Report on Participation Decision for Learning Guarantee Program

I. Introduction

This study was designed to address the question: *Why do some schools in a given region, under the same policy-maker and governed by the same institutional rules, do better than others?* We do this by examining the correlations between students' test scores and school processes and characteristics as well as the characteristics of the community and its involvement in government primary school operations in Bellary, Karnataka.

A secondary objective of the study was to examine the differences between schools that are voluntarily participating in the Azim Premji Foundation's (APF) *Learning Guarantee Program* (LGP) and those that did not request an application. The LGP is an incentive-based program, which rewards schools financially[1] for meeting certain benchmarks in enrollment, attendance and learning levels (measured by test scores). While the award is an incentive to work towards ensuring that the school performs at its optimum level of functioning, at the same time it is also an opportunity for the school to use an award to address its own essential needs.

Variation in the same school processes and characteristics was examined for 65 LGP schools and 64 'Non-LGP' schools. We consider those schools to be LGP schools that participated in 2003 or are joining the program in 2004. Schools that are neither currently participating nor have future plans to join the program are considered Non-LGP schools, although some of these schools did request applications.

This report proceeds as follows: Section II explains the data collection process. Section III presents the results of our preliminary analysis. In Section IV we give our concluding remarks.

II. Data Collection

Data were collected from 129 randomly selected schools from Bellary, an underdeveloped

[1] The maximum award is Rs. 20,000 per year for three years. There is no guaranteed minimum award.

district within the state. Schools had to apply by the end of February 2003 to participate in the program, and in July our study sample was selected from all LGP Schools and Non-LGP schools in the district. Sample schools are located throughout all seven administrative taluks and are all government-run primary schools. Information on sources and uses of funds, teacher management, school facilities, local government administration, and community participation in monitoring the schools were collected from each school's Head Teacher, other teachers, School Development and Monitoring Committee (SDMC[2]) President, and through limited direct observation. In addition, students in Class 3 and Class 5 were administered written tests in Math and their language of instruction.

The data collected were aimed at achieving the following goals:

- Examine correlations between school characteristics/ policies and test scores to identify those that may be relevant for improved learning levels,
- Identify school processes which can be improved if incentives are provided, and
- Understand key differences between the two types of schools: those that self-select into the LGP program and those that do not.

Survey Instruments

We used six different survey instruments to gain information about the schools and their processes: Pre-Interview Information, Teacher Roster, Individual Teacher Questions, School Observations, Head Teacher Questionnaire with School Records, and SDMC Questions.

1. **Pre-Interview Information —** These questions were designed to obtain initial information about the school as soon as the interviewers arrived, hopefully before teacher behavior changed in response to the interviewers' presence. Information covered includes how many classes were being taught, how many teachers were teaching (rather than engaged in non-teaching or personal activities, etc.), and basic facilities observable. During pilot tests, the interviewers were unable to complete this instrument before being asked about the purpose of their visit. During actual data collection, the first interviewer immediately went to talk to the Head Teacher, creating an opportunity for this

[2] The SDMC is intended to be a 9-member, elected board of parents and/or other concerned community members.

instrument to be completed by the second interviewer. This strategy overcame the difficulty; the interviewers were able to complete the pre-interview questions in all schools before the purpose of their visit was established for the teachers.

2. **Teacher Roster —** This roster records all teachers employed in the school, demographic information, and attendance along with who is responsible for hiring/payment. The school's Head Teacher provided this information.

3. **Individual Teacher Questions —** This instrument asked the teachers to report on their levels of education, teaching experience, compensation, job satisfaction, commute to the school, non-teaching official duties away from school, school management, their knowledge of the LGP, and their opinions on financial incentives similar to the one offered by the LGP. This instrument also collected information on the classroom environment where the teacher was working immediately prior to the interview. Teachers were selected to respond to these questions if they taught anything to students in 1st or 2nd standard.

4. **School Observations —** This instrument was used to record school infrastructure, such as having electricity, toilets, running water, lights, fans, blackboards, and a school office as well as the physical state of rooms and roofs. Lastly, it documents crowding in schoolrooms and actual student attendance the day of the interview.

5. **Head Teacher Questionnaire with School Records —** This survey focused on administration of the school. It records basic information about the education the school provides, other schools in the area, mother tongue(s) of the students, fees charged, support given (cash and in-kind) by various sources, teacher management, and involvement by various groups and individuals (SDMC, Block Education Officer, local Member of the Legislative Assembly, Village Panchayat, NGOs) in school management and administration. It also asks about differences in who are decision makers versus resource providers relevant to the school, for different supplies/ support and how the school responds to shortages in school supplies. The School Records section documents enrollment and attendance (for July 2003) by gender and class, social category and class, plus promotion and retention statistics for the previous school year.

6. **SDMC Questions —** Part 1 of this instrument repeated the questions already asked of the Head Teacher regarding SDMC functioning, support provided, and action taken for the school to the SDMC President. Part 2, the SDMC Roster also recorded basic information about the members of the SDMC: how they became members, occupations, education levels, gender, caste, and if they have a child attending the school in question.

The surveys were created in English and translated into Kannada by a Bangalore-based translation agency.[3] In addition to the six survey instruments, we used school-level average test scores and census and public goods data.

