

1 School Climate as a Key Factor to Improve Academic Outcomes:  
2 A Task for School Leadership

3 Ana Cristina Oliveira

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6 **Abstract**

7 Given the pivotal role played by school principals in school effectiveness (Sammons, 2008;  
8 Souza, 2006), this study asks how principals? work can affect schools? outcomes? Based in  
9 the concepts of school leadership (Leithwood, 2009; Lima, 2001) and school climate (Aguerre,  
10 2004; Brunet, 1992), it was developed a survey with new questionnaires that were tested and  
11 applied to a sample of 42 municipal public schools in Rio de Janeiro, Brazil. Through statistic  
12 approach, it was investigated possible associations between the principals? activity and both  
13 the teachers? work and students? proficiency. The data analysis indicates that a recognized  
14 and proactive principal, specially creating a positive environment to academic practices, is an  
15 important element for school outcomes. The study intended to analyze which aspects related  
16 to principals? job (leadership, relationship, management, etc) could be associated to two  
17 important school outcomes: teachers? job satisfaction and students? proficiency. In doing so,  
18 seeks to enlarge the discussion about school leadership and its effects to school outcomes by  
19 proposing a new quantitative research instrument, and presenting the results of an exploratory  
20 study, with important clues to future researches on the school leadership field.

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22 **Index terms**— school principals; school leadership; school climate.

23 **1 Introduction**

24 It's well known that school principal's leadership is an important factor related to school's outcomes (Sammons,  
25 2008; Leithwood, 2009; ??Ives & Franco, 2008, among others). But how school principals can make a difference  
26 inside their schools? How can their actions, decisions, and relationships impact school teachers' job quality  
27 and their students' learning? This study tries to answer those questions. It is part of a larger research  
28 which intended to deepen the understanding about if and how school leadership could affect two important  
29 school factors: teachers' job satisfaction and students' learning. Through a quantitative approach, this research  
30 designed questionnaires with specific items to access the information about school leadership as perceived by  
31 school teachers. The study intended to analyze which aspects related to principals' job (leadership, relationship,  
32 management, etc) could be associated to two important school outcomes: teachers' job satisfaction and students'  
33 proficiency. The theoretical and methodological contributes of this paper pretends to collaborate with the  
34 discussion about the importance of public schools in minimizing the social effects on students' academic trajectory.

35 **2 a) Some Context**

36 Brazil has a decentralized educational system spread over its 27 states and their municipalities. In 2017, Brazil  
37 had almost 34 million school-age children attending approximately 183,000 elementary and secondary schools  
38 (MEC/INEP, 2017). The public school system is responsible for more than 80% of the elementary and secondary  
39 school.

40 In our educational system, as well as in other Brazilian areas, deep historical social inequalities can be found.  
41 The school educational system has been getting, in the last few years, special attention amongst the other social  
42 challenges in our country. Since the 1990's it has been guaranteed that almost all children (97%) have access to

## 5 THEORETICAL FRAMEWORK

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43 elementary school. Nevertheless, many of them do not reach high school. The number of students with access  
44 to high school and even college has increased in the last 20 years, but very slowly compared to other countries,  
45 as Andrade (2012) points out: Despite this intense grow observed in higher education, the rate of youth access  
46 is still restricted -19% of people between 18 and 24 years old ??PNAD, 2009). When we compare the Brazilian  
47 situation with other countries better developed, we see that the Higher Education access, in 1997, had reached  
48 45% of 18 to 21 years old ones in USA and 69% in South Korea. (p. 18)

49 So, despite the goal of having almost all children with access to elementary school, the Brazilian educational  
50 system faces the challenge of retaining them and delivering a high-quality education. At the end of elementary  
51 school Trying to contribute on this field, this study was developed in municipal public schools in Rio de Janeiro.  
52 As have been well noticed, Rio struggles with economical, security and social problems that increased in the last  
53 years. Despite of being one of the most important cities in our country, the results for this municipal school  
54 system are alarming (just 49% of the 5 th grade students and 19% of 9 th students learned the Math's basic level  
55 . Many studies in Educational Sociology are trying to explain and find solutions for the educational inequalities,  
56 specially looking for the school factors that can minimize the social economic impacts on students' learning. In  
57 Brazil, this challenge is urgent, considering our delay in providing that our students could read and solve math  
58 problems when finishing elementary school.

