Information and Collective Action in Angolan Schools: Inside the Black Box of Community-based Monitoring[°]

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Abstract

Community-based monitoring interventions blend multiple components difficult to identify separately. The literature reports mixed impacts of these interventions. We designed and conducted a field experiment in 126 schools of the Angolan province of Kwanza Sul, aiming to distinguish the impact of the information and the collective action components of a scorecard intervention. Specifically, we explore a design with three treatments: (i) decentralized information to parents on the performance of schools, (ii) organization of meetings with parents without exogenous information on performance, and (iii) the full scorecard, i.e., information on performance through meetings with parents. Our measurement of outcomes includes: test scores, parent, school, teacher, and school director surveys, as well as lab games, and administrative data. Despite no impacts on students' test scores and absenteeism, we find positive effects of the full scorecard on school management outcomes and teachers' performance. Collective action is a relevant component of these effects. Parents' mobilization could be acting as a mediator although information alone is their main activator.

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1. Introduction

Empowering the poor for collective (and sustainable) development is an objective embraced by most people. It got strongly to development thinking motivated by the seminal contributions of Amartya Sen (1985, 1999) on capabilities and empowerment of the poor, Douglass North (1981) on the importance of institutions for economic development, and Elinor Ostrom (1990, 2000) on collective action and social capital. Today, it is very difficult to find the referred objective absent from the formulation of development policy. Perhaps the best example of this is Community-driven Development (CDD), a family of development policies strongly supported by international institutions such as the World Bank. CDD assumes participatory development is key to building the institutions necessary for fighting poverty and promoting sustainable development.

After several decades of substantial funding of CDD programs across the developing world, a number of recent systematic reviews of their impact have emerged. Results are very mixed. Mansuri and Rao (2013) underline that elite capture is an important ingredient of CDD implementation, which yields modest improvements in resource sustainability and infrastructure quality, as well as in long-lasting social cohesion. White et al. (2018) even suggest that it may be better to abandon the objective of building social cohesion and focus instead on the sustainable and cost-effective delivery of local public goods. Casey (2018), who focuses on reviewing recent randomized experiments, agrees that CDD does not fundamentally alter local institutions. However, this author underlines that CDD effectively delivers local public goods and generates modest economic returns, in difficult environments.[1]

One of the main types of CDD interventions is Community-based Monitoring (CBM), which relates to public service delivery. Specifically, development practitioners around the world have seen the community dissemination of scorecards evaluating local public services as an effective way to improve the performance public service providers. The scorecard process typically entails two main components: (i) information, by which performance data at the local level, often compared within the region, is provided to beneficiaries; (ii) collective action, by which communities are mobilized to participate in the process of improving service delivery, which is likely to create bottom-up incentives on service providers to do better. Within CBM

[1] Fox (2015) is more optimistic and suggests that scaling up social accountability interventions and bolstering state capacity have the potential to go beyond the findings encountered in field experiments.

programs, also for scorecards, evidence about their impact has been mixed. When scorecards produce clear improvements, like in Björkman and Svensson (2009), who analyze a scorecard for health centers in Uganda, we cannot distinguish which components of the process were most effective.

In this paper, we analyze a scorecard intervention for primary schools in the province of Kwanza Sul, Angola. This intervention is standard in the literature. It lasted for slightly more than one year and involved frequent parents' meetings in schools. The scorecard included baseline information on the performance of the school compared to other neighboring schools. It was disseminated initially in the meetings. Parents then formulated plans of actions to target identified problems in schools that were accompanied in follow-up meetings. Parents were also given general information about how to help their children in school. We implemented a randomized field experiment to test the impact of this intervention. To the best of our knowledge, this is the first randomized evaluation of a public policy in Angola, a country marked by civil conflict, and high levels of corruption.

The main innovation of this study is that we distinguish the two main components of the scorecard intervention, information and collective action. We accomplish this through the testing of three randomized treatments, a 2x2 design: (i) decentralized information to parents, door-to-door, including the scorecard; (ii) parents' meetings in schools, promoting collective action, but not including any type of exogenous information; (iii) the full scorecard intervention, including parents' meetings and the scorecard information. The separation of the two dimensions of the scorecard allows a precise understanding of their individual contributions, as well as of their complementarity, in the same exact setting, allowing a better design of future interventions of this type. Moreover, the distinction between information and collective action, coupled with an analysis of different outcome variables (final and mediating), allows drawing additional light into the mechanisms of impact of scorecards.

We employ a number of different types of measurement in this project, which includes baseline and endline data collection in 126 schools province-wide in Kwanza Sul, in the period 2014-2018. These include standardized tests in Language and Mathematics, which included more than 43 thousand observations at the endline. In addition, we implemented a comprehensive set of surveys. The surveys targeted parents (randomly sampled at the level of student, close to two thousand observations at the endline), teachers (including all teachers in the studied schools), school directors (all included), and school administrations (which included several

instances of direct observation of outcomes, such as of installations and equipment). We also collected behavioral data from parents and teachers: these included standard public goods (between parents) and trust (from parents in teachers) games, as well as a modified dictator game with multiple recipients (where teachers can send money to parents). Finally, we employ administrative data from the provincial board of education corresponding to the schools in our study.

Our results show that all treatments are effective at increasing parents' mobilization, in particular information alone. This result spans across parents and teachers' surveys. For instance parental involvement in the schools as reported by the teachers increases by 6 percent with the information treatment (alone). We also observe positive effects of the full scorecard on school management outcomes. This result is consistent across parents' views, school management practices, teacher and director reports, as well as the observation of installations and equipment. One example is that the full scorecard increased usable school desks by 17 percentage points. Although we do not find any statistically significant effects on teachers' absenteeism, we do find effects of the full scorecard on parents' satisfaction with teacher performance. We also report positive effects on the measures of teacher behavior in the trust and modified dictator games (returning and sending money to parents, respectively). Finally, results on student performance are weak. We do not find any significant effects of the treatments, when we consider student absenteeism, or standardized test scores. The only significant effects are of collective action (alone) on the student pass rate (5 percentage points), which are not standardized across schools. We conclude that the full scorecard alone had some effects on school management outcomes, possibly mediated by parents' mobilization. However, these effects were not strong enough to move student performance. Parents are particularly sensitive to information.

Our paper relates to the literature on information and collective action interventions in schools, some of them employing scorecards. We begin with the impact of information. In Kenya, Lieberman et al. (2014) evaluate an intervention providing parents with information about their children's performance on tests, and materials about how to become more involved in improving their children's learning. This is akin to our first treatment, which entails decentralized information to parents alone. The authors of this study find the provision of such information had no discernible impact on either private or collective action. Cerdan-Infantes and Filmer (2015) also find limited effects of information on knowledge or participation of parents in Indonesia, especially when information is provided in a decentralized manner. Other

papers come to the same conclusion, i.e., limited or no results – see the review of Read and Atinc (2017). The exception is Reinikka and Svensson (2004, 2011), who study the newspaper dissemination of information about capture of public funds in Ugandan schools. They find substantial reductions in the capture of funds that resulted in positive effects on school enrollment and learning outcomes.

Turning to the impact of collective action mixed with information, three contributions give a general sense of the state of knowledge. Banerjee et al. (2010) followed a set of interventions in Indian schools providing parents with information and some degree of collective action. They distinguish different degrees of participation in school activities and find no overall effects on community involvement, teacher effort, or learning outcomes inside the school. In Uganda, Barr et al. (2012) find that a standard scorecard for schools does not have significant effects on student test scores, as well as on teacher and student absenteeism. They nevertheless find that a variation of the standard scorecard, which involved members of parents' committees in a dialogue to design their own scorecard, yielded positive results on the referred outcomes. These authors provide some evidence that the improved scorecard system increased collective action. This is consistent with our results in that collective action, more than information, was channeling the effects on school management outcomes, teachers' performance, and student passing rates. Finally, Andrabi et al. (2017) evaluate the impact of providing report cards in school meetings in Pakistan and find an increase in subsequent test scores, a decrease in private school fees, and an increase in primary enrollment.

Other recent papers give a positive view of information coupled with collective action in improving school performance. Pandey et al. (2011) undertake a study in three Indian states and find that a rights and responsibilities campaign using flyers and posters in combination with meetings reduced teacher absenteeism, and led to improved learning outcomes. Pradhan et al. (2014) test two approaches to strengthening school committees in public schools in Indonesia, in addition to funding and training: the first employing elections, the second linking the school committee to the village council. The latter was particularly cost-effective at improving learning in schools.[2]

The remainder of this paper is organized as follows. Section 2 provides the context of our experiment. Section 3 gives an overview of the treatments and Section 4 describes the data

[2] In the case of Cerdan-Infantes and Filmer (2015), facilitating meetings increased parents' knowledge and, through an increased feeling of transparency, improved parent participation.

collection. The estimation strategy and hypotheses are included in Sections 5 and 6, respectively. Section 7 reports on the results, starting with balance, and following up with treatment effects on parents' mobilization, school management, teachers and students' performance. Section 8 concludes.

2. Context

The fact that Angola, a country of 29.8 million inhabitants, has been the second largest exporter of oil in Sub-Saharan Africa makes it a relatively rich country in the African context in terms of income per capita: in 2018, Angola had a GDP per capita of 6,644 International USDs, ranking 131st in 189 countries worldwide in this indicator.[3] However, in its recent history, Angola suffered a devastating civil war, which lasted from independence in 1975 to 2002. In parallel, the quality of institutions has been weak, with Transparency International recently rating Angola as the 16th most corrupt country in the world.[4] In this context, health and education indicators have been pushing down Angola's Human Development Index to just 147th in 189 countries worldwide.[5] On education, Angola has a literacy rate of 66 percent and net school enrollment at the primary level of 77.5 percent (close to the average of Sub-Saharan Africa).[6]

In this setting, Kwanza Sul, a province of almost 1.8 million inhabitants, is one of the poorest provinces among the 18 provinces of Angola.[7] In a recent report by the National Statistics Office (INE) and UNICEF, based on comprehensive survey data for 2016, the headcount of deprivation in education for children 5-11 years of age is 62.9 percent, only lower than in two other provinces of Angola.[8] This is the context of our study, where the World Bank has been active since the 1990s through the funding of FAS (Fundo de Apoio Social), an institution of the government of Angola, with a countrywide reach. FAS historically promoted the construction and infrastructural improvement of schools among other social infrastructures. Kwanza Sul is the province where FAS has constructed most schools. In a more recent generation of projects, FAS moved to strategies promoting quality beyond quantity of education. It is under this umbrella of work, that the scorecard intervention we study emerged.

[3] World Development Indicators, 2017.
[4] Transparency International, Corruption Perception Index, 2018.
[5] UNDP, Human Development Reports, 2017.
[6] World Development Indicators, latest years available, 2019.
[7] Preliminary census data, 2014.
[8] INE and UNICEF, 'Childhood in Angola - A Multidimensional Analysis of Child Poverty,' 2018.

3. Intervention

3.1 Treatments

FAS sponsored and implemented the interventions we evaluate in this project. This institution has a long record of employing a participatory approach, involving the local communities in decision-making. The interventions we study consisted of direct contact with the communities of primary schools in Kwanza Sul. They happened for more than a full year, from October 2016 until November 2017, and consisted of two types of activities: (i) an information campaign, and (ii) parent meetings.[9]

In the first treatment group parents were visited at home and given information about the school's performance. We label this treatment T1 – Information. In the second treatment group all parents were invited to participate in general parent meetings at the school. During these meetings, parents were encouraged to discuss their concerns and set up an action plan. We name this treatment T2 – Collective action. The third treatment included both the information campaign and parent meetings. This is the T3 – Combined treatment. We now turn to a detailed description of all activities conducted.

