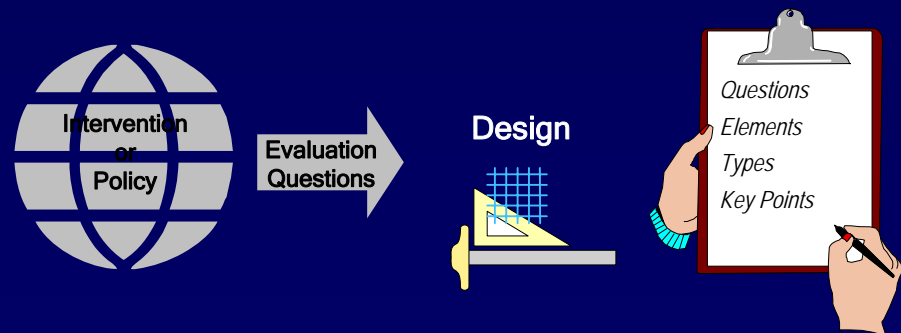
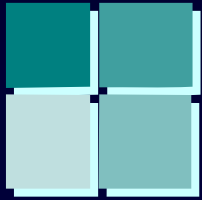


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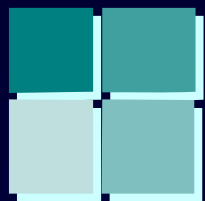
# Module 6: Descriptive, Normative, and Impact Evaluation Designs





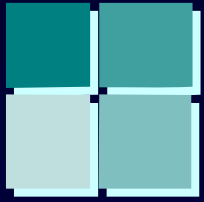
# Introduction

- What Is Evaluation Design?
- Connecting Questions to Design
- Design Elements
- Types of Designs for Impact Evaluation
- Key Points about Design

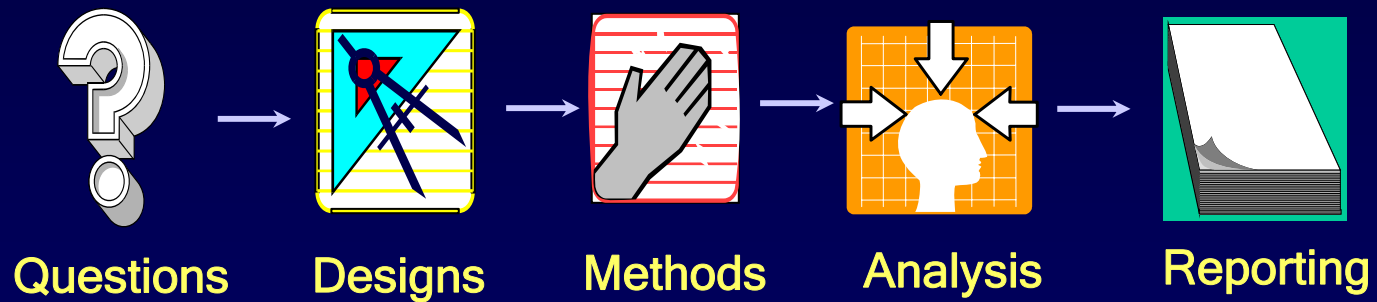


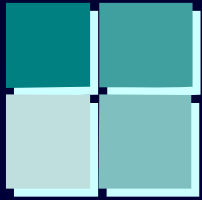
# Evaluation Design

- The total process of specifying a plan for:
  - collecting data
  - analyzing data
  - reporting results
  - getting the results used

