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School effectiveness and truancy: a multilevel study of upper secondary schools in Stockholm

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ABSTRACT
Truancy is a problem associated with a range of negative consequences at the individual and societal level, both in the short and the long term. Few earlier studies have investigated the association between school effectiveness and truancy. The aim of this study is to examine the links between three teacher-rated features of school effectiveness – school leadership, teacher cooperation and consensus, and school ethos – and student-reported truancy. Data were collected in 2016 among 4,956 students and 1,045 teachers in 46 upper secondary schools in Stockholm. Results from two-level binary logistic regression analyses show that higher teacher ratings of the school leadership and of the school ethos (but not of teacher cooperation and consensus) are associated with a lower likelihood of truancy at the student-level, even when adjusting for student- and school-level sociodemographic characteristics. The findings indicate that effective school characteristics may contribute to reducing students’ inclination to play truant.

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Truancy; absenteeism; school effectiveness; upper secondary school; contextual; multilevel

Introduction
Truancy is a problem of paramount importance within the educational and teaching sector, both in Sweden and internationally (Claes, Hooghe, & Reeskens, 2009; Swedish Schools Inspectorate, 2015). To reduce the level of truancy is an important part of the EU 2020 strategy, aiming at lowering the number of early school leavers (European Commission, 2013). The reasons behind truancy are complex and include individual, family-related, social, psychological and school-related aspects – and the same applies for the possible protective actions. Historically, the individual explanatory models for truancy have dominated, while more recent research has increasingly taken into account causes outside the individual and, instead, stressed the importance of social and school-related aspects (Reid, 2003, 2010).

Research on effective schools (e.g. Reynolds, Teddlie, Creemers, Scheerens, & Townsend, 2000; Rutter & Maughan, 2002) revolves around features of the school context and their associations with various student outcomes, over and above the effects of individual students’ social background and other sociodemographic characteristics. Usually, studies on school effectiveness characteristics focus on positive student outcomes such as grades, school performance, social well-being or school satisfaction. Some studies however deal with negative outcomes such as bullying (e.g. Låftman, Östberg, & Modin, 2017; Modin, Låftman, & Östberg, 2017) and risk behaviours (e.g. Gottfredson, 2001; Macbeath & Mortimore, 2001; West, Sweeting, & Leyland, 2004), showing that such behaviours are less common among students attending schools characterized by a high degree of effectiveness. The potentially protective role of effective schools may be understood by...
typical features such as a good leadership, positive teacher-student relationships, a strong academic focus and a strong school ethos. It is reasonable to assume that such school characteristics may serve protectively also against students’ inclination to play truant. Yet, possible relations between school effectiveness features and truancy have been identified as missing or inadequate within the field, especially within large normal samples taking into account individual, family, and school characteristics (Havik, Bru, & Ertesvåg, 2015; Rutter & Maughan, 2002). Using recently collected data among teachers and students in the same schools, the present study contributes to the field by investigating how three teacher-rated aspects of school effectiveness – school leadership, teacher cooperation and consensus, and school ethos – are associated with student-reported truancy.

**Truancy**

A range of different concepts are used to describe and define students’ absence from school, such as unauthorized absence, truancy, absenteeism, unexcused absence, and dropout, which differ by the form and extent of absence. Truancy can be defined as any unexcused or undocumented absence from school taking into account the attendance rules of the specific country (Claes et al., 2009) and can take different forms, ranging from repeated late arrivals to absence from a whole or several school day(s).

