Abstract Title Page
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Title:
Navigating Middle Grades: Role of School Context in Students' Social Adaptation and Experiences

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Abstract Body

Limit 4 pages single-spaced.

Problem / Background / Context:

Description of the problem addressed, prior research, and its intellectual context.

Most social-emotional learning interventions target young students and their social and academic contexts. As students move toward adolescence, less attention is paid to the school contexts that facilitate social-emotional adjustment. Yet, early adolescence is a particularly vulnerable period for academic and social-emotional development (Eccles & Midgley 1989; Simmons & Blyth, 1987). Many early adolescents experience declines in academic performance (Barber & Olsen, 2004), motivation (Maehr & Midgley, 1996), and engagement (Archambault, Janosz, Morizot, & Pagani, 2009). Social-emotional struggles ensue during this period, including decreases in students' sense of belonging in school (Maehr & Midgley, 1996; Wang & Eccles, 2012), perceived peer support and academic values (Ryan, 2001; Seidman, Allen, Aber, Mitchell, & Feinman, 1994), and self-esteem (Archambault, Eccles, Vida, 2010). These struggles may be magnified when students are undergoing a transition to a new school during the early adolescent period (Eccles, 2004; Eccles & Midgley, 1989; Seidman, Aber, & French, 2004).

Ecological perspectives and developmental theories have highlighted the importance of supportive school social contexts to promote positive adjustment across development (Eccles & Midgley, 1989; National Research Council, 2004; Trickett & Rowe, 2012). Increasingly, research focuses on the need to understand the social context of middle grade schools as a means toward predicting maintenance versus declines in social-emotional adjustment from middle childhood (Brand, Felner, Shim, Seitsinger, & Dumas, 2003; Jia et al., 2009; Way, Reddy, & Rhodes, 2007). Yet, current understanding of middle grade school social context is limited. Most studies focus on students' perception of school climate (e.g., Brand et al., 2003; Way et al., 2007) or school structural characteristics (e.g., Benner & Graham, 2009; Kieffer, 2013). Less consideration has been given to other perspectives and dimensions of the school setting, such as administrators' perceptions of student conduct and teachers' reports of stress and professional climate. In addition, no study has examined school social context in a national sample with grade spans typical of U.S. public schools (e.g., k-8 schools, middle schools, junior high schools). Although studies suggest k-8 schools may better support students than middle grade schools (for a review, see Seidman et al., 2004), it is unclear whether there are systematic differences in social context between middle grade schools with varying grade span configurations.

Purpose / Objective / Research Question / Focus of Research:

Description of the focus of the research.

Informed by the current literature, this study examines social contexts across middle grade schools with different grade span configurations. In doing so, we aim to build understanding of where and how to target interventions in the middle grades to enhance maintenance of social-emotional adjustment and experiences from middle childhood to early adolescence. Incorporating the perspectives and experiences of administrators and teachers, we focus on understanding school-wide social contexts and processes as an overarching construct that collectively influences students' adaptation in their schools. Specifically, utilizing a large national dataset – the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999

(ECLS-K) – we (1) describe the factor structure of the middle grade school social context as reported by administrators and teachers; (2) examine variation in social context among middle grade schools with different grade span configurations (k-8 schools; 6-8 middle schools; 7-9 junior high schools), controlling for school demographic and structural characteristics; and (3) test the role of middle grade school social context in the associations between school grade span configuration and student social adaptation and experiences (school attachment, perceived peer support, peer academic values).

Improvement Initiative / Intervention / Program / Practice:
Description of the improvement initiative or related intervention, program, or practice.

