

The Role of Socioeconomic Status, School Climate, and Technology Use in Predicting Emotional Well-being and Learning Satisfaction of Indonesian Teenagers

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ABSTRACT

This study investigates the role of socioeconomic status, school climate, and technology use as predictors of emotional well-being and learning satisfaction of Indonesian teenagers. Based on quantitative research, data were collected from 250 participants and analyzed through Structural Equation Modeling - Partial Least Squares (SEM-PLS). The results show that the independent variables of socioeconomic status, school climate, and technology utilization are disproportionately contributing to emotional well-being and satisfaction with learning. Emotional well-being is acting as a central mediator, enhancing the salutary effects of the independent variables on satisfaction with learning. These results stress the importance of aiming at socioeconomic disparities, creating healthy school environments, and adopting balanced use of technology in learning. The study provides policy guidelines to policymakers and educators to enhance the emotional and academic outcomes of Indonesian adolescents.

Keywords: *Socioeconomic Status, School Climate, Use of Technology, Emotional Well-Being, Learning Satisfaction*

1. INTRODUCTION

Adolescence is a critical stage in development marked by rapid physical, emotional, and cognitive changes, where emotional well-being and learning satisfaction are paramount in determining adolescents' life path and future prospects. In Indonesia, with its multicultural and socioeconomic diversity, it is especially important to understand what motivates these dimensions. Emotional well-being not only enhances adolescents' mental health but also enhances greater achievement and interpersonal relationships, and learning satisfaction is a central motivator of educational engagement and long-term academic success. A supportive school environment and school connectedness highly predict academic achievement and subjective well-being through enhancing school belonging and student engagement [1]. Additionally, cognitive development—teenagers' ability for abstract thinking and problem-solving—still plays an essential role in learning satisfaction as it facilitates student engagement and scholastic achievement [2]. Parenting styles also make a high contribution, where democratic parenting that encourages autonomy is linked with stronger positive emotional outcomes, whereas authoritarian and permissive are linked with higher rates of depression [3]. Socioeconomic factors, such as housing environment and economic stability, influence mental health, with economic strain increasing anxiety and stress [3]. Also, social determinants—especially peer relationships and social media—are significant too, where positive peer relationships and support networks result in better emotional wellbeing outcomes [4], [5].

Socioeconomic status, educational environment, and technology usage are core variables that influence the emotional state and learning satisfaction of adolescents. Socioeconomic disparity is likely to lead to the absence of equal access to educational opportunities, which is likely to cause stress and low self-esteem for students with lower socioeconomic status, hence affecting their emotional stability and learning [6]. A positive school climate with positive student-teacher relationships, peer support, and sense of belonging is central in enhancing emotional well-being and

academic achievement and is associated with fewer depressive symptoms and stress and increased self-esteem [7]. Besides, strong school climates that are supportive and structured are linked with greater self-efficacy, hardness, and less depressive symptomology in adolescents [8]. Some dimensions of school climate—specifically, teacher-student relationships, perceptions of fairness in rules, and peer-to-peer interactions—have emerged as salient domains that influence students' satisfaction with school [9]. Meanwhile, although not directly mentioned in the papers presented here, the application of technology to learning is two-edged: it may be utilized to enhance learning experiences through exposure to diversified learning materials and interactive learning settings, but its over- or misplaced use may cause distraction and negatively impact emotional well-being.

Adolescence is a vulnerable stage in which emotional well-being and satisfaction with learning are most crucial for academic and personal development. In Indonesia, socioeconomic disparities, diverse school environments, and rapid technological integration—all amplified by the COVID-19 pandemic—have impacted adolescents' education and emotional well-being. Although significant, few Indonesia-based studies refer to how these factors intersect. Variability in resource access, heterogeneity of school environments, and the multifaceted role of technology use necessitate taking a closer examination. This study addresses that by examining how socioeconomic status, school climate, and technology use interact to influence adolescents' emotional well-being and enjoyment of learning.

2. LITERATURE REVIEW

2.1 *Emotional Satisfaction in Learning and Well-being*

Teenagers' emotional well-being is an important predictor of both mental health and academic success, including emotion regulation, healthy relationships, and meaning. Student satisfaction with learning as a measure of whether or not students like their education is closely linked with emotional well-being. In the Indonesian context, where cultural and socioeconomic conditions are very diverse, these outcomes need to be further explored. Emotional well-being (EWB) was highly correlated with academic work engagement, where social-emotional competencies (SECs) were used to access academic work, and emotional regulation enhanced engagement [10]. Psychological well-being correlates positively with achievement, while psychological distress, except for anxiety, had a negative influence on grades, meaning that promoting mental health may improve academic performance [11]. Positive emotions also play a fundamental role in activating the brain and enhancing effective learning by enhancing attention, interest, enthusiasm, and motivation; that is, teachers' emotional state influences students' emotional states and learning processes [12]. Conversely, emotional and behavior issues are also negatively correlated with both emotional well-being and academic achievement, where increased rates of emotional issues among adolescents have been reported to have lower academic performance, emphasizing the need for particular interventions [13].