3.1.1 Information treatment

We begin by describing in detail T1 – Information. First, the information campaign involved an awareness component about the importance of good parenting for the education of children, including examples illustrated in a short comic. The comic included a list of suggestions about how parents can improve their involvement with their children's education, and the learning of their children. The comic mentions the importance of hygiene, safe transport, contact with the teacher/school, help with homework and nutrition, among others. See Figure A2 in the Appendix for the comic.

Second, parents were also presented and explained a scorecard about the school's performance. This scorecard was divided into several sections, which were based on the baseline data. These sections included: (i) student performance (e.g., standardized student test results); (ii) teacher

[9] See Figure A1 in the Appendix for a complete timeline of all field activities.

performance and characteristics (e.g., teacher presence and education level); (iii) school board performance (e.g., management practices, parent and teacher evaluations of the school management); (iv) parental involvement (e.g., parent participation in meetings); (v) availability of school facilities (e.g., toilets, electricity, student desks); and (vi) information about how the teachers and director are evaluated. For each indicator the school's result is presented in either green or red depending on the performance relative to the province average, green for above and red for below this average. Besides the school's result, the scorecard also showed the municipality and province averages. See Figures A3a and A3b in the Appendix to this paper for an example.[10]

Parents of students in treatment schools were visited up to eight times with about a month in between the visits during 2016-2017. Enumerators were instructed to visit as many parents as possible at home, at the local primary school, or at their place of work (often at the farms). The duration of each visit depended on the parents' level of understanding; the rough mean duration was 15 minutes. In T1 – Information, on average 74 visits were made per round per school, with a total of 17,989 visits for all T1 schools during the whole intervention. Throughout the eight rounds most parents were visited several times. During follow-up visits, parents were questioned informally about their understanding of the information. Depending on their answers, enumerators steered the conversation in order to cover all information as efficient as possible.

3.1.2 Collective action treatment

We now turn to T2 – Collective action. This treatment consisted out of up to eight meetings exclusively targeted at parents. During the first meeting, parents were encouraged to talk about problems at the school and establish an action plan regarding their participation. After that, up to seven follow-up meetings were organized with the objective of evaluating the progress made and discussing any additional concerns. On average, 53 parents per round per T2 school participated in meetings. The attendance ranged from minimal participation when occasionally only the parents' committee of the school was present, up until first meetings with about 400 parents. In round one parents were first asked to share their opinion about problems and opportunities at the school. Second, with the help of our enumerators a plan of action was designed. Finally, tasks were divided among the participants. During the follow-up meetings,

[10] Tables A1a and A1b provide English translations of all indicators presented on the scorecard.

attendees evaluated progress in the plan of action. If needed, the steps of the first round were repeated. Most frequently discussed topics during these meetings were school safety and hygiene. Our enumerators recorded that parents made monetary contributions for new doors, locks, hiring security staff and cleaning materials. In addition, parents worked together to clean the school and improve or construct bathrooms. Other commonly discussed topics include classroom quality, lack of student desks, available utilities and the general involvement of parents.

3.1.3 Combined treatment

T3 - Combined treatment blended both the information and collective action components described above. Door-to-door visits to parents happened like in T1 – Information. Here on average 69 visits were made per round per school, with a total of 17,058 visits for all T3 schools during the whole intervention. Meetings at the level of the school were also carried out like in T2 – Collective action. On average, 40 parents per round per T3 school participated in meetings. The main difference between treatments 2 and 3 was that in T3 the information on school performance, i.e., the scorecard, was provided during the meetings. In T3 one of the enumerators facilitated the discussion by explaining the scorecard results using a poster. See Figure A4 in the Appendix for an example.[11] The general scorecard explanation took place in every round of the meetings in a similar manner as during the door-to-door visits.

3.2 Allocation to treatment

Within the province of Kwanza Sul, 126 public primary schools were selected to take part in this research. They are distributed across nine municipalities of Kwanza Sul.[12] Most of these schools were either constructed by FAS or received another type of support through FAS. These 126 schools were randomly allocated across the four groups using blocks. The schools were organized in blocks employing municipality and a set of school characteristics, which included the number of classrooms, number students, number of teachers, and whether there are elections for a parent committee. The geographical allocation to treatment is presented in Figure A5 in the Appendix.

[11] Tables A1a and A1b provide English translations of all indicators presented on the scorecard
[12] Schools are distributed over the municipalities of Sumbe (39), Porto Amboim (37), Amboim (29), Conda (8), Ebo (7), Quilenda (2), Seles (2), Quibala (1) and Cassongue (1).

4. Data

The data collection was conducted in two phases. The baseline data was collected from October 2014 to August 2015 and the endline data collection was conducted from July until December 2018.[13] In this section we discuss all data sources and their variations across data collection rounds. We consider five types of data.[14]

First, during the baseline we conducted standardized Mathematics and Portuguese Language tests with all students of the third and fourth grade. At the endline we added tests for the fifth grade. Each test included 10 or 12 questions. All students completed both tests in class during a one-and-a-half-hour interruption of the normal daily routine. For the endline, tests are matched with their parents and teachers (when interviewed).

Second, in both pre and post intervention data collection rounds we conducted four types of interviews: to parents, teachers, school directors, and school administration. During the baseline, parents were selected and interviewed using the random walk method around each school. At the endline, 40 students from the third, fourth and fifth grade were randomly selected from the school records. The parents of these students were asked to come to the school and to participate in the parents' survey. Furthermore, all teachers and the school director of each school were interviewed in both rounds. Finally, the school administration interviews were conducted with a group of school representatives, usually including the school director.

Important outcome variables from the parents' survey are self-reported involvement at the school in terms of time and money invested and the relationship with the teacher, satisfaction with the school, teachers, management and behavior of other parents, as well as collective action indicators.

Teacher-related outcome variables from both the teachers and directors' surveys are self-reported performance outcomes (i.e., attendance), satisfaction with school, other teachers, management and behavior of parents, collective action indicators, as well as questions regarding the parental involvement of the parents of the 40 selected students answered by the relevant teacher.

[13] See Figure A1 in the Appendix for a complete timeline of all field activities.
[14] See Table A2 in the Appendix for the number of observations per measurement types.

Other outcome variables included in the directors' survey and include information about tasks and responsibilities, as well as the quality and quantity of relations with other institutions that support the school.

For the school administration surveys, important outcome variables are those related to investments in the school facilities and resources (by parents), administrative data on student, teacher and school board performance (i.e., number of students that passed grade 6, attendance of teachers and school directors etc.), as well as parent involvement (i.e., existence of a parents' committee).

All individual surveys included socioeconomic and demographic questions. We also collected information about social capital, assets, perceived school problems, as well as indicators about personal values and principles. School-level control variables from the school administration surveys are general characteristics of the school and the students, i.e., number different grades taught, distance of school to closest municipality center and target population, indicators of size such as the total number classroom and total number of students, details about the school's administration and finances.

Third, in addition to standardized test scores and surveys, we implemented lab-in-field experiments during the endline.[15] In each school the following lab games were conducted: (i) Public Good Game, (ii) Trust Game and (iii) Dictator Game with multiple recipients.

In order to measure social cohesion, we implemented a simplified version of the public good game. The game was played with groups of 10 parents. Each player received a voucher that could be invested in a private account or a group account. Vouchers in the private account were worth something only for the parent investing in it, while investments in the group account benefit each player. Social cohesion is measured by the number of parents investing in the group account.

Another important indicator is the level of trust from parents relating to the behavior of the teachers. We measure this trust using the standard trust game. The trust game was played with two participants, a parent and a teacher. The parent received an endowment that he or she could divide between him or herself and the matched teacher. The amount sent was multiplied by 3

[15] Similar lab-in-field experiments were conducted during the baseline. There are however small differences in the design of these baseline experiments that prevents us from using these in our analysis.

and given to the teacher. The teacher could then return some of the amount received. We examine both decisions to study the level of trust among parents and teachers.

For the endline we designed a modified dictator game with multiple recipients, with a teacher dividing an endowment between him or herself and the matched five parents. Across schools there were three different versions of the game that are used for another study about collective action in holding the dictator accountable. Here we focus on the benchmark version of the game, with no accountability mechanism.

Fourth, administrative data was collected from the provincial board of education in Kwanza Sul about the 126 schools in the project for 2016, 2017, and 2018. These data include information on school facilities and mostly administrative characteristics about students and teachers.

Finally, schools were visited twice for the endline data collection. Besides all other measurements, one of the enumerators reported the presence of all teachers and the 40 sampled students mentioned above for the parents' survey.

5. Estimation strategy

The random allocation of treatments allows us to estimate the treatment effects using simple OLS specifications. First, we will estimate the intervention's impact on individual and school outcomes using the following specification:

$$Y_{ijk} = \beta_0 + \beta_1 T'_j + \beta_2 X'_{ijk} + u_{ijk}. \qquad (1)$$

where Y_{ijk} is the outcome variable for student, parent or teacher i in school j in municipality k during the endline. For outcome variables at the school level we simply omit subscript i. T_j is the vector of three binary treatment indicators, with the control group serving as the omitted group; u_{ijk} is the error term. The standard errors are clustered at the school level in case observations are at a lower level. We estimate equation (1) with municipality dummies, school level controls, and, depending on the level of observation, a number of individual controls as well – these are depicted as X_{ijk}.

We check the robustness of the basic OLS specification taking into account any pre-intervention differences in the dependent variables between the control and treatment groups. In order to do so, we conduct an ANCOVA analysis.[16] The ANCOVA specification is similar to specification (1), although augmented with the baseline dependent variable. Note that in the case of individual level dependent variables these baseline variables are school averages shown here:

$$Y_{ijk} = \beta_0 + \beta_1 T'_j + \beta_2 X'_{ijk} + \beta_3 \bar{Y}_{jk,-1} + u_{ijk}. \qquad (2)$$

where $\bar{Y}_{jk,-1}$ is the average baseline dependent variable for school *j* in municipality *k*. For school level dependent variables this is the actual baseline value.

6. Hypotheses

Using the above described specifications, we aim to test two sets of hypotheses related to the short-term impacts of the interventions. We distinguish between four types of treatment effects, namely (i) direct treatment effects on parents and indirect treatment effects on (ii) school management, (iii) teachers, school director and (iv) student performance.

Hypothesis 1 - As a result of T1 - Information, $\beta_1^{T1} \geq 0$ for all outcomes we consider, i.e., (i) the individual involvement of parents increases, (ii) the schools' management and facilities improve, (iii) the effort and performance of teachers and directors increases, and (iv) the effort and performance of students increase. These are the effects of information alone.

Hypothesis 2 - As a result of T2 - Collective action, $\beta_1^{T2} \geq 0$ for all outcomes we consider, i.e., we see the same pattern of effects described in Hypothesis 1. These are the effects of collective action alone.

