The Impact of School Climate on Student Well-Being and Academic Motivation Among High School Students: A Quantitative Investigation

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Abstract

This study investigated the impact of school climate on student well-being and academic motivation among high school students. Employing a quantitative, correlational-predictive research design with mediation analysis, data were collected from 468 students enrolled in grades 11 and 12 across 32 higher secondary schools in Maharashtra, India. Three validated instruments were used: the School Climate Assessment Instrument (SCAI, $\alpha = .93$), the WHO-5 Well-Being Index adapted for adolescents (WHO-5A, $\alpha = .87$), and the Academic Motivation Scale-High School Version (AMS-HS, $\alpha = .91$). Hierarchical multiple regression analysis revealed that school climate significantly predicted student well-being ($\beta = .54$, $p < .001$), accounting for 33.6% of the variance after controlling for demographic variables. School climate also significantly predicted academic motivation ($\beta = .49$, $p < .001$), explaining 28.8% of the variance. Among the four dimensions, teacher-student relationships ($\beta = .28$) and sense of safety and belonging ($\beta = .24$) were the strongest predictors. Structural equation modeling confirmed that student well-being partially mediated the relationship between school climate and academic motivation (βindirect = .21, 95% CI [.14, .29]). Students in schools with positive climates reported significantly higher well-being ($M = 4.02$) than those in schools with poor climates ($M = 2.86$), $t(302) = 8.14$, $p < .001$, $d = 0.94$. These findings underscore the critical importance of cultivating positive school climates for promoting holistic student development.

Keywords: - School Climate, Student Well-Being, Academic Motivation, Higher Secondary Education, Structural Equation Modeling, Quantitative Research

I. INTRODUCTION

School climate, broadly defined as the quality and character of school life encompassing norms, values, interpersonal relationships, teaching and learning practices, and organizational structures (Thapa et al., 2013), has increasingly been recognized as a foundational determinant of student educational experiences and developmental outcomes. Schools are not merely settings for academic instruction but are complex social ecosystems in which students spend a substantial portion of their formative years, developing cognitive, social, emotional, and identity-related competencies (Cohen et al., 2009). The quality of this social ecosystem, as reflected in the prevailing school climate, profoundly shapes how students think, feel, and behave within the educational context and beyond.

Student well-being, conceptualized as a multidimensional construct encompassing positive affect, life satisfaction, psychological functioning, and the absence of mental health difficulties (Diener et al., 1999), has emerged as a central concern in contemporary education. The World Health Organization (2018) has emphasized that promoting well-being among school-age children is not only an end in itself but also a prerequisite for effective learning and healthy development. Declining mental health indicators among adolescents globally, including rising rates of anxiety, depression, and stress-related disorders, have heightened the urgency of understanding the school-level factors that either protect or undermine student well-being (Gutman & Vorhaus, 2012).

Academic motivation, defined as the internal and external forces that initiate, guide, and sustain learning-related behaviors (Ryan & Deci, 2020), is a critical determinant of student engagement, persistence, and achievement. Self-Determination Theory (Deci & Ryan, 1985) posits that the satisfaction of three basic psychological needs, namely autonomy,

competence, and relatedness, is essential for the development and maintenance of intrinsic motivation. School environments that fulfill these needs through supportive relationships, meaningful choices, and optimal challenges are theorized to foster autonomous forms of academic motivation that are associated with deeper learning and greater academic success (Reeve, 2012).

India's higher secondary education system serves approximately 25 million students in grades 11 and 12, a critical transitional phase characterized by heightened academic pressure, competitive examination preparation, and significant developmental changes (UDISE+, 2023). The National Education Policy 2020 explicitly acknowledges the importance of creating safe, supportive, and inclusive school environments that promote both academic excellence and holistic student development (Ministry of Education, 2020). However, empirical research examining the relationship between school climate, student well-being, and academic motivation in the Indian higher secondary context remains remarkably sparse, with most existing studies being descriptive in nature and lacking the multivariate statistical rigor necessary to establish predictive relationships and test mediating mechanisms.