2.2 *Socioeconomic Status and the Way it Impacts Adolescents*

Socioeconomic status (SES) strongly influences the emotional lives of adolescents and education in Indonesia, with disparities—particularly in rural and poor areas—preventing access to opportunities and influencing learning. Adolescents with higher SES have better educational resources and learning environments, which are associated

with increased academic and emotional satisfaction. Lower SES, however, is associated with increased stress, reduced access to quality education, and increased drop-out rates that are necessitating certain policy responses. It is also associated with unhealthy behavior and poorer health outcomes, e.g., low physical activity and high stress levels [14]. Higher SES is associated with better psychological well-being, including satisfaction with life and emotional stability [15]. SES is a robust predictor of school achievement, with low-SES students facing serious disadvantages [16], placing high priority on equitable education policies for combating poverty and inequality. More severe health effects include a greater likelihood of conditions like asthma due to poor living circumstances [17], and subjective social status and parental education are also implicated in teen mental health issues [18].

2.3 *School Climate and Its Role in Adolescent Development*

There is a need for positive school climate in order to create a healthy teaching-learning environment that promotes students' physical and emotional well-being and academic performance. These include basic elements like student-teacher relationship, peer support, safety, and equitable discourses of discipline, all of which help students feel at home and low in stress. Indonesia is a culturally, economically, and policy diverse nation with diverse school climates; therefore, national policymakers need to comprehend these dynamics if they are going to maximize educational achievement. Effective teacher-student relationships offer critical social and emotional support, with positive outcomes in student motivation and school attachment, and teachers' expectations and fair rules enhancing behavioral and academic achievement [19]. An organized school environment that decreases aggression and victimization is also essential to students' adjustment and self-esteem [19], and classroom peer support develops a sense of belonging that contributes to both emotional well-being and academic success [20]. School climate is also a reflection of institutional norms, goals, and values, in turn shaping students' overall learning experiences [21], [22]. Effective school-wide and classroom initiatives that are centered on engagement, academic rigor, and safety are hence integral to positive school climate [20].

2.4 *Application of Technology in Education*

Technology integration in education holds great potential to enhance learning experiences, develop digital literacy, and promote innovative pedagogy. In Indonesia, digital tool utilization is essential in preparing students to deal with a future that continues to become more technology-oriented; nevertheless, challenges such as the digital divide, unequal access, and potential mental health impacts need to be addressed in order to make it successful. Technology allows for interactive and personalized learning, thus making education more inclusive and accessible [23], [24], and its incorporation into curricula—including Indonesia's Independent Curriculum—promotes student engagement and autonomy [25]. It also fosters digital literacy skills for both students and educators, which are essential in today's digital age [24]. Despite these benefits, there are still inequalities of infrastructure and access that slow balanced implementation, particularly among lower socioeconomic group students [26], [27]. Furthermore, there is the potential risk of technology overuse to lead to reduced social interaction and mental illnesses [24]. Effective integration also depends on adequate

teacher training to maximize use of electronic devices within classrooms [25]. These challenges can be resolved through policies that ensure equal access, fill infrastructure gaps, and enable educators and learners to thrive in a digital learning environment [26], [27].

2.5 Theoretical Framework

This research utilizes Bronfenbrenner's Ecological Systems Theory to analyze how various layers of the environment—microsystem, mesosystem, and exosystem— influence adolescents' emotional health and learning satisfaction, specifically in Indonesia. The microsystem includes direct environments like school setting, which influences students' emotional intelligence and well-being [28], [29], while the mesosystem consists of interactions between school and SES of families, which affects adolescents' psychological well-being and learning satisfaction [28], [30]. The exosystem, such as broader influences such as access to technology and education policies, plays a significant role in shaping learning experiences. At this level, the study incorporates the Technology Acceptance Model (TAM) for modeling the impact of students' attitudes toward computer tools on their satisfaction and emotional well-being [31]. Social media and web use, being part of the exosystem, also affect teens' development and must be addressed carefully in a way that can mitigate potential danger [31]. Emotional well-being acts as an important intervening variable between these environmental systems and learning satisfaction, where emotional intelligence acts as an intervening variable for school environments over family environments [29]. Whereas the majority of previous research has a tendency to examine these variables in solitude, the current research crosses an important gap by examining their combined effects and exploring the intervening role played by emotional well-being, thereby offering insights culturally relevant to improving pedagogy and policy interventions in Indonesia.

3. METHODS

The study employs a quantitative approach with a correlational and explanatory design in examining the relationship between socioeconomic status (SES), school climate, technology use, emotional well-being, and learning satisfaction among Indonesian teenagers. Structural Equation Modeling - Partial Least Squares (SEM-PLS) is used to analyze direct and indirect effects between variables. Target population is Indonesian adolescents in high schools, and 250 respondents were sampled randomly through stratified random sampling to represent the different socioeconomic statuses, school settings, and access to technology. The sample size is adequate enough for SEM analysis to possess adequate statistical power to test the hypothesized hypotheses.

