

Relationship between students' economic, cultural, and social status, school climate and student achievement in Indonesia

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Abstract

PISA 2018 data shows that, in Indonesia, the relationship between students' economic, cultural, and social status and their scores on reading achievement is weak. However, there is great variation between schools in average reading achievement with over 40% of the explainable variation in reading achievement being between-schools. In addition, in Indonesia, there is low social diversity across schools (students within schools are likely to be of similar economic, cultural, and social background). These conditions raise the question of whether school factors play a role – specifically whether school climate has a compensating, mediating or moderating effect on the relationship between students' and schools' economic, cultural, and social status and achievement. Using regression analysis, it was found that, in Indonesian schools, the composition of student body in terms of economic, cultural, and social status plays a significant role in explaining differences in reading achievement between schools. School climate was found to compensate and mediate the relationship between school economic, cultural, and social status and school reading achievement, particularly those dimensions related to classroom climate, student respect for diversity, school discrimination climate, student sense of belonging and teacher support and directed instruction practices. Only student sense of belonging was found to play moderating role in the relationship between school economic, cultural, and social status and school reading achievement, a finding that requires further investigation.

Introduction

The relationship between students' economic, cultural, and social status and learning outcomes is a common and well-documented subject in educational research (see for example, Berkowitz et al., 2017; Broer et al., 2019; Hattie, 2009; O'Connell, 2019). In Indonesia, this relationship is weak and students' economic, cultural, and social status only explains a small part of the variation in reading achievement between students (OECD, 2019b). Based on this finding, Indonesia is classified as an equitable education system. PISA results also show that Indonesian schools significantly differ in their average reading achievement. In fact, Indonesia is among the countries where over 40% of the explainable variance in student achievement is between schools (OECD, n.d.).

The additional fact that Indonesia is among the countries that exhibit the lowest levels of social diversity across schools (OECD, 2019c) sparks the interest for investigating whether school factors, such as school climate, have a compensating, mediating or moderating effect on the relationship between students' and schools' economic, cultural, and social status and achievement. That is, it may be that school climate has an additive positive contribution to student achievement, compensating for negative school's economic, cultural, and social status. In contrast, it may be more the case that school's economic, cultural, and social status determines school climate (for example, in schools serving students from high economic, cultural, and social status bullying rarely occurs), thus school climate mediates the relationship between economic, cultural, and social status and student achievement. Finally, school climate may moderate the relationship between economic, cultural, and social status and student achievement, such that the strength of the relationship between economic, cultural, and social status and student achievement varies as school climate varies (Berkowitz et al., 2017).

Understanding the contribution of economic, cultural, and social status and school climate in student achievement are central topics of interest in the newly established Indonesian Minimum Competency Assessment (Pusat Asesmen Pendidikan, 2022). Therefore, this study focuses on understanding the role of students' perception of school climate in the relationship between economic, cultural, and social status and student achievement in Indonesia. This can be valuable evidence to consider in the design of policy actions aimed at improving equity of educational outcomes between schools in Indonesia.

School Climate

School climate has been a construct of interest since the early 1960s (Wang & Degol, 2016). School climate research has arisen from two different research domains: that of organisational psychology (focussing on teachers; for example, Halpin & Croft, 1963) and school and classroom effectiveness research (focussing on students; see (Reynolds et al., 2014). The interest in school climate (especially that in the school effectiveness domain) exists due to a belief that the climate of a school has influence, directly or indirectly, on the outcomes (both achievement and affective-behavioural) of students.

Many studies have found that elements of school climate are related to student achievement, starting with the seminal work of Brookover and colleagues (Brookover et al., 1978) who found that student and staff perceptions of social norms and expectations in the school were related to student achievement. Other elements of school climate that have been found to be related to student achievement are academic optimism (Hoy et al., 2006); school safety and experiences of bullying (Gronna & Chin-Chance, 1999;

Juvonen et al., 2011); teacher support (Lee, 2012; Wang & Holcombe, 2010); and a sense of school belonging or identification (Wang & Holcombe, 2010), for example.

