

Good Development Policy?

Guest Speaker: Researcher Kamilla Gumedé, JPAL

Class Outline for November 2, 2009:

- Presentation by Kamilla Gumedé

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[Please Note: The opinions expressed here are the views of the guest speaker and do not necessarily reflect the views and opinions of D-Lab.]

Kamilla Gumedé is a research fellow at the Abdul Latif Jameel Poverty Action Lab (JPAL), heading their policy outreach work in Sub-Saharan Africa. She works with governments and NGOs in Africa to decipher policy lessons about what works, help make policies more evidence-based and more effective, and collaborate with researchers and policy makers to identify and run randomized evaluations that answer pertinent policy questions facing African decision-makers. She has worked for the South African National Treasury to promote policy and capacity building. She has also worked for a number of international aid agencies in Europe and Africa and brings to J-PAL a solid understanding of the policy environment in Africa and a rich network to African policymakers and researchers.

The take home messages for today are:

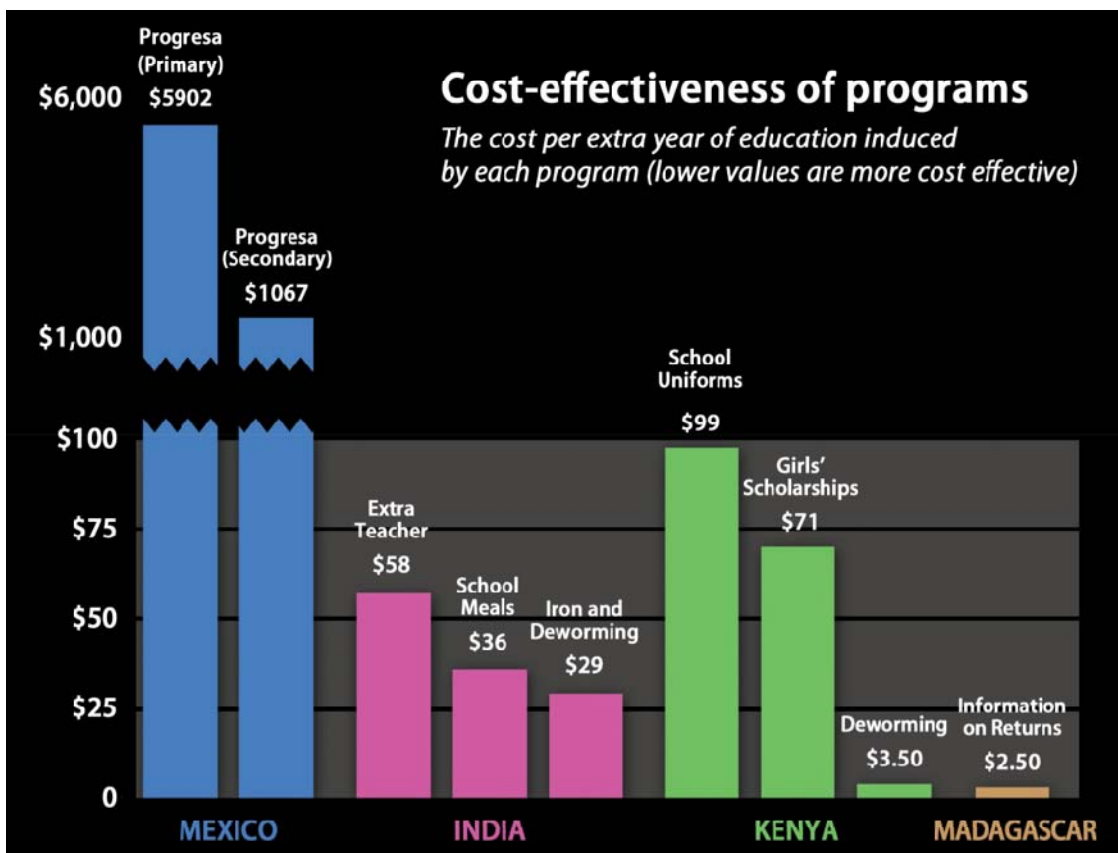
- Big development problems do not necessarily need big solutions
- Conventional wisdom about development sometimes needs to be questioned
- Do not always believe what is written in the books because we have very little evidence about what really works

There is surprisingly little hard evidence and little change after 50 years of global aid. \$65 billion a year have been spent without achieving intended results. JPAL is a network of 39 economic professors around the world trying to figure out what works. They work across a wide spectrum of sectors, including agriculture, education, health, corruption/governance, microfinance and gender issues. JPAL researchers have run over 200 experiments in 30 countries to get rigorous evidence to assist policymakers in decision-making, such as trials where some groups receive a particular intervention while some groups do not, enabling them to compare the results. They also run seminars to train policymakers to run experiments. A big part of what JPAL tries to do is to compare cost effectiveness and see what policies should be implemented on a limited budget. They are interested in what interventions would provide the most bang for our buck.