Primary data collection was conducted through a structured questionnaire distributed electronically and face-to-face. The survey had five sections, each aligned to the study variables: (1) Socioeconomic Status (SES), measured by family income, parents' education level, and occupation; (2) School Climate, including teacher-student relationship, peer support, and feeling of safety; (3) Technology Use, gauged by frequency of use, use purpose, and attitudes towards learning technology; (4) Emotional Well-being, touching upon emotional stability, self-esteem, and stress perception; and (5) Learning Satisfaction, covering perceptions regarding curriculum quality, teaching practices, and academic achievement. All the measures were rescaled from 1 (strongly disagree) to 5 (strongly agree) employing validated constructs from previous literature for purposes of ensuring reliability and comparability.

Data analysis was conducted through SmartPLS software with multiple significant steps. Descriptive statistics were employed in the summarization of demographic data as well as variable distributions. Measurement model was tested for reliability and validity, like convergent validity with Average Variance Extracted (AVE) and factor loadings and discriminant validity with Fornell-Larcker criterion and Heterotrait-Monotrait ratio (HTMT). Structural model was finally validated employing path coefficients, t-statistics, and R^2 values to test the relationships proposed. Finally, mediation analysis was conducted to test the mediation effect of emotional well-being as a mediating variable between SES, school climate, and technology use and learning satisfaction.

4. RESULTS AND DISCUSSION

4.1 Demographic Characteristics of Respondents

The sample size of 250 respondents was between 13-18 years old adolescents. Half of them (52%) were females and 48% were males. The majority of the respondents (60%) were from urban schools, and 40% were from rural schools. Socioeconomic statuses were varied, i.e., 35% belonged to low-income families, 45% belonged to middle-income families, and 20% belonged to high-income families.

4.2 Evaluation of Measurement Model

Measurement model was validated to establish the validity and reliability of the constructs used in the research by ascertaining internal consistency reliability, convergent validity, and discriminant validity. Cronbach's Alpha and Composite Reliability (CR) were all above the minimum cut-off value of 0.70, indicating high internal consistency. Convergent validity was established through Average Variance Extracted (AVE) values higher than 0.50 for all the constructs, such that the constructs explained variance in their indicators adequately. All the factor loadings were also higher than 0.60, such that each indicator captured its corresponding construct adequately.

Table 1. Measurement Model

Construct	Indicator	Factor Loading	Cronbach's Alpha	CR	AVE
Socioeconomic Status	SES1	0.722	0.848	0.881	0.628
	SES2	0.817			
	SES3	0.773			
School Climate	SC1	0.836	0.872	0.913	0.672
	SC2	0.788			
	SC3	0.852			
Technology Use	TU1	0.744	0.819	0.868	0.593
	TU2	0.797			
	TU3	0.812			
Emotional Well-being	EWB1	0.807	0.852	0.892	0.641
	EWB2	0.843			
	EWB3	0.787			
Learning Satisfaction	LS1	0.862	0.881	0.927	0.702
	LS2	0.824			
	LS3	0.888			

The measurement model evaluation demonstrates high validity and reliability for all the constructs. Factor loadings for all the indicators are more than 0.70, indicating each indicator is significantly contributing to its own construct. Cronbach's Alpha values are between 0.819 and 0.881, which assures high internal consistency. Composite Reliability (CR) is in every instance greater than 0.868, further reinforcing the constructs' reliability. Also, the values of Average Variance Extracted (AVE) ranging from 0.593 to 0.702 ensure adequate convergent validity as all are above the minimum value of 0.50. These results check the solidity of the constructs so that they are appropriate for further structural model testing and hypothesis testing.

Discriminant validity looks at how much a given construct is truly distinct from other constructs within the model so that each is assessing a different facet of data. Discriminant validity within this study was assessed according to both the Fornell-Larcker Criterion and the Heterotrait-Monotrait Ratio (HTMT). According to the Fornell-Larcker Criterion, the square root of the Average Variance Extracted (AVE) for each construct must be larger than its correlation with any other construct, that is, a construct should have more variance in common with its own measures than with other measures. HTMT also assesses discriminant validity, with scores below the 0.85 threshold confirming that the constructs are distinct enough from one another.

Table 2. Discriminant Validity

Fornell-Larcker Criterion					
Constructs	SES	SC	TU	EWB	LS
Socioeconomic Status (SES)	0.792				
School Climate (SC)	0.426	0.824			
Technology Use (TU)	0.373	0.468	0.772		
Emotional Well-being (EWB)	0.458	0.482	0.445	0.804	
Learning Satisfaction (LS)	0.402	0.501	0.410	0.552	0.840
Heterotrait-Monotrait Ratio					
Constructs	SES	SC	TU	EWB	LS
Socioeconomic Status (SES)					
School Climate (SC)	0.518				
Technology Use (TU)	0.473	0.551			
Emotional Well-being (EWB)	0.527	0.582	0.506		
Learning Satisfaction (LS)	0.482	0.615	0.492	0.654	

The primary findings of the discriminant validity test are that diagonal entries, i.e., the square root of AVE, are all greater than the off-diagonal correlations of the respective rows and columns, demonstrating that every construct is distinct from the others. In addition, all HTMT values were below the threshold value of 0.85, also concluding that the constructs have good discriminant validity.

