

**School Socioeconomic Status Context and Social Adjustment in Children**

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### Author Note

Code for this paper is available from OSF: <https://osf.io/q26ej>. Data is available from the [Australian Data Archive](https://dataverse.ada.edu.au/dataverse/ada?q=LSAC); <https://dataverse.ada.edu.au/dataverse/ada?q=LSAC>.

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### **Abstract**

Social adjustment is critical to educational and occupational attainment. Yet little research has considered how the school's socioeconomic context is associated with social adjustment. In a longitudinal sample of Australian 4 to 8-year-olds (N=9369; 51% Boys), we tested the association between school average socioeconomic status and social skills (parent and teacher reported). Models controlled for age 4 social adjustment and additional covariates. Results showed that children from more advantaged schools are more likely to have better prosocial behavior and fewer peer and conduct problems. An interaction between family and school average SES status suggested that this association was only present for children from lower SES backgrounds.

*Keywords:* social adjustment; assimilation effects; socioeconomic status; school context

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## School Socioeconomic Status Context and Social Adjustment in Children

There is growing recognition across the social sciences of the critical impact schools have on children's social development (e.g., Espelage et al., 2003; Espelage & Swearer, 2003; Hong & Espelage, 2012). And there is increasing acknowledgment that early social development is crucial to a child's life chances (Bradley & Corwyn, 2002; Entwisle & Alexander, 1993; e.g., Heckman, 2006; Jones et al., 2015). Through contact with school staff, peers, and school culture, the school context presents children with hundreds of interactions that re-enforce what social behavior is acceptable and not acceptable (Akerlof & Kranton, 2010). Thus, schools as developmentally significant contexts represent a vector by which advantage and disadvantage in social skills may be imparted to young people (Leventhal & Brooks-Gunn, 2000).

The aim of our study was to explore how school average socioeconomic status (SES) is related to children's social adjustment at age 8 controlling for family SES and social adjustment at age 4. That is, we aimed to discover whether school context is associated with change in social adjustment after children enter school. We also explored if the association of school average SES and social adjustment varied by family SES. In this way, we explored whether the influence of school context is potentially heterogeneous for children from different SES backgrounds.

### Social Adjustment

Social adjustment is a child's ability to adjust to the social demands of society and its institutions. Social adjustment reflects a child's deployment of social skills to promote positive relationships with peers and teachers (Sette et al., 2018). In children, prosocial behavior is a particularly important aspect of social adjustment (Sette et al., 2018) as is relationships with peers and conduct/behavioral adjustment (Navarro et al., 2019). It is a potentially powerful explanation for SES gaps in educational and occupational attainment for young people from lower socioeconomic status backgrounds (Gutman & Schoon, 2013;

47 Jones et al., 2015). Children from lower socioeconomic backgrounds appear to enter school  
48 with poorer social adjustment than their peers from higher socioeconomic backgrounds. This  
49 has been shown in the US (Bradley & Corwyn, 2002), the UK (Jerrim & Sims, 2019), and in  
50 Australia (E. Davis et al., 2010).

51 Research on 5 year-old Australian children suggests that children of parents with a  
52 lower income (<\$41k AUD) were 1.6 times more likely to have ‘potentially concerning’ (as  
53 defined by Youth in Mind, 2016) levels of conduct problems and 1.8 times more likely to  
54 have ‘potentially concerning’ levels of peer problems than children whose parents had higher  
55 income (>\$41k AUD) (E. Davis et al., 2010). Similar effect sizes were present when  
56 considering other measures of SES like parental education (E. Davis et al., 2010).

### 57 **SES and Social Adjustment**

58 Of the skills that employers are looking for when hiring candidates, social skills are  
59 some of the most desirable (Rios et al., 2020). Social adjustment also seems to be a viable  
60 target for intervention, with a meta-analysis showing that social and emotional learning  
61 programs have moderate effects on improving key social adjustment variables like conduct  
62 problems, social-emotional learning, and antisocial behavior (Durlak et al., 2011). Social  
63 adjustment also appears to be a worthwhile target from a societal perspective given its  
64 relationship to academic achievement (Corcoran et al., 2018) and its role in predicting adult  
65 employment, criminal activity, use of public assistance, substance abuse, and mental health  
66 (Jones et al., 2015).

67 As noted above, there is an association between a child’s social background and their  
68 level of social adjustment such that higher family SES is associated with greater social  
69 adjustment in children (e.g., Bradley & Corwyn, 2002). Strong evidence exists that the  
70 relationship between a child’s social background and important developmental outcomes are,  
71 at least in part, due to the differences in the contexts that children from different SES

72 backgrounds inhabit (Conger & Donnellan, 2007; Duncan et al., 2017, 2010). Of course, not  
73 all children from lower socioeconomic backgrounds will have worse social adjustment. Indeed,  
74 evidence from Elder (2018) and Davis and colleagues (2020) suggests that economic hardship  
75 can breed resilience, useful skills, and may promote some forms of prosociality. As we argue  
76 below, part of the reason for this may be that children inhabit multiple context where some  
77 contexts may exacerbate or protect children against the link between family SES background  
78 and critical outcomes. Schools are one of the most critical contexts that influence children's  
79 development.

80         There are several theories that aim to explain how family socioeconomic status is  
81 related to outcomes like social adjustment in young children. For example, the social  
82 causation model argues that inequality in outcomes like social adjustment is due to less  
83 access to resources and the pressure this can place on parenting and development (Conger &  
84 Donnellan, 2007). This is consistent with well established economics traditions that  
85 emphasize inequality as a function of differences in resources that can be applied to  
86 development where resources include both tangible (e.g., money for access to prestigious  
87 schools) but also intangible resources like parental time and information (Becker, 1976). In  
88 contrast, sociological theories based on the work of Bourdieu, often emphasis cultural  
89 differences that result in differing parenting styles for the rich and the poor that emphasis  
90 the development of different skills in children. Importantly, from this perspective, it is not  
91 that one style is inherently better but that the rich tend to define what in society is  
92 rewarded and they tend to reward the skills that their parenting styles help to develop  
93 (Lareau, 2011). While these theories differ fundamentally in the mechanism linking SES and  
94 child outcomes, both emphasis the role of parental school choice in child development.

### 95 **School as a Context for Social Adjustment**

96         There has been increasing recognition of the role that context plays in the  
97 development of children's social adjustment (Leventhal & Brooks-Gunn, 2000).

98 Bronfenbrenner's (1981) socio-ecological model guides much research focused on the  
99 contributions of the family, neighborhood, and school contexts (Brooks-Gunn et al., 1997).  
100 We use Bronfenbrenner's model as a basis for our research for two main reasons. First, in  
101 later developments of the model, Bronfenbrenner stressed the importance of time as a critical  
102 context (Bronfenbrenner, 1995). This highlights the range of things children bring with them  
103 as they enter school including their prior social adjustment, past experiences, and influences  
104 from other social contexts. This means research on the influence of school context must  
105 account for pre-existing differences. Second, Bronfenbrenner's model highlights the role of  
106 the school as a significant influence on child development but that this context exists in  
107 interaction with other contextual spheres. That is, one child's experience in a school may  
108 differ from that of another in the same school if they inhabit different contextual spheres  
109 outside of school and this can lead to differences in how their social adjustment manifests  
110 (Bronfenbrenner, 1995). This latter point suggests the need to expect that school contextual  
111 effects will not be the same for all children and thus to look for important moderators.  
112 Before exploring this, we note there are many ways that school context can influence a  
113 child's development. Here, we focus on one such mechanism central to educational and  
114 developmental research: the influence of assimilation.

115 *Identity economics* is a theoretical model that argues that school context mainly  
116 influences children via assimilation mechanisms. That is, children conform their beliefs,  
117 behaviors, and attitudes toward that of the school they are in (Akerlof & Kranton, 2010).  
118 These assimilative effects are the most important contextual mechanism at play in social  
119 institutions like schools (Akerlof & Kranton, 2010). When applied to educational contexts,  
120 identity economics suggests that a school's social context possesses a gravity that attracts  
121 students' behavior toward the prototypical behavior of the school (Akerlof & Kranton, 2002).  
122 This gravity is both explicit (e.g., statements of school values) and implicit (e.g., unspoken  
123 assumptions about 'the way things are done around here') and includes the whole school  
124 environment including school staff, parents, students, and the school ethos (Akerlof &

125 Kranton, 2010). The assimilative power of the school comes from the literally thousands of  
126 interactions that students have with the institution, teachers, and peers that are “indicative  
127 of approval, disapproval, or indifference to various kinds of behavior” (Akerlof & Kranton,  
128 2010, p. 62). The extensive work of Espelage and colleagues (Espelage et al., 2003; Espelage  
129 & Swearer, 2003; Hong & Espelage, 2012) shows that social adjustment behaviors like  
130 aggression are influenced by school context in an assimilative manner. Children’s SES  
131 backgrounds are also positively associated with social adjustment (e.g., E. Davis et al., 2010).  
132 It is therefore possible that school average SES will affect social adjustment.