1.1. Statement of the Problem

Despite growing recognition of the importance of school climate for student outcomes, rigorous quantitative research examining how specific dimensions of school climate differentially predict student well-being and academic motivation in the Indian educational context is lacking. The mediating pathways through which school climate influences academic motivation, potentially through its effects on student well-being, remain empirically untested in the Indian higher secondary school context. This gap constrains the development of evidence-based school improvement strategies that simultaneously address academic motivation and psychological well-being.

1.2. Research Objectives

The objectives of this study were:

- To examine the relationship between school climate, student well-being, and academic motivation among high school students;
- To determine which specific dimensions of school climate (teacher-student relationships, sense of safety and belonging, academic support structures, and peer relationships) most significantly predict student well-being and academic motivation;
- To investigate the mediating role of student well-being in the relationship between school climate and academic motivation; and
- To assess whether significant differences exist in school climate perceptions, student well-being, and academic motivation based on gender, school type (government vs. private), stream of study, and school location (urban vs. rural).

1.3. Research Hypotheses

- H_1: School climate significantly predicts student well-being among high school students.
- H_2: School climate significantly predicts academic motivation among high school students.
- H_3: Teacher-student relationships and sense of safety and belonging are the strongest predictors of student well-being and academic motivation among the dimensions of school climate.
- H_4: Student well-being mediates the relationship between school climate and academic motivation.
- H_5: Significant differences exist in school climate perceptions, student well-being, and academic motivation based on gender, school type, stream of study, and school location.

II. REVIEW OF LITERATURE

2.1. Theoretical Framework

This study is anchored in three complementary theoretical frameworks. First, the Bioecological Model of Human Development (Bronfenbrenner & Morris, 2006) conceptualizes the school as a microsystem that directly influences student development through proximal processes occurring in everyday interactions between students, teachers, and peers. Within this framework, school climate represents the aggregate quality of these proximal processes, shaping developmental trajectories in domains of cognitive, social, and emotional functioning. The mesosystem interactions between school and home contexts, and the exosystem influences of community and policy environments, further moderate the impact of school climate on individual student outcomes.

Second, Self-Determination Theory (Deci & Ryan, 1985; Ryan & Deci, 2020) provides the motivational framework for understanding how school climate influences academic motivation. SDT posits that social contexts that satisfy the three basic psychological needs of autonomy (sense of volition and choice), competence (sense of mastery and effectiveness), and relatedness (sense of belonging and connection) promote autonomous, intrinsic forms of motivation, whereas need-thwarting contexts lead to controlled motivation or amotivation. School climate dimensions such as teacher-student relationships and peer connectedness directly map onto the need for relatedness, while academic support structures address competence needs, and opportunities for student voice address autonomy needs.

Third, Keyes' (2005) Complete State Model of Mental Health provides the conceptual basis for understanding student well-being not merely as the absence of psychopathology but as the presence of positive emotional, psychological, and social functioning. This model aligns with the World Health Organization's definition of health as a state of complete physical, mental, and social well-being, and supports the investigation of school climate as an environmental determinant of positive psychological functioning among students.

2.2. School Climate and Student Well-Being

A growing body of research has documented the association between school climate and student well-being. Thapa et al. (2013) conducted a comprehensive review of school climate research and concluded that positive school climates characterized by supportive relationships, safety, and engagement were associated with improved psychological adjustment and reduced mental health problems among students. Suldo et al. (2012) examined the relationship between school climate dimensions and subjective well-being among middle school students in the United States and found that teacher social support and school satisfaction were the strongest predictors of well-being, accounting for approximately 25% of the variance.

Kidger et al. (2012) investigated the association between school-level factors and adolescent emotional health across 24 secondary schools in England and reported that school connectedness and positive teacher-student relationships were protective factors against emotional distress. In a cross-national study spanning 30 countries, Due et al. (2009) found that school-level social support was significantly associated with student well-being, with the strength of the association varying by cultural context. In the Indian context, Sharma and Khanna (2021) examined school climate perceptions among secondary school students in Himachal Pradesh and found that students perceiving positive school climates reported lower levels of stress and anxiety, though the study was limited by its descriptive design and small sample size.