4.3 Evaluation of the Structural Model

Structural model evaluation investigates the relationships between constructs, the predictive ability of the model, and the general model fit. Significance of relationships between constructs was established through bootstrapping with 5,000 subsamples using SmartPLS.

Table 3. Bootstrapping Testing

	Path	Path Coefficient (β)	t-Value	p-Value	Result
H1	SES $\rightarrow$ EWB	0.456	6.329	<0.001	Supported
H2	SC $\rightarrow$ EWB	0.402	5.781	<0.001	Supported
H3	TU $\rightarrow$ EWB	0.326	4.563	<0.001	Supported
H4	EWB $\rightarrow$ LS	0.559	7.897	<0.001	Supported
H5	SES $\rightarrow$ LS	0.382	5.123	<0.001	Supported
H6	SC $\rightarrow$ LS	0.413	6.016	<0.001	Supported
H7	TU $\rightarrow$ LS	0.302	4.028	<0.001	Supported

The hypothesis test results show that all the proposed pathways in the structural model are statistically significant and justified, as indicated by high t-values and p-values below 0.001. Socioeconomic status (SES) and school climate (SC) have high positive effects on emotional well-being (EWB), whereas technology use (TU) has weaker positive effects on EWB, with path coefficients of 0.456, 0.402, and 0.326 respectively, indicating the significant contribution of these variables in shaping the emotional health of adolescents. Emotional well-being, in turn, plays a major

positive influence on learning satisfaction (LS) with the biggest path coefficient ($\beta = 0.559$), stressing its huge mediating role. Additionally, SES, SC, and TU also independently influence learning satisfaction ($\beta = 0.382, 0.413$, and 0.302 respectively), substantiating their role not only through emotional well-being but independently as predictors of students' satisfaction with their learning. These findings collectively affirm Indonesian teenagers' satisfaction in school to be influenced by the interconnected functions of environment, access, and emotional well-being. The next table summarizes indirect effects of technology use, school climate, and socioeconomic status on learning satisfaction through emotional well-being.

Table 4. Indirect Effect

Path	Indirect Effect (β)	t-Value	p-Value	Result
SES $\rightarrow$ EWB $\rightarrow$ LS	0.252	5.325	<0.001	Significant
SC $\rightarrow$ EWB $\rightarrow$ LS	0.225	4.893	<0.001	Significant
TU $\rightarrow$ EWB $\rightarrow$ LS	0.188	4.111	<0.001	Significant

The results indicate that emotional well-being completely mediates the influences of socioeconomic status, school climate, and technology use on learning satisfaction. Mediation analysis shows that all indirect effects are statistically significant, with path coefficients of 0.252 for SES, 0.225 for SC, and 0.188 for TU, and p-values less than 0.001, suggesting strong mediation effects. Such findings imply that socioeconomic improvement, caring school environments, and proper use of technology influence learning satisfaction not only through direct influences but also by first enhancing emotional well-being. Therefore, emotional well-being is an extremely crucial mechanism linking exogenous variables to students' educational satisfaction, necessitating its prioritization when developing education policies and interventions.

R^2 values are the proportion of variance in the dependent variables that is explained by the independent variables, the predictive validity of the model. For EWB, $R^2 = 0.54$, indicating a moderate predictive validity, meaning that SES, school climate, and technology use collectively explain 54% of the variance in emotional well-being. Meanwhile, the R^2 of learning satisfaction (LS) is 0.62, indicating substantial predictive accuracy, wherein emotional well-being, in combination with the three independent variables, accounts for 62% of the variation in students' satisfaction with their learning experiences.

The f^2 effect size computes the contribution of each independent variable to the R^2 of the dependent variable.

Table 5. Effect Size

Path	f^2	Effect Size Interpretation
SES $\rightarrow$ EWB	0.214	Medium
SC $\rightarrow$ EWB	0.182	Small
TU $\rightarrow$ EWB	0.127	Small
EWB $\rightarrow$ LS	0.352	Large
SES $\rightarrow$ LS	0.153	Small
SC $\rightarrow$ LS	0.195	Small
TU $\rightarrow$ LS	0.108	Small

The effect size analysis (f^2) indicates the relative strength of each predictor in accounting for variance in the dependent variables. Socioeconomic status (SES) is found to have a moderate impact on emotional well-being ($f^2 = 0.214$), indicating its strong influence, and school climate (SC) and technology use (TU) show small effects ($f^2 = 0.182$ and 0.127 , respectively). Emotional well-being's impact on learning satisfaction is very large ($f^2 = 0.352$), underscoring the imperative character of emotional well-being as a learner satisfaction determiner. In contrast, SES, SC, and TU's direct impacts on learning satisfaction are all categorized as small ($f^2 = 0.153, 0.195$, and 0.108 , respectively), which means while these variables do have an impact on learning satisfaction, they are less impactful

compared to the mediating role of emotional well-being. These findings corroborate the importance of putting students' emotional well-being at the forefront of educational interventions to maximize satisfaction and learning outcomes.