133 Children’s SES backgrounds are positively associated with social adjustment such  
134 that high family SES is related to greater social adjustment (Bradley & Corwyn, 2002; A.  
135 Davis et al., 2020; de Laat et al., 2016; Entwisle & Alexander, 1993; Garratt et al., 2017;  
136 Jerrim & Sims, 2019; McMunn et al., 2001; Rajmil et al., 2014; Washbrook & Waldfogel,  
137 2011). In addition, children of similar levels of SES are often schooled together in Australia  
138 (the context of our research) (Parker et al., 2019). Children from different SES backgrounds  
139 tend to also differ in their social adjustment upon entering school (E. Davis et al., 2010).  
140 Thus, schools that are stratified by SES are also stratified by social adjustment. Thus school  
141 average SES can be considered a proxy for the social adjustment context of the school which  
142 identity economics expects to be transferred to students.

143 There is little research on the influence of school context on social adjustment  
144 (although we highlight the extensive literature on the influence of school context on other  
145 variables below). The closest research to the current paper is based on selective schools in  
146 the UK (Jerrim & Sims, 2019). Jerrim and Sims (2019) investigated differences in social  
147 adjustment outcomes between children who lived in areas where there were “selective” and  
148 “non-selective” schools. They also investigated differences in social adjustment scores between  
149 children who attended higher-achieving (selective) and lower-achieving (non-selective)  
150 schools. This is relevant to our work as high-achieving schools have a very particular social



151 context, with high-achieving, socio-economically advantaged intakes. In both cases Jerrim  
152 and Sims found that the “selection process has limited impact upon young people’s  
153 socioemotional outcomes” (p. 1769). However, Jerrim and colleagues estimated the influence  
154 of school context as having consistent influences on students regardless of their social  
155 backgrounds—something we explicitly test in this research.

### 156 **Counter Mechanism**

157         Although there is little research on the influence of school context on social  
158 adjustment, considerable research on depression has found evidence in favor of the  
159 assimilative influence of the school context (Coley et al., 2017, 2019; E. Goodman et al.,  
160 2003). In contrast, research on associated constructs like conscientiousness, self-control,  
161 self-worth, and grit has found evidence that students tend to contrast against the school  
162 context (West et al., 2016). This inconsistency in results is not surprising. Early theory  
163 (Jencks & Mayer, 1990) noted that not all mechanisms relating the school context to student  
164 outcomes are assimilative in nature. Empirical research has indeed highlighted the  
165 importance of so-called ‘frog-pond’ effects (also known as the big-fish-little-pond effects) on  
166 psychosocial variables like self-worth (Crosnoe, 2009). They note that the school context can  
167 lead to students evaluating themselves and their abilities and beliefs in relation to their  
168 relative position in their local school context rather than against a more global or objective  
169 standard; a mechanism sometimes referred to as relative deprivation. Such mechanisms are  
170 very common in educational psychology. Indeed, research in multiple countries and across  
171 time (e.g., Parker et al., 2021) has consistently shown that children’s academic self-concept is  
172 formed in part by contrasting their ability against that of the school context they are in.

173         West (2016) notes that such mechanisms are most likely present when the outcome of  
174 interest is self-reported and can thus cloud the ‘real’ impact of school context. In this study  
175 we do not use self-reported social adjustment. However, we use teacher reports and it is  
176 reasonable to assume that, when considering students’ social adjustment, teachers evaluate

177 their students' social adjustment with reference to the other students they teach rather than  
178 to a global or objective standard. This could lead, for example, to a negative relationship  
179 between school average SES and social adjustment rather than the assimilative association  
180 we expect in this study. Thus, research should consider information from multiple distinct  
181 reports (e.g., parents and teachers). Exploring multiple reports of a child's social adjustment  
182 is even more important when considering that different report sources have experience with  
183 the child in different circumstances and under different conditions. Consistency or otherwise  
184 in results across reports thus speaks to whether the influence of school context is a general  
185 process.

### 186 **Do School Context Effects Differ by Family SES**

187 Not only is there controversy in the literature as to the influence and direction of  
188 school context for social adjustment, early theory suggested that these relationships may not  
189 be the same for all children. In Jencks and Mayer's (1990) classic papers, they argue that  
190 research on the social context effects of SES on educational outcomes needs to consider the  
191 possibility that school context effects are heterogeneous. Nevertheless, little current research  
192 since this paper has considered if the influence of school context on children may differ by  
193 the child's own SES background. This is surprising as it is likely that school context  
194 influences vary in strength for children with different SES levels because those children  
195 inhabit different contexts outside of school. And these non-school contexts likely also  
196 influence social adjustment. Thus, the assimilative power of school contexts may not be  
197 evenly spread across the socioeconomic distribution.

198 This is an important consideration that has not been extensively tested, though  
199 differential assimilation across the SES gradient has been theorized (Gradstein & Justman,  
200 2005). There is a good reason to hypothesize that school context is particularly important for  
201 poorer than richer children. Children from wealthier backgrounds will typically come from a  
202 context that is rich in the resources that promote socially valued behaviors and skills (Lucas,

203 2001). For children from poorer backgrounds, schools may be one of the most critical places  
204 they can receive resources that can mitigate less access to resources in the family context.

### 205 **Controlling for Selection Effects**

206 One of the primary concerns with exploring school context effects is how best to  
207 control for selection effects (Dicke et al., 2018) or how to ensure we do not attribute to  
208 school context what is in fact due to other background variables (see Duncan et al., 2010).  
209 Selection effect refers to the extent to which participants differ before they enter school and  
210 the tendency for similar students to be selected into similar schools. Homogeneous schools  
211 can lead to the appearance of a school context effect where no such effect is present because  
212 pre-existing differences lead to a correlation between aggregated predictors and outcomes  
213 (Dicke et al., 2018). Two major controls we included in this study were: a) control for  
214 pre-school levels of social adjustment (from both the parent and pre-school teacher) and b)  
215 student level family SES. These two major controls account for a range of potential selection  
216 effect mechanisms. Controlling for these pre-existing differences provides strong controls for  
217 a range of selection effects because controlling for them allows for the comparison of children  
218 who are in schools of different levels of average SES but who have the same prior levels of  
219 social adjustment and who came from families with similar levels of SES.

220 Research on bias in school context effects recommends controlling for background  
221 demographics as proxies for mechanisms that lead to pre-existing differences (Dicke et al.,  
222 2018). We controlled for gender because girls tend to have higher levels of social adjustment  
223 than boys (Mieloo et al., 2012). We controlled for geography (rural vs urban) because  
224 families in rural setting have less access, or at least more complicated access, to school choice  
225 (Duncan et al., 2014). We also controlled for school sector (private vs public) given that  
226 private schools are typically religious in Australia and may differ in their emphasis on  
227 aspects of social development in comparison to government schools. Finally, because our  
228 data included two cohorts of children (see methods below) we controlled for cohort in case

229 there were any cohort or period effects like a change in school enrollment policies or practices.

## 230 **Current Study**

231 Australia is the context of our research and is a useful focus because Australia's  
232 Programme for International Student Assessment (PISA) index of social inclusion score is  
233 approximately equal to the international average (OECD, 2015). This means that Australian  
234 schools are moderately socially stratified by international standards (Parker et al., 2018;  
235 Parker et al., 2019). That is, children are not purely assigned to schools on the basis of SES  
236 but, on average, children of similar SES levels tend to be schooled together. Our major  
237 confirmatory hypothesis is that school average SES will have an assimilation association with  
238 social adjustment at Year 3 (age 8), controlling for incoming social adjustment (age 4), family  
239 SES (age 4) and other demographic and ability controls We also explored the possibility of  
240 differential associations of school average SES on social adjustment across the SES gradient.

241 We expected the assimilation effects to occur in the context of children from lower  
242 SES backgrounds entering school with poorer social adjustment (de Laat et al., 2016;  
243 Garratt et al., 2017; McMunn et al., 2001; Rajmil et al., 2014). Given that Australian  
244 schools are socially stratified (OECD, 2015; Parker et al., 2018), we expected children from  
245 lower SES backgrounds to attend more disadvantaged schools on average.

## 246 **Method**

### 247 **Participants and Study Design**

248 We used data from children, their parents, and their teachers from the B-Cohort and  
249 K-Cohort of the Longitudinal Study of Australian Children (LSAC). LSAC is a  
250 government-run study of a sample of Australian children who were zero-one (B-cohort) or  
251 four-five (K-Cohort) years of age in 2003-2004. The study aimed to draw data from urban  
252 and rural locations and all states and territories in Australia with the aim of advancing  
253 research and informing social policy, particularly in relation to early childhood interventions.