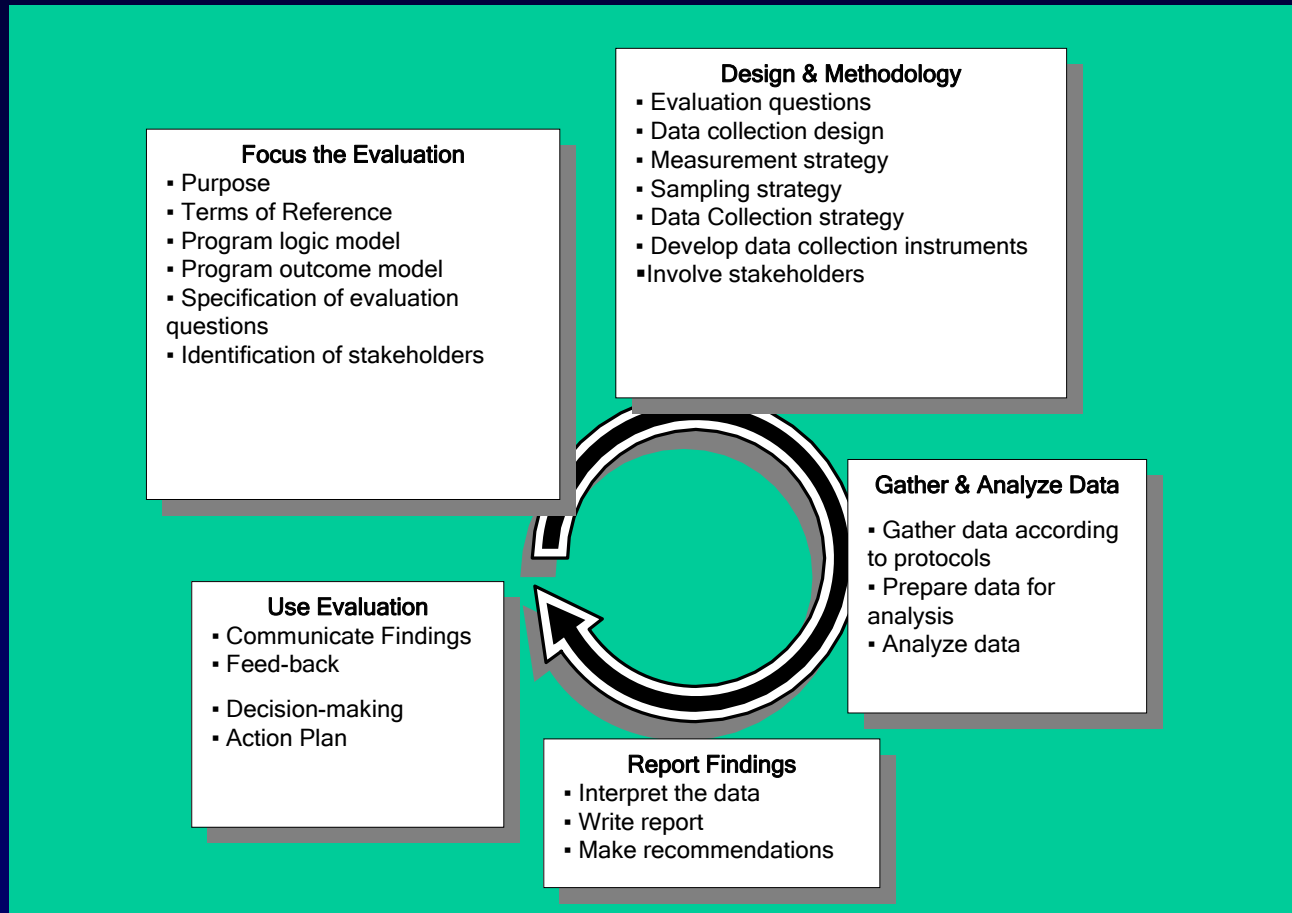


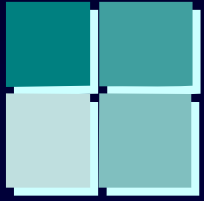
# Design Process





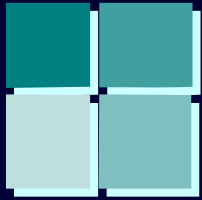
# Approach to Development Evaluation





# Design Matrix

- Another organizing tool to help plan an evaluation
- Organizes questions and the plans for collecting information to answer questions

