



## ARTICLE

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## **School ethos and the association to upper secondary school students' school engagement: A multilevel study**

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### **Abstract**

Students' school engagement has an intrinsic democratic value and is positively associated to a range of student outcomes. It is also established in international and national policy guidelines that students have the right to participate in decision-making concerning their education. Previous research shows that students' school engagement is influenced by a variety of factors at different structural levels, but few comprehensive studies have assessed the relation to school-contextual factors, such as school ethos, while also taking student-level sociodemographic characteristics into account. Therefore, this study aims to examine the associations between teacher-rated school ethos and three dimensions of students' school engagement: a) participation in educational planning; b) involvement in decision-making of important issues; and c) students' opportunities for influence. Data were collected with two separate surveys among 5,168 students and 1,204 teachers across 58 upper secondary schools in Stockholm, and subsequently linked together. Due to the hierarchical nature of the data, multilevel modelling was applied. Two-level linear regression analyses showed that schools with a strong school ethos were associated with higher ratings of the three dimensions of students' school engagement. Results indicate that a strong and vital school ethos has the potential to raise the levels of students' school engagement.

Keywords: School engagement, school ethos, participation, upper secondary school, multilevel.

## **Introduction**

The importance of students' school engagement, participation, involvement, and their ability to influence their schooling has a democratic value in itself, but it is also established in the United Nations Convention on the Rights of the Child (UNCRC), as well as in local and national policy guidelines (SFS 2010:800), that students have the right to participate in decision-making concerning their education. Although these rights are firmly entrenched in the school's policy guidelines, it is not clear how different educational contexts promote such engagement.

Research concerning students' school engagement is extensive and multifaceted, and parts of the research linked to the subject matter have sought to examine what the most important factors are in order to raise students' school engagement (e.g. DeVito 2016; Trowler 2010).

The school effectiveness research field is substantially about features of the school context and their associations with a wide range of student outcomes, over and above the effect derived from individual students' social background and other sociodemographic characteristics (e.g. Reynolds, Teddlie, Creemers, Scheerens & Townsend 2000; Rutter & Maughan 2002). School effectiveness research often deals with positive student outcomes such as school achievement, social well-being, and school satisfaction and their relation to the typical effective school features of school leadership, teacher collegial cooperation and school ethos. It is reasonable to assume that these typical school effectiveness features also are related to students' school engagement.

Given the complexity of the subject matter, factors that impact positively on students' school engagement derive from different structural levels, such as the individual, family, classroom and school level (DeVito 2016). However, few comprehensive studies have assessed the relation to school-contextual factors, such as school ethos, while also taking student-level sociodemographic characteristics into account, as pointed out by Fullarton (2002): '...it is difficult to find studies that have attempted to link characteristics of schools that reach beyond the classroom with students' engagement' (p. 4). Furthermore, DeVito (2016) stresses the importance of exploring the predictors of students' school engagement. Therefore, this study aims to contribute with knowledge about the importance of school-contextual factors to students' school engagement.

To this end, data among both teachers ( $n=1,204$ ) and students ( $n=5,169$ ) in the same upper secondary schools ( $n=58$ ) in Stockholm have recently been collected and contribute to the field by investigating how a school's ethos, as rated by the teachers, is associated with three dimensions of students' school engagement.

### **Students' school engagement**

School engagement as a concept has been put forward as a multifaceted construct, including e.g. affective, behavioural, and cognitive dimensions (Conner 2011), and to date there is no commonly held definition (Trowler 2010). The literature suggests that there are several different categories of school engagement, such as academic, cognitive, intellectual, institutional, emotional, behavioural, social, and psychological (Parsons & Taylor 2011). Thus, various definitions occur in the literature, but one feature that emerges relatively consistently includes participation in school-related activities (Jimerson,

Campos & Greif 2003). This study focuses on three dimensions of school engagement, namely: (a) students' participation in their educational planning; (b) students' involvement in decision-making; and (c) students' opportunities to influence, and the relations of these dimensions to the overall school ethos, as rated by teachers at the school.