[16] This type of analysis is argued to increase power compared with difference-in-difference and is particularly beneficial for dependent variables with low autocorrelation such as educational household expenditures and investments by the school (McKenzie, 2012). In our case this approach seems particularly relevant since at the individual level we do not have a panel. The consequence of this is that we can only conduct a difference-in-difference analysis at the level of the school. This entails a clear loss in power and therefore, although we ran all regressions using difference-in-difference, we chose to focus here on the ANCOVA analysis.

Hypothesis 3 - As a result of T3 – Combined, $\beta_1^{T3} \geq 0$ for all outcomes we consider, i.e., we see the same pattern of effects described in Hypothesis 1. These are the effects of information and collective action combined.

Hypothesis 4 – Complementarity of information and collective action arises, which means that $\beta_1^{T3} \geq \beta_1^{T1} + \beta_1^{T2}$ for all outcomes we consider.

7. Results

7.1 Balance and descriptive statistics

We now turn to the analysis of the results in our experiment. We begin with balance tests as well as descriptive statistics of our sample. These are shown in Table 1. This table encompasses the main characteristics of teachers, school director, parents and corresponding students, and schools. We display for each trait the corresponding mean for the control group, differences to each one of the three treatment groups, and the p-value of a joint test of all treatments. We also present results employing the baseline as well as the endline samples. From the 232 tests performed in Table 1, we find only 23 significant ones at standard levels, below 10 percent of the number of total tests. The unbalanced traits vary across baseline and endline, with the only common unbalance arising for gender of responding parent. As expected, given the blocking strategy for the randomization strategy we adopted, we do not find any unbalances for school characteristics. We can conclude that, overall, our randomization procedures seem to have been effective at identifying comparable groups.

<Table 1 around here>

Looking at the average characteristics of the control group at the baseline, we can report that teachers are 50 percent female and have 36 years of age on average. 33 percent of the teachers have higher education. School directors are less likely to be women (only in 16 percent of the cases) and are older (45 years of age); they are also more likely to have higher education (41 percent). Turning to the interviewed parents, 64 percent are female, with average age 36. 60 percent of these parents completed primary education. The sampled students corresponding to these households are female in 53 percent of the cases and have 11 years of age on average. The average control school has 16 teachers, 10 classrooms, and 639 students. Differences to

the endline sample in these individual and school characteristics for the control group are generally small.

7.2 Effects on parents' mobilization

Table 2 begins our analysis of treatment effects in our experiment. The focus there is on outcomes related to parents' mobilization towards their children's education. We devote our attention to self-reports from the parents' survey, but also to teacher reports about parents, and behavior in the lab games by the parents. From the parents' survey, we employ measures related to parents helping with their children's homework, keeping tight discipline for their children at home, keeping a regular sleeping schedule for their children, attending general school meetings, and talking to their children's teachers. From the teachers' survey, we devote attention to parents' involvement in their children's education, and to parents' availability to help with extracurricular activities of their children. In the lab games, we show results regarding contributions to the public account in the public goods game and the sending decision (to teachers) in the trust game. All outcome variables are fully described in Tables A3a and A3b of the Appendix to this paper. Our regression specifications include full controls, namely municipality dummies, school controls and either parent, teacher, or parent game controls (depending on the outcome variable).[17] In the case when a baseline measurement of the outcome variable is available, this baseline measurement is added as a control in a separate specification. Hypotheses 1-3 above are tested in the regressions through individual significance of the three treatments. Note that we display tests of differences between all three treatment effects. The test of the difference between T1 and T3 examines whether the marginal effect of collective action is different from zero. The test of the difference between T2 and T3 checks whether the marginal effect of information is different from zero. Hypothesis 4 above (complementarity of information and collective action) is considered through the test of the difference between T3 and the sum of T1 and T2. A joint significance test of all three treatment effects is also shown for each regression.

<Table 2 around here>

[17] School controls are number of teachers, number of classrooms, and number of students. Parent controls are parent gender, whether the parent has completed primary school, whether the parent has a partner, and number of children; they also include the age of the student, his/her gender, grade and relation to respondent. Teacher controls are teacher age, gender, whether the teacher has completed higher education, whether the teacher has a partner, number of children, years of experience and the corresponding class grade. Parent game controls are parent age, gender, whether the parent has completed primary school, whether the parent has a partner, number of children, the number of participants and dummies for the game enumerators.

The main finding is a consistently positive effect of T1 - Information across all outcomes (and specifications) employing parents and teachers' survey data. Specifically, we find an effect of 0.64-0.65 more days parents report helping their children with homework in the last two weeks before the survey date, which is statistically significant at the 5 percent level. Effects on the frequency of keeping a tight discipline and a regular sleeping schedule for children are between 0.18-0.20 standard deviations, with significance between 1 and 5 percent levels. On interacting with the school, we observe that parents talked more often to their children's teachers – this is an effect of 0.19 more days in the last four weeks before the survey date (significant at the 5 percent level). The magnitude on attending school meetings is consistently positive, although it does not achieve statistical significance at standard levels. When looking at teacher reports, we see similar patterns: parental involvement increases by 0.19-0.20 standard deviations – this is significant at the 5 percent level; and the availability of parents for extracurricular activities also increases, by 0.19 standard deviations – also significant at the 5 percent level.

When turning to the other two treatments, we also see positive treatment effects overall. However, they are not always statistically significant. For helping with homework, we observe very clear and significant effects for T2 – Collective action and T3 – Combined, i.e., respectively, of 0.64-0.68 and 0.79-0.84 days, significant at the 1 or 5 percent levels. We cannot distinguish statistically any treatment from each other. However, when it comes to parents keeping a tight discipline or a regular sleeping schedule for their children, we do not find any statistically significant effect for T2 or T3. In fact, the effects of T3 are significantly lower than for T1, i.e., the marginal effect of collective action is negative. Complementarity between information and collective action is also significantly negative. For attendance of school meetings and frequency of talking to teacher, we recover effects of T2 and (only for the second outcome variable) of T3. Again, we cannot distinguish between the three individual treatment effects for these variables, and there is negative complementarity between information and collective action. When taking our measures from the teachers' survey, we find clear positive effects of T2 on parental involvement (0.25-0.27 standard deviations, significant at the 1 percent level). Effects of T3 are weaker, and only significant without the baseline level of the outcome as control variable – negative complementarity between information and collective action emerges for this outcome. We do not see significant effects of T2 or T3 on availability of parents for extracurricular activities, even though coefficient magnitudes remain positive. Note however that we remain unable to distinguish the different individual treatments on these outcome variables.

In columns (10)-(11) of Table 2 we show the results relating to behavior of parents in the public goods and trust game. These are respectively the contribution of parents to the group investment, which is a binary variable taking value zero when a parent decides to invest in the individual account, and the sending decision to teachers in percentage of the maximum 800 Angolan Kwanzas that could be sent. We do not find significant treatment effects for any of the interventions or relevant hypothesis tests.

We conclude that all treatments seem to have had some impact on parent mobilization towards their children's education. We see that both parents and teachers are on agreement that parents' involvement increased. This is particularly consistent for T1 – Information, as marginal effects of collective action and complementarity with information are less clear. At the same time, we are not able to identify significant treatment effects in the behavioral data.

7.3 Effects on school management

Our results relating to school management outcomes are described in Table 3. These include outcome variables from all the survey types we conducted. Specifically, we analyze the following outcomes. First, we look at satisfaction of parents about the school management from the parents' survey. Second, we observe whether teacher evaluations are public, whether the school board has parents' representation, and whether the school has a parents' committee. These are all variables taken from school administration data at the level of the school. We then devote our attention to satisfaction of teachers about the parents' committee taken from the teachers' survey, and to the level of supply of school material taken from the directors' survey. Finally, we report on the percentage of usable student desks, whether the school has a fence, whether the school recently improved its fence/wall, and whether the school has student bathrooms – all these variables are collected through direct observation of the school facilities. All regressions in Table 3 employ full controls as before but no baseline values of the outcome variables (since they were not collected for these variables).

<Table 3 around here>

We find a very clear and consistently positive effect of T3 – Combined on the dependent variables we analyze in Table 3. Satisfaction of parents about the school management increases with T3 by 0.11 standard deviations, which is statistically significant at the 5 percent level.

From the administrative data at the school level, we see that T3 leads to a 16 percentage-point higher probability that teacher evaluations are public (significant at the 5 percent level), and a 9 percentage-point higher probability that the school has a parents' committee (significant at the 10 percent level). The effect on whether the school board has parents' representation is consistently positive, although it does not achieve statistical significance at standard levels. Next, we find that T3 causes an increase in teacher satisfaction with the functioning of the parents' committee by 0.16 standard deviations – this effect is significant at the 5 percent level. School directors also see that the supply of school material is less of a problem in their schools: this is an effect of 0.55 standard deviations, significant at the 10 percent level. Finally, from the observation of facilities in the schools, we identify an effect of T3 on increasing the number of usable student desks by 17 percentage points (statistically significant at the 5 percent level). T3 also increases the probability that the school has a fence by 21 percentage points (significant at the 10 percent level), and the probability that the school has recently improved its fence/wall by 31 percentage points (significant at the 1 percent level). Finally, the magnitude on the probability that the school has student bathrooms is consistently positive, although it does not achieve statistical significance at standard levels.

Turning to the other treatments, i.e., T1 – Information and T2 – Collective action, we find very sparse results. Specifically, we find a positive effect of T1 on parents' satisfaction with the school management. This is an effect of 0.08, significant at the 10 percent level, in line with the results for parents' mobilization of Table 2. This is possibly an indication that parents could be biased in their perceptions about school management in face of their own increased mobilization towards school involvement. Note also that the marginal effect of information but not the marginal effect of collective action, is significantly different from zero when it comes to this type of parents' satisfaction. We see a similar impact of T1 for the directors' view about the level of supply of school materials: this is an effect of 0.56, significant at the 10 percent level. However, for this variable, we cannot distinguish any individual treatment from each other. Relating to the impacts of T2, we see just one statistically significant positive effect (at the 5 percent level), for the probability that the school board has parents' representation, with magnitude 31 percentage points. For this outcome, the marginal effect of collective action is significantly different zero. This also happens with the percentage of usable student desks, whether the school has a fence/wall, and whether these facilities were recently improved. There are no signs of complementarity between information and collective action across the outcome variables in Table 3.

In summary, when it comes to outcome variables related to the quality of school management, we find clear effects of T3 – Combined, consistent across different sources, and with a clear base on the observation of facts at the level of the school (from school administration data at the level of the school and from observation of facilities). These effects are in line with some studies in the literature, and with the main hypotheses of CBM. We do not find consistent effects for T1 or T2 even though there is a slight preponderance of collective action.

7.4Effects on teacher performance

Table 4 is devoted to teachers' performance. It includes teacher absenteeism from two random visits at the endline to each school, as well as parents' satisfaction with teachers, specifically on general teacher performance and on caring for their students. This table also includes behavioral data from the lab games, specifically the returning decision by teachers in the trust game and the sending decision in the dictator game. All regressions include full controls like in the previous tables. For satisfaction about teacher performance, since we have baseline data, we include an ANCOVA specification as well.

<Table 4 around here>

The first finding is that there are no effects of any sort on absenteeism of teachers. The effect of T2 is even going in the direction of increasing absenteeism, even if it is far from being statistically significant. This is relevant, as we are not able to say that improvements in parents' mobilization and school management translated to higher teacher presence in schools.

