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TRANSLATING RESEARCH INTO ACTION

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Case 3: Women as Policymakers

Measuring the effects of political reservations

Thinking about measurement and outcomes

This case study is based on "Women as Policy Makers: Evidence from a Randomized Policy Experiment in India," by Raghabendra Chattopadhyay and Esther Duflo (2004a), *Econometrica* 72(5), 1409-1443.

J-PAL thanks the authors for allowing us to use their paper

India amended its federal constitution in 1992, devolving power to plan and implement development programs from the states to rural councils, or Gram Panchayats (GPs). The GPs now choose what development programs to undertake and how much of the budget to invest in them. The states are also required to reserve a third of GP seats and GP chairperson positions for women. In most states, the schedule on which reserved seats and positions cycle among the GPs is determined randomly. This creates the opportunity to rigorously assess the impact of reservations on politics and government: Do the policies differ when there are more women in government? Do the policies chosen by women in power reflect the policy priorities of women? Since randomization was part of the Indian government program itself, the evaluation planning centered on collecting the data needed to measure impact. Their questions were what data to collect, what data collection instruments to use, and what sample size to plan for?

Empowering the Panchayati Raj

Panchayats have a long tradition in rural India. An assembly *(yat)* of five *(panch)* elders, chosen by the community, convened to mediate disputes between people or villages. In modern times Panchayats have been formalized into institutions of local self-government.

The impetus to formalize came from the independence leaders, who championed decentralized government. Gandhi favored village *(gram)* self-government *(swaraj)*, a system where every village would be "self-sustained and capable of managing its affairs." Prime-minister Nehru advocated giving the Panchayats "great power," so that villages would "have a greater measure of real *swaraj* in their own villages."

Thus Article 40 of the constitution India adopted at independence directs the states to ensure that the Panchayats "function as units of self-government." Implementation guidelines recommended a three-tier system, with village councils (*gram panchayat*) as the grassroot unit.[1] Many states followed the directive and guidelines so that by the early 1950s most had formalized Panchayats. But in the 1960s, with no real power and no political and financial support from the federal government, the Panchayats disappeared in most states. It was not until the 1990s that they were revived.

The revival also came through the constitution. In 1992, India enacted the 73rd amendment, which directed the states to establish the three-tier Panchayati Raj system and to hold Panchayat elections every five years. Councilors are popularly elected to represent each ward. The councilors elect from among themselves a council chairperson called a pradhan. Decisions are made by a majority vote and the pradhan has no veto power. But as the only councilor with a full-time appointment, the pradhan wields effective power.

The 73rd amendment aimed to decentralize the delivery of public goods and services essential for development in rural areas. The states were directed to devolve the power to plan and implement local development programs to the Panchayats. Funds still come from the central government but are no longer earmarked for specific uses. Instead, the GP decides which programs to implement and how much to invest in

[1] Village councils, called Gram Panchayats or GPs, form the basic units of the Panchayat Raj. Village council chairs, elected by the members of the village council, serve as members of the block—subdistrict—council (*panchayat samiti*). At the top of the system is the district council (*zilla parishad*) made up of the block council chairs.

them. GPs can chose programs from 29 specified areas, including welfare services (for example, widows, care for the elderly, maternity care, antenatal care, and child health) and public works (for example, drinking water, roads, housing, community buildings, electricity, irrigation, and education).

Empowering women in the Panchayati Raj

The GPs are large and diverse. In West Bengal, for example, each has up to 12 villages and up 10,000 people, who can vary by religion, ethnicity, caste, and, of course, gender. Political voice varies by group identities drawn along these lines. If policy preferences vary by group identity and if the policymakers' identities influence policy choices, then groups underrepresented in politics and government could be shut out as GPs could ignore those groups' policy priorities. There were fears that the newly empowered GPs would marginalize the development priorities of scheduled castes (SCs), scheduled tribes (STs), and women. To forestall this, the 73rd amendment included two mandates to ensure that investments reflected the needs of everyone in the GP.

