



Student well-being, sense of belonging, and alienation among secondary school students in Colombia, India, and Malawi

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ABSTRACT

Growing evidence supports the importance of students' well-being, sense of belonging, and alienation for their success in school and the labor force. Although research points to some school-related factors that influence these important outcomes, evidence from lower- and middle-income countries is limited. In this paper we report the results of a cross-country survey of over 1500 youth in urban and rural schools in Colombia, India, and Malawi. For each country we estimate ordinary least squares multiple regression models relating student well-being, sense of belonging, and alienation to school climate variables. In all three countries, we find that these three outcomes are associated significantly and in the expected direction with a range of affective experiences that teachers and school leaders can shape, including students' sense of safety and fairness in school and the quality of students' relationships with teachers, school leaders, and peers. These findings suggest that teachers, school leaders, and educational policymakers in marginalized locations can enhance students' schooling experiences by looking beyond traditional academic processes and outcomes to improve school climate.

Medellín, Colombia, January 2020

Miguel, an administrator at a large public secondary school on the periphery of Medellín, shook his head when we asked how students had scored on the previous year's national examinations. "We are not there yet," Miguel reported. The school had earned a C on a national scale of A to D based on student test scores. He explained that the leadership team and teachers had been focusing on improving *convivencia* (peaceful co-existence) and creating a protective school environment for students. When he arrived at the school several years earlier, there were dozens of fights a year. The past year there had been just three. Miguel explained:

Having just three fights in one year demonstrates that we have dedicated ourselves to organizing our house, from the perspective of *convivencia*. We have created a consciousness in the teachers that as soon as we reach a point of equilibrium with *convivencia*, we can start to advance academically, and we have achieved better results.

Rural Tamil Nadu, India, September 2021

It had been over a month since classes resumed after the extended pandemic lockdown, and Class 9-A was still missing a dozen of its 29 students. Not that one could tell from the classroom noise, as the boys played a game of tag, punctuated by screeching desks and exaggerated cries of victory or pain. The girls, huddling at the other end of the classroom, could just be heard singing film songs

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over the din. When Mrs. N. peeks in, I fully expect the students to be roundly – and deservedly – scolded. She, however, gently engages them in conversation: “were you able to keep in touch with your studies [over the lockdown]?” As students continue to talk amongst themselves, Mrs. N. notes mildly that teachers – indeed, the education department itself – recognized that students needed time to settle into school routines. She reassures them of a “gentle” reintroduction to studies, pointing to the refresher materials they have. Far from punishing them, she firmly situates the classroom in the broader post-pandemic context, focusing on the refresher and deliberately refusing to be drawn into the frequent student disruptions.

Rural Thyolo District, Malawi, August 2021

Mr. Mvula is concerned. The school has many girls and boys who come from villages that are so distant that they have decided to “self-board”; that is, they now live in some of the school’s older classrooms. The government does not recognize the school as a boarding facility, so there is no official responsibility on the school’s part to assure students’ safety. But Mr. Mvula is well-aware of the dangers that self-boarding can pose, including lack of regular access to food, wanted and unwanted sexual relationships, and the many distractions that teens can experience when far from home. He and two other teachers have created a rotating schedule to supervise and support the self-boarding students, organizing extra classes for them in the evenings and checking in over the weekends. Since creating this structure, there have been no new dropouts or pregnancies among the self-boarders, Mr. Mvula proudly reports. But food is very scarce, and teachers can’t make up the difference month after month on their meager salaries. Mr. Mvula therefore held a meeting where teachers counseled students to remain focused on their studies no matter the hardships they were enduring, and he plans to call parents to the school to encourage them to provide more financial support. Meanwhile, Mr. Mvula and his colleagues try to assure their students that they have support as they navigate the demands and hardships that staying in secondary school entails.

1. Introduction

These vignettes, which we collected during a multi-year, mixed-method study of youth’s schooling experiences in Colombia, India, and Malawi, illustrate that the central work of schools in marginalized communities extends beyond academic exercises and cognitive outcomes.¹ As we collected qualitative data in the three countries immediately before, during, and after the COVID–19 pandemic lockdowns, we observed what it meant for secondary school students to lose and then regain connection with their teachers, school leaders, and peers. We also saw how students’ relationships influenced their feelings about being in school. We realized how impactful school-based relationships and perceived sense of safety and fairness were in shaping students’ sense of well-being and belonging, or, conversely, in contributing to their feelings of alienation. These insights guided our subsequent survey work in nearly 50 urban and rural schools that shared similar contexts of marginalization. Informed by our qualitative work with students in the three countries, we designed our survey instrument to address questions that are rarely asked in large-scale, cross-national studies, especially in lower- and middle-income countries (LMICs).

In this study, we report the results of our cross-national, multi-year

¹ We are a cross-national, multi-institution, multi-lingual team of researchers who have collectively worked in these countries for many years. We share these vignettes from the field to illustrate the nature and importance of the outcomes and perceptions that we investigate quantitatively in this paper. Although our initial qualitative work informed our survey data collection and analysis, the findings reported here are entirely drawn from the study’s quantitative data collection activities.

survey of over 1500 secondary-aged students in Colombia (grades 10–11), India (grades 9–10), and Malawi (grades 9–10). Our objective is to understand how socio-emotional outcomes relate to school climate-related factors, including students’ perceptions of school and their in-school relationships. Given the salience of socio-emotional outcomes for youth’s long-term success in school and in life—combined with evidence that schools exert an important influence on these outcomes (Jackson et al., 2020)—identification of potential school-level levers in our three study countries can inform research and policy to support youth in LMICs. Specifically, we examine the following research questions:

1. What is the relationship between secondary students’ well-being, sense of belonging, and alienation (socio-emotional outcomes) and:
 - a. their sense of safety and perceptions of fairness in school (school climate)?
 - b. their self-reported relationships with teachers, school leaders, and peers (school climate)?
2. How do these relationships vary across Colombia, India, and Malawi?

2. Literature review

Subjective well-being (SWB), sense of belonging, and alienation represent key socio-emotional outcomes that are commonly measured in higher-income countries. Whereas SWB and sense of belonging have been positively associated with academic and post-school success, alienation has a consistently negative relationship with these outcomes. A key determinant of SWB, sense of belonging, and alienation is school climate, or the qualities and character of school life. After describing each of these outcomes and its importance, we examine their relationship with school climate variables, focusing where possible on LMICs.

2.1. Well-being, belonging, and alienation

SWB is a self-reported measure that refers to how a person thinks and feels about their own life. It operationalizes the general construct of happiness, or quality of life, and is correlated with important positive future outcomes in health, income, longevity, and social and civic behavior (Diener, 2012; Diener et al., 2013). A variety of constructs and measures have been employed to study SWB (e.g., Das et al., 2020; Diener, 2009; Maddux, 2017). Since the 2000s, international organizations have included SWB in data collection efforts, and wealthier countries regularly monitor well-being in their national statistics (Diener, 2012).

Sense of belonging has been explained in many ways (Allen et al., 2018), but the most common definition is the extent to which students feel accepted, respected, and included in their schools (Goodenow and Grady, 1993). Similar to SWB, sense of belonging in school is associated with many benefits (Osterman, 2000), including academic achievement, competence, and engagement (Allen et al., 2018; Dixon and Gentzis, 2021). The benefits of a positive sense of belonging extend beyond students’ academic scores to prosocial behavior, reduced absenteeism, and positive conduct (See Allen et al., 2018 for a detailed review).

Alienation has been defined and explored in various ways in academic literature. Seeman (1959) identified five key factors: powerlessness, meaninglessness, normlessness, isolation, and self-estrangement (Brown et al., 2003). Others define alienation as states of indifference, hostility, and general unrelatedness (Newmann, 1981; Case, 2008). In contrast to SWB and sense of belonging, students’ sense of alienation has negative consequences for their academic performance and aspirations. Alienation often leads to disengagement from the learning process, which results in lower academic achievement (Lamborn et al., 1992). It can also cause students to lose interest in further education, thereby weakening their educational aspirations. Alienation can also take a

significant emotional toll on students (Morinaj et al., 2019).