### 59 3 3

### 60 4 II.

## 61 5 Theoretical Framework

62 ). Also, we have one of the higher indexes of school lateness (33% students with more than 2 years of school  
63 delay). The municipal school system of Rio de Janeiro included 996 elementary public schools, spread across  
64 a beautiful but complex city, with 483,073 students entitled to progress on their academic experience. The  
65 principals of these public schools struggle with providing good quality academic learning in a challenging social  
66 context. This study tries to better understand how it can be possible.

67 Extensive national and international research in sociology of education indicates that, if the family background  
68 has a significant weight in determining the student's academic performance, some intra-school factors could  
69 minimize this effect of students' social background, stimulating efficiency and equity in the educational offer  
70 (Brooke & Soares, 2008;Sammons, 2008;Franco et al., 2007;Medeiros, 2007;Brandão et al., 2008). Sammons  
71 (2008), as well as Alves and Franco (2008) point out some of these intra-school factors, including efficient  
72 pedagogical actions focused on learning, teacher training and remuneration, school infrastructure, monitoring  
73 the academic progress of students, among others.

74 School principalship -often identified with the leadership skills of school principals -is a relevant school factor  
75 of effectiveness, regarding which Sammons (2008) makes the following consideration:

76 Almost every school effectiveness study shows leadership as a key factor both in junior schools and high  
77 schools. ??ray (1990) says that "the importance of the Principal's leadership is one of the clearest messages from  
78 research into school effectiveness". [...] the study of the literature shows that three characteristics were found  
79 to be frequently associated with successful leadership: strong purpose, involvement of other employees in the  
80 decisionmaking process, and professional authority in the processes of teaching and learning. (p. 351-352).

81 School leadership has been raising increasing interest in the academic studies of the educational field and has  
82 gained prominence in the current educational policies. In our review of articles published between 2010 and  
83 2017 in four important national and international educational journals 4 , we found 44 papers that explored the  
84 relationship between the school principal tasks and the teachers work 5 The variance in the students learning  
85 results, related to the principalship, is usually linked to the combination of maintaining a good school climate  
86 (suitable to learning) and building a collective perception among the other school agentscharacteristics of effective  
87 schools, as identified in . Leithwood, the most frequently author cited in those articles, underscores the attention  
88 paid to the topic: School leadership is currently receiving unprecedented attention. The agenda of educational  
89 reform, in its ongoing evolution, seems to have grasped that the role of leadership is in itself an important goal  
90 for reform and, at the same time, a vehicle for other things to happen. (p. 17).

91 Although Leithwood highlights the influence of practice in the classroom as being the most relevant school  
92 factor that can influence students' academic results, he states that 'school leaders also influence student learning,  
93 but it is more indirectly' (ob. cit., p. 20). Leithwood stresses that even though school leadership only accounts  
94 for between 3% and 5% of learning variance between students from different schools, it accounts for a quarter  
95 of total variance when variables such as students' social origins are controlled, and only intra-school factors are  
96 analyzed (2009, p. 23). So, considering the findings in his huge literature review in this subject, we can consider  
97 that principals' work is the second most important factor -inside the school -that influence students' outcomes.

98 Soares (2007) also highlights the importance of school management: 'inside the school there are two important  
99 processes interacting to produce student performance: school management and teaching' ??Soares, 2007, p. 153).  
100 According to the results of his research, Soares points out that the school principal's job includes guaranteeing the  
101 school's functioning in a way 'that its existing resources can be used to meet the learning needs of the students'  
102 (ibid.).

