



Co-funded by the  
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**INSPIRE**



# IMPACT EVALUATION AND MEASURING RESULTS

Developed by



# Overview of the module

## LESSON

### 01

#### Introduction to impact evaluation

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1. Learn what is the essence of impact evaluation.
2. Learn what is the necessity to conduct impact evaluation.
3. Learn how to differentiate project evaluation from impact evaluation.

## LESSON

### 02

#### Indicators of impact evaluation

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4. Learn how to demonstrate the knowledge on impact indicators.
5. Learn how to understand RBM (Result-Based Management) approach.
6. Learn how to recognise the types of impact indicators.
7. Learn how to identify baseline, milestones, target and timeframe for interventions.
8. Learn how to deliver quantitative and qualitative analysis using signals and scales.
9. Learn how to apply indicators according to the relationship between output, outcome and impact

## LESSON

### 03

#### Impact evaluation counterfactuals

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10. Learn how to include counterfactual in impact evaluation.
11. Learn how to select respective methods within experimental, quasi-experimental and non-experimental options.
12. Learn how to create control group within RCT (Randomised Control Trial) approach.

## LESSON

### 04

#### Impact evaluation sampling

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13. Learn how to draw study units in the sample from a population of interests to precisely estimate differences in outcomes between treatment group and the comparison group.
14. Learn how to determine the size of a sample using power calculation.
15. Learn how to adjust sampling procedures.

**Suggested time for the whole Module: 24-28 hours.**

# LESSON 01

## Lesson Objectives:

1. Learn what is the essence of impact evaluation
2. Learn what is the rationale for conducting impact evaluation
3. Learn how to differentiate project evaluation from impact evaluation

## ACTIVITY 1.1 PREPARE / ICE-BREAKING

### Intended Learning Outcomes:

1. Identify your understanding of impact evaluation.
2. Specify own expectations and learning outcomes on the topic of impact evaluation and measuring results.



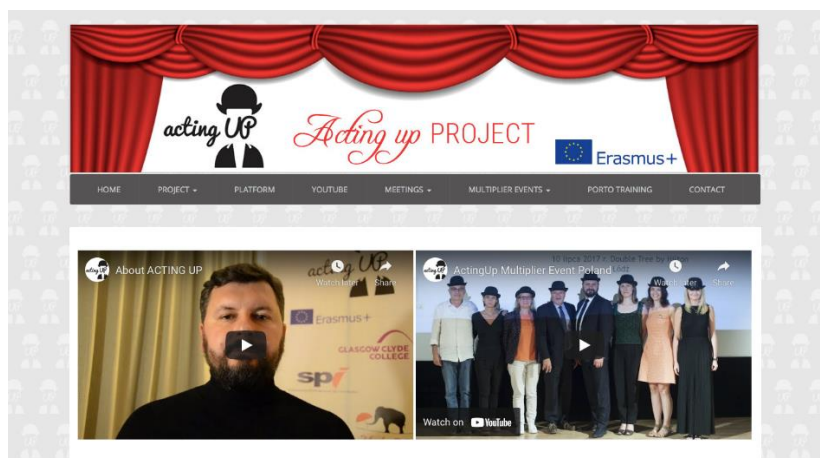
30 minutes - 1 hour



<http://actingup.eu>

## LECTURER ACTIVITY

The Acting Up project serves for using drama techniques for adult education. It constitutes an open resource to use while choosing for instance relevant ice-breaking scenario for the very first training session with learners.



<http://actingup.eu>

Depending on the group, please choose the most relevant ice-breaking exercise for team building using the resource suggested above or your own methodology.

## LEARNER ACTIVITY

Follow the exercise chosen by the Trainer having in mind the basic questions to answer: *What is your understanding of impact evaluation in the context of your involvement in working for organisation representing the third sector?*

*What are your expectations towards the current lesson?*

## LINKS TO OBJECTIVE

1 – 2

## ACTIVITY 1.2 STUDY DEFINITION AND RATIONALE OF IMPACT EVALUATION

Intended Learning Outcomes

3. Explore the theory behind impact evaluation versus its application.
4. Comprehend rationale of impact evaluation.
5. Distinguish between impact evaluation and project evaluation.



2 hours



Internet resources: videos, presentations, articles (example above).

## LECTURER ACTIVITY

DEFINITION:

**Impact evaluation** serves for assessing the contribution of an intervention (project, programme, policy, ...) towards some outcome or goal. It analyses the **impact on target population** and quantifies **how large** the impact is.

The contribution may be:

- Intended or unintended,
- Positive or negative,
- Long-term or short-term.



Impact evaluations attempt to identify a clear link between causes and effects, and explain **how** the intervention worked and **for whom**. Impact evaluations show whether **measurable changes in people's lives** can be attributed to a **particular intervention**.

WHY CONDUCT AN IMPACT EVALUATION?

Impact evaluations can help organisations:

- To decide whether to scale up projects with proven positive impacts or to stop projects or programmes with no impact;

- To improve the design of development projects, programmes or policies;
- To compare different projects or programmes with regard to their effectiveness.

#### DIFFERENCE BETWEEN PROJECT EVALUATION AND IMPACT EVALUATION:

Project evaluation	Impact evaluation
Focus put on <b>successful delivery</b> of service/ implementation/ operations.	Emphasis set on whether a project or programme had a (causal) <b>effect on the lives of target group(s)</b> (and why or why not).

VIDEO *1 hour!*



<https://www.youtube.com/watch?v=N764LUjj6Mw>

PRESENTATION *26 slides!*



<https://www.slideshare.net/crlmgn/impact-evaluation-23664200>

READING 4 pages!

## IMPACT EVALUATION



Impact evaluations aim to assess whether the predicted changes brought about through a project or programme have happened or not. Many cover unexpected or negative change as well. Most impact evaluations also try to assess the contribution of a development intervention to any changes identified. They usually follow a rigorous and accepted research methodology.

There is no single, agreed definition of *impact evaluation*. The term means different things to different people. At one end of the scale, some people define an impact evaluation as any evaluation that seeks to assess change (outcomes or impact), rather than focusing only on activities and process. At the other end of the scale, some people only include evaluations that use complex, statistical methods, such as randomised control trials (RCTs).

contribute to wider learning. However, impact evaluations have the potential to provide more certainty about any findings, because they are more rigorous in their approach. On the other hand, they also tend to be more costly than other kinds of evaluation, and may take longer to plan and implement. Therefore the costs and benefits of carrying out an impact evaluation always need to be carefully weighed up.

<https://www.intrac.org/wpcms/wp-content/uploads/2017/01/Impact-evaluation.pdf>

Organise common or individual studying of the content provided above. Assist the learners in case further guidance or explanation is required.

### LEARNERS ACTIVITY

Study individually the content provided or join the common session organised by the Trainer. Make notes for next activities; do not hesitate to ask questions if any, share your thoughts with other learners/ Tutor, focus on practical aspect of the knowledge you are gaining referring to the challenges you are facing in NPI you are involved in on regular basis.

