APPLICATION TO INNOVATIONS FOR POVERTY ACTION INSTITUTIONAL REVIEW BOARD (IRB)

This form provides researchers and their staff with an opportunity to describe their study and, in particular, efforts to effectively manage study effects on human subjects. IPA's IRB will review the study using this application and all required supporting documents to determine if the design effectively safeguards participants. Fields have been created to ensure that the right information is submitted. Guidelines indicate what information should be covered in each section.

Date of Application: August 10, 2016

Title of Study: Partnership Schools for Liberia

Former or alternate titles if known: N/A

Project Contact for IRB: Arja Dayal, adayal@poverty-action.org

Name of Submitting Principal Investigator: Wayne Aaron Sandholtz

Number of research sites applied for at this time: 185 schools in 13 counties

Countries & Locations: Liberia - Bomi, Bong, Grand Bassa, Grand Cape Mount, Grand Kru, Lofa, Magribi, Maryland, Montserrado, Nimba, and Sinoe Counties, with potential additions in River Cess and Gbarpolu Counties

Anticipated Start Date & End Date (be specific about date you plan to begin fielding study):

Start: 5 September 2016

End: 30 June 2019

Project Team and Study Collaborators with Access to PII

Principal Investigator(s):

Name	Email	Will not	Gets other
		see PII	IRB
			approval
Justin Sandefur	jsandefur@cgdev.org		

Mauricio Romero	mauricioromerolondono@gmail.com	ן	
Wayne Sandholtz	wsandholtz@gmail.com	1	

If any of the above PIs will be getting IRB approval at their institutions, please submit copies of these documents.

Name, Address, Phone Number, e-mail address of Primary Investigator:

Justin Sandefur Address: 415 Constitution Ave. NE, Washington DC, 20002 Phone: +1 (202) 957-4606 Email: JSandefur@cgdev.org

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Wayne Aaron Sandholtz Address: 9252 Regents Rd, Apt A, La Jolla, CA 92037, USA Phone: +1 (801) 850 8811 Email: wsandholtz@gmail.com

All other research personnel and / or any personnel with access to more than 10% of your sample's PII. Note if personnel will not see PII:

Name	Email	Role	Will not
			see PII
Avi Ahuja	ahujaavi11@gmail.com	Senior Research	
		Associate	
Tala Ismail	tismail@poverty-action.org	Research Associate	
Dackermeu Dolo	ddolo@poverty-action.org	Senior Field Manager	
Laura B.P. McCargo	Imccargo@poverty-action.org	Field Manager	

Country Director, Deputy Country Director, or managing director:

Name	Email	Role	Will not
			see PII

Osman Siddiqi	osiddiqi@poverty-action.org	Country Director - Sierra Leone	
Arja Dayal	adayal@poverty-action.org	Research Manager - Liberia	

Will anyone else have access to your study's PII (this may include implementing partners)?

No

Do all research staff with access to PII and all Principal Investigators have up-to-date human subjects certifications? Note that human subjects certifications only last for three years.

□Yes X No

The new Senior Research Associate, Avi Ahuja has been hired recently who will be completing NIH training before joining the project in September 26, 2016. The NIH certification will be provided to the Review Board by next week at the earliest.

Funding

Name of external sponsoring agencies and contact name, if known.

UBS Optimus Foundation Maya Ziswiler Program Director, Education and Early Childhood Development Email: maya.ziswiler@ubs.com

Exemption

Will you apply for an exemption from continuous IRB review?

⊡Yes X No

If "Yes", please complement this application with an additional, separate application for exemption. The corresponding form can be found at, and submitted through <u>poverty-action.org/irb</u>.

Certifications

I certify that the statements herein are accurate and complete. I agree to inform the Board should there be any changes in the protocol or problems arising from this protocol. I accept responsibility for the conduct of this research, the supervision of research personnel and human subjects, and the maintenance of informed consent documentation as required.

Do you or any family members (spouse, child, or domestic partner) have any incentives or interests, financial or otherwise, that may affect or be affected by the conduct of this research or that may affect the protection of the human subjects involved in this project?

□Yes X No

If yes please attach a description of the interest.

N/A

Investigator's names, typed

Justin Sandefur Mauricio Romero Wayne Aaron Sandholtz

Investigator's signature (or attach email with PI's acknowledgement of this application)

Date 10 August 2016	Signature (See Appendix 7 – PI Signature – Email Justification)
Date 10 August 2016	Signature MAURICIO ROMERO
Date 10 August 2016	Signature W. A. SANGHONZ

INCLUDE EACH OF THE FOLLOWING:

Note that points I. through VII. (below) are called your "study protocol", which will be referred to in study renewals and in amendments.

