

The present longitudinal study examined school satisfaction among Chinese early adolescents across four time points. In addition, two major aspects of school adjustment were examined: academic achievement as the indicator of students' academic competence, and peer liking as the indicator of their social competence. Peer liking or peer preference refers to the relative likeability of children (i.e., individual differences on how much they are liked and disliked by others) in the peer group, which was assessed by classroom-based sociometric nominations in the present study (Coie et al., 1982).

### School Context for Adolescent Development in China

China has the world's largest education system with over 198 million students enrolled in primary and secondary education in 2020 (National Bureau of Statistics of China, 2021; OECD, 2016). Chinese students often outperform their counterparts from many other countries in academic performance, but they tend to report lower positive emotions in school (e.g., PISA from OECD, 2019). Whereas academic achievement is highly emphasized, students'

emotional well-being, such as having positive emotions, has often been understated (Wang, 2013; Yik, 2010). Historically, education in China is examination-oriented and is often utilitarian, focusing on its practical outcomes. High social, occupational, and economic status is closely related to the attainment of a high level of education. Due to limited opportunities to receive a higher education, there is strong competition among students in the school because acceptance to senior high schools and colleges/universities is determined almost completely by scores on academic examinations. Thus, parents and teachers tend to be insensitive to children's emotions toward the school (e.g., Ng et al., 2019).

Over the past several decades, however, China has changed dramatically toward a market-oriented society in which individual autonomy and self-expression are required for success (Cai et al., 2020; Chen & Chen, 2010). The Ministry of Education of China has modified educational policies to promote human development in socioemotional areas. For example, since 2019, China has implemented the "The Action Plan for Mental Health of Children and Adolescents", which conducts regular mental health assessments, implements life education, and cultivates positive psychological qualities in adolescents across the country (Ministry of Education of China, 2019). Along with the change, Western individualistic ideologies, such as liberty and individuality, have been introduced into the country and are increasingly accepted by individuals, particularly the young generations (Cai et al., 2020). Accordingly, researchers and professionals in China have attempted to encourage teachers and parents to change their attitudes toward the role of emotions in school education and to help students develop positive school attitudes and emotions (Tian & Gilman, 2009). Given this background, it would be interesting to examine the development of school satisfaction and factors that predict the development of Chinese students.

### Development of School Satisfaction

In the literature, some studies have investigated the development, particularly, developmental changes, of school satisfaction in adolescents (e.g., Chen, 2020; Scharenberg, 2016; Tiliouine et al., 2019). Early studies compared levels of students' school satisfaction across grades (e.g., Hui & Sun, 2010; Malley et al., 2003). For example, in a cross-sectional study, a substantial decrease in school satisfaction from grades 1 to 8 was reported for public school students in the United States (Okun et al., 1990). Similarly, across other Western and East Asian populations, school satisfaction among children and adolescents often displayed a declining trend as students advanced to higher grades (Hui & Sun, 2010; Malley et al., 2003).

Longitudinal research also revealed the decrease in students' school satisfaction across grade levels. For example, a study using four waves of data from 2011 to 2017 found a decelerating decline with age in school satisfaction of children and young people from low-income families in Taiwan (Chen, 2020). German students' school satisfaction decreased from the beginning of Grade 7 to the end of Grade 8 (Scharenberg, 2016). Similarly, in a two-year follow-up study conducted with Algerian children, students became increasingly dissatisfied with multiple aspects of their school experiences from age 12 to 14, especially for boys (Tiliouine et al., 2019). Consistent with these results, it was also found that school satisfaction in Chinese students declined as they grew older (e.g., Hui & Sun, 2010; Tian & Gilman, 2009).

### School Satisfaction, Academic Performance, and Peer Liking

Schools are important contexts for children's and adolescents' development (Jiang et al., 2013). The characteristics of schools affect students' appraisals of their school environments (Baker et al., 2003). According to the developmental-ecological perspective proposed by Baker et al. (2003), in the school setting, academic performance and peer relationships are important factors that affect students' sense of competence and connectedness to others, which is related to the development of school satisfaction. Academic competence is often considered a proximal factor that may enhance children's sense of competence as a learner whereas peer liking is a major factor that is closely associated with children's feelings of social belonging and meaningful connections to others (Baker et al., 2003). It is necessary to examine these two important factors in the study of the development of students' school satisfaction.

Studies have noted positive relations between academic achievement and satisfaction with school among children and adolescents. For example, students who did better academically perceived their schools as more favorable in the United States (Malley et al., 2003). Similar positive associations between academic performance and school satisfaction have been found among students in other countries and regions, such as Hong Kong, the Netherlands, Bangladesh, and Germany (e.g., Hossain et al., 2019; Hui & Sun, 2010; Nikolov & Dumont, 2020; Verkuyten & Thijs, 2002), although mixed results have also been reported (e.g., Magnano et al., 2020).

Adolescents spend most of their time with peers and being accepted and liked by peers is of chief concern (de Bruine et al., 2019). According to Erdley et al. (2001), both dyadic close relationships with friends and liking by peers (e.g., classmates) should be highlighted in adolescent development, because these two forms of peer relationships

may contribute differently to adjustment (Erdley & Day, 2017). Given that most studies explored the contributions of relationships with close friends/peers to school satisfaction (e.g., Jiang et al., 2013), it is necessary to investigate the influence of peer liking on school satisfaction. Adolescents spend the majority of their time interacting with classmates. Integration into the class peer group is of great social concern as children enter adolescence and is particularly influential for students' adjustment (Fontaine et al., 2009). Students who are low in peer likability may fail to develop the bonds that link them to the school environment and thus likely develop negative attitudes toward school (French & Conrad, 2001). For example, measured by positive sociometric nominations, acceptance from classmates was positively related to the ratings of school satisfaction in Korean middle school students (Jun & Shin, 2015). Similarly, in a longitudinal study, Finnish adolescents' peer acceptance at age 16 positively predicted their school satisfaction one year later (Vasalampi et al., 2018). In general, however, research on the contributions of peer liking to school satisfaction is rather limited. It should be noted that whereas academic achievement and peer liking, on the one hand, and school satisfaction, on the other, are likely to affect each other, given the focus of the present study, academic achievement and peer liking were investigated as predictors of the developmental patterns of school satisfaction.