Test Scores

Since no standard test are administered for young students across taluks, students had to be tested for the purpose of the study. For students attending LGP schools, their actual LGP written test results are used. The same written tests used in the LGP evaluations were given to students in the Non-LGP schools. Non-LGP Schools to be tested were notified during the survey visit that Class 3 and 5 students would be administered written tests (approximately one week later) on Class 2 and Class 4 competencies in Math and Language (primarily Kannada, but also Urdu and Telugu according to the school's medium of instruction). Temporary workers in Bangalore graded the tests for Non-LGP schools.[4]

Census and Public Goods Data

With the help of the Block Education Officers, interviewers plotted the location of each school in the sample on taluk maps used in the *1991 Census of India*. The village codes were then read from the maps for the rural schools. A list of all Karnataka villages with their 1991 and 2001 Census codes (provided by the Directorate of Census Operations in Bangalore) was used to match the codes obtained from the 1991 maps to the code used in

[3] Some errors were found on the Kannada version after interviewers began to use them. The most serious mistake was in Book E, where the translation left out all of the "Shortage or Problem" categories in the second column of Book E question 74-84 and the supervisors did not realize that they were missing. The interviewers asked 74-84 as an open-ended question: What shortages or problems did you have? Once discovered, the categories were translated and new copies of the questions were distributed; the interviewers began using the corrected format approximately halfway through the data collection phase and moved the open-ended answers to the new format for schools completed with the erroneous format.

[4] During this process the results of three schools' tests were misplaced. Also, one of the LGP (2004) schools has not yet been tested at the time of this writing, so in total four schools in our sample are missing test scores.

the 2001 Census.

For schools located in urban areas, BEOs were asked for the Ward Number where the school was located. These ward numbers match the specific locations for the ward level Census Codes in 2001.[5]

Census Codes were used to match each school to its area's 2001 census data (total population, population involved in certain industry, literate females, etc.) In addition, the rural schools' codes were also used to match them to Public Goods data from the 1991 Census (availability of communications facilities, educational institutions, medical facilities, drinking water, etc.). Public Goods data are only collected for rural areas and at the time of writing, would not have been available from the 2001 census for many months.

III. Results

Mean Test Scores

Mean Test Score is regressed on key factors relating to the school, neighborhood (defined by the census area), teachers, and community participation to determine what correlations exist between resources and better student performance on tests. This analysis is completed in two ways, to accommodate covariates from Public Goods data, which the Census of India collects only for rural areas.

First, Table 2 (page 12) presents results where urban and rural schools are separated into two groups and *Mean Test Scores* (MTS) are regressed on the variables of interest alone. For example, we estimate the equation:

$$MTS_{rural} = a + b_1(DesksReceivedPerStudent) + \mu$$

where a is a constant and μ an error term, and we report $b_1 = 2.173$. Additionally, *Mean Test Scores* are regressed on the variables of interest with select Census Data used as covariates. These covariates are: *Female* percent of population, *Children under age six* percent of population, *Literate* percent of population, *Marginal workers* percent of

[5] For three urban schools, a ward number could not be obtained and town-level census data were used instead. This situation arose only in the towns of Kudligi and Sandur, which had been villages in the 1991 census.

population, *Non working* percent of population, and an indicator variable for *LGP School*. It should be noted, that there are only 19 urban schools in the sample, so the urban sample's variance is higher than in a large sample, making it difficult to predict which results would be statistically significant in the population of urban schools.

Second, Table 3 (page 16) shows the results where rural and urban schools have been aggregated; in addition to correlations from *Mean Test Scores* regressed on the explanatory variables alone, select Census **and** Public Goods Data are used as covariates and an indicator variable for *Urban* schools is included. The additional covariates from the Public Goods data are the following indicator variables: *Well* as a source of drinking water, *River* as a source of drinking water, *Adult Literacy Center* existing in the village, and *Market Facility* existing in the village. Our discussion of results is mainly focused on the results for the aggregated sample with covariates, with other individual results highlighted as necessary.

Test Scores and School Characteristics — We find that for all schools, an important relationship exists between higher *Mean Test Scores* and *LGP Schools.* For the aggregated sample, the *Mean Test Score* is approximately 21 percentage points higher for those that are *LGP Schools*; this effect is statistically significant at the 1% level. (See Table 3A School Characteristics.) This relationship also exists and remains significant at the 1% level when looking at the rural and urban schools separately, with an observed increase in scores of nearly 20 percentage points and 28 percentage points. (See Table 2A School Characteristics.)

When test scores are regressed on the variables of interest and both census and public goods data are used as covariates, several additional factors have a significant relationship with scores. We find two significant and positive relationships between test scores and School Characteristics: *Student attendance* on the initial survey visit (0.255 regression coefficient) and *Percent of classrooms in good condition* (0.161). Higher test scores are associated with higher attendance (measured during an unannounced visit) and classrooms that are kept in good condition. This is interesting because it may indicate a correlation between achievement and the care that is taken for existing infrastructure – something teachers can control – rather than a correlation between scores and the presence of

electricity, desks, and toilets – infrastructure items that are normally outside teachers' control. Similarly, ensuring attendance is also considered to be a responsibility of teachers.

Test Scores and Neighborhoods — We find many significant relationships with Neighborhood Characteristics, including: *Female* percent of population (-1.146), C*hildren under the age of six* percent of population (2.426), *Marginal Workers* percent of population (0.444), school is located in *HB Halli* taluk (-0.121), located in *Sandur* taluk (0.182), *Well* as a drinking water source (0.125), *Adult Literacy Center* (0.086), *Market Facility* (0.086) and *P&T Facility* in village (-0.052). (See Table 3B Neighborhood Characteristics.)

