

Impact Evaluations on Support to SMEs: A guide to Practice

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Basic Concepts about Impact Evaluations (CIE) on Support to SMEs

- Definition of “Impact” (DAC-OECD)= *‘positive and negative, primary and secondary long-term effects **produced** by a development intervention’*
 - Impact evaluations (CIE) focuses on being rigorous in estimating what is **‘produced’** by the program support and what is instead a change in Y produced by other factors, independent from the program support
 - “Causal effect/impact” in CIEs = difference between the observed ΔY and the counterfactual ΔY that would have happened also in the absence of the program
 - Result indicators Y = “outcome variables” in CIE studies
 - In best-practice CIEs, actors and stakeholders and **theory of change** should guide the choice of the empirical design (so that program mechanisms can be tested empirically). E.g. choice of:
 - results indicators
 - relevant features of the program schemes and/or SMEs for which different categorical impacts are estimated, because different impacts are expected
- CIEs as a way to empirically test crucial predictions from theory of change

Possible Ways of Estimating “Causal Effects/Impacts” = What Is a Result ‘Produced’ by the Support and What Is Not

- A) Cognitive recollections of involved actors / experts**
(e.g. interview/questionnaires to supported entrepreneurs asking them to indicate whether or not the support made a difference in affecting the result indicators)
- B) Theory of change**
- C) Empirical evidence based on data analysis.**

For support to SMEs, **A)** Is problematic:

- Respondents may have an incentive to exaggerate the importance of the support
- Cognitive recollections of distant events (especially those related to long-term result indicators) may become unreliable
- Interviews/questionnaires may fail to reach the specific person that was in charge of making the crucial decisions that had an impact on Y

CIE Empirical Methods /I

- Two types of empirical strategies to estimate what has been the effect/impact caused by the program intervention:

1) COMPARISON/CONTROL GROUP DESIGNS:

$[\Delta Y \text{ treated SMEs (A)}] - [\Delta Y \text{ comparable non-treated SMEs (B)}]$

(B) is used to estimate the 'counterfactual' = what would have happened to ΔY in the absence of the support (i.e. due to the influence of other factors)

- Comparable non-treated SMEs selected based on:
 - statistical matching (based on a propensity score)
 - other quasi-experimental designs (DD, CDD, multiple regressions, discontinuity designs, etc...)

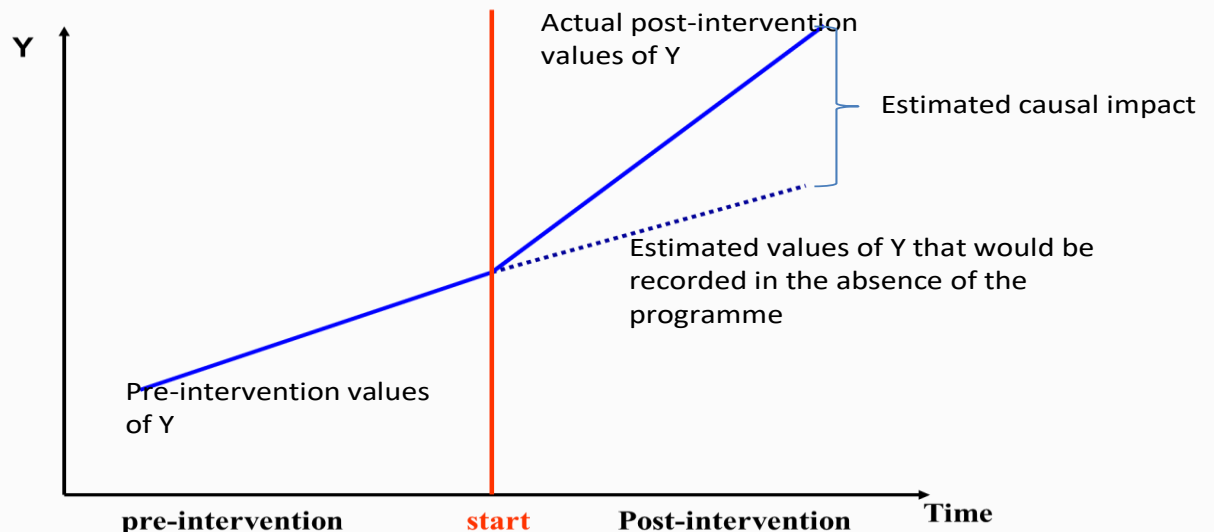
CIE Empirical Methods /II

2) ONE GROUP DESIGNS:

