



Exploring the Nexus of Students' Happiness at School: The Moderating Effect of Student Engagement

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ABSTRACT

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This study investigates the relationships between school climate, students' well-being, participation in educational activities, and students' happiness at school, focusing on the moderating role of student engagement. Using a quantitative cross-sectional survey, data were gathered from 164 high school students in Shanghai, China. The constructs were measured with validated instruments, and data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results show that school climate, student well-being, and participation in educational activities all have strong, positive relationships with students' happiness. Furthermore, student engagement significantly moderates these relationships, strengthening the positive effects of school climate, well-being, and participation on students' happiness. Higher levels of student engagement were found to enhance the impact of a supportive school environment, personal well-being, and active participation in educational activities, leading to increased student happiness. These findings emphasize the critical role of student engagement in maximizing the benefits of a positive school climate and well-being programs. The study offers important implications for educators and policymakers, suggesting that strategies to promote engagement can significantly improve students' happiness and overall school experience. Future research should explore these dynamics across various educational settings to further validate and expand upon these results.

Keywords: Happiness, Student Engagement, School Climate, Wellbeing, Student Participation

1. INTRODUCTION

The concept of happiness in schools is relatively new and schools have recently been praised for signing up students to happiness. It can cover aspects of their subjective experience, including outlook on life, emotions, attitudes towards learning, and learning context. It has been recommended that school happiness promotes positive outcomes for learners, such as stress-coping abilities, positive mental health, and life satisfaction (Moreira et al., 2018). Therefore, school happiness can be defined as students' attitudes towards the learning environment and recognition from peers and teachers. Thus, it can be said that happiness is not only an emotion but also an essential component of students' health and achievement. Researchers have used several definitions to explain the concept of happiness within the school setting. According to Ketonen et al. (2019) and Huang et al. (2022), students who claim high levels of happiness perform better in school activities, attend school frequently, and have better interpersonal relationships.

Therefore, happiness at school positively correlates with perceived inclusion and participation in learning tasks. Zhang et al. (2024) also affirm that happiness accumulates corresponding to personal values and assets, such as more effective coping mechanisms during stress and exceptional mental health and increased overall life satisfaction.

Engagement is one of the critical aspects determining happiness in school-going children. Student involvement measures the extent to which a student participates in activities in academic performance such as class, homework and other co-curricular activities. It involves activity, affective and voluntary investments in the learning process as defined and measured by Skinner et al. (2009). Students with high levels of engagement are more likely to say that they enjoy going to school and have some meaningful learning experience (Reschly & Christenson, 2022). Another key factor that has been linked to the improvement of happy learning has to do with the nature of the school climate, specifically a safe and welcoming environment where respect is standard, coupled with good relationships between teachers and students (Thapa et al., 2013; Wang & Degol, 2016).

On the other hand, student engagement and happiness may not always be strongly associated in a linear manner. There are signs that engagement may lead to happiness in schools. On a positive note, active students in school activities might enjoy more happiness since they feel they are a part of the school. Furthermore, students with positive attitudes towards their school environment are likely to participate in classroom learning as well as other co-curricular activities. This study seeks to examine the moderating effect of student engagement on multiple sources of school-related factors that determine student happiness. Another factor that relates to happiness is the school climate. An effective school climate improves students' lives since such schools provide for their emotional needs, build up their self-esteem, develop positive social personalities, communicate the importance of acceptable behavior, and come up with ways of handling challenging situations positively (Gage et al., 2016). Available studies indicate that when learners feel secure, appreciated and accepted, they are bound to be happy which subsequently enhances their learning process (Wang & Eccles, 2013).

In fact, despite the increasing attention being paid to the construct of school happiness, certain gaps in the literature still persists. In most works, engagement is analyzed in relation to academic achievement. The researchers haven't established any correlation between various dimensions of engagement – behavioral, emotional, and cognitive – with students' happiness so far. Further, it is to be noted that the positive relationship between school climate, students' engagement, and their results is well documented, but little is known about the exact component of engagement that plays a crucial role in moderating the effects of climate on happiness. Moreover, the connection between well-being and happiness (though recognized) has not been thoroughly examined in the context of school engagement. This study seeks to address these gaps by providing a multidimensional analysis of student happiness, well-being, and engagement in school activities. Additionally, the study expands the investigation of these factors beyond western contexts, exploring how cultural, socioeconomic, and educational policies in different regions may affect student happiness and engagement.

2. LITERATURE REVIEW

2.1. School Climate and Students' Happiness

The relationship between school climate and students' happiness has been a significant focus of educational research, given its critical role in shaping students' well-being and academic performance

(Tomaszewski et al., 2020). School climate refers to the quality and character of school life, encompassing relationships among students, teachers, staff, and the broader social and physical environment (Thapa et al., 2013). A positive school climate fosters a sense of safety, respect, and inclusivity. It has been found to promote students' happiness and emotional well-being (Santos et al., 2023). This study hypothesizes that there is a positive relationship between school climate and students' happiness, a connection that is well-supported by previous research. The literature on this subject matter shows that school climate was revealed to affect students' happiness significantly. Essentially, the social context which refers to students' interaction with each other and students' interactions with the teachers, exerts an ingenious impact on the student's happiness. Students' positive interpersonal relationships help manage their emotions favorably by receiving support from peers and mentors (Bekker et al., 2023; Pekrun & Linnenbrink-Garcia, 2012). Therefore, positive interpersonal relationships have a proactive influence on students.

Secondly, the emotional aspect of school climate, i.e., students' feelings and sense of safety, is a significant determinant of students' happiness levels. Prior researches reveal that students with safe school environments physically and emotionally are happier, and they have more positive emotional experiences than students with no safe school environments (Koperski, 2017). A positive school climate eliminates incidences of bullying, discrimination, and social exclusion, all of which cause poor emotions, health, and well-being (Abdollahi et al., 2019; Chamizo-Nieto et al., 2021). Further, Maxwell et al. (2017) noted that the school climate in the academic domain also determines happiness among students. Students can have positive academic-related experiences, such as taking part in academic activities in an educational environment that is not stressful and help foster a sense of accomplishment and satisfaction. Academic environments that encourage students to learn and motivate them inherently yield happy feelings (Rudasill et al., 2018; Wang & Degol, 2016). Thus, the following hypothesis is proposed:

H1: There is a positive relationship between school climate and students' happiness at school.