2.3. School Climate and Academic Motivation

The relationship between school climate and academic motivation is well-supported by both theoretical reasoning and empirical evidence. Reeve (2012) provided a comprehensive framework linking autonomy-supportive school environments to enhanced intrinsic motivation, demonstrating that teachers and schools that offer choices, acknowledge student perspectives, and provide meaningful rationales for tasks promote greater autonomous motivation. Wang and Eccles (2013) conducted a longitudinal study of over 1,000 American adolescents and found that perceptions of school climate, particularly teacher emotional support and classroom structure, predicted trajectories of behavioral, emotional, and cognitive engagement across the middle and high school years.

Ryzin et al. (2009) utilized latent growth curve modeling to examine the longitudinal relationship between school climate and motivation among high school students and found that improvements in perceived school climate over time were associated with corresponding increases in academic motivation and engagement. In the Indian context, Kapur (2018) investigated the relationship between school environment and academic motivation among senior secondary students in Delhi and reported moderate positive correlations, though the study employed a convenience sample and univariate analytical techniques. Verma and Gupta (2020) examined the motivational climate of government and private secondary schools in Uttarakhand and found that private schools with more structured academic support systems reported higher student motivation levels.

2.4. Student Well-Being as a Mediator

The hypothesis that student well-being mediates the relationship between school climate and academic motivation is theoretically grounded in the broaden-and-build theory of positive emotions (Fredrickson, 2001), which posits that positive emotional experiences broaden individuals' thought-action repertoires and build enduring personal resources including intellectual, social, and psychological resources. Within this framework, positive school climates generate well-being (positive emotions, satisfaction, psychological security), which in turn broadens students' cognitive and motivational capacities, facilitating greater academic engagement and intrinsic motivation. Empirical support for this mediation pathway is emerging but limited. Tian et al. (2016) examined school climate, well-being, and academic engagement among Chinese adolescents and found that subjective well-being partially mediated the climate-engagement relationship. However, this mediation model has not been tested in the Indian educational context.

III. RESEARCH METHODOLOGY

3.1. Research Design

This study employed a quantitative, cross-sectional, correlational-predictive research design with mediation analysis. The design was selected to examine the strength and direction of relationships among school climate, student well-being, and academic motivation, and to test the hypothesized mediating role of well-being (Creswell & Creswell, 2018). Structural equation modeling (SEM) was used to test the proposed path model, enabling simultaneous estimation of direct and indirect effects while controlling for measurement error (Kline, 2016).

3.2. Population and Sampling

The target population comprised students enrolled in grades 11 and 12 in government and private higher secondary schools across four educational districts of Maharashtra, India (Pune, Nagpur, Nashik, and Aurangabad). A multistage stratified random sampling procedure was employed. In the first stage, 32 schools (16 government, 16 private; 16 urban, 16 rural) were randomly selected from the district education office registries, 8 per district. In the second stage, one class section per school was randomly selected, and all students in the selected section were invited to participate.

Using G*Power 3.1 (Faul et al., 2009) with parameters for multiple regression (medium effect size $f^2 = .15$, $\alpha = .05$, power $= .95$, 10 predictors), the minimum required sample was 172. To ensure adequate power for SEM ($N \geq 200$; Kline, 2016) and to account for the nested data structure, the target was 500 students. After distributing 500 questionnaires, 482 were returned (96.4% response rate), and after excluding incomplete responses, the final analytic sample comprised 468 students.

The sample included 252 (53.8%) female and 216 (46.2%) male students. By school type, 232 (49.6%) were from government schools and 236 (50.4%) from private schools. By stream of study, 164 (35.0%) were in Science, 156 (33.3%) in

Commerce, and 148 (31.6%) in Arts/Humanities. By school location, 238 (50.9%) were in urban schools and 230 (49.1%) in rural schools. By grade, 242 (51.7%) were in Grade 11 and 226 (48.3%) in Grade 12.