One study that examined the relationships between students' school engagement and a variety of demographic, socioeconomic, educational and psychological factors found that girls in general had higher school engagement levels than boys, which was true at all achievement levels. It was also found that students from more advantaged socioeconomic backgrounds and those with more highly educated parents had the highest levels of school engagement. The study also revealed that students enrolled in independent schools and students who were planning to attend university had greater school engagement (Fullarton 2002). Reported differences between groups of students, in terms of sociodemographic backgrounds and academic performance, highlight the importance to adjust, as far as possible, for such background characteristics when examining possible associations of students' school engagement with school contextual factors.

As stated by Fullarton (2002), students' school engagement has an intrinsic democratic value in itself, but it is also positively associated to their motivation, school achievement, and other vital outcomes, just as a low level of school engagement is associated to a higher risk of dropping out of school (e.g. Bakker & Vergel 2015; Dotterer & Lowe 2011; Fredricks, Blumenfeld & Paris 2004; Shernoff, Csikszentmihalyi, Schneider & Shernoff 2003; Taylor & Parsons 2011). Therefore, it appears important to examine what characteristics influence the level of students' school engagement, not only at an individual level, but also to look at possible significant school level factors, which are missing from school engagement literature (Fullarton 2002).

### **School effectiveness**

There is an extensive body of research in the field of school effectiveness theory spanning over several decades. In essence, this research has shown the significance and impact of school contextual factors on a range of different vital student outcomes (e.g. Rutter & Maughan 2002; Teddlie & Reynolds 2000). It has been demonstrated that some schools are more successful than others when it comes to improving students' achievement and promoting other positive outcomes, just as counteracting negative behaviours, even when taking the schools' socio-demographic composition into account (e.g. Granvik Saminathen, Brolin Låftman, Almquist & Modin 2018; Ramberg, Låftman, Almquist & Modin 2019; Ramberg, Låftman, Fransson & Modin 2019; Ramberg & Modin 2019; Sellstrom & Bremberg 2006). Important features within school effectiveness theory are the school's leadership, the teacher collegial cooperation, and the school's ethos (Scheerens 2016). These features should in turn be looked at as hierarchically ordered (Blair 2002), where the highest level is school leadership, which has the potential to set up a clear vision and common goals, as well as create good prerequisites for teachers' work (Leithwood, Patten & Jantzi 2010; Leithwood & Riehl 2003). At the next level, teachers' collegial work plays a substantial role, since previous research shows that a good and vital collaboration among teachers gives positive outcomes for both students and teachers (Vangrieken, Dochy, Raes & Kyndt 2015; Van Waes *et al.* 2016). Ultimately, a good and clear school leadership and vital and professional

teacher cooperation leads to a more successful student population and engenders the opportunity to create a strong school ethos.

### *School ethos*

School ethos, as defined by Rutter, one of the pioneers within school effectiveness research, refers to the norms, values, and beliefs that permeate the spirit of the school and how these are manifested in the way students and teachers act, relate, behave, and interact toward each other (Rutter, Maughan, Mortimore, Ouston & Smith 1979). Another way to describe the essence of the school ethos concept is: 'student and teacher cohesion, a strong academic emphasis, positive teacher expectations of pupils, positive teacher attitudes towards students, a stress on positive rewards and consistent and shared values and standards' (Glover & Coleman 2005, pp. 257–258). Other important features of a strong school ethos are described as a good learning environment, active anti-racist and anti-bullying policies, and how conflicts in school are resolved (Halstead & Taylor 2000). So, school ethos refers primarily to the social activities and behaviours that the school's actors are involved in, and the school atmosphere that this creates, rather than the physical and organisational school environment (Allder 1993).

### **Aim and hypotheses**

The overall aim of this study is to examine the associations between a school's ethos, as rated by the teachers, with three dimensions of students' school engagement.

The following hypotheses are formulated:

- (1) A stronger school ethos is positively associated with students' participation in educational planning.
- (2) A stronger school ethos is positively associated with students' involvement in decision-making.
- (3) A stronger school ethos is positively associated with students' opportunities for influence.

All three associations above remain statistically significant when adjusting for sociodemographic background characteristics.