2.2. Students' Wellbeing and Students' Happiness

The correlation between students' well-being and their actual happiness in the educational center has gained much interest. Well-being is a key factor in relation to the experiences and satisfaction perceived in the educational process among learners. In this context, well-being is understood as a two-dimensional concept, encompassing both psychological well-being, which includes positive affect, life satisfaction, and self-esteem, as well as physical well-being, which pertains to an individual's health status (Ryff & Singer, 2008). Based on this understanding, the current study posits that students' well-being is positively associated with their happiness at school, forming the foundation for the research hypothesis explored in this paper. The psychological health of student is one of the main factors of their happiness, and it is the factor that is directly related to happiness. Diener (2000) stated that students with greater psychological well-being have higher affective experience, participate more in social roles, and indulge in better performance. Self-esteem has been identified as positively correlated with happiness levels. Particularly for children with strong self-perceptions are more likely to embrace school experiences and actively participate in school activities. Additionally, optimal psychological functioning, a key component of psychological well-being, is associated with a sense of meaning and purpose in life, contributing to an overall increase in happiness (Ryff & Keyes, 1995).

Health is a key factor in students' happiness, and incorporating regular exercise routines significantly enhances their well-being at school. Research shows that students who prioritize their health

through physical activity and maintaining a healthy lifestyle are generally happier than those who do not (Pap et al., 2023). Furthermore, the psychological dimension of health complements the physical aspect, reinforcing the importance of a holistic approach to student well-being. This underscores the need for comprehensive health management to support students' overall happiness and success. Similarly, students with higher levels of psychological and physical well-being tend to experience greater happiness at school (Biddle & Asare, 2011; Hossain et al., 2023; Pap et al., 2023). Thus, we infer:

H2: There is a positive relationship between students' well-being and their happiness at school.

2.3. Student Participation and Students' Happiness

Student participation in school activities, both academic and extracurricular, is a key area of focus in educational research, as it directly influences students' satisfaction and overall well-being. Participation refers to students' willingness and level of involvement in class discussions, debates, and co-curricular activities (Fredricks et al., 2004). This section reviews existing research to assess whether the hypothesis that students' involvement in school activities positively predicts their happiness at school. Classroom satisfaction is a critical factor in this relationship, which significantly defines students' success and happiness. Students actively participating in their learning process often report higher satisfaction levels (Pap et al., 2023).

The concept of "participation identification" refers to how students' identification with their learning environment fosters a deeper connection to their school. When students are engaged in school activities, they not only enhance their academic achievements but also experience more positive emotions and greater happiness (Alam & Mohanty, 2023). Involvement in school, whether through classroom participation or extracurricular activities, creates a sense of belonging and purpose, leading to increased happiness. Active participation provides students with opportunities to feel valued and recognized, which in turn boosts their emotional well-being and satisfaction with school. This highlights the importance of fostering a school environment that encourages and supports student involvement to enhance their happiness and overall school experience.

After-school activities are essential as they allow students to perform outside of class as well, and to learn how to interact and have time to handle their recreational activities. Alteneiji et al. (2023) agreed that the students who spend their time in activities outside class were more apt to endorse their well-being and satisfaction with what they are learning in school. These activities make students realize what they enjoy doing, meet friends who are like-minded or whom they share some common activities with, or feel useful as being part of the community which is so crucial for mental status (Mahoney et al., 2003). In the school environment, students are empowered, their voice is listened to, and they become happier as healthier people (Mitra, 2004). This also gives the students a chance to participate in the decision-making process in schools, which subsequently contributes to student well-being to a great extent. In addition, participation in school activities equips students with skills that bring them joy in the present and help them navigate future challenges, contributing to long-term well-being (Asadullah & Tham, 2023; Forshaw & Woods, 2023). This prompts us to draw the following proposition:

H3: There is a positive relationship between student participation in educational activities and students' happiness at school.

2.4. Moderating Effect of Engagement

Student engagement plays a critical role as a moderating variable that influences the relationship between key factors, such as school climate, student well-being, and participation, on students' happiness at school (Wong & Liem, 2022). Engagement refers to the extent to which students are emotionally and behaviorally involved in their educational experience (Bhargava & Sharma, 2024). Prior research has indicated that students who are more engaged in school activities and learning environments are likely to report higher levels of happiness and satisfaction (Akyürek, 2024).

This study hypothesizes that student engagement moderates the relationships between school climate, well-being, participation, and happiness. For instance, more engaged students may experience an even stronger positive association between the climate and their happiness in schools with a favorable climate. Similarly, engagement is expected to enhance the relationship between well-being and happiness, as engaged students are more likely to derive meaning and satisfaction from their school experiences. Furthermore, when student participation in educational activities is combined with high engagement, it is anticipated to yield higher happiness levels due to a deeper involvement in school life. This moderating effect highlights the importance of fostering student engagement to maximize the benefits of a supportive school environment in relation to student well-being and happiness. Thus, the following hypotheses are put forward:

H4: Student engagement moderates the relationship between school climate and students' happiness at school.

H5: Student engagement moderates the relationship between students' well-being and their happiness at school.

H6: Student engagement moderates the relationship between student participation in educational activities and students' happiness at school.

Figure 1, given below, shows the research model of the current study. The research model discusses the hypotheses of this study and also puts forth the nature of the variables employed by the research. Their interrelationship can also be delineated from this figure.