However, to date, there is no standard definition of school climate, with many different conceptualisations and ways in which it is defined and operationalised. Reviews of school climate research have concluded that school climate is multi-dimensional, covering domains such as perceptions of safety and discipline; academic expectations; social relationships; school facilities; and school connectedness (Berkowitz et al., 2017; Cohen et al., 2009; Freiberg, 1999; Wang & Degol, 2016; Zullig et al., 2010). In addition, school climate research should be based on multiple informants - students, teachers or other members of the school community - to provide the perceptions of school climate (Wang & Degol, 2016). However, school climate research continues to vary from study to study in both the way school climate is operationalised and who the informants are. Therefore, it is important that the definition and chosen informants are clear for each study of school climate.

For the current study, the definition of school climate that has been used is that used in PISA 2018. In PISA 2018, school climate is conceptualised as a multi-dimensional construct representing different aspects of the school experience (OECD, 2019c, pp. 37–38) grouped into three broad spheres:

1. *Student Disruptive Behaviour*, encompassing physical and emotional security of school members, disciplinary climate, and frequency of student disruptive behaviour.
2. *Teaching and Learning*, encompassing classroom practices and teacher behaviours that shape the experience of learning and promote socio-emotional development of children.
3. *School Community*, encompassing the nature of the relationships that students, teachers, the school principal, parents, and the local community establish within the school setting.

Method

This study investigated the role of students' perceptions of school climate in the relationship between economic, cultural, and social status and student reading achievement in Indonesia using PISA 2018 data. PISA 2018 was administered in 79 countries to country-representative samples of 15-year-old students enrolled in school, regardless of the grade they were studying. The Indonesian sample comprised 12,008 students distributed across 397 schools.

PISA is a triennial survey that assesses the extent to which students near the end of their compulsory education have acquired knowledge and skills deemed essential for full participation in social and economic life (OECD, 2019a). PISA assesses students' reading, mathematics and science literacy and administers contextual questionnaires to students and school principals to gather information about the environment in which students live and learn.

Indicators used in the study

Reading achievement

The current study used students' scores on reading literacy as the outcome variable. Reading literacy is defined "students' capacity to understand, use, evaluate, reflect on and engage with texts in order to achieve one's goals, develop one's knowledge and potential, and participate in society." (OECD, 2019a, p. 27). For each student, PISA database provides 10 plausible values of reading achievement which are combined for analyses following specifications provided by the OECD (2009). School average reading achievement was calculated from students' scores, also following OECD (2009) specifications.

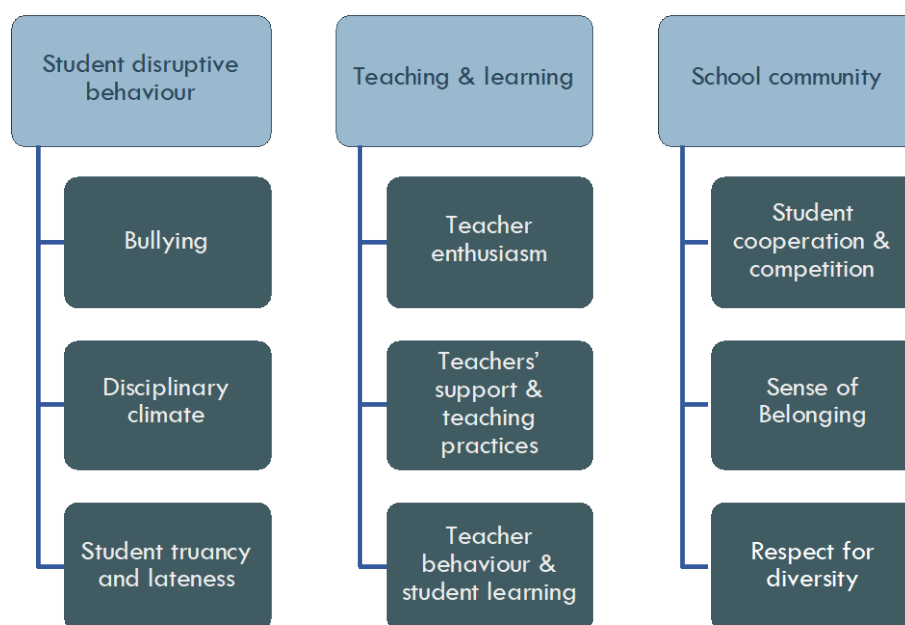
Economic, cultural, and social status

Students' economic, cultural and social status is defined in PISA as a "measure of students' access to family resources (financial capital, social capital, cultural capital and human capital) and the social position of the student's family/household" (OECD, 2019b, p. 52). Operationally, the PISA index of economic, social and cultural status (ESCS) is derived from information relating to students' family: parents' education and occupation, and household possessions. The ESCS score estimated by the OECD for each student, as provided in the PISA database, was used in the current study. School average ESCS (Schl_ESCS) was computed using student-level data.