However, like for school management, with the exception of teachers' absenteeism, we observe a clear and positive effect of T3 – Combined. In this case, it spans consistently across parents' and behavioral data. We find an effect of 0.17 standard deviations , statistically significant at the 10 percent level, for parents' general satisfaction with teacher performance. When taking whether teachers care for their students, this effect becomes highly significant (at the 1 percent level) with magnitude 0.22 standard deviations. Turning to the behavioral games, we see an effect of T3 on the sending decision in the dictator game: the size of this effect is 19 percentage points, significant at the 5 percent level. For the average share returned by teachers for all possibilities in the trust game we do not find for any effects of the treatment groups. However, T3 is significantly different from T2 and the combination of T1 and T2 at the 5 percent significance level.

Looking at the treatment effects of T1 – Information and T2 – Collective action, we just find significant effects of T1 on parents' general satisfaction with teacher performance. This effect is positive with magnitude 0.15, significant at the 10 percent level, and is statistically different from T2. Like previously, for other parent perceptions, we identify a significant marginal effect of information for this outcome variable, which does not arise for collective action. This is also the case for the perception of whether teachers care about their students, for the returning decision in the trust game. We do not find any evidence of complementarity of information and collective action.

To conclude, we do not find treatment effects on teacher absenteeism, which is an important dimension of actual performance in schools. We do however find positive effects of T3 – Combined, i.e., the full scorecard intervention, on all our other measures of teacher performance, including those reported by parents, and the behavioral ones. When it comes to parents' views about teachers, T1 - Information also has a positive impact, alone and marginally over collective action, in line with previously reported effects on parents' mobilization. This is indicative of the possibility that parents are influenced by their own mobilization in their judgments about teachers.

7.5Effects on student performance

We now turn to treatment effects on student performance, which are depicted in Table 5. We begin by analyzing student absenteeism, based on random visits to the schools during the endline checking for a sample of students. We then dedicate some attention to standardized tests of Portuguese Language and Mathematics we submitted in all schools for grades 3 and 4. Next, we look at student pass rates from administrative data at the level of the school, for grades 1-6, provided by the ministry of education. Finally, we report on parents' satisfaction about student performance. We employ specifications with full controls like in the previous tables. For the standardized tests and for students' pass rates, we control for the baseline values of the corresponding dependent variables.

<Table 5 around here>

We find that no treatments or treatment dimensions (information/collective action) had significant effects on student absenteeism. T1 – Information actually has a negative coefficient,

which is however far from being significant at standard levels. This is in line with the null findings on absenteeism of teachers. This is also consistent with no significant effects on the scores of the standardized tests. No treatment or treatment dimensions had a positive impact on this outcome variable. In fact, T2 yields a negative point estimate, which is however far from being statistically significant.

Still, we find significantly positive effects of T2 on increasing the passing rates of students in grades 1-6. The magnitude of this effect is 4 percentage points, significant at the 5 percent level, robust to the ANCOVA specification. The marginal effect of collective action is statistically significant at the 10 percent level, but only when including baseline values of the outcome as a control variable. Treatment effects on student performance also arise with parents' satisfaction about student performance, where we find individual effects of T1 and T3. These effects are (respectively) 0.16 and 0.15 standard deviations, both statistically significant at the 5 percent level. This is consistent with previous results emphasizing the role of T1 and information for parents. However, the lack of factual results of T1 on school management, as well as on teacher and student performance, suggest that these effects on parents' perceptions originate from effects on parents' own mobilization about school involvement.

Overall, we do not find significant treatment effects on student absenteeism or performance in standardized test scores. This is consistent with the earlier null result on teacher absenteeism. The treatments we analyze in this project seem too weak to lead to changes on those dimensions of school performance. However, we do see effects of T2 - Collective action on increasing the passing rates of students. This outcome can be related to the performance of students, although this is unlikely in our results in face of the null effects on standardized test scores. It could also be that the changes in passing rates are connected to school management and teacher behavior, in face of additional pressure to perform. The results on passing rates are actually quite in line with the effects we identified on school management and teachers' performance, some of them factual and robust across sources. Given that T2 and T3 also had an effect for parents' mobilization outcomes, it is possible that this was part of the mechanism for effects at the level of the school. However, the effects that we observe of T1 for parents' mobilization do not seem to have progressed to real effects on school performance.

8. Concluding remarks

In this paper, we report on a field experiment we conducted around a scorecard intervention for schools in the province of Kwanza Sul, Angola. We distinguish between information and collective action components of the scorecard by testing three treatments: one with decentralized information to parents, namely about the performance of the school; one with regular parent meetings at the school, without pre-set information about school performance; and one with the full scorecard, which entails parent meetings and information about school performance. We are thus able to enter the 'black box' of the scorecard intervention, which constitutes a prominent example of community-driven development. We observe that all treatments are effective at increasing parents' mobilization, with an emphasis on decentralized information. However, only the collective action treatments are able to improve school management and teacher performance, in a consistent manner. We also see some effects of collective action treatments on student passing rates, but not on their class absenteeism or standardized test scores. We conclude that parent meetings coupled with information about school performance improve aspects of school management and teacher behavior, possibly through increased parents' mobilization. However, these are not enough to change clearly student performance.

Community-based monitoring builds institutions from the bottom-up in the hope that the level of accountability of local state institutions, including of public service delivery, increases. Our study adds to a lukewarm literature on the impact of scorecards for schools, which does not yield robust findings. We test the impact of a scorecard intervention in Angolan schools and observe relatively weak effects regarding the ultimate goal of improving students' performance. However, we do find some positive effects on school management and teacher performance that mediate primarily through collective action. This is the key finding of our study, which puts the emphasis on the promotion of parents' meetings in schools. Still, it is possible that these effects are directly due to parents' mobilization, which is particularly strong in our study, in school and at home, and not uniquely due to increased accountability of school employees. Future studies should devote further attention to the mechanisms of producing accountability in schools in low-accountability contexts like the one we study in Angola.

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Table 1a: Individual and school characteristics - differences across treatment and control groups; for both baseline and endline samples

	Baseline sample					Endline sample				
Teachers	Control group	Information	Collective action	Combined	joint F-stat p-value	Control group	Information	Collective action	Combined	joint F-stat p-value
Female	0.500	0.003	0.066	0.017	0.506	0.651	-0.024	0.010	-0.020	0.648
		(0.052)	(0.052)	(0.053)			(0.030)	(0.030)	(0.031)	
Age	36.308	0.930	-0.022	-0.342	0.790	38.319	0.906	0.369	1.358**	0.082
		(0.859)	(0.867)	(0.873)			(0.616)	(0.605)	(0.620)	
Higher education	0.330	-0.060	-0.055	0.007	0.363	0.392	0.105***	0.039	0.145***	0.000
		(0.048)	(0.048)	(0.048)			(0.031)	(0.031)	(0.032)	
Number of children	3.428	0.329	0.279	0.002	0.331	3.609	0.298	0.205	0.183	0.135
		(0.253)	(0.256)	(0.257)			(0.187)	(0.183)	(0.188)	
Language spoken at home is Portuguese	0.989	-0.015	0.000	-0.006	0.519	0.968	-0.004	0.015	0.019*	0.281
		(0.013)	(0.013)	(0.013)			(0.011)	(0.011)	(0.011)	
Member of local social group	0.166	-0.006	-0.012	0.014	0.966	0.567	0.020	-0.043	-0.029	0.548
		(0.039)	(0.039)	(0.039)			(0.036)	(0.035)	(0.036)	
Total value assets (in 1000 AKZ)	851.545	10280.660	-407.020	11236.223	0.415	2423.514	204.391	152.812	23.321	0.792
		(10628.186)	(10503.923)	(10888.414)			(588.792)	(578.222)	(595.263)	
Director										
Female	0.156	-0.031	0.005	0.134	0.651	0.062	0.125	0.163*	0.228**	0.033
		(0.097)	(0.098)	(0.098)			(0.098)	(0.098)	(0.098)	
Age	44.969	0.451	-0.453	0.465	0.920	48.531	-0.344	-1.693	-1.402	0.424
		(1.874)	(1.874)	(1.890)			(1.747)	(1.761)	(1.761)	
Higher education	0.406	-0.000	0.165	-0.051	0.711	0.562	-0.000	0.147	0.018	0.586
		(0.124)	(0.129)	(0.125)			(0.123)	(0.124)	(0.124)	
Number of children	4.656	0.156	0.344	-0.449	0.975	6.438	-0.531	-0.857	-2.373**	0.110
		(0.651)	(0.656)	(0.667)			(0.952)	(0.959)	(0.959)	
Speak Portuguese at home	0.875	-0.000	0.093	0.093	0.267	0.938	0.000	0.062	0.030	0.444
		(0.068)	(0.068)	(0.068)			(0.049)	(0.050)	(0.050)	
Member of local social group	0.281	0.125	-0.023	0.074	0.546	0.531	-0.094	0.049	-0.112	0.614
		(0.118)	(0.119)	(0.119)			(0.126)	(0.127)	(0.127)	
Total value assets (in 1000 AKZ)	3874.009	-809.820	-768.195	-2443.666	0.412	4262.206	-708.431	-1165.603	-659.918	0.526
		(1977.874)	(1994.852)	(2052.537)			(1610.077)	(1636.272)	(1650.547)	

Note: Robust standard errors of the differences reported in parenthesis. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 1b: Individual and school characteristics - differences across treatment and control groups; for both baseline and endline samples

	Baseline sample					Endline sample				
Parents	Control group	Information	Collective action	Combined	joint F-stat p-value	Control group	Information	Collective action	Combined	joint F-stat p-value
Female	0.640	-0.038 (0.028)	-0.069** (0.029)	-0.043 (0.029)	0.033	0.453	0.052* (0.031)	0.047 (0.032)	0.046 (0.032)	0.062
Age	35.911	1.480** (0.702)	0.550 (0.706)	-0.491 (0.710)	0.375	40.426	-1.073 (0.705)	-0.699 (0.721)	-0.443 (0.724)	0.206
Primary education	0.593	0.057** (0.028)	0.032 (0.028)	0.061** (0.028)	0.032	0.608	-0.011 (0.031)	-0.015 (0.031)	-0.050 (0.032)	0.324
Number of children	4.090	0.209 (0.133)	0.089 (0.134)	0.100 (0.134)	0.227	4.617	0.538*** (0.157)	0.037 (0.161)	0.162 (0.162)	0.060
Speak Portuguese at home	0.951	0.011 (0.013)	-0.000 (0.013)	-0.010 (0.013)	0.993	0.940	-0.002 (0.014)	0.008 (0.015)	0.009 (0.015)	0.685
Member of local social group	0.089	-0.021 (0.017)	0.033* (0.017)	0.001 (0.017)	0.756	0.317	0.021 (0.029)	-0.023 (0.030)	-0.024 (0.030)	0.724
Total value assets (in 1000 AKZ)	464.648	9.520 (222.458)	-258.371 (224.648)	-126.077 (223.617)	0.501	943.987	815.170** (360.302)	483.626 (369.493)	302.007 (368.662)	0.075
Student age	10.623	-0.213 (0.179)	0.121 (0.180)	-0.185 (0.181)	0.531	11.265	0.036 (0.130)	0.040 (0.133)	0.061 (0.134)	0.670
Student is female	0.527	-0.043 (0.029)	-0.035 (0.029)	-0.044 (0.029)	0.089	0.515	-0.025 (0.031)	-0.038 (0.032)	-0.025 (0.032)	0.258
School										
Number of teachers	15.969	-0.031 (2.622)	0.580 (2.643)	-3.356 (2.643)	0.664	14.969	0.594 (2.671)	1.451 (2.692)	-0.840 (2.692)	0.855
Number of classrooms	10.188	-0.781 (1.591)	1.942 (1.604)	-2.021 (1.618)	0.826	9.875	-0.469 (1.548)	2.222 (1.561)	-1.843 (1.561)	0.981
Number of students	638.750	66.156 (121.430)	139.121 (122.406)	-98.653 (122.406)	0.721	672.687	111.906 (133.562)	171.054 (134.635)	-120.462 (134.635)	0.621
School offers classes after 6th grade	0.031	0.000 (0.058)	0.066 (0.058)	0.033 (0.058)	0.488	0.031	0.000 (0.054)	0.066 (0.054)	0.001 (0.054)	0.614
Years since establishment	26.857	-5.305 (5.107)	-4.065 (5.362)	-6.265 (5.200)	0.221	29.857	-5.305 (5.107)	-4.065 (5.362)	-6.265 (5.200)	0.221
Distance to province capital	68.656	-3.256 (12.908)	5.788 (13.273)	-0.979 (12.800)	0.961	68.656	-3.256 (12.908)	5.788 (13.273)	-0.979 (12.800)	0.961