2.2. School climate: framing factors that explain well-being, belonging, and alienation

Our review of factors related to student well-being, belonging, and alienation points to the importance of school climate, which pertains to the qualities and character of school life. School climate, which may include aspects of physical and social school environments (Thapa et al., 2013), is defined by the National School Climate Council (2009) as encompassing “norms, values, and expectations that support people feeling socially, emotionally and physically safe” at school (p. 2). Wang and Degol (2016) note that, across diverse definitions of school climate, most contain four broad dimensions: academic, community, safety, and institutional environment. Key aspects of the “community” and “safety” dimensions, on which this article focuses, include in-school relationships (e.g., Sarkova et al., 2014; Suldo et al., 2013) and a sense of belonging, safety, and fairness in school (Allen et al., 2018; Dukynaite & Dudaite, 2017; El Zaatari and Ibrahim, 2021; Faircloth and Hamm, 2005; Murphy and Zirkel, 2015).

Research in higher-income countries indicates that improving school climate can foster healthy relationships in schools (Thapa et al., 2013). A caring and participatory school climate tends to cultivate a greater sense of belonging and helps nurture socio-emotional and academic success (National School Climate Council, 2009), thereby supporting the development of students’ mental and physical well-being (National School Climate Council, 2009).

There has been a sustained interest in conceptualizing and analyzing school climate and its relationship with socio-emotional development in high-income countries like the United States (Clifford et al., 2012). A great deal of related literature has also been generated using data from International Large-Scale Assessments (ILSAs) like PIRLS, PISA, and TIMSS (Nilsen and Teig, 2022). As a result, there is substantial cross-national evidence regarding the relationship between school climate and academic success in higher-income countries. In contrast, a systematic understanding is lacking in LMICs (Larson et al., 2020), although there is some limited cross-national evidence. For example, Carnoy and Marshall’s (2005) analysis of cross-national data from Latin America and the Caribbean found that Cuba’s superior academic performance stems in part from the social context of Cuban schools, which enjoy a relative lack of school violence and high student attendance due to low prevalence of child labor.

In an extensive review of studies from LMICs, Larson et al. (2020) found positive relationships between behavioral, academic, and emotional outcomes and school climate variables, including some evidence regarding the school climate variables we examine here. Of the 35 studies reviewed, seven examined sense of safety, 12 examined fairness and equity, 13 examined relationships with peers, and 17 examined relationships with school staff. Only one study, Barnes et al.’s (2012) research from South Africa, included all four of these measures. Analyzing data gathered using the California School Climate and Safety Survey, the authors found that perceptions of school safety, rules and norms around safety, and social support from adults and learners were negatively related to sexual, physical, and verbal harassment, as well as weapons and physical attacks in school (Barnes et al., 2012).

Although the studies reviewed by Larson et al. (2020) provide hints about the potential importance of school climate in LMICs, the authors identify a tension: “Many of the most methodologically rigorous studies relied on nationally representative data from multi-national studies (e. g., TIMSS, PISA), for which only limited data pertaining to school climate was included, whereas studies that assessed school climate in more detail tended to be less generalizable, often geographically limited to a single city or region within a country, and of lower quality” (p. 17). Further, Larson et al. (2020) found few longitudinal or cross-national studies; most studies they reviewed were country- or region-specific.

The concerns raised by Larson et al. (2020) are reflected in the

handful of studies that have examined school climate in Colombia, India, and Malawi. Although these studies provide key insights into our study countries, none provides a longitudinal or comprehensive investigation of safety, fairness, and school-based relationships. In a study of 3460 Grade 10 and 11 students in Medellín, Colombia, Higueta-Gutiérrez and Cardona-Arias (2016) found that adolescents’ quality of life is significantly and positively associated with their relationships with peers but negatively related to their perceptions of school violence. Their findings also suggest an indirect, positive relationship between teacher relationships and students’ quality of life. Studying 2421 Grade 5–9 students in the Colombian department of Antioquia, Moratto Vásquez et al. (2017) found a negative relationship between positive perceptions of school climate and student reports of bullying and intimidation. Barrera-Osorio et al.’s (2020) study of Grade 4, 6, and 8 students in the city of Manizales, Colombia found that students’ sense of belonging was a strong positive predictor of student literacy levels, while school bullying was negatively related to literacy.

Mohanraj et al.’s (2010) study of 964 students aged 14–18 in southern India found that peer acceptance acted as a buffer against student depression. They also found that girls reported significantly higher levels of peer acceptance than boys. In a study of 11,191 13–14-year-old girls from the Indian state of Karnataka, Beattie et al. (2019) found a harassing or abusive school environment to be positively and significantly related to girls’ reports of feeling down, depressed, or hopeless. In their study of Class 10 students in 30 government-run secondary schools in the Indian state of Bihar, Santhya et al. (2015) found that fair treatment and “gender-egalitarian attitudes” of teachers were positively related to students’ academic outcomes.

Finally, in a comparative study of Botswana, Malawi, and Mozambique, Schwandt and Underwood (2016) examined the impact of training school personnel to promote gender equity and safe learning environments in schools. While the authors found that this training was positively related to several school climate variables in Botswana, in Malawi and Mozambique they found no significant differences between schools that received the training and those that did not. The authors attributed this difference in part to a greater level of school resources in Botswana (a middle-income country), relative to more resource-constrained environments in Malawi and Mozambique. The authors posit that educators in wealthier countries like Botswana may feel more empowered to change classroom environments.

2.3. Summary and contribution

Prior research from higher-income countries makes clear that student well-being, sense of belonging, and alienation are important for students’ success in school and life. Schools can influence these outcomes by building positive relationships between students and their teachers, school leaders, and peers, as well as by reducing violent or inequitable student experiences. Given the limited evidence from LMICs and the general finding of positive associations between school climate and both academic and socio-emotional outcomes (Larson et al., 2020), there is a clear need for additional research. Our study contributes to current knowledge in several ways: (1) although our data are not strictly longitudinal, we examine student outcomes and relationships in the same set of schools over two years; (2) our comparative data represent students in socio-economically marginalized rural and urban communities in two lower-income countries (India and Malawi) and one middle-income country (Colombia) across three continents; (3) the rich survey data related to socio-emotional outcomes and school climate that we have collected provide insights into the outcomes and school variables that appear to matter for secondary-aged youth across diverse contexts of marginalization.

3. Study background, data, and methods

3.1. Country selection, background, sample, and data collection

Data for this research were collected as part of a larger study that examined youth's secondary school contexts, experiences, and outcomes in marginalized urban and rural public secondary schools in Colombia, India, and Malawi between 2019 and 2023. We selected these countries for several reasons. First, we aimed to include a diversity of countries and continents, language environments, levels of economic development and economic inequality, and forms of marginalization affecting secondary-aged youth. At the same time we sought diversity in country contexts, we identified similarities in factors affecting secondary youth, including high-stakes exam regimes, generally politically democratic systems, and well-known and well-established (but different) forms of marginalization that would help us to understand whether and how this marginalization manifests itself in educational practice and the experiences of secondary-aged youth. As we discuss further below, each research site experienced a specific type of marginalization, such as civil conflict and displacement, caste-based discrimination, or abject poverty. What ties these marginalizing forces together is that they simultaneously make education more important and more difficult to access, by creating conditions that deeply limit students' educational and life chances (UNESCO, 2010). Finally, given our extensive ethnographic work, as well as the challenges of applying our survey in three countries in two consecutive years, we also needed to conduct the research in countries and sites where we had substantial personal and professional ties. These ties enabled us to identify research collaborators in each country who conducted the ethnographic research and applied the surveys, while allowing us to remain deeply involved in the research.

The overarching study employed a mixed-methods approach, in which data collection was iterative across sites and research methods. Data collection was informed by regular conversations among team members about emerging themes in each site and country, as well as across countries. The study team—which consisted of full-time ethnographers and survey teams located in each of the three countries and three principal investigators and their graduate students working in US universities—worked closely to construct cross-cultural, research-informed surveys (Fig. 1). As Fig. 1 explains, the team engaged in research, review, workshops, cognitive interviews, translations, and backtranslations to generate context-sensitive but cross-nationally comparable surveys. For survey data collection, the team similarly followed a context-sensitive approach that was aligned across the three countries and six locations (Fig. 2). We surveyed over 1500 students from nearly 50 schools across the three countries and over two rounds. In the first cycle, the questionnaire was administered to students in Grade 9 in India and Malawi and Grade 10 in Colombia (February and March 2022); the second cycle included students in Grade 10 in India and Malawi and Grade 11 in Colombia (January and March 2023).² Each round of the survey included approximately 16 students in each of 16 schools, divided evenly among urban and rural schools. Although we did not follow the same students in each year, it is possible that some students participated in both survey rounds.