Students' perception of school climate

The current study used PISA's definition of school climate – a multidimensional construct representing different aspects of the school experience. PISA identifies four spheres on which school climate can be operationalised: safety, teaching and learning, school community, and institutional environment (OECD, 2019c, pp. 37–38). The first three were used in this study and operationalised using indicators in Figure 1. Definition and specific items are detailed in the Appendix (Table 1).

Figure 1. Operationalisation of students' perception of school climate



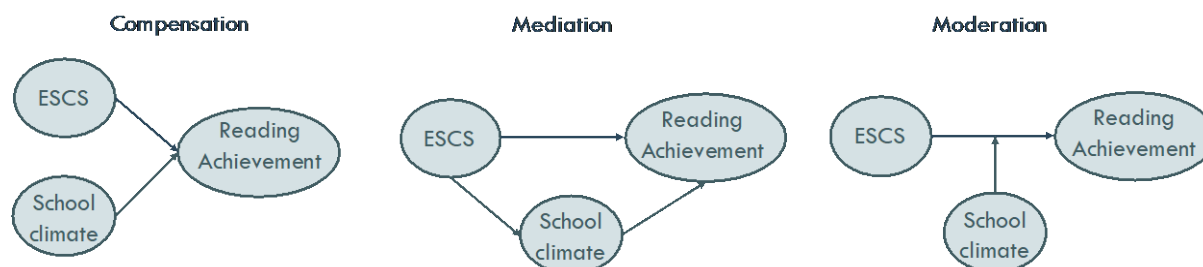
Analysis

Before analysing the role of school climate in the relationship between economic, cultural, and social status and student achievement, the theoretical model of school climate proposed by PISA was tested for Indonesia using confirmatory factor analysis. An alternative model was also tested to explore whether a different factor structure could better account for the relationship between the analysed school climate indicators in Indonesia.

Three models were tested to analyse the role of school climate in the relationship between economic, cultural, and social status and student achievement: a compensation, a mediation, and a moderation model (see Figure 2). Models were specified at the student and school levels using regression analyses that recognise the nested structure of educational data (Raudenbush & Bryk, 2002) – using replicate weights for computing standard errors (OECD, 2009). Results were compared between models.

The compensation model was used to explore whether a positive school climate contributes value to reading achievement on top of that contributed by ESCS. The mediation model investigated whether ESCS determines the level of school climate, which then influences achievement. The moderation model explored whether the relationship between ESCS and reading achievement is different for different levels of school climate.