Decades of research have examined the consequences of educational policies around the timing of the middle school transition. This line of research suggests that the transition to middle grade schools, compared to continuing attendance in k-8 schools, is negatively associated with student academic and social-emotional outcomes in both correlational (e.g. Byrnes & Ruby, 2007; Rockoff & Lockwood, 2010; Weiss & Kipnes, 2006) and causal examinations (e.g. Kieffer, 2013; Schwerdt & West, 2013). For example, Schwerdt & West (2013) find that students moving from elementary to middle grade schools suffer a sharp drop in academic achievement, experience an increase in school absences, and are less likely to still be enrolled in school by grade 10 as compared with students who do not transition. There is no clear consensus on whether there are differences in student outcomes between transitioning to middle schools versus junior high schools. Some studies suggest that for students who experience a school transition in the middle years, a transition in 6th grade (to middle schools) may be more detrimental than a transition in 7th grade (to junior high schools: e.g. Cook, MacCoun, Muschkin, & Vigdor, 2008; Rockoff & Lockwood, 2010). Others find transitions in 6th or 7th grade equally detrimental to student achievement (e.g. Schwartz, Stiefel, Rubenstein, Zabel, 2011; Seidman et al., 1994). By comparing the overall social context of middle grade schools and examining its association with students' school adaptation and experiences, we may better determine which types of middle grade schools are most supportive of early adolescent students' development. Furthermore, in examining the role of school social context in relations between school grade span configuration and student adaptation and experiences, we may better understand the mechanisms through which differential grade span configurations influence students' adaptation and thus their engagement and persistence in school.

Population / Participants / Subjects:
Description of the participants in the research: who, how many, key features, or characteristics.

The data used in the present analysis were provided by students, teachers, and school administrators participated in the ECLS-K data collection in 2006-2007 school year. Students were evenly split by gender (50.8% female) with an average 8th grade student age of 14.2 years. They are predominately white (61.8%), followed by Hispanic (18.1%), African American (9.3%), Asian (5.9%), and other (4.8%). Students represent an even distribution of the range of socioeconomic statuses (SES) with the exception of an underrepresentation of the lowest quintile (22.5% are in the top quintile followed by 20.4%, 21.3%, 20.7%, and 15.0%).

There were two teacher reports per student, that of an English teacher and either a science or a math teacher. Overall, this data has 5,085 unique English (n = 2,778) and math or science teacher

(*n* = 3,307) reports from the 1,712 schools. The average teacher completed a bachelor's degree, had 14 years of teaching (*SD* = 10.40), and was 44 years old (*SD* = 11.76).

For school administration data, the ECLS-K has one administrator, the principal, per school (*N* = 1,712). On average, the principals surveyed had spent 11.5 years teaching (*SD* = 6.3), 8.4 years as a principal (*SD* = 6.5), and 4.9 years as a principal at their current school (*SD* = 4.6). The majority had a master's degree or higher.

Research Design:
Description of the research design.

To address research questions, this study (1) identified a measurement model of school social context; and (2) examined cross-sectional associations between measures of school social context, middle school grade span configuration, and student social adaptation and experiences.

Data Collection and Analysis:
Description of the methods for collecting and analyzing data or use of existing databases.

This study utilizes the Early Childhood Longitudinal Study, Kindergarten Class 1998-99 (ECLS-K). The ECLS-K followed a nationally representative sample of 21,260 kindergarteners from the 1998-1999 school year through to the 2006-2007 school year, at which time the majority of participants were enrolled in 8th grade. For the present study, the sample consists of the 5,754 students from 1,712 schools (Table 1) who participated in the data collection in spring 2007 (Wave 7) and were: 1) in 8th grade; 2) attending a k-8 school, middle school, or junior high school; and 3) attending a regular public school.

To address the research aims, we utilized a series of single- and multi-level exploratory and confirmatory factor analyses as well as multi-level structural equation models (MSEM). First, to examine the factor structure of school social contexts (Question 1), we conducted preliminary exploratory and confirmatory factor analyses, as well as second-order factor analysis. Second, in order to determine the extent to which the social context factor varied among k-8 schools, middle schools, and junior high schools (Question 2) we used a multiple indicators and multiple causes (MIMIC) model. Third, to examine associations between school grade span, social context, and child adaptation (Question 3), we conducted two-level structural equation modeling. All models were estimated using maximum likelihood estimation with robust standard errors and a mean-adjusted chi-square statistic test (MLR: Asparouhov & Muthén, 2006) with Mplus 7.0 software (Muthén & Muthén, 2012). In all SEM models, factor variance was fixed at 1 and all item factor loadings were freely estimated.