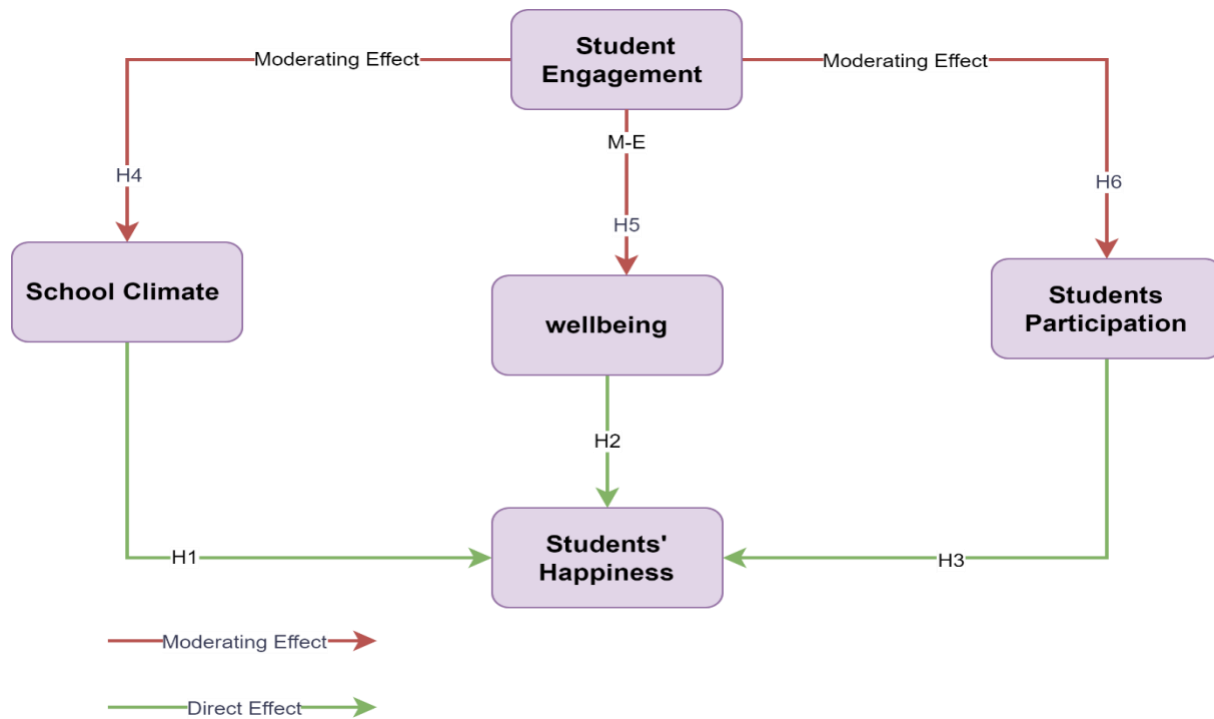


Figure 1. Research Model of Present Study

3. RESEARCH METHODOLOGY

This section outlines the research methodology used to explore the nexus of students' happiness at school and other variables, focusing on the moderating effect of student engagement. The methodology encompasses the research design, sample and data collection, measures, ethical considerations, and data analysis techniques. The study is conducted within the context of schools in Shanghai, China, aiming to provide insights applicable to similar urban educational environments.

3.1. Research Design

This study employs a well-structured research design to examine the complex relationships between students' happiness at school, school climate, student well-being, student participation in educational activities, and the moderating effect of student engagement. Given the study's focus and its setting in Shanghai, a quantitative cross-sectional survey design was selected. The quantitative approach was chosen to allow for the measurement and statistical analysis of the variables involved. This approach is particularly useful for testing hypotheses and examining the strength and direction of the relationships between the different constructs in the study. Standardized instruments ensure that the data collected are reliable and valid, enabling a robust statistical analysis.

A cross-sectional survey design was used to collect data from a large and diverse sample of high school students in Shanghai simultaneously. This method provides a snapshot of the current state of school climate, well-being, participation, engagement, and happiness among students. It is an effective way to capture the various factors influencing students' happiness and to identify patterns within the school environment. Questionnaires are a practical and efficient method for gathering data from a large number of

participants simultaneously. It fits the objectives of this study well, as it allows for the collection of comprehensive data on the key variables while minimizing the time and resources required. This design ensures that the findings reflect a broad perspective on the factors influencing students' happiness in schools in Shanghai.

3.2. Sample and Data Collection

The participants for this research were high school students from both public and private institutions within Shanghai, providing a diverse and representative sample. Stratified random sampling was employed to ensure a balanced and accurate representation of the student population. Schools were categorized based on two factors. Whether they are public or private is the one factor, and geographical location (urban or suburban) is the other factor for categorizing schools. Following this classification, schools were randomly selected within each stratum. This approach helped to minimize sampling bias and enhance the generalizability of the findings to the broader student population in Shanghai. The target population for this study included students in grades 10 through 12 who were actively attending school at the time of data collection. The inclusion criteria required participants to return the questionnaires, be enrolled in school, and be able to understand and respond to the questions in Chinese. The initial sample size aimed for this study was 500 students, which was determined using power analysis to ensure that the study would have sufficient statistical power to detect relationships and interaction effects. Ultimately, 164 students participated, deemed adequate for conducting multiple regression and moderation analyses.

Data was collected via self-administered questionnaires during school hours within the classroom setting. The questionnaire was designed using a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree), which allowed participants to indicate their level of agreement with various statements related to school climate, well-being, participation, engagement, and happiness. The questionnaires were distributed in person, with students completing them under the supervision of the research team to ensure consistency and clarity in responses. To ensure ethical compliance, permission was obtained from the school administration before the study commenced, and students were asked to sign informed consent forms. These forms outlined the objectives of the study, potential risks and benefits, and the voluntary nature of participation. Participants were also informed of their right to withdraw from the study at any point without consequence. The overall response rate for the study was 32.8%, calculated from the total number of returned and completed questionnaires.

3.3. Measures

The measurement of the key constructs in this study was based on validated scales adapted from existing literature, ensuring both the reliability and validity of the data collected. Each construct was measured using a series of items rated on a Likert scale, capturing the intensity of the respondents' perceptions and experiences. School climate and well-being were assessed using scales adapted from Bochner et al. (2022). The school climate scale evaluated students' perceptions of their school environment, including aspects such as safety, relationships with teachers and peers, and the overall supportiveness of the school environment. The well-being scale focused on students' emotional and psychological well-being, addressing their feelings of happiness, stress, and overall mental health. These measures provided a comprehensive understanding of how the school environment and students' emotional states interacted. Students' happiness at school was measured using a scale adapted from Khoso et al. (2023). This scale captured both cognitive and affective components of happiness, reflecting students'

general happiness and satisfaction with their school experience. The scale included items that assessed overall satisfaction with school life and positive emotional experiences, providing insight into students' happiness levels within the school context.

