Project Monitoring and Evaluation

MAPMS-711

Admas University

School of Postgraduate Programs

Misgina Asmelash (Ph.D.)

Asst. Prof. of Agricultural Economics and Management at AIGaD, ECSU

misgie2008@yahoo.com

Sep 2019

Impact Evaluation

Definitions:

❑ **World Bank**

"A systematic identification of the effects positive or negative, intended or not on individual households, institutions, and the environment caused by a given development activity such a program or project"

❑ **US Environmental Protection Agency**

"A form of evaluation that assess the net effect of a program by comparing program outcomes with an estimate of what would have happened in the absence of the program"

Impact Evaluation…

Characteristics:

❑ Impact Evaluation (IE) assesses changes than can be attributed to a particular intervention.

❑ IE involves COUNTERFACTUAL analysis (CAUSAL mechanism), that is, a comparison between what actually happened and what would have happened in the absence of the intervention.

❑ IE answers the question: What works for whom in what circumstances? Thus, IE involves Mixed Methods: contextual and qualitative analyses.

Impact Evaluation…

Characteristics….

❑ The main purpose of IE is to improve evidence-based policy making by means of providing effectiveness evaluations of project interventions.

❑ IE involves evaluating data available from the project over time in terms of goals, indicators and outcomes.

❑ IE focuses on the EFFECTIVENESS of the project.

Designing and Implementing evaluation

Effective evaluation involve several steps:

❑ The importance and objectives of the evaluation need to be outlined clearly

❑ Data availability and quality are also integral to assessing program or project effects

❑ Data requirements will depend on whether evaluators are applying a quantitative or qualitative approach—or both—or

❑ Whether the framework is ex-ante (based on forecasts rather than on results), ex-post, or both

Designing and Implement...

Effective evaluations involve several steps:

❑ Additional concerns need to be addressed,

   ▪ Including timing, sample design and sample selection,

   ▪ Selection of appropriate survey instruments

   ▪ Data analysis and presentation

Additional Readings

1. Ferraro, P.J. (2009). Counterfactual thinking and impact evaluation in environmental policy. In M. Birnbaum, *Ibidem*, 75–84

2. Margoluis, C. Stem, N. Salafsky & M. Brown (2009). Design alternatives for evaluating the impact of conservation projects. In M. Birnbaum , Ibidem, 85–96

3. Woerlen C. (2011). Meta-Evaluation of Mitigation Evaluations. www.climate-eval.org

4. International Initiative for Impact Evaluation (3ie) www.3ieimpact.org

The evaluation problem

Overview

❑ Dev't policies/programs are typically designed to change outcomes: raise incomes, improve wellbeing, improve health…

❑ Impact evaluation help policy makers decide whether programs are generating intended effects: **evidence-based policy**

❑ Evaluation seeks to prove that *changes in targets are due only to the specific interventions undertaken.*

The evaluation problem…

Overview…

❑ **The key cognitive question:** Does a treatment (participation in a project) have any **causal effect** on the observed outcome of the population? For instance,

  ➢ Do improved roads increase access to labour markets and raise households' income, and if so, by how much?

  ➢ Does class size influence student achievement, and if it does, by how much?

  ➢ What is the impact on access to health care of contracting out primary care to private providers?

The evaluation problem…

Overview…

❑ **Along with some *ad hoc* examples, we will consider a running example in order to clarify:**

(i) the impact evaluation problem and

(ii) ways to respond to the problem (the so-called identification of the effect)

The problem of selection bias

$$Y_i = \beta_0 X_i + \beta T_i + \varepsilon_i \ldots\ldots\ldots\ldots(1)$$

❑ Here, **T** is a dummy equal to **1** for those who participate and **0** for those who do not participate.

❑ **X,** is set of other observed characteristics of the individual and perhaps include household and local environment.

❑ **ε** is an error term reflecting unobserved characteristics that also affect Y.

❑ Eq.1 reflects an approach commonly used in impact evaluations, measures the direct effect of the program **T** on outcomes **Y**

The problem of selection bias…

- The problem with estimating eq. 1 is that treatment <u>assignment is not often random</u> because:

(a) **purposive program placement &**

(b) **self-selection into the program**

- **i.e., programs are placed according to the need of the communities & individuals, who in turn self-select given program design & placement.**

- **Self-selection could be based on observed characteristics unobserved factors, or both**

- **In the case of *unobserved factors*, the error term in the estimating equation will contain variables that are also correlated with the treatment dummy *T*.**

The problem of selection bias…

- One cannot measure—and therefore account for—these unobserved characteristics in equation 1, which leads to *unobserved selection bias.*

- i.e., cov $(T, \varepsilon) \neq 0$ implies *the violation of one of the key assumptions of OLS* in obtaining unbiased estimates:

➜ independence of regressors from the disturbance term ε.

- *The correlation between T and ε naturally biases the other estimates* in the equation, including the estimate of the program effect β.

What do we need?