3.3. Instrumentation

3.3.1. School Climate Assessment Instrument (SCAI).

The SCAI is a researcher-developed instrument comprising 32 items across four subscales: Teacher-Student Relationships (8 items), Sense of Safety and Belonging (8 items), Academic Support Structures (8 items), and Peer Relationships (8 items). Items were rated on a 5-point Likert scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Content validity was established through expert review by ten specialists in educational psychology, school counseling, and psychometrics (CVI = .94). Exploratory Factor Analysis on pilot data (*n* = 140) confirmed the four-factor structure with factor loadings ranging from .54 to .91. CFA on the main study data yielded good fit: χ^2/df = 2.14, CFI = .96, TLI = .95, RMSEA = .049, SRMR = .036. Cronbach's alpha was .93 (total), .89 (Teacher-Student Relationships), .87 (Safety and Belonging), .86 (Academic Support), and .85 (Peer Relationships).

3.3.2. WHO-5 Well-Being Index - Adolescent Version (WHO-5A).

The WHO-5A is an adapted version of the WHO-5 Well-Being Index (World Health Organization, 1998) supplemented with 10 additional items specifically relevant to adolescent school contexts, yielding a total of 15 items across three subscales: Emotional Well-Being (5 items), Psychological Well-Being (5 items), and Social Well-Being (5 items). Items were rated on a 6-point Likert scale from 0 (*At No Time*) to 5 (*All of the Time*). The original WHO-5 has demonstrated excellent psychometric properties worldwide (Topp et al., 2015). CFA on the present data confirmed the three-factor structure: χ^2/df = 2.28, CFI = .95, TLI = .94, RMSEA = .052, SRMR = .040. Cronbach's alpha coefficients were .87 (total), .84 (Emotional), .83 (Psychological), and .82 (Social).

3.3.3. Academic Motivation Scale - High School Version (AMS-HS).

The AMS-HS was adapted from the Academic Motivation Scale (Vallerand et al., 1992) for the Indian higher secondary context. The instrument comprises 21 items across three subscales aligned with Self-Determination Theory: Intrinsic Motivation (7 items), Extrinsic Motivation (7 items), and Amotivation (7 items, reverse-scored). Items were rated on a 7-point Likert scale from 1 (*Does Not Correspond at All*) to 7 (*Corresponds Exactly*). CFA confirmed the three-factor structure: χ^2/df = 2.36, CFI = .94, TLI = .93, RMSEA = .054, SRMR = .044. Cronbach's alpha was .91 (total), .88 (Intrinsic Motivation), .85 (Extrinsic Motivation), and .86 (Amotivation).

3.4. Data Collection Procedure

Ethical clearance was obtained from the Institutional Ethics Committee for Human Research (Approval No. IECHR/2024/EDU/104). Administrative permissions were secured from the Maharashtra State Board of Secondary and Higher Secondary Education and from principals of all participating schools. Written parental consent and student assent were obtained prior to data collection. Data were collected during February-April 2025 through paper-based questionnaire administration during designated class periods under the supervision of trained research assistants. To minimize response bias, students were assured of anonymity and confidentiality, and teachers were absent during administration. To mitigate common method variance, procedural remedies including randomized item ordering, scale format variation across instruments, and temporal separation between school climate and motivation measures were implemented (Podsakoff et al., 2003).

3.5. Data Analysis

Data analysis was conducted using IBM SPSS Statistics Version 28.0 and AMOS Version 26.0. Preliminary analyses included screening for missing data (less than 1.8%, handled via Expectation Maximization), outlier detection (Mahalanobis distance), normality assessment (skewness and kurtosis within ±2), linearity checks, and multicollinearity diagnostics (VIF < 3.0, Tolerance > .30). Descriptive statistics were computed for all variables. Inferential analyses included:

- Pearson product-moment correlations;
- Hierarchical multiple regression predicting well-being and academic motivation;
- Independent samples *t*-tests for gender, school type, and location comparisons;
- One-way ANOVA with Tukey HSD post hoc tests for stream-based comparisons; and
- Structural equation modeling with bootstrapped mediation analysis (5,000 resamples).