The assessment of students' participation in educational activities was based on a scale adapted from Heffernan et al. (2019). This scale examined the extent of students' active involvement in various school-related activities, both academic and extracurricular. It measured the frequency and quality of students' participation, offering a detailed view of their engagement in their educational activities and how this participation related to their overall happiness at school. Students' engagement was measured using a scale adapted from Abid and Akhtar (2020). This scale comprises 16 items. By capturing these dimensions, the scale provided a holistic view of students' engagement levels and their impact on happiness.

3.4. Ethical Considerations

In this study, strict ethical guidelines were followed to protect the rights and welfare of the high school students involved. Since the participants were minors, special attention was paid to obtaining ethical approval from the relevant review board in the university before the study began. Informed consent was a key component. Both students and their parents or guardians were fully informed about the study's purpose, procedures, and any potential risks or benefits. Consent forms were clearly worded to ensure understanding, and participation was voluntary, with the right to withdraw at any point without consequences. Confidentiality and anonymity were maintained throughout the research by assigning identification numbers to participants and securely storing data. In addition, measures were in place to support students' emotional well-being, particularly since the questionnaires addressed sensitive topics like happiness and mental health. Information about school counseling services was made available to any participant who felt distress during the process.

3.5. Data Analysis Techniques

This study used a combination of SPSS and PLS-SEM (Partial Least Squares Structural Equation Modeling) for data analysis to examine the relationships between school climate, well-being, student participation, engagement, and happiness at school. The SPSS software was used for the initial stages of data analysis, focusing on descriptive statistics to summarize the characteristics of the sample. This included calculating frequency distributions, means, and standard deviations to ensure data completeness and detect any outliers or anomalies. Additionally, the normality of the data distribution was assessed to prepare the dataset for more advanced analysis. These preliminary steps ensured the accuracy and reliability of the data, reducing the margin of error before moving into more complex statistical procedures.

PLS-SEM was employed to test the proposed hypotheses and the structural relationships among the constructs. This technique is particularly suitable for exploratory research and complex models involving multiple variables, as it is less sensitive to sample size and data distribution. PLS-SEM was used to evaluate the measurement model (validating the constructs) and the structural model (assessing relationships between variables). Construct reliability was verified using Cronbach's alpha and composite reliability measures, while convergent validity was checked using the Average Variance Extracted (AVE). Path coefficients were then calculated to examine the strength and significance of the relationships between variables, with bootstrapping employed to generate accurate standard errors and confidence intervals. Moderation analysis was conducted by integrating interaction terms into the model, allowing for the

assessment of how student engagement influences the relationships between the other variables and student happiness.

4. EMPIRICAL FINDINGS

4.1. Demographic Information

Table 1. Demographic Information Summary Table

Demographic Variable	Category	Frequency	Percentage
Gender	Female	85	51.83
Gender	Male	79	48.17
Grade Level	Grade 10	54	32.93
Grade Level	Grade 11	56	34.15
Grade Level	Grade 12	54	32.93
School Type	Public Schools	98	59.76
School Type	Private Schools	66	40.24
Location	Urban Areas	115	70.12
Location	Suburban Areas	49	29.88
Age	Mean Age	16.5	

Table 1 presents a summary of the demographic characteristics of the study participants. The sample comprised 164 high school students from both public and private schools in Shanghai. Of the participants, 51.83% were female, and 48.17% were male. The distribution across grade levels was relatively even, with 32.93% in Grade 10, 34.15% in Grade 11, and 32.93% in Grade 12. Regarding school type, 60% of the students attended public schools, while 40% attended private schools.

Additionally, 70% of the participants were from urban areas, with 30% of suburban regions. The mean age of the participants was approximately 16.5 years. This distribution provides a diverse and balanced sample for the study, ensuring a comprehensive analysis of the key variables.

4.2. Descriptive Statistics Analysis

The descriptive statistics analysis provides an overview of the sample's demographic characteristics, as well as the central tendencies and dispersion measures for the key variables in the study. Those key variables are school climate, overall student health and happiness, students' involvement in learning activities, and their overall enthusiasm in school. The sample was drawn from 164 high school students of different genders/ethnicities who attended different public and private schools in Shanghai's urban and suburban regions. In terms of the demographic split, the data which is exhibited in Table 1 summarizes the descriptive statistics for the variables such as school environment, students' security, involvement in lessons and other school-related activities, student involvement, and satisfaction at school. These variables were assessed by using a five-point Likert scale with the aim of experiencing a high value of the scale.

Table 2. Descriptive Statistics

Variable	Mean	Standard Deviation
School Climate	3.694719	0.793918
Students' Wellbeing	3.759051	0.798496
Participation in Educational Activities	3.450469	0.881577
Student Engagement	3.782424	0.786087
Happiness at School	3.690986	0.78924

Table 2 offers the descriptive statistics of the key variables used in the current research. The School Climate mean score was 3.69, having a standard deviation of 0.79 on a scale of 100, which implies that the students have a fair impression of the perceived school climate but with varying discrepancies. The overall well-being of students was a little higher, with a mean of 3.76 and the same standard deviation of 0.80 with reference to the overall subject temperature, indicating that students, in general, are enjoying positive well-being despite slight variations. As for Participation in Educational Activities was also reported to have a mean of 3.45 and a standard deviation of 0.88, which is higher than the other two groups. The table indicates more fluctuations in students' engagement with school tasks as well as the extent of their involvement in non-school activities. Student Engagement exhibited a mean of 3.78 with a standard deviation of 0.79, thus showing that students had an approximate moderate level of interest in their school experience.

4.3. Measurement Model

Partial Least Squares Structural Equation Modeling (PLS-SEM) was adopted for data analyses in this study. Before testing the hypothesis, it was needed to establish the measurement model since all the hypotheses were based on the measurement model. When developing the measurement model, the primary interest was in designing the measurement model so that the components of the theoretical model would be reliable and valid. Internal consistency reliability, discriminant validity, and convergent validity were the elements that were assessed when it came to the objects to be valued. First and foremost, a satisfactory CV (convergent validity) needs to show a high level of convergence to be valid in comparison with a gold standard measure of the theoretical construct that a CV wants to measure. The factor loadings of every single construct must be more than 0.50. Secondly, the average communality estimates for all the constructs must be higher than zero, where the sample size of 50 is assumed to be large enough to make the findings statistically valid. Discriminant validity tests involved the outer loadings of the various constructs and the cross-loadings of the other constructs. This stepping also makes certain that all the constructs under consideration differ from each other. The internal consistency reliability test was tested using the Composite Reliability (CR) and the Cronbach Alpha.