### The Present Study

Research in Western countries has shown an overall decline in adolescents' school satisfaction over time. However, relatively little is known about how social, school, and personal factors contribute to the developmental pattern. The study had two goals. The first goal was to investigate the developmental patterns of school satisfaction in Chinese adolescents. Because most research has shown a decreasing trend of school satisfaction in children and adolescents as their grade level increases, as **Hypothesis 1**, it was expected that school satisfaction would decline across the years among Chinese adolescents. The second goal was to examine the contributions of academic achievement and peer liking to adolescents' school satisfaction. Based on the developmental-ecological view (Baker et al., 2003) and the previous findings about the relations between academic achievement and school satisfaction, **Hypothesis 2a** proposed that academic achievement would positively contribute to the development of school satisfaction in Chinese adolescents. Similarly, consistent with the literature, **Hypothesis 2b** was that peer liking would positively contribute to the development of school satisfaction in the present study.

## Method

### Participants

Participants in this four-wave longitudinal study included students from four regular public middle schools in Shanghai, China. Unlike a small number of “key” schools in which students are from different areas based on their school performance, regular public schools accept students from the residential area where schools are located. At the end of their first semester (Time 1), all students in Grade 6 of the four schools were invited to participate in the study ( $N = 711$ ). On the day the first wave survey was administered, 15 students were absent and were not included in the participant pool. Furthermore, seven students did not report their school satisfaction and were removed from the Time 1 sample (total response rate is 96.91% at Time 1). The initial sample consisted of 689 sixth-grade students ( $M_{age} = 11.39$ ,  $SD_{age} = 0.53$ ; 53.7% girls). From the initial sample, 644 students (Grade 7, 6% attrition rate), 628 students (Grade 8, 9% attrition rate), and 616 students (Grade 9, 11% attrition rate) participated in the second, third, and fourth waves of data collection, respectively. A multivariate analysis of variance indicated that there were no significant differences between students with missing data and others on gender, socio-economic status, and Time 1 variables, Wilks'  $\Lambda = 0.98$ ,  $F(12, 610) = 1.28$ ,  $p = 0.226$ . Using the MissMech package (Jamshidian et al. 2014; <https://cran.r-project.org/src/contrib/Archive/MissMech/>) in R, the MCAR test revealed that the pattern of missing data was completely random ( $p = 0.277$ ).

In Shanghai, middle school or junior high school consists of four years from Grade 6 to Grade 9. Stipulated by the Ministry of Education in China, the core curriculum is identical in the city. The structure and organization of the schools are also similar. Students are usually not allowed to switch classes, so they typically stay together when they move into the next grade level. One head teacher is designated to each class, who often teaches one major course and takes care of the daily activities of the class. Students spend roughly the same amount of time under similar schedules in school. They are encouraged to participate in various extracurricular social and academic activities, which provide extensive opportunities for students to interact with each other. Most children were from families with middle socioeconomic status backgrounds. In the sample, 41.1% of the fathers and 44.7% of the mothers had a high/vocational school or lower education, and 58.9% of the fathers and 55.1% of the mothers had a college or higher education. Almost all children in this sample were of the Han nationality, which is the predominant ethnic group (over 90% of the population) in China.

### Procedure

The participants were group administered a self-report measure of school satisfaction at the end of their first semester of each academic year in Grades 6 to 9. The participants were also administered a sociometric measure (i.e., peer nominations) of peer liking in Grade 6. In addition, data on academic performance were obtained from school records in Grade 6. A group of faculty and graduate students in psychology in China conducted the administration of the measures. The study received approval from the ethics committee of the university. Active consent was obtained from the participants and their parents.

### Measures

#### School satisfaction

School satisfaction was measured by five items adopted from the School Subscale of Chinese Adolescents' Life Satisfaction Scale (CALSS; Cheung & Cheung, 2005) at four time points (T1, T2, T3, T4). The CALSS was designed to assess adolescents' global life satisfaction and domain-specific satisfaction (family, friend, health, school, and self) in the Chinese context. Five items with the highest factor loadings in School Subscale were used in this study (see Appendix). An example item is “I like going to school”. Participants were asked to rate each item on a seven-point scale, ranging from 1 (not at all true) to 7 (very true). Previous studies reported good psychometric properties of this measure in Chinese students (e.g., Ho et al., 2008; Li, 2021). The reliability of this scale was 0.76 for T1, 0.77 for T2, 0.78 for T3, and 0.81 for T4.

#### Peer liking

Participants were asked to nominate up to three classmates with whom they most liked to be and three classmates with whom they least liked to be (positive and negative nominations). Consistent with the approach of other researchers (e.g., Coie et al., 1995), both same-sex and cross-sex nominations were allowed. The nominations received from all classmates were totaled and then standardized within each class to allow for appropriate comparisons. Positive and negative nominations received from peers indicated peer acceptance and peer rejection in the class. Following Coie et al.'s (1982) procedure, an index of overall peer liking or peer preference was formed by subtracting negative nomination scores from positive nomination scores. This procedure has been shown to be valid for Chinese adolescents (e.g., Chen et al., 2005; Chen & Chen, 2020).