Due to its complexity, truancy must be understood as a behavior possibly originating from different structural levels, including the individual, the family, and the school (Reid, 2005). Individual conditions that have been shown to increase the risk of truancy include, e.g. mental health problems, high-risk life situations, exposure to bullying, and learning disabilities (Egger, Costello, & Angold, 2003; Maynard, Salas-Wright, Vaughn, & Peters, 2012; Reid, 2005; Southwell, 2006). With regards to family characteristics, research shows that truancy is more common among students from low-income families (Attwood & Croll, 2006; Galloway, 1983) and single-parent households (Strand & Granlund, 2014; Sundell, El-Khouri, & Månsson, 2005) and among those living in more disadvantaged neighborhoods (Crowder & South, 2003; Farrington, 1980). Truancy is also more common among students who receive limited parental support regarding schoolwork (Farrington, 1980, 1996; Teasley, 2004). At the school level, studies have shown that a school that does not meet the student’s needs or expectations is a risk factor for truancy (Attwood & Croll, 2006; Havik et al., 2015). Furthermore, the school’s social environment appears to be important, as poor relationships with teachers and peers including harassments and degrading treatments by peers or by school staff are risk factors for truancy (Attwood & Croll, 2006; Havik, Bru, & Ertesvåg, 2014; Swedish National Agency for Education, 2010; SOU 2016:94). Therefore, organisational characteristics of the school environment expressed through, e.g. norms and values, staff’s working conditions, and the way the school is being led, seem important for creating a school environment that helps reduce truancy among students.

**Consequences of truancy**

Many scholars have shown interest in the consequences of truancy and what future outcomes may be affected, both in the short and in the long term. Unsurprisingly, truancy is negatively associated with school performance. In a comprehensive American study, the most obvious effect for students with a high level of truancy was poorer grades (Vaughn, Maynard, Salas-Wright, Perron, & Abdon, 2013), a finding which has also been noted in a number of other studies (e.g. Attwood & Croll, 2006, 2015; Hunt & Hopko, 2009; Ingestad, 2006). Besides lower academic performance and poorer grades, there is a strong positive association between truancy and the risk of early school leaving and dropout (Attwood & Croll, 2015; Cabus & De Witte, 2015; Rocque, Jennings, Piquero, Ozkan, & Farrington, 2017; Swedish National Agency for Education, 2012). In addition to direct school-related outcomes, studies also indicate that truancy is negatively and strongly associated with self-reported health (Brandiabas, Jeunier, Clanet, & Fourasté, 2004; Trygged, Backlund, & Elofsson,
2017), and positively associated with a variety of problems and risk behaviors such as use of tobacco, alcohol and drugs (Best, Manning, Gossop, Gross, & Strang, 2006; Flaherty, Sutphen, & Ely, 2012; Maggs, Patrick, & Feinstein, 2008). Truancy is also linked with an increased risk of depression and of crime (Claes et al., 2009; Stockholm municipality, 2014; Vaughn et al., 2013).

Furthermore, truancy has proved to have long-lasting associations with negative outcomes during the life-course. For instance, studies controlling for a number of individual and environmental related factors have shown that truancy is associated with an increased risk of committing several different forms of crime later in life (Bennett, Mazerolle, Antrobus, Eggins, & Piquero, 2018; Rocque et al., 2017).

Even low levels of truancy are associated with less-favored outcomes such as poorer grades, a higher risk for school dropout, and lower employability in the future, although a higher degree of truancy has proved to have even more negative consequences (Attwood & Croll, 2015). Noteworthy, truancy has a negative impact on all socioeconomic groups, but it is particularly prominent for the less socially and economically advantaged (Attwood & Croll, 2015).

Despite the difficulties to determine the causal relations between individual-, family-, and school-related characteristics and truancy, the fact remains that truancy is a strong predictor of unfavorable results in a variety of areas, both in the short and in the long term. In fact, Reid (2003) states that: ‘Truancy is the greatest single predictor of juvenile and adult crime and of adult psychiatric problems’ (p. 3), and ‘Truancy has immediate and longer-term consequences throughout all stages of adult life’ (p. 4).

Thus, preventing and counteracting truancy must be considered an important task. Due to the complexity of the phenomenon, preventive work is necessary at many different levels, and in this study, we focus specifically on how aspects of the school environment, in terms of features of school effectiveness, are associated with truancy.