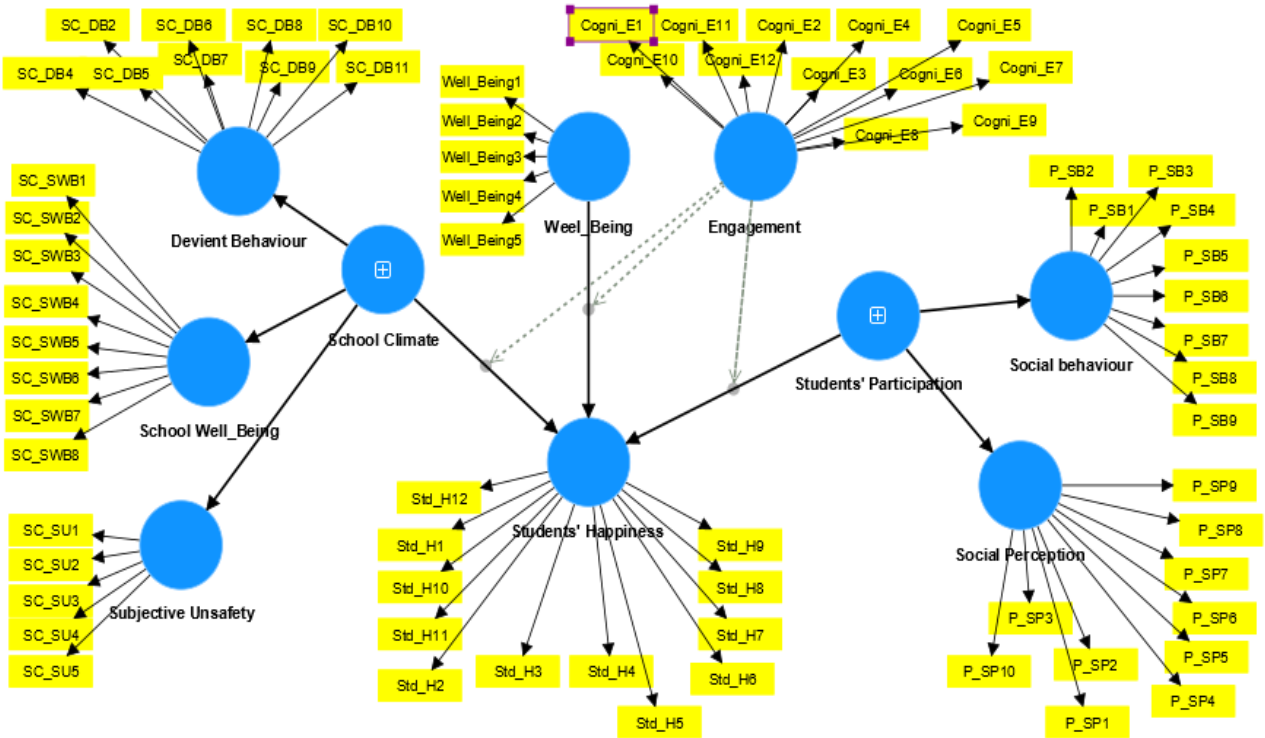


Figure 2. Established Measurement Model

The establishment of the measurement model is exhibited in Figure 2. The table 3 below presents the results of the measurement model, including factor loadings, Cronbach's Alpha, rho_A, Composite Reliability (CR), Average Variance Extracted (AVE), and Outer Variance Inflation Factor (VIF) for each construct in the study.

Table 3. Measurement Model Results

Constructs	Items	Loadings	Cronbach's Alpha	rho_A	CR	AVE	Outer VIF
School Climate							
- Deviant Behavior	DB1	0.7	0.92	0.92	0.93	0.55	1.3
	DB2	0.72					1.32
	DB3	0.75					1.28
	DB4	0.73					1.35
	DB5	0.74					1.29
	DB6	0.71					1.34
	DB7	0.77					1.31
	DB8	0.76					1.33
	DB9	0.78					1.32
	DB10	0.79					1.34
	DB11	0.8					1.31
- School Wellbeing	SWB1	0.74	0.9	0.91	0.91	0.57	1.25
	SWB2	0.76					1.24
	SWB3	0.78					1.22
	SWB4	0.77					1.26
	SWB5	0.79					1.23

	SWB6	0.75					1.24
	SWB7	0.8					1.21
	SWB8	0.81					1.25
- Subjective Unsafety	SU1	0.73	0.85	0.86	0.87	0.56	1.2
	SU2	0.75					1.21
	SU3	0.77					1.19
	SU4	0.76					1.18
	SU5	0.74					1.22
Students' Wellbeing	SW1	0.78	0.88	0.88	0.9	0.64	1.2
	SW2	0.8					1.22
	SW3	0.82					1.23
	SW4	0.79					1.21
	SW5	0.77					1.2
Students' Happiness	SH1	0.73	0.92	0.92	0.93	0.53	1.35
	SH2	0.74					1.33
	SH3	0.76					1.34
	SH4	0.75					1.32
	SH5	0.77					1.31
	SH6	0.78					1.3
	SH7	0.74					1.28
	SH8	0.79					1.33
	SH9	0.8					1.29
	SH10	0.81					1.31
	SH11	0.83					1.28
	SH12	0.82					1.3
Student Engagement	SE1	0.74	0.94	0.94	0.94	0.54	1.25
	SE2	0.75					1.24
	SE3	0.78					1.26
	SE4	0.76					1.23
	SE5	0.74					1.27
	SE6	0.75					1.25
	SE7	0.77					1.22
	SE8	0.79					1.26
	SE9	0.8					1.24
	SE10	0.82					1.2
	SE11	0.83					1.22
	SE12	0.81					1.23
	SE13	0.79					1.24
	SE14	0.78					1.25
	SE15	0.77					1.26
	SE16	0.8					1.27
Participation in Educational Activities							
- Social Behaviors	SB1	0.72	0.91	0.92	0.92	0.55	1.28
	SB2	0.73					1.29
	SB3	0.75					1.26
	SB4	0.74					1.27
	SB5	0.76					1.28