The first mandate secures community input. If GP investments are to reflect a community's priorities, the councilors must first know what those priorities are. So, GPs are required to hold a general assembly (*gram sabha*) every six months or every year to report on activities in the preceding period and to submit the proposed budget to the community for ratification. In addition, the Pradhans are required to set up regular office hours to allow constituents to formally request services and lodge complaints. Both requirements allow constituents to articulate their policy preferences.

The second mandate secures representation in the council for the SC, ST, and women. States are required to reserve seats and pradhan positions for SC and ST in proportion to their share of the population and to reserve at least a third of all council seats and pradhan positions for women. Furthermore, the states have to ensure that the seats reserved for women are "allotted by rotation to different constituencies in a Panchayat" and that the pradhan positions reserved for women are "allotted by rotation to different Panchayats." In other words, they have to ensure that reserved seats and pradhan positions rotate evenly within and among the GPs.

Reserved seats and positions are randomly allocated

In most states, the order of the rotation is determined randomly. Random allocation is based on a table of random numbers in the Panchayat Electoral Law. GPs are ranked in order of their legislative serial number, and the table is then used to determine the seats reserved for SCs and STs (it provides the rank of the GP to assign to each list). GPs are then placed in three separate lists, again ranked by their number: the first consists of GPs reserved for SCs, the second, GPs reserved for STs, and the last, unreserved GPs. Then, in the first election, every third GP in each list starting with the first is reserved for a woman pradhan. Thus, some villages are reserved for an SC woman, some for an ST woman, and some for a woman in general. In the second election, the process to create the SC and ST list is repeated (with a new set of ranks assigned to each list), and every third GP starting with the second on each list is reserved for a woman, and so on.

Randomized reservation in India: What can it teach us?

Your evaluation team has been entrusted with the opportunity to estimate the impact of reservations for women in the Panchayats. Your evaluation should address all dimensions in which reservations for women are changing local communities in India. What data will you collect? What instruments will you use? How large will your sample be?

As a first step you want to understand all you can about the reservation policy. What were the needs? What are the pros and cons of the policy? What can we learn from it?

Discussion Topic 1: Gender reservations in the Panchayati Raj	
1.	What were the main goals of the Panchayati Raj?
2.	Women are underrepresented in politics and government. Only 10 percent of India's national assembly members are women, compared to 17 percent worldwide. Does it matter that women are underrepresented? Why and why not?
3.	What were the framers of the 73rd amendment trying to achieve when they introduced reservations for women?
Gender reservations have usually been followed by dramatic increases in the political representation of women. Rwanda, for example, jumped from 24th place in the "women in parliament" rankings to first place (49 percent) after the introduction of quotas in 1996. Similar changes have been seen in Argentina, Burundi, Costa Rica, Iraq, Mozambique, and South Africa. Indeed, 17 of the top 20 countries in the rankings have reservations. Imagine that your group is the national parliament of a country deciding whether to adopt reservations for women in the national parliament. Randomly divide your group into two parties, one against and one for reservations.	
4.	Debate the pros and cons of reservations. At the end of the debate, you should have a list of the pros and cons of reservations.
5.	What evidence would you collect to strengthen the case of each party?
6.	Both parties are concerned about the causal impact of reservations at the national level. They appoint a bipartisan "methodology" commission to agree on what type of research to accept as evidence. Your team is called to give expert testimony on what constitutes good evidence. The first question you are asked is whether it is at all possible to determine the causal impact of reservations at the national level. What will you tell the commission?
7.	A commissioner brings up randomized reservations in India and asks if there are differences between the situation in India and the situation the commission is reviewing. What will you tell the commissioner?

What data to collect

First, you need to be very clear about the likely impact of the program. It is on those dimensions that you believe will be affected that you will try to collect data. What are the main areas in which the reservation policy should be evaluated? In which areas do you expect to see a difference as a result of reservations?