When rural schools are analyzed separately, the relationship between P&T facilities and test scores becomes insignificant while all other explanatory variables remain significant. Additionally, there is a significant relationship for rural schools' *Mean Test Scores* and *Literates* (0.749), location in *Siruguppa* taluk (-0.238), *Area (km^2) unavailable for cultivation* (0.0001) and *River* as a source of drinking water (-0.180). (See Table 2B Neighborhood Characteristics). These factors may be correlated with areas that are better off, in terms of financial or social capital, but since the town/village census data contain no direct information on average household income or assets, it is difficult to confirm assertions about wealth. We also investigated the effects of not/having various medical institutions in the community, but found no significant correlation (results not shown).

For urban schools individually, in addition to *LGP participation*, the only other variable with which test scores are significantly correlated is the *Scheduled Caste* percent of population in the ward. A 1% increase in the SC population is correlated with a drop in *Mean Test Scores* of .005 percentage points. This effect is small, but significant at the 5% level when controlling for the census covariates. A school from a "low" SC population community (defined as mean SC population – 1 standard deviation, equal to 3.3%) is estimated to have scores that are approximately 17.5 percentage points higher than a school in a "high" SC population community (defined as mean SC population + 1 standard deviation, equal to 38.1%) This variable is insignificant for rural schools and the aggregated group.

Test Scores and Teachers — In terms of teacher characteristics, significant variables for the aggregated sample are *Percent of teachers found teaching* (rather than reading or doing something else personal) when survey takers arrived at the school (0.112), *Percent of classrooms with educational materials on walls* (0.204), *Percent of teachers educated beyond secondary school* (0.146), and *Mean number of years since teachers were assigned non-teaching*[6] *duties* (-0.030). Although the final result is small in magnitude, it is quite surprising that more time passed since a school's teachers were called away to perform non-teaching duties is associated with lower test scores, since such disruptions are normally blamed for low learning levels. (See Table 3C Teacher Characteristics.) This effect, however, disappears when rural schools are evaluated separately and *Student: teacher ratio* (-0.002) and *Teacher attendance* the day of the (unannounced) study visit (0.176), and *Percent of teachers who say "quality of teaching" is the most important criterion for promoting teachers* (0.155) are significant. (See Table 2C Teacher Characteristics.)

Test Scores and Community Participation — When looking at Community Participation, particularly the influence of the School Development and Monitoring Committee, we find a significant, positive relationship between *Mean Test Scores* and *SDMC visits school at least every other day* (0.104). There also exists a significant, positive relationship between *Mean Test Scores* and the

SDMC having a *President whose education is above the village average* (0.095) and a significant, negative relationship between *Mean Test Scores* and the percentage of teachers who say that the *SDMC is the principal decision maker for allocating resources*. These results seem to suggest that individual action by SDMC members can increase test scores, but an important decision of the SDMC may not contribute to greater learning. (See Tables 2D and 3D Community Participation Characteristics). We also investigated the correlation between test scores and regular provision of Mid-Day Meals for young students, but found no significant relationship.

[6] Teachers are commonly assigned away from teaching to complete other government projects, such as census taking and voter registration.

Table 1 Summary of significant explanatory variables for test scores

(ORDER DOES NOT REFLECT MAGNITUDE)	Aggregated Schools	Rural Schools	Urban Schools
LGP Participation	▯	▯	▯
Higher student attendance (%)	▯	▯	
More classrooms in good condition (%)	▯	▯	
More classrooms with educational materials on wall (%)	▯	▯	
More teachers educated beyond secondary school (%)	▯	▯	
SDMC member visits school at least every other day	▯	▯	
SDMC President's education above neighborhood average	▯	▯	
More children as % of population	▯	▯	
More marginal workers as % of population	▯	▯	
School in Sandur taluk	▯	▯	
Fewer females as % of population	▯	▯	
SDMC is NOT principal decision maker in allocation of school's resources	▯	▯	
School NOT in HB Halli taluk	▯	▯	
Fewer years since non-teaching duty took teachers away	▯		
P&T facility NOT available in village	▯		
More teachers observed teaching (%)	▯		
Well available as source of drinking water in village	▯		
Adult literacy center in village	▯		
Market facility available in village	▯		
More teachers say "quality of teaching" is the most important criterion for promoting teachers (%)		▯	
Desks received per student		▯	
Lower student: teacher ratio		▯	
Higher teacher attendance during initial study visit (%)		▯	
More literates as % of population		▯	
More area unavailable for cultivation (km^2)		▯	
River water NOT available as for drinking water in village		▯	
School NOT in HB Siruguppa taluk		▯	
Fewer SC as % of population			▯

LGP and Non-LGP Schools

Since LGP participation is an important indicator of higher *Mean Test Scores*, we now turn to the differences between LGP and Non-LGP Schools. This question is addressed by examining the differences in means of many School, Neighborhood, Teacher, Community Participation and LGP-related variables between LGP and Non-LGP schools. A strong word of caution is necessary here. This study was not designed to explain *why* LGP and Non-LGP schools are different or to determine if the LGP is responsible for higher test scores. Since all schools were surveyed only once and at least six months after the program began, these results cannot be characterized as "impact" and also cannot properly be considered baselines. We feel that the best way to think about this section of the report is as a "selection" study.

