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SAMPLING PROBLEMS IN THE EVALUATION OF AGRICULTURAL DEVELOPMENT PROJECTS IN PAKISTAN

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Several projects have been implemented in Pakistan with an aim of introducing positive change in various sectors of economy such as agriculture, industry, services etc. Although several bench mark surveys have been conducted in Pakistan but the main emphasis in this article has been given to the sampling problems involved in surveys carried out to evaluate the development projects in the field of agriculture. Response errors and errors introduced due to the bias of interviewers are the major sources of errors in our sample surveys. However, in these pages attention has been focussed only to the situations where we fail to capture the real responses of various inputs of the projects due to the lack of a proper sampling plan.

1. UN- AVAILABILITY OF SAMPLING FRAMES

In many of the agricultural sample surveys, sampling frames are not available. For example in a survey of farming status of villagers of Punjab, some categories of villagers are established on the basis of owners/tentants, size of land holding etc., and we wish to do Multistage Stratified Random sampling with proportional allocation but we do not have auxilliary information needed to form the strata and draw the sample. Agricultural Census report helps to some extent but all the catergories are hardly available in the villages of districts and sub-divisions selected in the process of multistage sampling. Thus the researcher is forced to take information about certain categories from one place/village and certain others from other places/villages and in certain

cases these places might be miles apart from one another. This practice may distort the results and shake the confidence on the inferences drawn from them.

For example in the rural areas of the province of Sind,one may get farm families from one place and may have to travel long distances to get non-farm families with altogether different life style and envioronments. What sampling procedure should be adopted to cope with this situation?

2. LACK OF ESTIMATES OF VARIANCE TO DETERMINE SAMPLE SIZE

Usually more than one variable is studied in a survey and in order todetermine the size of the sample, it will be preferable to base the estimate of the size of the sample on the maximum value of the coefficient of variability which needs a knowledge of the variance of all the variables being studied in the survey. This information is often lacking and provides serious problems for the statistician.

3. EVALUATION OF A LARGE NUMBER OF PROJECT ACTIVITIES PERFORMED IN THE SAME AREA

"Barani (rainfed) Area Development Project" funded by an international agency carried out following activities for the farmers of a rainfed area:

(i) Soil Conservation
(ii) use of fertilizer and improved seeds
(iii) Use of modern implements
(iv) Bunding and terracing to reduce soil erosion
(v) Improvement of livestock breed
(vi) Provision of agricultural credit
(vii) Activating agricultural cooperatives
(viii) Forestation
(ix) Other agricultural extension activities

Due to one reason or the other, every farmer in the area could not get the direct benefits of all the project activities. The beneficiaries ranged from

users of no facility to users of all the facilities. Many farmers could only avail a subset of the facilities. Due to the lack of uniformity in the use of facilities it has become extremely difficult to devise a proper sample design to evalute the impact of the various activities and the project as a whole.

4. SAMPLE SURVEYS INVOLVING REPEATED VISITS

A survey may aim to visit respondents more than once. The people do not feel easy to be interviewed again and again about their incomes and there is very high proportion of dropouts. To avoid this situation, we may either take a large sample initially but this may not be feasible with a given time and budget, or we may carry out purposive sampling which limits the generalization power of the results.

5. EVALUATION OF TREATMENT EFFECTS WITHOUT A CONTROL

Two instances are quoted below where evaluation of project inputs faces serious problems in the absence of a control population and a suitable design is highly needed.

(a) In "On-Farm Water Management Project" water courses are improved and bricklined to decrease irrigation water losses and increase its availability for farms. In order to see the impact of this improvement on cropping patterns of farmers we need an area with comparable set of unimproved water courses whose avilability is extremely difficulty because water course differ in the amount of water flowing through them and in various physical and environmental respects. Sampling plans may be designed for measuring the impact of the improvement of water courses when control area of water courses is not available.

(b) In Training & Visit (T&V) system of agricultural extension, the extension agent meets a few selected farmers (called contact farmers) in each village of his area after regular intervals. He imparts knowledge to the contact farmers about the modern farming facilities. The idea is that the contact farmers will act as opinion leaders and other farmers in the village will follow them. Now there is a need to have the comparable control population of

farmers so that the impact of the project could be identified. But it is not possible to have comparable non-contact farmers from the area since majority of the relatively large, better educated and modern farmers was already selected as contact farmers. Therefore, non-contact farmers are of traditional type and relatively poor in respect of farm size and education etc., where as such factors have high correlations with crop yield, cropping pattern, innovation and family labour use etc. The problem of evaluation further deteriorates because of the fact that contact farmers are generally already knowledgeable and advanced which makes it very difficult to differentiate between their own efforts in acquiring modern farming knowledge and the effectiveness of extension agent's efforts. Again the question arises that how should we draw a sample of the farmers from the project area which could provide a basis for right evaluation of the impact of the project.