**Table 1** Descriptive statistics and zero-order correlations among variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Peer liking	0.00	1.59	–						
2. Chinese	0.00	0.99	0.32***	–					
3. Mathematics	0.00	0.99	0.23***	0.34***	–				
4. English	0.00	0.99	0.30***	0.46***	0.42***	–			
5. School satisfaction_w1	5.63	0.92	0.16***	0.11**	0.13**	0.17***	–		
6. School satisfaction_w2	5.35	0.99	0.12**	0.10*	0.11**	0.13**	0.84***	–	
7. School satisfaction_w3	5.26	0.92	0.13**	0.08*	0.11**	0.10**	0.75***	0.85***	–
8. School satisfaction_w4	5.15	0.99	0.11**	0.09*	0.16***	0.13**	0.68***	0.72***	0.84***

School satisfaction is the latent score derived from its five indicators

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

## Academic performance

Information concerning academic achievement in Chinese, mathematics, and English, which are the main subjects in Chinese schools, was obtained from the school records. The scores of academic achievement (grades) were based on examinations conducted by the school. The measure based on grades in the subjects has been used and shown to be valid in other studies with Chinese students (Chen et al., 2005; Fu et al., 2020). To control for differences in school tests, these scores were standardized within schools.

## Plan of Data Analysis

The skewness (ranging from  $-1.06$  to  $-0.50$ ) and kurtosis ( $-0.25$  to  $2.98$ ) values of the variables indicated the normal distribution of the data (Kline, 1998). Zero-order correlational analysis was conducted. Repeated measure multivariate analysis of variance (MANOVA) was used to examine time and gender differences in latent scores of school satisfaction. Another MANOVA was used to examine gender differences in peer liking and academic performance.

For **Hypothesis 1**, multiple-indicator latent growth curve models were employed to examine the trajectories of school satisfaction with the maximum likelihood estimator and examine the measurement invariance by holding the intercepts and factor loadings of the factor indicators equal over time. Therefore, latent growth models based on latent school satisfaction (i.e., school satisfaction at each time point indicated by five items) were employed. Missing data were handled in *Mplus* using full information maximum likelihood estimation to derive the most likely parameter estimates, as the pattern of missing data was completely random (Hirose et al., 2016). For **Hypotheses 2a** and **2b**, a conditional model was then conducted to examine the

effects of peer liking and academic performance at T1 on the growth patterns of school satisfaction. Academic performance was treated as a latent variable with Chinese, English, and mathematics scores as indicators. Parental educational levels were not significantly correlated with school satisfaction, therefore were not included in the conditional model. Simple slope analyses were conducted when there were significant associations between predictors and growth patterns.

## Results

### Descriptive Statistics

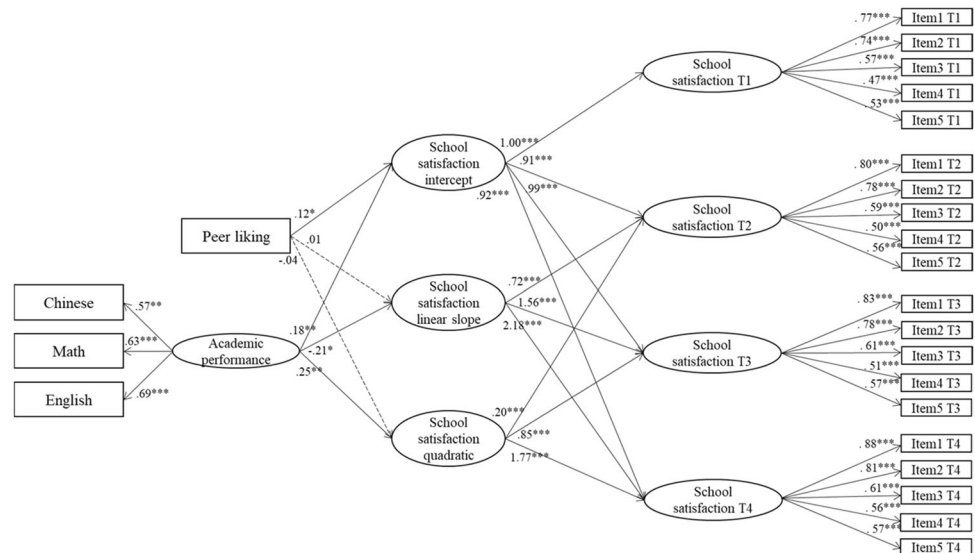
Descriptive statistics of the variables, their correlations, and Cronbach's alphas are presented in Table 1. The overall effects of time, gender, and their interactions on latent scores of school satisfaction in four waves were examined through mixed repeated MANOVA. Results indicated significant time differences (Wilks'  $\Lambda = 0.68$ ,  $F(3, 685) = 106.63$ ,  $p < 0.001$ ,  $\eta^2 = 0.32$ ) in school satisfaction. MANOVA showed significant gender differences in peer liking and academic performance (Wilks'  $\Lambda = 0.85$ ,  $F(4, 682) = 29.90$ ,  $p < 0.001$ ,  $\eta^2 = 0.15$ ). Further univariate analyses indicated that girls had higher levels of peer liking, Chinese scores, and English scores than boys. Correlation results showed that, in general, peer liking and academic performance were positively associated with school satisfaction.

### Latent Growth Curve Model of School Satisfaction

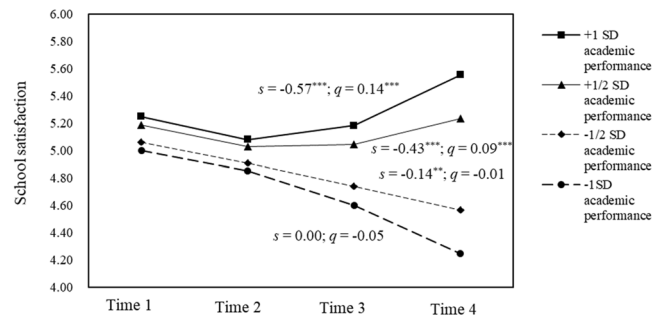
To examine potential changes in school satisfaction across four waves, both the linear and quadratic growth models were tested. Both the linear model ( $\chi^2 = 461.61$ ,  $df = 163$ ,  $CFI = 0.94$ ,  $RMSEA = 0.05$ ,  $SRMR = 0.05$ ) and the



**Fig. 1** The Standardized Coefficients of the Effects of Peer Liking and Academic Performance on School Satisfaction Growth Patterns. Gender was controlled in the analysis. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$