254 Data are collected on the child from their parents, carers, and teachers. Both cohorts of  
255 children have been followed every two years (AIFS, 2015). We used government-collected  
256 data on school average SES. In total, the data contained information on 3296 unique schools.  
257 Because LSAC is a publicly available government dataset (Department of Social Services,  
258 2020), the ethics committee at the Australian Catholic University declared this study exempt  
259 from ethics review. This study was not preregistered. Source code is available (Parker, 2022).

260 Many children in the sample were the only child in their school surveyed (16.57%) or  
261 were one of two children surveyed (15.43%) in their school. We made no exclusions in the  
262 data and instead imputed administrative data for participants where there were no matching  
263 records. Together, our total sample was 9369 children (51.09% boys) aged 8. In the vast  
264 majority of cases (98%), parent data came from mothers. Approximately 95% of the sample  
265 was in some form of formal preschool education at age 4.

266 [LSAC](#) originally contacted the families of 18,800 children, with initial response rates  
267 of 54%. From this initial wave of data, response rates listed by the [Department of Social](#)  
268 [Services](#) for LSAC are estimated at 91% (wave 2) and 84% per wave (wave 5). This meant  
269 that, in the latest wave of the sample, attrition resulted in 79.7% of the sample being  
270 retained.

## 271 **Measures**

### 272 *Social adjustment at age 4 and 8*

273 Social adjustment was estimated using the peer problems, conduct problems, and  
274 prosocial behavior component scores from the Strengths and Difficulties Questionnaire [SDQ;  
275 R. Goodman (1997)]. We explored social adjustment at ages 4-5 (for prior social adjustment;  
276 parent report and pre-school teacher report) and ages 8-9 (as primary outcomes) as reported  
277 by the child's parent and the child's school teacher. The SDQ asks respondents to rate a  
278 child's adjustment in the last six months on a 3-point scale (not true, somewhat true, and

279 certainly true). Questions ask about the child’s peer problems (e.g., “Rather solitary, tends  
280 to play alone”), conduct problems (e.g., “Often fights with other children or bullies them”),  
281 and prosociality (e.g., “Is kind to younger children”). Peer and conduct problems scores of 3  
282 or greater and prosocial scores of 7 or lower place children beyond the ‘close to average’  
283 group and may thus be a potential concern (Youth in Mind, 2016). The current sample  
284 compared to general and Australian specific norms are presented in [supplementary materials](#).

285         The greatest lower bound estimates of reliability (Sijtsma, 2008) were all greater than  
286 .95 (Schmitt, 2011) and parallel analysis (Horn, 1965) suggested that items from each  
287 construct could be explained by a single component. Parallel analysis is a method of  
288 determining the number of latent factors underlying a set of data by comparing the observed  
289 data to randomly generated parallel data (i.e., having a similar structure, see Çokluk &  
290 Koçak, 2016). Based on this evidence, we used the total scores for these scales as developed  
291 by the LSAC administrators. Scores ranged from 0 to 10 (see supplementary materials for  
292 variable distributions). These scores were heavily left-censored for peer and conduct  
293 problems, with a preponderance of students being scored as a zero by their parent or teacher.  
294 Prosocial behaviors were heavily right-censored. Censoring can be viewed as a special type of  
295 missing data where scores on  $y^*$  (the hypothesized true latent distribution of the variable)  
296 below or above the bounds are curtailed to fit within the bounds resulting in the observed  
297 scores  $y$  (Gelman et al., 2020). Models accounting for this censoring were used in all cases,  
298 with results on the latent variable’s scale  $y^*$  believed to underlie the censored variable (hence  
299 negative predicted scores or scores over 10 were possible).

300         Parents and teachers had moderate agreement for children at age 8 with correlations  
301 ranging from  $r = 0.42$  95% CI[0.4, 0.44] for peer and  $r = 0.42$  95% CI[0.4, 0.44] for conduct  
302 problems to  $r = 0.32$  95% CI[0.3, 0.34] for prosocial behavior.

### 303 *Socioeconomic Status*

304 *Family SES* was measured using the Socioeconomic Position (SEP) index constructed  
305 by the LSAC survey organizers (Baker et al., 2017). The SEP index is constructed from  
306 parent-reported standardized weekly income, years of education, and ANU4 occupational  
307 prestige derived from the Australian Standard Classification of Occupations. These values  
308 were used to create an index for single and two-parent families before being integrated into a  
309 single index for all families that was standardized (Baker et al., 2017). The SEP has a mean  
310 of zero and a standard deviation of one and is collected at each time wave. Thus, we  
311 averaged the SEP from age 4, 6 and 8 to get a more reliable measure of persistent SES. This  
312 average was z-scored in the analysis.

313 *School average SES* was measured using the *school* Index of Community  
314 Socioeconomic Advantage (ICSEA) that the Australian government uses to assess the  
315 relative advantage of schools for the purpose of funding allocation and policy. This measure  
316 was taken from government administration records and is a composite consisting of income  
317 and education level of the parents with students in the school. ICSEA has a mean of 1000  
318 and a standard deviation of 100. We z-scored this variable for analysis. Because this data  
319 were taken from administrative records it represents the average SES of the *entire* school. By  
320 using administrative records, we gain school average SES based on the child's *whole* school  
321 from a high-quality source, thus avoiding the sampling bias that is present in much school  
322 context research. Put simply, the use of administrative data means we have information on  
323 child's school context based on all students in their school rather than a subset of children.

### 324 *Additional Covariates*

325 Cohort membership was included as a covariate in all models as were measures of  
326 rural status and gender—all measured at age 4 to ensure they were exogenous to the school  
327 context. The school's sector (government or non-government) was also included as a  
328 covariate.

## 329 **Analysis**

330       The missing data were treated consistent with a missing at random mechanism.  
331 Missing data were generally moderate with the largest missing data proportion for  
332 teacher-reported social adjustment at age 8 (16%), and pre-school teacher reported social  
333 adjustment at 25-29%. All other variables had ~6% missing data or less. Missing data  
334 pattern graphs are presented in supplementary materials. To account for missing data in our  
335 models, we constructed 30 imputed datasets using a bootstrapped expectation-maximization  
336 procedure from the Amelia II package (Honaker et al., 2011). These imputations were used  
337 in all analyses. All analyses were conducted using Bayes via the BRMS package in R  
338 (Bürkner, 2017). Models estimating the association between school average SES and social  
339 adjustment were run once for each imputation and then the resulting posterior samples were  
340 pooled before estimates and their uncertainties were extracted. Our inference criterion was  
341 that 95% credibility intervals do not include zero.

342       To test the association between school average SES and social adjustment, we used a  
343 Bayes Tobit regression model with weakly informative priors. A Tobit model was selected  
344 because the distribution of the social adjustment variables implied their was censoring. That  
345 is, participants would have recorded higher or lower scores than the survey responses allowed  
346 had that option been made available. Tobit models can be used when seeking to model  
347 outcome variables that are censored on the left, right, or both tails (see Kleiber & Zeileis,  
348 2008). As scores on the social adjustment variables had both a floor of zero and a ceiling of  
349 10, we included censoring on both the left and the right in all models.

350       To test if the association between school average SES varied across the SES gradient,  
351 we included an interaction term between school average SES and family SES in a subsequent  
352 set of models. To account for the multilevel nature of the data (children nested within  
353 schools) we included a random intercept for schools in all models. Tables and figures clearly  
354 label the metric of the predictor variables.



355 For effect size estimates, the skew in the outcome variables meant traditional  
 356 standardized beta coefficients could be difficult to interpret with respect to the distribution  
 357 of the social adjustment variables. Hence, we provided effects sizes in the results section in  
 358 relation to the interquartile range (IQR) for the social adjustment outcomes. Although  
 359 unusual, we believe this provides a readily interpretable metric for readers that is faithful to  
 360 the underlying distribution of the data. Thus, the effect size formula is:

$$\beta = B \times \frac{SD_x}{IQR_y}$$

361 For continuous predictors like family or school average SES this effect size gives the  
 362 difference in social adjustment in IQR units for a standard deviation change in the predictor.  
 363 This is the same as beta standardization except the standard deviation of the outcome  
 364 variable was replaced with the IQR of the outcome variable.

365 The main models were fit using the following formula:

$$y_i^* \sim N(\alpha_{j[i]} + X_i\beta, \sigma_y^2), \text{ for } i = 1, \dots, n$$

$$\alpha_j \sim N(U_j\gamma, \sigma_\alpha^2), \text{ for } j = 1, \dots, k$$

366 Here  $X$  is a matrix of student level predictors for student  $i$  including family SES,  
 367 prior social adjustment, gender, cohort, geographic location, and verbal ability. Prior social  
 368 adjustment is particularly critical as this provides strong controls for selection effects.  $U$  is a  
 369 matrix of school level predictors for school  $j$  including school sector and the aforementioned  
 370 critical variable *school SES*. Note that we predict  $y_i^*$  which is the latent continuous variable  
 371 underlying the observed variables, which are defined as:

$$y_i = \begin{cases} y^*_i & \text{if } y^*_i < 0 \text{ or } y^*_i > 10 \\ 0 & \text{if } y^*_i < 0 \\ 10 & \text{if } y^*_i > 10 \end{cases}$$

372 When there were significant interactions between school average SES and family SES  
 373 they were investigated via conditional means plots and regions of significance plots.  
 374 Uncertainty estimates in both types of plots were taken from the 2.5 and 97.5 quartiles of  
 375 the posterior draws from the respective models (Gelman et al., 2020).