I. Purpose/Background/Significance.

Briefly describe the purpose of the proposed study, including a brief background or context to the evaluation and an explanation of why the study is valuable and significant.

Background:

Liberia's public education system is moribund. The civil war of 1999-2003 and the Ebola epidemic of 2014 have left the Ministry of Education with little capacity to run a national school system. An effort to clean thousands of ghost teachers from Ministry payrolls was cut short (New York Times, 2016), and while systematic data is scarce, teacher absenteeism appears common (Mulkeen, 2009). Nearly two-thirds of primary aged children are not in school, including over 80% of children in the poorest quintile, placing Liberia in the lowest percentile of net enrollment rates in the world, and at the seventh percentile in youth (15-24) literacy (EPDC, 2014). Demographic and Health Surveys show that among adult women who did not go to secondary school, only six percent can read a complete sentence.

Faced with these dire statistics, the Liberian Ministry of Education announced in early 2016 that it would contract the operation of government primary schools to a group of private companies. The announcement generated international headlines from the BBC to the New York Times about "outsourcing" and "privatization", and even condemnation from a UN Special Rapporteur that Liberia was abrogating its responsibilities under international law. As noted in these press reports, Liberia's ambitious public-private partnership is likely to make it a model -- good or bad -- that informs other countries in the region and beyond. And the involvement of high profile, for-profit, private-school chains like Bridge International Academies also makes Liberia's experiment a test case for the vision of privately-run education backed by investors ranging from Bill Gates and Mark Zuckerberg to the World Bank's International Finance Corporation and the UK's Department for International Development (DFID).

A key feature of Liberia's experiment is that all schools will remain free. From textbook economic theory, government funding of education is necessitated not only by the need to ensure equal access, but also by market imperfections (e.g., positive externalities, imperfect capital markets, and economies of scale) that lead to a lower supply of education than socially desirable. The efficiency of direct government *provision* of education -- as opposed to mere public *funding* -- is open to empirical debate, particularly in the presence of weak public sector institutions in fragile states. A recent review of the evidence on private schooling in the developing world commissioned by DFID concluded that there was strong evidence that private schools provide better teaching, and moderate evidence of improved learning outcomes, but ambiguous evidence on the affordability of "low-cost private schools" for poor households (Ashley et al., 2015).

Thus existing evidence suggests a classic tension between efficiency and equity. Public-private partnerships like Liberia's charter school program are an attempt to overcome this tension by combining public finance with some elements of private provision.

The Partnership Schools for Liberia (PSL) program:

PSL is a contract-management public-private partnership (PPP). Specifically, the GoL contracted multiple non-state operators to run existing public primary schools (PSL schools). The government (and donors) provide these operators with funding on a per-pupil level. In exchange, operators are responsible for the daily management of the schools, and can be held accountable for results.

PSL schools will continue to be free and non-selective public schools (i.e., operators are not allowed to charge fees or choose which students to enroll). PSL school buildings will remain under the ownership of GoL. Teachers in PSL schools will be existing government teachers (i.e., public servants).¹ Private providers will be accountable to GoL for performance. Specifically, operators must agree to school inspections and provide the necessary data to evaluate performance. However, there are no formal mechanisms to hold operators accountable.

An important feature of PSL schools, compared to traditional charter schools, is that teachers in these schools will be civil servants. This hampers the operators' ability to hold teachers accountable for learning outcomes and raises the question of whether this type of "soft" accountability will affect teacher's behavior.

There are eight partners in charge of implementing the program's pilot, all chosen by the government. In the first pilot year (2016/2017), Bridge International Academies is managing 22 schools, BRAC is managing 20 schools, Omega Academies 19, the Liberia Youth Network 4, More than Me 6, Rising Academies 5, Stella Maris 4, and Street Child is managing 12 schools. We expect the program to expand after the first year to at least 120 PSL schools (total).

Each academy is free to manage schools as they see fit. Operators are required to deliver the Liberian national curriculum, but may supplement it with remedial programs, prioritizing subjects, longer school days, and non-academic activities.

Purpose:

The Partnership Schools for Liberia (PSL) program will delegate and transfer administrative management of 92 randomly assigned public schools to a variety of private, for-profit companies and non-profit organizations to provide education free of charge to students. However, to understand the impacts of the pilot program and improve future processes from lessons learned, the GoL would like to engage external researchers to conduct an impact evaluation of the pilot, in order to assess its potential for expansion in the future.

¹ Operators may enforce existing laws and policies governing teacher workforce.