**Fig. 2** Predicted Growth Patterns of School Satisfaction for Adolescents with Low ( $-1/2$  SD and  $-1$  SD) and High ( $+1/2$  SD and  $+1$  SD) Academic Performance.  $s$  = linear slope;  $q$  = quadratic slope. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$



quadratic model ( $\chi^2 = 436.01$ ,  $df = 159$ , CFI = 0.95, RMSEA = 0.05, SRMR = 0.05) fit the data well. Based on the chi-square difference test, the quadratic model had a significantly better fit than the linear model ( $\Delta\chi^2(4) = 25.60$ ,  $p < 0.001$ ). AIC and sample-size adjusted BIC values also suggested that the quadratic model provided a better fit than the linear model (linear AIC = 43927.54, linear sample-size adjusted BIC = 44018.66, quadratic AIC = 43909.93, quadratic sample-size adjusted BIC = 44006.50).

Results of the quadratic growth model revealed that school satisfaction were high initially (intercept = 5.64, SE = 0.04,  $p < 0.001$ ), and decreased gradually (linear slope =  $-0.29$ , SE = 0.05,  $p < 0.001$ ), with some slowing decrease over time (quadratic slope = 0.04, SE = 0.02,  $p = 0.005$ ). There was significant heterogeneity in intercepts ( $\sigma^2 = 1.00$ ,  $p < 0.001$ ), linear slopes ( $\sigma^2 = 0.62$ ,  $p < 0.001$ ), and quadratic slopes ( $\sigma^2 = 0.05$ ,  $p = 0.001$ ). Therefore, it is reasonable to conduct conditional models.

### Conditional Models

A conditional growth curve model building on the quadratic latent growth model was conducted to examine the effects of peer liking and academic performance at T1 on school

satisfaction growth patterns controlled for gender. Non-significant paths from gender to the variables in the study were removed in the conditional model. The conditional model fit the data well ( $\chi^2 = 700.52$ ,  $df = 257$ , CFI = 0.92, RMSEA = 0.05, SRMR = 0.05). Results (see Fig. 1) indicated that peer liking and academic performance positively predicted the intercept of school satisfaction. Academic performance negatively predicted the linear slope and positively predicted the quadratic slope of school satisfaction. However, peer liking was not related to the slopes of school satisfaction. To depict the effect of academic performance on school satisfaction patterns over time, predicted change patterns are shown in Fig. 2 for adolescents with low ( $-1/2$  SD and  $-1$  SD) and high ( $+1/2$  SD and  $+1$  SD) T1 academic performance. As shown, the temporal pattern of school satisfaction had a pronounced concave shape at the high levels of academic performance and a decreasing shape at the low levels of academic performance.

Multigroup analysis was adopted to explore whether gender moderated the relations of peer liking and academic performance with school satisfaction growth patterns. Results indicated that the unconstrained model in which the path coefficients were free to vary across gender was not significantly different from the constrained model in which

the path coefficients were fixed across gender:  $\Delta\chi^2(6) = 5.86$ ,  $p = 0.439$ ,  $\Delta CFI = 0.00$ ,  $\Delta RMSEA = 0.00$ . Therefore, gender did not moderate the relations of peer liking and academic performance with school satisfaction growth patterns.

### Sensitivity Analysis

As the data were from four schools, a conditional model with school as a covariate was tested to examine any potential main effects of school on the research variables. The new model fit the data poorly:  $\chi^2 = 3490.00$ ,  $df = 819$ ,  $CFI = 0.73$ ,  $RMSEA = 0.07$ ,  $SRMR = 0.07$ . The findings indicated that school was not significantly associated with the variables. There were no significant changes in the estimates for the parameters compared to the previous conditional model.

### Discussion

The development of students' school satisfaction is an important issue in children's and adolescents' development (Jiang et al., 2019; Skrzypiec et al., 2018). The existing research on this issue has been limited due to the inadequate investigation of social and personal factors that predict the development of school satisfaction and reliance on Western samples. To fill the gaps, the current study examined the developmental pattern of school satisfaction and key factors that predicted the pattern among Chinese adolescents. The results showed that school satisfaction in Chinese adolescents displayed a decreasing trend in a quadratic growth manner over the three years. Moreover, consistent with the developmental-ecological perspective (Baker et al., 2003), academic performance and peer liking were relevant to the development of school satisfaction in Chinese students. Specifically, both academic achievement and peer liking significantly and positively predicted the initial level of school satisfaction. Academic performance also significantly contributed to the developmental trend of school satisfaction. In general, these findings are helpful in understanding the development of the emotional aspect of adolescents' school experiences in the Chinese context.

The results of the study first indicated a downward change in school satisfaction among Chinese adolescents, which was consistent with the findings in other studies (e.g., Hui & Sun, 2010; Tiliouine et al., 2019). However, the results supported a quadratic growth model in which school satisfaction was high initially but slowly decreased as students advanced to higher academic achievement. The general declining trend of school satisfaction is often explained in terms of the development of social-cognitive abilities and

changes in the learning environment. For example, Baker and Maupin (2009) argued that the developmental trend might be due to changes in students' evaluations of themselves, as older students become able to assess their attitudes more accurately over time. At the same time, according to Epstein and Mcpartland (1976), as students mature, they gradually become more critical of their learning environments. As Lam et al. (2018) noted, facing higher academic demands at higher grade levels, students are likely to experience increased stress, which may cause a decline in school satisfaction. This may be particularly the case in the Chinese context. Most adolescents tend to follow traditional cultural expectations as they work hard for college entrance examinations. As academic demands become intensified in higher grades (Hui & Sun, 2010), students may experience fewer positive feelings about schoolwork and other examination-oriented activities in school (Tian & Gilman, 2009).