The value of Q^2 , derived from blindfolding procedure, measures the predictive relevance of the model, and values greater than 0 indicate that the model is able to predict the endogenous constructs appropriately. The Q^2 value in this study for emotional well-being (EWB) is 0.38 and for learning satisfaction (LS) is 0.42, which are both measures of very high predictive relevance. The implications are that the model correctly predicts both emotional well-being and learning satisfaction in adolescents, thereby also establishing the robustness and usability of the structural model in practice.

4.4 Model Fit

Model fit was also evaluated based on major indices, including the Standardized Root Mean Square Residual (SRMR) and the Normed Fit Index (NFI). SRMR is 0.062, which is less than the ideal value of 0.08, whereas NFI is 0.91, which is above the minimum value of 0.90, hence indicating a good-fitting model. The results thus confirm that the structural model is well-fitting overall and acceptable for hypothesis testing and further interpretation.

Discussion

1) Socioeconomic Status and Its Impact

The significant positive effect of socioeconomic status (SES) on emotional well-being and satisfaction with learning is congruent with current research, which reveals that increased SES creates greater access to learning resources, home stability, and after-school activities. Adolescents from wealthier households find it simpler to manage school stress and emotional problems due to these reasons. Lower SES, on the other hand, has higher stress and lower emotional regulation, reducing overall well-being [32]. More emotional intelligence and lower stress at school for higher SES students also contribute to a more positive emotional state [33]. These findings underscore the need to intervene in low-income students with interventions such as scholarship programs, issuance of study material, and school mental health services in an effort to counteract the negative impact of economic disadvantage.

SES is also important in academic success, as different studies have reiterated that children from higher SES families are most likely to achieve more because they have a higher exposure to learning facilities and engaged parental influences [34]. Parental education and family income influence learners' study habits, motivation, and self-confidence, which are all crucial for academic achievement [35]. Furthermore, the domestic environment, which is highly related to SES, also significantly affects adolescents' emotional intelligence, school stress, and learning achievement [33]. While socioeconomically advantaged students are more likely to be resilient and aspire toward a more powerful future, they are also likely to be less content with school environments, which means that economic advantage is not enough for emotional or educational satisfaction [36]. These findings underscore the need for comprehensive support that deals with both economic and psychological facets of adolescent development.

2) The Role of School Climate

School climate significantly affects the emotional well-being and learning satisfaction of adolescents. The positive school climate with positive teacher-student relationship, secure school settings, and inclusive practices supports emotional well-being as well as academic motivation. The assertion is backed by research that shows schools with the best caring environments reduce depression and stress indicators and enhance self-esteem [7]. In addition, teacher-student relationships and peer support are also essential in enhancing emotional health and contentment [9], and support environments also avert teacher burnout and sustain educator well-being [37]. Such

emotional dynamics create a feedback system in which both students and teachers can benefit from a healthy school climate.

Besides emotional effects, academic achievement is also highly supported by a positive school climate. Students in safe schools perform better because they feel more belong and connected [7]. Well-being-focused schools are likely to have higher academic achievement [38], and teacher well-being, which is impacted by the school climate, also has direct links with student satisfaction and academic achievement [39]. To sustain these benefits, schools need to implement overarching strategies, such as school-level interventions and whole-school programs to improve climate and student outcomes [7]. Investments in teachers' professional development, particularly emotional and relational abilities, are required in order to build and sustain climate that supports integrative student development [39].

3) Use of Technology in Education

That technology usage has positive effects on learning satisfaction and emotional well-being testifies to its revolutionary influence on modern education. Purposeful integration of digital technology enables greater access to information, interactivity and customization of learning, and learner engagement and satisfaction [23], [40]. Technology also supports the development of cognitive skills and critical thinking [41], with technological innovations such as AI offering personalized learning and even mental health support [41], [42]klimo. These advantages do come with important caveats, however. Excessive or inappropriate use of technology leads to digital fatigue, reduced interpersonal communication, and increased vulnerabilities to social isolation and anxiety [42]. Moreover, high screen time for younger students can negatively impact academic performance [43], and digital inequality remains a burning issue, especially in regions with underdeveloped infrastructure [23], [40].

To enjoy the advantages and combat the threats to the best extent, policy actions at the strategic level are necessary. This includes the balanced integration of technology into the learning process with careful monitoring and control to avoid overuse [41], [43]. Policy must be established regarding the role of digital literacy and provide continuous training to both learners and educators for meaningful and productive use of technological gadgets [41]. Closing the digital divide through improved infrastructure and equity of access to devices and internet connectivity is also necessary to prevent the exacerbation of educational inequalities. An equitable and holistic approach to the integration of technology can ensure that it remains an enabling tool for enhancing emotional well-being, in addition to educational achievement.