**Effective schools**

The underlying idea of the effective schools theory is about the significance and impact of school contextual factors on, for example, student achievement and well-being, but also about its relation to negative student outcomes such as bullying and risk behaviours (Rutter & Maughan, 2002; Teddlie & Reynolds, 2000). Over the past 40 years, this field of research has demonstrated that some schools are more successful than others in improving students’ results and promoting other positive outcomes, even when considering the schools’ sociodemographic composition. It has also been shown that these schools are successful in combating negative effects of, for example, unfavorable student background characteristics. The earliest studies in the field were conducted by Rutter and his colleagues in England in the 1970s (Rutter, Maughan, Mortimore, Ouston, & Smith, 1979), and have later been applied in a variety of contexts, where Grosin (2004), in Sweden, contributed with significant studies. Central characteristics of effective schools include a strong and competent leadership, high expectations of all learners, a school atmosphere conducive to learning, a focus on basic-skill acquisition and frequent monitoring of students’ progress (Edmonds, 1979; Scheerens, 2016). These aspects should in turn be understood as hierarchically ordered, where a strong and good leadership at the school sets clear guidelines and involves the prerequisites for teachers to carry out work that complies with other principles of effective schools, which ultimately contributes to more positive student outcomes (Blair, 2002).

**School leadership** is attributed a central role in theory of effective schools, through the school management’s ability to set common goals and visions as well as to create prerequisites for a collegial work with shared and common goals (Leithwood, Patten, & Jantzi, 2010; Leithwood & Riehl, 2003). School leadership has been shown to affect a variety of educational outcomes (Seashore Louis, Dretzke, & Wahlstrom, 2010), although the direct effect of school leadership on student outcomes is rather modest (Hattie, 2008; Muijs, 2011). Largely, the role of the school leadership for educational outcomes can be understood as indirect, by setting out frameworks and
guidelines, clarifying the school’s vision and goals, and ensuring that resources and staff competencies are available in the right places at the right times (Leithwood & Riehl, 2003). Characteristics that have been described as particularly important for an effective leadership include high expectations on staff, the management’s role in contributing to creating collaborative processes and strengthening the school culture, as well as setting the direction of the work by identifying and clarifying the school’s vision and goals, and striving for a consensus within the staff group (Leithwood & Riehl, 2003).

Teacher cooperation and consensus can be understood as subordinate to school leadership in the sense that a strong school leadership is largely a prerequisite for teachers to have the opportunity to collaborate and find consensus in important pedagogical and organisational issues. A systematic review of studies on teacher cooperation shows that a good and vital collaboration between teachers gives positive outcomes at several levels of the school organisation, benefiting both the students and the teachers (Vangrieken, Dochy, Raes, & Kyndt, 2015). More precisely, teacher cooperation revolves around conditions for regular communication among teacher colleagues to provide opportunities for recurring everyday interaction, planning of teaching and the exchange of educational materials and experiences (Van Waes et al., 2016). Previous studies have highlighted the importance of a good collaborative environment among school teachers because it is a prerequisite for finding consensus and agreeing on common goals, work strategies and methods (Roland & Galloway, 2004; Sammons, Hillman, & Mortimore, 1995).

A third central aspect of school effectiveness is school ethos, which can be described as the norms, values and beliefs of the school, and how they are expressed through how teachers and students act, relate and interact with each other (Rutter et al., 1979). Important features of school ethos include a clear academic emphasis, high and positive expectations and attitudes towards the students from the teachers, a focus on positive feedback and praise, and common values and standards (Glover & Coleman, 2005). Furthermore, Halstead and Taylor (2000) emphasize the importance of a good learning environment, student involvement, procedures of how conflicts are resolved, anti-bullying and anti-racist policies and the schools’ underlying philosophy and aims. Thus, school ethos consists of the prevailing common atmosphere at school, which derives from the social activities and behaviors that its actors are involved in, rather than the physical and organisational environment (Allder, 1993).

The Swedish context

In Sweden, school year 1–9 constitute the compulsory school, preceded by a mandatory preschool year and followed by a formally voluntary upper secondary education for three years. In practice, however, the upper secondary school serves as an extension of the compulsory school, since almost all (98%) students enter this level of education, meaning that the upper secondary school has a mandatory character (Swedish National Agency for Education, 2013). However, the proportion of students that complete a national program within three years is only about 75 percent (Swedish National Agency for Education, 2017). The upper secondary school is divided into twelve vocational and six academic national educational programs, and five introductory programs for students who are not yet qualified for a national program.