Figure 2. Models used in analysis

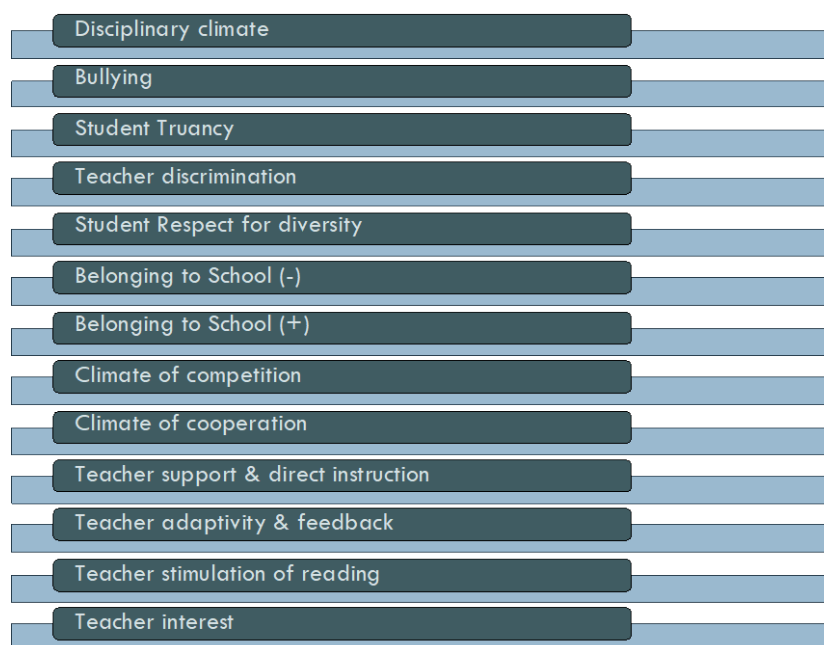


Results

The model of school climate for Indonesia

The three-spheres model of school climate theorised by PISA explained 31% of the variance in the school climate latent variable for Indonesia data. An exploratory factor analysis model was specified to investigate how indicators of school climate relate in Indonesia. The resulting model, which explained 65% of variance in the school climate latent variable, suggested 13 dimensions (see Figure 3).

Figure 3. School climate model for Indonesia



** *Belonging to school (-)* refers to negative worded items and *Belonging to school (+)* refers to positive worded items. See detail of items in the Appendix

It was found that when indicators of school climate are combined in the three theoretical spheres/dimensions suggested by PISA, the effect of individual indicators on reading achievement is masked. For instance, the sphere of *Student disruptive behaviour* – comprised by disciplinary climate, bullying and student truancy in the PISA theoretical model (see Figure 1), had a non-significant correlation to reading achievement. However, in the 13-dimension model, *Disciplinary climate*, *Bullying* and *Student Truancy* showed significant and varying correlations to achievement (.23, -.04 and -.04, respectively).

In the PISA model, the effect of individual indicators within a dimension are cancelled. The 13-dimension model provides more detail about the effect of specific school climate dimensions on school achievement, which is of more interest from a policy perspective. Therefore, the 13-dimension model was retained for analyses.

The initial model

School averages of ESCS and school climate dimensions were computed and three models at the student level were specified as in equations 1 to 3.

$Reading\ achievement = Intercept + Std.\ ESCS$	equation 1
$Reading\ achievement = Intercept + Std.\ ESCS + Schl.\ ESCS$	equation 2
$Reading\ achievement = Intercept + Std.\ ESCS + Schl.\ ESCS + Schl.\ climate$	equation 3

Results of fitting each of these models are displayed in Table 1. Model 1 (corresponding to equation 1) shows that students' ESCS plays a minor role in explaining differences in students' reading achievement – only 8% of the variation in reading achievement is explained by this variable. Results indicate that students in schools with higher average ESCS achieve higher reading scores and that the effect of school average ESCS cancels the effect of student ESCS on reading achievement (Model 2). The inclusion of school ESCS accounts for an additional 10% of the variation in student reading achievement.

Table 1. Initial student-level models

STUDENT LEVEL MODELS			
	Model 1	Model 2	Model 3
(Intercept)	401.08 *** (4.72)	442.10 *** (6.16)	373.13 *** (9.41)
ESCS	19.14 *** (2.20)	1.62 (1.06)	1.62 (1.06)
Schl_ESCS		43.70 *** (3.85)	15.16 *** (3.07)
schl_disclima			11.23 * (5.63)
schl_bullying			-2.19 (12.07)
schl_truancy			-11.63 (8.88)
schl_Tdiscrim			-38.07 *** (5.69)
schl_Srespect			35.58 *** (6.08)
schl_Sbelneg			37.30 *** (8.86)
schl_Sbelpos			-44.34 *** (11.78)
schl_Scompete			6.32 (8.03)
schl_Scooper			-7.39 (7.41)
schl_TSupDirin:			-22.55 ** (7.95)
schl_TAdapFeed			-8.29 (10.33)
schl_TstimRead			3.06 (10.78)
schl_Tinterest			-11.70 (7.32)
R2	0.08	0.18	0.39
R2.adj	0.08	0.18	0.39
Num. obs.	12008	12008	12008
Deviance			
Dispersion			

*** p < 0.001; ** p < 0.01; * p < 0.05; . p < 0.1

All variables with the “schl_” suffix correspond to school averages of students related variables. See Appendix for abbreviations and the items corresponding to each indicator of school climate.

The inclusion of school indicators related to students’ perception of school climate accounts for an additional 21% of the variation in student reading achievement (Model 3). School-level indicators of students’ perception of disciplinary climate in language lessons, students’ respect for diversity, and students’ sense of belonging expressed through negatively worded items show a positive and statistically significant relationship to student reading achievement. School-level indicators of students’ perception of teacher discrimination, students’ sense of belonging expressed through positively worded items, and students’ perception of teacher support and directed instruction show a negative and statistically significant relationship to student reading achievement.