Note: Robust standard errors of the differences reported in parenthesis. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 2: Parents' mobilization

Dep. variable source --->	Parents survey						Teacher survey			Lab experiment parents	
Dependent variable --->	Helped with homework		Keep tight discipline at home	Regular sleeping schedule	Attendance general meetings	Frequency of talking to teacher	Parental involvement		Parents availability extra activities	Public good game: group investment	Trust game: sending decision
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
T1: Information	**0.650****	**0.643****	**0.202*****	**0.175****	**0.134**	**0.192****	**0.192****	**0.205****	**0.186****	**0.034**	**0.007**
	(0.264)	**(0.273)**	**(0.070)**	**(0.075)**	**(0.093)**	**(0.078)**	**(0.080)**	**(0.079)**	**(0.092)**	**(0.074)**	**(0.032)**
T2: Collective action	**0.683****	**0.638****	**-0.040**	**0.069**	**0.171****	**0.266****	**0.269*****	**0.251*****	**0.122**	**-0.032**	**-0.033**
	(0.290)	**(0.285)**	**(0.069)**	**(0.080)**	**(0.079)**	**(0.122)**	**(0.084)**	**(0.082)**	**(0.094)**	**(0.068)**	**(0.028)**
T3: Combined	**0.838*****	**0.794****	**0.061**	**0.009**	**0.103**	**0.165***	**0.143***	**0.134**	**0.148**	**0.049**	**-0.005**
	(0.315)	**(0.312)**	**(0.061)**	**(0.071)**	**(0.089)**	**(0.096)**	**(0.085)**	**(0.082)**	**(0.101)**	**(0.068)**	**(0.024)**
Mean dep. variable (control)	2.865	2.865	0.000	0.000	0.000	0.592	0.000	0.000	0.000	0.557	0.447
R-squared	0.102	0.103	0.058	0.046	0.048	0.031	0.034	0.041	0.083	0.108	0.129
Observations	1800	1800	1932	1936	1900	1906	1568	1568	1555	825	1123
T1 = T2 (F p-val)	0.915	0.986	0.001	0.211	0.636	0.552	0.369	0.586	0.502	0.401	0.233
T1 = T3 (F p-val)	0.578	0.654	0.042	0.025	0.732	0.779	0.603	0.447	0.702	0.841	0.689
T2 = T3 (F p-val)	0.663	0.652	0.135	0.462	0.391	0.440	0.167	0.195	0.789	0.252	0.310
T1 + T2 = T3 (F p-val)	0.267	0.271	0.311	0.033	0.100	0.050	0.013	0.011	0.229	0.635	0.594
T1 + T2 + T3 = 0 (F p-val)	0.001	0.002	0.164	0.162	0.064	0.006	0.002	0.002	0.054	0.762	0.648
Baseline value dep. variable	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO	NO

Note: The regressions include full controls, namely municipality dummies, school controls and for regressions (1)-(6) parent controls, for regressions (7)-(9) teacher controls and for regressions (10)-(11) parent game controls. School controls are number of teachers, number of classrooms, and number of students. Parent controls are parent gender, whether the parent has completed primary school, whether the parent has a partner, and number of children; they also include the age of the student, his/her gender, grade and relation to respondent. Teacher controls are teacher age, gender, whether the teacher has completed higher education, whether the teacher has a partner, number of children, years of experience and the corresponding class grade. Parent game controls are parent age, gender, whether the parent has completed primary school, whether the parent has a partner, number of children, the number of participants and dummies for the game enumerators. In the case of baseline dependent variables, these are averages at the school level in columns (2) and (8). All dependent variables are fully described in Table A1 of the Appendix, dependent variables in columns (3), (4), (5), (7), (8) and (9) are z-scores. Robust standard errors clustered by school reported in parenthesis. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 3: School management

Dep. variable source --->	Parents survey	School administration survey			Teacher survey	Director survey	Facilities observation survey			
Dependent variable --->	Satisfaction school management	Teacher evaluations are public	School board has parents rep	School has parents committee	Satisfaction parents committee	Supply of school material	Percentage usable student desks	School has fence/wall	Recently improved fence/wall	School has student bathrooms
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
T1: Information	**0.080***	**0.106**	**-0.065**	**0.063**	**0.121**	**0.562***	**-0.028**	**-0.017**	**0.040**	**-0.069**
	(0.047)	**(0.078)**	**(0.121)**	**(0.074)**	**(0.098)**	**(0.295)**	**(0.086)**	**(0.122)**	**(0.086)**	**(0.129)**
T2: Collective action	**-0.010**	**0.059**	**0.308****	**0.032**	**0.048**	**0.460**	**0.049**	**0.046**	**0.078**	**0.149**
	(0.063)	**(0.069)**	**(0.130)**	**(0.077)**	**(0.086)**	**(0.297)**	**(0.073)**	**(0.126)**	**(0.098)**	**(0.127)**
T3: Combined	**0.107****	**0.158****	**0.164**	**0.094***	**0.157****	**0.553***	**0.171****	**0.210***	**0.310*****	**0.103**
	(0.048)	**(0.074)**	**(0.131)**	**(0.056)**	**(0.079)**	**(0.290)**	**(0.066)**	**(0.124)**	**(0.113)**	**(0.127)**
Mean dep. variable (control)	0.000	0.094	0.281	0.906	0.000	0.000	0.702	0.469	0.156	0.438
R-squared	0.025	0.234	0.117	0.052	0.095	0.120	0.170	0.203	0.281	0.143
Observations	1934	126	126	126	1538	125	126	126	126	126
T1 = T2 (F p-val)	0.176	0.587	0.005	0.619	0.452	0.771	0.351	0.622	0.698	0.101
T1 = T3 (F p-val)	0.583	0.599	0.073	0.451	0.699	0.979	0.014	0.072	0.020	0.196
T2 = T3 (F p-val)	0.091	0.264	0.306	0.251	0.168	0.786	0.083	0.211	0.061	0.730
T1 + T2 = T3 (F p-val)	0.646	0.954	0.669	0.999	0.925	0.298	0.185	0.315	0.204	0.905
T1 + T2 + T3 = 0 (F p-val)	0.137	0.039	0.187	0.319	0.131	0.017	0.297	0.424	0.060	0.550

Note: The regressions include full controls, namely municipality dummies, school controls and for regression (1) parent controls, for regression (5) teacher controls and for regression (6) school director controls. School controls are number of teachers, number of classrooms, and number of students. Parent controls are parent gender, whether the parent has completed primary school, whether the parent has a partner, and number of children; they also include the age of the student, his/her gender, grade and relation to respondent. Teacher controls are teacher age, gender, whether the teacher has completed higher education, whether the teacher has a partner, number of children, years of experience and the corresponding class grade. School director controls are director age, gender, whether the director has completed higher education, whether the director has a partner, number of children, and years of experience. All dependent variables are fully described in Table A1 of the Appendix, dependent variables in columns (5) and (6) are z-scores. Robust standard errors clustered by school reported in parenthesis. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 4: Teachers' performance

Dep. variable source --->	Observed	Parents survey			Lab experiment teachers	
Dependent variable --->	Teacher presence	Satisfaction teacher performance		Satisfaction teacher care for student	Trust game: returning decision	Dictator game: sending decision
	(1)	(2)	(3)	(4)	(5)	(6)
T1: Information	**0.028**	**0.147***	**0.148***	**0.125**	**-0.033**	**0.056**
	(0.042)	**(0.086)**	**(0.086)**	**(0.079)**	**(0.042)**	**(0.076)**
T2: Collective action	**-0.048**	**-0.034**	**-0.033**	**0.092**	**-0.050**	**0.080**
	(0.046)	**(0.077)**	**(0.077)**	**(0.064)**	**(0.036)**	**(0.059)**
T3: Combined	**0.053**	**0.172***	**0.172***	**0.217*****	**0.037**	**0.188****
	(0.045)	**(0.092)**	**(0.091)**	**(0.067)**	**(0.042)**	**(0.070)**
Mean dep. variable (control)	0.776	0.000	0.000	0.000	0.406	0.368
R-squared	0.117	0.030	0.030	0.033	0.084	0.208
Observations	1564	1652	1652	1912	529	173
T1 = T2 (F p-val)	0.080	0.029	0.030	0.661	0.684	0.708
T1 = T3 (F p-val)	0.557	0.796	0.808	0.228	0.132	0.163
T2 = T3 (F p-val)	0.045	0.028	0.029	0.044	0.045	0.114
T1 + T2 = T3 (F p-val)	0.265	0.641	0.655	0.998	0.047	0.660
T1 + T2 + T3 = 0 (F p-val)	0.759	0.159	0.155	0.013	0.623	0.049
Baseline value dep. variable	NO	NO	YES	NO	NO	NO

Note: The regressions include full controls, namely municipality dummies, school controls and for regressions (2)-(4) parent controls and for regressions (5)-(6) teacher game controls. School controls are number of teachers, number of classrooms, and number of students. Parent controls are parent gender, whether the parent has completed primary school, whether the parent has a partner, and number of children; they also include the age of the student, his/her gender, grade and relation to respondent. Teacher game controls are teacher age, gender, whether the teacher has completed higher education, whether the teacher has a partner, number of children, the number of game participants and dummies for the game enumerators. In the case of baseline dependent variables, this is an average at the school level in column (3). All dependent variables are fully described in Table A1 of the Appendix, dependent variables in columns (2), (3) and (4) are z-scores. Robust standard errors clustered by school reported in parenthesis. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 5: Students' performance