What are all the possible effects of reservations?

Discussion Topic 2: Using a logical framework to delineate your intermediate and final outcomes of interest	
1.	Brainstorm the possible effects of reservations, both positive and negative. Hint: Use your answers to Discussion Topic 1 as a starting point.
2.	For each potential effect on your list, list also the indicator(s) you would use for that effect. For example, if you say that reservations will affect political participation of women, the indicator could be "number of women attending the Gram Sabha."
3.	Suppose you had all the money and resources in the world and could collect data on every one of these indicators in reserved and unreserved communities, and compare them. How many indicators would you collect?

Multiple outcomes are difficult to interpret, so define a hypothesis

Reservations for women could affect a large number of outcomes in different directions. For example, it may improve the supply of drinking water and worsen the supply of irrigation. Without an *ex-ante* hypothesis on the direction in which these different variables should be affected by the reservation policy, it will be very difficult to make sense of any result we find. Think of the following: if you took 500 villages, and randomly assigned them in your computer to a "treatment" group and a "control" group, and then run regressions to see whether the villages look different along 100 outcomes, would you expect to see some differences among them? Would it make sense to rationalize those results *ex-post?*

The same applies to this case: if you just present your report in front of the commission who mandated you to evaluate this policy, explaining that the reservation for women changed some variables and did not change others, what are they supposed to make of it? How will they know that these differences are not due to pure chance, rather than the policy? You need to present them with a clear hypothesis of how reservations are supposed to change policymaking, which will lead you to make predictions about which outcomes are affected.

Discussion Topic 2: Using a logical framework to delineate your intermediate and final outcomes of interest	
4.	What might be some example of key hypotheses you would test? Pick one.
5.	Which indicators or combinations of indicators would you use to test your key hypothesis?

Use a logical framework to delineate intermediate and final outcomes

A good way of figuring out the important outcomes is to lay out your theory of change, that is, to draw a logical framework linking the intervention— step by step— to the key final outcomes.

Discussion Topic 2: Using a logical framework to delineate your intermediate and final outcomes of interest	
6.	What is the possible chain of outcomes in the case of reservations?
7.	What are the main critical steps needed to obtain the final results? What are the conditions needed to be met at each step?
8.	What variables should you try to obtain at every step in your logical framework?
9.	Using the outcomes and conditions, draw a possible logical framework, linking the intervention and the final outcomes.

What data collection instruments to use

Now that you have determined outcomes of interest, there are several methods available to your team to answer your questions about the effects of reservations. Here are some examples of what you could do, including their costs in man days.

Pradhan Interview. You can interview the pradhan. This can give you information on socioeconomic background, political ambitions, and investments made since taking office. It costs one man day per pradhan interview.

Participatory Resource Appraisal (PRA). This method involves drawing a map of the village with the help of 10 to 20 villagers. Figure 1 shows a map from Damdama Phanchayat. The map shows public infrastructure (schools, wells, roads; SC and ST areas; cultivated land and energy projects). You can also find out when the infrastructure was built or repaired, what its (perceived) quality is; and also about the participation of women in various activities. It costs three man days to complete a very detailed PRA and to complement it with focus groups. It will cost an additional man day to travel between GPs, and half a man day to travel between villages in a GP.

Transcript of the Gram Sabha. You can send members of your team to record the Gram Sabha. The transcript will give you information about who speaks (gender), when, how long, and what they speak about (water, schools, governance). Attending the meeting and transcribing and translating takes a long time. It costs at least five man days for each Gram Sabha covered.

Household Surveys. You can interview a sample of the households to obtain both objectives and perceptions from all household members. Along with the PRA the household surveys allow very detailed data to be collected. However, this is the most expensive method of data collection. First, you need to start with a PRA to establish the household list from which your household can be sampled. A short questionnaire (a simple questionnaire without physical measurement) and focusing on interviewing only one or two household members will cost the research group roughly half a man day per household. A long questionnaire (involving health measurement for example) will cost up to a full man day per household.