[Y for treated SMEs after the program intervention (A)] - [projection of the pre-intervention trend of Y for the same treated SMEs (B)]

(B) is used to estimate the ‘counterfactual’ = what would have happened to Y in the absence of the program (i.e. due to the influence of other factors)

■ Interrupted time series analysis



- “Shift-share analysis”= the counterfactual trend of Y is estimated based on a benchmark % change of Y recorded from regionally or nationally aggregated statistics

DATA

■ Possible data sources:

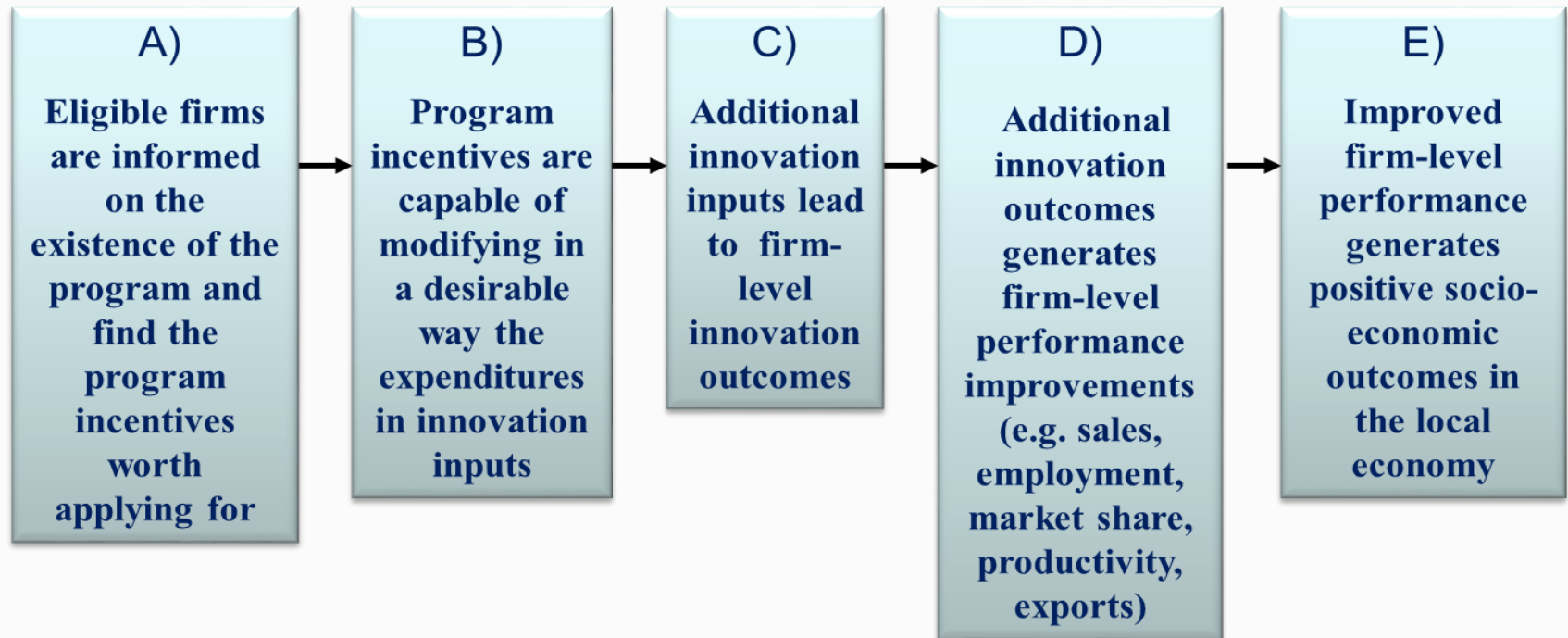
- A) Administrative records
(e.g. Internal Revenue Services, Social Security Agencies, etc..)
- B) National statistical Offices
- C) Program activity records
- D) Balance-sheet databases, business registers, (BVD Amadeus)
- E) Interview and questionnaires used as data collection tools in which the values of **Ys** are collected for both treated and non-treated SMEs (ideally both at a pre-...and post-....program intervention time)

A Guide to Practice: Sequence of Evaluation Tasks

Task 1: Developing a Chain of Causality Links

Theory of change use to reconstruct the chain of causality links from the program intervention to ultimate socio-economic outcomes

E.g.: **Support to innovation expenditures**



Time

Confounding factors/treatment contamination

Step A)

Process evaluation to fine-tune the delivery of the program

E.g.