Dep. variable source --->	Observed	Standardized tests		Administrative data		Parents survey
Dependent variable --->	Student presence	Aggregate test score (PT/MAT; grade 3 and 4)		Student pass rate		Satisfaction student performance
	(1)	(2)	(3)	(4)	(5)	(6)
T1: Information	**-0.026**	**0.274**	**0.053**	**0.013**	**-0.004**	**0.162****
	(0.060)	**(0.266)**	**(0.310)**	**(0.024)**	**(0.023)**	**(0.068)**
T2: Collective action	**0.038**	**0.049**	**-0.044**	**0.038***	**0.040****	**0.071**
	(0.058)	**(0.280)**	**(0.276)**	**(0.021)**	**(0.020)**	**(0.068)**
T3: Combined	**0.043**	**0.292**	**0.278**	**0.016**	**0.018**	**0.153****
	(0.057)	**(0.307)**	**(0.322)**	**(0.020)**	**(0.019)**	**(0.070)**
Mean dep. variable (control)	0.594	5.356	5.356	0.862	0.862	0.000
R-squared	0.040	0.060	0.075	0.219	0.321	0.029
Observations	7533	43266	43266	126	125	1937
T1 = T2 (F p-val)	0.261	0.411	0.659	0.276	0.053	0.229
T1 = T3 (F p-val)	0.213	0.952	0.440	0.886	0.290	0.907
T2 = T3 (F p-val)	0.927	0.439	0.253	0.265	0.249	0.293
T1 + T2 = T3 (F p-val)	0.702	0.940	0.530	0.256	0.550	0.437
T1 + T2 + T3 = 0 (F p-val)	0.714	0.370	0.716	0.207	0.293	0.016
Baseline value dep. variable	NO	NO	YES	NO	YES	NO

Note: The regressions include full controls, namely municipality dummies, school controls and for regression (6) parent controls. School controls are number of teachers, number of classrooms, and number of students. Parent controls are parent gender, whether the parent has completed primary school, whether the parent has a partner, and number of children; they also include the age of the student, his/her gender, grade and relation to respondent. In the case of baseline dependent variables, this is an average at the school level in column (3). All dependent variables are fully described in Table A1 of the Appendix, dependent variable in column (6) is a z-score. Robust standard errors clustered by school reported in parenthesis. * significant at 10%; ** significant at 5%; *** significant at 1%.

Appendix

Figure A1. Timeline of field work activities

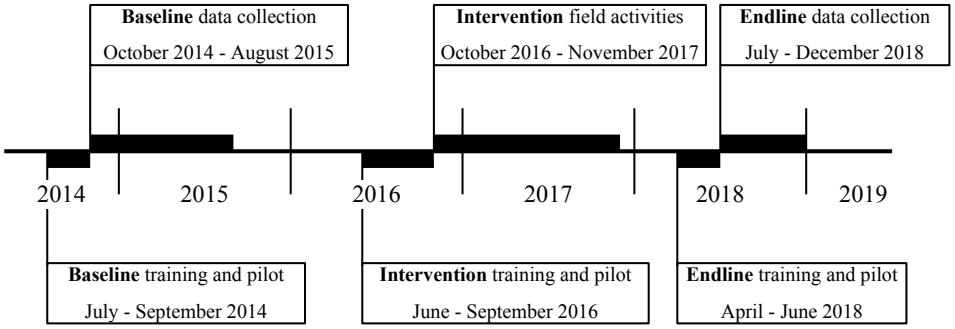


Figure A2. Comic about parental involvement and education

Figure A3a. Example of a scorecard (front)

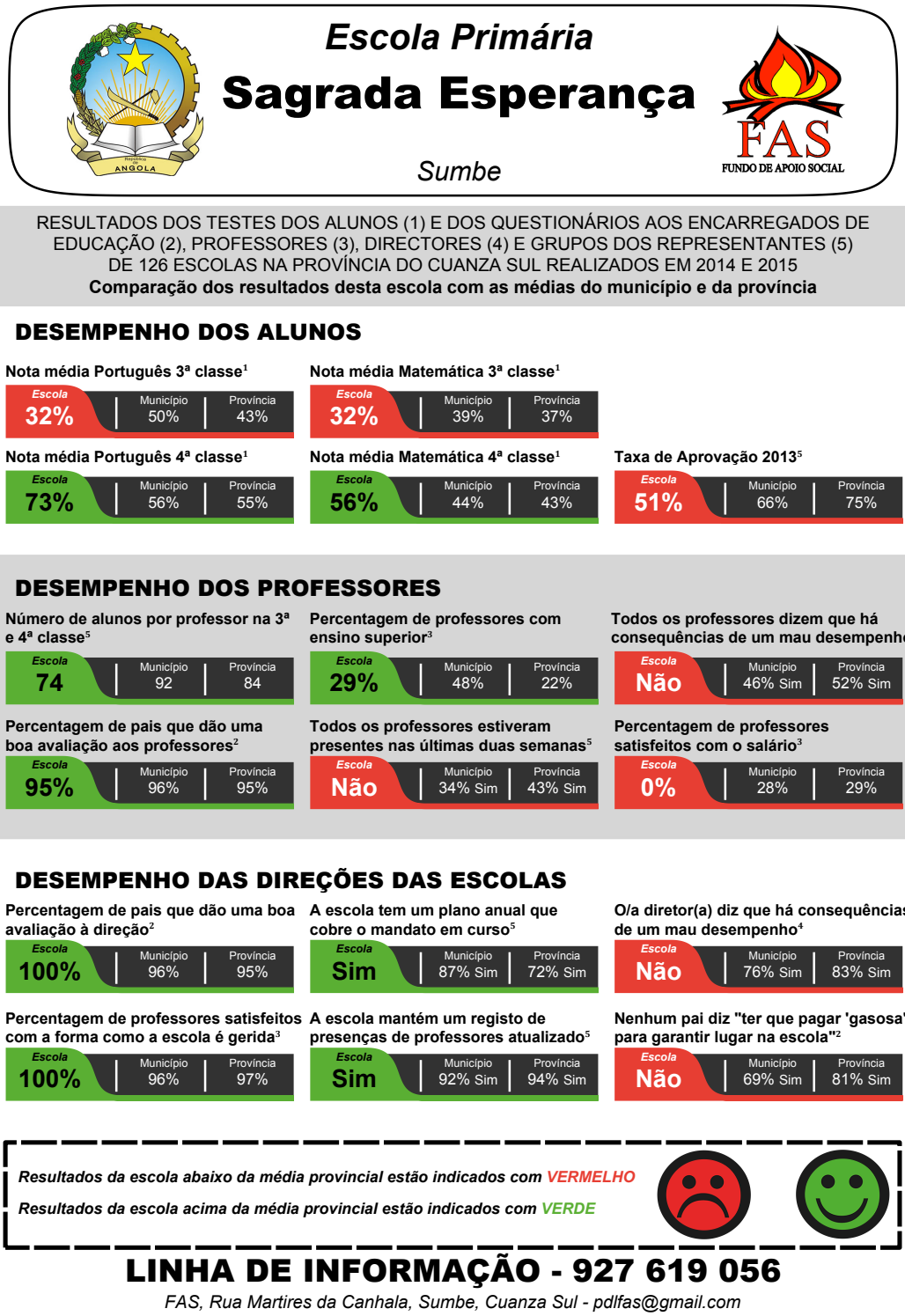
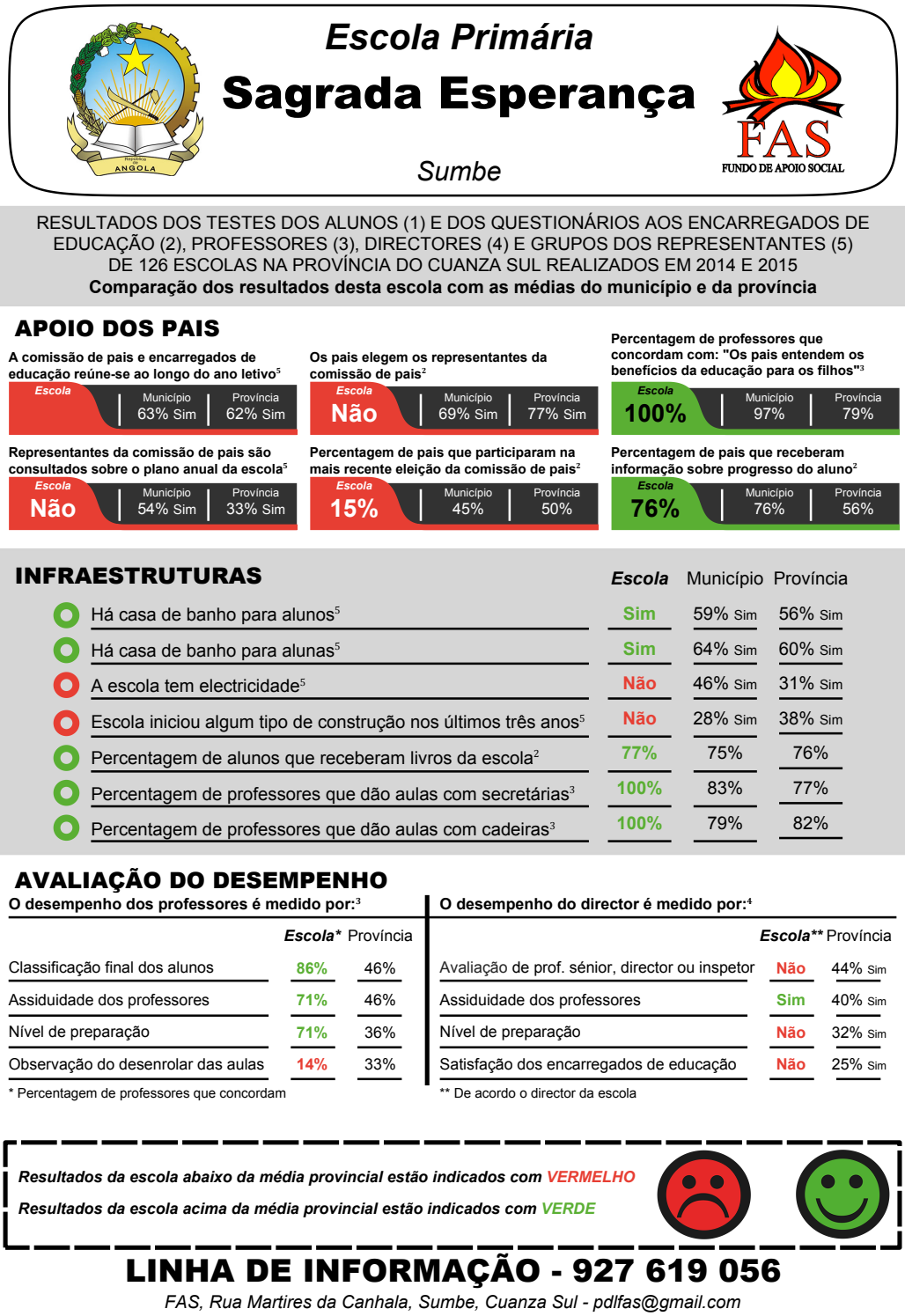


Figure A3b. Example of a scorecard (back)



Escola Primária

Sagrada Esperança

Sumbe

FAS
FUNDO DE APOIO SOCIAL

RESULTADOS DOS TESTES DOS ALUNOS (1) E DOS QUESTIONÁRIOS AOS ENCARREGADOS DE EDUCAÇÃO (2), PROFESSORES (3), DIRECTORES (4) E GRUPOS DOS REPRESENTANTES (5) DE 126 ESCOLAS NA PROVÍNCIA DO CUANZA SUL REALIZADOS EM 2014 E 2015

Comparação dos resultados desta escola com as médias do município e da província

APOIO DOS PAIS

A comissão de pais e encarregados de educação reúne-se ao longo do ano letivo[5]