Kamilla asks the class to guess how best to get kids to go to school. The options are:

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|---|----------------------------|
| 1. School buildings | 8. Deworm |
| 2. Free textbooks | 9. Community oversight |
| 3. Free uniforms | 10. Cash for participation |
| 4. Iron tablets | |
| 5. Extra teacher | |
| 6. Free school meals | |
| 7. Information about returns to education | |

The top guesses are deworming, free school meals, free textbooks, free uniforms and community oversight. Other guesses include cash for participation and hiring an extra teacher. Contrary to what most people usually guess, the class guessed deworming, which is one of the cheapest interventions to increase school attendance. Most people are surprised when they hear this, but deworming has a direct effect on a child's health, which impacts his or her ability to attend. Deworming costs only \$3.50 per student per year and decreases absenteeism by 30%. Another method that works well is informing parents about the returns to schooling, such as how much additional cash the child would earn after schooling.



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It is important to remember that correlation is not causation, so it can be difficult to figure out what impacts are caused by the intervention and what impacts are influenced by other sources. For example, there has not been a rigorous, randomized trial on microfinance until recently. The people who go to microfinance institutions (MFIs) to apply for a loan are different from people who would not do so, and it is possible that the people with the initiative to go to an MFI would have found a way to make it somehow even without microfinance. So far, studies have shown that microfinance is not a silver bullet and the impacts are only marginal, but then again MFIs have only really been followed for a year and a half.

It can also be hard to measure outcomes, especially when relying on self-reported data. How accurate would a survey be that asks about engaging in risky sex? Corruption is particularly hard to measure. JPAL did a study where they conducted randomized audits of governments by digging holes in the roads to see what material was used and then comparing it to what material

was supposed to be used. They were trying to see which oversight methods were most effective, and it turns out that the threat of such an audit decreased corruption by 8%.

Randomizations are sometimes hard to do politically, because people prefer everyone to receive something rather than distributing something by lottery. One strategy is to do a phase-in, where some people receive something in year 1 and others receive something in year 2 or 3. Some items, like textbooks, cannot be randomized by individuals because people share them, so you would have to randomize distribution by communities. Even deworming programs randomized by individuals do not work, because it is an infective parasite that can be passed from student to student. It is only effective when the whole school is treated.

Smart incentives are an interesting topic that JPAL studies. Vaccines are often given for free, and yet there is low coverage in many places. JPAL attributes this effect mainly to procrastination. The mothers understand that immunization is important for the health of their children and has positive long-term impacts, but something day to day always comes up and seems more important. For example, Kamilla usually ends up eating her chocolate today and saying she will run tomorrow, like many other people. Procrastination tends to happen especially with preventative health care. An effective intervention turned out to be making sure that nurses were present during vaccination time and offering mothers a bag of lentils for immunizing their children. In some trials, the immunization rate shot up more than 30%. This shows the power of small interventions. By encouraging more families to go to immunization centers, you can also reduce the cost per immunization. The use of incentives can be an



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important policy tool. For example, you can get farmers to buy fertilizer when they still have money. The trick is to approach them right after a harvest and give them a time-sensitive voucher that allows them to buy fertilizer at a very small subsidy, but only if they purchase it within a week. This program was actually far more effective than a 50% subsidy during planting season, when farmers did not have money on hand to invest in fertilizer. In another study, school attendance was doubled by offering small bags of food as incentives for students to bring home to their families.

Another incentive, scholarships, can really vary in effectiveness, depending on the program. JPAL did a study with young adults in rural Ghana who could not afford secondary school. These students did well on qualifying exams, but did not attend the school they were placed at because they could not afford it. Scholarships were given out randomly to 600 out of 2000 students, and the remaining students received a cell phone. JPAL is now following these students for 10 years to see if they are attending school and if they complete school within 3 years. It turns out that the students who received scholarships and the students who received only cell phones have had similar results so far. It may take some students who received only phones an extra year or two to finish school, but some students who received scholarships may not end up finishing school at all. The incentives in this case did not quite function as hoped.