We selected schools that had similar geographic and sociodemographic profiles to our qualitative focal schools, especially in terms of urban/rural location and poverty indicators. We also attempted to identify schools with similar levels of student enrollment. In each country, we divided our sample evenly between females and males, according to self-reported student gender. With the exception of one school in Colombia that withdrew in Year 2 after changes in leadership,³ all schools that we approached agreed to participate in the survey,

which reduces concerns related to selection bias stemming from the inclusion of schools that may have been more willing or likely to participate in the survey than others.

Due to differences in local regulations and preferences, we were not able to collect all of the information we had hoped for. In India for instance, officials scrutinized various rounds of the survey carefully and made several recommendations and requests regarding student demographic items. We were also constrained by the need to balance information needs with the length of the survey to avoid placing excessive demands on student participants. Even so, the student survey contained approximately 130 items, depending on country and year.

3.2. Variables

Our dependent variables are student well-being, sense of belonging, and alienation. Independent variables reflect key aspects of school climate identified as important in previous research: perceived school safety, perceived school fairness, relationships with teachers, relationships with principals, and relationships with peers. We also include student and school-level variables to control for factors that may be related to both school climate and student outcomes. In estimating relationships between school climate variables and student outcomes, we separated factors that schools can conceivably control (such as actions of teachers and school leaders and the nature of their relationships) and those that they cannot, such as student gender, age, and household resources. While we focused on school climate variables to understand how the potentially malleable actions and attitudes of adults in schools relate to student outcomes, we controlled for student background factors to eliminate potential confounding between independent and dependent variables.

3.2.1. Dependent variables: student well-being, sense of belonging, and alienation

We measured SWB using a 10-point Likert scale response to the question, "Overall, how satisfied are you with your life as a whole these days?," which is considered a robust indicator of SWB (Dolan et al., 2008). We generated our measure of student sense of belonging using principal component analysis (PCA) with five variables: "(1) Do you wake up in the morning excited to go to school, (2) Do you feel positive that good things will happen to you at school, (3) I make friends easily at school, (4) I feel like I belong at school, (5) I feel safe at school." PCA allows us to reflect the conceptual connection among these distinct responses by measuring the underlying construct of sense of school belonging. The benefit of PCA is that it reduces the dimensionality of each construct while accounting for the loading—or correlation—of the individual questionnaire items. To generate the SWB measure, we used promax rotation and retained and standardized the first component with an eigenvalue above one (Kaiser, 1960). We conducted PCA six times to generate a unique measure of belonging for each country and year. Given differences in questionnaires and samples, PCA results are not strictly comparable across countries and years (Mazziotta and Pareto, 2019). As a result, we report descriptive statistics using the means of the original survey items, not PCA results; further, we estimate regression analyses within countries and years. We do not formally test differences in associations across the three countries, due to both the non-comparability of PCA results and the small number of countries in our sample.

We measured student-reported sense of alienation by generating a summary mean of student responses on two items: "I feel like an outsider or left out of things at school" and "I feel lonely at school." These items are coded so that a higher value indicates a greater sense of alienation.

3.2.2. Independent variables

To understand variation in our dependent variables, we focused on five key school climate variables identified during our qualitative research and from relevant literature: perceived school safety, perceived

² We selected these grade levels to study students in the first two years of non-compulsory education in each country.

³ We replaced this school with a demographically similar urban school.

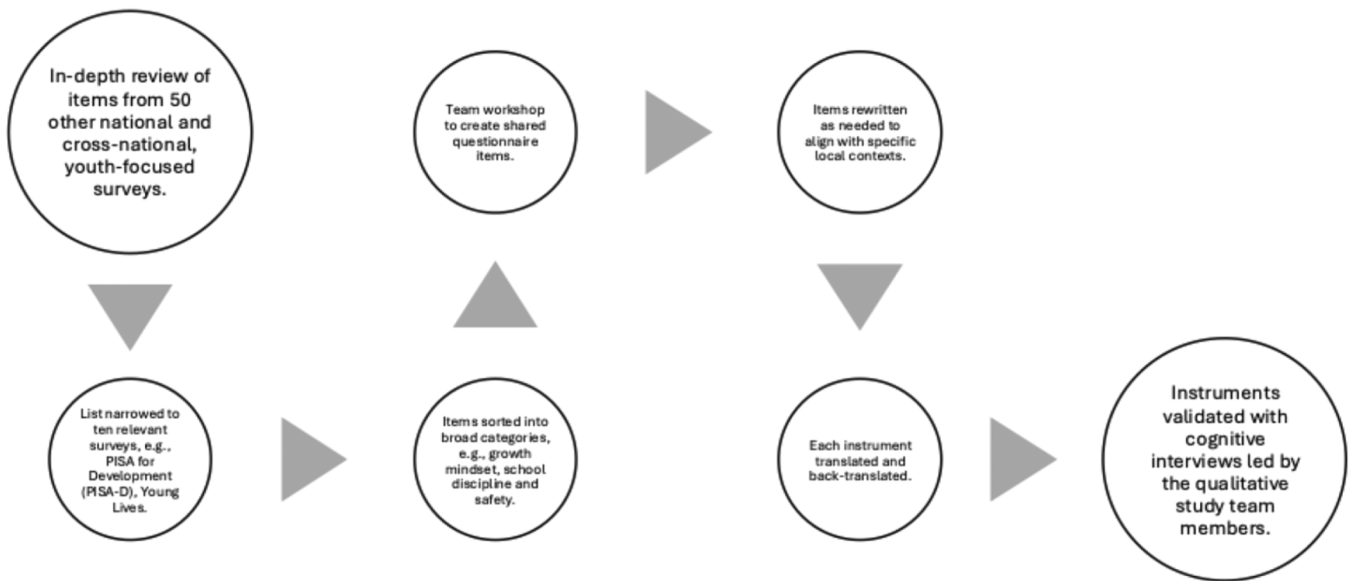


Fig. 1. Survey construction with shared (cross-country) and unique (local) items.

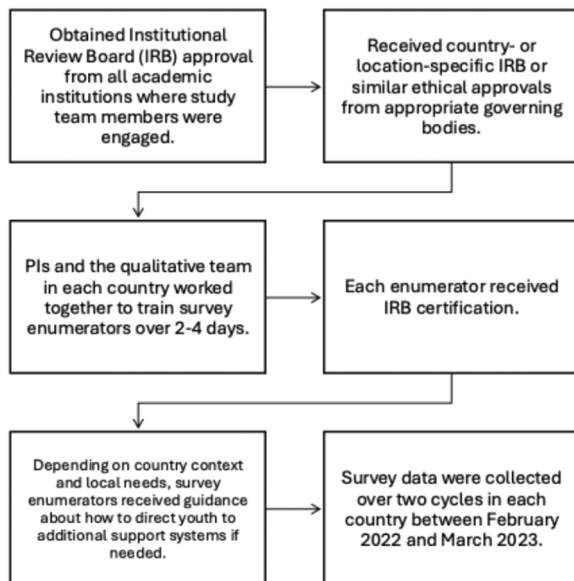


Fig. 2. Survey data collection process.

school fairness, relationships with teachers, relationships with principals, and relationships with peers. We employed PCA to construct all five variables, using the same steps described above. Means of survey items that made up each of the five school climate variables are reported in Table 1. Factor loadings for each of the items are included in the online appendix⁴.

3.2.3. Control variables

In all regression models, we control for students' self-reported gender, school location (1 = Urban; 0 = Rural), whether the family has lived in the area for more than 3 years (1 = Yes; 0 = No), private tutoring (1 = Yes; 0 = No), age, and language spoken at home. We also

include variables indicating whether the household head can read and write (1 = Yes; 0 = No) and whether a student works outside the home (1 = Yes; 0 = No). In addition, we use various summative indexes: school-related resources at home (10 items: e.g., having textbooks, notebooks at home), home resources (5 items: desk, quiet place/room, Internet, helpful books, dictionary), and community resources (3 items: community has job opportunities and academic opportunities, willingness to live there).

Control variables were adjusted to align with country contexts. For example, languages spoken at home had two options in Colombia, three in India, and seven in Malawi. Questions on resources at school and home also varied based on country context. In India we controlled for medium of instruction in school and language spoken at home. In Malawi, as suggested by our Malawian research partners, we added questions on availability of resources in schools: permanent/temporary classrooms, girls' hostels, boys' hostels, changing rooms for girls, and access points for people with disabilities.