The overall decline in school satisfaction may also be understood from the perspective of positive psychology. School satisfaction is an emotional experience for students and is related to whether the school meets their needs (Baker & Maupin, 2009; Huebner et al., 2001). As children and adolescents grow, beyond the traditional academic tasks at school, their psychological needs system (e.g., autonomy, growth, integrity, and wellness) inevitably change (e.g., Deci & Ryan, 2012). The school context focusing on learning and academic performance may become increasingly incomparable with students' needs to pursue autonomy and personal interests over time. As indicated by the stage-environment fit theory (Eccles et al., 1993), the lack of fit between the school and individual developing needs may result in negative emotions including school satisfaction. Thus, schools and teachers should make targeted reforms in response to students' development and changes to enhance their school satisfaction.

Beyond the general pattern, the conditional quadratic growth model analysis revealed that academic performance and peer liking might play complicated roles in the development of school satisfaction. The results first showed positive linear relations between both academic achievement and peer liking and the intercept of school satisfaction. Higher academic achievement and peer liking predicted a higher initial level of school satisfaction. The results suggest that academic achievement and positive relationships with peers, as major indicators of cognitive and social competence at school, determine, in part, students' emotional experiences in school.

However, the effects of academic performance and peer liking on school satisfaction diverged as adolescents got older. A conditional growth curve model analysis showed that peer liking did not significantly predict the change in school satisfaction. In contrast, for students with high

academic achievement, school satisfaction showed a pronounced concave shape, while for students with low academic achievement, school satisfaction showed a significant downward trend. These results seem to confirm the critical role of academic achievement (Hui & Sun, 2010) whereas the impact of peer likeability may be weaker in affecting the development of school adaptation in Chinese students. In China, attaining academic achievement is emphasized as an indicator of individual success and filial duty to the entire family (Fu et al., 2016; Loyalka et al., 2021). The Confucian doctrine, for example, indicates that children have the obligation to enhance the status and reputation of the family, which is reflected in school performance in childhood and adolescence (e.g., Ho, 1986). As indicated earlier, there is strong competition among students in school. At the end of junior high school, students participate in senior high school entrance examinations. Students who get high scores can enter senior high schools, which allows them to take college-entrance examinations for higher education, whereas students who are not accepted by a senior high school may apply for a vocational school or go to work. Thus, students receive great pressure to perform optimally in academic work, particularly in higher grades. Those who perform well are praised by others, which may serve to increase opportunities for them to engage in various school activities, whereas those who fail to reach the school standard are often regarded as incompetent and problematic (Chen et al., 1997; Zhou et al., 2010). Achieving academic goals may thus induce a sense of competence to fulfill one's obligation and lead to increased school satisfaction. The importance of academic performance may become heightened in higher grades, as reflected in the accelerated increase in school satisfaction among adolescents with high academic performance.

The current study is helpful to understand the developmental pattern of adolescents' school satisfaction and important factors that predict the pattern. The results shed some light on how educators, professionals, and parents should strive to improve the quality of students' school life. For example, a major finding of the present study, which has practical implications, is that the development of school satisfaction showed different trajectories between students with different levels of academic achievement. For students with low academic achievement, their school satisfaction gradually decreased over time. However, for students who performed well academically, school satisfaction increased in an exponential or accelerated manner in higher grades. In the framework of positive psychology, the goal of school education is not only to promote students' cognitive development, but also to let students learn and experience positive emotions in school life (Huebner et al., 2009; Whitley et al., 2012). Thus, teachers and parents should pay particular

attention to the decline in school satisfaction of students who experience academic difficulties. It may also be a useful strategy to consider academically oriented intervention programs for students who display negative school attitudes and emotions.

It should be noted that whereas this study provided evidence for the unique role of academic performance in the development of school satisfaction among Chinese adolescents, the results also indicated that peer liking significantly and positively predicted the intercept of school satisfaction. Thus, students who have more positive peer relationships tend to report a higher initial level of school satisfaction, which constitutes an important foundation for its development. The results suggest that it may be an effective strategy to design peer-based educational and intervention programs with a focus on improving peer skills and experiences for students who display a low level of school satisfaction.

Several limitations of this study should be noted. First, the present study focused on the development of school satisfaction with academic performance and peer liking as its predictors. To achieve this goal, the data on school satisfaction from Grade 6 to Grade 9, and the data on academic performance and peer liking in Grade 6, were collected, respectively. It will be interesting to examine in future research how school satisfaction contributes to the development of academic achievement and peer relationships. Future research may collect longitudinal panel data to examine potentially bidirectional cross-lagged relations between school satisfaction and academic performance/peer liking in Chinese adolescents. Second, the current study examined the development of school satisfaction in early adolescents. Research (e.g., Okun et al., 1990) has revealed different patterns of change in school satisfaction in different developmental periods because children and adolescents in different age groups may face specific developmental tasks, such as the transitions from childhood to adolescence, from elementary school to middle school, and from comprehensive school to an academic or a vocational track (Li, 2021; Salmela-Aro & Tuominen-Soini, 2010; Shoshani & Slone, 2013). Thus, one needs to be careful in generalizing the results of the present study to other developmental periods, and it will be important to examine school satisfaction and predicting factors in other age groups. Third, peer liking or peer preference, which is considered a major indicator of social competence (Chen & French, 2008; Rubin et al., 2015), as a predictor of school satisfaction, was examined in this study. It will be important to investigate the contributions of other aspects of peer relationships, such as friendships and peer groups, to the development of school satisfaction in Chinese adolescents. Finally, this study was concerned with general school satisfaction. The



specific school attitudes, such as school liking, school belonging, and attitudes toward teachers, may develop in different manners. Future studies should examine the development and predictors of students' school satisfaction in specific domains and other school-related attitudes and emotions.

## Conclusion

Research on school satisfaction, an important aspect of adolescent socioemotional functioning in the school setting, has been conducted primarily in Western societies. This study revealed different developmental trajectories of school satisfaction in students with different academic achievement in China. School satisfaction decreased over time for students with low initial academic achievement, but increased exponentially for students with high initial academic achievement. The results also showed that peer liking significantly contributed to the initial level of students' school satisfaction. The study provided valuable information about the development pattern of school satisfaction and the work of both peer relationships and academic performance on the development in the Chinese context.