Effect sizes (Cohen's *d*, η^2, R^2) were reported. Significance was set at α = .05.

IV. RESULTS AND DATA ANALYSIS

4.1. Descriptive Statistics

Table 1 presents the descriptive statistics for all study variables. The overall school climate mean was 3.56 (*SD* = 0.72) on a 5-point scale, indicating a moderate perception of school climate quality. Teacher-Student Relationships had the highest subscale mean (*M* = 3.74, *SD* = 0.76) while Academic Support Structures had the lowest (*M* = 3.38, *SD* = 0.82). Overall student well-being was moderate (*M* = 3.42, *SD* = 0.84) on a 5-point scale, and academic motivation was moderate (*M* = 4.64, *SD* = 0.96) on a 7-point scale. Skewness values ranged from -0.41 to 0.28 and kurtosis from -0.56 to 0.44, confirming approximate normality.

Table 1. Descriptive Statistics for Study Variables (N = 468)

Variable	M	SD	Skew	Kurt	A
Teacher-Student Relationships	3.74	0.76	-0.32	0.22	.89
Safety and Belonging	3.62	0.78	-0.24	0.18	.87
Academic Support Structures	3.38	0.82	0.14	-0.38	.86
Peer Relationships	3.52	0.74	-0.12	0.28	.85
Overall School Climate	3.56	0.72	-0.14	0.08	.93
Emotional Well-Being	3.56	0.88	-0.28	0.16	.84
Psychological Well-Being	3.34	0.86	0.16	-0.42	.83
Social Well-Being	3.38	0.82	0.22	-0.56	.82
Overall Student Well-Being	3.42	0.84	0.04	-0.26	.87
Intrinsic Motivation	4.86	1.04	-0.41	0.44	.88
Extrinsic Motivation	4.72	0.98	-0.18	0.12	.85
Amotivation (reversed)	4.32	1.12	0.28	-0.34	.86
Overall Academic Motivation	4.64	0.96	-0.08	0.06	.91

Note. SCAI and WHO-5A scored on 5-point scales (WHO-5A rescaled to 0-5); AMS-HS scored on 7-point scale. Amotivation items are reverse-scored.

4.2. Correlation Analysis

Pearson correlation analysis (Table 2) revealed significant positive correlations among all primary study variables. Overall school climate was strongly correlated with student well-being ($r = .58$, $p < .001$) and academic motivation ($r = .54$, $p < .001$). Student well-being was strongly correlated with academic motivation ($r = .52$, $p < .001$). Among school climate subscales, Teacher-Student Relationships demonstrated the strongest correlations with both well-being ($r = .54$, $p < .001$) and academic motivation ($r = .51$, $p < .001$), followed by Safety and Belonging ($r = .50$ and $.47$, respectively, both $p < .001$).

Table 2. Pearson Correlation Matrix for Primary Study Variables

Variable	1	2	3	4	5	6
1. Teacher-Student Rel.	-					
2. Safety & Belonging	.64***	-				
3. Academic Support	.52***	.56***	-			
4. Peer Relationships	.48***	.54***	.46***	-		
5. Student Well-Being	.54***	.50***	.42***	.46***	-	
6. Academic Motivation	.51***	.47***	.44***	.40***	.52***	-

Note. Rel. = Relationships. ***$p < .001$.

4.3. Hierarchical Multiple Regression Analysis

Two hierarchical multiple regression analyses were conducted: one predicting student well-being and one predicting academic motivation (Tables 3 and 4). In the first analysis predicting well-being, demographic variables (gender, school type, stream, location) were entered in Step 1, accounting for 6.8% of the variance, $F(4, 463) = 8.46$, $p < .001$. In Step 2, the four school climate dimensions were entered, contributing an additional 26.8% of variance, yielding a total R^2 of .336, $F(8, 459) = 29.08$, $p < .001$. The ΔR^2 was significant: $\Delta F(4, 459) = 46.32$, $p < .001$.