Escola	Município	Província
	63% Sim	62% Sim

Os pais elegem os representantes da comissão de pais[2]

Escola	Município	Província
Não	69% Sim	77% Sim

Percentagem de professores que concordam com: "Os pais entendem os benefícios da educação para os filhos"[3]

Escola	Município	Província
100%	97%	79%

Representantes da comissão de pais são consultados sobre o plano anual da escola[5]

Escola	Município	Província
Não	54% Sim	33% Sim

Percentagem de pais que participaram na mais recente eleição da comissão de pais[2]

Escola	Município	Província
15%	45%	50%

Percentagem de pais que receberam informação sobre progresso do aluno[2]

Escola	Município	Província
76%	76%	56%

INFRAESTRUTURAS

	Escola	Município	Província
Há casa de banho para alunos[5]	Sim	59% Sim	56% Sim
Há casa de banho para alunas[5]	Sim	64% Sim	60% Sim
A escola tem electricidade[5]	Não	46% Sim	31% Sim
Escola iniciou algum tipo de construção nos últimos três anos[5]	Não	28% Sim	38% Sim
Percentagem de alunos que receberam livros da escola[2]	77%	75%	76%
Percentagem de professores que dão aulas com secretárias[3]	100%	83%	77%
Percentagem de professores que dão aulas com cadeiras[3]	100%	79%	82%

AVALIAÇÃO DO DESEMPENHO

O desempenho dos professores é medido por:[3]

	*Escola**	Província
Classificação final dos alunos	86%	46%
Assiduidade dos professores	71%	46%
Nível de preparação	71%	36%
Observação do desenrolar das aulas	14%	33%

* Percentagem de professores que concordam

O desempenho do director é medido por:[4]

	*Escola***	Província
Avaliação de prof. sénior, director ou inspetor	Não	44% Sim
Assiduidade dos professores	Sim	40% Sim
Nível de preparação	Não	32% Sim
Satisfação dos encarregados de educação	Não	25% Sim

** De acordo o director da escola

Resultados da escola abaixo da média provincial estão indicados com VERMELHO

Resultados da escola acima da média provincial estão indicados com VERDE

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Figure A4. Example of a scorecard poster

RESULTADOS DOS TESTES DOS ALUNOS (1) E DOS QUESTIONÁRIOS AOS ENCARREGADOS DE EDUCAÇÃO (2), PROFESSORES (3), DIRECTORES (4) E GRUPOS DOS REPRESENTANTES (5) DE 126 ESCOLAS NA PROVÍNCIA DO CUANZA SUL REALIZADOS EM 2014 E 2015

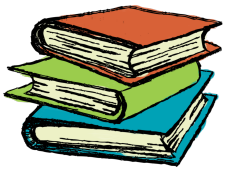
Comparação dos resultados desta escola com as médias do município e da província

DESEMPENHO DOS ALUNOS

	Escola	Município	Província
Nota média Português 3ª classe[1]	44%	38%	43%
Nota média Matemática 3ª classe[1]	28%	37%	37%
Nota média Português 4ª classe[1]	54%	57%	55%
Nota média Matemática 4ª classe[1]	46%	47%	43%
Taxa de Aprovação 2013[3]	82%	83%	75%

INFRAESTRUTURAS

	Escola	Município	Província
Há casa de banho para alunos[5]	Sim	13% Sim	56% Sim
Há casa de banho para alunas[5]	Sim	13% Sim	60% Sim
A escola tem electricidade[5]	Não	0% Sim	31% Sim
Escola iniciou algum tipo de construção nos últimos três anos[5]	Não	38% Sim	38% Sim
Percentagem de alunos que receberam livros da escola[2]	82%	82%	76%
Percentagem de professores que dão aulas com secretárias[3]	86%	71%	77%
Percentagem de professores que dão aulas com cadeiras[3]	86%	74%	82%



DESEMPENHO DOS PROFESSORES

	Escola	Município	Província
Número de alunos por cada professor na 3ª e 4ª classe[5]	55	78	84
Percentagem de professores com ensino superior[3]	29%	7%	22%
Todos os professores dizem que há consequências de um mau desempenho[3]	Sim	75% Sim	52% Sim
Percentagem de pais/encarregados que dão uma avaliação boa aos professores[2]	91%	98%	95%
Todos os professores estiveram presentes nas últimas duas semanas[5]	Sim	67% Sim	43% Sim
Percentagem de professores satisfeitos com o salário[3]	0%	49%	29%

AVALIAÇÃO DO DESEMPENHO

O desempenho dos professores é medido por:[3]

	Escola*	Província
Classificação final dos alunos	0%	46%
Assiduidade dos professores	71%	46%
Nível de preparação	86%	36%
Observação do desenrolar das aulas	57%	33%
Resultados dos testes padronizados	14%	9%
Assiduidade dos seus alunos	14%	7%
Satisfação dos encarregados de educação	0%	5%
Avaliação de prof. sénior, diretor ou inspetor	0%	3%

* Percentagem de professores que concordam

O desempenho do director é medido por:[4]

	Escola**	Província
Avaliação de prof. sénior, diretor ou inspetor	Sim	44% Sim
Assiduidade dos professores	Sim	40% Sim
Nível de preparação	Sim	32% Sim
Satisfação dos encarregados de educação	Sim	25% Sim
Classificação final dos alunos	Sim	24% Sim
Observação do desenrolar das aulas	Sim	22% Sim
Assiduidade dos seus alunos	Sim	17% Sim
Resultados dos testes padronizados	Sim	15% Sim

** De acordo o director da escola

DESEMPENHO DAS DIREÇÕES DAS ESCOLAS

	Escola	Município	Província
Percentagem de pais que dão uma boa avaliação à direção[2]	100%	100%	95%
A escola tem um plano anual que cobre o mandato em curso[2]	Não	38% Sim	72% Sim
O/a diretor(a) diz que há consequências de um mau desempenho[4]	Sim	100% Sim	83% Sim
Percentagem de professores satisfeitos com a forma como a escola é gerida[2]	100%	98%	97%
A escola mantém um registo de presenças de professores atualizado[2]	Sim	100% Sim	94% Sim
Nenhum pai diz "ter que pagar 'gasosa' para garantir lugar na escola"[2]	Sim	100% Sim	81% Sim

AS 5 UTILIZAÇÕES MAIS APONTADAS PARA GASTAR UM MILHÃO DE KUANZAS

	PAIS[2]		PROFESSORES[3]		DIRECTORES[4]	
	Escola	Província	Escola	Província	Escola	Província
1	Compra de livros escolares	Compra de livros escolares	Construção/melhoria das salas de aula	Construção/melhoria das salas de aula	Construção/melhoria das salas de aula	Construção/melhoria das salas de aula
2	Construção/melhoria das instalações sanitárias	Construção/melhoria das instalações sanitárias	Construção/melhoria das instalações sanitárias	Construção/melhoria das instalações sanitárias	Compra/manutenção de mobília e material	Construção/melhoria das instalações sanitárias
3	Construção/melhoria das salas de aula	Aumento do número de aulas para os alunos	Projetos da escola (ex. campo multiusos)	Aumento do número de aulas para os alunos		Compra/manutenção de mobília e material
4	Refeições/merendas escolares	Construção/melhoria das salas de aula	Refeições/merendas escolares	Compra de livros escolares		Aumento do número de aulas para os alunos
5	Compra/manutenção de mobília e material	Refeições/merendas escolares	Atividades extracurriculares	Refeições/merendas escolares		Construção/melhoria da escola em geral

APOIO DOS PAIS

	Escola	Município	Província
A comissão de pais e encarregados de educação reúne-se ao longo do ano letivo[2]	Sim	100% Sim	62% Sim
Percentagem de professores que concordam com: "Os pais entendem os benefícios da educação para os filhos"[3]	100%	98%	79%
Os pais elegem os representantes da comissão de pais[2]	Sim	100% Sim	77% Sim
Representantes da comissão de pais são consultados sobre o plano anual da escola[2]	Sim	63% Sim	33% Sim
Percentagem de pais que participaram na mais recente eleição da comissão de pais[2]	80%	57%	50%
Percentagem de pais que receberam informação sobre progresso do aluno[2]	25%	44%	56%

OS 5 PROBLEMAS MAIS APONTADOS

	PAIS[2]		PROFESSORES[3]		DIRECTORES[4]	
	Escola	Província	Escola	Província	Escola	Província
1	Turmas com demasiados alunos	Turmas com demasiados alunos	Turmas com demasiados alunos	O salário dos professores é baixo	Saúde fraca dos alunos	O salário dos professores é baixo
2	Falta de envolvimento dos pais na escola	Condição das instalações sanitárias	O orçamento da escola não é suficiente	Turmas com demasiados alunos	Ausências dos alunos	Condição das instalações sanitárias
3	Desrespeito dos alunos aos professores	Qualidade das salas de aula	Atividades extracurriculares	O orçamento da escola não é suficiente	Avaliação dos professores	Qualidade das salas de aula
4	Passagem automática para a classe seguinte	Passagem automática para a classe seguinte	Passagem automática para a classe seguinte	Qualidade das salas de aula	O salário dos professores é baixo	Turmas com demasiados alunos
5	Avaliação dos professores	O salário dos professores é baixo	Custo de garantir materiais para os alunos	Condição das instalações sanitárias	Número insuficiente de professores	Número insuficiente de professores

Resultados da escola abaixo da média provincial estão indicados com VERMELHO
Resultados da escola acima da média provincial estão indicados com VERDE

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Figure A5. Map of geographic location sample schools