### LINKS TO OBJECTIVE

1 – 3

## ACTIVITY 1.3 JOINT WORK: CASE STUDY

Intended Learning Outcomes

6. Analyse case study to distinguish project and impact evaluation.



1 hour



Blackboard & chalk/whiteboard and marker/smart board  
Paper notes & markers/ICT equivalent  
(computers/laptops/smartphones)

## LECTURER ACTIVITY

**Task1: Case Study**

Imagine a development project or programme that aims to improve child health in a chosen country through the construction of public water pumps.

Task: Please try to distinguish what would be the project evaluation and what would be the impact evaluation in this case.

Facilitate the individual or group work so the learners could finally reach the correct answer. Use techniques adjusted to the situation e.g. brain storming, division of the group into smaller teams, one-to-one discussion, etc.

*Correct answer: In above example an evaluation would look at whether the project succeeded in constructing water pumps and how many people use them, while an impact evaluation aims to assess whether the construction of water pumps led to improve health.*

## LEARNERS ACTIVITY

Follow the Trainer instructions. Reflect upon the example, note down what would You classify as impact evaluation in this case. Share and discuss your thoughts within the group or individually with the Tutor. Come up to final conclusions and find out the correct answer.

## LINKS TO OBJECTIVE

3



## ACTIVITY 1.4 DESIGN &amp; TRAIN: REFER TO REAL-LIFE EXAMPLE

Intended Learning Outcomes

7. Design (or refer to) real example and practice analysing impact evaluation of chosen intervention(s)



## LECTURER ACTIVITY

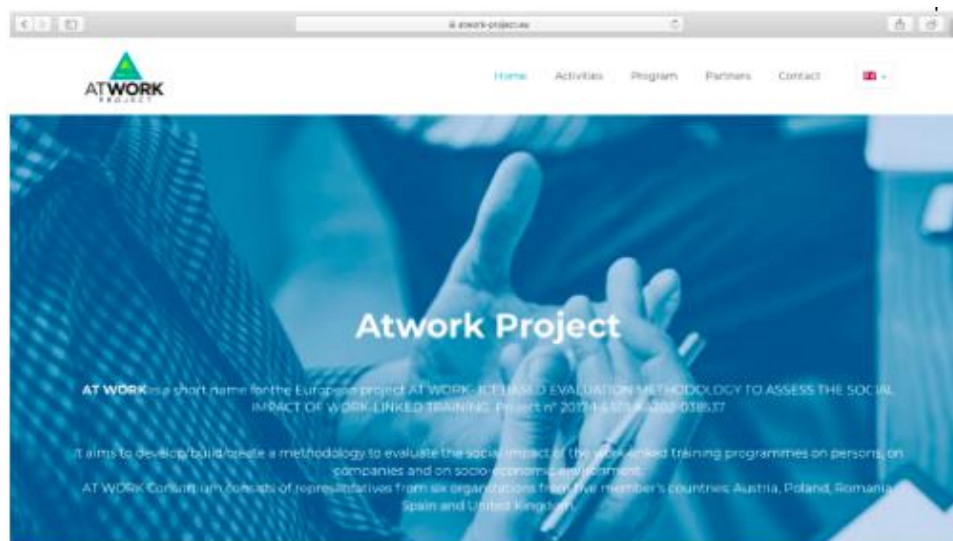
**Task 2: Reflection activity for a leader or a team of an NGO (NPI)**Option 1 (the most desirable one)

Please analyse the current activity/ies carried out by your organisation or an NGO (NPI) you find useful in your region. Decide what would be a desirable impact to evaluate within a chosen project/ programme conducted. Discuss it within a team and/or share and consult your reflection with the tutor on-line or face-to-face.

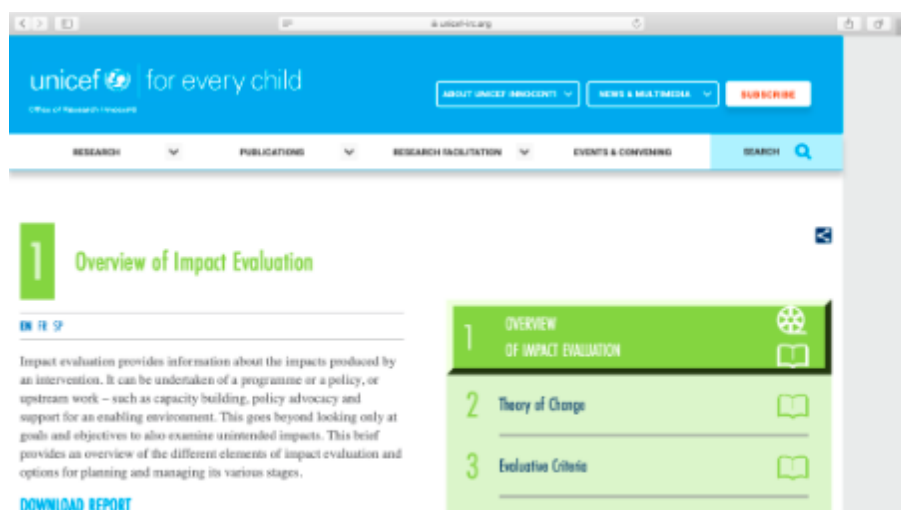
Option 2 (alternative scenario)

Choose the case studies presented below and follow the same instructions as above:

A) ATWORK project case - <https://atwork-project.eu/en/>



B) UNICEF case - [https://www.unicef-irc.org/KM/IE/impact\\_1.php](https://www.unicef-irc.org/KM/IE/impact_1.php)



*Report 20 pages & Video 8 minutes!*

This is a design & train activity. Assure that all design & train stages are completed according to the DBE methodology (see: Annex to the Curriculum).

## LEARNERS ACTIVITY

Follow the Trainer guidelines. Decide individually or within the group which option to choose and then carry out the exercise based on a real context from your experience or examples proposed.

## LINKS TO OBJECTIVE

1 - 3

## ACTIVITY 1.5 TEST

Intended Learning Outcomes

8. Consolidate knowledge and skills on basics of impact evaluation.



30 minutes - 1 hour



Evaluation tests in hard copies or on-line versions.

## LECTURER ACTIVITY

! Important notice: Correct answers cannot be seen by the learners.

**Quiz 1/ True or False**

1. IE\* aims at assessing impact of an intervention towards a goal. **T/F**
2. Intervention can be understood as project, programme, policy. **T/F**
3. IE\* does NOT quantify how large the impact was. **T/F**
4. Project evaluation means the same as IE\*. **T/F**
5. There is no need for organisations to conduct IE\*. **T/F**
6. IE\* shows changes in people's lives after intervention. **T/F**
7. IE\* explain(s) how the intervention worked and for whom. **T/F**

*IE\* = Impact Evaluation(s)*

**Quiz 2/ Drag and drop**

Please select one feature from the box, which does NOT characterise impact:

intended

negative

short-term

measurable

long-term

unintended

abstract

positive

*Correct answer: abstract*

Support the testing process. Check the knowledge of learners after completion of the lesson. Quizzes might be conducted individually or within the group. Comparing the results with all participants and discussing them should be a crucial element at the end of the lesson.