Existing Administrative Data. You can also ask the pradhan for the GP balance sheets, which are supposed to be public information. You can also obtain minutes of past Gram Sabhas as part of the village PRA and the latest national census data. Data from the 1991 and 2001 censuses are available. It cost zero man days to get access to census data.

Table 1 summarizes each of the methods available to your team.

Discussion Topic 3: Data collection instruments	
1.	What are the advantages and disadvantages of each of the tools?
2.	If you had an unlimited budget, what tools would you use to collect your data?
3.	If you had a limited budget, what tools would you use to be able to test your hypothesis?
4.	What instruments would you use to collect data on policy preferences?

Figure 1: An actual PRA from Damdama Panchayat

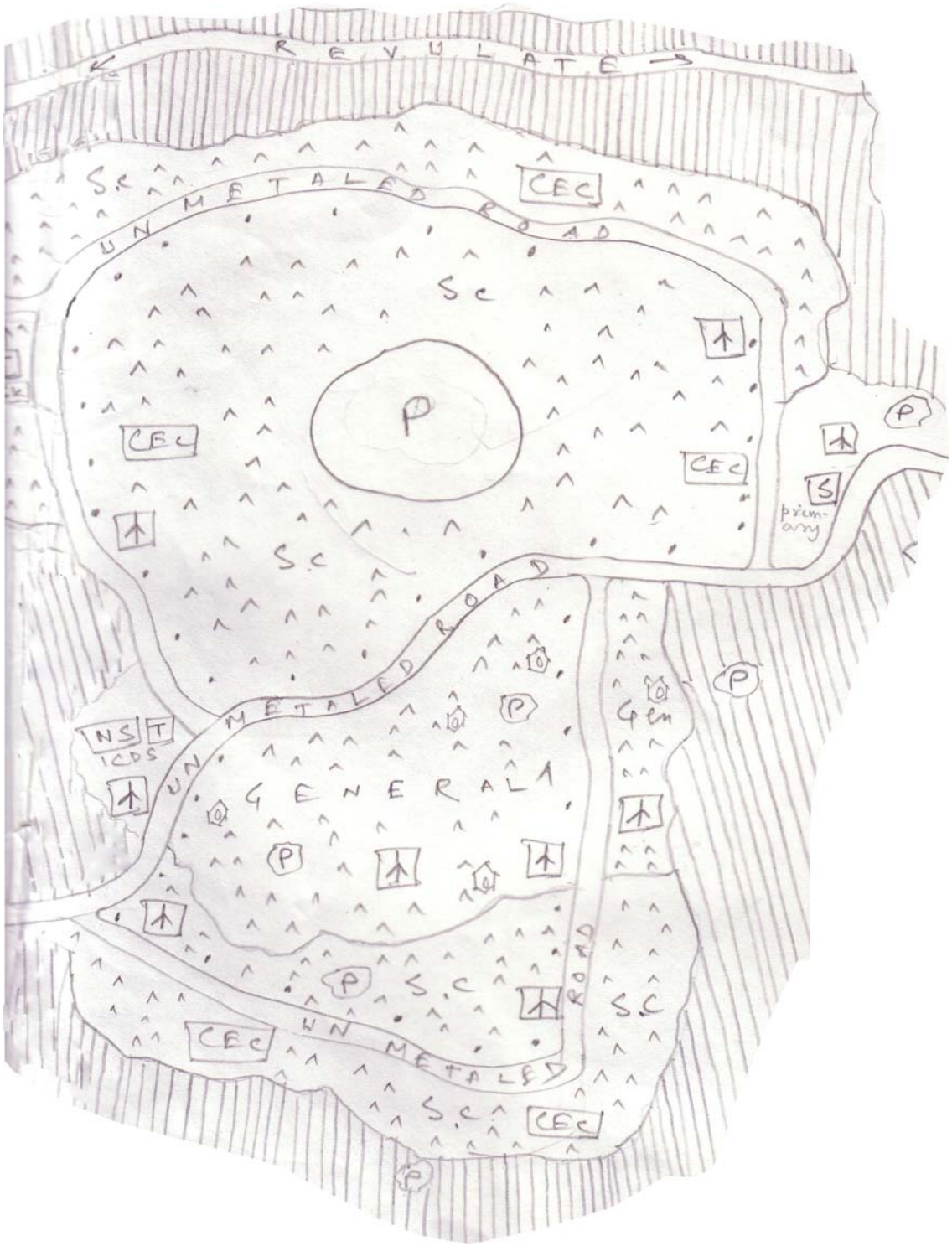

Table 1: Data collection instruments

Tool	*Target Respondent*	*Target Outcomes*	*Cost**
GP Interview	Pradhan	o Pradhan's background (socioeconomic status, education) o Political ambitions o Political experience o Investments undertaken o Public records. such as GP balance sheets	o Cost = 1 man day per interview o Travel Cost between GPs = 1 man day
Transcript of Gram Sabha	GP	o Who speaks and when (gender) o For how long do they speak? o What issues do they raise?	o Cost = 5 man days for every meeting attended, transcribed, and translated
Complaints and service requests	GP	o What have men and women complained about?	o Cost = 0 man days
Village Participatory Resource Appraisal (village mapping exercise and focus groups)	10 to 20 villagers per village	o Village infrastructure (schools, roads, wells, SC and ST areas, cultivated land, irrigation, energy projects) o Perception of quality of different public goods o Participation of men and women in activities o What issues villagers have raised with GP	o Cost = 3 man days for every map drawn and focus group conducted o Travel Cost between villages in GP = ½ man day
Household interviews	Head of household (the male in some HH; the female in other HH)	o HH demographic and socioeconomic data o HH outcomes (child heath, measurement of height and weight, etc.) o HH perceptions of quality of public goods and services o Declared HH preferences	o Short questionnaire with no physical measurement = ½ man day per HH; o Long questionnaire with physical measurement = 1 man day per HH