JPAL has also found that there is **something special about zero**. Many people say that it is better to sell something at cost than to give it away for free so that people will value it. Bednets are an interesting case because they have a big positive impact for people that use them, but the purchase rate may not be that high, even when they are sold at a very minimal, highly-

subsidized cost at clinics. It has something to do with it being difficult to take out money to buy the bednet, even if it is affordable. JPAL did a study where they compared clinics that gave out bednets for free with clinics that charged a small fee for them. It was found that many more bednets were utilized when given out for free, and it is cheaper to give out the bednets at once at a clinic. Charging for bednets actually led to coverage dropping by 75%. JPAL still is not sure whether charging people for bednets increases the chance that people will use them correctly, but they have found that charging for bednets often ends up with the bednet being used by the breadwinner, such as the father. When given out for free, bednets often end up being used by the women and children. Another concern with giving things away is that it might destroy the market, but when researchers returned after 2 years, it turns out that people who received free bednets were actually more likely to buy additional ones. JPAL believes that once people see the benefit, they and their neighbors may become more willing to pay for bednets. This is not to say that everything should be given away for free, especially not cars, houses and televisions, but people are notoriously bad at spending for preventive healthcare so charging even a small fee is a deterrent. JPAL also did a similar study on chlorinators, soap and school uniforms. This time they found that people were willing to pay for school uniforms in Kenya, where education is subsidized.



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Q: When advising donors, how do you extrapolate data to make recommendations?

A: JPAL does not necessarily believe that something tested in one area of Kenya means that the impact will be the same around the world, so they will do other studies in other countries. Similarly, just because a trial was region-specific does not necessarily mean that it cannot have any relevance for the rest of the world. For example, one trial investigated if having a female teacher would increase the attendance of female students, and ended up retesting this in other places. What often happens is JPAL will test something to see if it works, and then roll it out across a country or retest it in other countries to see if impact is replicable.

Q: How are you funded?

A: JPAL is a network of researchers, and the researchers often find their own funding. There is some seed funding from a Middle East donor, but that goes to fund more policy work.

Q: What's the sustainability of incentives?

A: We certainly think a lot about sustainability and this was one of the first criticisms of the bednet study, which is why the researcher went back to do a follow-up study. We worry a lot about sustainability for large interventions in particular. There was one experiment that offered large amounts of money to people to stay HIV negative, but it ended up having little impact. While the women tended to engage less in risky behavior, the men spent the money and still had risky sex. Sometimes the incentive is so small that JPAL will recommend it even if the long-term implications are unsure. With vaccines, a bag of lentils cost so little that it is worth offering it to keep children healthy.

In conclusion, it is important to think about behavioral responses:

- Remember that people **procrastinate**. Will this be a constraint for people to use your technology?

- Think about encouraging people with small incentives to get vaccinated and take medication.
- You can trick people into buying fertilizers and saving up for their pension, which have long-term benefits.
- Don't forget to consider the **channel factors**. When it comes to interventions, delivery matters and you need to facilitate how the intervention is delivered to maximize impact.
 - 400 million children are chronically infected with worms and they can get about 30 days more school through deworming, but the low-cost intervention is only effective if most students in a school are dewormed to prevent cross-infection.
 - For a vaccination session, giving people a map with the time and date of the session can encourage more people to come and get vaccinated.
- **Effective information campaigns** can be very powerful. It is important to provide people with information that says why an intervention matters. Culture matters, and some pieces of information are more useful than others.
 - In some places, soap is seen more as a cosmetic rather than something that kills germs.
 - With the case of arsenic contamination in wells, people responded better to a simple contaminated/clean rating or water over a progressive scale of contamination level.
 - People are much more likely to do something, like getting a bank account, when they are afraid of missing out rather than trying to gain something.
 - Small group discussions tend to have more impact than big lectures.
- There is **something special about zero**. Charging even a marginal amount to cover the cost of something can really discourage people from buying it.
 - JPAL found that charging even a small amount for bednets dramatically decreased the adoption rate.

JPAL encourages everyone to question conventional wisdom and test things out to find out what really has the greatest impact. A lot can be learned from small contexts and not all big problems necessarily need a big solution. Finally, JPAL hopes that its research shows that cheap, practical solutions do exist and that behavioral responses matter.

Kamilla will send the titles of a few books to Amy that may interest the class. There are also a variety of mechanisms to get involved in this work, such as through the Public Service Center grants/fellowships, JPAL internship opportunities, the IDEAS competition and the Yunus Challenge. Each year, the Yunus Challenge highlights a pressing and often overlooked need of the world's poor. Winning teams receive funding to continue their work.

The first Yunus Challenge was on tuberculosis (TB) drug adherence. There is a cure for TB, but it requires 6-9 months of continuous treatment and there is a problem with people not finishing their medication, which can lead to drug resistance. As people take the medication and begin to feel better, the side effects of the drug become more noticeable and may discourage patients from taking it or health workers may stop showing up to make sure patients are continuing treatment. Directly Observed Treatment Short course (DOTS) is a response method to TB which includes observing and supporting patients to make sure they are taking their medication regularly. DOTS has been recommended widely, but has been hard to implement in many places because it is costly to send people to rural areas to monitor patients.

