



Impact Data and Evidence Aggregation Library

# Session: Outcomes Concept Review

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# Agenda

1. Outcome and overview of fields
  - 1a. Unit of analysis
  - 1b. Unit of analysis inclusion criteria
  - 1c. Variable types
  - 1d. Standardization



# 1. Outcome

- **Outcome:** variable for which treatment effects are estimated in the main text of the paper
  - Authors may discuss the set of outcomes they are interested in the paper, but **we want to know** what the outcome variable that **entered estimation of the treatment effects** in the exhibits of the paper.
  - “Household monthly income” and “Log of monthly household income” should be counted as two different outcome variables in IDEAL, although the both measure the construct of the income that a household receives per month.



# Outcome description

- **Outcome description/definition should**
  - Describe the construct that the outcome variable measures.
  - Be illustrative to suggest that a higher value of the outcome variable means an increase in the construct being measured, e.g. "better school behavior" instead of "school behavior"
- **Objective**
  - Be understandable for someone who has not read the paper and does not necessarily know what the intervention is.



# 1a. Unit of analysis

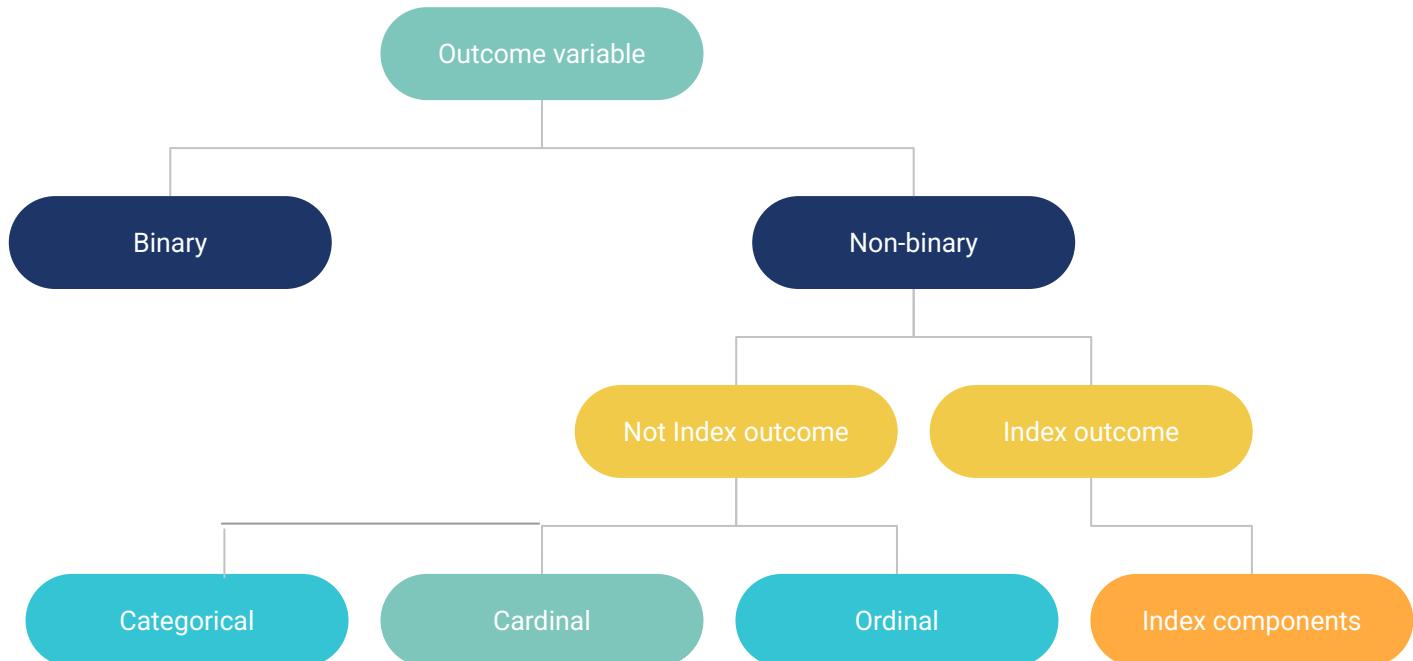
- An outcome is the variable for which there is a treatment effect estimated.
  - **Unit of analysis:** the unit of analysis when estimating the treatment effect
    - This is at the outcome level
  - What we want to know: **for what unit** is the treatment effect being estimated?



## 1b. Unit of analysis inclusion criteria

- **Definition:** Inclusion criteria for the specified unit of analysis when estimating the treatment effect
  - The actual unit of observation might be different from unit of analysis and only a subsample in the unit of analysis was included in data collection, for example, children under age 5, employed members in the household.
  - This field captures the inclusion criteria within the unit of analysis.
  - This will often require reading the text sections on outcomes or samples, as space constraints may limit this information in the exhibits themselves
- **Why do we need this?**

# 1c. Outcome variable Type



# 1c. Variable Type

## Binary

Two possible values

Can be categorical or dummy/indicator

## Index

Multiple independently measured variables that assess different dimensions or units

## Cardinal

Levels and differences between two values are meaningful (e.g., weight, height, ratios)

## Ordinal

Scale, rank or position, but difference in values do not have numerical interpretation (e.g., Likert scale)

## Categorical

Values indicate categories, not positions, and cannot be ordered

**\*These will be flagged**



# Why do we want to know?

- When asking for variable type, we want to know not how the outcome variable was measured in the data collection phase but how the **outcome variable enters the estimation**
  - Variables may be collected as non-binary but estimated as binary
- Knowing what the variable that is estimated means and how it can be interpreted is key in facilitating use of the IDEAL library for meta-analyses
  - Different types of outcomes require different ways of standardization



# 1d. Outcome variable standardization

- An outcome is standardized if it is converted from the original raw scale to a specific standard scale or z-score using mean and SD
  - **Internally standardized:** using mean and SD of any group in study sample
  - **Externally standardized:** using distribution of sample outside of study (e.g., Bayley Scales)
  - Provide information on procedure, statistics and sample
    - Often for only internal standardization



## 1e. Outcome variable unit of measurement

- Unit of measurement affects standardization and interpretation
- Capture the unit of measurement of the outcome variables in the estimation of treatment effects.
  - Only for non-binary cardinal outcome variables



# 1e. Outcome variable unit of measurement

Categories	Details
Currency	Specify country-currency, year, nominal/real
Time	Select exact unit, e.g. year, month, week, etc
Height	Select exact unit, e.g. cm, meter, inch, etc
Weight	Select exact unit, e.g. gram, kg, pound etc
Percent (0-100)	
(Non-binary) fraction (0-1)	
Odds ratio	
Count (quantity)	Number of [specify]
Standard deviation	
Unitless or other, specify	e.g. log of [], sine of [], inverse hyperbolic function of []])

Thank you  
for listening

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