376 All scripts used to produce these results can be found in the [OSF project](#),  
 377 <https://osf.io/q26ej>, associated with this paper. Data can be applied for from the Australian  
 378 Data Archive Dataverse [website](https://dataverse.ada.edu.au/dataverse/ada?q=LSAC), <https://dataverse.ada.edu.au/dataverse/ada?q=LSAC>.

## 379 Results

### 380 Descriptives

381 Table 1 provides the descriptive information about the sample. This includes  
 382 descriptives broken down by schools below and above the median for school average SES  
 383 (descriptives for the total sample are in [supplementary materials](#)). We can see here that  
 384 there were significant differences in all social adjustment variables between children in poorer  
 385 and wealthier schools. But there were also significant differences in many of the control  
 386 variables. Thus, our models below aim to determine if this is representative of a school  
 387 context association or merely the influence of selection effects.

388 In order to provide a context for the main analyses, we aimed to show that: a)  
 389 children from advantaged backgrounds enter school with better social adjustment (as  
 390 measured by their parents); and b) children in Australia tend to be schooled in socially  
 391 stratified schools. Student SES is slightly correlated with prior prosocial behavior ( $r = 0.073$ )

392 95% CI[0.052, 0.094]) but more strongly and negatively correlated with prior conduct  
393 problems ( $r = -0.18$  95% CI[-0.21, -0.16]) and peer problems ( $r = -0.18$  95% CI[-0.2, -0.16]).  
394 Children from lower SES backgrounds also tended to enter schools with children from similar  
395 backgrounds ( $r = 0.5$  95% CI[0.48, 0.52]). Put simply, disadvantaged children enter school  
396 with lower social adjustment on average and the school they enter tends to have  
397 lower-average levels of SES. Figure 1 shows the relationship between family and school SES  
398 with red lines indicating average scores. Although there is a strong relationship between  
399 family and school SES, a number of children from lower SES attend schools with a  
400 higher-average SES; although the reverse is not as frequent. This is important to keep in  
401 mind when interpreting latter results as it shows that there are a significant number of  
402 children from lower SES backgrounds who attend wealthier schools; while the reverse is not  
403 as often true.

#### 404 **School-Average SES Predicts Social Adjustment Controlling for Age 4 SES and** 405 **Social Adjustment**

406 We next predicted social adjustment with school average SES controlling for family  
407 SES, a range of demographic covariates and academic performance measures, and social  
408 adjustment at age 4. We present results for school average SES in Tables 2-4. School average  
409 SES negatively predicted conduct problems and positively predicted prosocial behavior for  
410 both parent and teacher-reported social adjustment. School average SES also negatively  
411 predicted peer problems. Results from either teacher or parent provided fairly consistent  
412 evidence of the influence of school SES context on social adjustment (or, more specifically,  
413 change in social adjustment from age 4 to age 8). Interestingly, the association of school  
414 average SES with social adjustment was similar in strength to the association of family SES  
415 with social adjustment (see [supplementary materials](#) for full results). Overall, and consistent  
416 with Jerrim and Sim (2019), the effects sizes were small (all  $\beta < .20$ ) indicating that school  
417 context had a minor potential influence on social adjustment.

418 **School Average SES Predicts Social Adjustment Mainly in Children from Lower**  
419 **SES Backgrounds**

420 The predictive association of school average SES on social adjustment was not  
421 consistent across the SES gradient (see Tables 2-4). School average SES by student SES  
422 background interactions were significant for peer problems and conduct problems for both  
423 teacher and parent reports and for teacher-reported prosocial behavior. Although, the  
424 interaction between family and school average SES was not significant in predicting  
425 parent-reported prosocial behaviour, the significant interaction for teacher-reported procial  
426 behavior was not substantially larger ( $\Delta\beta = 0.02 [0.00, 0.04]$ ).

427 Figures 2-4 provide the regions of significance for the association of school average  
428 SES and social adjustment for different levels of family SES. The interaction plots suggest  
429 that school context associations were particularly potent for children from lower SES  
430 backgrounds but that school context had minimal association with social adjustment for  
431 children from advantaged backgrounds. Indeed, the effect sizes for children from  
432 disadvantaged backgrounds were practically significant. For example, predicted scores for  
433 two children one standard deviation below the mean on family SES but who went to a school  
434 either one standard deviation above or below the mean on school average SES differed on  
435 conduct problems by  $\Delta\beta \approx .50$  for parent reported and  $\Delta\beta \approx 1$  for teacher reported. The  
436 plots suggest that for the very poorest schools in our sample, a student from a lower SES  
437 background would have levels of peer problems greater than the threshold for ‘close to  
438 average’ scores that may signal a need for intervention (Youth in Mind, 2016). This result  
439 can be compared to a child with similar characteristics who attended a school with average  
440 levels of SES, who would be predicted by our model to be well within the ‘close to average’  
441 band. Referring to Figure 1, it is important to note that there were a considerable number of  
442 students from lower SES backgrounds who may benefit from attending a higher SES school  
443 in the sample. There is some evidence that higher school average SES may be detrimental to

444 children from higher SES backgrounds. However, the regions of significance plots show that  
445 this was generally only relevant for a small portion of the SES gradient where the result is  
446 based on interpolation from a sparse number of data points. Thus, readers should be  
447 skeptical about how robust this result is given there were relatively few children with SES  
448 backgrounds greater than two to two and a half standard deviations above the mean where  
449 this result applies (see Figure 1).

## 450 Discussion

451 Research on social adjustment has repeatedly shown that there is a SES gradient to  
452 social adjustment (e.g., Datta Gupta & Simonsen, 2010; Gutman & Schoon, 2013; Jerrim &  
453 Sims, 2019). Yet little research in this area has considered the potential influence of school  
454 context on social adjustment, despite a history of research noting the importance of context  
455 to healthy child development (Leventhal & Brooks-Gunn, 2000). Our research filled this gap  
456 by examining the association between school socioeconomic context and social adjustment in  
457 early elementary school. Like previous research on aggression (Espelage et al., 2003;  
458 Espelage & Swearer, 2003; Hong & Espelage, 2012), we find that, at least for children from  
459 lower SES backgrounds, higher-average school SES is positively associated with social  
460 adjustment; although lower-average school SES may be associated with lower levels of social  
461 adjustment. These results replicated across parent and teacher reports of social adjustment  
462 despite the relatively modest agreement between these two report sources. Conditioning on  
463 prior social adjustment, as well as family SES and other demographic variables, meant that  
464 coefficients for school average SES predicted social adjustment at age 8; controlling for at  
465 least some selection effects of interest.

466 For both teacher and parent reports, we found that the association of school context  
467 with social adjustment depended on the child's socioeconomic background. This was the case  
468 for all outcomes except for parent-reported prosocial behavior. Children with the lower SES  
469 experienced the largest benefit from a wealthy social-economic context. Regions of

470 significance plots showed that significant school context associations were almost exclusively  
471 present among students from lower SES backgrounds. Interestingly, although present at the  
472 extreme of Family SES ( $>2SD$  above the mean) where only few children were present, there  
473 was some evidence that going to a high SES school has a negative association with social  
474 adjustment.

### 475 **School Context Theory**

476 A greater focus on factors other than cognitive development, such as social  
477 adjustment, may help to explain socioeconomic gaps in educational attainment and provides  
478 an important step forward in inequality research (see Heckman, 2006). Now that research  
479 has illuminated the importance of such variables, future research needs to consider the  
480 conditions under which they develop. Previous economic theory has emphasized the role that  
481 schools play as a context for developing non-academic factors like social adjustment (Akerlof  
482 & Kranton, 2010) and claimed this as one of the ways intergenerational inequality is  
483 transmitted and maintained (Bowles & Gintis, 1976). In contrast, sociology has tended to  
484 emphasize the role of contagion like effect but also differences in resource allocation (Lucas,  
485 2001). Likewise, psychology research has emphasized assimilation to frames-of-reference,  
486 with particular significance given to the role of a child's peers as providing a standard  
487 against which a child might assimilate to (Mussweiler et al., 2004). Our research could not  
488 distinguish between these mechanisms. Instead we focused on their collective influence. The  
489 hypothesis we tested was that school average SES would have a positive association with  
490 social adjustment but we did not specify the relative contribution of different mechanisms to  
491 this association. We also note that, school SES is used as a proxy for the school social  
492 adjustment context as noted in the introduction.