Findings / Outcomes:
Description of the main findings or outcomes, with specific details.

First, we identified the measurement model of school social context. We found five interrelated factors. Two of these factors—administrator reports of school chaos and conduct problems—indicate the levels of disorder, such as racial tension, turnover, and student behavior problems, present in the school. The remaining three factors—staff professional climate, teacher agency, and teacher burden—reflect a range of teachers' perceptions, from teaching challenges and

teaching efficacy to social and professional interactions among school staff. Collectively, these five factors form a single overarching factor that encompasses school social context. School chaos, student conduct problems, and teacher burden negatively contributed to this overarching school social context factor; and teachers' perception of a supportive professional climate and their sense of agency positively contributed to this factor (χ^2 (164) = 950.10, $p < .001$; RMSEA = .03; CFI = .90; SRMR-B = .06; see Table 2 for factor loadings).

Second, we found that school social context varies by school grade span configuration. Specifically, k-8 schools have a more positive social context compared to both middle schools and junior high schools, controlling for school demographic and structural characteristics. We found no significant difference in social context between middle and junior high schools (Figure 1; $\chi^2(202) = 1884.017$, $p < .001$; CFI = .82; RMSEA = .03; SRMR-B = .06).

Finally, we used a MSEM model to examine the role of school social context in student adaptation and experiences (Figure 2). Our findings suggest there is no direct relation between school grade span and any of the student adaptation variables, once the mediating role of social context is considered. As discussed above, middle and junior high schools are associated with a more negative school social context. Negative school social context is in turn associated with lower levels of students' school attachment, peer support, and peer academic values. Further investigation of simple and total indirect effects (Table 3) highlight the importance of the role of school social context in mediating the associations between grade span and students' school attachment (simple indirect effect (IE) = .05, p <.05, total IE = .11), peer support (simple IE = .04, p = .08; total IE = .11), and peer academic values (simple IE = .03, p =.05; total IE = .12).

Conclusions:

Description of conclusions, recommendations, and limitations, based on findings.

This study identifies school social context as a potentially critical avenue of intervention toward supporting students' social and academic development in the middle grades. Consistent with past work, this study identifies k-8 schools as more supportive contexts for youth. It also suggests that the implementation of policies directly targeting key aspects of social context within middle and junior high school contexts might better support student adaptation and development and, through these, their academic outcomes and educational persistence. This could take the form of increasing relational support among teachers, administrators, and parents (Jia et al., 2009); implementing interventions to reduce conduct problems (Bradshaw et al., 2009); reducing teacher burden through streamlined administrative demands; or otherwise improving professional climate. Further research as to the characteristics of k-8 schools most critical to their positive social context would greatly aid in informing intervention work focused on the social context of middle grade schools. Whether targeting social context along with, or in the absence of, structural change, our findings indicate that in order to improve student perceptions of social and academic climate and, through those, student outcomes, educators may need to focus on teacher and administrative social processes as well as supporting individual students.

School social context is critical to student learning and wellbeing. It may also explain why many youth experience declines in achievement and adjustment across the transition to middle or junior high school. Targeting school social context may be a particularly effective way of addressing these declines while, preventatively, benefiting a large number of youth.

Appendices

Not included in page count.

Appendix A. References

References are to be in APA version 6 format.

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Appendix B. Tables and Figures
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Table 1
Descriptives of School Structural and Demographic Variables

	N	%
Grade Span		
K-8 schools (PK/K – 8/12)	194	11.3%
Middle schools (6 – 8/12)	1087	63.5%
Junior high schools (7 – 8/9/12)	431	25.2%
School Location		
Urban	562	33.5%
Suburban	710	42.3%
Rural	408	24.3%
% Hispanic Students		
Less than 1%	91	5.6%
1% to less than 5%	533	32.8%
5% to less than 10%	242	14.9%
10% to less than 25%	310	19.1%
25% or more	447	27.5%
% African American Students		
Less than 1%	80	4.9%
1% to less than 5%	606	37.4%
5% to less than 10%	244	15.1%
10% to less than 25%	316	19.5%
25% or more	375	23.1%