**Acknowledgements** Our sincere thanks go to The National Social Science Fund of China—Education (Grant No. BIA210175) for supporting this research. We are also grateful to Ms. Xiangyang Zhong and all participants for their great help with the data collection.

**Authors' Contributions** ML participated in the study design, performed the statistical analysis and drafted the manuscript; QB participated in the conceptualization of the study and in writing the draft; WF conceived of the study, participated in its design and drafted the manuscript; XC helped with the design and coordination of the study and participated in writing the manuscript. All authors read and approved the final manuscript.

**Funding** This study is financially supported by The National Social Science Fund of China—Education (Grant No. BIA210175).

**Data Sharing and Declaration** The data that support the findings of this study are available from the corresponding author upon reasonable request.

## Compliance with Ethical Standards

**Conflict of Interest** The authors declare no competing interests.

**Ethical Approval** The study involving human participants were reviewed and approved by Shanghai Normal University. Participants gave their informed consent before participating the research and were informed that they could withdraw from the study at any time.

**Informed Consent** Informed assent was obtained from the participants and their parents.

## Appendix

### Items in school satisfaction scale

English Version	Chinese Version
Item 1 I like going to school.	我喜欢上学。
Item 2 I like what I learn in school.	我喜欢学校所教的知识。
Item 3 I wish I didn't have to go to school.	我希望不用上学。
Item 4 I am not interested in studying during class.	上课时我提不起兴趣学习。
Item 5 I like most of the teachers who teach at my school.	我喜欢大部份在我学校任教的老师。

## References

- Baker, J. A., Dilly, L. J., Aupperlee, J. L., & Patil, S. A. (2003). The developmental context of school satisfaction: Schools as psychologically healthy environments. *School Psychology Quarterly*, 18(2), 206–221. <https://doi.org/10.1521/scpq.18.2.206.21861>.
- Baker, J. A., & Maupin, A. N. (2009). School satisfaction and children's positive school adjustment. In R. Gilman, E. S. Huebner, & M. J. Furlong (eds.), *Handbook of positive psychology in schools* (pp. 189–196). Routledge.
- Cai, H., Huang, Z., Lin, L., Zhang, M., Wang, X., & Jing, Y. (2020). The change of Chinese psychology over the past half century: Empirical research. *Advances in Psychological Science*, 28(10), 1599–1618. <https://doi.org/10.3724/SP.J.1042.2020.01599>.
- Chen, K. M. (2020). Subjective poverty, deprivation, and the subjective well-being of children and young people: a multilevel growth curve analysis in Taiwan. *Children and Youth Services Review*, 114, 105045.
- Chen, L., & Chen, X. (2020). Affiliation with depressive peer groups and social and school adjustment in Chinese adolescents. *Development and Psychopathology*, 32(3), 1087–1095. <https://doi.org/10.1017/S0954579419001184>.
- Chen, X., & Chen, H. (2010). Children's social functioning and adjustment in the changing Chinese society. In R.K. Silbereisen & X. Chen (Eds.), *Social change and human development: Concepts and results* (pp. 209–226). Sage.
- Chen, X., Cen, G., Li, D., & He, Y. (2005). Social functioning and adjustment in Chinese children: The imprint of historical time. *Child Development*, 76(1), 182–195. <https://doi.org/10.1111/j.1467-8624.2005.00838.x>.
- Chen, X., Dong, Q., & Zhou, H. (1997). Authoritative and Authoritarian Parenting Practices and Social and School Performance in Chinese Children. *International Journal of Behavioral Development*, 21(4), 855–873. <https://doi.org/10.1080/016502597384703>.
- Chen, X., & French, D. C. (2008). Children's social competence in cultural context. *Annual Review of Psychology*, 59, 591–616. <https://doi.org/10.1146/annurev.psych.59.103006.093606>.
- Cheung, F. M., & Cheung, S. F. (2005). *The Chinese Adolescents' Life Satisfaction Scale (CALSS)*. Hong Kong SAR, PRC: F. M. Cheung, Department of Psychology, The Chinese University of Hong Kong. Available from.