### LEARNERS ACTIVITY

Follow the Trainer guidelines. Do not hesitate to ask in case something is not clear. Decide individually or within the group what are the correct answers.

### LINKS TO OBJECTIVE

1 – 3

# LESSON 02

## Lesson Objectives:

1. Gain knowledge on impact indicators
2. Understand RBM (Result-Based Management) approach
3. Learn how to recognise the types of impact indicators
4. Learn how to identify baseline, milestones, target and timeframe for interventions
5. Learn how to deliver quantitative and qualitative analysis using signals and scales
6. Learn how to apply indicators according to the relationship between output, outcome and impact

## ACTIVITY 2.1 PREPARE

### Intended Learning Outcomes:

9. Specify own expectations and learning outcomes on the topic of impact evaluation indicators.



30 minutes - 1 hour



Article from Internet (suggested below)

## LECTURER ACTIVITY



<http://www.social-impact-navigator.org/impact-analysis/indicators/types-of-indicators/>

Introductory Reading Exercise *10 minutes!*

Arrange the common reading of the text suggested above. Confront the knowledge delivered within the introductory short reading exercise with the participants' expectations towards the current lesson.

## LEARNERS ACTIVITY

Follow the exercise chosen by the Trainer having in mind the basic questions to answer: *What are your expectations towards the current lesson?*

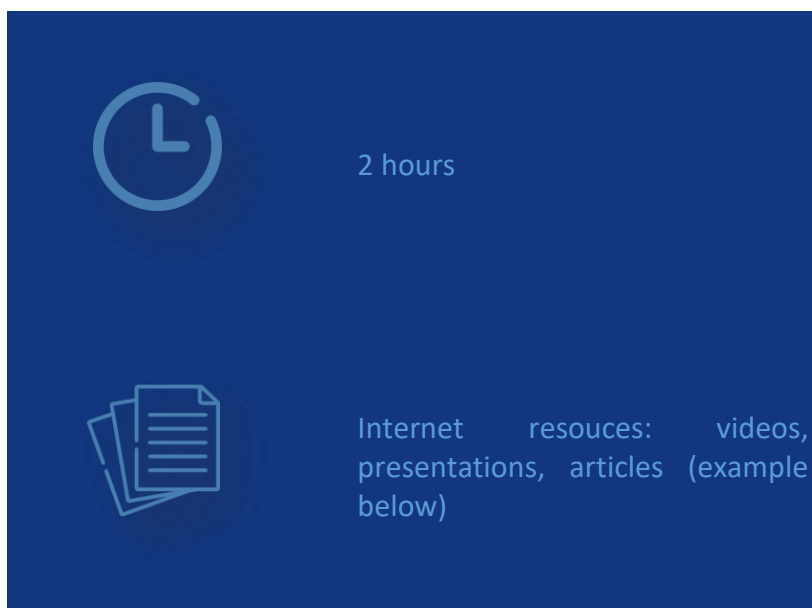
## LINKS TO OBJECTIVE

4 & 6

## ACTIVITY 2.2 STUDY DEFINITION, RATIONALE AND TYPES OF IMPACT EVALUATION INDICATORS

### Intended Learning Outcomes:

10. Explore the theory behind impact evaluation indicators.
11. Comprehend rationale of impact evaluation indicators.
12. Distinguish different types of impact evaluation indicators



### LECTURER ACTIVITY

#### DEFINITION:

**Impact indicators** monitor the progress of achieving objectives of our actions, which usually relate to some type of **short-term changes**.

Indicators help us demonstrate **progress when things go right** and provide **early warning signals when things go wrong**. This assists in identifying changes that need to be made in organisational strategy and practice as a consequence of analysing impact evaluation for projects. The continuous monitoring of indicators also facilitates effective evaluation.

Indicators tell us that a **change** we are interested in **is happening**.



#### WHY IS IT ADVISABLE TO USE IMPACT INDICATORS?

Indicators can help to:

- Measure progress and achievements;
- Clarify consistency between activities, outputs, outcomes and goals;

- Ensure legitimacy and accountability to all stakeholders by demonstrating progress;
- Assess project and staff performance.



**The purpose of impact indicators** is to support effectiveness throughout the processes of planning, implementation, monitoring, reporting and evaluation – constituting the full spectrum of **results-based management (RBM\*)**.

*!!!Important notice: Indicators only indicate; they do not explain!!!*

### TYPES OF INDICATORS

*According to UNDP (United Nations Development Programme) based on RBM\**

1. **Situational (Impact)** indicators, which provide a broad picture of whether the developmental changes that matter are actually occurring;
2. **Outcome** indicators, which assess progress against specified outcomes;
3. **Output** indicators, which assess progress against specific operational activities.



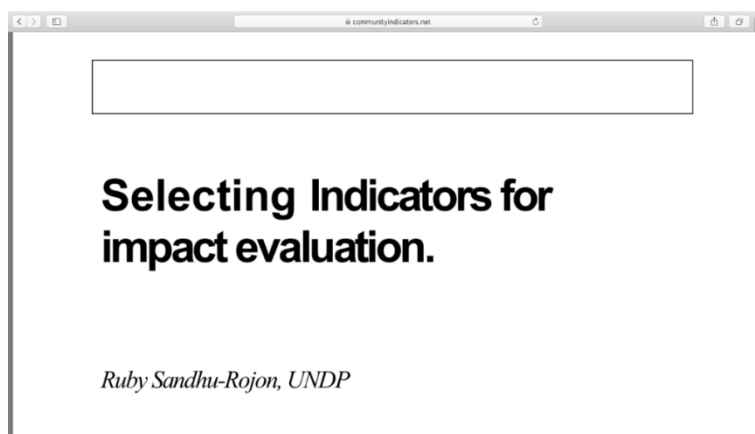


Presentation/ *28 slides!*



<https://www.slideshare.net/Makewa/62-me-indicators>

Reading/ *19 pages!*



<https://communityindicators.net/wp-content/uploads/2018/01/Selecting-Indicators-for-Impact-Evaluation.pdf>

## STUDENT ACTIVITY

Study individually the content provided or join the common session organised by the Trainer. Make notes for next activities; do not hesitate to ask questions if any, share your thoughts with other learners/ Tutor, focus on practical aspect of the knowledge you are gaining referring to the challenges you are facing in NPI you are involved in on regular basis.

## LINKS TO OBJECTIVE

4 – 6

## ACTIVITY 2.3 JOINT WORK: REFLECTION UPON VIDEO

Intended Learning Outcomes:

13. Learn how to select best metrics from standards and design custom metrics



1 hour



Blackboard & chalk/whiteboard and marker/smart board  
Paper notes & markers/ ICT equivalent (computers/ laptops/ smartphones)

## LECTURER ACTIVITY

## Task 1/ Reflection upon video

Video *6 minutes!*



<https://www.sopact.com/perspectives/impact-indicators>

## Assignment:

Please watch video above on 'Impact metrics' and answer 5 questions from the speaker so to identify the best impact indicators for your organisation.

Facilitate the individual or group work so the learners could finally reach the answers to 5 questions. Use techniques adjusted to the situation e.g. brain storming, division of the group into smaller teams, one-to-one discussion, etc.

