

Fieldwork, Economic Theory and Research on Institutions in Developing Countries

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Development economics has been the beneficiary of a rich tradition of field research. Within this broad tradition there is a huge variety of methods, from short qualitative studies to large-scale surveys. In this note, however, I focus on one point in this broad space of research methodologies - iterative field research in which the collection of data through surveys is combined with detailed observation and conversation to elicit knowledge about institutions.

Typically, empirical work in economics relies on existing data. However, it is becoming more common in development economics to complement existing data with relatively short, often less structured visits to the field site in order to clarify aspects of the data, to better define the economic environment, or to collect limited amounts of complementary data. For example, ICRISAT hosted and provided institutional support for a series of visiting scholars during the collection of the Village Level Surveys. This proved to be a relatively inexpensive mechanism that generated an important sequence of insights regarding economic institutions in India (e.g., John Pender, 1996).

At the forefront of public service in development economics is that set of academic economists who have combined their time and energy with significant outside resources to direct and organize the collection of new large-scale datasets. An important recent example is the Indonesian Family Life Survey (<http://www.rand.org/labor/FLS/IFLS>), which tracks approximately 7,000 households over approximately 7 years.

In this note I discuss a less institutional, more personal form of field research that requires fewer external resources than the large data-collection exercise exemplified by the IFLS. This is a method of intermediate scale in which the collection of data through surveys is combined with detailed observation and conversation. The hallmark of this work is that it engages the researcher in an interactive process of detailed observation, construction of economic models, data collection and empirical testing. An initial hypothesis is refined and clarified through detailed observation, which informs the collection of appropriate data. As the economic environment is clarified during the course of fieldwork, the data collection procedure can be adjusted in response. Finally, the research proceeds to formal statistical analysis and, one hopes, to new hypotheses. This iterative process of moving between theoretical reasoning, informal observation and discussion, data collection and statistical analysis is the locus of creativity in this kind of field research and is its distinguishing feature. The relatively small scale of the research facilitates this iterative process, particularly with respect to the ability of the researcher to quickly modify data collection.

Unlike the more purely qualitative or case study research (e.g., Robert Townsend, 1995) that can serve to generate hypotheses or clarify aspects of the economic environment for modelling purposes, iterative field research relies on formal statistical reasoning. It is an intensive and time-consuming type of research. During this period, much of the researcher's time is spent fully engaged in the day-to-day details of interviewing and collecting data, NOT writing papers. Standard principles of comparative advantage would seem to indicate that economists should specialize in generating models, writing papers, and encouraging specialists in data collection to collect the sorts of data that will be useful in testing these models, or for generating new ideas about the way the development process works. Under what circumstances is iterative field research appropriate?

Clearly, it must be the case that the question cannot be addressed using available data. Moreover, even when there is an important gap in available data, in many instances it would be more productive to augment that existing data with targeted supplementary research. The enormous advantage of supplementing existing data is that one could achieve much larger samples for a given cost. If this approach is not feasible because there is no available

relevant baseline data, then collecting one's own data may be the appropriate strategy.

If existing data are not available and if the research question is sufficiently well-defined, then a conventional program of data collection might suffice. In this case, a model specified in advance determines the “perfect data” for testing, and this in turn guides the creation of survey instruments and the sample design (some essential references are Angus Deaton, 1997 and Margaret Grosh and Paul Glewwe, 2000; also see the resources at <http://sticerd.lse.ac.uk/FIELDMETHODS/>. A recent example of this approach is Oriana Bandiera and Imran Rasul, 2002).

A different method is required when the research question is more ambiguous and open-ended. When the question of interest is clear, but the economic environment within which agents live is not well-documented, then iterative field research becomes particularly useful. This inductive process of moving back and forth between hypothesis, observation and testing characterizes much of the research process in applied economics generally. The point of iterative field research is to compress this process: the interaction between inductive and deductive reasoning that might otherwise take place over a sequence of papers, perhaps spread across many researchers, is concentrated in one project.

To summarize, the most important cost of iterative field research is that for a given sample size it is much more expensive, particularly in terms of the researcher's time, than alternative methods. The primary benefit is that the researcher can address questions that are less well-defined than can typically be managed using existing data or through more conventional survey methods. It provides a method for opening up new questions, for being surprised.