### **Methods**

#### *Data*

The study is based on data from two separate data collections, the Stockholm School Survey (SSS) and the Stockholm Teacher Survey (STS), both performed during spring 2016 targeting all upper secondary schools in the Stockholm municipality. The SSS was carried out by the Stockholm municipality among second-year students (aged 17 to 18 years) (N=8,324, response rate 77.1%), and covers a wide range of questions, including information on different dimensions of students' school engagement. The STS was performed by our research group through a web-based questionnaire, targeting all upper secondary level teachers (N=2,443, response rate 57.9%) with the main purpose to collect information about schools through the teachers' ratings of different dimensions of their working conditions, including information on their views of the school ethos. The teachers' ratings were aggregated to the school level by calculating mean values for each school, which were later linked to

the student-level data. Only schools that participated in both surveys were included in the study sample, and students with missing data on any of the variables used in the analyses were excluded, resulting in a final study sample comprising information from 5,168 students and 1,204 teachers across 58 upper secondary schools in Stockholm.

### **Individual-level measures**

#### *Dependent variables*

Three dependent variables have been used in order to capture different dimensions of students' school engagement by asking students 'How well do the following statements describe your situation at school?' (a) Participation was measured by the statement: 'Students take part in the planning of what we will do in class', (b) Involvement was measured by the statement: 'Students take part in making decisions on things that are important to us', and (c) Influence was measured with the statement: 'Students' views are taken seriously at this school'. The statements were responded to on a four-point Likert scale with the following alternatives: 'Describes very poorly (1)', 'Describes rather poorly (2)', 'Describes rather well (3)', and 'Describes very well (4)', meaning that higher ratings of the statements implies a higher degree of the school engagement dimensions.

#### *Control variables*

Several control variables at the individual level were adjusted for. Grades were measured as the summation of the student's self-reported grades in the subjects Swedish, English, and mathematics. Grades (A-F) were given numerical values (5-0), resulting in an approximately normally distributed index ranging between 0-15. Gender was coded as boy (value 0) or girl (value 1). Family type was measured by the question 'Which persons do you live with?' and the respondents could mark one or several options. Students who ticked both 'Mother' and 'Father' were classified as living with two custodial parents and contrasted to all others. Parents' education was created by the question 'What is the highest level of education of your parents?', which could be ticked separately for the mother and the father. The variable was operationalized as those with (a) no parent has university education or missing information, (b) one parent has university education, and (c) both parents have university education. Finally, migration background was measured by the question 'How long have you lived in Sweden?'. The variable was dichotomized into those who had lived in Sweden for less than ten years and those who had lived in Sweden for ten years or more.

### **School-level measures**

#### *Independent variable*

School ethos was measured by a teacher-rated index, developed through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The index in turn is based on items formulated from a theoretical idea that they should measure the essence of the concept school ethos. EFA was performed to initially check if the items were related as expected, while CFA was carried out in order to assess model fit statistics. The index is constructed from nine items that were responded to by teachers on a five-point Likert scale with the following response alternatives 'Strongly agree', 'Agree', 'Neither agree nor disagree', 'Disagree', and 'Strongly disagree'. The items included are: 'At this school the teachers make an effort to provide positive feedback about students' performance'; 'Teachers have high

expectations of student performance'; 'Teachers at this school take their time with students even if they want to discuss something other than schoolwork'; 'At this school we actively work on issues such as violence, bullying and harassment among students'; 'This school provides a stimulating learning environment'; 'The teachers work with great enthusiasm'; 'At this school the students are treated with respect'; 'The teachers at this school feel confident as classroom leaders'; and 'There are many substitute teachers'. The index has a good model fit (CFI = 0.97; TLI = 0.96; RMSEA = 0.06) and a high internal consistency (Cronbach's Alpha 0.90). In order to identify schools with a 'weak', 'intermediate', or 'strong' school ethos, the index was divided into thirds. This was done in order to take possible non-linear associations with students' school engagement into account. However, linear regression analyses were also performed with school ethos as a continuous scale (data not shown).

#### *Control variable*

At the school level, the analyses also adjust for school type, which refers to public school (value 0) or independent school (value1).

#### **Statistical method**

Due to the hierarchical data, multi-level modelling was applied. Two-level linear regression models were performed using Stata's `xtmixed` command. First, an empty model (intercept only) with no independent variables was estimated, in order to assess the variation of students' school engagement between schools. This allowed the variation in the dependent variables to be separated into two components: students and schools, and is presented in terms of the Intra Class Correlation (ICC) at the school level. The three dimensions of students' school engagement were analysed separately. In Model 1, the estimate for the school-level independent variable school ethos is presented, while Model 2 adjusts for the student-level control variables (gender, family type, parents' education, migration background, and grades) and the school-level control variable school type. For each model, the ICC is reported, which provides information on how much of the total variance in school ethos is accounted for by the school level rather than the student level (Hox, Moerbeek & Van de Schoot 2017).