### LEARNERS ACTIVITY

Follow the Trainer instructions. Reflect upon the video; make notes with proposals for the answers. Share and discuss your thoughts within the group or individually with the Tutor. Come up to final conclusions and find out the required solutions.

### LINKS TO OBJECTIVE

6,8,9

## ACTIVITY 2.4 DESIGN &amp; TRAIN: IDENTIFY BASELINE, TARGET AND TIMEFRAME

Intended Learning Outcomes:

14. Design (or refer to) real example and practice identification of Baseline, Target and Timeframe.

15. Design (or refer to) real example and distinguish quantitative and qualitative expressions of indicators using signals and scales.

16. Design (or refer to) real example and train to apply indicators according to the relationship between output, outcome and impact.



2 hours



Open resources on Internet (links available below)

## LECTURER ACTIVITY

Option 1:

Study example from Lesson 1

Imagine a development project or programme that aims to improve child health in a chosen country through the construction of public water pumps.

Option 2:

Design or refer the below activities to real-life intervention(s).

**BASELINE, TARGET AND TIMEFRAME**

Indicators require a baseline, target and timeframe in order to be useful in verifying the results of a development intervention (meaning that impact indicators serves for both progress and change). This makes it possible to demonstrate change over time. The **baseline** is the situation before a programme or activity, and is the starting point for results monitoring. The **target** is the situation expected at the end of a programme or activity. Between the baseline and the target there may be **several milestones** that correspond to expected performance at periodic intervals. The **timeframe** refers to observations taken at specified points in time or within a given period of time.

**Task 2/ Timeframe exercise**

Please choose a project/ programme your NPI intends to carry out in the close future and design realistic timeframe for its realisation. Remember to clearly define baseline, target and milestones.

Another alternative is to use an example given above.

## QUANTITATIVE AND QUALITATIVE EXPRESSIONS OF INDICATORS

### SIGNALS AND SCALES

**Quantitative** indicators are numerical.

**Qualitative** indicators use categories of classification and/or are based on individual perceptions, e.g. as given in response to survey questionnaires.

Indicators can comprise a variety of types of **‘signals’**—in other words, how the indicator is expressed—such as numbers, ranking systems or changes in the level of user approval. A signal also features a **‘scale’** of observation.

*Example: the indicator ‘65 per cent of enrolled students graduate secondary school’ features a percentage signal with a scale of 65 per cent.*

Additional remarks and tips:

*Indicators should be specific (When we use indicator ‘Reduction in numbers/ in percentage against ...’ we should refer precisely which specific population we have in mind e.g. the participating target group of the project/ general population of the country/ of the local community).*

*Terminology should be measurable and explicit (e.g. in terms of defining what does “properly” or “survive” - survive for how long etc.).*

### Task 3/ Analyse tables below

Table1: Indicators according to the relationship between output, outcome and impact				
Area Result	Water supply	Women’s empowerment	Environment	Human Rights
Output	Number and type of wells installed	Number of loans given and repaid as agreed	Number of species planted properly and surviving	Number and category of people given training or other type of support
Outcome(s)	The number and proportion of population with sustained availability of clean water for proper domestic use	Percentage of women with increased disposable income, expanding their options towards diverse social and economic roles	New areas reforested and sustainable agricultural practices applied.  Better economic opportunities for indigenous or isolated communities	More active censure of politicians and law-enforcing agencies  Greater financial allocation by government to monitor and address human rights abuse
Impact	Reduction in ill health and mortality	Improved economic control, choice and status with respect to men	Retention or increase in forest areas	More transparent accountable state behaviour with reduction in political arrests

Table 2: Examples of outcome and output indicator signals and scales

Qualitative/ Categorical Indicators			
Signal	Scale	Outcome Indicator	Output Indicator
Existence	Yes/ No	Local governance act passed/ not passed	Policy recommendation submitted/ not submitted
Category	e.g. X or Y or Z	Level of SHD** policy focus 'high', 'medium' or 'low'	Poverty analysed in 'region east', 'west' or 'nationally'
Quantitative/ Numerical Indicators			
Signal	Scale	Outcome Indicator	Output Indicator
Number	e.g. 1,20 or 5'000	Number of new jobs created in small enterprise sector	Number of entrepreneurs trained
Percentage	e.g. 12% or 95%	Percentage share of rural population with access to basic health care	Percentage share of government budget devoted to social sectors
Ratio	e.g. 1/3 or 125 per 100'000	Ratio of female to male school enrolment	Ratio of trained female to male members of parliament

SHD\*\* - Sustainable Human Development

This is a design & train activity. Assure that all design & train stages are completed according to the DBE methodology (see: Annex to the Curriculum).

## STUDENT ACTIVITY

Follow the Trainer guidelines. Decide individually or within the group which option to choose and then carry out the exercises based on a real context from your experience or examples proposed.

## LINKS TO OBJECTIVE

7– 9

## ACTIVITY 2.5 TEST

Intended Learning Outcomes:

17. Consolidate knowledge and skills on basics of impact evaluation indicators



30 minutes - 1 hour



Evaluation tests in hard copies or on-line versions.

## LECTURER ACTIVITY

! Important notice: Correct answers cannot be seen by the learners.

**Quiz 1/ Matching**

Please match the indicator (A,B,C) with its type (1,2,3)

1. Situational (Impact); 2. Outcome; 3. Output

A. Number of wells installed

B. HDI – Human Development Index

C. Estimated number of the population with access to Internet

*Correct answer: 1B; 2C; 3A*

**Quiz 2/ True or False**

1. Impact Indicators demonstrate progress when things go wrong. T/F
2. Indicators not only indicate but explain as well. T/F
3. Impact indicators are useful for providing early warning signals T/F
4. RBM states for results-based management T/F
5. Ratio is an example of signal of quantitative indicators T/F
6. YES/NO is an example of scale of qualitative indicators T/F
7. Indicators do not require demonstrations of change over time T/F

Support the testing process. Check the knowledge of learners after completion of the lesson. Quizzes might be conducted individually or within the group. Comparing the results with all participants and discussing them should be a crucial element at the end of the lesson.

### LEARNERS ACTIVITY

Follow the Trainer guidelines. Do not hesitate to ask in case something is not clear. Decide individually or within the group what are the correct answers.