Given that Model 2 shows that school average ESCS cancels the effect of student ESCS on reading achievement and, after confirming that the pattern of significant indicators and effect size shown by Model 3 was similar for school level analysis, compensation, mediation and moderation analysis were performed using all variables aggregated at the school level (see Model 5 in Table 2).

Compensation analysis

Results indicate that a positive school climate, as manifested by high levels of disciplinary climate in language lessons, students’ respect for diversity, and sense of belonging expressed directed instruction items, and low levels of teacher discrimination practices, sense of belonging expressed through positively worded items, and teacher support and directed-instruction, has a compensating positive contribution to school

average reading scores, beyond the contribution of school ESCS. This finding is indicated by comparing Models 4 and 5 in Table 2.

The compensation effect is illustrated by the fact that school average ESCS explains 39% of the variation in school average reading achievement (Model 4) and the inclusion of school climate indicators accounts for an additional 47% of the variation in school achievement.

Mediation analysis

The mediating role of school climate in the relationship between school average ESCS and school average reading achievement is also investigated by comparing Models 4 and 5 in Table 2. Results indicate that school climate has a partial mediating effect on school average reading achievement. This finding is observed in that the inclusion of school climate reduces the effect of school average ESCS on school average reading achievement. However, given that the effect of school average ESCS is still significant in Model 5, a partial mediation effect is observed.

Table 2. School-level models

STUDENT LEVEL MODELS			
	Model 1	Model 2	Model 3
** (Intercept)	371.08 *** (2.53)	401.08 *** (4.72)	442.10 *** (6.16)
ESCS		19.14 *** (2.20)	1.62 (1.06)
Schl_ESCS			43.70 *** (3.85)
schl_disclima			
schl_bullying			
schl_truancy			
schl_Tdiscrim			
schl_Srespect			
schl_Sbelneg			
schl_Sbelpos			
schl_Scompete			
schl_Scooper			
schl_TSupDirins			
schl_TAdapFeed			
schl_TstimRead			
schl_Tinterest			

(7.32)		
0.18	0.39	0.39
*** p < 0.001; ** p < 0.01; * p < 0.05; . p < 0.1		
2571.07		

Moderation model

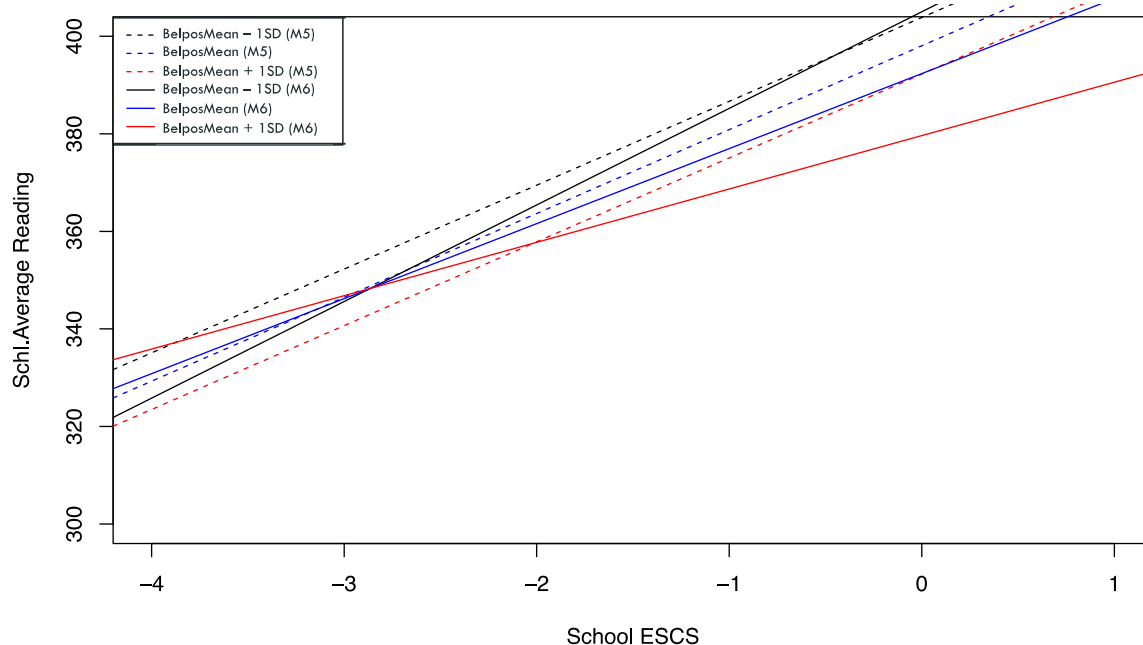
Investigating whether school climate moderates the role of school average ESCS on school average reading achievement entails introducing interaction effects between each indicator of school climate and school average ESCS (Model 6 in Table 2). Statistically significant interactions will be an indication of moderation effects.