#### *Ethics*

According to a decision by the Regional Ethical Review Board of Stockholm (2010/241-31/5), data from the Stockholm School Survey are not considered an issue of ethical concern since the data are collected anonymously. The Stockholm Teacher Survey and its linkage with SSS was approved by the Regional Ethical Review Board of Stockholm (2015/1827-31/5).

#### **Results**

Table 1 presents descriptive statistics of all variables used in the study. At the individual level, the average value for participation is 2.62, for involvement 2.65, and for influence 2.86. At the school level, the school ethos index has an average value of 35.18, ranging from 27.5 to 41.5. The average value for schools identified as having a weak school ethos is 31.93, and for schools identified as having an intermediate ethos it is 35.02, while in schools identified as having a strong school ethos the corresponding value is 38.62.

There are slightly more girls (53.50%) in the study sample. Concerning family type, about two-thirds of the students live in households with two custodial parents and about one-third belong to households with other constellations. Just over 42 percent of the students report that they have two parents with university education, about one-quarter has one parent with university education, and about one-third has no parent with university education or information is missing. The vast majority of the students (91 percent) have lived in Sweden for ten years or more. About 60 percent of the study sample is enrolled in a public school, and the rest in an independent school.

<i>Individual-level</i>	M	SD	Range
<i>Dependent variables</i>			
Participation	2.62	0.80	1-4
Involvement	2.65	0.80	1-4
Influence	2.86	0.89	1-4
<i>Control variables</i>			
Grades	8.63	3.59	0-15
	N	%	
Gender			
Boys (ref.)	2,403	46.50	
Girls	2,765	53.50	
Family type			
Other (ref.)	1,861	36.01	
Two custodial parents	3,307	63.99	
Parents' education			
No parent has university education or missing information (ref.)	1,662	32.16	
One parent has university education	1,309	25.33	
Both parents have university education	2,197	42.51	
Migration background			
Lived in Sweden <10 years (ref.)	453	8.77	
Lived in Sweden ≥10 years	4,715	91.23	
<i>School-level</i>			
	M	SD	
<i>Independent variable</i>			
School ethos	35.18	3.08	27.5-41.5
Weak (n=1,739)	31.93	2.00	27.5-33.8
Intermediate (n=1,710)	35.02	0.82	34.0-36.7
Strong (n=1,719)	38.62	1.10	36.9-41.5
	N	%	
School type			
Public (ref.)	3,064	59.29	
Independent	2,104	40.71	

Table 1. Descriptive statistics of the data. n=5,168 students distributed over 58 schools

Table 2 presents results from the two-level linear regression analysis where the three dimensions of students' school engagement (participation, involvement, and influence) serve as dependent variables, and school ethos as the independent variable. First, concerning participation, results in Model 1 show that school ethos, as rated by teachers, is positively associated to students' participation in educational planning. The results reveal that students in schools with an intermediate or strong school ethos rate



their participation in educational planning higher compared to students in schools with a weak school ethos. The estimate for intermediate school ethos is 0.14 ( $p = 0.021$ ), indicating that students' average ratings is 0.14 units higher on the participation variable, compared to students in schools with a weak school ethos. Among students enrolled in a school identified as having a strong school ethos, the corresponding estimate is 0.29 ( $p < 0.001$ ), indicating an even higher degree of participation among its students. In Model 2, where the full set of control variables are included, the estimates decrease but only to a negligible extent, indicating that the control variables do not have any major impact on the association under scrutiny. This is further revealed by the ICC, which is more or less the same in Model 1 as in Model 2. The ICC of the empty Model shows that 5.5 percent of the variation in participation occurs at the school level. In Model 1, the ICC decreases to 0.036, indicating that about 35 percent of the between-school variation in students' participation in educational planning is accounted for by differences in school ethos ( $1 - (3.6/5.5) = 0.35$ ).