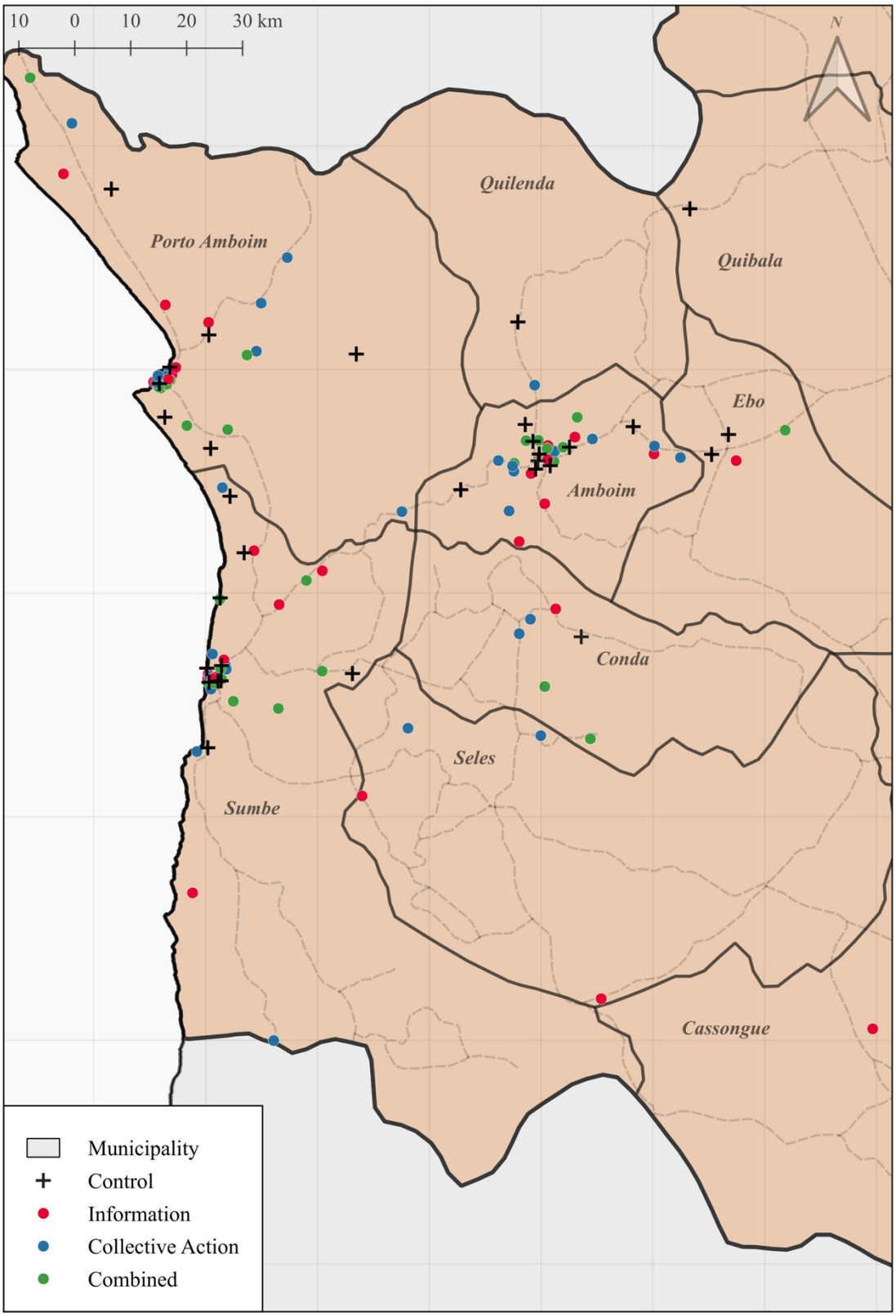

Table A1a: Scorecard indicators

Indicator	Source
Student performance	
Average score Portuguese Language 3rd grade	Standardized tests
Average score Portuguese Language 4th grade	Standardized tests
Average score Mathematics 3rd grade	Standardized tests
Average score Mathematics 4th grade	Standardized tests
Approval Rate 2013	School survey
Teacher performance	
Number of students per teacher in 3rd and 4th grade	School survey
Percentage of parents giving a good evaluation to teachers	Parent survey
Percentage of teacher that completed higher education	Teacher survey
All teachers were present in the last two weeks (Yes/No)	School survey
All teachers say there are consequences of poor performance (Yes/No)	Teacher survey
Percentage of teachers satisfied with salary	Teacher survey
School managment performance	
Percentage of parents giving a good evaluation to school board	Parent survey
Percentage of teachers satisfied with how the school is managed	Teacher survey
The school has an annual plan covering the current mandate (Yes/No)	School survey
The school maintains an up-to-date teacher attendance record (Yes/No)	School survey
The school director says there are consequences of poor performance (Yes/No)	Director survey
No parent says, “I have to pay a bribe to secure a place in school” (Yes/No)	Parent survey
Parental support	
The parents’ committee meets throughout the school year (Yes/No)	School survey
Representatives of the parents’ committee are consulted about the school’s annual plan (Yes/No)	School survey
Parents elect parents' representatives (Yes/No)	Parent survey
Percentage of parents who participated in the most recent parents’ committee election	Parent survey
Percentage of teachers who agree with: “Parents understand the benefits of education for their children”	Teacher survey
Percentage of parents who received information about student progress	Parent survey
Facilities	
There is a bathroom for students (boys)	School survey
There is a bathroom for students (girls)	School survey
The school has electricity	School survey
School started some type of construction in the last three years	School survey
Percentage of students receiving school books	Parent survey
Percentage of teachers giving classes in classroom with desks	Teacher survey
Percentage of teachers giving classes in classroom with chairs	Teacher survey

Table A1b: Scorecard indicators

Indicator	Source
Performance evaluation	
The performance of teachers is measured by: (percenage of teacher who agree)	
Final grade of students	Teacher survey
Teachers' attendance	Teacher survey
Level of preparation	Teacher survey
In class observation	Teacher survey
Poster only:	
Standardized test results	Teacher survey
Student attendance	Teacher survey
Parents' satisfaction	Teacher survey
Rating of senior teacher, school director or inspector	Teacher survey
The school director's performance is measured by:	
Rating of senior teacher, school director or inspector	Director survey
Teachers' attendance	Director survey
Level of preparation	Director survey
Parents' satisfaction	Director survey
Poster only:	
Final grade of students	Director survey
In class observation	Director survey
Student attendance	Director survey
Standardized test results	Director survey
The five most uses of a hypothetical million kwanzas (poster only)	
All occuring uses:	
Construction / improvement electricity; Construction / improvement library; Construction / improvement of classroom; Construction / improvement of other school projects (e.g. multipurpose field); Construction / improvement of sanitary facilities; Construction / improvement of teachers' house / room; Construction / improvement of the school in general; Construction / improvement of wall or fence; Contract more teachers; Contract security staff; Increase in number of classes for students (e.g. in the night); Increase teachers' salaries by work day, to encourage attendance; Organize extracurricular activities (e.g. soccer tournaments); Purchase / maintenance of furniture and equipment (e.g. desks, chairs); Purchase school books; School lunches / snacks; Teacher training; Transportation for teachers / students.	Parent, teacher and director surveys
The five most mentioned problems (poster only)	
All occuring problems:	
Absenteeism of students; Absenteeism of teachers; Automatic passage of children to the next grade; Classes with too many students; Cost of guaranteeing materials for students; Disorderly conduct or physical conflict between students; Disrespect of students towards teachers; Drop-out rate; Extracurricular activities; Failure to meet schedules by students; Insufficient number of teachers; Lack of parent involvement in school; Lack of teaching material; Motivation of teachers; Poor student health; Preparation of school staff; Quality of classrooms; Sanitary facilities; Specific issues of the program; Student empathy toward teachers; Teacher evaluation; Teacher salary is too low; Teachers give private lessons to students in other classes; Teachers give private lessons to students of their own class; Teachers' time constraints; The school budget is not enough.	Parent, teacher and director surveys

Table A2: Sample size

Measurement type	Number of observations	
	Baseline	Endline
Standardized tests		
Grade 3 - Portuguese Language	5896	9578
Grade 3 - Mathematics	5787	9355
Grade 4 - Portuguese Language	4985	12152
Grade 4 - Mathematics	4937	12181
Grade 5 - Portuguese Language		6903
Grade 5 - Mathematics		6746
Surveys		
Parents	2350	1977
Teachers	713	1687
School Director	126	126
School Administration	126	126
Lab-in-field experiments		
Parents		1163
Teachers and School Directors		553

Table A3a: Outcome variables - description

	Dependent variable	Source	Explanation / Phrasing of the question	Scale
Table 2	**Helped with homework**	Parent survey	In the past two weeks, how many days have you or any adult in your household helped your child do his homework? [in days]	0-14
	Keep tight discipline at home	Parent survey	How often does the following situation occur? "I keep clear rules in my house that my son must obey." [never (0) - very frequent (5)]	0-5
	Regular sleeping schedule	Parent survey	How often does the following situation occur? "I keep a regular wake up and sleep schedule for my child" [never (0) - very frequent (5)]	0-5
	Attendance general meetings	Parent survey	During the previous school year, how often did the following situation occur? "You went to your child's school to attend the general meetings" [never (0) - every week (7)]	0-7
	Frequency of talking to teacher	Parent survey	In the past four weeks, how many times did you go to the school to talk to the teacher about your child's performance? [in days]	0-20
	Parental involvement	Teacher survey	To what extent is this subject a problem in this school? "Lack of parent involvement in school." [it is a big problem (0) - it is not a problem (3)]	0-3
	Parents availability for extra activities	Teacher survey	To what extent do you agree or disagree? "The parents and guardians of this school are always available to help with extracurricular activities." [disagree a lot (1) - agree a lot (5)]	1-5
	Public good: group investment	Lab experiment parents	Public good investment decision by parents with two options: invest in group account (1) or invest in private acount (0)	0-1
	Trust game: sending decision	Lab experiment parents	Trust game sending decsion by parent. [Percentage share of maximum 800 AKZ]	0-1
Table 3	**Satisfaction school management**	Parent survey	To what extent do you agree or disagree? "The school is doing a good job of preparing children for their future." [disagree a lot (1) - agree a lot (5)]	1-5
	Teacher evaluations are public	School survey	Indicator base on the following question: Of the following types of information, which are publicly displayed at school? Options to be read one by one; option 8: "resultados de avaliação de professores".	0-1
	School board has parents rep	School survey	Indicator base on the following question: Which of the following representatives are members of the direction of this school? Options to be read one by one; option 2: "parents representative".	0-1
	School has parents committee	School survey	Is there a committee of parents? [Yes (1) - No (0)]	0-1
	Satisfaction parents committee	Teacher survey	How do you think the performance of the parents' committee has been? [very bad (1) - very good (5)]	1-5
	Supply of school material	Director survey	To what extent is this subject a problem in this school? "Lack of teaching material." [it is a big problem (0) - it is not a problem (3)]	0-3
	Percentage of usable student desks	Observed	Percentage of usable student desks is created using the total number of student desks and the total number of broken student desks. Observed by enumerator, using the facilities survey.	0-1
	School has fence/wall	Observed	Indicator for whether the school has a fence or wall. Observed by enumerator, using the facilities survey.	0-1
	Recently improved fence/wall	Observed	Has there been any construction or improvement of the fence during the two previous school years and this year (2016, 2017 and 2018)? Confirmed by enumerator.	0-1
	School has student bathrooms	Observed	Indicator for whether the school has student bathrooms. Observed by enumerator, using the facilities survey.	0-1

Table A3b: Outcome variables - description

	Dependent variable	Source	Explanation / Phrasing of the question	Scale
Table 4	**Teacher presence**	Observed	During the two endline visits, the presence of all the teachers was checked by one of the enumerators. This is the average presence per teacher over these two visits.	0-1
	Satisfaction teacher performance	Parent survey	To what extent is this subject a problem in this school? "Low teachers performance." [it is a big problem (0) - it is not a problem (3)]	0-3
	Satisfaction teacher care for student	Parent survey	To what extent do you agree or disagree? "You feel that your child's teacher cares about him." [disagree a lot (1) - agree a lot (5)]	1-5
	Trust game: returning decision	Lab experiment teachers	Trust game returning decision by teacher. [Average percentage share returned for all possibilities]	0-1
	Dictator game: sending decision	Lab experiment teachers	Dictator game sending decision by teacher. [Percentage share of maximum 2000 AKZ]	0-1
Table 5	**Student presence**	Observed	During the two endline visits, the presence of the randomly selected students was checked by one of the enumerators. This is the average presence per student over these two visits.	0-1
	Aggregate test score (PT/MAT; grade 3 and 4)	Standardized tests	Standardized test scores out of 10. This variable includes all Portuguese Language and Mathematics testscores for grades 3 and 4.	0-10
	Student pass rate	Administrative data	School average of the student pass rates for grades 1-6. Created using the total number of students and total number of repeaters for each grade	0-1
	Satisfaction student performance	Parent survey	How do you think your child has been doing in school? [very bad (1) - very good (5)]	1-5