I. HOUSEHOLD ORGANIZATION, LAND TENURE AND SOIL FERTILITY

I frame the rest of the discussion of the potential benefits and limitations of iterative field research around an account of some work in Ghana (Markus Goldstein and Christopher Udry, 2002). One of our objectives when we began planning research was to understand

the dynamics of land resource management in an environment characterized by apparently imperfect financial markets and complex land tenure arrangements. This was a context in which iterative field research would seem to be a valuable tool: there is little data available from Africa that combines a rich set of economic information with data on soil fertility. More importantly, the relevant institutional context was quite obscure. Open-ended and extensive discussions with farmers would be important to clarify the incentives confronting individuals as they managed their land. On the other hand, an important worry was that the relatively short time scale of the data collection process (two years) might make it difficult to discern movements in soil fertility, which might become apparent only over a longer period.

A. Initial Theoretical Concerns

Decisions regarding the management of a renewable resource such as land fertility are strongly influenced both by land tenure and by capital market imperfections. It is very difficult to make strong predictions about patterns of investment in land without good knowledge of the incentives faced by individuals in those dimensions. However, the efficient allocation of resources within households implies strong implications for within-household patterns of investment in land fertility, even in the context of imperfections in land and financial markets. In an efficient household, profits from any of the household's plots are pooled, aggregated over time at a household- (*not* plot-) specific discount rate, and allocated to the consumption of household members. The consequence of this pooling is that fertility management will be similar on similar plots within the household. Therefore, even in the context of quite imperfect markets, Pareto efficiency within households provides some strong testable restrictions on behavior. However, these predictions are restricted to within-household comparisons; to move beyond that boundary we need a better understanding of the institutional environment. Moreover, even within the household, it would be necessary to clarify property rights and issues of intrahousehold resource allocation if the null hypothesis of Pareto efficiency were to be rejected.

B. Design of Data Collection

The survey was conducted in the Akwapim South District of the Eastern Region of Ghana. Each sample participant was interviewed 15 times during the course of the two years. The survey was centered around a core group of agricultural activity questionnaires (plot activities, harvests, sales, credit) that were administered during each visit. In addition about 35 other modules were administered on a rotating basis.

After a literature review and conversations with soil scientists in Ghana, we decided to attempt to estimate fertility by measuring soil organic matter (OM) on each of the plots cultivated by members of our sample households in each of the two years of the survey.

We took two tracks towards understanding the complex systems of land tenure in the region. On the one hand, we asked questions of each cultivator regarding what they perceived as their rights over the plot. These questions were drawn from earlier surveys in Ghana (Frank Place and Peter Hazell, 1993). On the other hand, following Sara Berry (1993), we asked questions about the history of the plot: specifically, the process through which the current cultivator acquired the plot.

C. Observation and Adoptive Design of Data Collection

There were three reasons for designing the survey with repeated, partially-varying modules: first, to reduce errors of recall, particularly with respect to plot-level inputs and outputs; second, to generate panel data for consumption, income, time-use, and financial transactions; and third, to permit modifications and additions to the set of survey instruments as the institutional context became clear and new hypotheses emerged.

From conversations during the field research, it became clear that our information on perceived land rights and on plot histories provided an inadequate account of individuals' expectations regarding their future rights over the plot. We learned that virtually all land, regardless of its current tenurial status, can be traced to a source lineage. A respondents' status within his or her lineage might be a determinant of his or her expectations over and above the contractual status of a plot, or his or her current "rights" over the plot.

Therefore, we added questions that recorded the lineage to which each plot can be assigned, and a sequence of questions about the lineage membership and status within the membership of each individual in the sample. In addition, we collected information on the identity of the person from whom land was received.

D. Preliminary Statistical Analysis

Our preliminary analysis of the data showed that changes in soil OM are far from sufficient statistics for anthropogenic changes in fertility (Goldstein and Udry, 1999 provides the gory details). Therefore, we turned to an examination of fallowing choices and land productivity. We found that there are dramatic differences within households in the fallowing behavior of husbands and wives on physically similar plots. Husbands systematically fallow their plots for longer periods than their wives. As a consequence, husbands achieve startlingly higher yields and profits than their wives. This difference in fallowing behavior, in turn, is related to the difference in political power of husbands and wives: men are far more likely to occupy important offices within the lineage hierarchy than are their wives. In households in which neither the husband nor his wife hold an office, there is no significant difference in fallowing behavior nor in plot-level profits (Goldstein and Udry, 2002).