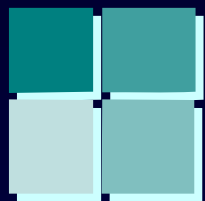


# Matrix Elements

- Design Matrix Planning Instrument for:
- Major Issues Being Addressed
- Major Assumptions Being Made
- Questions
- Sub-questions
- Type of Question
- Design
- Measures or Indicators
- Criteria for Normative Questions

**Design Matrix Planning Instrument for:**

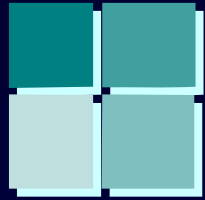
<b>Questions</b>	<b>Sub-Questions</b>	<b>Type of Question</b>	<b>Design</b>	<b>Measures or Indicators</b>	<b>Criteria for Normative Questions</b>



# Matrix Elements (page 2)

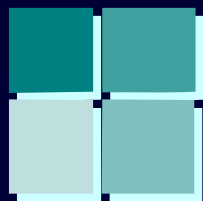
- Data Sources
- Sample
- Data Collection Instrument
- Data Analysis
- Comments

<b>Data Sources</b>	<b>Sample</b>	<b>Data Collection Instrument</b>	<b>Data Analysis</b>	<b>Comments</b>



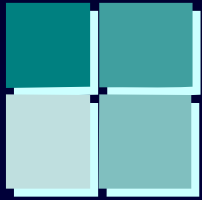
# Answering Descriptive Questions

- Descriptive questions generally use non-experimental designs
- Common designs for descriptive questions:
  - one-shot
  - cross-sectional
  - before-and-after
  - time series
  - longitudinal
  - case studies



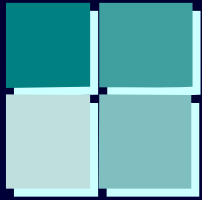
# One-shot Designs

- A look at a group receiving an intervention at one point in time, following the intervention
- Use to answer questions such as:
  - How many women were trained?
  - How many participants received job counseling as well as vocational training?
  - How did you like the training?
  - How did you find out about the training?



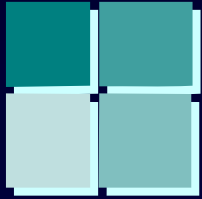
# One-shot

- Represented as:
  - $X \quad O_1$
- There is one group receiving the treatment “X” and one observation “O”
- There is no before treatment/  
intervention measure



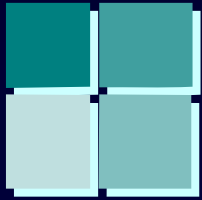
# Cross-sectional Designs

- Also show a snapshot at one point in time
- Also interested in sub-group responses
- Often used with survey method
- Subgroups may be:
  - age
  - gender
  - income
  - education
  - ethnicity
  - amount of intervention received



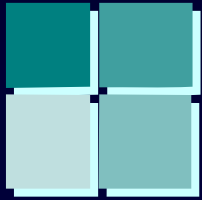
# Cross-sectional

- Evaluation question may focus on
  - participant satisfaction of services
  - why they did not use services
  - find out current status of people from an intervention a few years ago
- Evaluation questions might be:
  - Do participants with different levels of education have different views on the value of training?
  - Did women receive different training services than their male counterparts?



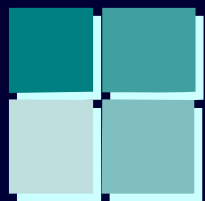
# Cross-sectional

- Represented as:
  - X     $O_1$   
          $O_2$   
          $O_3$
- The observation is made after the intervention “X” and responses of subgroups (“ $O_1$ ,  $O_2$ ,  $O_3$ ” and so on) receiving the interventions are examined



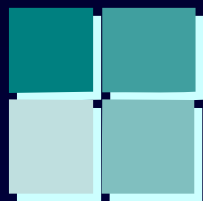
# Before-and-after Designs

- Also called pre- and post-designs
- Ask about group characteristics
- There is no comparison group
- Evaluation questions:
  - Did program participants increase their knowledge of parenting techniques?
  - What was the change in wages earned, two years after the training intervention?