- Clearly defined programs
  - Targeting individuals, health care providers: yes
  - Capacity development, sector support: probably not
- Clearly defined outcomes
  - Poverty, health, education: yes
    - Most Millennium Development Goals can be measured!
  - Democratization, investment climate: very difficult
- Comparable control and treatment groups
  - If everyone benefits to the same extent, then IE not possible
  - Someone needs to be excluded (or get less than others)
- Knowledge of the policy or intervention!
- Data (obviously)

Data requirements

- Type of data typically used in impact evaluations
  - Survey data (households, public service providers, ...)
    - Repeated observations on the same units (panel data)
      - ➢ Baseline survey!
    - Often researchers are forced to work with cross-section data
  - Qualitative studies: understanding outcomes and bias

- Appropriate control group
- Type of information the data would need to include
  - Outcome indicators for participants and non-participants
  - Other characteristics that affect program placement and outcome
  - Program participation: by what means, when, how long?

Quantitative vs. Qualitative Impact Assessment

❑ Gov'ts, donors, practitioners in the development community are keen **to determine the effectiveness of programs** with far-reaching goals such as lowering poverty or increasing employment.

❑ These policy quests are often possible only through impact evaluations **based on hard evidence** from survey data or through quantitative approaches.

❑ Understanding the local sociocultural and institutional context using qualitative information is however essential to sound quantitative assessment.

Quantitative vs. Qualitative…

❑ But a qualitative assessment on its own cannot assess outcomes against relevant alternatives or ***counterfactual*** outcomes.

❑ That is, it cannot really indicate what might happen in the absence of the program. Assessment

❑ Quantitative analysis is also important in addressing potential statistical bias in program impacts.

❑ A mixture of qualitative and quantitative methods (**a *mixed-methods approach***) might therefore be useful in gaining a comprehensive view of the program's effectiveness.

Ex Post vs. Ex Ante Impact Evaluations

❑ There are two types of quantitative impact evaluations: **ex post and ex ante.**

❑ An **ex ante** impact evaluation attempts to measure the **intended impacts of future programs and policies**, based on assumptions about how the economy works.

❑ **Ex ante** evaluations are based on structural models of the economic environment facing potential participants.

❑ The underlying assumptions of structural models involve identifying main economic agents in the development of the program, as well as the links between the agents and outcomes of program.

Ex Post vs. Ex Ante Impact…

❑ **Ex post evaluations,** in contrast, measure actual impacts accrued by the beneficiaries that are attributable to program intervention.

❑ One form of this type of evaluation is the treatment effects model (Heckman model).

❑ However, sometimes it may miss the mechanisms to capture and understand the program's effectiveness (particularly in future settings).

❑ Ex post evaluations can also be much more costly than ex ante, as it requires collecting data on actual outcomes of users/non-users.

❑ One approach is to combine both analyses and compare *ex post* estimates with *ex ante* predictions.

Impact Evaluation: the design

- In measuring the impact of a program, we often encounter the problem of selection bias==targeting criteria, or self-selection.

- Typically, the use of randomized experiments (RCTs) ensures that selection bias is avoided

- RCT compares 2 groups that are similar in all characteristics except treatment (participation in a program) which is randomly assigned.

- But, in most cases, RCT is not feasible & ethical (see Ravallion, 2009)
  - ➜ Non-experimental / quasi-experimental approaches

- These methods include, PSM, DD, IV, Regression discontinuity (RD) design and other modelling approaches.

Evaluation Framework

❑ PM wants to know everything about their products, services or programs.

❑ However, limited resources usually force managers to prioritize what they need to know **to make current decisions**.

❑ Project evaluation plans depend on what information need to be collected in order to make major decisions.

Evaluation Framework

Key Considerations: Following key questions should be considered for designing a project evaluation.

1. For **what purposes is the evaluation being done**, i.e., what do we want to be able to decide as a result of the evaluation?

2. Who are the **audiences for the information** from the evaluation, e.g., stakeholders, partners, donors, inter-governmental organizations, staff…

3. What kinds of **information are needed to make the decision** we need to make and/or enlighten our intended audiences, e.g., its inputs, activities outputs, strengths/weaknesses, outcomes…

22

Evaluation Framework

Key Considerations…

4. **Sources of information**, e.g., employees, stakeholders, partners and program documentation, etc

5. **Information collection Methods**, e.g., questionnaires, interviews, examining documentation, observing customers or employees, conducting focus groups among customers or employees, etc.

6. When is the **information needed** (so, by when must it be collected)

7. What resources are available to collect the information?

Evaluation Framework

Evaluation Questions and Methods: Evaluators ask many different questions and use formative and summative evaluation methods:

1. ***What is the definition and scope of the problem or issue, or what's the question?*** Formulating and conceptualizing methods might be used including brainstorming, focus groups, nominal group techniques, Delphi methods, brainwriting, stakeholder analysis, lateral thinking, input-output analysis, and concept mapping.