National policy documents include regulations stating that schools have a responsibility to counteract absenteeism, promote attendance, and prevent student interruptions. According to the Swedish Education Act (SFS 2010:800, 15 chapter, 16§), a student in upper secondary school must participate in all scheduled educational activity provided, unless there is a valid reason not to. Furthermore, the principal shall inform the guardian(s) on the same day if a student is not present during parts of or throughout the school day. Thus, the upper secondary school is voluntary in the meaning that a student can choose whether to start this level of education or not, but for a student who has enrolled, it is mandatory to attend during all parts of the education. The Swedish Board of Student Finance (CSN) is the Swedish government agency
that provides students in upper secondary school with study allowance. If a school reports more than four hours of truancy during one month for a student, the study allowance may be withdrawn. In the school year of 2015/16, about 24,000 students or 7.8% of the Swedish upper secondary population had their study allowance withdrawn due to truancy (SOU 2016:94). In addition to the national policies that regulate students’ obligation to attend school, Sweden has signed the EU2020 Strategy and the UN Convention on the Rights of the Child (see Article 28), thus committing to encouraging regular attendance at school as well as countering school absence (European Commission, 2010; UNICEF, 1989).

**Associations between school contextual factors and truancy**

Previous studies have documented that a variety of school level factors, including the relationships between students and teachers, the content and quality of teaching, and the school’s ethos, affect truancy among students (Reid, 2005).

According to Swedish National Agency for Education (2010), many of the causes of truancy are related to the school itself, and the report highlights the importance of a good working environment. Other vital factors that can affect the degree of truancy are the teachers’ involvement and engagement. Another Swedish report, focusing on students’ absenteeism from a school leadership perspective, identifies a number of factors that the school leaders emphasize as important for reducing truancy in the upper secondary school. The report underline rapid reporting, collaboration with the custodians and the student health, and the creation of a good physical and social study environment (Swedish National Agency for Education, 2014). A large-scale Finnish study demonstrated that a positive psychosocial climate, as reported by teachers, is associated with less truancy, fewer health symptoms, more received health education and a more positive school perception, as reported by students (Virtanen et al., 2009). Another large-scale study, including data from 28 countries and 94,000 students, shows that truancy can be largely affected by school level factors, for example by having a supportive and authoritative learning environment (Claes et al., 2009). Similarly, Maes and Lievens (2003) found a negative association between the school climate, as rated by teachers, and truancy among students. Furthermore, it is shown that a good classroom management by the teachers has a direct negative association with students’ truancy (Havik et al., 2015).

Trusting relationships between teachers and students are also highlighted as an important factor for reducing truancy (Swedish Schools Inspectorate, 2015). Similar to these findings, a doctoral dissertation focusing on truancy from both a student and from a school perspective, states that a positive change in the school climate means that multiple system forces work together to reduce the level of truancy at school (Strand, 2013).

**Aim**

The present study aims to examine the associations between three teacher-rated aspects of school effectiveness – school leadership, teacher cooperation and consensus, and school ethos – and truancy among secondary-year upper secondary school students. We hypothesize that higher teacher ratings of school effectiveness are associated with a lower likelihood of truancy at the student-level, even when taking sociodemographic characteristics at the student- and the school-level into account.

**Data and method**

This study is based on a recently collected combined data material including students and teachers from 46 upper secondary schools in Stockholm municipality. Stockholm municipality performed the Stockholm School Survey (SSS) during the spring 2016, targeting second-year students in all
public and many independent upper secondary schools; including questions on e.g. school climate, health and truancy. Our research team performed the Stockholm Teacher Survey (STS) during the same period. Through a web-based questionnaire, we targeted all teachers in all upper secondary schools in Stockholm municipality and asked questions about e.g. working conditions and school effectiveness features at the school. The teachers’ ratings were aggregated to the school level by calculating mean values for each school, which were subsequently linked to the student-level data.