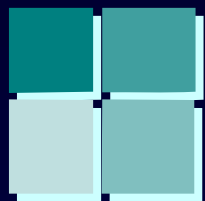
# Before-and-after Designs

- Represented as:
  - $O_1 \times O_2$
- Observation, intervention, observation



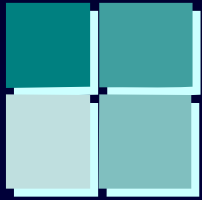
# Time Series Designs

- Look for change over time
- Purpose is to explore and describe changes over time - either after, or before and after the intervention
- Can be used to discern trends
- Often there are existing data that can be used



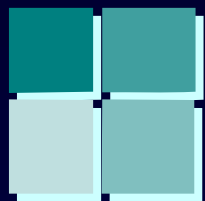
# Time Series

- Evaluation questions:
  - What are the trends in child mortality rates before and after and over time for an intervention?
  - What are the changes in participant attitudes over time towards women entrepreneurs?



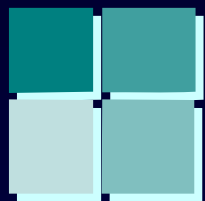
# Time Series

- Represented as:
  - $O_1 O_2 O_3 X O_4 O_5 O_6$
- Several (three shown above) observations are made prior to the intervention and again three more times after the intervention



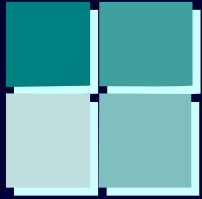
# Longitudinal Study

- A type of time series design
- Repeated measures of the same variable are taken from the study population
- Panel design is one type of longitudinal study where a small group of people is tracked at multiple points over time
  - almost always use qualitative questions (open-ended survey questions, in-depth interviews, and observation)
  - can give a more in-depth perspective



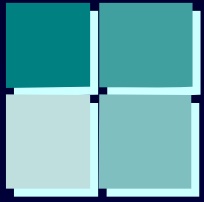
# Longitudinal

- Evaluation question:
  - How did the allocation of social benefits effect families' transition into and out of poverty?
    - a study looking at Poland's family allowance from 1993 to 1996



# Case Study Design

- Descriptive case study
- In-depth information is collected over time to better understand the particular case or cases
- Useful for describing what implementation of the intervention looked like - and why things happened the way they did
- May be used to examine program extremes, or a typical intervention



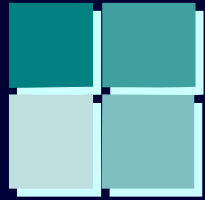
# Case Study

- Represented as:

$O_1$

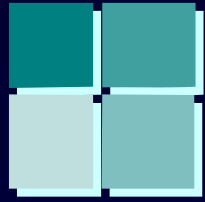
$O_2$

$O_3$



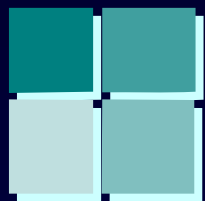
# Answering Normative Questions

- Similar to descriptive questions
- Normative always assessed against a criterion:
  - a specified desired or mandatory goal, target, or standard to be reached
- Generally the same designs work for normative questions as descriptive questions



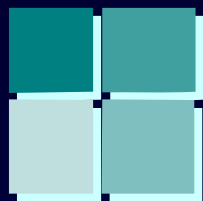
# Answering Cause-Effect Questions

- Pose the greatest challenge
- Need a well thought out design
- Design attempts to rule out feasible explanations other than the intervention
- Internal validity: a design's ability to rule out other explanations



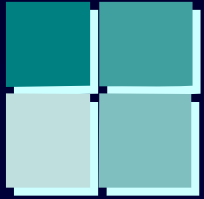
# Common Threats to Internal Validity

- History (events occurring at the same time)
- Maturation of subjects (getting older changes the results)
- Testing (learning how to take the test)
- Instrumentation (changes in data collection instruments or procedures)
- Selection bias (participants may be different to begin with)
- Attrition (a specific group of people may drop out)