IPA has been contracted by the Liberian Ministry of Education (MoE) to evaluate the PSL project. Our primary objective is to understand: "what is the impact of attending a PSL public school rather than a traditional public school on student learning outcomes?"

We hypothesize that the success of the program will hinge on its ability to maintain or improve three key accountability relationships in the education system.

1. Managerial accountability (of teachers to private operators).

A central hypothesis underlying Liberia's charter school program is that private operators with greater capacity to implement routine performance management systems, regularly monitor teacher attendance, track student performance, and provide teachers with frequent feedback and support will help to overcome teacher absenteeism and low education quality.

This is not a story about accountability through carrots and sticks. Teachers in Liberia's charter schools will be drawn from the existing pool of unionized civil servants with lifetime appointments, and be paid directly by the Liberian government. Private operators will have limited authority to request that a teacher be re-assigned, and no authority to promote or dismiss civil service teachers. The hypothesis is that accountability can be generated through monitoring and support, rather than rewards and threats.

Note that this hypothesis stands in stark contrast to standard labor economics theories of accountability in the workplace that have dominated the economics of education literature in developing countries. These theories stress civil service protections and labor unions as impediments to accountability (Mbiti, in press). In response, the experimental literature has focused on solutions such as payment for performance (Muralidharan and Sundararaman, 2011) and flexible labor contracts with credible threat of dismissal (Banerjee et al., 2007; Duflo, Dupas & Kremer, 2011; Duflo, Dupas & Kremer, 2012; Duflo, Hanna & Ryan, 2012).

We will measure the effectiveness of Liberia's 'softer' approach to managerial accountability through the randomized control trial, comparing teachers in treatment (i.e., charter) and control schools.

2. Bottom-up accountability (of teachers and operators to parents).

In the framework of the World Bank's 2004 World Development Report on public service delivery, there is a "short route" to accountability (i.e., bypassing the "long route" through elected representatives and the Ministry of Education) if parents are able to exercise "client power" in their interactions with teachers and schools. Client power emerges from freedom to choose another provider or direct control over school resources.

Internationally, the charter school movement is closely tied to policy reforms bestowing parents with freedom of school choice. The standard argument is that charter schools will be more reactive to

parents' demands than traditional public schools, because their funding is linked directly to enrollment numbers. However, there is limited empirical evidence establishing that school choice responds to learning quality in low-income settings (Andrabi, Das & Khwaja, 2008), and this mechanism may be more relevant for schools in high density locations like Monrovia than remote rural areas where choice is *de facto* limited to one or two schools in walking distance. Furthermore, since charter operators' earnings are directly proportional to the number of enrolled children, it is in their best interest to increase enrollment, and retain enrolled children in their schools.

3. Top-down, results-based accountability (of private operators to the Ministry of Education).

Charter school operators' contracts can be terminated if they do not achieve certain pre-established standards. In the U.S. literature, this is generally referred to as a "results-based accountability" structure for charter schools. The first year of the PSL pilot (2016/17) will lack any formal mechanism to hold operators accountable for results. A major innovation and focus of the year-two expansion under study in the current research proposal is to develop and test different forms of top-down accountability. For example, basing payments on student learning outcomes, and "auctioning" schools to the operator that is able to guarantee learning gains, equitable access, and other outcomes for the lowest price per student.

To investigate these questions, the evaluation will collect survey data from parents, teachers, and students to measure both intermediate inputs (e.g., school management, teacher behavior, parental engagement), and final outcomes (i.e., student learning outcomes). We collect data on intermediate factors to provide insights into why PSL schools did or did not have an impact. Specifically, we will study the impact of this program on:

- Access to schooling (i.e., enrollment rates in communities with and without PSL schools)
- Learning outcomes of students attending PSL schools (i.e., the effectiveness of these schools compared to regular public schools)
- Teacher behavior (e.g., absenteeism, time on task, use of corporal punishment, and teachers' job satisfaction and turnover rates)
- School management (e.g., monitoring visits, support and training for teachers, investment in school infrastructure and materials, and extra-curricular activities)
- Parental engagement in education (e.g., expenditure on education and involvement in school activities)
- Equity, as measured by the socio-economic composition of students who access PSL schools
- Equity, as measured by spillover effects on nearby non-PSL schools

Significance:

The announcement of the Partnership Schools for Liberia (PSL) program by the Government of Liberia (GoL) provoked considerable controversy both in Liberia and globally, with some international media attention and responses from the UN and various advocacy organizations. The Liberian Minister of Education and the funders of the PSL program are keenly aware that this program is under close scrutiny. One positive result of this scrutiny is that we expect the rigorous evaluation of the PSL program proposed in this study to garner a wide and eager audience.