The response rate in the SSS was 77.1% within 68 schools, while in the STS, it was 57.9% within 74 schools. Only schools that participated in both surveys were included in the study sample. Thus, after merging the STS and the SSS data, the data included information from 6,129 students and 1,204 teachers in 58 schools. Schools with no available information on sociodemographic characteristics at the school-level were excluded (n = 525 students in 12 schools). Students with missing data on any of the variables used in the analyses were also excluded (n = 648), resulting in a final study sample including information from 4,956 students and 1,045 teachers in 46 upper secondary schools.

### Individual-level measures

**Dependent variable**

Truancy was created from the question: ‘Have you played truant an entire day from school this school year?’ with the following response categories ‘No’; ‘Yes, once’; ‘Yes, 2–3 times’; ‘Yes 4–10 times’; ‘Yes, 10–20 times’; and ‘Yes, more than 20 times’. The variable was dichotomized with those who replied that they had not played truant vs. those who had done so at least once.

**Control variables**

A number of control variables at the student level were included, in order to adjust for sociodemographic characteristics. Gender was coded as ‘Boy’ or ‘Girl’. Family structure was created from the question ‘Which people do you live with?’ with the following response options (one or more to be ticked): ‘Mother’; ‘Stepfather/stepmother’; ‘Shared residence’; ‘Foster parents’; ‘I live alone’; ‘Father’; ‘Siblings’; ‘Other relatives’; and ‘Other’. The variable was coded into those who live: (a) with two custodial parents in the same household, (b) with a single parent, (c) in a reconstituted family, and (d) with shared residence. Parental education was constructed from the question: ‘What is the highest education (or corresponding) your parents have?’ with the following response categories to be ticked separately for the mother and the father: ‘Compulsory school’; ‘Upper secondary school’; ‘University’; and ‘Don’t know’. The variable was dichotomized into those who have at least one parent with tertiary education and those who have not. Parental unemployment was created from the question ‘What do your parents do?’ with the following response options (one or more to be ticked) for the mother and the father, respectively: ‘Works full- or part-time’; ‘Studies’; ‘On leave of absence/parental leave’; ‘Unemployed’; ‘Other’; and ‘Don’t know’. Those who ticked ‘Unemployed’ for the mother and/or the father were coded as ‘At least one parent unemployed’. Migration background was measured by the question ‘How long have you lived in Sweden?’ with the response categories ‘All my life’; ‘10 years or more’; ‘5–9 years’; and ‘Less than 5 years’. The variable was divided into those who have lived in Sweden ten years or more and those who have lived in Sweden less than ten years.

### School-level measures

**Independent variables**

At the school level, three teacher rated indices (aggregated to the school level) were used as independent variables, in order to capture features of school effectiveness. The indices were developed through initial exploratory factor analysis (EFA) in order to examine if the items included were related as postulated, followed by confirmatory factor analysis (CFA) to assess model fit statistics for each of the indices. School leadership includes ten items and refers to how well the
school is led in terms of the management of the school (e.g. ‘This school is lead in a good way’; ‘The management is a good support for teachers experiencing difficulties with a class’ and ‘The management shows understanding of my work problems’). The index shows good model fit (CFI = 0.99; TLI = 0.99; RMSEA = 0.06) and high internal consistency (Cronbach’s alpha 0.90). Teacher cooperation and consensus refers to how well the teachers assess a good and vital cooperation and consensus among their teacher colleagues at the school. It is measured by seven items (e.g. ‘I can discuss work problems with my colleagues’; ‘Teachers at this school usually use the same methods to deal with students who break school rules’ and ‘There is consistency in the approach to school goals among teachers’). The model fit for the index is reasonably good (CFI = 0.97; TLI = 0.95; RMSEA = 0.11) and the measure has high internal consistency (Cronbach’s alpha 0.83). School ethos includes nine items and intends to capture the teachers’ assessment of the overall ethos of the school (e.g. ‘This school provides a stimulating learning environment’; Teachers at this school take their time with students even if they want to discuss something other than schoolwork’ and ‘At this school we actively work on issues such as violence, bullying and harassment among students’). The index has a good model fit (CFI = 0.97; TLI = 0.96; RMSEA = 0.06) and the measure has high internal consistency (Cronbach’s alpha 0.90). All items are rated on a five-point Likert scale (‘strongly agree’ to ‘strongly disagree’). The indices were coded so that a high value of the index means a high rating of, for example, school leadership. Prior to the multilevel regression analysis, all three indices were z-transformed (mean = 0, standard deviation = 1).