Overall, LGP and Non-LGP schools are remarkably similar on the great number of dimensions studied. (See Table 4 for a sample.) One interesting result is that 34% of LGP Schools charge an *Exam Fee* while only 20% of Non-LGP Schools charge an exam fee. They are the same, on average, for other types of fees. If this means that LGP Schools actually test their students more, it may mean that they have better information on which they could evaluate their chances of success in the LGP. Also, there is a significant difference in student attendance on the day our researchers first visited the schools. Attendance at LGP Schools was 77% while Non-LGP schools averaged 70%. This difference could either be an influence of the LGP or a pre-existing difference, which influenced schools to participate. We also see a significant difference in the percentage of teachers who are *From the location where they teach* either as an ancestral home or by their own birth; teachers in LGP Schools are nearly twice as likely as Non-LGP teachers to be from the school's area.

We also see a difference in the presence of *River water* for drinking, *P&T facilities*, and *Distance from the nearest town* for the rural schools' villages. Five of the six LGP schools with river water are from Siruguppa, the only taluk in the study where test sores and participation are negatively correlated and a taluk that had a high participation rate in the program in general, perhaps indicating a bureaucratic hand at the taluk level that successfully encouraged schools to participate. While we noted earlier that the existence of

a P&T is not significantly correlated with test scores for rural schools, in our sample, 87% of rural LGP schools are located in villages with P&T facilities while only 71% of Non-LGP schools have this facility. The difference between these means is statistically significant. Similarly, distance to the nearest town was uncorrelated with test scores, but rural LGP schools are located in villages that are on average 16.9 km from the nearest town, while rural Non-LGP schools are over 21 km from the nearest town, on average. Again, this difference is statistically significant. These two factors indicate that Non-LGP schools are more remote; it may simply have been harder for them to participate in the program with fewer local communication facilities. Since building post offices and the distance to nearby towns are not under the influence of the LGP, it is likely in this case that the differences pre-existed the announcement of the program.

Finally, Table 4E presents responses to questions that teachers were asked specifically about the LGP and how they would spend a financial award. While 87% of teachers in LGP schools responded that they knew something about the LGP, this rate falls to 72% in the Non-LGP schools. A very high percentage of teachers responded that having Rs. 20,000 would make a difference in learning outcomes in their schools; 99% of teachers in LGP Schools agreed while 95% of teachers in Non-LGP schools agreed. Teachers were also asked from whom they had heard about the LGP and many reported hearing about the program from multiple sources. The percentage that said they heard about the LGP from APF (via radio commercials, newspaper ad, staff, etc.) was significantly lower at 22% for the LGP schools versus 33% for Non-LGP schools. LGP Schools were not more likely to have found out from government sources (BEO or CRC) or from multiple sources.

Teachers were also asked how they would spend Rs. 20,000 to improve learning outcomes. The only significant difference in responses is that "Science Lab" was mentioned by 6% of teachers in LGP schools while only 0.5% of teachers in Non-LGP schools stated that a Science Lab is a spending priority. When the same question was asked about spending Rs. 50,000, further differences arose. Only 20% of LGP teachers suggested that they would spend the money on furniture, while 30% of Non-LGP teachers mentioned purchasing furniture. Also, Non-LGP teachers were much more likely (13% vs. 5%) to recommend spending part of this money on a garden for the school. See Table 4E for further results on questions asked about the LGP.

IV. Concluding Remarks

The dataset we have constructed and analyzed represents a snapshot of government primary schools in Northeast Karnataka. While we have found some interesting correlations, we can prove no causal relationships between school and community attributes and students' learning levels. The correlations we did find, however, may suggest some policy implications.

It is worthy of note that we do *not* find a significant relationship between learning levels and school resources such as cash, textbooks, notebooks, or even basic infrastructure such as running water, electricity and toilets. Meanwhile, maintenance of existing classrooms and placing or painting educational materials on classroom walls are both positively correlated with test scores. Also, teacher attendance and teachers' educational levels are also positively correlated with test scores, suggesting how important recruiting and monitoring teachers is for student achievement. Combined, these observations indicate that spending scarce resources on ensuring teacher quality should be a priority over policies that increase school supplies or infrastructure. Further research may also be needed to understand beyond academic qualifications, what other experiences or attitudes can be identified in the population of teachers who maintain the infrastructure, despite its humble nature, and use resources to their fullest. This research would potentially inform training, accountability practices, and more targeted recruitment—if the appointment system could be altered and even pushed down to local levels.

Finally, there are some possible implications for the LGP's expansion to the rest of the state (and perhaps beyond), in particular the reduced likelihood of participation for schools that are the "remotest of the remote" and have no P&T facilities. This observation may indicate that it is necessary to create alternate communication procedures for areas that have limited postal facilities. We found, in addition, that several schools in Hadagalli taluk reported having applied to the program via their Block Education Officer, rather than mailing a prospectus to APF, but the Foundation never received a requisition or application from them. Therefore, it may be beneficial to plan an alternative way for schools to apply, rather than leaving it to schools or others to develop alternatives that add an extra layer of discretion.

Table 2- Mean Test Scores regressed on survey data
Urban and rural schools SEPARATED

Covariates: *Percent population female, Percent population less than six, Percent population (>six) literate, Percent population marginal workers, Percent population not working*, indicator for *LGP School*