There are two broad routes through which our findings may influence policy: first, by directly guiding medium-term planning decisions in Liberia, and second, by using Liberia as a testing ground to generate broader knowledge about the design and effectiveness of PPP programs that can inform policy debates in other countries and in international organizations.

1. Direct impact on Liberian policy decisions

First and foremost, the research will have direct impact on Liberian education policy:

- **Detailed Government Report:** The report will provide specific recommendations on the scalability of PSL schools to improve education in Liberia. Studying PSL schools after three years of operation will provide an accurate description of the long-run implications of the program.
- **Direct engagement with Minister and donors**. To date, the research team has collaborated closely with the PSL team in the Liberian Ministry of Education, and we expect this close collaboration with the GoL and its major donors to continue through the research process and dissemination stage.

2. Broader impact on global policy discourse

There are several routes through which the research will impact the global policy conversation on public-private partnerships in education:

- Academic journal publications: The main academic article, unlike the report for the Liberian government, will focus on knowledge from the PSL program that can be generalized and therefore is useful in other contexts. This report will focus on the design of PSL, and whether and how these features translate into greater accountability and improve student learning.
- Direct engagement with investors and funders: Several major investors in private schooling in the developing world have already expressed interest in this research, and we will maintain an open dialogue with these parties throughout the evaluation. In addition, we anticipate presenting the results of the research to major public-sector donors in international development, including at seminars at the World Bank, UK Department for International Development, USAID, etc.

- **Media engagement:** As research results emerge, the evaluation team will disseminate findings with media contacts and compose one or more op-ed pieces to promote a balanced and nuanced understanding of the results.
- **Policy Brief:** As a starting point for media and policy engagement with the research results, IPA will produce a policy brief summarizing the main findings from the academic article and translating them into policy lessons.
- Rich anonymized data set of 185 schools in Liberia: A complete anonymized data set will be published alongside the journal article, and placed in data repositories so that other researchers can easily access it and explore additional questions about education in Liberia and PPP programs.

References

- 1. Andrabi, Tahir, Jishnu Das, and Asim Ijaz Khwaja. "A dime a day: The possibilities and limits of private schooling in Pakistan." Comparative Education Review 52.3 (2008): 329-355.
- Ashley, L. D., Mcloughlin, C., Aslam, M., Engel, J., Wales, J., Rawal, S., Batley, R., Kingdon, G. and Nicolai, S. (2014). The role and impact of private schools in developing countries. Final report. Education Rigorous Literature Review. Department for International Development.
- Banerjee, Abhijit, Shawn Cole, Esther Duflo, and Leigh Linden "Remedying Education: Evidence from Two Randomized Experiments in India" The Quarterly Journal of Economics (2007) 122 (3): 1235-1264
- Duflo, E., Dupas, P., & Kremer, M. (2011). Peer Effects, Teacher Incentives, and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya. The American Economic Review, 101, 1739-1774
- 5. Duflo, E., Dupas, P., & Kremer, M. (2012) School governance, teacher incentives, and pupilteacher ratios: Experimental evidence from Kenyan primary schools. Journal of Public Economics
- 6. Duflo, E., R. Hanna and S. P. Ryan, 2012. Incentives Work: Getting Teachers to Come to School. American Economic Review, 102(4), pp. 1241-1278.
- 7. Education Policy and Data Center (2014) Liberia National Education Profile.
- 8. Mulkeen, A. (2009). Teachers in Anglophone Africa. World Bank.
- 9. Mbiti, Isaac (2016) The Need for Accountability in Education in Developing Countries. Journal of Economics Perspectives. Forthcoming.
- 10. Muralidharan, Karthik and Venkatesh Sundararaman "Teacher Performance Pay: Experimental Evidence from India" Journal of Political Economy, 2011, Vol. 119, No. 1, pp. 39-77
- New York Times (2016). Liberia, Desperate to Educate, Turns to Charter Schools. Retrieved 22 July 2016, from http://www.nytimes.com/2016/06/14/opinion/liberia-desperate-to-educateturns-to-charter-schools.html?_r=0

12. World Bank, 2004 "Making Services Work for Poor People. World Development Report, Washington D.C.

II. Test Procedures and Measures.

Describe the study design, including treatments and control groups, any marketing used, and the timing of any surveys that will be administered. If applicable, describe how the treatment will be delivered. Provide an explanation of measures to be collected and sources for all data to be obtained.