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## 103 6 Year 2019

104 Volume XIX Issue I Version I ( G ) literature. ??ammons (2008, p. 351) considers that the impact of school  
105 management in the improvement of academic results is not direct, but it involves real work behind the scenes,  
106 seeking to ensure the development of other key features recognized as essential for school effectiveness. Among  
107 them she points out: shared objectives and visions, learning environment, positive incentives, family-school  
108 partnership, learning-oriented organization and monitoring of students' academic progress.

109 Ogawa and Bossert (1995) analyzed the comprehension of leadership from different perspectives that influenced  
110 the school climate studies.

111 It's interesting to note that the focus is on the principals' work and there the leadership assumes different  
112 variations, both in its form and its substance (op. cit., p. 239). But Brunet (1992, p. 128) cautions against  
113 generalizing the results since the 'the leadership style just indicates one of the possible dimensions of the climate  
114 [organizational]'.

115 Boyd et al. ( ??011), however dedicated special attention to the contextual/relational factors inside the  
116 school, and their impacts on teachers' decision of stay or leave the school. The factor administration (which, in  
117 the authors' study involves the relationship with the school leadership team) was an important predictor in the  
118 teachers' decision of keep working in the school, as well as the lack of support from the school leadership team  
119 was pointed as an aspect that influenced the teachers' decision to leave the school.

120 Thoonen et al. ( ??011), in their turn, analyses the impact of school leadership practices, school organizational  
121 conditions, and motivational factors (including personal relationships) in school teachers' practices.

122 Considering the principals' leadership as an important factor to school improvement, the study here presented  
123 aimed to identify how the principals' work can be effective to schools' outcomes. Trying to understand that, it was  
124 investigated some possible variables that could be related with the teachers' satisfaction in their job (as a proxy  
125 of the improvement in teachers' job) and with students' results in Math tests (as a proxy of the improvement in  
126 academic quality). The methodological procedures to reach that are described in the next section.

## 127 7 III.

## 128 8 Material and Methods

129 As the aim of this study was to understand how leadership, relationship, and management, (i.e. aspects of school  
130 principals' leadership) could be associated to teachers' job satisfaction and students' proficiency, a quantitative  
131 survey-based study was designed.

132 The quantitative studies about school leadership in Brazil are normally limited by the available data: the  
133 principals and teachers' responses to the contextual questionnaire of Prova Brasil 6 , but they have some  
134 limitations 7 Therefore, the study here presented used data provided from two different sources: the first one  
135 was the results of the survey mentioned above, that was applied to school principals and teachers in 2014. It  
136 was used a stratified sample (n= 42) of municipal public schools in Rio de Janeiro that attend all grades of  
137 elementary school (N= 163) . These limitations challenged our research group to design a special survey trying  
138 to deep access the information about school leadership and school climate. Inspired by our studies and by the  
139 literature review, this study designed new correlated instruments to access principals and teachers' perceptions  
140 about these concepts. The questionnaires were tested to verify their confidence level to measure our constructs.

## 141 9 8

142 . The questionnaires applied were answered by 45 principals and principal assistants and 394 teachers. In some  
143 schools the survey didn't receive an expressive number of teachers' answers, reason why this study considered  
144 the results collected in 27 schools where it was found a representative number of respondents (211 teachers, in  
145 total). So, we worked with a sample of 27 schools, that was confirmed tested as representative of their universe  
146 (N= 163). The questionnaires were applied both online (through surveymonkey.com) and in paper 9 The second  
147 source of data used in this study was provided by Prova Brasil/2013. The Social Economic Status -SES variable  
148 was designed with the information provided by students' questionnaires about their social background (in average  
149 per school). We considered the parents' academic background as a . In this study, I used teachers' answers to our  
150 questionnaires to build indexes of their perceptions about school leadership and school climate. 6 Prova Brasil  
151 is a large-scale assessment (Mathematics and Language skills tests) applied every two years to students in the  
152 5th and 9th grades of the elementary school, in all Brazilian public schools. The assessment includes contextual  
153 questionnaires applied to principals, teachers and students of the classes being evaluated. 7 To know more about  
154 this assessment and the limitations of the contextual questionnaires, see AUTHOR, 2015 and 2018; FRANCO,  
155 2001. 8 According to Brazilian educational laws, the municipal educational systems are responsible for organizing  
156 and offering the kindergarten schools (attending children from 4 to 5 years old) and the elementary school (6  
157 to 14 years old students). The municipal public schools in Rio de Janeiro differ in their organization: some of  
158 them offer only kindergarten, others offer kindergarten plus the first term of elementary school, others offer all  
159 the elementary school, some of them offer just the first or the second terms of the elementary school, etc. We  
160 can find different arrangements in all the municipal school units in the city of Rio de Janeiro, reason why the  
161 actual government are trying to reorder all the system. In this study, we chose to apply the survey in those units