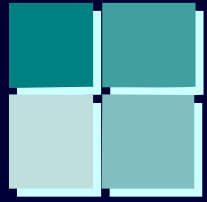
# Impact Designs

- Can use experimental and quasi-experimental designs
- Experimental sometimes called the “medical model”
  - randomly assign participants to a group, group does not know who is in the treatment or placebo group (“blind studies”)



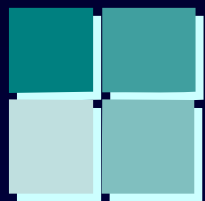
# Controlling

- To reduce the possibility of believing we know something as true which is really not, need to control everything but the intervention, including:
  - the implementation of an intervention
  - who receives it
  - the environment in which it is delivered



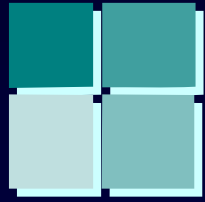
# Impact and Multi-site and Cluster Evaluations

- Each site and the nature of the interventions may vary in different locations
- Complexity may limit options for design



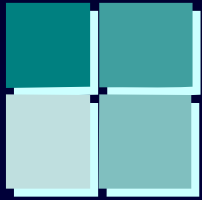
# Design Elements for Impact Questions

- For evaluators doing *traditional* experimental evaluation:
  - before-and-after measures
  - comparison groups
  - random assignment to the comparison groups
- For *newer* approaches (i.e. cluster, multi-site, and rapid assessment)
  - use of control variables
  - use of natural variation
  - causal tracing strategies



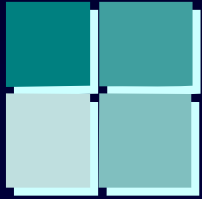
# Before-and-After Measures

- Change is measured by comparing key measures after the intervention began against the measures taken before the intervention began
- Before measure might be called the baseline
- Collecting baseline data might be called a baseline study
- Change alone does not prove causality



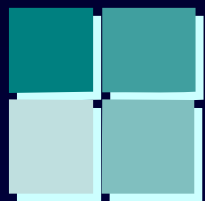
# Comparison Groups

- Treatment group: group that received treatment
- Control group: group that does not receive treatment
- If the intervention causes change those in treatment group show more change than the control group
- Again, alternative explanations *must* be ruled out before drawing conclusions



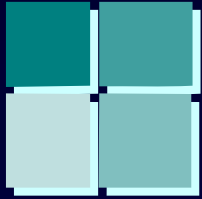
# Random Assignment

- Random: people, or things are placed in groups by chance
- Random assignment makes groups comparable
- Not always an option but it is possible more often than you think
  - when not all participants can receive the intervention at once



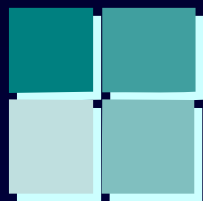
# Use of Control Variables

- Random assignment impossible?
  - Rule out alternative explanations by statistically controlling for them:
    - prior performance or prevalence levels
    - socioeconomic status
    - prior soil quality
    - weather / climate



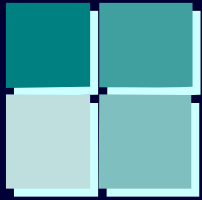
# Use of Natural Variation

- Inconsistent implementation? Turn it into an advantage
- Useful evidence includes:
  - less extensive implementation
    - smaller (or no) impact
  - better quality implementation
    - more positive results and/or fewer negative impacts



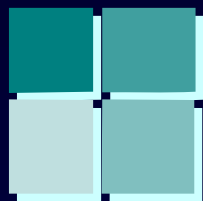
# Causal Tracing Strategies

- Based on the general principles used in traditional experimental and quasi-experimental designs, but:
  - can be used for rapid assessments
  - can be used without high-level statistical expertise
  - can be used on small scale interventions where numbers preclude statistical analysis
  - can be used for evaluations with a qualitative component
  - involves the evaluator doing some detective work