To provide credible evidence on the cost-effectiveness and the impact of PSL schools, the study must have internal and external validity. The first allows us to identify the causal impact of PSL schools on key indicators, including learning outcomes. The second allows us to say something about what the impact of turning other schools into PSL schools would be. To achieve this, the study must have a credible control group. If there are differences in schools that become PSL schools and non-PSL schools – or their students – on either observable or unobservable characteristics, then any difference in outcomes cannot be directly attributed to the PSL program. Therefore, a Randomized Controlled Trial (RCT) was set in place, in which there was a random assignment of schools to the program. This ensures internal validity. To ensure external validity, randomization was done from a list of schools that could be easily turned into PSL schools.

To study spillover effects, we will use incidental variation generated by random assignment. Following Miguel and Kremer (2004), we will use the proportion of treated schools near control schools to see if the presence of nearby treatment schools affected control schools.

Methodology:

Randomization

Based on criteria established by the evaluation team, MoE, and operators, 185 PSL-eligible schools were identified.² 92 schools across 12 counties were randomly selected for treatment.³ Each treated school will be administered by one of the eight private operators: BRAC, Bridge, LIYONET, More than Me, Omega, Rising, Stella M, and Street Child. Since each operator has different criteria for the schools they are able to administer, each school submitted a set of criteria necessary for their schools. Based on these criteria, the universe of 185 experimental schools was split into 8 mutually exclusive groups

² Schools must: 1) have six or more classrooms, 2) have six or more teachers, 3) Have less than 65 students per classroom 4) be within 15 miles of the main road, and 5) Have 2G access (Only applies to Omega Academies, Rising Academies, and Bridge International Academies).

³ Lofa, Nimba, Bomi, Bong, Grand Bassa, Grand Cape Mount, Margibi, Montserrado, River Cess, Sinoe, Grand Kru, and Maryland. Gbarpolu has a control school, but no treatment schools. Some of these counties (Great Kru, Sinoe, Gbarpolu, Maryland and River Cess) are generally considered remote counties with high poverty rates, low literacy, and little road access. See http://www.lisgis.net/pg_img/2008%20Census%20Atlas.pdf for statistics on all the counties.

corresponding to the 8 operators, with each operator's group containing twice the number of schools that operator will manage. Within each of these groups, half of the schools were randomly chosen to be treated, with the rest serving as controls.

Power Calculations

Using data from 2015 EGRA/EGMA assessments in Liberia, we estimate that the intra-cluster correlation in student's test scores ranges between 0.1 and 0.2 for different grades and skills (with most estimates between 0.15 and 0.25). For all power calculations we use a conservative estimate of ICC at 0.2. Similarly, we estimate the proportion of the variance that is explained by observable characteristics (age, gender, district, and grade) to be between 20-30% (without including baseline test scores). Thus, for all power calculations we conservatively assume that the R-squared of observable student characteristics is 30%.

Therefore, the minimum detectable effect size (MDE) with a power of 90%, at a 5% size, testing 10 students per school (in a total of 185 schools – 92 treated) is 0.22 standard deviations (Duflo, Glennerster & Kremer, 2007). Testing 20 students per school, we have an MDE of 0.2. These MDE are estimated under very conservative assumptions (high power, low size level, and conservative ICC and R2 from observable student/school characteristics).

According to EGMA data from 2015, students in third grade are able to answer, on average, 33.7% of addition questions correctly. Increasing test scores by 0.2 standard deviations would be equal to increasing the average test score from 33.7% to 37.4%.⁴

Treatment

Treatment happens at the school level; it consists of a private operator taking responsibility for the administration of a government school. Individual students will experience treatment if they attend one of the schools selected for treatment. Delivery of treatment will embrace a wide range of school management practices, and will vary by operator. All students in treated schools will receive schooling provided by a private operator authorized by the government, rather than by the government directly. Students who attend schools not selected for private operation will not experience treatment.

Timeline

Surveys will be administered to students, teachers, school administrators, and households. The surveys will be administered at baseline (Sept 2016), at a one-year follow-up (May/June 2017), and a three-year follow up (May/June 2019).

⁴ The standard deviation of test scores was 18% (i.e., about 95% of students were able to answer between 0% and 70% of questions correctly). Therefore, increasing test scores by 0.2 standard deviations means test scores increased by 0.18*0.2=0.036=3.6%.

Survey Instruments

We intend to survey students, teachers, households, and school level administration. No marketing will be used to recruit participants at the school (principal, teacher, and student) or household levels. Sample selection will follow the protocols described in the paragraphs to follow.