3.3. Analysis

We conducted ordinary least squares regression to estimate the relationship between each of our three outcomes—well-being, sense of belonging, and alienation—and the five school climate variables. In each regression, we included one independent variable of interest, along with the student background controls. We estimated the following five models for each outcome, country, and year:

$$Outcome = \beta_1 Safety + \alpha STUDENT + \varepsilon_1 \quad (1)$$

$$Outcome = \beta_2 Fairness + \alpha STUDENT + \varepsilon_2 \quad (2)$$

$$Outcome = \beta_3 RelationshipTeacher + \alpha STUDENT + \varepsilon_3 \quad (3)$$

$$Outcome = \beta_4 RelationshipLeader + \alpha STUDENT + \varepsilon_4 \quad (4)$$

$$Outcome = \beta_5 RelationshipPeers + \alpha STUDENT + \varepsilon_5 \quad (5)$$

The parameter of interest is β , which indicates the association between the main independent variable and each dependent variable. α is the estimated relationship between the student control variables and the outcome of interest, while ε represents random error. We ran a total of 15 OLS regressions (3 outcomes * 5 independent variables) for each country and round of data. Standard errors are clustered at the school

⁴ The online appendix can be found at the following link: <https://docs.google.com/spreadsheets/d/18YI9Hunlp4l8wiAJRLbzHj4iO63L8h-AKkZdJiNG65o/edit?usp=sharing>

Table 1
Descriptive Statistics.

	Colombia		India		Malawi	
	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2
Outcome Variables						
<i>Wellbeing</i>	7.71	7.91	7.50	7.60	6.21	5.59
<i>Sense of Belonging (PCA)</i>						
Do you wake up in the morning excited to go to school?	2.9	2.80	3.21	3.19	3.72	3.55
Do you feel positive that good things will happen to you at school?	3.22	3.13	3.33	3.29	3.64	3.58
I make friends easily at school.	3.16	2.92	3.04	3.00	3.48	3.4
I feel like I belong at school.	3.31	3.16	3.14	3.2	3.52	3.51
I feel safe at our school.	3.27	3.19	3.37	3.39	3.57	3.38
<i>Alienation</i>						
I feel like an outsider (or left out of things) at school.	1.68	1.66	1.99	1.73	2.1	1.94
I feel lonely at school.	1.66	1.62	2.09	1.93	1.8	1.76
Independent Variables						
<i>Safety (PCA)</i>						
Other students made fun of me.	2.69	2.51	2.44	2.48	2.63	2.6
I was threatened by other students.	2.96	2.89	2.80	2.88	2.74	2.79
Other students took away or destroyed things that belonged to me.	2.85	2.78	2.64	2.62	2.84	2.8
I got hit or pushed around by other students.	2.87	2.89	2.85	2.9	2.9	2.92
<i>Fairness (PCA)</i>						
Your school rules are fair.	3.14	2.87	3.05	3.11	3.77	3.65
Students are treated fairly by the teachers when they break school rules.	3.22	3.03	3.13	3.17	3.64	3.47
All students are treated the same by the teachers, regardless of economic status.	3.34	3.23	2.95	3.37	3.68	3.42
All students are treated the same by the teachers, regardless of sexual identity.	3.42	3.24	2.88	3.24	3.63	3.42
All students are treated the same by the teachers, regardless of place of origin.	3.48	3.33	2.99	3.32	3.65	3.42
All students are treated the same by the teachers, regardless of medium of instruction.			2.98	3.20		
All students are treated the same by the teachers, regardless of academic performance.					3.57	3.29
All students are treated same, regardless of	3.44	3.29				

Table 1 (continued)

	Colombia		India		Malawi	
	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2
whether they are a boy or girl.						
<i>Relationships with Teachers (PCA)</i>						
I get along well with my teachers.	2.8	2.80	2.76	2.85	2.54	2.5
My teachers are interested in my well-being.	2.56	2.51	2.68	2.86	2.42	2.42
My teachers listen to what I have to say.	2.6	2.65	2.66	2.80	2.52	2.51
If I need extra help, I will receive it from my teachers.	2.49	2.56	2.46	2.62	2.35	2.23
My teachers treat me fairly.	2.76	2.74	2.81	2.92	2.49	2.51
I can talk to my teachers about challenges in my life outside of school.	2.11	2.11	1.90	2.07	2.01	2.06
I can talk to my teachers about my future plans.	2.41	2.33	2.27	2.35	2.22	2.14
If I tell a teacher that I have been bullied, the teacher will do something.	2.55	2.51	2.32	2.33	2.35	2.42
If I am absent, my teacher will take notice of my absence.	2.65	2.67	2.36	2.68	2.02	2.15
Our teachers show an interest in every student's learning.	2.73	2.64	2.69	2.87	2.58	2.58
Our teachers give students an opportunity to express opinions.	2.71	2.72	2.59	2.80	2.72	2.68
Our teachers expect us to work hard.	2.76	2.78	2.79	2.95	2.85	2.85
Our teachers encourage students to do their best work.	2.73	2.73	2.70	2.90	2.73	2.85
Our teachers expect us to do our homework on time.	2.79	2.87	2.74	2.93	2.64	2.76
Our teachers are clear in what they expect from us in their class.	2.66	2.72	2.70	2.87	2.62	2.69
<i>Relationships with School Leaders (PCA)</i>						
I get along well with my school leader (s).	3.1	3.17	0.55	0.62	0.94	0.95
My school leader(s) are interested in my well-being.	2.9	2.98	0.90	0.94	0.89	0.87
My school leader(s) listen to what I have to say.	2.94	2.94	0.83	0.92	0.89	0.89
If I need extra help, I will receive it from my school leader (s).	2.96	2.93	0.79	0.80	0.79	0.76
My school leader(s) treat me fairly.	3.29	3.12	0.96	0.98	0.94	0.9
I can talk to my school leader(s) about challenges in	2.73	2.66	0.41	0.41	0.73	0.67

(continued on next page)

Table 1 (continued)

	Colombia		India		Malawi	
	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2
my life outside of school.						
I can talk to my school leader(s) about my future plans.	2.84	2.83	0.53	0.54	0.85	0.74
If I tell my school leader(s) that I have been bullied, they will do something	3.27	3.21	0.80	0.71	0.94	0.89
<i>Relationships with Peers (PCA)</i>						
Students cooperate with each other.	3.17	2.95	2.46	2.50	2.3	2.2
Students compete with each other.	2	2.03	2.01	1.81	1.62	1.61
... friendly to you.	3.33	3.17	2.44	2.53	2.02	2
... unfriendly to you.	2.67	2.74	2.22	2.53	2.32	2.34
... understand you.	3.04	2.84	2.12	2.13	1.83	1.83
... friends accept you as you are.	3.33	3.27	2.11	2.11	1.95	1.86
... friends are easy to talk to.	3.2	3.06	2.19	2.11	2.01	1.87
... friends respect your feelings.	3.3	3.08	2.13	2.07	1.82	1.91
<i>Controls</i>						
% Female	51.16	51.91	52.57	53.3	50	49.8
% Urban	48.37	48.63	48.5	49.8	50	49.8
Age	15.47	16.37	14.22	15.01	15.37	16.15
% Private tutoring	13.95	14.75	56.61	67.24	60.24	55.29
% Work outside home for/without pay (Yes)	12.09	18.03	6.9	2.7	5.51	10.98
Language spoken most frequently at home ^a	99.07	99.5	94.8	95.8	96.06	96.47
% Has some books at home	83.26	83.06	74.63	100	83.86	77.65
% Head of household can read and write in any language	94.42	92.9	76.47	78.39	86.22	85.1
Index: Home resources (5 items)	0.58	0.58	0.53	0.68	0.38	0.33
Index: School-related personal resources (10 items)	0.77	0.76	0.83	0.91	0.5	0.45
Index: Community resources (3 items)	2.29	2.25	0.61	0.63	0.33	0.36
Lived in this area for 3 years or more (Yes)	76.74	79.23	78.67	76.3	83.46	88.24
N ^b	215	183	272	287	254	255

Notes: The table presents mean unstandardized values for original items on scales as measured in the survey. There is some variation in how we measure items, some on a scale of 2, some 3, and some 4. Items for safety, relationships with teachers, and relationships with peers were reverse-coded so that higher values indicate higher sense of safety and more positive relationships.

^a For language spoken most frequently at home, we use Spanish in Colombia, Tamil in India, and Chichewa in Malawi.