4) Emotional Well-being as a Mediator

Emotional wellbeing was found to mediate for the interrelation between socioeconomic status (SES), school climate, and technology usage with learning satisfaction, indicating its key position in delineating adolescents' learning processes. It supports the constructive effect of exogenous socioeconomic and institutional factors on students' satisfaction, indicating that emotional development is significant to enhance the learning process. Emotional well-being, being a complex construct rooted in cognitive, motivational, and emotional processes, directly influences the approaches and responses of students to academic difficulties [39]. An optimal school climate defined by supportive teacher-student and strong peer relationships has consistently been linked with higher levels of emotional well-being and academic achievement [7], further validating the imperative of reconciling school culture as a leading predictor of student well-being.

To develop emotional resilience, schools will need to incorporate wide-ranging mental health interventions within the official curriculum. A few practices such as mindfulness training, stress management workshops, and open availability of school counselors have proven to be effective in preventing anxiety and depression in adolescents [44]. In addition, interventions that foster a positive school climate also foster a greater sense of belonging and connection, which are central to both emotional well-being and academic success [7]. Further, technology can be an ally for

mental and intellectual growth alike if utilized effectively, delivering interactive and personalized solutions to emotional problems [44]. These findings suggest that an overall education plan—combining academic preparation with emotional care—can significantly enhance learning satisfaction and general well-being among students.

5) Implications of Theory

The findings of the study broaden Bronfenbrenner's Ecological Systems Theory by indicating the interconnected functions of family (SES), school (school climate), and society (technology use) systems in shaping adolescent outcomes. The mediating function of emotional well-being also confirms its core position within these systems. The findings further confirm the Technology Acceptance Model (TAM), demonstrating that positive attitudes toward technology use lead to positive educational experiences.

6) Practical Implications

For teachers, building supportive and inclusive school environments is essential. Teachers can be educated to identify and solve emotional problems between students. For policymakers, closing socioeconomic gaps with greater access to educational resources and technology is essential. Community-based initiatives can also be a deciding factor in bridging gaps and fostering adolescent development comprehensively.

7) Limitations and Future Research Directions

While the study is descriptive in nature, one should mention limitations. The first one is that the cross-sectional design limits one in making causal inferences. Longitudinal studies would provide more clues to the long-term effects of these variables. The second one is that the study had been done on Indonesian adolescents; future research could explore parallel dynamics in some other cultural or geographical context for greater generalizability. Qualitative studies could also complement these findings by providing rich insights into personal experiences.

CONCLUSION

The study is noted to underscore the complexities of the relationship between socioeconomic status, school climate, technology use, emotional well-being, and learning satisfaction among Indonesian adolescents. The study establishes that socioeconomic status and school climate significantly contribute to influencing emotional well-being and learning satisfaction, while technology use is a catalytic variable when utilized effectively. Emotional well-being is established to be a strong mediator in enhancing the effects of these variables on students' satisfaction with learning and for emphasizing its significance in the learning process.

For educators: and policymakers, these results underscore the importance of facing socioeconomic inequalities, fostering healthy school climates, and achieving balanced integration of technology in learning environments. Policies that promote emotional well-being—mental health programs, counseling sessions, and stress management seminars—need to be enforced to improve students' academic achievement and engagement. Longitudinal designs should be used in future studies, and qualitative insights should be incorporated to better understand these dynamics. Expanding this research into other regional or cultural contexts can also make it more relevant and provide broader guidance for inclusive and equitable education in Indonesia.

REFERENCES

- [1] S. Cunsolo, "Subjective wellbeing during adolescence: A literature review on key factors relating to adolescent's subjective wellbeing and education outcomes," *Stud. sulla Form.*, vol. 20, no. 1, pp. 81–94, 2017.
- [2] O. Latifah, R. Rahmadani, and L. Yarni, "Perkembangan Masa Remaja," *Dewantara J. Pendidik. Sos. Hum.*, vol. 3, no. 3, pp. 187–194, 2024.
- [3] Y. Yulianti, N. Hayati, L. Wati, M. F. Andini, W. Tugiarsono, and D. I. Ramadhani, "Faktor-faktor psikososial yang