## 12 RESULTS

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162 that were serving in 2014 all 9 grades of elementary school, trying to access a larger number of teachers and  
163 trying to figure out the complexities of leading a huge school. 9 To have a detailed description of the survey's  
164 methodology and challenges, see Author (2015; 2018). ). The information about students' academic results was  
165 also provided by Prova Brasil/2013. We considered the Math tests' results of 5 th grade students (in average  
166 per school) considering that this subject reflects the school academic improvement more than the Language one  
167 -which is still much dependent of family backgrounds, as highlighted Rutter et al. (2008).

168 The data provided of those different sources were than organized in two databases -Schools (with the data  
169 provided by Prova Brasil: SES and Math Proficiency in average per school) and Teachers (With the data collect  
170 in our survey).

171 To analyze the data, we used factor analysis with teachers' answers to build indexes that synthetized a group of  
172 answers linked to the constructs to be tested. Factor analysis allow the estimation of latent variables rather than  
173 only measured variables, improving validity and reliability (Brown 2006). For this study, the main indexes were  
174 "Leadership recognition (by teachers)", "Teachers' Perception of school climate" and "Teachers' job satisfaction".  
175 The first one synthesized the teachers' perception about their principal (or principal team) leadership and included  
176 items like "the school management team is known as an effective team" among others. The second index included  
177 items related to discipline and relationships. The third index included questions in a concordance scale, as "I  
178 feel happy working at this school" and "If I could I would transfer to another school", among others. These  
179 indexes are completed described in the table below. In my school the leadership team is recognized for their good  
180 job (0,796); The leadership team has an encouraging and solidarity attitude with teachers (0,933); The school  
181 principal value and encourage the teachers' job (0,930). KMO:0,668 ? de Conbrach: 0,866

## 182 10 Perception of School Climate (by teachers)

183 How do you evaluate the following aspects in your school: Students discipline/behavior (0,767); The relationship  
184 of students and their teachers (0,909); The relationship of teachers and their students (0,842); The relationship  
185 between students and school's employees (0,847). After checking the confidence level of these indices to synthetize  
186 the items (validity and reliability), which enabled us to synthesize teachers' perceptions about the three themes,  
187 the indices were aggregated in average by school. So, each one of the 27 schools in our sample had their indices,  
188 expressing the perceptions of their teachers in average. The aggregated indices were then merged to the Schools  
189 Database.

190 The study intended to analyze which aspects related to principals' job (leadership, relationship, management,  
191 etc) could be associated to two important school outcomes: teachers' job satisfaction and students' proficiency.  
192 Trying to better understand the possible relationships between the variables created, two groups of linear  
193 regressions were developed, having the variables "Index of Teachers' job satisfaction" and "Students results  
194 in Math test (5 th grade)" as dependent variables. I am here considering the teachers' satisfaction in working in  
195 their schools as a proxy of their quality of work and the 5 th grade students' results in Math test as a proxy of  
196 school academic achievement.