^b Total sample size across countries and years is 1283. Country and year sample sizes represent values after observations with missing variables were removed. Original sample sizes reached or exceeded 250 in each country and year.

level, and we use listwise deletion for missing observations. All PCA-generated variables are standardized, so that related coefficients represent standard deviation units.

4. Results

4.1. Country context

To put our results into context, we note several important differences across our study countries. First, as an upper middle-income country, Colombia enjoys a higher average standard of living than India and Malawi, which are classified by the World Bank as low-middle and low-income economies respectively. In 2024, per capita gross national income (GNI) in Colombia was \$21,060, compared to \$11,000 in India and \$1790 in Malawi (World Bank, 2025a).⁵ Seventy-five percent of Malawians live on less than three dollars a day (World Bank, 2025e), compared to 7.7% of Colombians (World Bank, 2025b), and 5.3% of Indians (World Bank, 2025e). Similar poverty figures in India and Colombia—despite Colombia's much higher per capita GNI—reflect severe income inequality in Colombia, which has a Gini Index of 53.9, compared to 38.5 in Malawi and 25.5 in India (World Bank, 2025b, 2025d, 2025e). As a result of these differences, we would expect to see a higher level of home, school, and community resources among students in Colombia and India, followed by Malawi. Second, although public secondary enrollment is higher in Colombia relative to India and Malawi, enrollment in all three countries drops as grade levels increase, especially among students with fewer resources at home (UNESCO, 2026). We would therefore expect to see our measures of student resources increase over time, as students with fewer resources leave school from year to year. Third, in the second year of our data collection, students in all three countries faced high-stakes tests that could influence their future success in tertiary education and the labor market (Luschei et al., 2025). Consequently, we may expect to see changes in students' socio-emotional outcomes or feelings about school over the two years, although it is difficult to predict in which direction. Finally, young people in each country face a unique set of marginalizing forces. Whereas violence and displacement have directly impacted the welfare and schooling of millions of children and youth in Colombia (Soler, 2023), youth in India must contend with poverty, climate change, and caste-based discrimination (Bailwal and Paul, 2021). In Malawi, extreme poverty, climate change, and food insecurity have made daily survival ever more precarious for youth, while the HIV/AIDS epidemic has infected and orphaned hundreds of thousands of children and youth (Sharra and Silver, 2023; World Bank, 2025c). Although these contexts of marginalization may not be directly reflected in our data, they provide an important backdrop for the study.

4.2. Descriptive results

4.2.1. Dependent variables

Table 1 provides a portrait of youth in each country and survey round. We note key differences in the dependent variables across countries and over time. In terms of SWB, students in Colombia scored highest in both years of the survey, followed by India and then Malawi, possibly reflecting differences in available resources. In contrast, Malawi had consistently higher values of all variables making up sense of belonging relative to Colombia and India, which had similar values to each other. Of the variables making up sense of alienation, Malawian students had the highest values for feeling like an outsider, while Indian students experienced the highest levels of feeling lonely at school.

From Year 1 to Year 2, student well-being increased in Colombia and India, but decreased in Malawi. As students approached high-stakes testing in Year 2, values of most of the variables constituting sense of belonging fell in all three countries. At the same time, values for the two alienation variables fell in all three countries from Round 1 to Round 2. Although improvements in well-being and alienation in Colombia and India provide some evidence of a positive trend in the face of impending

⁵ 2024 international dollars, calculated using Purchasing Power Parity.

high-stakes exams, a decrease in sense of belonging suggests a different story. These results indicate that sense of belonging and alienation may not be complete mirror images of each other, at least for the youth in our survey.

4.2.2. School climate variables

School climate variables associated with perceived safety were similar across the three countries, with slightly lower values in India. Variables representing students' perceptions of fairness in school were highest in Malawi, followed by Colombia and India. Colombia and India had similar values of variables associated with relationships with teachers, while Malawi had slightly lower values. Values of most peer relationship variables were higher in Colombia, followed by India and then Malawi. Although school leader relationships are not strictly comparable due to the use of a different scale in Colombia, most of the school climate variables appear to indicate slightly more positive climate for Colombian students, possibly due to greater access to school resources, as well as a stronger school-level focus on social dynamics that we saw in our qualitative work (Chavarría et al., 2021). Across the two years, perceptions of safety declined in Colombia, increased in India, and remained stable in Malawi. Perceptions of fairness declined from Year 1 to Year 2 in Colombia and Malawi but increased in India. We do not see a clear pattern in student relationship variables from year to year in the three countries.

4.2.3. Control variables

Given Colombia's higher level of economic development, we would expect Colombian students to report greater levels of personal and school resources relative to India and Malawi. This advantage is clear in terms of the percentage of household heads who are literate and the index of community resources reported by Colombian students. However, Colombian students reported similar or lower levels of home and school resources relative to Indian students. Malawian students reported the lowest levels of home, school, and community resources. Further, Colombian students had lower rates of working outside the home and levels of private tutoring, relative to India and Malawi. Heavy reliance on private tuition reflects a general trend in India, where even families with modest means often provide their children with additional academic support to prepare for high-stakes exams (Dongre and Tewary, 2015). This reliance on private tuition illustrates the high private costs of schooling for marginalized families in India; in Malawi, students must also pay examination, boarding, and other fees to attend public secondary schools (Gruijters et al., 2024).⁶ Thus, students and families in India and Malawi face relatively higher school expenses.

Examining trends across survey years, we note that while Years 1 and 2 of the survey do not capture the same students, they capture data from students in the same schools over time. If students who persist in school are somewhat more privileged than their peers, we would expect to see improved home and community circumstances in Round 2. However, our data do not consistently present this picture. The percentage of students working outside the home increased by six percentage points in Colombia and nearly doubled in Malawi. The percentage of household heads who could read and write decreased slightly from Round 1 to Round 2 in Colombia while increasing in India and Malawi. The index of home resources remained the same in Colombia, increased in India, and decreased in Malawi; the index of school-related personal items decreased in Colombia and Malawi while increasing in India. The lack of a clear trend across years complicates our understanding of the resources available to secondary-aged student subpopulations in our study

contexts.

4.3. Research question 1: regression results

Table 2 presents regression results from all countries and years. Given the many separate OLS regressions that we estimate across countries and years, which may increase the risk of Type I errors

Table 2
Regression Results.

	(1)	(2)	(3)	(4)	(5)	(6)
	Wellbeing		Sense of Belonging		Alienation	
	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2
Panel 1. Colombia						
Safety	0.24**	0.45***	0.29***	0.21**	−0.08	−0.11***
	(0.10)	(0.10)	(0.09)	(0.09)	(0.06)	(0.03)
Fairness	0.10	0.10	0.34***	0.38***	−0.06*	−0.09**
	(0.08)	(0.08)	(0.05)	(0.06)	(0.03)	(0.03)
Relationships with Teachers	0.28***	0.09*	0.28***	0.26***	−0.03	−0.07*
	(0.07)	(0.05)	(0.08)	(0.08)	(0.03)	(0.04)
Relationships with Leaders	0.12*	0.05	0.24***	0.24***	−0.01	−0.05**
	(0.06)	(0.06)	(0.06)	(0.07)	(0.02)	(0.02)
Relationships with Peers	0.20**	0.22**	0.44***	0.29***	−0.12***	−0.11***
	(0.07)	(0.08)	(0.06)	(0.10)	(0.03)	(0.03)
N	215	183	215	183	215	183
Panel 2. India						
Safety	0.18*	0.16	0.23***	0.24***	−0.09***	−0.03
	(0.10)	−0.1	(0.04)	(0.08)	(0.03)	−0.02
Fairness	−0.09	0.05	0.27***	0.31***	−0.10***	−0.09***
	(0.07)	−0.08	(0.05)	−0.07	(0.03)	−0.02
Relationships with Teachers	0.07	0.19**	0.25***	0.01	−0.08***	0.01
	(0.07)	(0.05)	(0.04)	−0.05	(0.02)	−0.02
Relationships with Leaders	0.35***	0.09	0.11*	0.01	−0.03	0.02
	(0.08)	−0.05	(0.06)	−0.04	(0.03)	−0.02
Relationships with Peers	0.19	0.06	0.22***	0.17**	−0.06**	−0.05***
	(0.11)	−0.07	(0.07)	−0.07	(0.03)	−0.01
N	272	287	272	287	272	287
Panel 3. Malawi						
Safety	−0.04	0.09	0.01	0.13*	−0.05	−0.07**
	(0.11)	(0.11)	(0.07)	(0.07)	(0.04)	(0.03)
Fairness	0.20**	−0.04	0.43***	0.36***	−0.06**	−0.06***
	(0.09)	(0.06)	(0.05)	(0.05)	(0.03)	(0.02)
Relationships with Teachers	0.17***	0.10**	0.12*	0.11**	−0.06***	−0.05***
	(0.05)	(0.04)	(0.07)	(0.04)	(0.02)	(0.02)
Relationships with Leaders	0.25***	0.02	0.21***	0.17**	−0.03	−0.01
	(0.08)	(0.07)	(0.05)	(0.07)	(0.02)	(0.02)
Relationships with Peers	0.01	0.08**	0.07	0.17***	−0.05**	−0.09***
	(0.08)	(0.04)	(0.05)	(0.05)	(0.02)	(0.02)
N	215	255	254	255	254	255

Note: Standard errors clustered at the school level are in parentheses. We use the first component of principal component analysis for the outcome variable Sense of Belonging, as well as for the independent variables Safety, Fairness, Relationships with Teachers, Relationships with Leaders, and Relationships with Peers.