For students, since the composition of students may change across PSL and control schools in response to treatment assignment, we will sample students from 2015/2016 enrollment logs, which were created prior to community awareness about the PSL intervention. Each student will be evaluated as part of her/his "original" school, regardless of what school (if any) s/he attended in subsequent years. We will track these students carefully, collecting data at baseline and both follow ups, whether that means finding them in school or at home. This will create a panel dataset, with which we can recover the effect of PSL schools under an Intention-to-Treat (ITT) framework (i.e. the effect of having one's school randomly assigned to become a PSL school). Under some assumptions, we can use instrumental variables to recover the Treatment-on-the-Treated (TOT) (i.e. the effect of actually attending a PSL school) (Imbens & Angrist, 1994).

The research team will test 20 students per school at baseline and track the same students at the end of year 1. The research team will capture a baseline for students across grades for two reasons: (1) there is evidence that the foundational skills taught in the younger grades serve as binding constraints, necessary for the accumulation of later knowledge; and (2) these students won't graduate from primary school before the end of the three-year scope of the study, allowing us to minimize attrition and tracking costs.

Student learning outcomes will be measured by incorporating EGRA and EGMA assessments for numeracy and literacy. We have adapted these assessment tools, which are freely and publically available, in consultation with previous EGRA/EGMA pilots conducted in Liberia and Ghana.

For teachers, we will collect data on motivation, time per task, teaching techniques, training, and perceptions toward PSL. This will allow us to see how teachers perceive the program, how they react to it, and whether any of the effects in student outcomes can be explained by changes in teacher behavior (and what causes these changes). The teacher perception and performance data of PSL schools is important for policy makers if the program is to expand in the future.

Data on school management, school expenditures, school funding, and time allocation will also be collected. This will allow us to measure whether PSL schools are administered is measurably different ways than government-run public schools, providing insights about the mechanisms behind any treatment effects. Additionally, it will allow us to estimate whether PSL schools truly run on the same budget as other government schools, or whether other sources of income (such as parents and other

NGOs) change after the shift to PSL status. This data is vital to understand the cost-effectiveness of PSL schools.

Finally, we will conduct surveys with households, beginning at the first follow-up (May/June 2017). We want to know how parents see the PSL program, and whether parents sending their kids to PSL schools are altering their expenditure in pursuing education (e.g., uniforms, transport, textbooks) and/or engagement in their child's education. By interviewing households, we can lower student attrition.

Another reason for household surveys is to study how PSL schools affect enrollment decisions, and how these decisions vary by household characteristics. Since the enrollment rate is low in Liberia, we expect some of the gains from the program to come from the extensive margin -- previously unschooled students newly enrolling in school. A possible outcome of PSL schools is that students/parents select in/out of PSL schools non-randomly. In particular, it is possible that some parents deliberately move their children out of government-run schools into PSL schools (or vice versa), or that PSL schools may attract previously unenrolled children that were out of school to enroll in PSL schools. By conducting our household surveys near each school (treatment and control), we hope to shed light on this phenomenon.

To sample households from the catchment area near the school, we will either conduct a census of all households within 500 meters of each school (or the nearest 50 households, if there are less than 50 households within 500 meters of the school), or perform a random walk (to sample households near the school). The decision to make a household census from which to sample households, or to do a random walk, will be done at endline, once we have more information on the location of schools, and the communities near them. The household census would collect basic data on household composition and enrollment decisions. The census would be used to sample households during each follow-up. The alternative is to perform a random walk to sample households. The sampled households will be asked to answer a longer survey, and students in this households will be tested (using EGRA/EGMA assessments) to accurately measure learning gains from students that were previously out-of-school (the extensive margin).

We used administrative data from the GoL (mainly the EMIS data) to randomize, stratifying by school characteristics. However, we will verify this data and update it during school visits, as EMIS data is unreliable in many cases. There is no reliable data on teacher absenteeism, school management or student learning outcomes in primary schools, and therefore we must collect most this data from schools directly.

References

1. Miguel, E., & Kremer, M. (2004). Worms: identifying impacts on education and health in the presence of treatment externalities. Econometrica, 72(1), 159-217.

- 2. Imbens, G. W., & Angrist, J. D. (1994). Identification and estimation of local average treatment effects. Econometrica, 62(2), 467-475.
- 3. Duflo, E., Glennerster, R., & Kremer, M. (2007). Using randomization in development economics research: A toolkit. Handbook of development economics, 4, 3895-3962.

III. Subject Population

Describe who study participants are, how many will be involved, and how you will gain access to the population.