493 Likewise, our research could not disentangle school context from other enmeshed  
494 contexts. For example, other adults in and around the school community are also part of the  
495 neighborhood community. Thus, at least part of the potential role of school context is the

496 associated neighborhood context. Further, better school resourcing leading to better funded  
497 programs or facilities may also be associated with increases in social adjustment. Although  
498 Australia has an, in principle, free education system, there is a significant proportion of  
499 children who attend fee based private school. Even in government schools there are  
500 significant differences in the money that schools in more advantaged locations are able to  
501 attract from private financing (Rowe & Perry, 2019). Future research that can disentangle  
502 these mechanisms is likely to be vital in developing more precise interventions and more  
503 nuanced policy in the future.

#### 504 **School Context and Assimilation Associations**

505 For children with a SES status below the mean, school socioeconomic context had  
506 statistically significant associations with social adjustment at age 8 (controlling for social  
507 adjustment at age 4; i.e., incoming social adjustment). As with previous research on  
508 aggression (Espelage et al., 2003; Espelage & Swearer, 2003; Hong & Espelage, 2012) and  
509 depression (Coley et al., 2017, 2019; E. Goodman et al., 2003), school context associations  
510 (i.e, the significant influence of school average SES in Model 1), were consistent with  
511 assimilation rather than with contrast-like mechanisms. That is, the social adjustment in  
512 children from lower SES backgrounds tended to increase in high-average school SES and  
513 decrease in low-average school SES. This is in contrast to research on self-worth where the  
514 opposite findings were observed (Crosnoe, 2009). But the strength of this association  
515 depended on a child's SES background.

516 Our results suggest that a child from a lower SES background, who is enrolled in an  
517 advantaged school, would be predicted to have similar social adjustment levels compared to  
518 their higher SES background peers. Children from higher SES backgrounds tend to come  
519 from families rich in the resources needed for healthy social development. In contrast,  
520 children from lower SES backgrounds tend to arrive at school having grown up in contexts  
521 with less access to such resources. Thus, by increasing access to those resources, school may

522 be pivotal to these children's future attainment. Yet children from lower SES backgrounds,  
523 in countries like Australia, are considerably less likely to be enrolled in advantaged schools  
524 where such resources are prevalent. As we noted in the introduction, Australia has average  
525 levels of social inclusion as measured by PISA (OECD, 2015). This means that Australian  
526 schools tend to be moderately homogenous in terms of their student population (see Parker  
527 et al., 2019).

528 Our results indicate that children from lower SES backgrounds attend more  
529 disadvantaged schools on average and their social adjustment is predicted to be lower than  
530 we would expect it to be in a higher-SES school. This association appears to be of practical  
531 significance in size, particularly for children from lower SES backgrounds. The net effect of a  
532 system where lower SES children are, on average, enrolled in lower-average SES schools is  
533 that these children will tend to have their—already lower on average—social adjustment  
534 levels depressed by the school climate they are most likely to find themselves in.

535 But this also suggests that increasing access to higher SES schools for children from  
536 lower SES backgrounds could have meaningful positive effects. Of course, identity economics  
537 argues that there is nothing inherent in higher SES schools themselves that provides an  
538 environment conducive to social adjustment. The important factor is instead the degree to  
539 which there is a clear and consistent positive school ethos shared by the school leadership,  
540 teachers, and fellow students alike (Akerlof & Kranton, 2010). There is danger here too. If a  
541 school ethos is strong but not broad and inclusive enough so that all students can feel  
542 included, those students on the fringes may be rejected by the ethos, potentially leading to  
543 poorer overall outcomes for these students despite the strong ethos (Akerlof & Kranton,  
544 2010). Thus, in order for children from lower SES backgrounds to benefit from their school  
545 context, there is a need for both local and jurisdictional policy makers and institutions to  
546 ensure that the school ethos is not only clear but inviting to all students (Parker et al., 2022).

547 Our results suggest that school choice, in which children from lower SES backgrounds



548 receive vouchers or similar, and programs such as Movement to Opportunity, where poorer  
549 families receive vouchers to move to new neighborhoods, may be beneficial (Entwisle &  
550 Alexander, 1993; Friedman, 1962; Leventhal & Brooks-Gunn, 2000; Souza Briggs et al.,  
551 2010). Strategies like these could be a powerful policy lever to overcome socioeconomic gaps  
552 in social adjustment. This approach tackles the problem of contextual influences via  
553 market-based systems. Yet this policy requires there to be few barriers, whether  
554 psychological or otherwise, to parents using vouchers to select the best school or move to  
555 neighbourhoods that match their child's needs. Such barriers do exist (Gradstein & Justman,  
556 2005; Souza Briggs et al., 2010). Indeed, empirical evidence suggests that school choice tends  
557 to exacerbate inequality (e.g., Saporito, 2003).

558 Research shows that greater school choice at the country level is related to poorer  
559 average ability levels, lower aspirations, and paradoxical effects on psychological factors like  
560 motivation and self-concept. These negative outcomes appear to be relevant to most of the  
561 student population (Parker et al., 2021, 2016, 2018; Parker et al., 2019). This research  
562 suggests school selection policies should maximize within-school heterogeneity and minimize  
563 between-school heterogeneity such as the school system found in Finland. Not only does this  
564 approach help standardize the school context, it is also likely to lead to more equitable  
565 resource allocation across schools. More resources, and more equitable distribution of those  
566 resources, is more efficient, removes hindrances to learning, and appears to be associated  
567 with greater levels of achievement at the country level (OECD, 2019).

568 Altering school selection policies to create heterogeneous classrooms would require  
569 considerable state intervention to achieve and may thus impose unreasonable restrictions on  
570 parents' rights to choose. However, it is worth noting that our results predict children from  
571 higher SES backgrounds would not have lower social adjustment by being enrolled in a more  
572 disadvantaged school. There are strong arguments and good empirical support on both sides  
573 of this debate, suggesting that we are far from a settled position on the matter. At least for

574 the current context in Australia, where social stratification is moderately high and where the  
575 school system seems to ensure that school choice is more clearly an option for the rich than  
576 the poor (Parker et al., 2019), our results are troubling. It is important to acknowledge that  
577 our focus has been on between school stratification. However, within-school stratification  
578 may pose as much of a risk to children's social development as between-school stratification  
579 (Perry & Weinstein, 1998).

### 580 **Limitations**

581         There are several strengths to this study. Most notably, longitudinal data allowed us  
582 to control for incoming social adjustment and government administrative data that provided  
583 access to complete and high-quality data for school's average SES at the school level.  
584 Further, the use of LSAC data meant that we were able to control for a number of potential  
585 confounding variables drawn from a sample of Australian children. Our aim was to try to  
586 build a model from high-quality data that could assist us in making as close to an *all else*  
587 *being equal* comparisons as possible by including a range of pertinent control variables  
588 (Angrist & Pischke, 2008).

589         Nevertheless, there are also limitations. This includes an inability to control for all  
590 differences present prior to school enrollment. This included an inability to average across  
591 multiple waves of data for some key variables to get potentially more reliable estimates (e.g.,  
592 school average SES). The reader should interpret results of this research with respect to  
593 causation with skepticism. Finally, we were not able to identify and compare the relative  
594 impact of different mechanisms that may explain the influence of school average SES on  
595 social adjustment. Assimilation effects can result from peer effects but also the socialization  
596 influence of teachers and educational structures as well as the inherent resource advantages  
597 of wealthier parents and schools (Bowles et al., 2001). Identifying and comparing these  
598 mechanisms is an important future direction for research. Finally, our use of Bayesian  
599 multilevel models precluded our ability to use population weights in this analysis.

600

### Conclusion

601           The influence of school average SES on social adjustment represents the triple  
602 disadvantage that children from lower SES backgrounds can face in socially stratified school  
603 systems. First, children from lower SES backgrounds are more likely to start school with  
604 lower social adjustment than their higher SES background peers. Second, because the school  
605 system is stratified by SES, children from lower SES backgrounds are likely to enroll in more  
606 disadvantaged schools, which can have negative associations with social development. Third,  
607 assimilative associations suggest that children from lower SES backgrounds are more affected  
608 by their school context than children from middle to high SES backgrounds. Taken together,  
609 our results support the call for policy that aims to a) decrease country-level variance in  
610 social stratification, b) decrease between-school heterogeneity in social status, and, in  
611 combination with (a), c) encourage school selection practices that maximize within school  
612 heterogeneity in social status while improving equitable resource allocation across schools.