The second association examined concerns students' involvement in decision-making on important things and school ethos. The ICC of the empty model shows that 8.6 percent of the variation in students' involvement occurs at the school level. Model 1 shows that the estimate for intermediate school ethos lies 0.14 ( $p = 0.050$ ) units higher in the involvement variable than in schools with a weak school ethos, and the estimate for schools with a strong school ethos is 0.35 ( $p = < 0.001$ ) units higher than in schools with a weak school ethos. While adjusting for the control variables in Model 2, the estimates practically remain the same, even though the statistical significance for intermediate versus a weak school ethos is lost. The ICC of Model 1 is 0.053, indicating that the amount of school variation in students' involvement accounted for by school ethos is about 38 percent.

Finally, the third association investigated concerns students' influence and school ethos. The empty Model shows that the ICC is 12.1 percent. In Model 1 it is shown that the estimate for schools with an intermediate school ethos is 0.18 ( $p = 0.028$ ) units higher than for schools with weak school ethos. The corresponding estimate for schools with a strong school ethos is 0.52 ( $p = < 0.001$ ). The estimates do not change to any noteworthy degree in Model 2 while adjusting for the control variables. The ICC of Model 1 is 6.9 percent, showing that about 43 percent of the variation in students' influence between schools is accounted for by the level of school ethos.

Taken together, the multilevel regression analyses show clear and significant associations between a school's ethos and the three dimensions of students' school engagement, where the association is somewhat stronger concerning students' influence than for participation and involvement.

	Participation			Involvement			Influence		
	Empty model <sup>a</sup>	Model 1 <sup>b</sup>	Model 2 <sup>c</sup>	Empty model <sup>a</sup>	Model 1 <sup>b</sup>	Model 2 <sup>c</sup>	Empty model <sup>a</sup>	Model 1 <sup>b</sup>	Model 2 <sup>c</sup>
		b	b		b	b		b	b
School ethos									
Weak (ref.)		0.00	0.00		0.00	0.00		0.00	0.00
Intermediate		0.14*	0.12*		0.14*	0.12		0.18*	0.17*
Strong		0.29***	0.26***		0.35***	0.32***		0.52***	0.48***
ICC <sub>school</sub>	0.055	0.036	0.034	0.086	0.053	0.050	0.121	0.069	0.067
<i>Control variables individual level</i>									
Gender									
Boys (ref.)			0.00			0.00			0.00
Girls			-0.10***			-0.05*			-0.09***
Family type									
Other (ref.)			0.00			0.00			0.00
Two custodial parents			0.05*			0.01			-0.01
Parents' education									
No parent has university education or missing information (ref.)			0.00			0.00			0.00
One parent has university education			0.01			0.02			0.02
Both parents have university education			0.00			0.02			0.02
Migration background									
Lived in Sweden <10 years (ref.)			0.00			0.00			0.00
Lived in Sweden ≥10 years			-0.08*			-0.12**			0.05
Grades			0.01**			0.01**			0.01**
<i>Control variables school level</i>									
School type									
Public (ref.)			0.00			0.00			0.00
Independent			0.05			0.06			0.01

\*\*\*p<0.001 \*\*p<0.01 \*p<0.05

<sup>a</sup>Empty model contains no independent variables

<sup>b</sup>Model 1 includes school ethos

<sup>c</sup>Model 2: Model 1 + gender, family type, parents' education, migration background, grades, and school type

Table 2. Two-level linear regression analyses of school ethos predicting students' participation, involvement, and influence. n=5,168 students distributed over 58 upper secondary schools

## **Discussion**

Students' school engagement, participation in educational planning, involvement in decision-making, and opportunities for influence have been put forward as important features for a democratic school, but they are also shown to be important factors for students' school achievement and other important student outcomes (e.g. Bakker & Vergel 2015; Dotterer & Lowe 2011; Fredricks, Blumenfeld & Paris 2004; Shernoff, Csikszentmihalyi, Schneider & Shernoff 2003; Taylor & Parsons, 2011). Therefore, investigating what factors can contribute to higher levels of school engagement seems important, both from an individual perspective and from a societal point of view, and the impact of school contextual factors especially have previously been called for (DeVito 2016; Fullarton 2002). This study has examined the association between school ethos and three dimensions of students' school engagement.