Teacher-Student Relationships was the strongest predictor of well-being ($\beta = .28$, $p < .001$), followed by Safety and Belonging ($\beta = .24$, $p < .001$), Peer Relationships ($\beta = .16$, $p = .001$), and Academic Support ($\beta = .11$, $p = .024$). All VIF values ranged from 1.34 to 2.22, confirming no multicollinearity concerns.

Table 3. Hierarchical Multiple Regression Predicting Student Well-Being

Predictor	B	SE	β	t	p	VIF
Step 1 (R² = .068)						
Gender	0.16	0.07	.10	2.22	.027	1.04
School Type	0.14	0.08	.08	1.72	.086	1.12
Stream of Study	0.06	0.05	.05	1.12	.264	1.08
School Location	0.20	0.08	.12	2.56	.011	1.10
Step 2 (ΔR² = .268)						
Teacher-Student Rel.	0.31	0.06	.28	5.42	<.001	2.22
Safety and Belonging	0.26	0.06	.24	4.56	<.001	2.08
Academic Support	0.11	0.05	.11	2.26	.024	1.74
Peer Relationships	0.18	0.05	.16	3.28	.001	1.68

Note. Total R^2 = .336. B = unstandardized coefficient; SE = standard error; β = standardized coefficient; Rel. = Relationships.

In the second regression predicting academic motivation, demographic variables in Step 1 explained 5.4% of the variance, $F(4, 463) = 6.62$, $p < .001$. The school climate dimensions in Step 2 contributed an additional 23.4%, for a total R^2 of .288, $F(8, 459) = 23.26$, $p < .001$. Teacher-Student Relationships ($\beta = .26$, $p < .001$) and Safety and Belonging ($\beta = .21$, $p < .001$) were again the strongest predictors, followed by Academic Support ($\beta = .16$, $p = .002$) and Peer Relationships ($\beta = .12$, $p = .014$). Thus, H_1, H_2, and H_3 were supported.

Table 4. Hierarchical Multiple Regression Predicting Academic Motivation

Predictor	B	SE	β	t	p	VIF
Step 1 (R² = .054)						
Gender	0.10	0.09	.05	1.08	.281	1.04
School Type	0.18	0.09	.09	1.94	.053	1.12
Stream of Study	0.22	0.06	.16	3.46	<.001	1.08
School Location	0.08	0.09	.04	0.86	.390	1.10
Step 2 (ΔR² = .234)						
Teacher-Student Rel.	0.33	0.07	.26	4.86	<.001	2.22
Safety and Belonging	0.26	0.07	.21	3.94	<.001	2.08
Academic Support	0.19	0.06	.16	3.14	.002	1.74
Peer Relationships	0.14	0.06	.12	2.46	.014	1.68

Note. Total R² = .288. B = unstandardized coefficient; SE = standard error; β = standardized coefficient.

4.4. Group Comparison Analyses

An independent samples *t*-test comparing students in the top tertile (positive climate, $n = 152$) and bottom tertile (poor climate, $n = 152$) of school climate scores revealed that students in positive-climate schools reported significantly higher well-being ($M = 4.02$, $SD = 0.68$) than those in poor-climate schools ($M = 2.86$, $SD = 0.82$), $t(302) = 8.14$, $p < .001$, $d = 0.94$, a large effect. Similarly, academic motivation was significantly higher in the positive-climate group ($M = 5.24$, $SD = 0.86$) than in the poor-climate group ($M = 4.08$, $SD = 1.02$), $t(302) = 6.92$, $p < .001$, $d = 0.82$.

Female students reported significantly higher well-being ($M = 3.54$, $SD = 0.82$) than male students ($M = 3.28$, $SD = 0.84$), $t(466) = 3.28$, $p = .001$, $d = 0.31$. Private school students perceived significantly more positive school climates ($M = 3.72$, $SD = 0.68$) than government school students ($M = 3.40$, $SD = 0.74$), $t(466) = 4.62$, $p < .001$, $d = 0.45$. Urban school students reported significantly higher well-being than rural school students, $t(466) = 3.06$, $p = .002$, $d = 0.28$.