Control variables

The analyses adjust for five variables at the school-level, based on data from the Swedish National Agency for Education. Proportion of students with parents with tertiary education, providing information of the parental education level at the school, and proportion of students with foreign-born parents indicating the level of migration background of the school. Proportion of teachers with a pedagogical degree indicates to what extent the teachers at the school have a relevant teacher training, and number of students per teacher shows the staff density at the school. School type refers to public or independent school.

Statistical method

The method used is multilevel binary logistic regression analysis. Two-level random intercept models were estimated using the meqrlogit command in Stata 15. The estimates presented are Odds Ratios (OR) with 95% confidence intervals. By first fitting an empty model (with no independent variables), we estimated the degree of variation in truancy at the student and at the school-level, respectively. The Intra Class Correlation (ICC) for binary outcomes provides approximate information on how much of the total variance that can be attributed to the school-level. In Model(s) 1, the school-level independent variable is included, while Model(s) 2 adds the school-level control variables (proportion of students with parents with tertiary education, proportion of students with foreign-born parents, proportion of teachers with a pedagogical degree, number of students per teacher, and school type). Model(s) 3 also adds the student-level control variables (gender, family structure, parental education, parental unemployment, and migration background). Because truancy is operationalized as those who stated that they had played truant at least once vs. those who stated that they had not, sensitivity analyses with other cut-offs have also been conducted. Because comparing Odds Ratios can be problematic across logistic regression models (Mood, 2010), we also conducted multilevel linear probability models as sensitivity analyses.

Ethics

The Stockholm Teacher Survey has been approved by the Regional Ethical Review Board of Stockholm (2015/1827–31/5). The Stockholm School Survey is collected anonymously, and
therefore not considered as an issue of ethical concern, according to a decision by the Regional Ethical Review Board of Stockholm (2010/241–31/5).

**Results**

Descriptive statistics of the variables used in the study are presented in Table 1. About a third of the students (33.5%) reported that they had played truant at least an entire school day during the current school year.

The school leadership index ranges between 24.7–44.6 with an average of 33.8, the teacher cooperation and consensus index ranges between 19.7–32.0 with an average of 24.9, while the school ethos index has an average of 34.9 and ranges between 27.5–41.3, indicating that the degree of accomplished school effectiveness, as rated by the teachers at the schools, differs substantially between schools. The proportion of students with parents with tertiary education varies between 7.0 and 86.3 percent with an average of 51.8 percent. The proportion of students with foreign-born parents ranges between 6.0–95.7 percent with an average of 41.0 percent, while the average proportion of teachers with a pedagogical degree is 84.7 percent, and ranges between 41.6–100 percent. The average number of students per teacher is 16.6, and ranges between 5.1–26.7. Just as in our independent variables, the control variables show a substantial variation between the schools.

**Figure 1** displays results from the two-level binary logistic regression analyses with truancy as the dependent variable and the three features of school effectiveness as the independent variables. For each feature of school effectiveness, results from the three different models (M1, M2, M3) are presented in terms of Odds Ratios (OR), 95% Confidence Intervals (95% CI) and the Intra Class