Results indicate that the only significant interaction between school average ESCS and school climate indicators is verified in relation to students' sense of belonging expressed through positively worded items.

Figure 4 displays the relationship between school average ESCS and school average reading achievement for three different levels of students' sense of belonging expressed through positively worded items: at its mean (blue line), one standard deviation below

its mean value (black line) and one standard deviation above its mean value (red line). All other school climate indicators are fixed at their average value. In the figure, dotted lines represent the direct effect of students' sense of belonging expressed through positively worded items in Model 5; continuous lines represent the moderation effect (Model 6). The figure shows that in schools with more school belonging expressed through positively worded items, the relationship between school ESCS and school average reading achievement becomes negative from positive.

Figure 4. Moderation effect of students' sense of belonging expressed through positively worded items in the relationship between school average ESCS and school average reading achievement



Discussion and Conclusion

Associations between economic, cultural, and social status indicators have been extensively explored in different disciplines such as sociology, psychology, and health for a variety of outcomes, and throughout various stages of life and contexts. The relationship between economic, cultural and social status indicators and learning outcomes is also a common and well-documented subject in educational research (see, for example, (Broer et al., 2019; Conger et al., 2010; Hattie, 2009; O'Connell, 2019; Yang-Hansen, 2008).

Although understanding the relationship between economic, cultural, and social status and student achievement is crucial for monitoring equity in education, the former is a factor that cannot be modified. Therefore, understanding the role that other factors that can be modifiable by policy actions play in this relationship is key for acting upon inequity. School climate is one of those modifiable factors.

In Indonesia, students' economic, cultural, and social status plays only a minor role in explaining differences in achievement between students. However, Indonesian schools show low diversity in terms of economic, cultural, and social status, which means students tend to attend schools where their schoolmates tend to have similar economic, cultural, and social status. In this context, schools' average economic, cultural, and social status does play a significant role in explaining differences in achievement

between schools - that is, students in schools with higher average economic, cultural, and social status achieve higher scores in PISA.

In this study it has been shown that school climate compensates and partially mediates the relationship between economic, cultural, and social status and student reading achievement. Compensation is verified in that a positive school climate contribute value to school achievement on top of that contributed by school average economic, cultural, and social status.

Partial mediation is verified in that the effect of school climate indicators on school achievement is statistically significant. Considering the contribution of these school climate indicators reduces the effect of school average economic, cultural, and social status on school achievement but it does not eliminate its effect. Therefore, the importance of unpacking what positive school climate is and how it can be modified.

In Indonesia, a positive school climate, according to students' perceptions, is manifested by several indicators. In the first place, a positive school climate is manifested by high levels of positive disciplinary climate in language lessons, high students' respect for diversity and high students' sense of belonging to school expressed through positively worded items. A positive school climate is also manifested in low levels of teacher discrimination as perceived by students, low levels of students' sense of belonging to school expressed through negatively worded items and low levels of teacher support to students and directed-instruction practices. Policy actions aimed at improving school climate in these dimensions may have an impact on improving school average reading achievement in schools that enrol students coming from low economic, cultural, and social status contexts.

Two indicators of school climate require further attention in future research in Indonesia: students' sense of belonging to school and teacher support and directed instruction practices.

In PISA, students' sense of belonging to school is assessed using six items, three of which are worded positively and three of which are worded negatively (see Table 3 in Appendix). In this study it was found that in Indonesia a positive school climate is given by high levels of students' sense of belonging to school expressed through positively worded items and low levels of sense of belonging to school expressed through negatively worded items. This means that, in Indonesia, a sense of belonging expressed by not feeling like an outsider, lonely or awkward at school does not contribute to a positive school climate. It may be the case that, in Indonesia, this type of items are indicators of a construct different than "sense of belonging to school". The importance of further investigating the "students' sense of belonging to school" items also relate to the finding that only a sense of belonging expressed through positively worded items acts as a moderator factor in the relationship between economic, cultural and social status indicators and school average reading achievement.