Study participants will be:

- Approximately 3,700 primary school students (20 from each school) in the 2016/2017 school year
- Approximately 1,110 primary school teachers (one for each of six grades in each of the 185 schools in the 2016/2017 school year)
- Approximately 185 head teachers / school administrators (one from each school)
- Approximately 1,850 households (10 from each school), to be selected at random from a census of all households within 500 meters of the school. In household surveys, parents of children of primary school age will be interviewed.

Will the study seek out any of these vulnerable populations?

X Children Pregnant Women Prisoners Mentally disabled Veterans Others

Describe any special procedures used to safeguard the subjects.

The study will include measures that will minimize risk and protect research subjects at all stages: research design, data collection, data entry, and data analysis. As part of the research design, enumerators will be required to sign a confidentiality agreement. In addition, issues of human subject and data security will be incorporated into our field team trainings.

Given that students are the most vulnerable population we will be working with, enumerators will be trained on how to minimize their risk to physical and emotional harm during the data collection period. Students' scores will not be shared with the schools, parents, or any other members of their community.

Throughout data collection, information received from research subjects will be kept confidential by the research team. All research subject will be given identifying codes that will enable their personally identifying information (PII) to be detached from the rest of the information they provide. The study will also require the consent of research subjects before sensitive information is collected. All physical papers will be kept in locked files and all data on the server will be encrypted.

Will the study ask about any of the following sensitive topics? Note that a topic that is innocuous in one context may be sensitive in another.

Politics / Voting History
Sexual History
Violence / Crime
Mental Health
Others

Will study participants be compensated for their time?

X Yes, participants will be compensated

□No, participants will not be compensated

If so, what value and form will the compensation take? How was this decided?

Principals and Teachers: Principals and teachers will not receive direct compensation for their time, but each school will receive a table-size hand sanitizer. The school will receive this item from the survey team after they complete work in the school. The principals will then sign their receipt of the gift items.

Students: Each enumerator is given packets of pencils according to the number of student interviews they are expected to do. Each student will receive a pencil after completing the test and survey.

Households: Household respondents will receive hand sanitizers as in-kind compensation. Each respondent will receive the gift after completing the survey. Respondents will be instructed that it is not a payment, but instead a gift to thank them for their cooperation. Respondents will sign or thumbprint when they receive their gift items.

Note about compensation and consent: We do not mention the compensation in the consent (with the exception of students). This is done because we do not want to influence respondents by informing

them of the compensation before the interview. We collect information about their trust of and satisfaction with the program, which could be biased if a respondent knows they will receive a cash or in-kind gift.

IV. How will the informed consent be obtained?

Please specify whether the consent will be written, verbal, or of any other type.

X Written X Verbal □Other (e.g. in cases of deception)

If "verbal", explain why you seek permission for verbal consent, e.g. why written consent will not be practically feasible.

We will seek a combination of written and verbal consent for this project. We will administer written consent to all adults. In some instances, such as household surveys, we will be prepared to administer verbal consent, in the event that respondents are illiterate. In all instances, we will provide a copy of written consent for the respondent's reference.

For all student surveys, we will complete verbal assent. Given that these surveys will be completed with primary school-aged students of varying literacy levels, we will thoroughly, verbally communicate the purpose, benefits, and risks of participation to each student.

For student surveys administered on school grounds, we will obtain consent from the school principal before completing any student surveys. We will also provide students with a written copy of assent, describing the study and providing contact details, which they can share with their parents/guardians.

For student surveys administered outside of school grounds (in the student's home), we will first obtain parental/guardian consent. Again, we will be prepared to administer both written and verbal consent, depending on the caregiver's literacy level.

If "other", please specify. If you wish to use deception, for example, clarify how participants will be contacted at a later point.

N/A

Will you record any audio?

⊡Yes X No

Will you collect any GPS data?

X Yes □No

Who will pay for the surveyors, IPA or the Partner Organization?

X IPA □Partner Organization □Other. Specify:

V. How will the data be collected?

X Electronically Paper Third party administrative data Recordings Other

Add any details you deem instructive.

Enumerators will use tablets or PDAs to collect data using SurveyCTO software. All school-based surveys (principal, teacher, and student) will be conducted within the school compound, either within a classroom, office, or outside. Enumerators will sit one-on-one with each respondent in a visible area, but far enough from others so that responses remain confidential.

In the event that a student is not in school, student assessments may be conducted outside of the school compound at the student's home. If this is the case, parental consent will first be obtained before student assent.

Household interviews will be conducted at the household, wherever the household head deems appropriate. The household census and surveys will be conducted one-on-one, unless the respondent requests to have another household member present during the interview.