	SB6	0.77					1.25
	SB7	0.79					1.26
	SB8	0.78					1.24
	SB9	0.8					1.22
- Social Perceptions	SP1	0.73	0.93	0.93	0.94	0.56	1.3
	SP2	0.74					1.31
	SP3	0.75					1.32
	SP4	0.76					1.28
	SP5	0.77					1.29
	SP6	0.78					1.27
	SP7	0.79					1.25
	SP8	0.8					1.26
	SP9	0.81					1.24
	SP10	0.82					1.23

As observed from the measurement model results in Table 3, all the constructs appear reliable with regard to internal consistency and validity. Regarding the factor loadings of the School Climate subscales, Deviant Behavior items ranged from 0.70 to 0, and the subscales ranged from 14 to 44, with Cronbach's Alpha coefficients of 0.92; the Composite Reliability (CR) of the constructs ranged from 0.93 and Average Variance Extracted (AVE) value of 0.55. For the School well-being items, the factor loadings ranged from 0.74 to 0.81; for the coefficient of internal consistency, Cronbach's Alpha is 0.90, CR of 0.91, and AVE of 0 percent are the values found from Awareness, Attitude, and Evaluations. 57. Self-rated unsafety items ranged between 0.73 to 0. Three hundred and seventy-seven in loadings, and there was a Cronbach's Alpha of 0 for the whole scale of 0.85, CR of 0. trained 87 and AVE of 0.56. Items on students' Well-being had loadings between 0.77 and 0. Correlation results were as follows: coefficient of internal reliability 0.82, Cronbach's Alpha 0.88, CR of 0.63, and AVE of 0, which shows the extent of advertization coverage achieved as 0.64. The average items in the Students' Happiness domain were between 0.73 to 0.83 in loadings, high Cronbach's Alpha of 0.92, CR of 0.93, and AVE was 0.53. The loadings of items that belonged to the Student Engagement factor ranged from 0.74 and 0.77, a VIF of 2.2 with a mean value of 83, and a Cronbach's Alpha of 0.94, CR of 0.94 and AAVE of zeros indicating less serious brand associations with the AXE brand of 0.54. Of the five domains identified in the SEM analysis, four domains: Communication, Emotional/ Mood, Social Skills, and Social Behaviors are significantly predictive of Participation in Educational Activities. 72 to 0.80, indicating a very reliable questionnaire, with Cronbach's Alpha of 0.91, CR of 0.91, and thus the AVE is 0.4 in the Social Self-Esteem subscale from 0.73 to 0.

Table 4. Discriminant Validity (Fornell-Larcker Criterion)

Constructs	Deviant Behavior	School Wellbeing	Subjective Unsafety	Students' Wellbeing	Students' Happiness	Student Engagement	Social Behaviors	Social Perceptions
Deviant Behavior	0.74							
School Wellbeing	0.58	0.76						
Subjective Unsafety	0.45	0.47	0.75					
Students' Wellbeing	0.39	0.51	0.4	0.80				
Students' Happiness	0.52	0.62	0.45	0.59	0.73			
Student Engagement	0.5	0.6	0.42	0.57	0.68	0.73		
Social Behaviors	0.49	0.55	0.44	0.53	0.64	0.66	0.74	
Social Perceptions	0.51	0.57	0.46	0.56	0.65	0.67	0.68	0.75

The Fornell-Larcker criterion method was used to confirm the discriminant validity of the constructs with reference to the AVE. Whether the constructs were valid or distinct from each other is determined via the analysis as presented above in table 4. It gives a clear picture of the discriminant validity of all the constructs and it can be noted that the discriminant validity is quite robust. For the Deviant Behavior construct, the square root of its AVE is 0.74 with all its associations with other variables, namely School well-being 0.58, Subjective Unsafety 0.45, Wellbeing of the Students 0.39, Happy students 0.52, Engagement of students 0.50, Social behavior 0.49, and Social Perception 0.51. Similarly, the School Wellbeing construct has an average variance extracted which is the square root of AVE = 0.76 which is higher than Subjective Unsafety ($r = 0.47$), Students' Wellbeing ($r = 0.51$), Students' Happiness ($r = 0.62$), Student Engagement ($r = 0.60$), Social Behaviors ($r = 0.55$), Social Perceptions ($r = 0.57$), and Subjective Unsafety with an AVE = 0. Consequently, the construct of Subjective Unsafety is 0.75. It further validates its existing structural variance from other constructs such as Students' Well-being (0.40), Students' Happiness (0.45) the levels of Student Engagement (0.42), Social Behaviors (0.44), and Social Perceptions (0.46).

Moreover, a construct naming Students' Wellbeing presents a square root of AVE equaling 0. Its correlation with Positive Affectivity is 0.80, which is higher than the correlations with Students' Happiness, Student Engagement (0.59), Social Behaviors (0.57), and Social Perceptions (0.56). This further validates that Students' Well-being occupies a different construct from a combination of factors, thus affirming discriminant validity. The construct that was extracted from the Students' Happiness scale has a square root AVE of 0.73. It is higher than the corresponding coefficient with Student Engagement (0.68), Social Behaviors (0.65), and Social Perception (0.65). Thus, the Student Engagement construct also demonstrates an average amount of convergence and has a square root of AVE equal to 0.73 which was rated higher than the correlation between PDI and Social Behaviors (0.66) as well as Social Perceptions (0.67).

Table 5. Discriminant Validity (HTMT 0.85)

No.	Constructs	1	2	3	4	5	6	7	8
1	Deviant Behavior								
2	School Wellbeing	0.65							
3	Subjective Unsafety	0.59	0.61						
4	Students' Wellbeing	0.52	0.68	0.54					
5	Students' Happiness	0.62	0.72	0.57	0.71				
6	Student Engagement	0.58	0.7	0.55	0.69	0.75			
7	Social Behaviors	0.55	0.65	0.53	0.64	0.68	0.67		
8	Social Perceptions	0.56	0.66	0.55	0.65	0.69	0.68	0.7	

Table 5 presents the discriminant validity using the Heterotrait-Monotrait (HTMT0.85) ratio, ensuring that each construct is distinct from others. All HTMT values are below the threshold of 0.85, indicating satisfactory discriminant validity between the constructs. The highest correlation is observed between "Student Engagement" and "Students' Happiness" (0.75), while the lowest is between "Deviant Behavior" and "Students' Wellbeing" (0.52). This confirms that the constructs are well differentiated and suitable for further analysis. The table supports the distinctiveness of each variable in the model.