The second indicator of school climate that requires further attention is teacher support and directed instruction. In Indonesia this indicator has a negative association with student and school average ESCS and a negative relationship to the school climate latent variable. This expresses that teacher support and directed-instruction practices in schools serving students from low economic, cultural, and social status are not conducive to a positive school climate promoting high achievement. In Indonesia, receiving more support from teachers may be related to the fact that students are not performing well and, therefore, need more attention from teachers.

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Appendix

Table 3. Definition and operationalisation of school climate

Sphere	Indicator	Definition	Items	PISA itemcode	Response categories
Student behaviour	Disciplinary climate (schl_disclima)	Positive values on these items mean that the student enjoys a better disciplinary climate in language-of-instruction lessons	Students don't listen to what the teacher says.	ST097Q01TA	4=never or hardly ever 3=some lessons 2=most lessons 1=every lesson
			There is noise and disorder.	ST097Q02TA	
			The teacher waits long for students to quiet down.	ST097Q03TA	
			Students cannot work well.	ST097Q04TA	
			Students don't start working for a long time after the lesson begins.	ST097Q05TA	
	Bullying (schl_bullying)	Positive values on these items indicate that the student is more exposed to bullying at school	Other students left me out of things on purpose	ST038Q03NA	1=Never or almost never 2=A few times a year 3=A few times a month 4=Once a week or more
			Other students made fun of me	ST038Q04NA	
			I was threatened by other students	ST038Q05NA	
	Student truancy and lateness (schl_truancy)	Positive values on these items indicate more truancy	I <skipped> a whole school day	ST062Q01TA	1=Never 2=One or two times 3=Three or four times 4=Five or more times
			I <skipped> some classes	ST062Q02TA	

Sphere	Indicator	Definition	Items	PISA itemcode	Response categories
School community	Respect for diversity – teacher discrimination (schl_Tdiscrim)	Positive values on these items indicate teachers discriminate students by cultural groups	Teachers in your school: They have misconceptions about the history of some cultural groups	ST223Q02HA	1= To none or almost none of them 2= To some of them 3 =To most of them 4= To all or almost all of them
			Teachers in your school: They say negative things about people of some cultural groups	ST223Q04HA	
			Teachers in your school: They blame people of some cultural groups for problems faced by <country of test>	ST223Q05HA	
			Teachers in your school: They have lower academic expectations for students of some cultural groups	ST223Q08HA	
	Respect for diversity – students (schl_Srespect)	Positive values on these items indicate more respect for diversity	How well does the following describe you: I respect people from other cultures as equal human beings	ST217Q01HA	1= Very much like me 2= Mostly like me 3 =Somewhat like me 4 =Not much like me 5= Not at all like me
			How well does the following describe you: I treat all people with respect regardless of their cultural background	ST217Q02HA	
			How well does the following describe you: I give space to people from other cultures to express themselves	ST217Q03HA	
			How well does the following describe you: I respect the values of people from different cultures	ST217Q04HA	

Sphere	Indicator	Definition	Items	PISA itemcode	Response categories
	Sense of belonging at school	Positive values on these items mean that the student has a stronger sense of belonging at school	Thinking about your school: I make friends easily at school (schl_Sbelpos)	ST034Q02TA	1 =Strongly agree 2= Agree 3= Disagree 4 =Strongly disagree
			Thinking about your school: I feel like I belong at school (schl_Sbelpos)	ST034Q03TA	
			Thinking about your school: Other students seem to like me (schl_Sbelpos)	ST034Q05TA	
			Thinking about your school: I feel like an outsider (or left out of things) at school (schl_Sbelneg)	ST034Q01TA	
			Thinking about your school: I feel awkward and out of place in my school (schl_Sbelneg)	ST034Q04TA	
			Thinking about your school: I feel lonely at school (schl_Sbelneg)	ST034Q06TA	
	Perceived competition (schl_Scompete)	Positive values on these items mean that students perceive that other students at the school compete with each other	Think about your school, how true: Students seem to value competition	ST205Q01HA	1= Not at all true 2= Slightly true 3 =Very true 4 =Extremely true
			Think about your school, how true: It seems that students are competing with each other	ST205Q02HA	
			Think about your school, how true: Students seem to share the feeling that competing with each other is important	ST205Q03HA	
		Positive values on these items mean that	Think about your school, how true: Students seem to value cooperation	ST206Q01HA	