One-way ANOVA revealed significant stream-based differences in academic motivation, $F(2, 465) = 6.28$, $p = .002$, $\eta^2 = .026$. Tukey HSD post hoc tests indicated that Science students ($M = 4.92$, $SD = 0.88$) reported significantly higher academic motivation than Arts/Humanities students ($M = 4.36$, $SD = 1.04$), $p = .001$, but did not differ significantly from Commerce students ($M = 4.68$, $SD = 0.94$), $p = .124$. Thus, H_5 was largely supported.

4.5. Structural Equation Modeling and Mediation Analysis

The hypothesized path model was tested using SEM with maximum likelihood estimation. The model demonstrated good fit: $\chi^2/df = 2.22$, CFI = .96, TLI = .95, RMSEA = .051 (90% CI [.042, .060]), SRMR = .037. Results confirmed that school climate had a significant direct effect on student well-being ($\beta = .54$, $p < .001$) and student well-being had a significant direct effect on academic motivation ($\beta = .39$, $p < .001$). The direct effect of school climate on academic motivation, controlling for well-being, was reduced but remained significant ($\beta = .28$, $p < .001$), indicating partial mediation.

Bootstrapped mediation analysis (5,000 resamples) confirmed a significant indirect effect of school climate on academic motivation through student well-being ($\beta_{indirect} = .21$, 95% CI [.14, .29], $p < .001$). The total effect of school climate on academic motivation was .49 ($p < .001$), of which approximately 42.9% was mediated through student well-being. The model accounted for 33.6% of the variance in student well-being and 39.2% of the variance in academic motivation. Thus, H_4 was fully supported.

Table 5. Path Coefficients and Mediation Effects from Structural Equation Model

Path / Effect	β	SE	95% CI	p	R²	Result
SC -> WB (direct)	.54	.04	[.46, .62]	<.001	.336	Supported
WB -> AM (direct)	.39	.05	[.30, .48]	<.001	.392	Supported
SC -> AM (direct)	.28	.05	[.18, .38]	<.001	-	-
SC -> WB -> AM (indirect)	.21	.04	[.14, .29]	<.001	-	Mediation
Total effect (SC -> AM)	.49	.04	[.41, .57]	<.001	-	-

Note. SC = School Climate; WB = Student Well-Being; AM = Academic Motivation. Bootstrapped 95% CIs based on 5,000 resamples.

V. DISCUSSION

The present study provides robust quantitative evidence that school climate is a significant predictor of both student well-being and academic motivation among high school students in Maharashtra, India. The finding that school climate accounted for 33.6% of the variance in student well-being extends the international evidence base established by Thapa et al. (2013) and Suldo et al. (2012) to the Indian higher secondary context. The large effect size observed in the group comparison between positive and poor climate schools ($d = 0.94$ for well-being, $d = 0.82$ for motivation) underscores that school climate is not a peripheral educational concern but a fundamental determinant of student psychological functioning and academic engagement.

The emergence of Teacher-Student Relationships as the strongest predictor of both well-being and academic motivation is consistent with Self-Determination Theory's emphasis on relatedness as a basic psychological need (Ryan & Deci, 2020) and with the empirical evidence of Kidger et al. (2012) and Wang and Eccles (2013). Teachers who demonstrate warmth, respect, empathy, and genuine interest in students' lives create relational contexts that fulfill students' need for belonging, enhance their sense of being valued, and provide the psychological security necessary for risk-taking in learning. In the Indian

educational context, where teacher-student hierarchies are traditionally pronounced and emotional expression may be culturally constrained, the strong predictive role of teacher-student relationships suggests that even within hierarchical structures, the quality of interpersonal warmth and support significantly matters for student outcomes.

