Session 11: Quantitative & Qualitative Methods, and Integration

Prepared for the course on Evaluating the Impact of Projects and Programs, April 10-14, 2006, Beijing China.
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Outlines

• Summary of Previous three modules
• Introduction to Qualitative methods
• The “Why” and the “What”
• The benefits and drawbacks
• Integrating Quantitative and qualitative methods
• Selecting a methodology: best-practices
• Examples: Mexico, Nicaragua
• Q and A: What if we do not have baseline data?
• Other approaches to impact evaluation
1-3, why, what and how

- Objective of IE is to determine the causal relationship between the program/project and the improvements in the livelihood of the beneficiaries.
- The key problem is to establish a good counterfactual – net out the influence of other factors such as growth.
- Evaluation questions for IE differ from other questions for monitoring, and they link to the evaluation methods to be used.
- Key steps for design and implementation were discussed.
- Evaluation methods link closely with data requirements.
- Therefore, it is crucial to have advanced planning on Impact Evaluation and select a good method which is feasible and cost effective.
Qualitative methods: the “Why”

• Poverty and inequality are multi-dimensional: income poverty, income inequality, also deprivation of basic needs: food, nutrition, shelter, and clothing, and access to basic social services: health and education.

• The MDGs have 11 goals which are mostly quantifiable, but others are difficult to quantify.

• Some of the questions can only be answered by qualitative methods. In cases that processes /perceptions are crucial, or data is not ideal, qualitative methods can be in conjunction of quantitative methods.

• This requires that both quantitative and qualitative methods must be used for impact evaluation.
Qualitative methods: the “what”

- Qualitative methods determine causal relationship by methods other than establishing counterfactuals
- They rely on understanding processes, behaviors, and conditions as perceived by individuals or groups
- Examples: how a project is perceived to have affected people’s lives, how a training program is perceived to affect learning
Questions to be answered by Qualitative methods

• How was the program/project perceived to have affected the individual/group?
• Has the individual/group had the opportunity to participate in the project?
• Was this social service perceived accessible to this individual/group?
• Was this information perceived to be available to this individual/group?
• Has the benefit reached the intended target group?
The how to use issues:
Please note…. 

• Qualitative data can also be quantified, and analyzed using quantitative methods (such as logit, tobit and probit regressions)
• For Impact evaluation, establishing the counterfactual is so essential, thus, qualitative methods are often used as a complementary methods for quantitative analysis.
• e.g. Rapid rural assessment: which rely on participants’ knowledge of the conditions surrounding the project/program being evaluated
• Participatory evaluation: in which stakeholders are involved in all stages of evaluation. See World Bank 1996, *The World Bank Participation Sourcebook*.
Main data collection instruments for Qualitative methods

These methods are often used in qualitative analysis:

• **Focus groups**: pros and cons
• **Interviews**: pros and cons
• **Observations**: pros and cons
• **Case studies**: pros and cons
Benefits of Qualitative methods

- Benefits: they are flexible, can be tailored to the needs using open-ended approaches,
- can be carried out quickly using rapid techniques and
- can provide a better understanding of stakeholders perceptions and priorities and conditions and processes that may have affected program impact
Drawbacks of this method

• Subjectivity involved in data collection
• The lack of a comparison group – not possible to establish counterfactual, and thus the causality
• The lack of statistical robustness given small sample sizes
• Thus the results cannot be generalized to a larger population
• The validity and reliability depend on the skill and capacity of the evaluator / interviewer
Integrating Quantitative and Qualitative methods

• No one method is perfect: Qualitative methods have several drawbacks
• Growing acceptance for integrated approach
• Benefits of integrating both
  o Consistency checks
  o Different perspectives
  o Analysis can be conducted on different levels
  o Feedbacks to help interpret findings of quantitative analysis
An example: Nicaragua School Autonomy Reform case

• Quantitative: a quasi-experimental design were used
  ▪ to determine the relationship between decentralized management and learning; and
  ▪ to generalize results for different types of schools
• Qualitative analysis: a series of key informant interviews and focus group discussions with different school based staff and parents were used
  ▪ To analyze the context in which the reform was introduced,
  ▪ To examine the decision-making dynamics in each school, and
  ▪ To assess the perspectives of different school community actors on the autonomy process.
What if we do not have baseline data?