E. Further Observation

In order to explore the reasons for this variation in fallowing behavior within households, I conducted a sequence of focus group interviews in the sample villages after completion of data collection. When confronted with preliminary results relating to the gender differential in plot profits and fallowing behavior a consensus quickly emerged that the primary cause is a particular kind of uncertainty over land tenure. Women in particular worry that the very act of investing in the land (that is, leaving it fallow) would reduce their security of tenure. There is no danger of losing access to legitimately-acquired land as long as it is under cultivation. However, once fallowed, the right to re-establish cultivation is uncertain even on land that was obtained through a legitimate process.

In several of the focus groups, the danger of losing one’s right to cultivate a plot was related to one’s perceived ‘need’ for that plot. To paraphrase a common view: “the land belongs to the lineage, not to me. If I leave it fallow, someone may say ‘she does not need that land, she is just letting it sit there unused’ and get use of it for himself.”

F. New Theory

The participants in the focus groups seemed to be describing a land allocation process designed to reveal information about one’s need for land. This led us to consider a mechanism design problem that had not been apparent at the initiation of the survey. There is strong evidence that people have very incomplete information about the non-farm incomes of other members of their lineage. The focus group discussions indicate that a goal of the leadership of the lineage is to allocate land to minimize the number of lineage members whose total income falls below a certain level. The lineage offers its members a deal akin to the following: you have free access to x units of additional land, however, in order to get this land you must keep at least y units of land under cultivation rather than left fallow. When fallowing is productively efficient, for appropriate x and y , lineage members with sufficiently lucrative non-farm opportunities refuse the additional land because it is too costly in terms of the high opportunity cost of keeping it under cultivation. If the lineage head has access to the otherwise private information about some individuals’ returns to off-farm work, perhaps because these individuals are socially or politically well-connected to the lineage leadership, then for these individuals, the land allocation can be made without the cultivation requirement.

G. Further Empirical Work and Data Collection

The key empirical implication is that all plots under the control of an individual are treated similarly. Well-connected individuals about whom the lineage head has full information efficiently fallow their entire portfolio of plots. More isolated poor individuals reveal their ‘need’ by inefficiently cultivating land that should be fallowed.

Goldstein and Udry (2002) use our existing data to provide mixed evidence regarding the importance of this hypothesis for decisions regarding investment in land. Unfortunately, the relatively small sample size that we can work with limits the precision of our estimates. It is apparent that new data that identifies the individuals in each lineage and village who have direct influence on land allocation decisions would help resolve the issue. Combining that information with our existing data on flows of information between individuals should enable us to distinguish this hypothesis from other alternatives involving the notion that the security of one's rights over a plot are determined by one's social position in the village and lineage. The latter hypothesis is a plausible approximation to much of the literature on land tenure systems in West Africa (Berry, 1993; Agnes Quisumbing, Jonna Estudillo and Keiji Otsuka, 2001).

II. CONCLUSION

Iterative field research provides an opportunity, within the context of a unified project, for a flow of work between different research methods: qualitative observation and conversation, theorizing, collection of survey data, statistical analysis. While this process requires a larger commitment of resources for a given sample size than many alternative approaches to research, it is uniquely valuable in those instances in which the hypotheses to be examined are relatively open-ended or in which the economic environment is not well understood. Direct involvement in field research provides rich opportunities for being surprised, and these surprises can lead to important insights.

A hopeful development over recent years is that field research of many different types has become less costly. As a consequence, approximately one-third of the microeconomics papers at the 2002 NEUDC conference were based on data collected by an author. It is apparent, however, that there remain important unexploited gains to coordination that could improve the quality and lower the cost of various forms of field research. We can make it possible to realize many of the benefits of field research at substantially lower cost.

First, we should develop outlets for discussions of field research methods, including the

rich variety of mundane but essential tasks surrounding data collection. Part of this need might be met through publication on the web, as with the “Fieldwork in Development Economics” site mentioned above, but a refereed outlet in one of the field journals would be particularly valuable.

Second, we should strengthen research collaborations between developed and developing country researchers and institutions. These connections are essential for developed country researchers doing fieldwork, and can provide important support for developing country researchers.

Third, we should intensify our work with data collection agencies to encourage collaboration, as for example has been so successful with the Progressa program in Mexico.

Finally, we should facilitate exchanges between major centers of graduate education in development economics to improve graduate students’ knowledge of and access to ongoing research projects in developing countries.

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Endnote

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