OLS coefficients on first row, *Standard Errors in parentheses below.*

* Significant at 10%; ** significant at 5%; *** significant at 1%

2A. School characteristics	**Urban Schools**	**Urban Schools with Covariates**	**Rural Schools**	**Rural Schools with Covariates**
	(1)	*(2)*	*(3)*	*(4)*
Urban n=19, Rural n=105				
Desks received per student, previous academic year	5.540	5.605	2.173**	1.242*
	(4.587)	*(3.696)*	*(0.846)*	*(0.726)*
Chairs received per student, previous academic year	1.913	2.242	0.769*	0.541
	(1.849)	*(1.670)*	*(0.406)*	*(0.340)*
Notebooks received per student, previous academic year	0.174	0.133	0.045	0.004
	(0.131)	*(0.158)*	*(0.088)*	*(0.075)*
Texts received per student, previous academic year	-0.018	0.004	0.007	0.005
	(0.036)	*(0.035)*	*(0.020)*	*(0.017)*
Cash received per student, previous academic year (1000s)	0.839	1.352	0.063	-0.077
	(1.351)	*(1.057)*	*(0.092)*	*(0.079)*
Student attendance, day of study visit %	1.334**	0.522	0.498***	0.282**
	(0.586)	*(0.596)*	*(0.131)*	*(0.124)*
Urban n=19, Rural n=106				
LGP School (Y/N)	0.278***	0.319***	0.200***	0.227***
	(0.073)	*(0.086)*	*(0.046)*	*(0.042)*
School has electricity (Y/N)	-0.027	-0.045	0.002	0.0273
	(0.099)	*(0.081)*	*(0.053)*	*(0.048)*
School has running water (Y/N)	-0.004	-0.110	0.016	-0.001
	(0.107)	*(0.100)*	*(0.050)*	*(0.042)*
Classrooms in good condition %	-0.291	-0.069	0.215*	0.205*
	(0.281)	*(0.258)*	*(0.123)*	*(0.104)*
Total toilets in school	0.128*	0.012	0.007	0.006
	(0.069)	*(0.075)*	*(0.021)*	*(0.018)*

2B. Neighborhood characteristics	**Urban Schools**	**Urban Schools with Covariates**	**Rural Schools**	**Rural Schools with Covariates**
	(1)	*(2)*	*(3)*	*(4)*
Urban n=19, Rural n=106				
Percent of population female	5.055	1.454	-0.983**	-1.756***
	(4.571)	*(5.537)*	*(0.492)*	*(0.583)*
Percent of population children	-0.916	-4.920	0.115	3.990***
	(2.083)	*(4.904)*	*(0.894)*	*(1.228)*
Percent of population literate	0.049	-0.330	0.271	0.749***
	(0.383)	*(1.144)*	*(0.180)*	*(0.230)*
Percent of population not working	-1.491	-0.876	-0.181	-0.119
	(1.342)	*(1.265)*	*(0.235)*	*(0.239)*
Percent of population marginal workers	0.354	-0.649	0.405	0.687***
	(1.344)	*(2.098)*	*(0.256)*	*(0.225)*
Percent of population Scheduled Tribe	0.093	0.245	0.108	0.028
	(0.425)	*(0.455)*	*(0.119)*	*(0.111)*
Percent of population Scheduled Caste	-0.375	-0.503**	-0.081	0.022
	(0.301)	*(0.223)*	*(0.139)*	*(0.140)*
School located in Bellary taluk	0.032	0.032	0.032	0.010
	(0.103)	*(0.103)*	*(0.103)*	*(0.100)*
School located in Hadagalli taluk	0.276	0.319	-0.063	-0.019
	(0.212)	*(0.387)*	*(0.094)*	*(0.080)*
School located in HB Halli taluk	no urban	no urban	-0.212***	-0.138**
			(0.070)	*(0.063)*
School located in Hospet taluk	-0.098	-0.011	-0.134	0.012
	(0.098)	*(0.092)*	*(0.093)*	*(0.083)*
School located in Kudligi taluk	0.049	0.124	0.134***	0.040
	(0.222)	*(0.237)*	*(0.049)*	*(0.048)*
School located in Sandur taluk	no urban	no urban	0.145**	0.160**
			(0.063)	*(0.057)*
School located in Siruguppa taluk	0.002	0.071	-0.173	-0.238***
	(0.162)	*(0.134)*	*(0.092)*	*(0.086)*

***2B. Neighborhood characteristics,* continued**	**Urban Schools**	**Urban Schools with Covariates**	**Rural Schools**	**Rural Schools with Covariates**
Urban n=0, Rural n=106				
Area unavailable for agriculture			0.0002**	0.0001*
			(0.000)	*(0.000)*
River Water, Binary			-0.171	-0.180**
			(0.092)	*(0.085)*
Well, Binary			0.194***	0.173**
			(0.069)	*(0.068)*
Adult Literacy Center, Binary			0.133**	0.106**
			(0.058)	*(0.051)*
Market Facility, Binary			0.118**	0.120**
			(0.058)	*(0.053)*
PNT Facility, Binary			0.047	0.015
			(0.061)	*(0.054)*
Distance from nearest town			0.001	0.001
			(0.003)	*(0.003)*

2C. Teacher characteristics	**Urban Schools**	**Urban Schools with Covariates**	**Rural Schools**	**Rural Schools with Covariates**
	(1)	*(2)*	*(3)*	*(4)*
Urban n=19, Rural n=106				
Percent of teachers observed actually teaching	-0.040	-0.321	0.117	0.097
	(0.250)	*(0.249)*	*(0.080)*	*(0.068)*
Mean years since last official non-teaching duty took teachers out of school	-0.024	-0.012	-0.042*	-0.028
	(0.061)	*(0.057)*	*(0.022)*	*(0.019)*
Percent of classrooms with educational materials on walls	-0.045	0.142	0.358***	0.276**
	(0.231)	*(0.222)*	*(0.084)*	*(0.074)*
Student : teacher ratio	0.004	0.000	-0.002**	-0.002*
	(0.006)	*(0.006)*	*(0.001)*	*(0.001)*
Percent of teachers originally from this location	0.048	-0.090	0.285***	0.075
	(0.159)	*(0.131)*	*(0.099)*	*(0.095)*
Percent of teachers educated beyond secondary school	0.261	0.209	0.139*	0.144**
	(0.168)	*(0.139)*	*(0.083)*	*(0.070)*