### LINKS TO OBJECTIVE

4-9



# LESSON 03

## Lesson Objectives:

1. Learn how to include counterfactual in impact evaluation
2. Learn how to select respective methods within experimental, quasi-experimental and non-experimental options
3. Learn how to create control group within RCT (Randomised Control Trial) approach

## ACTIVITY 3.1 PREPARE

### Intended Learning Outcomes:

18. Specify own expectations and learning outcomes on the topic of impact evaluation counterfactuals



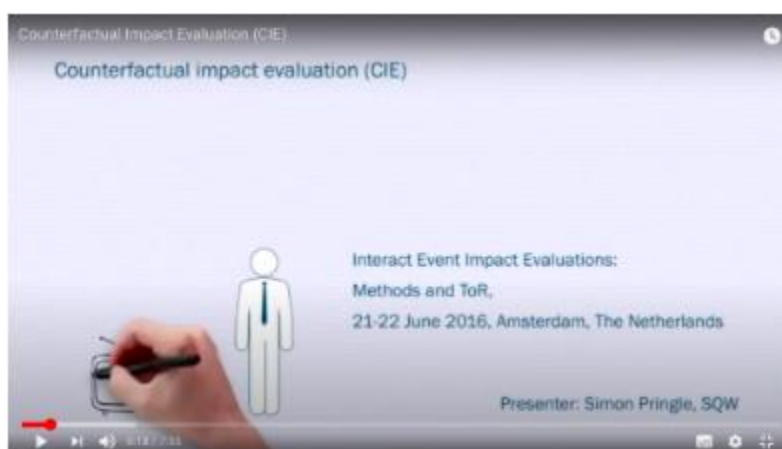
30 minutes – 1 hour



Information from Internet  
(suggested above or similar)

## LECTURER ACTIVITY

- VIDEO



<https://www.youtube.com/watch?v=GqJLErBrk00>

- For Polish speaking participants:



<https://docplayer.pl/7771188-Wykorzystanie-metod-kontrfaktycznych-w-badaniach-ewaluacyjnych.html>

- Introductory Watching Video Exercise *8 minutes!*
- And Introductory Reading for Polish speaking learners *16 slides!*

Arrange the common watching of the video and reading suggested above. Confront the knowledge delivered within the introductory short video watching and/or reading exercises with the participants' expectations towards the current lesson.

### LEARNER ACTIVITY

Follow the exercise chosen by the Trainer having in mind the basic questions to answer: *What are your expectations towards the current lesson?*

### LINKS TO OBJECTIVE

10

## ACTIVITY 3.2 STUDY DEFINITION, RATIONALE AND METHODS OF IMPACT EVALUATION COUNTERFACTUALS

### Intended Learning Outcomes:

19. Explore the theory behind impact evaluation counterfactuals.
20. Comprehend rationale of impact evaluation counterfactuals
21. Select respective methods within experimental, quasi-experimental and non-experimental options
22. Create control group within RCT (Randomised Control Trial) approach



2 hours



Internet resources: videos, presentations, articles (examples below).

### LECTURER ACTIVITY

#### COUNTERFACTUAL? WHAT DOES IT MEAN?

For impact evaluation it would be favourable (although challenging) to **include a counterfactual** so to compare the observed results to those you would expect if the intervention had **NOT** been implemented.

#### *Difficulties*

It can be difficult however to develop an accurate estimation of **what would have happened in the absence of an intervention**, since this absence would have affected the situation in ways that cannot be predicted.

*Example: it might be possible to show that the development of community infrastructure for raising fish for consumption and sale was directly due to a local project, without being able to confidently state that this would not have happened in the absence of the project (perhaps through an alternative project being implemented by another organisation).*

#### HOW TO COMPARE THE FACTUAL WITH THE COUNTERFACTUAL?

##### Experimental options (or research designs):

**Control Group:** comparing an untreated research sample against all other groups or samples in the research.

##### Quasi-experimental options (or research designs):

**Difference in Difference (or Double Difference):** the before-and-after difference for the group receiving the intervention (where they have not been randomly assigned) is compared to the before-after difference for those who did not.

**Instrumental Variables:** a method used to estimate the causal effect of an intervention.

**Judgemental Matching:** a comparison group is created by finding a match for each person or site in the treatment group based on researcher judgements about what variables are important.

**Matched Comparisons:** participants are each matched with a non-participant on variables that are thought to be relevant. It can be difficult to adequately match on all relevant criteria.

**Propensity Scores:** statistically creating comparable groups based on an analysis of the factors that influenced people's propensity to participate in the program.

**Sequential Allocation:** a treatment group and a comparison group are created by sequential allocation (e.g. every 3rd person on the list).

**Statistically Created Counterfactual:** developing a statistical model, such as a regression analysis, to estimate what would have happened in the absence of an intervention.

**Regression Discontinuity:** comparing the outcomes of individuals just below the cut-off point with those just above the cut-off point.

### **Non-experimental options:**

**Key Informant:** asking experts in these types of programmes or in the community to predict what would have happened in the absence of the intervention.

**Logically constructed counterfactual:** using the baseline as an estimate of the counterfactual. Process tracing can support this analysis at each step of the theory of change.

### **Approaches: Randomized Controlled Trial (RCT):**

creating a control group and comparing this to one or more treatment groups to produce an unbiased estimate of the net effect of the intervention.

Presentations *174 slides!*



[https://scholar.harvard.edu/files/malf/files/jhsph-ie-2014\\_v10.pdf](https://scholar.harvard.edu/files/malf/files/jhsph-ie-2014_v10.pdf)

Reading *80 pages!*



[https://ec.europa.eu/regional\\_policy/sources/information/evaluations/pdf/impact/ciewp2\\_final.pdf](https://ec.europa.eu/regional_policy/sources/information/evaluations/pdf/impact/ciewp2_final.pdf)

Organise common or individual studying of the content provided. Assist the learners in case further guidance or explanation is required.

### LEARNERS ACTIVITY

Study individually the content provided or join the common session organised by the Trainer. Make notes for next activities; do not hesitate to ask questions if any, share your thoughts with other learners/ Tutor, focus on practical aspect of the knowledge you are gaining referring to the challenges you are facing in NPI you are involved in on regular basis.

### LINKS TO OBJECTIVE

10-12

## ACTIVITY 3.3 JOINT WORK: REFLECTION UPON VIDEO

Intended Learning Outcomes:

23. Learn whether we can ever know the counterfactual, or not



1 hour



Blackboard & chalk, whiteboard, markers, smart board.  
Paper notes & markers/ ICT equivalent  
(computers/laptops/smartphones)

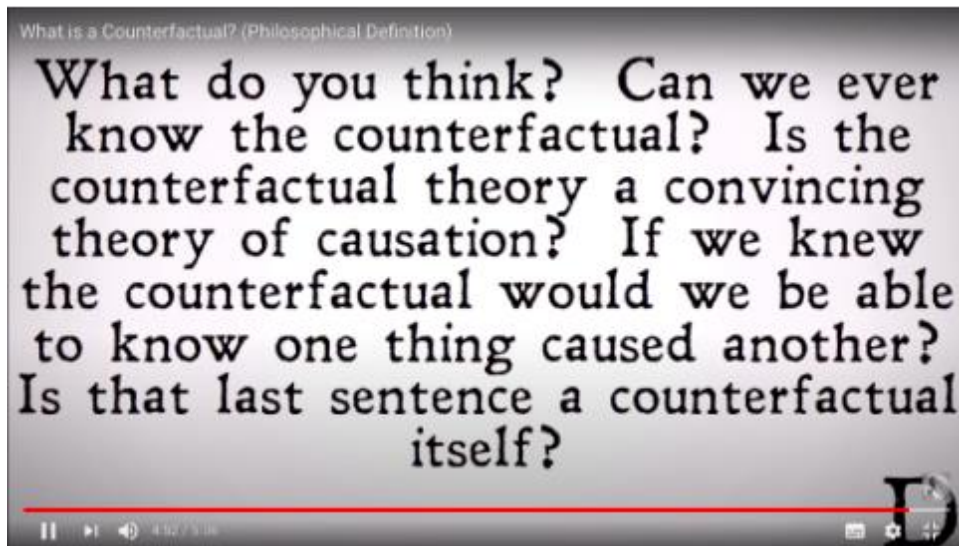
## LECTURER ACTIVITY

## Task 1/ Reflection upon video

Video *5 minutes!*



<https://www.youtube.com/watch?v=5eNhS0oaLHo>

**Assignment:**

Please watch the video above 'What is counterfactual?' and try to answer the philosophical questions from last slide. Try to discuss it within a group and/or with your tutor.