The results reveal that in schools identified as having a strong school ethos, students rate their participation in the educational planning, their involvement in decision-making, and their opportunities for influence as higher than in schools with a weak school ethos, even when taking the school's sociodemographic composition into account. The same pattern is revealed when comparing schools with an intermediate school ethos with schools with a weak school ethos. Taken together, these associations confirm the hypotheses raised for the study.

In the concept of school ethos, high academic expectations on students is included, which has previously been demonstrated to be linked to, for example, higher self-expectations, higher school engagement, and better academic achievement (Agirdag, Van Houtte & Van Avermaet 2013; Archambault, Janosz & Chouinard 2012; Brault, Janosz & Archambault 2014; Hattie 2008). These results are very much in line with the findings from this study, which therefore reinforce the picture of the importance of school ethos. School effectiveness research has previously shown clear links between different school contextual factors and a variety of student outcomes (Granvik Saminathen et al. 2018; Ramberg et al. 2019a; Ramberg et al. 2019b; Ramberg & Modin 2019; Rutter & Maughan 2002; Teddlie & Reynolds 2000). This study adds to these findings by showing that a strong school ethos also seems important for students' school engagement, in terms of their participation in educational planning, involvement in decision-making, and opportunities for influence.

It has previously been shown that students' school engagement is affected by a number of different factors, at different structural levels (DeVito 2016). Therefore, it seems important that efforts aimed at strengthening students' school engagement are directed towards several different levels and different factors. However, the results of this study show how school contextual factors, in terms of school ethos, are linked to students' level of school engagement, which means that efforts that could strengthen the school's ethos could also have important implications for the degree of students' school engagement, and ultimately for their academic performance and future life opportunities. Examples of such efforts could be to strengthen the school leadership and teachers' collegial collaboration in line with school effectiveness theory.

### **Strengths and limitations**

One major strength with the study was the use of combined data sources, which were linked together, leading to a decreased risk of bias related to common measures variance. Another strength was the possibility to adjust for several sociodemographic characteristics, which previously have been shown to have an impact on students' school engagement (Fullarton 2002).

The response rate in the SSS was reasonably high (77.1%) but it can be assumed that the students who did not participate in the survey due to absence from school when the survey was conducted would have rated their school engagement lower, and if so, the levels of school engagement are somewhat overestimated in the study sample compared to the population. The attrition in the STS was more substantial (response rate 57.9%), and it is reasonable to assume that teachers who did not participate in the survey would have rated the schools' ethos somewhat lower, and if that is the case, the levels of school ethos are somewhat overestimated in the data. However, it seems unlikely that these potential biases would have affected the associations examined.

School ethos was divided into thirds in order to take possible non-linear associations into account. This way of operationalizing school ethos has its limitations, but all analyses were also performed with school ethos as a continuous scale, showing very similar results, and therefore reinforcing the findings of the study.

Due to the complexity of the school engagement concept, it can be and previously has been measured in a number of different ways. Therefore, it is important to stress that school engagement in this study refers to the dimensions investigated. Other operationalizations and items are desirable in future research.

Due to the cross-national nature of the data, there can be no claims on causality. Theoretically, however, it is assumed that a strong school ethos leads to higher school engagement among its student population, but it cannot be ruled out that the associations demonstrated also reflect selection, i.e. students who have high levels of school engagement are more likely to attend schools with a strong school ethos and vice versa. Another possibility is that there can be reversed causality, i.e. in schools with many students with a low school engagement, a weak school ethos might develop, and vice versa.

Finally, the generalizability of the results is limited since the data derive from second-year upper secondary school students in Stockholm and their teachers. Future research should also cover other age groups and geographical areas.

### **Conclusion**

This study has shown that school ethos, as rated by teachers in 58 upper secondary schools in Stockholm municipality, is positively associated with second-year upper secondary students' participation in educational planning, involvement in decision-making, and opportunities for influence, in the corresponding schools, while also taking into account the school's sociodemographic composition. Results suggests that promoting a strong school ethos is beneficial for the levels of students' school engagement, which in turn most likely also affects students' academic performance in

a positive manner. Results also show that the between-school variation concerning students' school engagement is significant (even though not very large), indicating that it does matter what school a student attends when it comes to develop a positive school engagement.

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