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**Table 1***Descriptive Statistics.*

Characteristic	Above Median School Avg. SES, N = 3,934	Below Median School Avg. SES, N = 4,212	p
Family SES	0.44 (0.91)	-0.33 (0.80)	<0.001
Unknown	166	276	
Achievement	0.28 (0.91)	-0.26 (0.99)	<0.001
Unknown	769	1,128	
Urban			<0.001
rural	843 (21%)	2,048 (49%)	
urban	3,089 (79%)	2,156 (51%)	
Unknown	2	8	
Gender			0.5
boy	2,003 (51%)	2,179 (52%)	
girl	1,931 (49%)	2,033 (48%)	
LOTE			0.009
eng	3,390 (86%)	3,712 (88%)	
other	544 (14%)	500 (12%)	
Indigenous			<0.001
indig	28 (0.7%)	166 (4.2%)	
nonIndig	3,823 (99%)	3,827 (96%)	
Unknown	83	219	
Grade			<0.001
Grade 1	1 (<0.1%)	1 (<0.1%)	
Grade 2	212 (5.5%)	175 (4.3%)	
Grade 3	3,000 (78%)	2,883 (71%)	
Grade 4	614 (16%)	987 (24%)	
Unknown	107	166	
Vocabulary Skills (Age 4)	0.21 (0.93)	-0.11 (1.00)	<0.001
Unknown	218	294	

*(Continued on Next Page...)*

**Table 1***Descriptive Statistics. (continued)*

Characteristic	Above Median School Avg. SES, N = 3,934	Below Median School Avg. SES, N = 4,212	p
School Sector			<0.001
Government	2,190 (56%)	3,226 (77%)	
Non-Government	1,744 (44%)	986 (23%)	
Cohort			<0.001
B	2,065 (52%)	1,915 (45%)	
K	1,869 (48%)	2,297 (55%)	
Prosociality (Parent Report Age 4)	7.83 (1.74)	7.67 (1.76)	<0.001
Unknown	211	244	
Conduct Problems (Parent Report Age 4)	2.05 (1.80)	2.53 (1.95)	<0.001
Unknown	212	246	
Peer Problems (Parent Report Age 4)	1.31 (1.42)	1.64 (1.52)	<0.001
Unknown	213	246	
Prosociality (Teacher Report Age 4)	7.26 (2.31)	7.04 (2.37)	<0.001
Unknown	950	1,306	
Conduct Problems (Teacher Report Age 4)	0.99 (1.65)	1.08 (1.79)	0.047
Unknown	948	1,307	
Peer Problems (Teacher Report Age 4)	1.32 (1.65)	1.49 (1.71)	<0.001
Unknown	948	1,306	

*(Continued on Next Page...)*

**Table 1***Descriptive Statistics. (continued)*

Characteristic	Above Median School Avg. SES, N = 3,934	Below Median School Avg. SES, N = 4,212	p
Prosociality (Age 8: Teacher)	7.91 (2.14)	7.53 (2.32)	<0.001
Unknown	638	825	
Conduct Problems (Age 8: Teacher)	0.67 (1.35)	0.97 (1.73)	<0.001
Unknown	635	823	
Peer Problems (Age 8: Teacher)	1.16 (1.59)	1.45 (1.82)	<0.001
Unknown	636	825	
Prosociality (Age 8: Parent)	8.48 (1.63)	8.26 (1.74)	<0.001
Unknown	321	490	
Conduct Problems (Age 8: Parent)	1.10 (1.33)	1.48 (1.59)	<0.001
Unknown	321	489	
Peer Problems (Age 8: Parent)	1.23 (1.49)	1.62 (1.66)	<0.001
Unknown	322	489	

<sup>1</sup> Continuous variables: Mean (SD); Categorical variables: n (%)

<sup>2</sup> Continuous variables: t-test p-value; Categorical variables: Fisher's exact test p-value

**Table 2**

*Association of School Average SES by Student SES with Conduct Problems.*

Parameters	Teacher Report		Parent Report	
	Model 1	Model 2	Model 1	Model 2
Intercept (Units: Censored 0-10)	-0.78 (-0.97, -0.59)*	-0.84 (-1.03, -0.66)*	-0.05 (-0.11, 0)	-0.07 (-0.13, -0.01)*
School Average SES (Units: SD)	-0.18 (-0.26, -0.1)*	-0.18 (-0.26, -0.1)*	-0.07 (-0.09, -0.04)*	-0.07 (-0.09, -0.04)*
Family SES (Units: SD)	-0.29 (-0.37, -0.21)*	-0.31 (-0.4, -0.23)*	-0.07 (-0.1, -0.05)*	-0.08 (-0.1, -0.05)*
Prior (Parent Report) conduct (Units: 0-10)	0.2 (0.17, 0.24)*	0.2 (0.17, 0.23)*	0.22 (0.21, 0.23)*	0.22 (0.21, 0.23)*
Prior (Teacher Report) conduct (Units: 0-10)	0.38 (0.35, 0.43)*	0.38 (0.34, 0.42)*	0.07 (0.06, 0.08)*	0.07 (0.06, 0.08)*
Cohort K	-0.18 (-0.31, -0.05)*	-0.17 (-0.3, -0.05)*	-0.01 (-0.05, 0.04)	-0.01 (-0.05, 0.03)
Girl	-0.99 (-1.12, -0.86)*	-0.99 (-1.12, -0.86)*	-0.18 (-0.22, -0.14)*	-0.18 (-0.22, -0.14)*
Urban	0.13 (-0.02, 0.27)	0.11 (-0.04, 0.25)	0.01 (-0.03, 0.06)	0.01 (-0.04, 0.05)
Peabody Picture Vocabulary	-0.11 (-0.18, -0.05)*	-0.11 (-0.17, -0.04)*	-0.05 (-0.07, -0.03)*	-0.05 (-0.07, -0.03)*
Non-government School	0.2 (0.06, 0.35)*	0.23 (0.08, 0.38)*	-0.03 (-0.07, 0.02)	-0.02 (-0.06, 0.02)
Random Intercept (Units: SD)	0.57 (0.4, 0.7)*	0.55 (0.37, 0.69)*	0.05 (0, 0.12)	0.05 (0, 0.12)
School Average SES by Student SES		0.17 (0.1, 0.24)*		0.04 (0.02, 0.06)*

*Note.* Results are in unit changes on a 1-10 (Censored) scale for social adjustment variables for a standard deviation increase in school SES. Full results in supplementary materials. \* = Credability Intervals do not include zero.



Table 3

*Association of School Average SES by Student SES with Peer Problems.*

Parameters	Teacher Report		Parent Report	
	Model 1	Model 2	Model 1	Model 2
Intercept (Units: Censored 0-10)	0.12 (0.04, 0.2)*	0.1 (0.02, 0.18)*	0.06 (-0.01, 0.12)	0.04 (-0.02, 0.11)
School Average SES (Units: SD)	-0.06 (-0.1, -0.03)*	-0.06 (-0.1, -0.03)*	-0.08 (-0.11, -0.05)*	-0.08 (-0.11, -0.05)*
Family SES (Units: SD)	-0.09 (-0.12, -0.05)*	-0.1 (-0.13, -0.06)*	-0.11 (-0.14, -0.08)*	-0.12 (-0.15, -0.09)*
Prior (Parent Report) peer (Units: 0-10)	0.08 (0.06, 0.1)*	0.08 (0.06, 0.1)*	0.24 (0.23, 0.26)*	0.24 (0.23, 0.26)*
Prior (Teacher Report) peer (Units: 0-10)	0.14 (0.12, 0.16)*	0.14 (0.12, 0.16)*	0.07 (0.06, 0.09)*	0.07 (0.06, 0.09)*
Cohort K	-0.02 (-0.08, 0.03)	-0.02 (-0.08, 0.04)	-0.02 (-0.07, 0.02)	-0.02 (-0.06, 0.02)
Girl	-0.11 (-0.17, -0.05)*	-0.11 (-0.16, -0.05)*	-0.08 (-0.13, -0.04)*	-0.08 (-0.13, -0.04)*
Urban	0.02 (-0.04, 0.08)	0.02 (-0.05, 0.08)	0.07 (0.02, 0.12)*	0.07 (0.01, 0.12)*
Peabody Picture Vocabulary	-0.04 (-0.07, -0.02)*	-0.04 (-0.07, -0.01)*	-0.05 (-0.08, -0.03)*	-0.05 (-0.08, -0.03)*
Non-government School	0.03 (-0.03, 0.1)	0.04 (-0.02, 0.1)	-0.03 (-0.08, 0.02)	-0.02 (-0.07, 0.03)
Random Intercept (Units: SD)	0.23 (0.16, 0.3)*	0.23 (0.14, 0.29)*	0.06 (0, 0.13)	0.06 (0, 0.14)
School Average SES by Student SES		0.06 (0.03, 0.08)*		0.04 (0.01, 0.06)*