Facilitate the individual or group work so the learners could finally reach the answers to those philosophical questions. Use techniques adjusted to the situation e.g. brain storming, division of the group into smaller teams, one-to-one discussion, etc.

**LEARNERS ACTIVITY**

Follow the Trainer instructions. Reflect upon the video; make notes with proposals for the answers. Share and discuss your thoughts within the group or individually with the Tutor. Come up to final conclusions and find out the required solutions.

**LINKS TO OBJECTIVE**

10

## ACTIVITY 3.4 DESIGN &amp; TRAIN: FROM ABSTRACT THINKING TO REALITY

Intended Learning Outcomes:

24. Design (or refer to) real example and practice identification Counterfactual

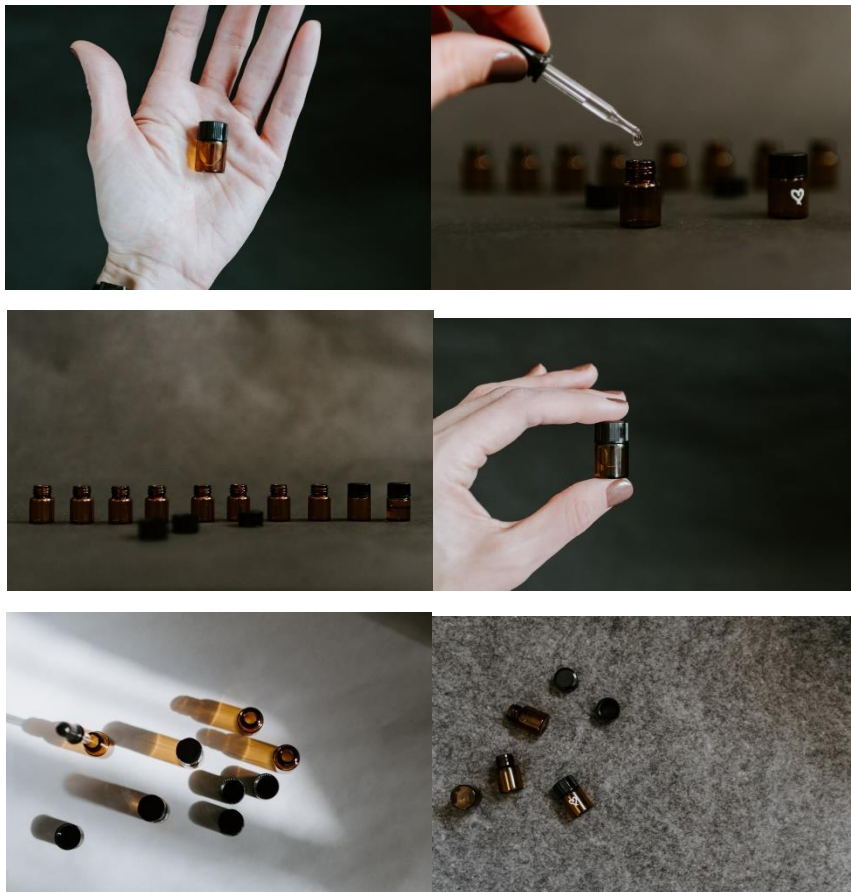


2 hours



Imagination, symbolic pictures  
(examples below)

## LECTURER ACTIVITY





**Task 2/ From abstract thinking to reality**

Please, look at the images above. Imagine they symbolise intervention and lack of intervention. Try to analyse impact in both cases. From abstract reasoning move to examples from real life most preferably from an organisation your work for. Share your reflection within a group and/or with tutor.

This is a design & train activity. Assure that all design & train stages are completed according to the DBE methodology (see: Annex to the Curriculum).

**LEARNERS ACTIVITY**

Follow the Trainer guidelines. Decide individually or within the group which option to choose and then carry out the exercises based on a real context from your experience or examples proposed.

**LINKS TO OBJECTIVE**

10

## ACTIVITY 3.5 TEST

Intended Learning Outcomes:

25. Consolidate knowledge and skills on basics of impact evaluation counterfactuals



30 minutes – 1 hour



Evaluation tests in hard copies or on-line versions.

## LECTURER ACTIVITY

! Important notice: Correct answers cannot be seen by the learners.

**Quiz 1/ Single choice**

Please, choose the correct answer (only one is correct):

1. What does RCT state for?

- A. Randomised Control Trial      B. Randomised Counterfactual Tendency  
C. Results Control Trial          D. Randomised Control Treatment

2. Which method is known as experimental option?

- A. Propensity scores              B. Key Informant  
C. Control Group                  D. Judgmental Matching

3. Which is NOT quasi-experimental option?

- A. Difference in Difference      B. Regression Discontinuity  
C. Sequential Allocation          D. Logically constructed counterfactual

*Correct answers: 1A, 2C, 3D*

### Quiz 2/ Multiple choice

Please, choose the correct answers (more than one answer can be correct)

1. Including a counterfactual in impact evaluation

- A. is very easy
- B. is challenging
- C. can be achieved in many ways
- D. is possible only at university level

2. Difference in Difference method:

- A. is known as Double Difference
- B. is a research design option
- C. is an experimental option
- D. is a quasi-experimental option

3. Key Informant method:

- A. involves experts
- B. is non-experimental option
- C. refers to community
- D. predicts alternatives without intervention

*Correct answers: 1B,C; 2A,B,D; 3A,B,C,D*

Support the testing process. Check the knowledge of learners after completion of the lesson. Quizzes might be conducted individually or within the group. Comparing the results with all participants and discussing them should be a crucial element at the end of the lesson.

### LEARNERS ACTIVITY

Follow the Trainer guidelines. Do not hesitate to ask in case something is not clear. Decide individually or within the group what are the correct answers.