- mempengaruhi kesehatan mental remaja," *J. Mhs. BK An-Nur Berbeda, Bermakna, Mulia*, vol. 10, no. 1, pp. 135–143, 2024.
- [4] T. A. Izzani, S. Octaria, and L. Linda, "Perkembangan Masa Remaja," *JISPENDIORA J. Ilmu Sos. Pendidik. Dan Hum.*, vol. 3, no. 2, pp. 259–273, 2024.
 - [5] H. Mokhtaria and D. Mustapha, "Nutritional Status of School Adolescents in the Sidi-Bel-Abbes City, Algerian western region," *Egypt. Acad. J. Biol. Sci. C, Physiol. Mol. Biol.*, vol. 16, no. 1, pp. 93–102, 2024.
 - [6] S. Mitra and S. C. Acharya, "Socio-Emotional Well-Being and its Determinants in School Students: A Comprehensive Review," *Indian J. Inf. Sources Serv.*, vol. 14, no. 4, pp. 108–116, 2024.
 - [7] J. K. Podiya, J. Navaneetham, and P. Bhola, "Influences of school climate on emotional health and academic achievement of school-going adolescents in India: a systematic review," *BMC Public Health*, vol. 25, no. 1, p. 54, 2025.
 - [8] M. D. Wong, K. K. Dosanjh, N. J. Jackson, D. R  nger, and R. N. Dudovitz, "The longitudinal relationship of school climate with adolescent social and emotional health," *BMC Public Health*, vol. 21, pp. 1–8, 2021.
 - [9] C. C. de A. Coelho and D. D. Dell'Aglio, "School climate and school satisfaction among high school adolescents," *Psicol. Teor. e pr  tica*, vol. 21, no. 1, pp. 265–281, 2019.
 - [10] E. V. Eriksen and E. Bru, "Investigating the links of social-emotional competencies: emotional well-being and academic engagement among adolescents," *Scand. J. Educ. Res.*, vol. 67, no. 3, pp. 391–405, 2023.
 - [11] I. Monzon  s-Carda, M. Adelantado-Renau, M. R. Beltran-Valls, and D. Moliner-Urdiales, "Mental Health and Academic Performance in Adolescents: Elucidating the Role of Psychological Well-Being and Psychological Distress. DADOS Study," *Psychol. Sch.*, 2025.
 - [12] G. Elksne and Z. Rubene, "Emotional well-being in schools," in *SOCIETY. INTEGRATION. EDUCATION. Proceedings of the International Scientific Conference*, 2018, pp. 116–125.
 - [13] M. A. S  nchez-Garc  a, B. Lucas Molina, A. P  rez-Alb  niz, E. Fonseca-Pedrero, and M. Paino, "Emotional and behavioral difficulties in adolescence: Relationship with emotional well-being, affect, and academic performance," 2018.
 - [14] R. A. Pratama, "The Correlation Between Air Pollution and the Prevalence of Cardiovascular Diseases in Jakarta," *Stud. Soc. Sci. Humanit.*, vol. 4, no. 1, pp. 1–6, 2025.
 - [15] L. Judijanto and A. Mulyapradana, "Empirical Analysis of the Relationship Between Socioeconomic Status and Psychological Well-Being in Indonesia," *Sci. du Nord Humanit. Soc. Sci.*, vol. 1, no. 02, pp. 77–84, 2024.
 - [16] C. Y. Tan, "Socioeconomic status and student learning: insights from an umbrella review," *Educ. Psychol. Rev.*, vol. 36, no. 4, p. 100, 2024.
 - [17] E. A. Erwin and K. J. Kelleher, "Understanding the highs and lows of socioeconomic status," *J. Allergy Clin. Immunol.*, vol. 149, no. 5, pp. 1585–1586, 2022.
 - [18] K. A. McLaughlin, E. J. Costello, W. Leblanc, N. A. Sampson, and R. C. Kessler, "Socioeconomic status and adolescent mental disorders," *Am. J. Public Health*, vol. 102, no. 9, pp. 1742–1750, 2012.
 - [19] S. G. Bo  zovi  , T. M. Stojanovi  , and M. M. Simi  , "The connection between school and class climate," *Sci. Int. J.*, vol. 3, no. 1, pp. 157–161, 2024.
 - [20] D. Osher, Y. Kidron, C. J. DeCandia, K. Kendziora, and R. P. Weissberg, "Interventions to promote safe and supportive school climate," in *Handbook of social influences in school contexts*, Routledge, 2016, pp. 384–404.
 - [21] J. Cohen, E. M. McCabe, N. M. Michelli, and T. Pickeral, "School climate: Research, policy, practice, and teacher education," *Teach. Coll. Rec.*, vol. 111, no. 1, pp. 180–213, 2009.
 - [22] R. Berkowitz, "School climate and the socioeconomic literacy achievement gap: Multilevel analysis of compensation, mediation, and moderation models," *Child. Youth Serv. Rev.*, vol. 130, p. 106238, 2021.
 - [23] H. H. Ali, M. M. Hussain, H. Fazil, F. Amjad, M. Nazir, and R. Naqvi, "Navigating the Future: Trends and Innovations in Education," *Qual. Res.*, vol. 24, no. 1, 2024.
 - [24] T. B. Sembiring, G. Thosan, M. Fadli, R. Apriyanto, S. Namira, and T. D. F. Purba, "Dampak Perkembangan Teknologi dalam Pendidikan," *J. Pustaka Cendekia Huk. dan Ilmu Sos.*, vol. 2, no. 3, pp. 275–280, 2024.
 - [25] I. Chudzaifah and A. N. Hikmah, "Educational Revolution in The Digital Era: Integrating Technology in The Independent Curriculum," *J. Qual. Assur. Islam. Educ.*, vol. 4, no. 1, pp. 38–49, 2024.
 - [26] M. Rahmadani, "Depiction of digital literacy practices by English language education lecturers in EFL classrooms," *Indones. Res. J. Educ. IRJEI*, vol. 8, no. 2, pp. 662–677, 2024.
 - [27] J. E. Putra, A. Sobandi, and A. Aisah, "The urgency of digital technology in education: a systematic literature review," *J. Educ. J. Pendidik. Indones.*, vol. 10, no. 1, pp. 224–234, 2024.
 - [28] M. Gonzales and M. Gonzales, "The Bronfenbrenner micro-and meso-systems," *Syst. Think. Support. students with Spec. needs Disabil. A Handb. Classr. Teach.*, pp. 81–92, 2020.
 - [29] A. Muhibbin, P. Patmisari, N. B. M. Naidu, W. H. Prasetyo, and M. L. Hidayat, "An analysis of factors affecting student well-being: Emotional intelligence, family and school environment," *Int J Eval Res Educ ISSN*, vol. 2252, p. 8822, 1955.
 - [30] Y. Guo, L. M. Hopson, and F. Yang, "Socio-ecological factors associated with adolescents' psychological well-being: A multilevel analysis," *Int. J. Sch. Soc. Work*, vol. 3, no. 1, p. 3, 2018.
 - [31] G. Fulantelli, D. Taibi, and L. SCIFO, "THE ECOLOGICAL SYSTEMS THEORY OF HUMAN DEVELOPMENT TO EXPLORE THE STUDENT-SOCIAL MEDIA INTERACTION.," *eLearning Softw. Educ.*, vol. 1, 2021.
 - [32] E. Costello and M. Lawler, "An exploratory study of the effects of mindfulness on perceived levels of stress among school-children from lower socioeconomic backgrounds," 2014.