***2C. Teacher characteristics,* continued**	**Urban Schools**	**Urban Schools with Covariates**	**Rural Schools**	**Rural Schools with Covariates**
Percent of teachers who say "quality of teaching" is the most important criterion for promoting teachers	0.110	0.357	0.220**	0.155*
	(0.243)	*(0.263)*	*(0.101)*	*(0.085)*
Local or state awards given to commend good teaching, Binary	-0.172	-0.005	-0.153***	-0.063
	(0.156)	*(0.188)*	*(0.051)*	*(0.046)*
Teacher won any award for teaching in past three years, Binary	0.023	-0.038	-0.006	-0.024
	(0.140)	*(0.142)*	*(0.051)*	*(0.042)*
Teacher attendance on initial study visit, percent	-0.261	-0.326	0.303***	0.176*
	(0.325)	*(0.293)*	*(0.114)*	*(0.099)*

2D. Community participation characteristics	**Urban Schools**	**Urban Schools with Covariates**	**Rural Schools**	**Rural Schools with Covariates**
	(1)	*(2)*	*(3)*	*(4)*
Urban n=19, Rural n=105				
SDMC visits school at least every other day (according to Head Teacher), Binary	-0.042	0.050	0.112*	0.119**
	(0.136)	*(0.113)*	*(0.065)*	*(0.055)*
SDMC contribution to school per student (in thousands) (according to Head Teacher)	2.687	1.734	0.580*	1.745
	(2.004)	*(1.612)*	*(0.303)*	*(0.263)*
School issues discussed in last Gram Sabha (according to Head Teacher)	-0.304*	-0.156	-0.018	-0.037
	(0.144)	*(0.124)*	*(0.050)*	*(0.043)*
SDMC President's education is above the neighborhood average	0.142	0.210	0.084	0.109*
	(0.132)	*(0.153)*	*(0.075)*	*(0.063)*
Urban n=19, Rural n=106				
SDMC is principal decision maker in allocation of school's resources (mean Teacher response. N=125 and 106)	-0.210	-0.468	-0.149	-0.260*
	(0.483)	*(0.457)*	*(0.179)*	*(0.155)*

Table 3-Mean Test Scores regressed on survey data
Urban and rural schools AGGREGATED

Covariates: *Percent population female, Percent population children under six, Percent population (> age 6) literate, Percent population marginal workers, Percent population not working*, indicators for *LGP School, Well* as source of water, *River* as source of water, *Adult literacy center* existing in village, *Market facility* existing in village.

All regressions also contain an indicator value for *Urban* location.

OLS coefficient on first row, *Standard Errors in parentheses below*.

* Significant at 10%; ** significant at 5%; *** significant at 1%

3A. School characteristics	**All Schools**	**All Schools with Covariates**
n=124	*(1)*	*(2)*
Desks received per student, previous academic year	2.252***	0.918
	(0.816)	*(0.678)*
Chairs received per student, previous academic year	0.807**	0.487
	(0.390)	*(0.313)*
Notebooks received per student, previous academic year	0.075	0.043
	(0.076)	*(0.060)*
Texts received per student, previous academic year	0.003	-0.003
	(0.018)	*(0.015)*
Cash received per student, previous academic year (1000s)	0.065	-0.037
	(0.089)	*(0.082)*
Student attendance, day of study visit (percent)	0.524***	0.255**
	(0.126)	*(0.115)*
n=125		
LGP School	0.212***	0.255***
	(0.040)	*(0.036)*
School has electricity	-0.003	-0.013
	(0.047)	*(0.040)*
School has running water	0.013	0.005
	(0.045)	*(0.037)*
Percent of classrooms in good condition	0.155	0.161*
	(0.114)	*(0.094)*
Total toilets in school	0.014	0.001
	(0.020)	*(0.017)*

3B. Neighborhood characteristics	All Schools	All Schools with Covariates
n=125	*(1)*	*(2)*
Percent of population female	-0.935*	-1.146**
	(0.480)	*(0.555)*
Percent of population children	-0.005	2.426**
	(0.821)	*(1.131)*
Percent of population literate	0.240	0.369
	(0.163)	*(0.226)*
Percent of population not working	-0.207	-0.368
	(0.227)	*(0.237)*
Percent of population marginal workers	0.404	0.444**
	(0.247)	*(0.219)*
Percent of population Scheduled Tribe	0.107	0.016
	(0.113)	*(0.102)*
Percent of population Scheduled Caste	-0.117	-0.020
	(0.127)	*(0.120)*
School located in Bellary taluk	-0.028	-0.003
	(0.082)	*(0.066)*
School located in Hadagalli taluk	-0.025	-0.045
	(0.086)	*(0.081)*
School located in HB Halli taluk	-0.212***	-0.121**
	(0.069)	*(0.060)*
School located in Hospet taluk	-0.120*	0.031
	(0.071)	*(0.063)*
School located in Kudligi taluk	0.131***	-0.034
	(0.047)	*(0.046)*
School located in Sandur taluk	0.145**	0.182***
	(0.062)	*(0.052)*
School located in Siruguppa taluk	-0.139	-0.091
	(0.081)	*(0.089)*
Area unavailable for agriculture	0.0002**	0.000
	(0.000)	*(0.000)*