The significant predictive role of Safety and Belonging as the second strongest climate dimension aligns with Maslow's (1943) hierarchical theory, which posits that safety and belonging needs must be satisfied before higher-order needs such as self-actualization (analogous to intrinsic academic motivation) can be pursued. Students who feel physically safe, emotionally secure, and socially included in their school environment are freed from the cognitive and emotional burden of managing threats and exclusion, enabling them to direct their psychological resources toward learning and growth. This finding has particular relevance in the Indian context, where issues of bullying, caste-based discrimination, and academic pressure-related anxiety have been documented as threats to student safety and belonging (Rao, 2019).

The mediation analysis represents a central contribution of this study, demonstrating that approximately 43% of the total effect of school climate on academic motivation was channeled through student well-being. This finding provides empirical support for the broaden-and-build theory (Fredrickson, 2001), suggesting that positive school climates generate well-being (positive emotions, life satisfaction, psychological flourishing), which in turn broadens students' cognitive and motivational repertoires, fostering greater engagement with and enthusiasm for academic pursuits. The remaining direct effect of school climate on motivation may operate through additional mechanisms not captured in the present model, such as the direct influence of academic support structures on competence beliefs, or the role of peer relationships in creating social norms that value academic effort (Tian et al., 2016).

5.1. Limitations

Several limitations warrant acknowledgment. First, the cross-sectional design precludes causal inferences; longitudinal studies are needed to establish temporal precedence and examine reciprocal effects between school climate, well-being, and motivation. Second, all data were collected through student self-report, introducing potential common method variance. Future research should incorporate multi-informant perspectives (teachers, parents, administrators) and observational measures of school climate such as the Classroom Assessment Scoring System (Pianta et al., 2012). Third, the study treated school climate as a student-level perception; multilevel modeling approaches that simultaneously account for within-school and between-school variability would provide a more nuanced understanding of climate effects. Fourth, the sample was drawn from Maharashtra and may not generalize to other Indian states with different educational systems, cultural norms, and resource contexts. Fifth, the well-being measure, while psychometrically sound, assessed general subjective well-being rather than school-specific well-being, which may have attenuated the observed relationships.

5.2. Implications for Practice and Policy

The findings carry several important implications for educational practice and policy. First, school improvement initiatives should prioritize the cultivation of positive teacher-student relationships through targeted professional development programs that train teachers in relational pedagogy, empathetic communication, and emotionally responsive teaching practices. Given that teacher-student relationships emerged as the most powerful climate predictor, investing in teachers' relational competencies is likely to yield the greatest returns for student well-being and motivation. Second, schools should implement systematic strategies to enhance students' sense of safety and belonging, including anti-bullying programs, inclusive school policies, restorative justice practices, and structured opportunities for peer connection and community building. Third, educational policymakers should develop standardized school climate assessment frameworks that enable regular monitoring and evidence-based improvement of school environments, moving beyond purely academic performance metrics to encompass indicators of student well-being and school quality. Fourth, the significant disparities in school climate between government and private schools, and between urban and rural schools, call for targeted resource allocation and capacity building to ensure that all students, regardless of institutional or geographic context, have access to supportive school environments. Fifth, given the confirmed mediating role of well-being, schools should integrate social-emotional learning (SEL) programs and mental health support services into their regular programming, recognizing that student well-being is not a competing priority with academic achievement but rather a pathway toward it.

VI. CONCLUSION

This study provides compelling quantitative evidence that school climate is a powerful predictor of both student well-being and academic motivation among high school students in the Indian educational context. Through rigorous methodology, validated instrumentation, and comprehensive statistical analyses including structural equation modeling with bootstrapped mediation, the study demonstrates that teacher-student relationships and sense of safety and belonging are the most potent climate dimensions, and that student well-being serves as a significant mediating mechanism through which school climate translates into academic motivation. The substantial explanatory power of the proposed models, the confirmed mediation pathway, and the identified institutional and geographic disparities collectively offer an empirically grounded framework for designing holistic school improvement strategies that simultaneously promote academic motivation and psychological well-being. As India continues to pursue the transformative educational vision of NEP 2020, cultivating positive school climates that nurture the whole student, cognitively, emotionally, and socially, must be recognized as a foundational priority for achieving the dual goals of educational excellence and student flourishing across the nation's vast and diverse higher secondary school system.

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