- How to improve advertising on the existence of the support
- Procedures, requirements, eligibility rules set by the application process

Step B)

Impact evaluation is used to assess the additionality of the support

- Fewer confounding factors
- Focus on each single separate support scheme (Y likely to be affected only by a single scheme)

Step C-D)

Impact evaluation is focused on more distant and global firm-level Y

Evaluation closer to the ultimate goal of the support but more challenging: larger confounding factors and need to consider all sources of support

Step E)

Impact evaluation is focused on local-economy data

Estimating causal effects of the support on the ultimate goals

E.g. How the program affected Y aggregated at NUTS III

Most challenging analysis (not implemented in many cases), all program interventions has to be considered, greater n. of confounding factors

Task 2: Identifying “Proximate/Local” / “Distant/global” Ys

■ “PROXIMATE/LOCAL” Ys....

-“proximate” = immediately (and typically in the short-run) affected by the support schemes

- “local” = they are likely to be affected solely by a single support scheme

E.g.

-N. new products/product innovations (support to R&D Innovation)

-Intensity of investment expenditures (SME Growth Scheme)

-N. loans from financial institutions (SME initiative)

-N. consultancy services (support to acquisition of consultancy services)

-N. stands at international fairs (support to internationalization)

■ “DISTANT/GLOBAL” Ys....

-”distant” = last in order of time to be affected by the support

-“global” = they are likely to be affected by other support schemes and program interventions

E.g.

-total sales

-total employment

-total volume of exports

-firm-level job quality indicators

(e.g. employees with high skill/education)

Task 3: Estimating Causal Effects Using CIE Empirical Methods

- “Proximate/Local” Ys = separate analyses for each support scheme
”Distant/Global” Ys = the analysis has to focus on pooled data from all the supports (with separate casual effects estimated for each support scheme)
- The empirical designs have to....(main features of the empirical design)
 - Identify how long after the support the outcome variable Y has to be measured (based on theory of change)
 -short periods for “proximate/local” Ys
 -longer periods for “distant/global” Ys
 - Investigate for which groups of SMEs the support may provides more/less additionality /casual impacts (based on theory of change if sample sizes are large enough)
 - E.g. ...larger SMEs may be more likely to obtain financing from private banks= + **additionality** in smaller SMEs
 - ...industrial sectors with higher intensities of labour may produce high employment additionality

- Avoid to use a static statistical framework = a fixed pre-... and post-intervention time (in which to measure Ys) is adopted for all supported SMEs
- Use instead a dynamic approach in which for each SME the exact pre- and post-support period is specifically considered (e.g. Bondonio and Martini 2019; Bondonio, Fernandes and Mamede 2020).
- To enhance the policy relevance of the results:
translate causal-effect estimates into figures of cost-per-additional-unit of impact (e.g. cost per additional job generated, so that the efficacy of different policy schemes may be compared in their ability to address employment goals)
- Avoid to estimate casual impacts over very-long periods (e.g. > 5 years):
In the long-term non-treated SMEs (used to estimate the counterfactual Y) may become also affected by the support because of positive/negative spillovers of the support (i.e, treatment contamination bias)

Task 4: (If Conditions Apply)

Estimating Causal Effects on Local-Economy Data

- **Most challenging analysis to be attempted only if:**
 - firm-level information are available in terms of geographically-aggregated data (e.g. NUTS III)
 - the size of the supports is not disproportionally smaller than that of the local economy
- **Units of observations= geographic areas/industrial sectors (e.g. NUTS_III/sector) as units of analysis. This is in order to contain inside Positive/Negative spillovers inside the NUTS_III/sector**
- **All the different types of support should be considered (including those from other Thematic Objectives, if applicable)**
- **All units (=NUTS_III/sectors) may be treated with different intensities of the support =**
 - Advanced CIE methods have to be used to estimate causal impacts in terms of higher intensities of the support vs. lower intensities (e.g. Bondonio and Greenbaum 2006)