***3B. Neighborhood characteristics,* continued**	**All Schools**	**All Schools with Covariates**
River Water, Indicator	-0.171*	-0.129
	(0.090)	*(0.085)*
Well, Indicator	0.194*	0.125*
	(0.067)	*(0.069)*
Adult Literacy Center, Indicator	0.133**	0.086*
	(0.057)	*(0.049)*
Market Facility, Indicator	0.118**	0.086*
	(0.057)	*(0.050)*
PNT Facility, Indicator	0.047	-0.052*
	(0.059)	*(0.052)*
Distance from nearest town	0.001	0.001
	(0.003)	*(0.002)*

3C. Teacher characteristics	**All Schools**	**All Schools with Covariates**
n=125	*(1)*	*(2)*
Percent of teachers observed actually teaching	0.106	0.112*
	(0.075)	*(0.061)*
Mean years since last official non-teaching duty took teachers out of school	-0.041*	-0.030*
	(0.021)	*(0.017)*
Percent of classrooms with educational materials on walls	0.318***	0.204***
	(0.079)	*(0.068)*
Student : teacher ratio	-0.002**	-0.001
	(0.001)	*(0.001)*
Percent of teachers educated beyond secondary school	0.155**	0.146**
	(0.075)	*(0.059)*
Percent of teachers who say “quality of teaching” is the most important criterion for promoting teachers	0.208**	0.141
	(0.093)	*(0.090)*
Percent of teachers originally from this location	0.230***	-0.025
	(0.086)	*(0.080)*
n=124		
Local or state awards given to commend good teaching, Binary	-0.154***	-0.046
	(0.048)	*(0.042)*

3C. Teacher characteristics, continued	All Schools	All Schools with Covariates
n=123		
Teacher won any award for teaching in past three years, Binary	-0.004	-0.023
	(0.047)	*(0.037)*
Teacher attendance on initial study visit, percent	0.256**	0.110
	(0.107)	*(0.089)*

3D. Community participation characteristics	All Schools	All Schools with Covariates
n=124	*(1)*	*(2)*
SDMC visits school at least every other day (according to Head Teacher), Binary	0.090	0.104**
	(0.059)	*(0.047)*
SDMC contribution to school per student (in thousands) (according to Head Teacher)	0.612**	0.208
	(0.293)	*(0.248)*
School issues discussed in last Gram Sabha (according to Head Teacher)	-0.037	-0.041
	(0.047)	*(0.039)*
SDMC President's education is above the neighborhood average	0.095	0.095*
	(0.066)	*(0.052)*
n=125		
SDMC is principal decision maker in allocation of school's resources (mean Teacher response.)	-0.155	-0.253*
	(0.167)	*(0.136)*

Table 4 - Comparison of Means for LGP and Non-LGP Schools

Mean on first row, *Standard Deviation in parentheses below*.
* Significant at 10%; ** significant at 5%; *** significant at 1%

4A. School characteristics	**LGP Schools**	**Non-LGP Schools**	**Difference in Means**
	n=64	*n=64*	
Desks per student	0.030	0.025	0.005
	(0.033)	*(0.019)*	
Chairs per student	0.071	0.068	0.003
	(0.066)	*(0.053)*	
Notebooks per student	0.349	0.319	0.030
	(0.275)	*(0.314)*	
Texts per student	3.069	3.323	-0.254
	(1.286)	*(1.218)*	
Cash received per student, thousands	0.140	0.080	0.060
	(0.322)	*(0.138)*	
School charges exam fees	0.344	0.203	0.141*
	(0.479)	*(0.406)*	
	n=65	*n=64*	
School has electricity	0.323	0.359	-0.036
	(0.471)	*(0.484)*	
School has running water	0.600	0.531	0.069
	(0.494)	*(0.503)*	
Total toilets in school	0.877	0.781	0.096
	(1.281)	*(0.934)*	
Percent of classrooms in good condition	0.840	0.883	-0.043
	(0.223)	*(0.159)*	
	n=64	*n=61*	
Mean test score	0.616	0.404	0.212***
	(0.219)	*(0.229)*	

4B. Neighborhood characteristics	**LGP Schools**	**Non-LGP Schools**	**Difference in Means**
	n=65	*n=64*	
Percent of population female	0.491	0.483	0.008
	(0.015)	*(0.063)*	
Percent of population children	0.164	0.158	0.006
	(0.023)	*(0.032)*	
Percent of population literate	0.561	0.577	-0.016
	(0.139)	*(0.153)*	
Percent of population Scheduled Tribe	0.215	0.240	-0.025
	(0.186)	*(0.227)*	
Percent of population Scheduled Caste	0.214	0.200	0.014
	(0.162)	*(0.187)*	
Percent of population not working	0.625	0.612	0.013
	(0.097)	*(0.124)*	
Percent of population marginal workers	0.082	0.100	-0.018
	(0.082)	*(0.099)*	
Rural Only	*n=55*	*n=55*	
River Water (binary)	0.127	0.018	0.109**
	(0.336)	*(0.135)*	
Well (binary)	0.800	0.927	-0.127
	(0.404)	*(0.262)*	
Adult Literacy Center (binary)	0.218	0.236	-0.018
	(0.417)	*(0.429)*	
Market Facility (binary)	0.218	0.218	0.000
	(0.417)	*(0.417)*	
Post and Telegraph Facility (binary)	0.872	0.709	0.163**
	(0.336)	*(0.458)*	
Distance to nearest town (km)	16.890	21.091	-4.201**
	(8.814)	*(8.646)*	