* $p < 0.1$

** $p < 0.05$

*** $p < 0.01$

⁶ Results from Malawi indicate a surprisingly high percentage of students reporting the use of private tutoring. This may have resulted from confusion with the survey question, which asked students if they had received tutoring support from part-time teachers or classes to prepare for the Junior Certificate of Education Exam.

(Schochet, 2008), we report both patterns in statistically significant results and broader results describing the direction of coefficients, independent of statistical significance.⁷ Although the regressions control for the student background characteristics described above, we omit these regression coefficients due to space constraints. Full results for all regressions are available in the online appendix.

4.3.1. Colombia

Relationships between SWB and school climate variables are presented in Columns 1 and 2. All significant relationships are positive. Safety is significantly and positively related to well-being in both years (0.24 and 0.45), as are teacher relationships (0.28 and 0.09). Student well-being is significantly related to relationships with school leaders in Year 1 (0.12), while peer relationships are significant in both years (0.20 and 0.22).

Columns 3 and 4 present results for students' reported sense of belonging in school. All relationships are positive and statistically significant, indicating that students who believe that school is a safe and fair place are more likely to feel that they belong in school. These patterns are consistent across years, with coefficients of 0.29 and 0.21 for safety and 0.34 and 0.38 for fairness. Teacher relationships are significantly related to sense of belonging in both years (0.28 and 0.26), as are relationships with school leaders (0.24 in each year) and peers (0.44 and 0.29).

Columns 5 and 6 indicate that all statistically significant relationships between alienation and the independent variables are negative, as expected. Alienation is negatively related to safety in Year 2 (−0.11) and fairness in both years (−0.06 and −0.09). Teacher relationships are negatively and significantly related to alienation in Year 2 (−0.07), as are relationships with school leaders (−0.05). Peer relationships are associated negatively and significantly with alienation in both years (−0.12 and −0.11). Overall, the school climate variables appear to be more consistent predictors of alienation in Year 2, when Colombian students are facing added pressures of high-stakes college-entrance exams.

Looking across all coefficients (regardless of significance), we find positive relationships between all school climate variables and well-being and belonging in both survey years; conversely, in both survey years, coefficients for all school climate variables are negatively related to alienation, as expected.

4.3.2. Heterogeneity analysis

To examine heterogeneity in key relationships, we estimated regressions separately across student gender and urban/rural location in both survey years (tables and full results are included in the online appendix). Out of 30 regression coefficients, we see more positive and significant relationships for girls (16) than for boys (12). These are concentrated in terms of the independent variables safety, fairness, relationships with teachers, and relationships with peers. For girls these variables all have positive and significant relationships with well-being and belonging in at least one year, and most are significantly and negatively related to alienation in both years. For male students, significant relationships are concentrated in terms of fairness and relationships with teachers, which are both positively related to well-being and belonging in at least one year. Relationships with school leaders are also positively and significantly related to sense of belonging for boys in both years.

Examining differences across urban and rural schools in Colombia, we find similar numbers of significant relationships (18) in each locale. Key predictors in both locations include safety, especially for students in

rural areas; fairness; relationships with teachers; and relationships with peers. In terms of the outcomes, well-being is consistently and positively associated with school climate variables in rural areas, but less so in urban areas. Students' sense of belonging is positively correlated with all types of predictors in both urban and rural areas, with a few exceptions. In urban schools, alienation is negatively and significantly related to all school climate variables in at least one year, whereas for rural students, alienation is significantly related only to safety, fairness, and relationships with peers, and only in Year 1.

Including non-significant results, we find universally positive relationships between the school climate variables and well-being and belonging for both girls and boys. We find consistently negative relationships between school climate variables and alienation, with the exception of the variables fairness and relationships with school leaders for boys in Year 1. Across urban and rural areas and in both survey years, we continue to find consistently positive relationships with well-being and belonging, and negative relationships with alienation.⁸

4.3.3. India

Columns 1 and 2 of Table 2 (Panel 2) present results for student-reported well-being in India. Compared to Colombia, far fewer associations are statistically significant. In Year 1, two variables are significantly and positively associated with sense of well-being—when students feel safe (0.18) and when they report a positive relationship with school leaders (0.35). In Year 2, only relationships with teachers (0.19) are positively related to well-being (not significant in Year 1). These differences may relate to the importance of teachers in preparing students for high-stakes exams in Grade 10, often at the cost of such relationships in Grade 9 (Thangaraj et al. (Under review). Peer relationships are not significantly related to student well-being in either year.

Students' sense of safety is significantly and positively related to sense of belonging in Year 1 (0.23) and Year 2 (0.24), as is sense of fairness (0.27 and 0.31). Teacher and school leader relationships are positively and significantly related to sense of belonging in Year 1 (0.25 and 0.11 respectively), but not in Year 2. Relationships with peers are positively related to sense of belonging in both years (0.22 and 0.17).

Columns 5 and 6 of Table 2 show that all significant relationships between alienation and the independent variables are negative, indicating that a more positive school climate is associated with lower levels of student alienation. Sense of school fairness is negatively and significantly related to alienation in both years (−0.10 and −0.09). Positive relationships with teachers are negatively and significantly related to alienation in Year 1 (−0.08), but not in Year 2. Positive relationships with peers are negatively related to alienation in both years (−0.06 and −0.05).⁹

Examining all results—both significant and non-significant—across three student outcomes, five school climate variables, and two survey years (30 regression coefficients), all relationships except three¹⁰ run in the expected direction: positive for well-being and sense of belonging and negative for alienation.

⁸ Three exceptions are: non-negative coefficients for alienation in urban areas in Year 1 (relationships with teachers and school leaders), and a negative relationship between fairness and well-being in rural areas in Year 2.

⁹ We also ran alternative regressions that included all five climate variables simultaneously. Relative to the regressions reported here, we found that while none of the school climate coefficients changed direction, several lost statistical significance, while one coefficient gained significance (the negative relationship between fairness and well-being in Year 1). These results are available in the online appendix.

¹⁰ Year 1: negative relationship between fairness and well-being. Year 2: positive relationship between relationships with school leaders and alienation; negative relationship between relationships with teachers and sense of belonging.

⁷ We also ran alternative regressions that included all five climate variables simultaneously. Results are available in the online appendix. Relative to the regressions reported here, we found that while none of the school climate coefficients changed direction, several lost statistical significance.

4.3.4. Heterogeneity analysis

In India, we find more significant relationships for girls (16) than for boys (12). Key school climate variables for both include safety, fairness, and relationships with peers. These variables are all significantly related to at least two of the three key outcomes for girls and boys in at least one year. As expected, significant relationships are positive for well-being and sense of belonging and negative for alienation. Important outcomes in terms of significant coefficients include belonging and alienation for girls and belonging for boys.

We find more significant relationships for urban schools (14) relative to rural schools (12). Key predictors in urban areas include sense of safety and fairness, whereas fairness and relationships with peers are consistently significant for students in rural areas. In urban areas, only safety in Year 1 is significantly and positively related to well-being; in contrast, several school climate variables are positively and significantly related to student sense of belonging in both survey years. In rural areas, the outcome with the most consistently significant and positive relationships is sense of belonging, in Year 1. Positive relationships with peers in rural areas are positively and significantly related to alienation in Year 1 but negatively and significant in Year 2.