- Coie, J. D., Dodge, K. A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology*, 18(4), 557–570. <https://doi.org/10.1037/0012-1649.18.4.557>.
- Coie, J. D., Terry, R., Lenox, K., Lochman, J., & Hyman, C. (1995). Childhood peer rejection and aggression as predictors of stable patterns of adolescent disorder. *Development and Psychopathology*, 7(4), 697–713.
- de Bruine, M., Giletta, M., Denissen, J. J., Sijtsema, J. J., & Oldenhinkel, A. J. (2019). A healthy peer status: Peer preference, not popularity, predicts lower systemic inflammation in adolescence. *Psychoneuroendocrinology*, 109, 104402.
- Deci, E. L., & Ryan, R. M. (2012). Self-determination theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 416–436). Sage Publications Ltd. <https://doi.org/10.4135/9781446249215.n21>.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95, 542–575.
- Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Mac Iver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist*, 48(2), 90–101. <https://doi.org/10.1037/0003-066X.48.2.90>.
- Elmore, G. M., & Huebner, E. S. (2010). Adolescents' satisfaction with school experiences: Relationships with demographics, attachment relationships, and school engagement behavior. *Psychology in the Schools*, 47(6), 525–537.
- Epstein, J., & McPartland, J. M. (1976). The concept and measurement of the quality of school life. *American Educational Research Journal*, 13, 15–30.
- Erdley, C. A., & Day, H. J. (2017). Friendship in childhood and adolescence. In M. Hojjat, & A. Moyer (Eds.), *The psychology of friendship* (pp. 3–19). Oxford University Press.
- Erdley, C. A., Nangle, D. W., Newman, J. E., & Carpenter, E. M. (2001). Children's friendship experiences and psychological adjustment: Theory and research. In D. W. Nangle & C. A. Erdley (Eds.), *The role of friendship in psychological adjustment*. Jossey-Bass.
- Fontaine, R. G., Yang, C., Burks, V. S., Dodge, K. A., Price, J. M., Pettit, G. S., & Bates, J. E. (2009). Loneliness as a partial mediator of the relation between low social preference in childhood and anxious/depressed symptoms in adolescence. *Development and Psychopathology*, 21(2), 479–491. <https://doi.org/10.1017/S0954579409000261>.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56(3), 218–226.
- French, D. C., & Conrad, J. (2001). School dropout as predicted by peer rejection and antisocial behavior. *Journal of Research on Adolescence*, 11(3), 225–244. <https://doi.org/10.1111/1532-7795.00011>.
- Fu, R., Lee, J., Chen, X., & Wang, L. (2020). Academic self-perceptions and academic achievement in Chinese children: A multiwave longitudinal study. *Child Development*, 91(5), 1718–1732. <https://doi.org/10.1111/cdev.13360>.
- Fu, R., Chen, X., Wang, L., & Yang, F. (2016). Developmental trajectories of academic achievement in Chinese children: Contributions of early social-behavioral functioning. *Journal of Educational Psychology*, 108(7), 1001.
- Gómez-Baya, D., Matos, M. G. D., & Wiium, N. In: R. Dimitrova N. Wiium, (eds.) (2021). Positive youth development and subjective happiness: examining the mediating role of gratitude and optimism in Spanish emerging adults. *Handbook of Positive Youth Development*. [https://doi.org/10.1007/978-3-030-70262-5\\_13](https://doi.org/10.1007/978-3-030-70262-5_13). 187–202. Cham: Springer.
- Gorman, A. H., Kim, J., & Schimmelbusch, A. (2002). The attributes adolescents associate with peer popularity and teacher preference. *Journal of School Psychology*, 40(2), 143–165.
- Hirose, K., Kim, S., Kano, Y., Imada, M., Yoshida, M., & Matsuo, M. (2016). Full information maximum likelihood estimation in factor analysis with a large number of missing values. *Journal of Statistical Computation and Simulation*, 86(1), 91–104. <https://doi.org/10.1080/00949655.2014.995656>.
- Ho, D. Y. F. (1986). Chinese patterns of socialization: A critical review. In M. H. Bond (Ed.), *The psychology of the Chinese people* (pp. 1–37). Oxford University Press.
- Ho, M. Y., Cheung, F. M., & Cheung, S. F. (2008). Personality and life events as predictors of adolescents' life satisfaction: Do life events mediate the link between personality and life satisfaction? *Social Indicators Research*, 89, 457–471.
- Hossain, S., O'Neill, S. C., & Strnadová, I. (2019). What really matters for students' school satisfaction in Bangladesh? *Psychology in the Schools*, 56(5), 670–689.
- Huebner, E. S., Ash, C., & Laughlin, J. E. (2001). Life experiences, locus of control, and school satisfaction in adolescence. *Social indicators research*, 55(2), 167–183. <https://doi.org/10.1023/A:1010939912548>.
- Huebner, E. S., Gilman, R., Reschly, A. L., & Hall, R. (2009). Positive schools. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford handbook of positive psychology* (pp. 561–568). Oxford University Press.
- Hui, E. K., & Sun, R. C. (2010). Chinese children's perceived school satisfaction: The role of contextual and intrapersonal factors. *Educational Psychology*, 30(2), 155–172.
- Jamshidian, M., Jalal, S. J., & Jansen, C. (2014). MissMech: An R package for testing homoscedasticity, multivariate normality, and missing completely at random (MCAR). *Journal of Statistical Software*, 56, 1–31. <https://doi.org/10.18637/jss.v056.i06>.
- Jiang, X., Fang, L., & Lyons, M. D. (2019). Does school satisfaction predict coping? A short-term longitudinal examination in early adolescents. *Psychology in the Schools*, 56(4), 582–594.
- Jiang, X., Huebner, E. S., & Siddall, J. (2013). A short-term longitudinal study of differential sources of school-related social support and adolescents' school satisfaction. *Social indicators research*, 114(3), 1073–1086.
- Jun, Y., & Shin, J. (2015). The effect of peer acceptance on euphoria among Korean adolescents. *Social Behavior and Personality: An International Journal*, 43(1), 63–73.
- Karatzias, A., Power, K. G., Flemming, J., Lennan, F., & Swanson, V. (2002). The role of demographics, personality variables and school stress on predicting school satisfaction/dissatisfaction: Review of the literature and research findings. *Educational Psychology*, 22(1), 33–50.
- Kline, R. (1998). *Principles and practice of structural equation modeling*. The Guilford Press.
- Lam, C. S. C., Yeung, P. P., & Yuen, M. (2018). Personal and Environmental Factors Affecting Hong Kong High-Ability Students' School Satisfaction. *Journal of Psychologists and Counsellors in Schools*, 28(2), 166–184.
- Li, M. (2021). The contributions of indigenous personality and parenting style to life satisfaction development in Chinese adolescents. *Frontiers in Psychology*, 12, 702408. <https://doi.org/10.3389/fpsyg.2021.702408>.
- Loyalka, P., Liu, O. L., Li, G., Kardanova, E., Chirikov, I., Hu, S., & Li, Y. (2021). Skill levels and gains in university STEM education in China, India, Russia and the United States. *Nature human behaviour*, 5(7), 892–904. <https://doi.org/10.1038/s41562-021-01062-3>.
- Magnano, P., Boerchi, D., Lodi, E., & Patrizi, P. (2020). The effect of non-intellective competencies and academic performance on school satisfaction. *Education Sciences*, 10(9), 222.