### LINKS TO OBJECTIVE

10-12

# LESSON 04

## Lesson Objectives:

1. Learn how to draw study units in the sample from a population of interests to precisely estimate differences in outcomes between treatment group and the comparison group
2. Learn how to determine the size of a sample using power calculation
3. Learn how to adjust sampling procedures

## ACTIVITY 4.1 PREPARE

### Intended Learning Outcomes:

26. Specify own expectations and learning outcomes on the topic of impact evaluation sampling



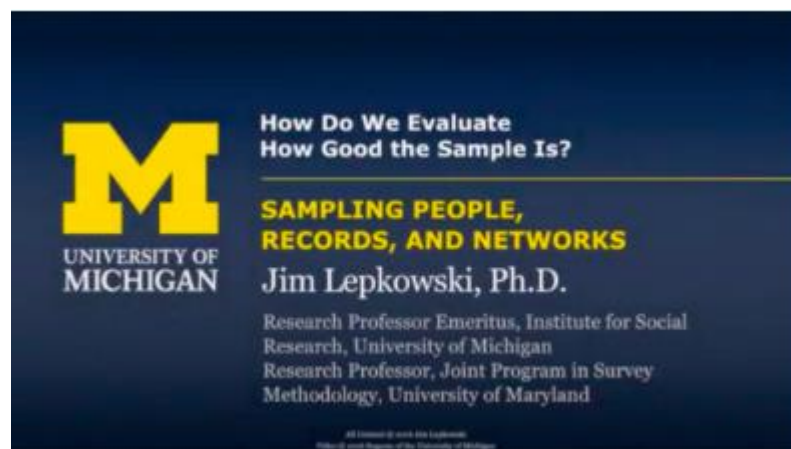
30 minutes – 1 hour



Information from Internet  
(suggested above or similar)

## LECTURER ACTIVITY

### VIDEO



<https://www.coursera.org/lecture/sampling-methods/1-6-how-do-we-evaluate-how-good-a-sample-is-0Azr8>

Introductory Watching Video Exercise *14 minutes!*

Arrange the common watching of the video suggested above. Confront the knowledge delivered within the introductory short video watching exercise with the participants' expectations towards the current lesson.

Arrange the common watching of the video suggested above. Confront the knowledge delivered within the introductory short video watching exercise with the participants' expectations towards the current lesson.

### LEARNER ACTIVITY

Follow the exercise chosen by the Trainer having in mind the basic questions to answer: *What are your expectations towards the current lesson?*

### LINKS TO OBJECTIVE

13

## ACTIVITY 4.2 STUDY DEFINITION, STEPS AND PROCEDURES OF IMPACT EVALUATION SAMPLING

### Intended Learning Outcomes:

- 27. Explore the theory behind impact evaluation sampling
- 28. Comprehend steps and procedures of impact evaluation sampling



2 hours

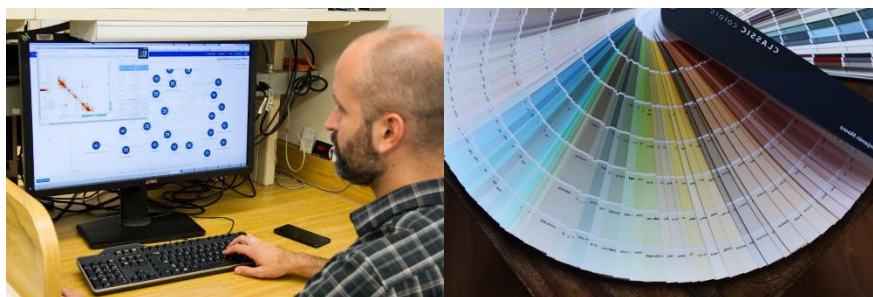


Internet resources: videos, presentations, articles (examples below)

### LECTURER ACTIVITY

#### SAMPLING – DEFINITION

The usual objective in program impact evaluation is to learn about **how a population of interest is affected by the intervention**. Programmes/ projects are typically implemented in geographic areas where populations are large and beyond our resources to observe in their entirety. Therefore, we have to sample. **Sampling** is the process of selecting a set of observations from a population to estimate a chosen parameter— e.g. programme impact for that population.



### STEPS

Steps to follow in planning an impact evaluation sampling

- Choose a method to select the comparison group
- Determine what data you need
- Define the sample required to estimate differences in outcomes between the treatment group and the comparison group
- Establish both the size of the sample and how to draw the units in the sample from a population of interest

### 3 SAMPLING PROCEDURES

The three common sampling procedure in Impact Evaluation are:

**Simple Random Sampling (SRS)**

**Cluster Sampling**

**Stratified Random Sampling**

**SRS** is often used as a basic design to which the sampling variance of statistics using other sample designs are compared.

SRS assign an equal probability of selection to each frame element.

**Cluster sampling** procedure focuses on division of the population into **c** subsets (clusters), each having **b** elements, selection of **a** of the **c** clusters and measurement the total of the attribute of interest in each of the selected cluster. If we select elements randomly from the selected clusters, the design effect of the sample mean will go down and the precession of the sample mean will increase.

Within **Stratified Random Sampling** we divide the population into subgroups, called strata. We take a separate sample in each stratum.

Stratification may be needed if we want to reduce the standard error, by gaining control of the composition of the sample and we want to assure the representation of certain groups.

Presentation *24 slides!*



<http://pubdocs.worldbank.org/en/952101463413520026/Core-21-Eng-Sampling-and-Power-Calculations-Nazmul-Chaudhury.pdf>

Organise common or individual studying of the content provided. Assist the learners in case further guidance or explanation is required.

### LEARNERS ACTIVITY

Study individually the content provided or join the common session organised by the Trainer. Make notes for next activities; do not hesitate to ask questions if any, share your thoughts with other learners/ Tutor, focus on practical aspect of the knowledge you are gaining referring to the challenges you are facing in NPI you are involved in on regular basis.

### LINKS TO OBJECTIVE

13 – 15

## ACTIVITY 4.3 JOINT WORK

Intended Learning Outcomes:

29. Learn Impact Evaluation in Practice



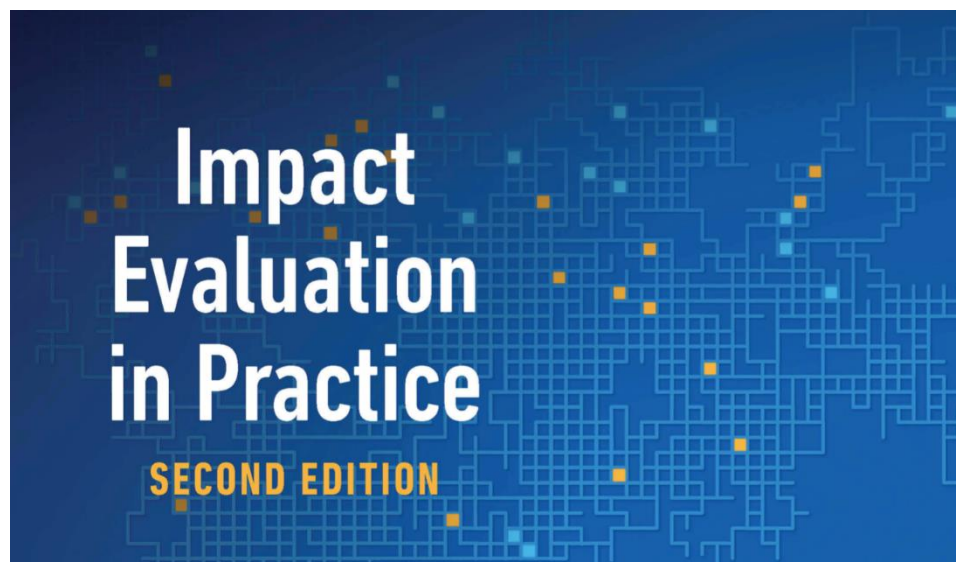
60 minutes



Blackboard & chalk/whiteboard and marker/smart board.  
Paper notes & markers/ ICT equivalent (computers/ laptops/ smartphones)

**LECTURER ACTIVITY**

Parts to read to be chosen by Trainer/ *367 pages!*



[http://www.fapesp.br/avaliacao/manuais/impact\\_evaluation\\_2016.pdf](http://www.fapesp.br/avaliacao/manuais/impact_evaluation_2016.pdf)

**Task 1/ Size of a sample (b)**

Choose a project/ programme/ any kind of intervention undertaken by your organisation. Try to estimate the size of a sample for impact evaluation using intuitive approach described above.