Examination of non-significant results in India reveals greater diversity in the direction of relationships between school climate and student outcomes (online appendix, Tables 8 and 9), relative to the non-disaggregated results reported above and the heterogeneity results reported for Colombia. This finding in India—which occurs primarily in Year 2—may suggest important differences across gender and location that are masked by focusing on aggregated and significant results only. These differences could also be related to significant shifts in school climate, resources, and expectations between Grades 9 and 10 in India, as we discuss below.

4.3.5. Malawi

Columns 1 and 2 of Table 2 (Panel 3) present results for student well-being in Malawi. All statistically significant relationships are positive; three occur in the first year and two in the second. Fairness is significantly related to well-being in Year 1 (0.20), but not in Year 2. Relationships with teachers are significantly associated with well-being in both years (0.17 and 0.10). Relationships with school leaders are significantly associated with well-being in the first year (0.25), but not the second. Relationships with peers are positive and significant in the second year (0.08), but not the first.

In terms of sense of belonging, all significant relationships are positive. Fairness is significantly related to sense of belonging in both years (0.43 and 0.36), while safety is significantly related to sense of belonging in the second year (0.13). Relationships with school leaders are significantly related to sense of belonging in both years (0.21 and 0.17), as are relationships with teachers (0.12 and 0.11). Relationships with peers are significantly related to sense of belonging in the second year (0.17), but not the first.

Relationships between school climate variables and alienation are presented in Columns 5 and 6. All significant relationships are negative, as expected. Although safety is not significantly related to alienation in the first year, it is in the second (−0.07). Fairness is significantly related to alienation in both years (−0.06 in each year). A better relationship with teachers is associated with a 0.06 and 0.05 standard deviation decrease in alienation in Years 1 and 2, respectively. Relationships with peers are negatively related to alienation in both years (−0.05 and −0.09).¹¹

As in Colombia, almost all non-significant results (reported in

Table 2) are consistent with the statistically significant results, with the exception of negative relationships between safety and well-being in Year 1 and fairness and well-being in Year 2.

4.3.6. Heterogeneity analysis

As in Colombia and India, we ran regressions separately by gender and urban/rural location in Malawi. We find more significant relationships for male students (15) than for female students (9). Whereas only fairness has consistently significant relationships with the three key outcomes for girls, fairness, relationships with teachers, relationships with school leaders, and relationships with peers are all consistently important for boys. In terms of outcomes, for boys we find consistently significant relationships with well-being, sense of belonging, and alienation. For girls there are few consistent results across the outcomes. For both girls and boys, all significant relationships with well-being and belonging are positive, while significant relationships with alienation are negative.

We find many more significant relationships in rural areas (16), compared to urban areas (7). In urban schools, only fairness, relationships with teachers, and relationships with school leaders have more than one significant relationship with the three key outcomes over the two survey years. In contrast, in rural areas, fairness, relationships with teachers, relationships with school leaders, and relationships with peers have consistently significant relationships with the key outcomes.

Non-significant results generally confirm the same patterns we see in the statistically significant results, but we find a greater diversity in directions of relationships when we disaggregate results by gender and location. Of 60 total coefficients of interest, in Year 1, we find six non-significant coefficients that are not consistent with general patterns, while we find seven such coefficients in Year 2.¹²

4.4. Research question 2: cross-country comparison

In line with our interest in understanding whether there were important similarities across the six extremely diverse settings where we collected survey data, we examine overall patterns in the direction and significance of our regression results, rather than formally testing differences in associations across countries. We found similar patterns in the three countries across the three dependent variables and two survey years. In all three countries, relationships with teachers and school leaders are positively and significantly associated with students' well-being in at least one year. In Colombia and Malawi, teacher relationships are positive and significant in both years, while relationships with peers are positively and significantly related to student well-being in at least one year. More broadly, all coefficients for relationships with teachers, school leaders, and peers are positive with respect to student well-being, regardless of statistical significance.

Another striking feature of our results is the stable relationship between fairness and students' sense of belonging. In all three countries and across two survey rounds—as well as across significant and non-significant results—when students perceive that schools treat all students fairly, they report a stronger sense of belonging. Better relationships with teachers, school leaders, and peers are also positively related with sense of belonging. However, the significance of these relationships changes from year to year.

In all three countries and over the two years, students' sense of alienation decreases when students have better relationships with peers;

¹¹ We also ran alternative regressions that included all five climate variables simultaneously. Relative to the regressions reported here, we found that while none of the school climate coefficients changed direction, several lost statistical significance (and one negative coefficient gained significance). These results are available in the online appendix.

¹² Year 1, female: safety and well-being, relationships with peers and well-being; Year 1, male: safety and well-being; Year 1, urban: fairness and alienation; Year 1, rural: safety and well-being and safety and belonging. Year 2, female: relationships with leaders and alienation, fairness and well-being, relationships with leaders and well-being; Year 2, male: relationships with peers and well-being, relationships with leaders and well-being; Year 2, urban: fairness and well-being, relationships with leaders and well-being.

good relationships with teachers are also negatively related to student alienation in at least one year. (One exception to this general pattern are non-significant positive coefficients for relationships with teachers and school leaders in India in Year 2.) These results underscore the importance of school climate—and particularly, teacher-student and student-student relationships—for a positive experience in school.

Despite similarities across countries in the main regression results, we find fewer significant relationships in India (17) compared to Colombia (24) and Malawi (20). Colombia also has a consistent advantage in terms of outcomes and resources, another data point supporting wide-ranging evidence of the importance of socioeconomic context for youth's schooling opportunities. The number of significant relationships in India also falls from Year 1 to Year 2 for all three dependent variables, in contrast to Colombia and Malawi.

Our heterogeneity analysis identifies some cross-country differences in regression results across gender and urban/rural location. We find more significant relationships for girls in Colombia and India, but for boys in Malawi. Across rural and urban schools, Colombia has the most consistently significant relationships, with no difference across settings. In India, we find more significant relationships in urban schools, while in Malawi, rural schools show many more significant relationships, which are concentrated among the variables related to fairness and relationships with school leaders. When examining all results, regardless of significance, we find a greater diversity in the direction of coefficients in India and Malawi, including some that run counter to expected patterns. Nonetheless, the large majority of non-significant results reinforce the major conclusions we draw from the data. Together, these results demonstrate that although school climate is consistently important for students' socio-emotional outcomes, there are important differences across and within countries in terms of which climate measures matter most, and which students appear to benefit most from improved school climate.

5. Discussion

Our regression results indicate clear and consistent relationships between socioemotional outcomes and school climate. Although these patterns are somewhat clearer when focusing on statistically significant regression coefficients, they generally hold regardless of statistical significance. Students who perceive schools as safe, fair spaces and who have appreciable relationships with adults and peers in school report a greater sense of well-being and belonging and a lower sense of alienation. These results largely align with the results of our initial qualitative observations—which motivated and informed our survey development—and extend them to a broader set of similar school populations.

One exception to these consistent relationships is India, where we find fewer significant relationships and a decline from Year 1 to Year 2. This may suggest a less salient and decreasing importance of school climate for socio-emotional outcomes in India. Our ethnographic research in Tamil Nadu found that our focal school strategically directed teacher resources from Grade 9–10 to support students' preparation for high-stakes Grade 10 board exams (Thangaraj et al. (Under review)). The relative neglect of students by teachers in Grade 9 may be related to a weaker relationship between school climate variables and student outcomes. Why would these relationships weaken over time? Perhaps teachers' intense focus on test preparation during Grade 10 shifts attention and relational patterns away from relationships and school climate and toward more traditional achievement-based outcomes. We must also consider the high prevalence of student participation in private tutoring in India, which may weaken the importance of in-school relationships as students turn more to relationships with tutors outside of school as they approach their board exams.

Differences also emerge from our heterogeneity analysis across student gender and urban/rural location. These results indicate that sense of safety, fairness, and school-based relationships are clearly important

for students' socio-emotional outcomes in Colombia, India, and Malawi, but they are differently important across student gender and school location. Nonetheless, if we take a broad view of our regression results, we are struck by the overall similarity in patterns across countries and over time. As we describe above, we selected these three countries in part due to the diversity of contexts they represent. Within each country, we also divided our samples evenly across urban and rural schools. The consistently important role of school-based relationships—regardless of context—underscores the school's role as a space in which relationships—particularly among adults and students—act as the primary mechanism linking school climate to students' well-being, sense of belonging, and alienation.