- Malley, J., Basic, J., Beck, M., Tavra, V. K., Feric, M., & Conway, J. (2003). Student perceptions of their schools: an international perspective. *International Journal of Reality Therapy*, 23(1), 4–11.
- Ministry of Education of China (2019, December 18). *Healthy China Action -The Action Plan for Mental Health of Children and adolescents (2019-2022)*. [http://www.moe.gov.cn/jyb\\_xxgk/moe\\_1777/moe\\_1779/202007/t20200728\\_475479.html](http://www.moe.gov.cn/jyb_xxgk/moe_1777/moe_1779/202007/t20200728_475479.html).
- Moral-Garcia, J. E., Jiménez, A., Cabaco, A. S., & Jiménez-Eguizabal, A. (2021). The Role of Physical Activity and School Physical Education in Enhancing School Satisfaction and Life Satisfaction. *International Journal of Environmental Research and Public Health*, 18(4), 1689 <https://doi.org/10.3390/ijerph18041689>.
- National Bureau of Statistics of China. (2021). *China Statistical Yearbook*. Beijing: China Statistics Press. Accessed on April 20, 2022.
- Ng, J., Xiong, Y., Qu, Y., Cheung, C., Ng, F. F.-Y., Wang, M., & Pomerantz, E. M. (2019). Implications of Chinese and American mothers' goals for children's emotional distress. *Developmental Psychology*, 55(12), 2616–2629. <https://doi.org/10.1037/dev0000834>.
- Nikolov, F., & Dumont, H. (2020). The whole is more than the sum of its parts: School composition, school satisfaction and norm-violating behaviour. *Journal for Educational Research Online*, 12(1), 26–46. <https://doi.org/10.25656/01:19117>.
- OECD. (2016). *Education in CHINA: A Snapshot*. <https://www.oecd.org/china/Education-in-China-a-snapshot.pdf>.
- OECD. (2019). *PISA 2018 Results (Volume III): What School Life Means for Students' Lives*. Paris: OECD Publishing. 10.1787/acd78851-en.
- Okun, M. A., Braver, M. W., & Weir, R. M. (1990). Grade level differences in school satisfaction. *Social Indicators Research*, 22(4), 419–427.
- Rubin, K. H., Bukowski, W. M., & Bowker, J. C. (2015). Children in peer groups. In M. H. Bornstein, T. Leventhal, & R. M. Lerner (Eds.), *Handbook of child psychology and developmental science, Vol. 4: Ecological settings and processes* (7th ed., pp. 175–222). Wiley.
- Salmela-Aro, K., & Tuominen-Soini, H. (2010). Adolescents' Life Satisfaction during the Transition to Post-Comprehensive Education: Antecedents and Consequences. *Journal of Happiness Study*, 11, 683–701.
- Scharenberg, K. (2016). The interplay of social and ethnic classroom composition, tracking, and gender on students' school satisfaction. *Journal of Cognitive Education and Psychology*, 15(2), 320–346. <https://doi.org/10.1891/1945-8959.15.2.320>.
- Shoshani, A., & Slone, M. (2013). Middle school transition from the strengths perspective: Young adolescents' character strengths, subjective well-being, and school adjustment. *Journal of Happiness Studies*, 14(4), 1163–1181.
- Simões, C., Matos, M. G., Tomé, G., Ferreira, M., & Chafinho, H. (2010). School satisfaction and academic achievement: the effect of school and internal assets as moderators of this relation in adolescents with special needs. *Procedia-Social and Behavioral Sciences*, 9, 1177–1181.
- Skrzypiec, G., Askill-Williams, H., Zhao, X., Du, W., Cao, F., & Xing, L. (2018). Predictors of Mainland Chinese students' well-being. *Psychology in the Schools*, 55(5), 539–554.
- Takakura, M., Wake, N., & Kobayashi, M. (2010). The contextual effect of school satisfaction on health-risk behaviors in Japanese high school students. *Journal of School Health*, 80(11), 544–551. <https://doi.org/10.1111/j.1746-1561.2010.00540.x>.
- Tian, L., & Gilman, R. (2009). School satisfaction among Chinese mainland adolescents. *Social Behavior and Personality: An International Journal*, 37(8), 1095–1100.
- Tiliouine, H., Rees, G., & Mokaddem, S. (2019). Changes in Self-Reported Well-Being: A Follow-Up Study of Children Aged 12–14 in Algeria. *Child Development*, 90(2), 359–374. <https://doi.org/10.1111/cdev.13132>.
- Vasalampi, K., Kiuru, N., & Salmela-Aro, K. (2018). The role of a supportive interpersonal environment and education-related goal motivation during the transition beyond upper secondary education. *Contemporary Educational Psychology*, 55, 110–119.
- Verkuyten, M., & Thijs, J. (2002). School satisfaction of elementary school children: The role of performance, peer relations, ethnicity and gender. *Social Indicators Research*, 59, 203–228.
- Wang, Q. (2013). Chinese socialization and emotion talk between mothers and children in native and immigrant Chinese families. *Asian American Journal of Psychology*, 4(3), 185–192. <https://doi.org/10.1037/a0030868>.
- Whitley, A. M., Huebner, E. S., Hills, K. J., & Valois, R. F. (2012). Can students be too happy in school? The optimal level of school satisfaction. *Applied Research in Quality of Life*, 7(4), 337–350.
- Yik, M. (2010). How unique is Chinese emotion. In M. H. Bong (Ed.), *The Oxford handbook of Chinese psychology* (pp. 205–220). Oxford University Press.
- Zhou, Q., Main, A., & Wang, Y. (2010). The relations of temperamental effortful control and anger/frustration to Chinese children's academic achievement and social adjustment: A longitudinal study. *Journal of Educational Psychology*, 102(1), 180–196.

**Publisher's note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.

**Mengting Li** is a PhD candidate at the University of Hong Kong, Hong Kong, China. Her major research interests include personality development and career development.

**Qinglin Bian** is a PhD student at the University of Pennsylvania, USA. Her major research interests include children's and adolescents' social behaviors.

**Weiqiao Fan** is a professor at Shanghai Normal University, Shanghai, China. His research interests include personality assessment and career development.

**Xinyin Chen** is a professor at the University of Pennsylvania, USA. His research interests include children's and adolescents' social behaviors and school adjustment.