Table 6. Results of Hypotheses Testing (Direct Effects)

Hypotheses	Beta	SD	T Values	P Values	2.50%	97.50%	Decision	f2	R2	Adjusted R2	Q2
H1: School Climate -> Students' Happiness	0.645	0.024	26.875	0.00	0.598	0.692	Supported	0.85	0.512	0.511	0.271
H2: Students' Wellbeing -> Students' Happiness	0.69	0.022	31.364	0.00	0.646	0.734	Supported	0.9	0.526	0.525	0.278
H3: Participation -> Students' Happiness	0.675	0.023	29.348	0.00	0.629	0.721	Supported	0.88	0.518	0.517	0.274

Table 7. Results of Hypotheses Testing (Indirect Effects)

Hypotheses	Beta	SD	T	P	2.50%	97.50%	Decision	f2	R2	Adjusted R2	Q2	
			Value	Value								
H4: Student Engagement moderates School Climate -> Students' Happiness	0.1	0.0	28	15	8.533	0	0.09	0.15	Supported	0.2	0.5	0.2
H5: Student Engagement moderates Students' Wellbeing -> Students' Happiness	0.1	0.0	47	14	10.5	0	0.11	0.17	Supported	0.2	0.5	0.2
H6: Student Engagement moderates Participation in Educational Activities -> Students' Happiness	0.1	0.0	34	16	8.375	0	0.10	0.16	Supported	0.2	0.5	0.2

Table 6 presents the results of the direct effects of the tested hypotheses on students' happiness. The relationship between School Climate and Students' Happiness (H1) was supported, with a strong positive beta coefficient of 0.645, indicating that a better school climate is significantly associated with increased happiness. The t-value of 26.875 and p-value of 0.00 further confirm the significance of this relationship. Similarly, Students' Wellbeing had a significant positive impact on Students' Happiness (H2), with a beta of 0.69 and a t-value of 31.364, showing that higher levels of student well-being strongly predict happiness. Lastly, Participation in Educational Activities (H3) was also found to have a strong positive effect on Students' Happiness, with a beta of 0.675 and a t-value of 29.348. All the relationships were highly significant with p-values of 0.00, indicating robust support for the direct effects. The R² values across the hypotheses suggest that these predictors explain a substantial proportion of the variance in students' happiness, with f² values indicating large effect sizes. The high Q² values reflect the predictive relevance of the model.

Table 7 presents the results of the indirect effects, examining the moderating role of Student Engagement on the relationships between School Climate, Students' well-being, Participation in Educational Activities, and Students' Happiness. The moderation effect of Student Engagement on the relationship between School Climate and Students' Happiness (H4) was supported with a beta of 0.128, indicating that higher engagement strengthens the positive impact of school climate on happiness. Similarly, Student Engagement significantly moderated the relationship between Students' Well-being and Students' Happiness (H5), with a beta of 0.147, suggesting that engaged students experience an even greater boost in happiness from their well-being. The moderation of Participation in Educational Activities and Students' Happiness (H6) was also supported, with a beta of 0.134, indicating that engagement amplifies the positive effect of participation on happiness. All these moderation effects were highly significant, with t-values above 8 and p-values of 0.00, showing strong support for the hypotheses.

5. DISCUSSION

The findings of this study meaningfully contribute to the understanding of the interconnections between school climate, students' well-being, their participation in educational procedures, and the students' happiness, with a focus on the moderating role of student engagement. Previous research highlights the significant role that school climate plays in shaping student outcomes. In line with the findings of this research, it can be rightly inferred that a positive school climate strongly influences the happiness quotient of students, a point echoed by authors such as Moreira et al. (2018) and Thapa et al. (2013), who emphasize the link between a supportive school environment and student well-being. Our study adds to this body of work by empirically confirming that a structured and supportive school climate promotes students' emotional health and increases their overall happiness. This direct relationship, supported by Hypothesis 1, aligns with the work of Wang and Degol (2016), who argue that an optimistic and inclusive school climate is essential for fostering a positive emotional experience for students.

Moreover, students' well-being was found to be a crucial determinant of happiness at school (Hypothesis 2), consistent with findings from Reschly and Christenson (2022), which suggest that psychological and physical well-being significantly influence students' emotional outcomes. Our research reinforces the notion that schools must prioritize mental health and wellness initiatives, supporting the argument that higher levels of well-being contribute to greater happiness among students. This supports the calls by scholars like Gage et al. (2016), who advocate for integrating well-being programs in schools to improve students' happiness and school experience. Additionally, the study confirms that student

participation in educational activities enhances their happiness (Hypothesis 3). This finding is consistent with research by Santos et al. (2023), who argue that active involvement in both academic and co-curricular activities fosters a sense of accomplishment and school affiliation. Our results suggest that schools should focus on creating opportunities for students to participate actively in various activities, reinforcing the role of participation as a key contributor to students' overall happiness.

A major contribution of this study is the exploration of the moderating role of student engagement. The findings demonstrate that student engagement strengthens the positive relationships between school climate, well-being, participation, and happiness. Students who are more engaged benefit more from a positive school climate (Hypothesis 4), a finding supported by Koperski (2017), who argue that engagement amplifies the positive effects of a supportive school environment. Additionally, student engagement enhances the link between well-being and happiness (Hypothesis 5), in line with studies like those of Reschly and Christenson (2022), which underscore the importance of engagement in translating well-being into positive emotional outcomes. Finally, engagement amplifies the impact of participation in educational activities on happiness (Hypothesis 6), reinforcing the arguments of Thapa et al. (2013) that students who are actively engaged are more likely to derive emotional benefits from their participation. These findings not only support previous studies but also extend the literature by emphasizing the moderating role of student engagement.