197 The first group of linear regression model was trying to understand what can be associated with "Teachers' job  
198 satisfaction" and its control variable was the "Teachers' age" (percentage of teachers older than 40, per school),  
199 considering the studies that showed the relationship between teachers' age/experience and their satisfaction in  
200 working at their schools (as showed, for example, by Cunha, 2015).

201 The second group of linear regressions asks: what can be associated with the variation in "Students results in  
202 Math test -5th grade"? Its control variable was the SES (percentage, per school, of students which at least one  
203 parent finished high school). This control variable was chosen considering that the social background has the  
204 major influence in students' outcomes (Alves, 2008;Soares & Andrade, 2006 and and that it can be measured by  
205 the parents' formal educational level ??Hasembalg & Silva, 2000).

## 206 11 Validity and reliability

207 The tables below summarize the variables used in each model. IV.

## 208 12 Results

209 After statistical analyses of the data, some associations were found to explain the variance of the dependent  
210 variables tested in each model. This paper highlights the significant and positive association between the Index  
211 "Teachers' Perception about School Climate" with the both dependent variables, as discussed below.

212 Considering the collinearity among all the variables and the size of the sample as technical limitations for  
213 an analysis of the indexes' simultaneous effects, we considered their individual associations with the dependent  
214 variable, in each model. As a result, we have different models introducing each index with the control variable  
215 (stepwise method, on SPSS). The Final Model, on the two groups of regression, presents the index "Teachers'  
216 Perception of School Climate" as the one which better adjusted to the models, amplifying its power to explain  
217 the variation of the dependent variable in each group.

218 In the first group, which was measuring what could affect the teacher's satisfaction in working at that school,  
219 the index "Teachers' Perception about School Climate" had a coefficient b= 0.27 (sig < 0.01) in the variation of  
220 the dependent variable ( $r^2 = 0.46$ ). It was the most important index measured to explain the variation on the

221 teachers' job satisfaction and the only one that stayed in the Final Model, as showed in the table below: It can be  
222 inferred of this result that teachers are more satisfied working at schools where they perceive a better academic  
223 and relational climate. These results corroborate common sense: teachers are more satisfied working in those  
224 schools where they find a good climate to teach. They also work happier where they recognize and legitimate  
225 their principals.

226 In the second group, testing what could be related with the students' academic results, we found that the  
227 Index "Teachers' Perception about School Climate" had a coefficient  $b = 5,8$  ( $\text{sig} < 0.05$ ) in the variation of  
228 the variable "Students' results in Math test (5 th grade)" ( $r^2 = 0.59$ ). It was again the most important index  
229 measured to explain the variation on the students' results (average per school) and the only one that stayed in  
230 the Final Model, as showed in the table below: As showed in the data above, the students' academic results  
231 tend to be improved more in that schools were teachers perceive a good climate to teach. And it is important  
232 to note that, in this sample, the index "Teachers' Perception of School Climate" had the power of minimize the  
233 SES effect on the academic results, an important goal when we think about school inequalities. Furthermore,  
234 the "Teachers' job satisfaction" also had a significant association with students' outcomes:  $b = 4,2$  ( $\text{sig} < 0.05$ ,  $r^2$   
235 = 0,56). These results point out to a direct and an indirect effect of the index "Teachers' Perception of School  
236 Climate" on students' Mathematics proficiency, as shown in the figure below that synthesizes the findings:

## 237 13 Discussion

238 This study tried to better understand how school leadership could affect two important school outcomes: the  
239 teachers' job satisfaction (as a proxy of teachers' work quality) and the students' academic results. Considering  
240 the hypothesis that the relationships built inside the school, between principals (or principal team) and teachers  
241 could affect these outcomes, it was developed a survey specially designed to capture information about these  
242 relationships.

243 Even considering the limitations of working with a small sample, the statistic findings of this study contribute  
244 to better understand how and through which ways principal's leadership can be related to schools' outcomes.

245 The results presented above confirmed that the teachers work more satisfied and students had better Math  
246 results on those schools where teachers reported a better perception about their school climate (which is also  
247 associated with principals' tasks). This finding corroborates the study developed by Shapira-Lishinsky and  
248 Tsemach (2014, p.676-677) about the association of an authentic leadership with organizational factors, among  
249 them, teachers' satisfaction on their work.