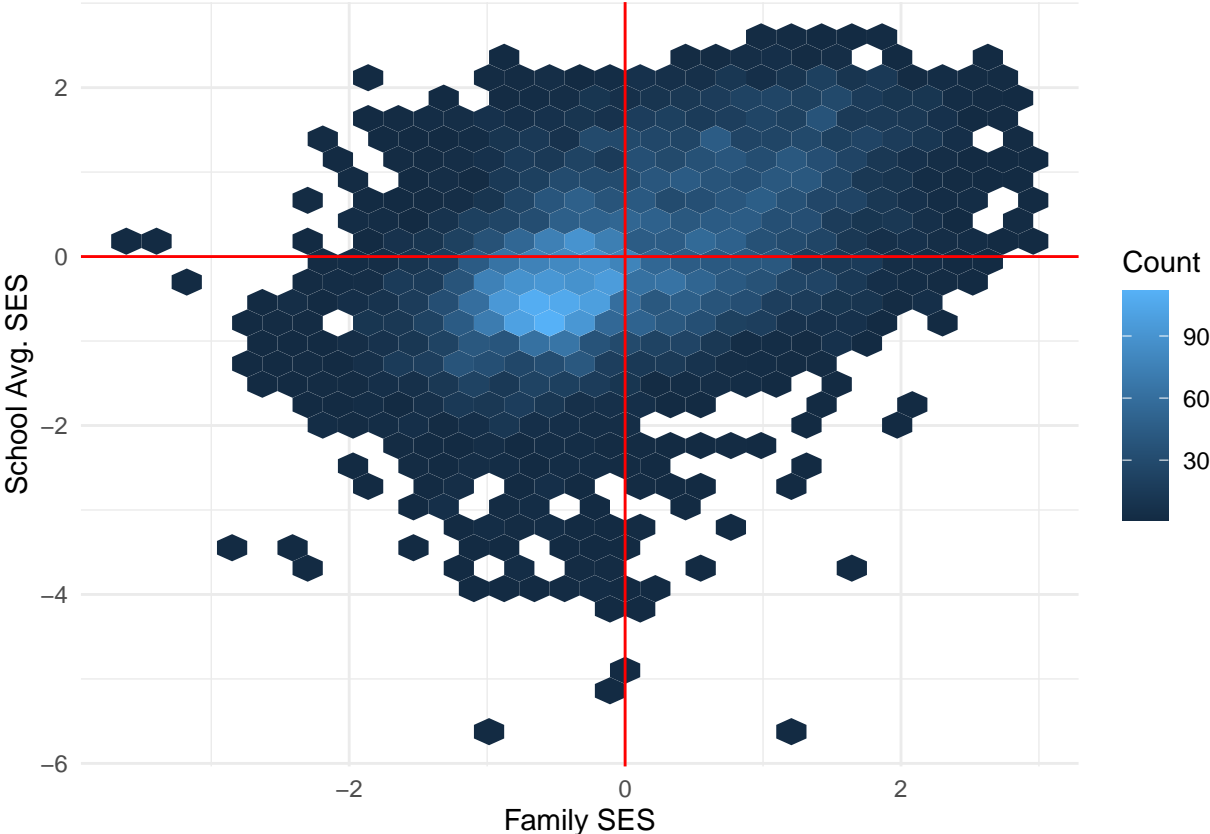
*Note.* Results are in unit changes on a 1-10 (Censored) scale for social adjustment variables for a standard deviation increase in school SES. Full results in supplementary materials. \* = Credability Intervals do not include zero.

Table 4

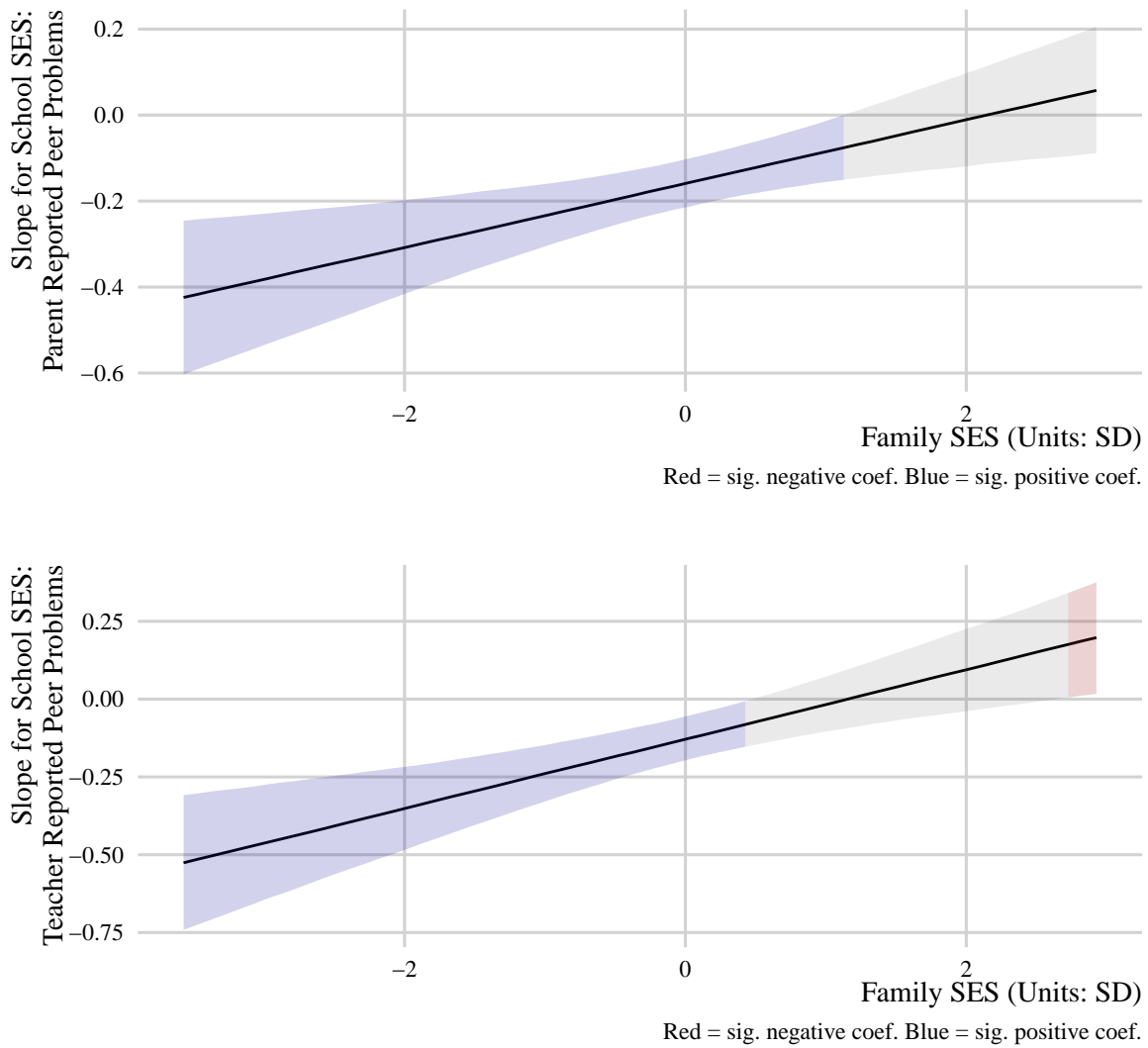
*Association of School Average SES by Student SES with Prosocial Behaviour.*

Parameters	Teacher Report		Parent Report	
	Model 1	Model 2	Model 1	Model 2
Intercept (Units: Censored 0-10)	1.1 (1.02, 1.18)*	1.11 (1.04, 1.19)*	1.31 (1.23, 1.39)*	1.31 (1.24, 1.39)*
School Average SES (Units: SD)	0.03 (0.01, 0.05)*	0.03 (0.01, 0.05)*	0.02 (0.01, 0.04)*	0.02 (0.01, 0.04)*
Family SES (Units: SD)	0.05 (0.04, 0.07)*	0.06 (0.04, 0.08)*	0.01 (0, 0.03)	0.02 (0, 0.03)
Prior (Parent Report) social (Units: 0-10)	0.04 (0.03, 0.05)*	0.04 (0.03, 0.05)*	0.17 (0.16, 0.18)*	0.17 (0.16, 0.18)*
Prior (Teacher Report) social (Units: 0-10)	0.06 (0.05, 0.06)*	0.06 (0.05, 0.06)*	0.04 (0.03, 0.04)*	0.04 (0.03, 0.04)*
Cohort K	-0.02 (-0.05, 0)	-0.03 (-0.05, 0)	-0.13 (-0.16, -0.1)*	-0.13 (-0.16, -0.1)*
Girl	0.33 (0.3, 0.36)*	0.33 (0.3, 0.36)*	0.21 (0.18, 0.24)*	0.21 (0.18, 0.24)*
Urban	0 (-0.03, 0.04)	0 (-0.03, 0.04)	-0.03 (-0.06, 0)	-0.03 (-0.06, 0)
Peabody Picture Vocabulary	0.02 (0, 0.03)	0.02 (0, 0.03)	0.02 (0, 0.03)	0.02 (0, 0.03)
Non-government School	-0.03 (-0.06, 0.01)	-0.03 (-0.06, 0)	0.04 (0.01, 0.07)*	0.04 (0.01, 0.07)*
Random Intercept (Units: SD)	0.13 (0.09, 0.16)*	0.13 (0.09, 0.16)*	0.03 (0, 0.07)	0.03 (0, 0.07)
School Average SES by Student SES		-0.03 (-0.04, -0.01)*		-0.01 (-0.02, 0.01)

*Note.* Results are in unit changes on a 1-10 (Censored) scale for social adjustment variables for a standard deviation increase in school SES. Full results in supplementary materials.\* = Credability Intervals do not include zero.