5.1. Limitations

Although we find robust cross-country evidence of the importance of school climate for students' socio-emotional outcomes, we recognize several limitations of our methodological approach. To begin, although we characterize our study as a cross-country analysis, we do not formally test differences in statistical associations across countries. Our limited comparative analysis occurs primarily in the discussion section, when we introduce additional context from the three countries. A true statistical comparison would require the inclusion of many more countries, which would limit the contextual information we could provide for each. Within countries, we included clusters of schools in our sample due to their similarity with the urban and rural focal schools we studied in our qualitative work. These schools are not representative of any administrative unit such as a city, district, or state. Further, we did not track the same students from year to year. As a result, our findings are not generalizable beyond our sample of 16 schools in each country and survey year.

While the COVID–19 pandemic was not a focus of our research, the resulting disruptions and lockdowns affected much of our data collection and likely the responses of participants to our survey. We cannot disentangle students' school trajectories from the particularities of their return after a significant disruption. Changes from Year 1–2 could, for example, reflect a “return to the norm” of schooling practices. Alternatively, as our qualitative vignette from India suggests, the return from lockdown may have brought an entirely new reality to the classroom.

Finally, although we include student background variables in our regression analyses to control for potentially confounding factors, we cannot claim that our results represent causal relationships. Further, due to the challenges of collecting data from nearly 50 schools over two years in three countries, as well as differences in local regulations and preferences, we could not collect all the student background information that might be considered relevant. Our regression results may be biased if omitted student-level variables are correlated with both school climate variables and the outcomes we examine. Nonetheless, it is noteworthy to find such consistent patterns across three diverse contexts. The consistency of our results across countries and years suggests that our findings represent important relationships between major constructs that should be investigated further.

While these limitations are real, the multi-year, multi-country nature of our study design helps mitigate some of them. Even though our findings may not be generalizable in a statistical sense, it is noteworthy that they appear with relative consistency across years, countries, and locations.

5.2. Implications for policy, practice and research

According to the 2022 PISA, over 70% of 15-year-old students agreed or strongly agreed with the statement “I feel like I belong at school” (OECD, 2023, p. 52). However, socio-economically disadvantaged students reported a significantly lower sense of belonging in school than their more advantaged peers (OECD, 2023, Table II.B1.1.2). This implies that schools may not be meeting the social or emotional needs of their

most marginalized students. Our results underscore the imperative for schools to consider these needs and recognize that schools are not just academic places, but also relational spaces. Efforts to ensure a positive school climate may need to supersede, or at least precede, efforts to raise academic outcomes. In Colombia, where marginalization often drives and is driven by violence, our research indicates that school safety is strongly and positively related to students' well-being and ability to concentrate on academic performance. In Malawi, extremely high levels of poverty drove food and housing insecurity among rural students, which often resulted in pregnancies and dropout. In rural Malawi, we found that female students who were boarding at school relied on significant family and teacher support, which was essential for their ability to stay in school. A key insight from our qualitative work in India was the great extent to which students in socially and educationally marginalized contexts reported a sense of satisfaction with their schooling, regardless of their achievement on standardized tests (Thangaraj et al. (Under review). In other words, school matters to young people for reasons that go beyond traditional academic approaches and metrics.

Although peer relationships are clearly important, our qualitative and quantitative results point consistently toward the role of adults in ensuring a positive school climate. Relationships with teachers and school leaders are consistently related to important socio-emotional outcomes. School leaders and teachers can play a crucial role in building a safe, fair, and nurturing environment; as demonstrated in the opening vignettes, the jobs of adults in schools extend beyond academic learning to recognizing the social, economic, and emotional challenges faced by students and ensuring the proper conditions for student belonging and connection. As the school leader portrayed in our Colombian vignette suggests, adults can also play an important role in building *convivencia*—or improved relationships among peers—as a necessary step toward learning.

What are the implications of our results for policy and practice? Our work speaks directly to calls for “relevance” in the provision of secondary schooling in LMICs (e.g., UNESCO, 2015, UNESCO, 2026). Such calls often equate relevant secondary education with effective preparation for the formal labor market (Cummings and Johnson, 2015; World Bank, 2016), while failing to address the realities of stagnant job markets (Agbor, Taiwo and Smith, 2016) and the structural, spatial, and relational inequities that often limit marginalized youth's access to formal labor market opportunities (e.g., Abrego and Gonzales, 2010; Angel-Urdinola and Semlali, 2010). Although we do not argue with the notion that schools must provide students with skills that will serve them in their future careers, our research points to the need for a more youth-centered and relationship-based conception of relevance that involves both future aspirations and current needs—including youth's socio-emotional and relational needs. Qualitative findings, such as those reflected in our vignettes and in other studies in these regions (e.g., Bajaj, 2009), indicate the central role that caring adult school staff can play in marginalized students' current wellbeing, capacity to achieve academically, and future opportunities. Similarly, it is difficult to imagine how schooling experiences that alienate students can succeed in preparing youth for future careers. We therefore agree with the calls of scholars such as DeJaeghere et al., (2016), that educational researchers and policymakers alike need to reconceptualize school culture and social relations as essential to understanding relevance and impact of schooling on youth lives, and particularly marginalized youth's educational goals, experiences, and outcomes.

To address the socio-emotional and relational needs of secondary students, policy makers must focus both outside and inside of schools. Outside of schools, policy makers must pay more attention to the importance of school climate and relationships and recognize the invisible and uncompensated labor of adults who work to ensure safe and enjoyable places of learning. Education officials should consider this labor as they recruit, compensate, and evaluate school professionals. For example, the interpersonal skills and experiences of potential teachers

should be evaluated and recognized alongside their academic and professional qualifications. Within schools, leaders should provide time and space for teachers to build and sustain relationships with students, whether through regular academic activities or efforts to build community within and outside of the classroom (Bajaj, 2009). Given the consistently significant relationships we found between socio-emotional outcomes and students' sense of safety and fairness, school leaders and teachers should work to understand and respond with care to the conditions in which each of their students are living (Cohen, 2023), should pay attention to key metrics like the number of physical altercations in school (as in our Colombian vignette) or students living in vulnerable conditions (as in rural Malawi and urban Colombia), and should actively work to reduce bullying, theft, intimidation, and unsafe living conditions. School leaders and teachers also must work to ensure that school rules are clear and enforced fairly across different student groups.

Our study has important implications for current and future research related to the secondary education experiences of students in LMICs. This study has been feasible almost entirely due to the mixed-methods aspect of our overarching work. Although it is visible primarily through the vignettes we share in the introduction, the ethnographic work we conducted prior to applying our quantitative survey played a key role in developing the survey and formulating our research questions. It is also essential for our analysis of what drives differences within and across countries, which we do not fully discuss here due to space limitations. We encourage other scholars in the field of comparative and international education to engage in mixed-methods, reflexive research to uncover lessons for improved policy and practice that may not be visible with qualitative or quantitative approaches alone (DeJaeghere, 2024).

We conclude by responding to the critique of Larsen et al. (2020) that school climate research in LMICs that does not rely on data from ILSAs tends to be “less generalizable, often geographically limited to a single city or region within a country, and of lower quality” (p. 17). We believe that our study, for which we carefully collected comparable and rich data across three diverse country contexts, six diverse geographies, and two survey years, occupies a niche between large cross-national studies and smaller, single-country or single-site studies. Future research focused on different sets of countries and levels of schooling (such as pre-primary, primary, or tertiary) may confirm the importance and further delineate key components of school climate across contexts; alternatively, new research may identify contexts in which the importance of school climate is less or more salient for the socio-emotional outcomes of children and youth in marginalized settings.

CRedit authorship contribution statement

Thomas M. Chimwaza: Investigation. **Yenny Chavarría:** Investigation. **Arpith Thomas Isaac:** Investigation. **Tatiana Chirkina:** Writing – original draft, Methodology, Formal analysis, Data curation. **Nancy Kendall:** Writing – review & editing, Investigation, Funding acquisition. **Aanchal Gidra:** Writing – original draft, Methodology, Formal analysis, Data curation. **Su Yon Choi:** Writing – original draft, Methodology, Formal analysis, Data curation. **Ida Tamara Muwa:** Investigation. **Stella Makhuva:** Investigation. **Amita Chudgar:** Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Funding acquisition, Conceptualization. **Miriam S. Thangaraj:** Writing – review & editing, Investigation. **Thomas F. Luschei:** Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Funding acquisition, Conceptualization.

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