	N	Mean	SD	Min	Max
School Composition					
School size	1700	783.53	341.13	100	5,000
% students receiving free lunch	1712	34.56	26.05	0	95
Facility Quality					
Scale score: Number of facilities ranked adequate	1689	60.81	28.92	0	100

Table 2

Standardized Factor Loadings of School Social Context Variables for the Second-Order Confirmatory Factor Analysis Model

	Second order factor: School social context									
	Factor 1:		Factor 2:		Factor 3:		Factor 4:		Factor 5:	
	School chaos		Student conduct problems		Staff professional climate		Teacher agency		Teaching burdens[a]	
Factor loading (*SE*)	-0.46 (0.03)		-0.41 (.0.03)		0.68 (0.03)		0.73 (0.03)		-0.92 (0.02)	
	Mean (*SD*)	Factor loading (*SE*)	Mean (*SD*)	Factor loading (*SE*)	Mean (*SD*)	Factor loading (*SE*)	Mean (*SD*)	Factor loading (*SE*)	Mean (*SD*)	Factor loading (*SE*)
Teacher turnover	4.28 (0.90)	0.47 (0.03)								
Gang activity	3.57 (1.09)	0.80 (0.02)								
Racial tension	1.79 (0.97)	0.67 (0.02)								
Class cutting			3.51 (1.10)	0.70 (0.02)						
Physical conflict			3.36 (0.89)	0.76 (0.02)						
Theft			3.65 (0.69)	0.67 (0.02)						
Vandalism			3.81 (0.65)	0.64 (0.02)						
Student bullying			2.85 (0.99)	0.55 (0.02)						
Teachers continue to learn					4.04 (0.53)	0.68 (0.03)				
School spirit					3.80 (0.61)	0.70 (0.03)				
Accepts me					4.36 (0.46)	0.61 (0.03)				
Enjoy teaching							4.38 (0.54)	0.87 (0.02)		
Making a difference							4.36 (0.43)	0.61 (0.03)		
Choose teaching again							4.12 (0.65)	0.61 (0.02)		

Misbehavior interferes	2.67 (0.90)	0.70 (0.02)
Students not capable	2.23 (0.71)	0.54 (0.02)
Parents supportive	3.50 (0.66)	-0.61 (0.02)
Students' attitudes	3.30 (0.71)	0.65 (0.02)
Factors beyond control	2.54 (0.71)	0.51 (0.03)
Waste of time	1.72 (0.61)	0.5 (0.03)

Note. All factor loadings were significant at $p < .001$.

[a.] "Routine administrative duties and paperwork interfere with my job of teaching" item was dropped from the final CFA due to the low factor loading (< .40) on teaching burdens factor. *Note.* Five items, including "Part of my responsibility to reduce drop-outs," "If students not doing well should change approach," "Different method, can affect student's achievement," and "Work to create lessons foster independent thinking" were factored into "teacher commitment" factor – this factor and the items were dropped due to low factor loading (< .40) on the second-order school social context factor. These items had very low ICCs (< .03), suggesting that these items are better measures of individual differences and not of school level differences.

Table 3

Unstandardized and Standardized Total Indirect Effects and Total Effects of k-8 Schools and School Social Context Predicting Student-Report School Attachment, Peer Support, and Peer Academic Values

	k-8 schools predicting				School social context predicting			
	Total indirect		Total		Total indirect		Total	
Student-report school climate	Estimate	Std. estimate	Estimate	Std. estimate	Estimate	Std. estimate	Estimate	Std. estimate
School attachment	0.01	0.11	0.01	0.11	0.00	-0.62	-0.04	-1.15
Peer support	0.01	0.11	0.01	0.11	0.00	-0.74	-0.03	-0.42
Peer academic values	0.01	0.12	0.01	0.12	0.00	-0.83	-0.04	-1.17