4C. Teacher characteristics	**LGP Schools**	**Non-LGP Schools**	**Difference in Means**
	n=65	*n=64*	
Percent of teachers observed actually teaching	0.796	0.835	-0.039
	(0.305)	*(0.283)*	
Years since last official non-teaching duty took teachers out of school	1.564	1.814	-0.250
	(1.065)	*(1.038)*	
Percent of teachers educated beyond secondary school	0.766	0.827	-0.061
	(0.319)	*(0.260)*	
Percent of teachers who say "quality of teaching" is the most important criterion for promoting teachers	0.099	0.069	0.030
	(0.272)	*(0.188)*	
Percent of teachers originally from this location	0.196	0.101	0.095**
	(0.299)	*(0.194)*	
Student: teacher ratio	44.022	41.793	2.229
	(21.565)	*(16.261)*	
Percent of classrooms with educational materials on walls	0.664	0.657	0.007
	(0.272)	*(0.262)*	
	n=64	*n=64*	
Local or state awards given for good teaching, Binary	0.656	0.766	-0.110
	(0.479)	*(0.427)*	
Student attendance, day of study visit (percent)	0.769	0.701	0.068**
	(0.170)	*(0.160)*	
Percent of teachers who say *staff* is head decision maker	0.690	0.825	-0.135**
	(0.377)	*(0.319)*	
	n=64	*n=63*	
Teacher won any award for teaching past three years, Binary	0.422	0.317	0.105
	(0.498)	*(0.469)*	

4D. Community participation characteristics	**LGP Schools**	**Non-LGP Schools**	**Difference in Means**
	n=64	*n=64*	
SDMC visits school at least every other day	0.125	0.219	-0.094
	(0.333)	*(0.417)*	
SDMC contribution to school per student (in thousands)	0.036	0.021	0.015
	(0.095)	*(0.047)*	
School issues discussed in last Gram Sabha	0.391	0.344	0.047
	(0.492)	*(0.479)*	
SDMC President's education is above the neighborhood average	0.156	0.109	0.047
	(0.366)	*(0.315)*	
SDMC is principal decision maker in school resource allocation (mean)	0.982	0.947	0.035
	(0.071)	*(0.171)*	

4E. LGP related questions	**LGP Schools**	**Non-LGP Schools**	**Difference in Means**
	n=65	*n=64*	
Percent teachers report know about LGP	0.875	0.736	0.139***
	(0.233)	*(0.305)*	
Rs.20,000 would make a difference for learning outcomes	0.989	0.954	0.035*
	(0.052)	*(0.159)*	
	n=63	*n=61*	
Percent teachers say they learned of LGP from APF	0.227	0.331	-0.104
	(0.345)	*(0.390)*	
	n=0	*n=62*	
Applied for program but never heard back	not applicable	0.097	
		(0.252)	

How would you spend Rs.20,000 to improve learning levels (Mean percent teacher response. Multiple responses allowed.)	**LGP Schools**	**Non-LGP Schools**	**Difference in Means**
	n=65	*n=64*	
Building maintenance	0.115	0.122	-0.007
	(0.215)	*(0.202)*	
Compound (wall)	0.042	0.078	-0.036
	(0.118)	*(0.232)*	
Furniture	0.216	0.152	0.064
	(0.260)	*(0.227)*	
Sports equipment	0.086	0.094	-0.008
	(0.187)	*(0.195)*	
Playground	0.000	0.008	-0.008
	(0.000)	*(0.063)*	
Garden	0.048	0.049	-0.001
	(0.163)	*(0.137)*	
Science lab	0.062	0.005	0.057**
	(0.186)	*(0.042)*	
Other	0.887	0.904	-0.017
	(0.210)	*(0.203)*	

How would you spend Rs.50,000 to improve learning levels (Mean percent teacher response. Multiple responses allowed.)	**LGP Schools**	**Non-LGP Schools**	**Difference in Means**
	n=65	*n=64*	
Building maintenance	0.253	0.311	-0.058
	(0.300)	*(0.342)*	
Compound (wall)	0.125	0.105	0.020
	(0.240)	*(0.247)*	
Furniture	0.191	0.302	-0.111**
	(0.277)	*(0.315)*	
Sports equipment	0.211	0.191	0.020
	(0.308)	*(0.279)*	
Playground	0.035	0.065	-0.030
	(0.117)	*-0.212*	
Garden	0.050	0.131	-0.081**
	(0.159)	*(0.268)*	
Science lab	0.049	0.022	0.027
	(0.155)	*(0.089)*	
Other	0.703	0.760	-0.057
	(0.280)	*(0.298)*	

What changes do you expect as a result of participating in the LGP (Mean percent teacher response. Multiple responses allowed.)	**LGP Schools**	**Non-LGP Schools**
	n=65	*n=0*
Change in attendance	0.202 *(0.332)*	not applicable
Change in learning	0.404 *(0.390)*	n/a
Other student improvements	0.068 *(0.197)*	n/a
Change in teaching	0.077 *(0.167)*	n/a
Other change	0.599 *(0.417)*	n/a

What is your school's reason for not participating (Mean percent teacher response. Multiple responses allowed.)	**LGP Schools**	**Non-LGP Schools**
	n=0	*n=62*
Teacher shortage	not applicable	0.013 *(0.076)*
Other problem	n/a	0.013 *(0.076)*
Applied but never heard back	n/a	0.097 *(0.252)*
Did not know about program	n/a	0.459 *(0.407)*
Other	n/a	0.323 *(0.356)*
No answer	n/a	0.094 *(0.215)*