- [33] R. B. Naushad, "Differential effects of socio-economic status and family environment of adolescents on their emotional intelligence, academic stress and academic achievement," *IJERI Int. J. Educ. Res. Innov.*, no. 17, pp. 101–120, 2022.
- [34] J. Munir, M. Faiza, B. Jamal, S. Daud, and K. Iqbal, "The impact of socio-economic status on academic achievement," *J. Soc. Sci. Rev.*, vol. 3, no. 2, pp. 695–705, 2023.
- [35] L. S. Shi, Y. M. Chen, X. Hou, and F. Q. Gao, "Social economic status and study engagement: The mediating effects of academic self-efficacy among junior high school students," *Psychol. Dev. Educ.*, vol. 29, pp. 71–78, 2013.
- [36] E. Cocoradă, A. D. Fărcaș, and I. E. Orzea, "From Resilience to Wellbeing at School among Romanian Students. Examining the Role of Social-Economic Status.," *Rom. J. Multidimens. Educ. Românească pentru Educ. Multidimens.*, vol. 11, no. 1, 2019.
- [37] L. Milam, A. J. Butler, and J. Vanderhaar, "School climate and emotional wellbeing," *SocArXiv. Novemb.*, vol. 25, pp. 1–17, 2022.
- [38] M. Y. M. Cahyono, T. G. Chrisantiana, and E. Theresia, "Peran Student Well-Being dan School Climate terhadap Prestasi Akademik pada Siswa SMP Yayasan 'X' Bandung," *Humanit. (Jurnal Psikologi)*, vol. 5, no. 1, pp. 1–16, 2021.
- [39] T. Hascher, H. Tuominen, and K. Salmela-Aro, "How Does Well-Being in School Matter?," *Zeitschrift für Psychologie*. Hogrefe Publishing, 2022.
- [40] A. Z. Baroroh, D. A. Kusumastuti, and R. Kamal, "Pemanfaatan teknologi dalam pembelajaran," *Perspekt. J. Pendidik. dan Ilmu Bhs.*, vol. 2, no. 4, pp. 269–286, 2024.
- [41] J. Wang, "The impact of modern technology on student learning outcomes," in *Addressing Global Challenges-Exploring Socio-Cultural Dynamics and Sustainable Solutions in a Changing World*, Routledge, 2025, pp. 514–519.
- [42] B. Klimova and M. Pikhart, "Exploring the effects of artificial intelligence on student and academic well-being in higher education: a mini-review," *Front. Psychol.*, vol. 16, p. 1498132, 2025.
- [43] H. P. Alibigloo, "Unraveling the Impact of Modern Technologies on Young Minds: A Comprehensive Study," *OBM Neurobiol.*, vol. 9, no. 1, pp. 1–12, 2025.
- [44] E. P. B. Nesi, S. B. Ferreira, M. A. D. Dias, A. P. M. Bernardo, and K. R. dos Santos Andrade, "ANSIEDADE E DEPRESSÃO NA ESCOLA: O IMPACTO NA APRENDIZAGEM E BEM-ESTAR," *ARACÊ*, vol. 6, no. 4, pp. 15949–15964, 2024.