**Task 2/ Size of a sample (a)**

Choose a project/ programme/ any kind of intervention undertaken by your organisation. Try to estimate the size of a sample for impact evaluation using formulas presented above and within additional sources. In case you are not capable



to do it, please try to identify a person within your team or from outside who could deliver this service. Please prepare a shortlist of expectations towards the external expert.

Facilitate the individual or group work so the learners could finally reach the answers basing on the parts of lecture chosen by You. Use techniques adjusted to the situation e.g. brain storming, division of the group into smaller teams, one-to-one discussion, etc.

### LEARNERS ACTIVITY

Follow the Trainer instructions. Reflect upon the part of the text; make notes with proposals for the answers. Share and discuss your thoughts within the group or individually with the Tutor. Come up to final conclusions and find out the required solutions.

### LINKS TO OBJECTIVES

13 – 15

## ACTIVITY 4.4 DESIGN &amp; TRAIN: HOW TO DEFINE THE SIZE OF SAMPLE

Intended Learning Outcomes:

30. Design (or refer to) real example and practice defining the size of a sample



2 hours



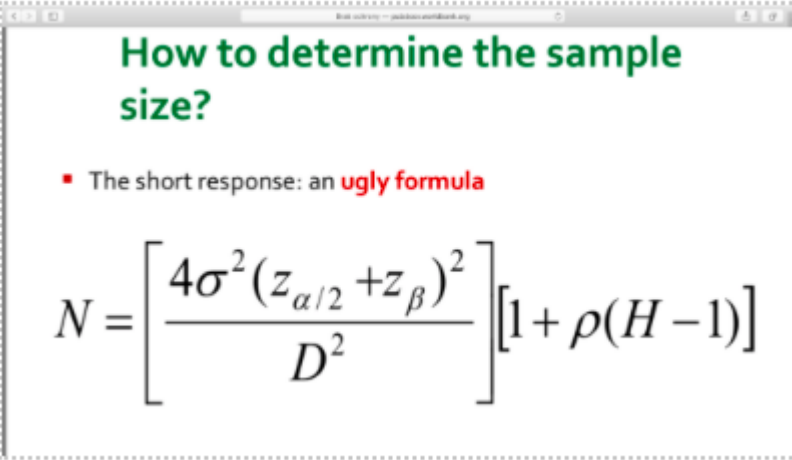
Imagination, symbolic pictures (examples below)

### LECTURER ACTIVITY

#### SIZE OF A SAMPLE

**Power calculations** tell us how large samples need to be.

There are two possible approaches: a) math-based and b) intuition-based.

a) 

You can learn from additional sources recommended within this chapter how to calculate it precisely or you can hire an expert on statistics but at least after finishing the course you should be aware what to expect from your adviser.

b) You can follow intuitive approach (*Intuition behind power calculations*)

We do not know in advance the effect of our policy.

How can we be sure we will be able to measure it?

Analysis of questions below might help to determine the size of a sample.

### Core Ingredients

1. What is the minimum impact that would justify the investment in the intervention?
2. How variable is the outcome you are interested in?
3. Does your program create clusters?

### Other factors

1. Multiple evaluation questions/ treatment groups
2. Comparison of impacts between sub-groups
3. Take-up
4. Data quality
5. Statistical parameters (level of confidence, power,...)
6. Choice of impact evaluation method

The slide is titled 'Power Calculations Summary' and is divided into two columns: 'Elements:' and 'Implication for Sample Size:'. The 'Elements:' column lists several factors that influence the required sample size, while the 'Implication' column states that these factors lead to a larger sample size. A large curly bracket on the right side of the 'Elements:' column points to the 'Implication' column.

Elements:	Implication for Sample Size:
The <b>smaller effects</b> that we want to detect	The <b>larger</b> will have to be the sample size
The higher the underlying <b>variance</b>	
The higher level of implementation ( <b>clustering</b> ), and correlation of outcomes within cluster	
The more (statistical) <b>confidence/precision</b>	
The more <b>complicated design</b>	
- Multiple treatment	
- Interest in comparison between sub-groups	
The lower <b>take up</b>	
The lower <b>data quality</b>	
<b>Non-Experimental Impact Evaluation Methods require larger samples!</b>	

Presentation **47 slides!**



<https://www.slideshare.net/MarcosVera1/sample-size-calculations-for-impact-evaluations>

This is a design & train activity. Assure that all design & train stages are completed according to the DBE methodology (see: Annex to the Curriculum).

## LEARNERS ACTIVITY

Follow the Trainer guidelines. Decide individually or within the group which option to choose and then carry out the exercises based on a real context from your experience or examples proposed.

## LINKS TO OBJECTIVES

13 – 15

## ACTIVITY 4.5 TEST

Intended Learning Outcomes:

31. Consolidate knowledge and skills on basics of impact evaluation sampling



30 minutes - 1 hour



Evaluation tests in hard copies or on-line versions.

## LECTURER ACTIVITY

! Important notice: Correct answers cannot be seen by the learners.

**Quiz 1/ True or False**

- |  |     |
|--|-----|
| 1. Stratification helps reducing standard errors.  | T/F |
| 2. Stratum means a subgroup  | T/F |
| 3. Cluster means a subgroup  | T/F |
| 4. SRS states for Simple Random Sampling   | T/F |
| 5. Power calculations facilitate decision on the size of a sample  | T/F |
| 6. Sampling describes the process to draw a sample of units from a population to estimate the characteristics of that population | T/F |
| 7. Impact evaluation requires estimating the difference in outcomes between two groups (treatment and comparison)                | T/F |

**Quiz 2/ Matching**

Please match the term (A,B,C) with its characteristic (1,2,3)

1. Sub-groups 2. Sub-set; 3. Size of a sample

A. Power calculations B. Strata C. Cluster

*Correct answer: 1B; 2C; 3A*

Support the testing process. Check the knowledge of learners after completion of the lesson. Quizzes might be conducted individually or within the group. Comparing the results with all participants and discussing them should be a crucial element at the end of the lesson.

### LEARNERS ACTIVITY

Follow the Trainer guidelines. Do not hesitate to ask in case something is not clear. Decide individually or within the group what are the correct answers.

### LINKS TO OBJECTIVES

13 – 15