Sphere	Indicator	Definition	Items	PISA itemcode	Response categories
	Perceived cooperation (schl_Scooper)	students perceive that other students at the school co-operate with each other	Think about your school, how true: It seems that students are cooperating with each other	ST206Q02HA	
			Think about your school, how true: Students seem to share the feeling that cooperating with each other is important	ST206Q03HA	

Sphere	Indicator	Definition	Items	PISA itemcode	Response categories
Teaching and learning	Teacher support (schl_TSupDirins)	Positive values on these items mean that students perceive their teacher support learning	How often during <test language lessons>: The teacher shows an interest in every student's learning	ST100Q01TA	1 =Every lesson 2 =Most lessons 3 =Some lessons 4 =Never or hardly ever
			How often during <test language lessons>: The teacher gives extra help when students need it	ST100Q02TA	
			How often during <test language lessons>: The teacher helps students with their learning	ST100Q03TA	
			How often during <test language lessons>: The teacher continues teaching until the students understands	ST100Q04TA	
	Teaching practice – directed instruction (schl_TSupDirins)	Positive values on these items mean that students perceive their teachers to use teacher-directed practices frequently	How often during <test language lessons>: The teacher sets clear goals for our learning	ST102Q01TA	
			How often during <test language lessons>: The teacher asks questions to check whether we have understood what was taught	ST102Q02TA	

Sphere	Indicator	Definition	Items	PISA itemcode	Response categories
			How often during <test language lessons>: [...] the teacher presents a short summary of the previous lesson	ST102Q03TA	
			How often during <test language lessons>: The teacher tells us what we have to learn	ST102Q04TA	
	Teaching practice – stimulation of reading (schl_TStimRead)	Positive values on these items mean that the students perceive their teacher to provide stimulation for reading	In your <test language lessons>, how often: The teacher encourages students to express their opinion about a text	ST152Q05IA	1= Never or hardly ever 2= In some lessons 3 =In most lessons 4 =In all lessons
			In your <test language lessons>, how often: The teacher helps students relate the stories they read to their lives	ST152Q06IA	
			In your <test language lessons>, how often: The teacher shows students how the information in texts builds on [...]	ST152Q07IA	
			In your <test language lessons>, how often: The teacher poses questions that motivate students to participate actively	ST152Q08IA	
	Teaching practice – adaptive instruction (schl_AdapFeed)	Positive values on these items mean that students perceived their language-of-instruction teachers to be more adaptive	How often in <test language lessons>: The teacher adapts the lesson to my class needs and knowledge	ST212Q01HA	1 =Never or almost never 2= Some lessons 3 =Many lessons 4= Every lesson or almost every lesson
			How often in <test language lessons>: The teacher provides individual help when a student has difficulties [...]	ST212Q02HA	
			How often in <test language lessons>: The teacher changes the structure of the lesson on a topic that most [...]	ST212Q03HA	

Sphere	Indicator	Definition	Items	PISA itemcode	Response categories
	Teacher support – feedback (schl_AdapFeed)	Positive values on these items mean that students perceive their teachers to provide frequent feedback	How often during <test language lessons>: The teacher gives me feedback on my strengths in this subject	ST104Q02NA	
			How often during <test language lessons>: The teacher tells me in which areas I can still improve	ST104Q03NA	
			How often during <test language lessons>: The teacher tells me how I can improve my performance	ST104Q04NA	
	Teacher behaviour –interest (schl_Tinterest)	Positive values on these items mean that students perceived their language-of-instruction teachers to be enthusiastic about teaching	Thinking of past two <test language lessons>: It was clear to me that the teacher liked teaching us	ST213Q01HA	1= Strongly disagree 2 =Disagree 3= Agree 4 =Strongly agree
			Thinking of past two <test language lessons>: The enthusiasm of the teacher inspired me	ST213Q02HA	
			Thinking of past two <test language lessons>: It was clear that the teacher likes to deal with the topic of the lesson	ST213Q03HA	