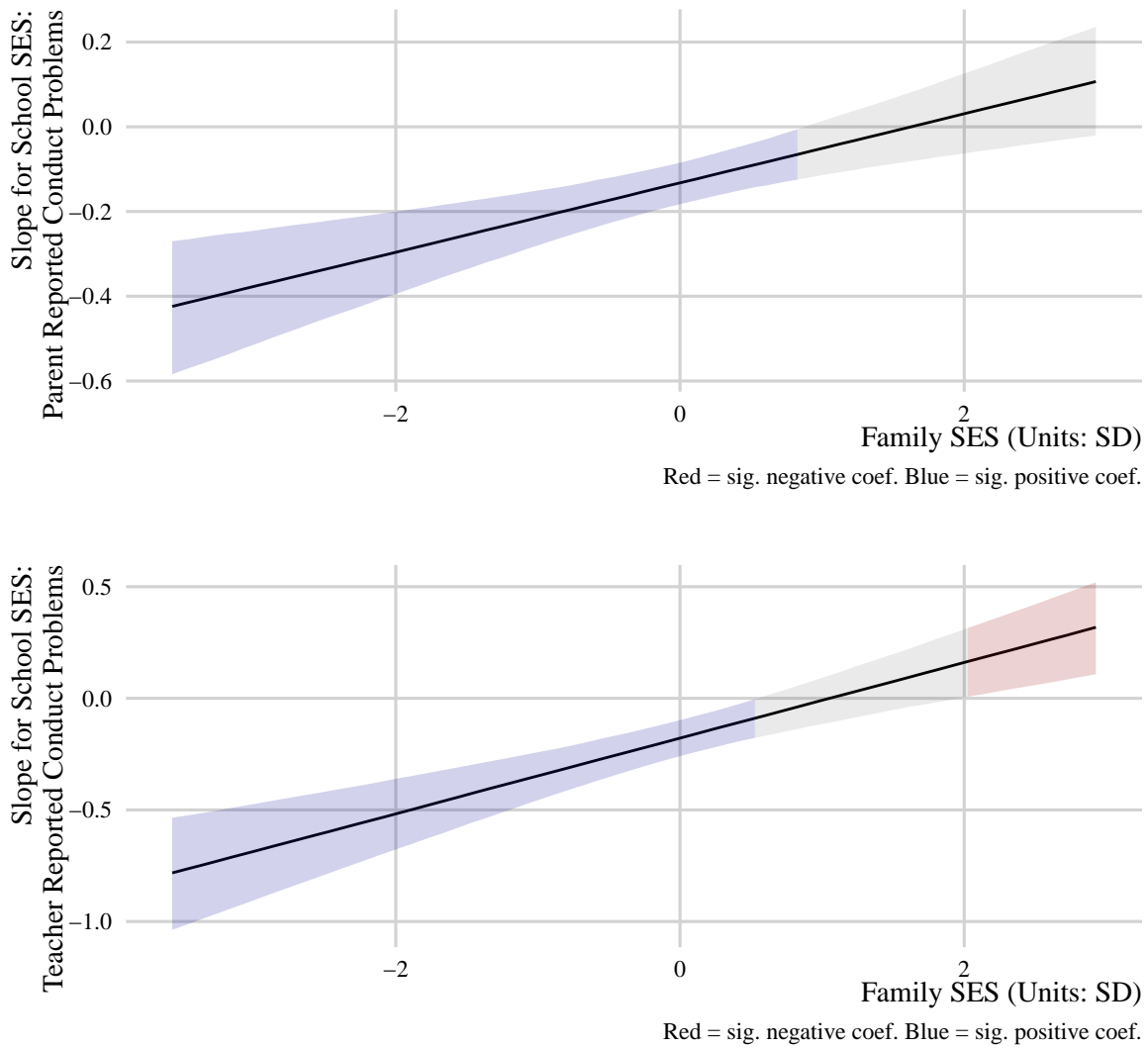


**Figure 1**  
*Relationship between family and school SES.*



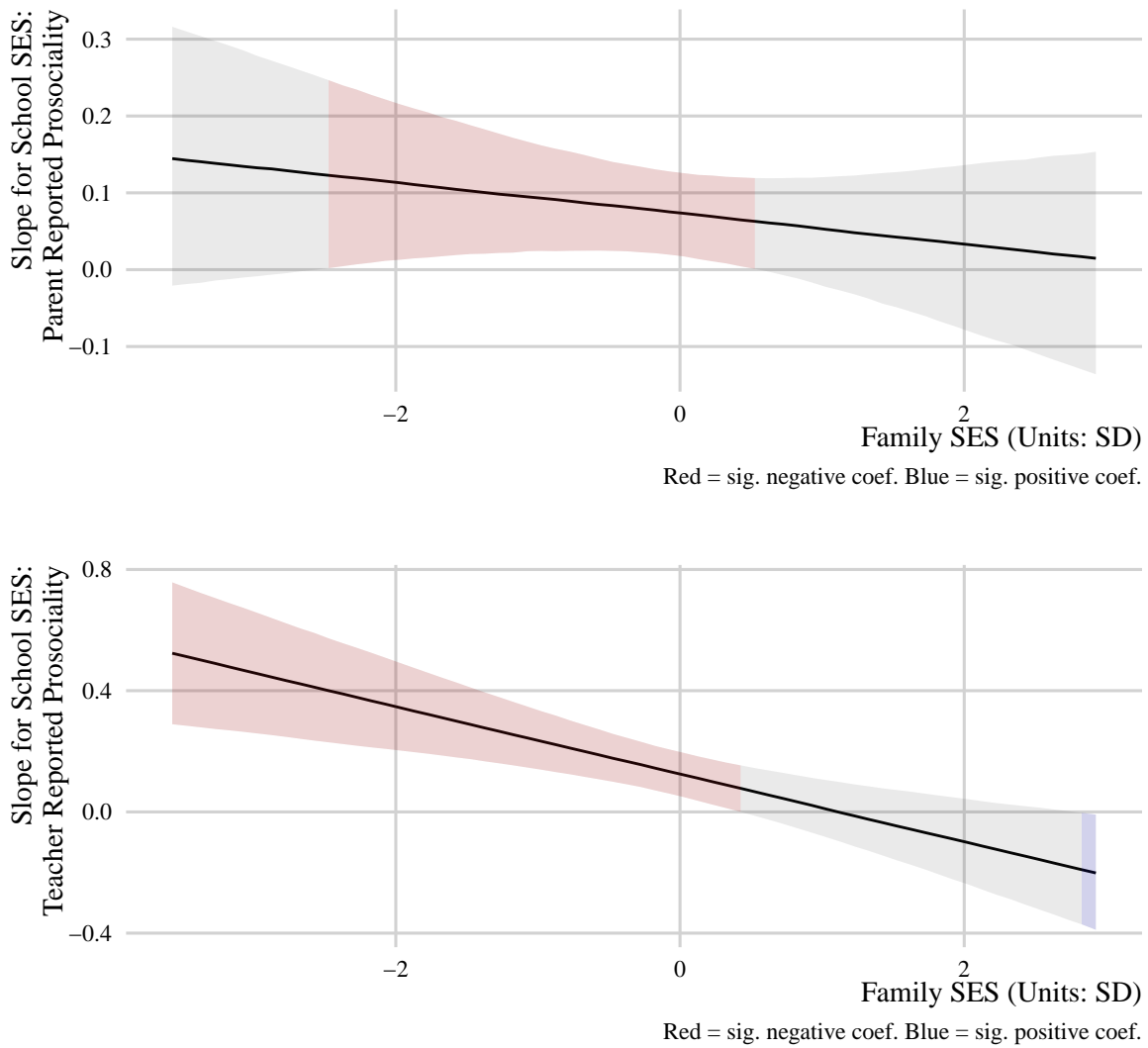
**Figure 2**

*School average SES by Student SES on Peer Problems. Includes 95% CIs. The line represents the size of the coefficient for school average SES at different values of family SES.*



**Figure 3**

*School average SES by Student SES on Conduct Problems. Includes 95% CIs. The line represents the size of the coefficient for school average SES at different values of family SES.*



**Figure 4**

*School average SES by Student SES on Prosociality. Includes 95% CIs. The line represents the size of the coefficient for school average SES at different values of family SES.*