One Yunus Challenge team, XoutTB, basically tried to adapt the DOTS system to make it more robust and affordable. With the XoutTB procedure, the user urinates on a strip which will react if they have taken the drug and allow the patient to get a code for free cell phone minutes as a

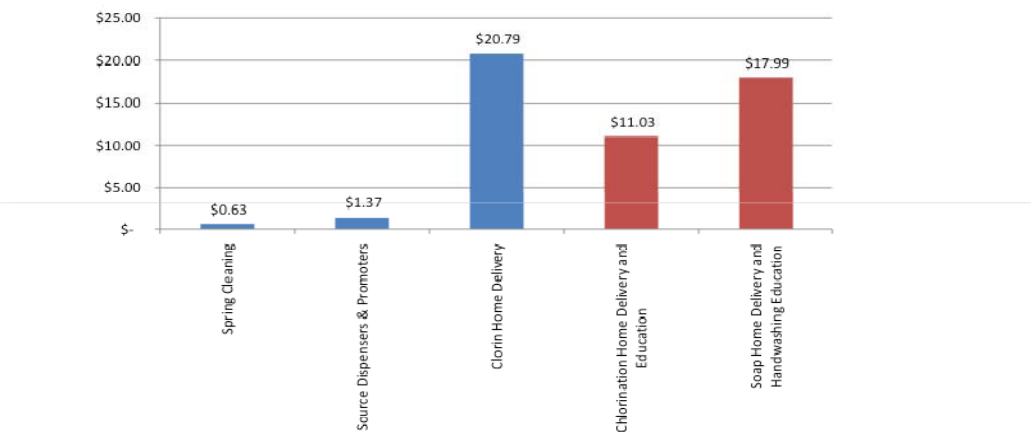
form of instant gratification. There is a daily deadline so people have to submit their results by a certain time, and health care centers can call patients to remind them. This system will not work for everyone, but it may work for a lot of people. XoutTB is also far cheaper than DOTS. The small incentive ends up being a lot cheaper than other interventions, such as sending someone in person to monitor patients as they take their treatment. The team, led by Jose Gomez-Marquez, instructor of *D-Lab: Health* and manager of the International Innovations in Health program, is now doing a trial in Pakistan in collaboration with JPAL. With the involvement of researchers, there is a nice back and forth going on between development practice and theory.

This year's Yunus Challenge is about hand hygiene, and it is open for anyone at MIT to enter next semester. 2 million children die every year from diarrhea, but this can be prevented. Preventing fecal-oral transmission of disease through hand hygiene is said to be one of the best ways of preventing diarrheal diseases and acute respiratory infections. There was a study where people were provided with free soap and given information about the importance of washing hands. This worked, but turned out to be expensive because the researchers may have overdone the program a bit by giving out 3 blocks of soap a day and visiting the households daily to remind them to wash their hands. Unfortunately, there is no information on whether this intervention would work if people were only given one block of soap and reminded occasionally. JPAL has not really done a study on clean hands yet and hopes the students will have some interesting ideas and findings.

In addition to encouraging good hand hygiene to prevent oral-fecal transmission of diseases, another method that is widely recommended to prevent diarrhea is to provide safe drinking water. People have tried a wide range of interventions, including expensive options like providing piped water. There was a study done on clean water in Kenya, but the issue was that the system did not prevent against recontamination. Another system involves putting the clean water in containers with a small bottleneck, so people cannot dip contaminated containers into the storage container. People preferred their original ceramic containers to these new plastic containers, however, because the water was warm during the summer. Some people even bought ice to put into their water to cool it down, and the ice could be contaminated.

A recent finding in Kenya and Pakistan is that providing chlorinators can be quite effective, as they protect against recontamination, but it can cost a lot of money to get the solution out there, at about \$21 for every case of diarrhea prevented. Bottles tend to cost more than the actual chlorine solution, so transportation expenses can be high to deliver bottles of chlorine solution to households. An alternative chlorination option is to put a large dispenser next to the community water source. This is can be more affordable, at about \$1 per every case of diarrhea prevented.

Dollars per avoided case of diarrhea



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More information about the Yunus Challenge can be found at <http://web.mit.edu/idi/yunus.shtml>. We encourage anyone who is interested to form a team and work on an idea to reduce incidences of water-borne disease through promoting good hand hygiene. Teams enter the Yunus Challenge by going through the IDEAS Competition. Winners will be announced in late spring of 2010.

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