Evaluation Framework

Evaluation Questions and Methods…

2. *What is the definition and scope of the problem or issue, or what's the question?* Formulating and conceptualizing methods might be used including brainstorming, focus groups, nominal group techniques, Delphi methods, brainwriting, stakeholder analysis, synectics, lateral thinking, input-output analysis, and concept mapping.

3. *Where is the problem and how big or serious is it?* The most common method is "needs assessment" includes, analysis of existing data sources, and the use of sample surveys.

Evaluation Framework

Evaluation Questions and Methods…

4. ***How should the program or technology be delivered to address the problem?*** Some of the methods already listed apply here, as do detailing methodologies like simulation techniques, or multivariate methods like multi-attribute utility theory or exploratory causal modeling; decision-making methods; and project planning and implementation methods like flow charting, PERT/CPM, and project scheduling.

Evaluation Framework

Evaluation Questions and Methods…

5. How well is the program or technology delivered? Qualitative and quantitative monitoring techniques, the use of management information systems, and implementation assessment would be appropriate methodologies here.

Evaluation Framework

Evaluation Questions and Methods: The questions and methods addressed under summative evaluation include:

1. *What type of evaluation is feasible?* Evaluation assessment can be used here, as well as standard approaches for selecting an appropriate evaluation design.

2. *What was the effectiveness of the program or technology?* *E*xperimental and non-experimental designs can be used for determining whether observed effects can reasonably be attributed to the intervention and not to other sources.

Evaluation Framework

Evaluation Questions and Methods: summative evaluation methods:

1. *What type of evaluation is feasible?* Evaluation assessment can be used here, as well as standard approaches for selecting an appropriate evaluation design.

2. *What was the effectiveness of the program or technology?* Experimental and non-experimental designs can be used for determining whether observed effects can reasonably be attributed to the intervention and not to other sources.

Evaluation Framework

Evaluation Questions and Methods: summative evaluation methods:

3. What is the net impact of the program? **Econometric methods** for assessing cost effectiveness and cost/benefits would apply here, along with qualitative methods that enable us to summarize the full range of intended and unintended impacts.

Evaluation Framework

Overview of data Methods

Method	Overall Purpose	Advantages	Challenges
questionnaires, surveys, checklists	when need to quickly and/or easily get lots of information from people in a non threatening way	-can complete anonymously -inexpensive to administer -easy to compare and analyze -administer to many people -can get lots of data -many sample questionnaires already exist	-might not get careful feedback -wording can bias client's responses -are impersonal -in surveys, may need sampling expert - doesn't get full story
interviews	when want to fully understand someone's impressions or experiences, or learn more about their answers to questionnaires	-get full range and depth of information -develops relationship with client -can be flexible with client	-can take much time -can be hard to analyze and compare -can be costly -interviewer can bias client's responses

1

Evaluation Framework

Overview of Data Collection Methods...

documentation review	when want impression of how program operates without interrupting the program; is from review of applications, finances, memos, minutes, etc.	-get comprehensive and historical information -doesn't interrupt program or client's routine in program -information already exists -few biases about information	-often takes much time -info may be incomplete -need to be quite clear about what looking for -not flexible means to get data; data restricted to what already exists
observation	to gather accurate information about how a program actually operates, particularly about processes	-view operations of a program as they are actually occurring -can adapt to events as they occur	-can be difficult to interpret seen behaviors -can be complex to categorize observations -can influence behaviors of program participants -can be expensive

Evaluation Framework

Stakeholders Involvement

❑ Requirement for the involvement of different stakeholder from the region should be identified.

❑ Identified stakeholders should be involved from planning and design, and throughout the evaluation exercise in information collection, analysis, evaluation reporting and result sharing.

❑ Stakeholder participation is fundamental to evaluations. Stakeholder participation is to be an integral component of evaluation design and planning; information collection; the development of findings; evaluation reporting; and results dissemination.

Evaluation Framework

Others activities

❑ **Roles and responsibilities** to be carried out by partners and the evaluator should be clearly identified and delineated.

❑ **Duration of the evaluation** should be carefully identified to cover all the tasks that had to be performed for successful completion.

S #.	Deliverable	Duration
1	Methodological framework and work plan for evaluation	X days / weeks
2	Cleaned and fully referenced "electronic data sets" in an agreed format with copies of the original data collection instruments	X days / weeks
3	Full transcripts of all in-depth interviews and focus group discussions in an electronic format	X days / weeks
4	A complete draft report	X days / weeks
4	Final Evaluation report	X days / weeks
	Total Duration	**X weeks / Months**

Evaluation Framework

Others activities…

❑ **Cost for the evaluation study should be carefully calculated.** The basis for payment and payment scheduling should be determined during contract negotiations.

❑ Requirements for **Evaluator's Qualification** should be adequately describe the experience, skills and abilities needed to meet the expectations

❑ **REPORTING;** depending on the purpose of evaluation it may also be important to use and communicate the findings to the relevant stakeholders.