6. CONCLUSION

This study explored the interconnections between school climate, students' well-being, their participation in educational activities, and their overall happiness, particularly emphasizing the moderating effect of student engagement. The research hypotheses were tested, and the results offer key insights into how these factors contribute to students' happiness within the school setting. The study proposes *Hypothesis 1*, which posited that a positive school climate has a direct and significant impact on students' happiness. The data support this proposition. The findings confirm that a supportive, inclusive, and well-structured school climate plays a critical role in fostering students' emotional health and overall sense of happiness. This result underscores the importance of creating an environment where students feel valued, respected, and secure. Schools that provide a nurturing climate promote academic achievement and contribute to students' emotional and psychological well-being, reinforcing the need for school policies that emphasize emotional support and inclusivity. Furthermore, *Hypothesis 2* proposes the relationship between students' well-being and their happiness and is also confirmed. The results show that higher levels of psychological and physical well-being significantly enhance students' happiness. In this context, well-being refers to both mental and physical health. The findings highlight that well-being is critical in shaping students' emotional outcomes. Schools that actively promote physical fitness, mental health programs, and counseling services are better positioned to improve their students' happiness.

Hypothesis 3 predicted that active participation in educational activities (both academic and co-curricular) would lead to increased happiness. The study validates this hypothesis. The study finds that students who are more involved in school activities tend to experience greater satisfaction and a stronger sense of belonging. Participation in educational activities fosters a sense of accomplishment, personal growth, and school affiliation, all of which contribute to higher happiness levels. This result suggests that schools should offer a wide range of academic and extracurricular activities and encourage students to actively engage in them, as participation is crucial for emotional fulfillment and happiness. Similarly, *Hypothesis 4* focused on how student engagement strengthens the positive effect of school climate on

students' happiness. The results suggest that students who are more engaged in their learning experience benefit more from a positive school environment. Engaged students are more likely to internalize the benefits of a supportive and structured school climate, leading to enhanced happiness levels. This finding emphasizes the importance of fostering high levels of engagement within the student body as a mechanism to amplify the positive effects of a well-functioning school climate.

Moreover, *Hypothesis 5* examined the moderating role of student engagement in the relationship between well-being and happiness. The data indicate that students who are more engaged in school are better able to translate their well-being into happiness. In this context, engagement acts as a bridge between students' well-being and their emotional satisfaction. It suggests that schools should not only promote health and wellness but also work on engaging students in meaningful and fulfilling ways. This ensures that students' well-being translates effectively into increased happiness. Likewise, *Hypothesis 6* explored how engagement moderates the relationship between participation in school activities and happiness. The findings reveal that student engagement amplifies the positive effect of participation on happiness, implying that students who are actively involved in school activities and are also highly engaged are more likely to experience elevated levels of happiness. This suggests that while participation in activities is crucial, the quality of student engagement during these activities is equally important for maximizing happiness outcomes.

In conclusion, the findings of this study demonstrate the crucial role of student engagement in strengthening the positive effects of school climate, well-being, and participation on happiness. Schools should take a holistic approach by not only fostering a positive climate and promoting well-being but also ensure that students are actively engaged in the learning process and extracurricular activities. These findings offer valuable implications for educators, school administrators, and policymakers. Schools that focus on creating a supportive and engaging environment can significantly enhance both academic achievement and the happiness of their students.

6.1. Practical Implications

The following practical recommendations can be made in view of the established results of this study in enhancing students' happiness levels in schools, especially within the context of Shanghai High School. Firstly, a positive school climate helps students stay happy. Secondly, school practices can promote happiness as an inclusive factor in the learning process. This study insinuates the responsibility upon schools to eradicate negative environments that are unsafe, intolerant, and non-respectful. These are very important because, as a school, they can schedule time intervals to evaluate the school climate and see areas that require improvement, and the interventions put in place to solve problems can help mediate the students in the right direction. Promoting students' health and well-being can make students feel comfortable and safe and, therefore, help them increase their performance in the education sector as well.

Furthermore, there are programs designed which include and entail the social-emotional learning (SEL) of students. These initiatives are reinforced through education and comprehensive health promotion programs. Mental health services and counseling can also be used alongside the implementation of physical fitness programs in order to assist the students in developing coping mechanisms against stress. Schools also need to stop making students feel like it is shameful to seek help if their well-being needs it. In this way, schools can integrate and prioritize the well-being of students above all, which will ultimately affect not only the students in a positive way but will also contribute to building a positive community and society.

Participation in educational activities should be promoted to improve students' relatedness and autonomy. The concept allows the schools to provide students with a range of activities, which may be academic or co-curricular, depending on the students' needs and abilities. Engaging students in the decision-making process regarding these activities may enhance their interest and participation. Moreover, engaging students in the learning process more actively appears to be crucial. Teachers can use approaches like project selling, group work, and the use of technology in the classroom to make the lessons more interesting. It is important that teachers are trained on how to engage students in order to develop an effective classroom atmosphere with high energy levels.

6.2. Limitations And Future Research

This study has some limitations that should be acknowledged. While it provides valuable insights into the factors influencing students' happiness at school, it is important to consider the following. First, the study is cross-sectional, implying it captures only a snapshot in time and cannot establish cause-and-effect relationships between the variables. Future research should employ longitudinal designs to examine causal relationships and track the long-term effects of school climate, well-being, participation in educational activities, and student engagement on students' happiness. Second, the study's context is limited to high school students in Shanghai, China, which may affect the generalizability of the findings when compared to students from other regions or educational systems.

Furthermore, more aspects should be developed in future studies; for example, moderating and mediating variables were beyond the scope of this study, but they may include student engagement, socio-demographic factors, cultural practices, and personality characteristics that could perhaps be moderated by school climate, wellbeing and student's engagement in educational activities to produce the level of happiness among students. Other studies could be conducted to find out more about these factors in order to delve into this issue from various angles. In addition to this, future studies should look into how some global aspects, such as COVID-19, have affected the happiness of the students.

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Ethical Statement: Informed consent was obtained from the students and their parents before the data collection. Moreover, all data collected were anonymized to protect the identity of participants and guarantee their privacy and security. The study procedures were approved by the Institutional Review Board of the Southeast Asia University People's Republic of China. In this case, the study proposal was subjected to the University Ethical Committee to ensure that all the procedures followed were ethical and met the University's Ethical Standards.

Consent to Participate: Before conducting this research study, the researcher explained the objectives of the study before collecting the data. The respondents were assured that the information would only be

used for research purposes. The respondents were told that they could withdraw at any stage from the interview if they felt uneasy or did not want to continue the interview.

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