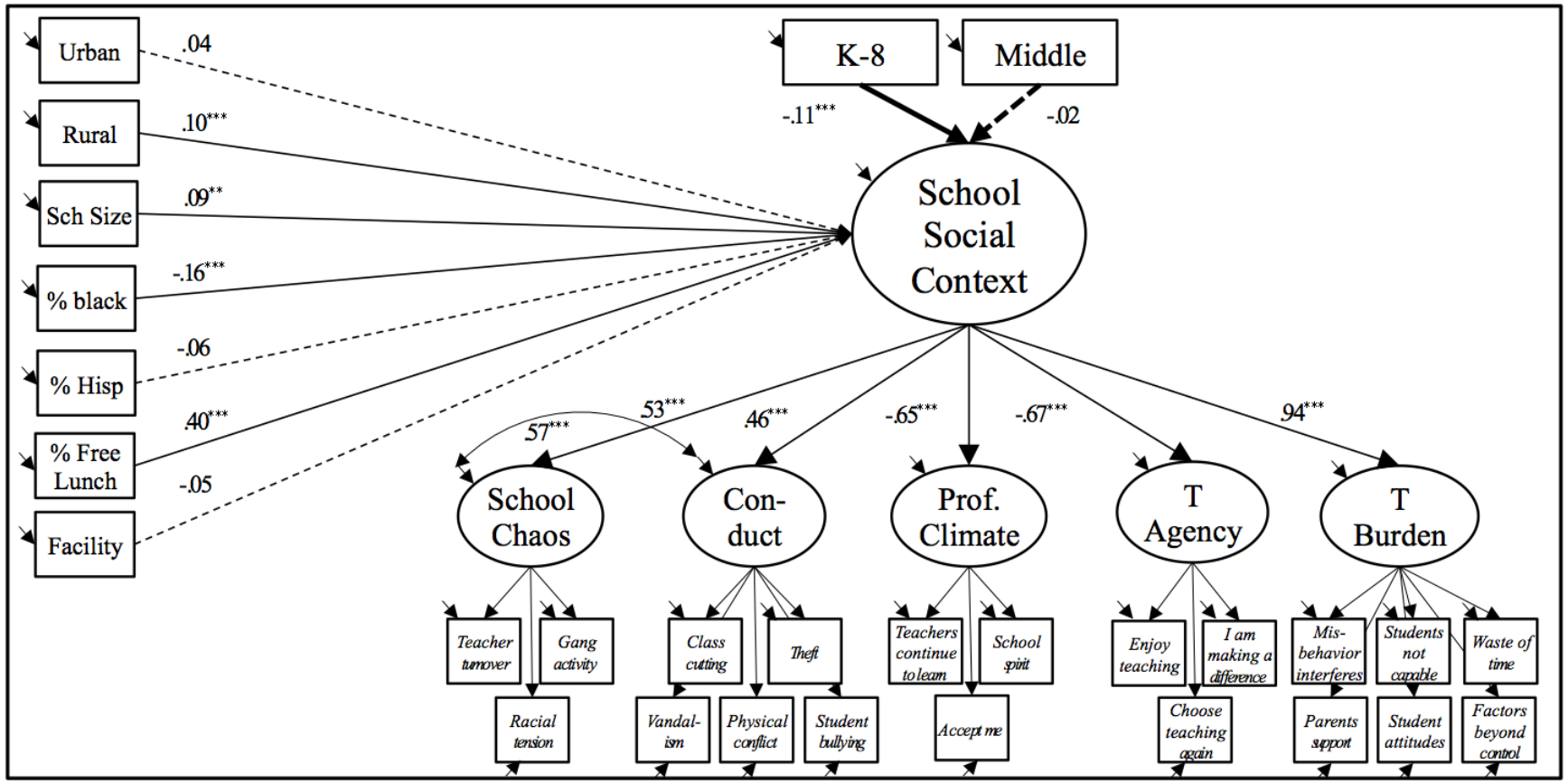

Figure 1. MIMIC model testing school social context varying by grade configurations with standardized coefficients and factor loadings. School structural and demographic characteristics were controlled for. Solid lines indicate significant correlation or factor loadings; and dotted lines indicates non-significant correlations.