250 Considered at the study here presented as one of the dimensions in school climate, the index developed and  
251 tested deserves attention. In our previous tests this index was correlated with other ones related to school  
252 management and leadership, indicating that care about school climate should be one of the school principals'  
253 aim. Indeed, Urick and Bowers (2014) pointed out this priority: 'In more recent studies, leadership behaviors  
254 that contribute to a creation of a school climate have been found to have an increased influence on teacher and  
255 student outcomes compared to managerial tasks' (p.98)

256 In the present study, the data allowed us to infer that working in a school where faculty recognizes and  
257 legitimates the effectiveness of the school leadership team and perceive a good school climate is positively  
258 significant to teachers' feeling of belonging and, consequently, to their satisfaction and retention at the school.  
259 Considering the decentralized orientation to choose school principals in Brazilian school systems, we would like  
260 to highlight the importance of democratic practices to provide school principal's positions to build a sense of  
261 his/her recognition by school faculty ??Author et al, 2013;Mendonça, 2001).

262 The findings also indicate that the teachers' feelings of job satisfaction are related with better academic results,  
263 probably because satisfied teachers are more engaged on their students' learning. Some studies investigated the  
264 evidence of relations between the teachers' work and the students' outcomes (an important review of this topic  
265 was made by Torrecilla, 2008). Some of them pointed out how the teachers' level of satisfaction on their job  
266 (including stability) could affect their students' learning (Hulpia et al., 2011; ??hoonem et al. 2011;Price, 2012).

267 The Index "Leadership Recognition" also related positively with students results, although not significantly.  
268 Sammons (2008) and Alves & Franco (2008) considered the school management/leadership as an important school  
269 effectiveness key-factor. In fact, they pointed out the indirect effect of the principals' work on school academic  
270 results, and the findings presented in this study reinforce this assumption. The leadership factor of effectiveness  
271 can work through the teachers' recognition and through principals' work in maintaining a good school climate.  
272 Other studies investigated how the principals' leadership could improve the students' learning, highlighting the  
273 role of the school principal in this matter ??Bruggencate et al. Regarding the public schools of Rio de Janeiro in  
274 our sample, it is important that principals become leaders and work for the construction and maintenance of a  
275 good school climate.

276 Although these results are not representative of all Brazilian or Rio de Janeiro's schools and cannot be  
277 generalized, they offer important clues for understanding school leadership amidst the complex social and  
278 educational challenges faced by public school systems. Finally, the study contributes to school leadership research  
279 field in two ways: offering a new and tested survey instrument (to be applied in larger samples and different

## 13 DISCUSSION

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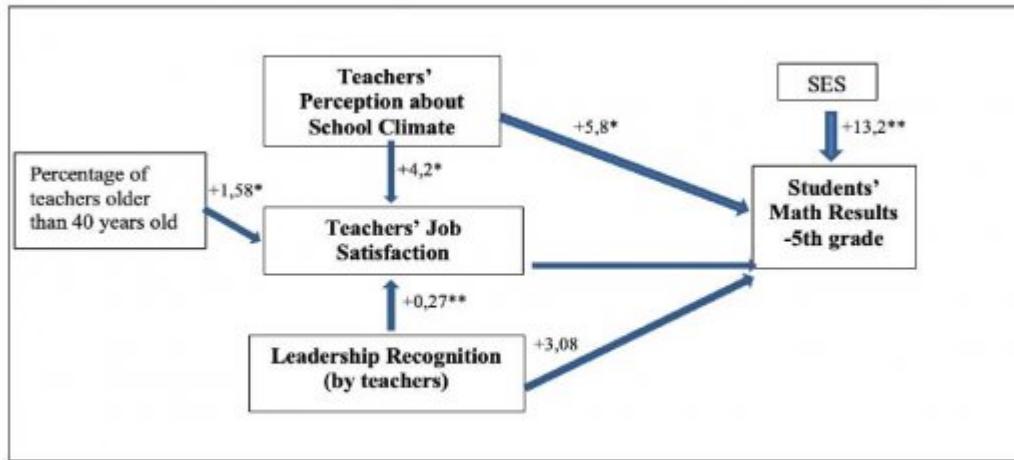