Existing administrative data	Public data archives (national, GP, and Village)	o A snapshot of village characteristics—population, public goods, demographics, etc.—at the time of the 1991 and 2001 census o Expenditures on public goods and services in GP (from GP balance sheets) o Issues addressed at GP public assemblies (from Gram Sabha minutes)	o Cost = 0 man days

* Costs are given in man days. We will assume here that all other expenses can be computed using a simple overhead rule. Anything with a cost of zero is charged to overhead.

How much data to collect—planning the sample size

To be able to draw credible conclusions about the general population, the sample of GPs you use for your study must be representative of the general population. How large does the sample size need to be to credibly detect an effect size? By credibly we mean only that you can be reasonably sure that the difference in outcomes you see between the reserved and unreserved GPs is due the reservation policy. Randomization removes bias, but it does not remove noise; it ensures comparability because of the law of large numbers. The question is, how large must large be? What sample size do you need to be able to test your hypotheses of interest?

Discussion Topic 4: Power and Cost Tradeoffs	
Use Excel exercise 3B to answer the following questions:	
1.	How does power vary with sample size?
2.	How does power vary with effect size?
3.	How does power vary with the level of clustering?
4.	What effect size do you think you need to be able to tell if women had an impact on investments in drinking water?
5.	Given the effect size you chose in (4), what is the smallest number of villages you need to detect the effect?
6.	Does the study with the smallest number of villages have the smallest budget? Why? Why not?
7.	How should you pick the minimum number of villages to have the smallest budget to detect the effect?
8.	How many villages do you need?
9.	Given a budget of 900 man days, what data would you collect? Of the questions you are interested in, which could you answer? Which questions that you would want to answer are you unable to answer within this budget (these questions come from the budget for various things before)?
10.	Given a budget of 4000 man days, what data would you collect? What new questions could you answer?

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