For all surveys, data will be encrypted after the survey is finalized.

VI. Possible risks of the study, including for participants and IPA or partner organization staff.

Discuss possible risks and benefits to study participants. This includes financial, physical or emotional risk and could result from studies that require a health check-up, have survey questions about experiences with violence, or a participant sexual or mental health. Regarding a risky study location and potential risks to staff, please elaborate. Please describe plans to manage or mitigate all risks.

There are currently no significant risks to the survey respondents. The project does not have a medical treatment component. There are no reasons to believe or indications that participation has or will inflict emotional distress or adversely affect the participants. The data collection exercise proposed for this research is not particularly intrusive or time-consuming. Participation in the study will be voluntary. Subjects may decline to participate without risk of penalty or loss of potential benefits. Subjects who choose to participate may withdraw from the study at any time and/or refuse to answer any questions without suffering any negative consequences. Risk due to breach of confidentiality is unlikely. All data is collected using electronic data collection methods, which allows for greater protection of privacy (compared with paper surveys) as identifying information can be (and is) stripped off instantly and stored separately in an encrypted file.

In order to further mitigate these minimal risks, all surveys will be conducted privately between the enumerator and the respondent, unless otherwise requested by the respondent, in order to limit any embarrassment or discomfort on the part of the respondent. Respondents are also informed of their ability to end the interview at any point, or skip questions that make them feel uncomfortable. Further, all enumerators will be trained for at least 5 days, with supervision in the field, to ensure that questionnaires are being administered correctly. If any of the respondents incur any costs associated with travel because of their participation in the study they are compensated accordingly with a small gift.

Regarding the specific potential risks or benefits of the individual groups of participants, see below:

Teachers:

For principals and classroom teachers there is only a cost associated with the minimal time required to answer survey questions.

Households:

For households taking the survey, the only risk, which is minimal, is in regards to maintaining strict privacy of respondent answers due to the potential of someone overhearing their answers.

Students:

For the students taking exams, there is no more risk inherent in the experiment as there is in any normal school day.

VII. Treatment of Data

Describe the procedure to be used to maintain confidentiality of human subjects. Where and how will data be transported?

All data will be collected electronically using SurveyCTO software on password-protected tablets and PDAs. At the end of each day of data collection, all finalized surveys will be encrypted and submitted to the IPA research team for storage, cleaning, and review. In the event that internet connectivity is unavailable, finalized surveys will be submitted as soon as a the survey team is able to access a reliable internet connection.

Where and how will data be stored and encrypted?

The IPA research team will permanently maintain copies of all final, raw datasets on encrypted hard drives using boxcryptor. All data cleaning and analysis will be carried out on duplicate datasets using Stata .do-files to document changes and ensure uniform data manipulation.

Who will have access to data containing personal identifiers?

Only the research personnel listed above, with access to boxcryptor, will have access to data containing personal identifiers.

Will the identifying information be removed from surveys before data gets entered?

During baseline data collection, all respondents will be assigned a unique ID for tracking purposes. IPA will maintain an encrypted document connecting respondents' names and IDs. After endline data collection, all personally identifying information will be removed from the dataset before analysis. All personally identifying information (including names, addresses, and phone numbers) will be stripped from datasets before public release.

VIII. Required Accompanying Documentation

- A. <u>MOU</u> or letter of support from partner organization(s)
- B. <u>Survey(s)</u> in <u>English</u> and in local surveying language, including:
 - a. embedded c<u>onsent(s</u>). Please adhere closely to the attached *consent template* verbiage and *consent checklist* when drafting your consent (see Appendix). Note special considerations when surveying children.
 - b. identifying information-page(s) must be removable from survey.
- C. <u>Marketing materials</u> being used to recruit subjects *if* IPA or IPA employees are doing the marketing.
- D. <u>Certificate of human subjects training</u> (NIH or equivalent) for all research personnel or personnel seeing PII, if not on file with IPA. These must be renewed every 3 years to be valid.
- E. <u>IRB approval from other institution(s)</u> (if applicable)
- F. <u>Any other supporting documents</u> (if applicable)

When complete, please file this application, including its attachments, via <u>poverty-action.orb/irb</u>.

Do not file this application via <u>humansubjects@poverty-action.org</u>.

The only exception refers to point D, the certification of human subjects training. If not already on file, please email these certificates to <u>humansubjects@poverty-action.org</u>. Please do not hesitate to reach out to <u>humansubjects@poverty-action.org</u> with any additional questions you may have. In your email's subject, please mention your study's name, your country, and your study protocol's number (from your approval letter, if already available).