Figure 1:

1

Index	Items and factorial charges
Leadership recognition (by teachers)	

Figure 2: Table 1 :

2

Variables	Minimum	Maximum	Mean	Std. Deviation
<b>DEPENDENT</b>				
Index of Teachers' Job Satisfaction	-1.07	.80	.0045	.51447
<b>INDEPENDENT</b>				
Percentage of teachers older than 40 years old	.20	.86	.5964	.15613
Index of Leadership Recognition (by teachers)	-2.48	1.34	0.0	1.0
Index of Teachers' Perception about School Climate	-1.63	1.77	0.0	1.0

Source: Elaborated with data provided by Prova Brasil 2013 and Survey 2014.

Figure 3: Table 2 :

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### 3

Variables		Minimum	Maximum	Mean	Std. Deviation
<b>DEPENDENT</b>					
Students' Math Results -5th grade (in average)		175.60	251.83	219.47	18.06
<b>INDEPENDENTS</b>					
SES (percentage, per school, of students which at least one parent finished high school)		-2.05	1.79	0.0	1.0
Index of Leadership Recognition (by teachers)		-2.48	1.34	0.0	1.0
Index of Teachers' Perception about School Climate		-1.63	1.77	0.0	1.0
Index of Teachers' Job Satisfaction		-2.09	1.55	0.0	1.0

[Note: Source: Elaborated with data provided by Prova Brasil 2013 and Survey 2014.]

Figure 4: Table 3 :

### 4

	Model 1	Model 2	Model 3	Final Model
Constant	-0.963*	-	-	-0.734*
Percentage of teachers older than 40 years old	1.58*	0.734*	0.734*	1.17* 1.21* 1.15*
Index of Leadership Recognition (by teachers)			0.27**	
Index of Teachers' Perception about School Climate			0.27**	0.27**
R <sup>2</sup> Adjusted	0.20	0.45	0.46	0.46
				* = sig < 0.05
				** = sig < 0.01

Source: Elaborated with data provided by Prova Brasil 2013 and Survey

Figure 5: Table 4 :

## 13 DISCUSSION

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	Model 1	Model 2	Model 3	Model 4	Final Model
Constant	219.47*	219.47**	219.47**	219.47**	219.47**
SES (percentage, per school, of students which at least one parent finished high school)	13.2**	13.3**	10.9**	12.8**	10.9**
Index of Leadership Recognition (by teachers)				3.08	
Index of Teachers' Perception about School Climate					5.8*
Index of Teachers' Job Satisfaction					4.2*
R <sup>2</sup> Adjusted	0.52	0.53	0.59	0.56	0.59 = sig < 0.05

Figure 6: Table 5 :

Figure 7:

280 contexts) and mapping suitable schools to deeply investigate those findings, through a qualitative approach,  
281 which can be reached in future studies. <sup>1 2 3</sup>

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<sup>1</sup>Based on official classification presented by QEdu: [www.qedu.org.br](http://www.qedu.org.br)  
<sup>3</sup>Data provided by Prova Brasil, 2017.

<sup>2</sup>Revista Brasileira de Educação, Revista Brasileira de Política e Administração da Educação, Educational Administration Quarterly e American Educational Research Journal.<sup>5</sup> To know more about the literature review, including the papers' categorization and the list of the references, go to Author (2015; 2018).

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286 I would like to especially dedicate the paper to all school principals and teachers who face the challenge of offer a  
287 better school opportunity to Brazilian students in our public schools, even considering the social and structural  
288 obstacles that we have.

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## 13 DISCUSSION

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