*** $p < .001$; ** $p < .01$

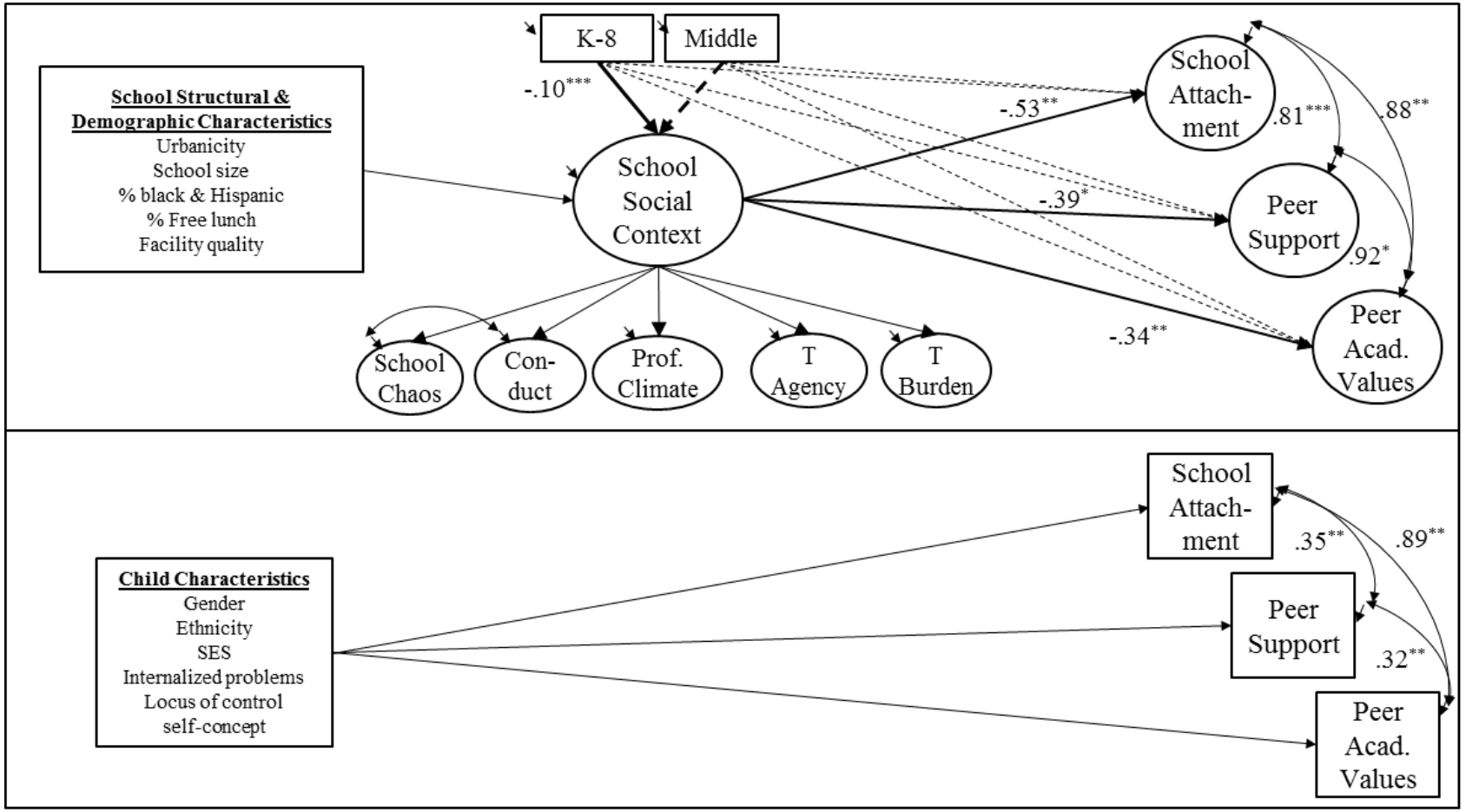

Figure 2. Multi-level structural equation model (MSEM) testing the role of school social context with standardized coefficients of main paths of interests. Solid lines indicate significant correlation or factor loadings; and dotted lines indicates non-significant correlations. For full results, including unstandardized and understandized coefficients of covariates and factor loadings for school social context factors, see Appendix B.

*** $p < .001$; ** $p < .01$; * $p \leq .05$