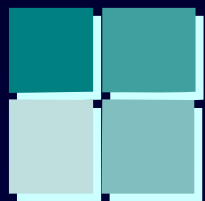
# Causal Tracing Strategies

- Ask yourself:
  - What decisions are likely to be based on the evidence from this evaluation?
  - How certain do I need to be about my conclusions?
  - What information can I feasibly collect?
  - What combination of information will give me the certainty I need?
- Remember: this list is a menu of possible sources of evidence, not a strict checklist of requirements



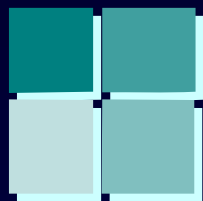
# 9 Causal Tracing Evidence Sources

- Causal list inference
- Modus operandi
- Temporal precedence
- Constant conjunction
- Contiguity of influence
- Strength of association
- Biological gradient
- Coherence
- Analogy



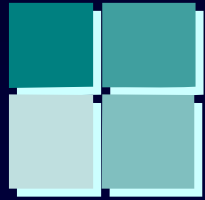
# Types

- Experimental design
- Quasi-experimental design
- Correlational design
- Case study design
- Non-experimental design



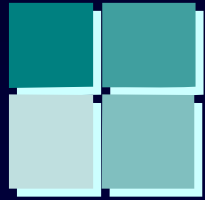
# Experimental Design

- Called the “true experiment”
  - involves random assignment
  - uses comparison groups
  - often includes before-and-after measures
- Considered the optimum approach but can be difficult to implement
- Drawback:
  - often small scale, less generalizable



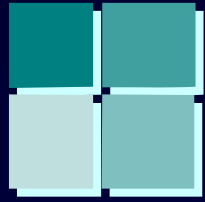
# Randomized Control Trials (RCTs)

- Consider when:
  - you have a discrete, concrete intervention - singular, well-defined
  - implementation can be standardized
  - valid and reliable measures exist for the outcome to be tested
  - random assignment is possible
  - random assignment is ethical



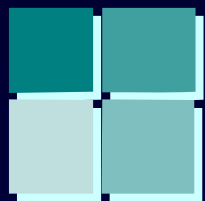
# Randomized Control Trials (RCTs)

- NOT appropriate for:
  - complex, multi-dimensional and highly context-specific community interventions
  - ethical constraints
- NOT needed if:
  - face validity is high
  - observed changes are dramatic
  - link between treatment and outcome is direct



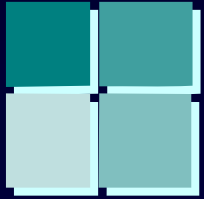
# Quasi-experimental Design

- The design is similar to true experimental design but:
  - no random assignment
  - uses naturally-occurring comparison groups
  - requires more data to rule out alternative explanations



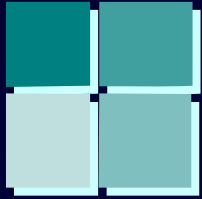
# Examples of Quasi-experimental Design

- Before-and-after: good for descriptive questions
- Matched and non-equivalent comparison design
- Time series and interrupted time series design
- Correlational design using statistical controls
- Longitudinal design
- Panel design



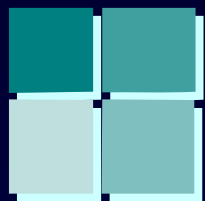
# Correlelational Design

- Often used when seeking to answer questions about relationships and associations
- Often used with already available data



# Case Study Design

- Used when the researcher wants to gain an in-depth understanding of a process, event, or situation
- Good to learn how something works or why something happens
- Are often more practical than a national study
- Can consist of a single case or multiple cases
- Can use qualitative or quantitative methods to collect data



# Key Points about Design

- There is no perfect design
- Each design has strengths and weaknesses
- There are always trade-offs - time, costs, practicality
- Acknowledge trade-offs and potential weaknesses
- Provide some assessment of their likely impact on your results and conclusions

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