• Use time-lag comparison groups: by bringing control groups into the program at a later stage, once the evaluation has been designed and initiated. Random selection determines when the eligible joining in.

• Example: Yemen Social Fund—time lag comparison group, not perfect.

• Use Quasi-experimental designs such as “propensity score matching” in which the comparison group is matched to the treatment group on a set of observed char. or by using the “propensity score” see below.

• Use other Quasi-experimental designs

• Use non-experimental designs – other approaches.
Propensity Score Matching

- Aims to find the closest comparison group from a sample of non-participants to the sample of participants.
  1. Need a representative sample survey of eligible non-participants and one for participants.
  2. Pool the two samples and estimate a logit model of program participation
  3. Create the predicted value of the probability of participation from the logit regression; these are called “propensity scores”
  4. Exclude some non-participants with lowest scores
  5. For each participants find 5 non-participants with the closest propensity score. This is called nearest neighbors.
  6. The estimated project gain for individual i is the difference between his/her outcome value (e.g. income) and the mean outcome of the nearest neighbors.
  7. Calculate the mean value of these individual gains to obtain the average overall gain.
Non-experimental design – other approaches for IE

• Evaluating structural adjustment programs where there is no counterfactual…

1. Approaches with no counterfactual
   ▪ Qualitative studies
   ▪ “Before and After” which compares the performance of key variables after a program with those prior to the program.

2. Approaches that generate a counterfactual using multiple assumptions.
   ▪ Computable General Equilibrium models (CGEs) that attempt to contrast outcomes in treatment and comparison groups through simulations.
   ▪ With and without comparisons
   ▪ Statistical controls consisting of regressions that control for the differences in initial conditions and policies undertaken in program and non program countries.

• Theory-based evaluation.
Cost-Benefit or Cost-effectiveness analysis

• This type of analysis does not measure impact, but measures program efficiency.

• Attempts to measure the economic efficiency of program costs versus benefits in monetary terms. But it may not be possible for programs in social sectors.

• Identify all program/project costs and benefits and compute a cost to effectiveness ratio $R = \frac{\text{cost}}{\text{unit (or benefit)}}$, which can be compared across interventions.

• Caveats: quantifying costs and benefits; appropriate indicators; methods and assumptions being consistent across ratios.
Selecting a Methodology

Evidence from the best-practice evaluations highlighted that the choices of IE methods are not mutually exclusive. Combining quantitative and qualitative methods is ideal. Features of best-practice evaluations:

• An estimate of the counterfactual has been made by randomization or using other methods such as matching to create a comparison group.
• Relevant data collected at baseline and follow-up
• The treatment and comparison group are of sufficient size to establish statistical inferences with minimal attrition
• Cost-benefit or cost-effectiveness analysis is included to measure project efficiency
• Qualitative techniques are incorporated to allow for the triangulation of findings.
Mexico: Opotunidades /PROGRESA

• Project target: improve the education, health and nutrition status of the poor families
• Impact evaluation method: randomization;
• Panel data: incl a Baseline survey combined with 4 followup surveys.
• Used difference in difference; plus multivariate regressions on cross sectional data
• Results: Project has significant impact on consumption; health, nutrition; education, gender gap (-), dropout rate (-), school attainment, and child labor (-)
Summary

• Both Quantitative and qualitative methods are not perfect. Each has different problems because of the difficulties in establishing good counterfactuals.

• It is ideal to combine qualitative methods and quantitative methods.

• Features of best-practice impact evaluations are discussed and examples given.

• Dr. Zhang will elaborate on the analytical tools and methodological issues when using qualitative methods.
Putting them all together

• The why” and “what” of IE (session 1-3)
• The log frame and its role (session 4)
• Evaluation questions, key steps (session 5)
• Overview of quantitative methods (s 6)
• Quantitative (exp and quasi-exp) methods (s7-8)
• Survey design and sampling (s9-10)
• Qualitative and other nonexp methods (s 11-13)
• Data analysis and reporting: case studies (s14-17)
• Participant team work session [last session]
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