| Table 1. Descriptives of variables included in the analyses. n = 4,956 students distributed across 46 upper secondary schools. |
|-----------------|-----------------|-----------------|
| **Student level** | **n** | **%** |
| Truancy | | |
| No | 3296 | 66.5 |
| Yes | 1660 | 33.5 |
| Gender | | |
| Boy | 2335 | 47.1 |
| Girl | 2621 | 52.9 |
| Family structure | | |
| Two parents in the same household | 3100 | 62.5 |
| Single parent | 863 | 17.4 |
| Reconstituted family | 340 | 6.9 |
| Shared residence | 653 | 13.2 |
| Parental education | | |
| No parent with tertiary education | 1608 | 32.5 |
| At least one parent with tertiary education | 3348 | 67.5 |
| Parental unemployment | | |
| No parent | 4626 | 93.3 |
| At least one parent | 330 | 6.7 |
| Migration background | | |
| ≥ 10 years in Sweden | 4539 | 91.6 |
| < 10 years in Sweden | 417 | 8.4 |
| School level | Mean | S.d. | Range |
| School leadership | 33.8 | 3.9 | 24.7–44.6 |
| Teacher cooperation and consensus | 24.9 | 1.7 | 19.7–32.0 |
| School ethos | 34.9 | 3.0 | 27.5–41.3 |
| % students with parents with tertiary education | 51.8 | 25.2 | 7.0–86.3 |
| % students with foreign-born parents | 41.0 | 21.6 | 6.0–95.7 |
| % teachers with a pedagogical degree | 84.7 | 11.5 | 41.6–100.0 |
| Number of students per teacher | 16.6 | 3.3 | 5.1–26.7 |
| School type | n | % |
| Public | 2,985 | 60.2 |
| Independent | 1,971 | 39.8 |
Correlation (ICC). In Models 1 (M1), only the independent variable is included, while Models 2 (M2) adjust for the school-level control variables, and finally, in Models 3 (M3), the student-level control variables are included. The ICC of the empty model is 4.23 percent, indicating the amount of variation in truancy that occurs at the school level rather than at the individual level.

Concerning school leadership, Model 1 shows that higher teacher ratings of the school leadership are associated with a lower likelihood of truancy at the student-level and that the association is statistically significant (OR 0.86, \( p = 0.008 \), 95% CI 0.77–0.96). This finding remains robust and statistically significant also when school-level sociodemographic characteristics are added in Model 2 (OR 0.86, \( p = 0.011 \), 95% CI 0.77–0.97) and student-level sociodemographic characteristics are added in Model 3 (OR 0.88, \( p = 0.015 \), 95% CI 0.79–0.97). When school leadership is introduced in Model 1, the ICC decreases to 3.36 percent, and when adding the full set of control variables in Model 3, it decreases to 2.12 percent, indicating that part of the between-school variation of truancy can be attributed to school leadership.

Regarding the analyses of the association between teacher cooperation and consensus and truancy, the results of all three models show a negative but non-significant association between teachers’ ratings of the collegial cooperation and consensus and student-reported truancy (Model 3: OR 0.91, \( p = 0.085 \), 95% CI 0.82–1.01).

Results from the analyses of the association between teacher-rated school ethos and student-reported truancy (Model 1) shows a clear negative association in that higher teacher ratings of the school ethos are associated with a lower likelihood of truancy at the student-level (OR 0.85, \( p = 0.010 \), 95% CI 0.75–0.96). The association remains robust and statistically significant when adjusting for school-level sociodemographic characteristics in Model 2 (OR 0.85, \( p = 0.009 \), 95% CI 0.75–0.96) and when student-level sociodemographic characteristics are added in Model 3 (OR 0.86, \( p = 0.012 \), 95% CI 0.77–0.97). In Model 1, the ICC decreases to 3.49 percent and in Model 3 to 2.22 percent, indicating that part of the variation between schools in truancy can be attributed to teachers’ ratings of the school ethos.

In sum, the figure illustrates the results of how three features of school effectiveness – school leadership, teacher cooperation and consensus, and school ethos – are associated with students’
inclination to play truant. School leadership and school ethos show negative and statistically significant associations with student-reported truancy, while for teacher cooperation and consensus, the same pattern is revealed although it is not statistically significant.

**Discussion**

Truancy is a critical problem with potentially short- and long-lasting negative consequences at both the individual and the societal level. Hence, identifying potential risk and protective factors is a relevant task. Earlier research has shown that both individual, family-, and school-related conditions play a role for students’ inclination to play truant. The present study focused on the potentially protective role of the school, testing the hypothesis that higher levels of school effectiveness – in terms of teachers’ ratings of the school leadership, teacher cooperation and consensus, and school ethos – were associated with a lower likelihood of truancy among students. The results showed that the teachers’ ratings of the school leadership and of the school ethos, respectively, were negatively associated with truancy at the student-level. The findings were robust even when adjusting for student- and school-level sociodemographic characteristics. There was however no statistically significant association between teacher cooperation and consensus and truancy, even if the pattern was similar.

It has previously been pointed out that research regarding possible associations between school effectiveness and truancy is missing or inadequate, especially with large normal samples with control for individual-, family-, and school characteristics (Havik et al., 2015; Rutter & Maughan, 2002). This study contributes to the field by investigating these associations. Our results are consistent with previous findings within the field of effective schools, thus confirming the importance of these school contextual characteristics and their role for student outcomes, even when taking into account relevant factors at the student and the school level.

Previous national Swedish studies (Strand, 2013; Swedish National Agency for Education, 2010, 2014) have highlighted the importance of a positive school climate in order to reduce the level of truancy at school. International large-scale multilevel studies (Claes et al., 2009; Maes & Lievens, 2003; Virtanen et al., 2009) have shown a negative association between the school’s climate and students’ inclination to play truant. Consistent with these earlier results, our findings showed a negative association between teacher-rated school ethos and student-reported truancy, pointing at the importance of a good school ethos for preventing truancy among students.

Combating truancy is a high set priority in most European countries, and as stated in previous research, actions against truancy should target several different structural levels. Interventions directed to specific individuals and identified risk groups can certainly influence the degree of truancy among these adolescents and groups of students. However, we emphasize that this work should also be carried out at the school and the national level by implementing stronger and clearer guidelines and policies to counteract truancy. Our results indicate that strengthening the opportunities for school leaders and other school staff to create a stronger ethos of the school (as it manifests itself in the form of prevailing norms and values of the school’s actors through actions, relations and interactions) would possibly benefit this work. Of particular importance would be to strengthen and stimulate this work at schools where there is a low degree of compliance with the principles of school effectiveness.

**Strengths and limitations**

The main strength of the study is the use of combined data with survey information from both teachers and students as well as register information on schools’ sociodemographic composition. The fact that school effectiveness was measured through teachers’ ratings and truancy by student self-reports decreases the risk of common measures variance. There are however also limitations. Due to the cross-national nature of the data, we cannot make any claims about
causality in these associations with support in the data. Theoretically, it is assumed that higher levels of school effectiveness lead to less truancy among students and such an interpretation seems likely. Yet, it cannot be ruled out that the findings may also reflect selection; that students who are academically motivated and therefore less inclined to play truant are more likely to attend schools with a strong leadership and ethos, and that poorly motivated students are more likely to enroll in less ‘effective’ schools. Still another possibility is that there are elements of reverse causality, in that schools with a large proportion of students who play truant develop a poorer school ethos.

Another limitation concerns non-response among students in the Stockholm School Survey. Since the survey was completed during school hours, it is likely that students who often play truant are over-represented among those who did not participate in the survey. Apart from the external non-response, there is also non-negligible internal non-response in the survey. Students who reported to have played truant were, compared with non-truants, less likely to be included in the study sample due to missing information on any of the included variables. Despite the fact that truants are underrepresented in our study sample, we do not see any reasons that this would have affected the main empirical patterns.

In this study, we have operationalized truancy by distinguishing those students who reported that they had played truant during the last school year with those who stated that they did not. However, we also tested with other cut-offs on the truancy variable, with very similar results.

We also conducted multilevel linear probability models as sensitivity analyses, resulting in very similar patterns as presented.

Finally, the study was based on data collected among second-year upper secondary students in Stockholm, and hence the findings cannot be generalized to Sweden as a whole or to other populations. To corroborate our findings, studies including schools in other educational systems and geographical settings are needed.

**Conclusions/implications**

The current study showed that features of school effectiveness such as school leadership and school ethos are negatively associated with truancy among students attending their second year of upper secondary school in Stockholm. The results demonstrate that schools in which the teachers rate the leadership and the ethos as high, students are significantly less likely to report truancy, even when adjusting for sociodemographic characteristics at the student- and the school-level. The findings indicate that strengthening schools’ leadership and ethos may reduce truancy among their students, and indirectly also protect against the negative consequences related to truancy.

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