

# What is Rigor and Why is it Important?

The term “rigor” is widely used in research and evaluation; however, the term is rarely and inconsistently defined.<sup>1</sup> Moreover, the term “rigor” can be polarizing or misunderstood. Some may see rigor as a “gold standard,” whereas others may view rigor as a construct that limits creativity. Rigor is one of the Colorado Evaluation and Action Lab’s [eight essential elements](#) in making our work actionable and beneficial for directly impacted communities. This brief communicates what we mean by rigor.

## Defining Rigor

We adopt a criteria-based definition of rigor, aligned with existing evidence,<sup>1,2,3</sup> that has three components. To conduct a rigorous research or evaluation study it must be credible. To do that, we must:

- *Employ an appropriate design for our goals and questions.* We align design decisions with the study goals, ensure that any interpretations about cause and effect are well founded, and articulate the populations, settings, and circumstances to which results can be applied.
- *Be systematic and transparent:* We take steps to ensure the accuracy and trustworthiness of the results. We document our decisions and provide enough detail so that others can understand why design or analytic choices were made throughout.
- *Ask challenging questions:* We ask questions for which the answers are not known in advance, push back against our expectations or biases, and look for system/root causes and alternative explanations.



## Rigor: Necessary but Not Sufficient

At the Colorado Lab, our primary goal is to do work that supports learning and sustained action among our partners. As defined, rigor is one part of what helps a study meet that goal. We strive to do work that is simultaneously rigorous, relevant, and resonant.<sup>4</sup>

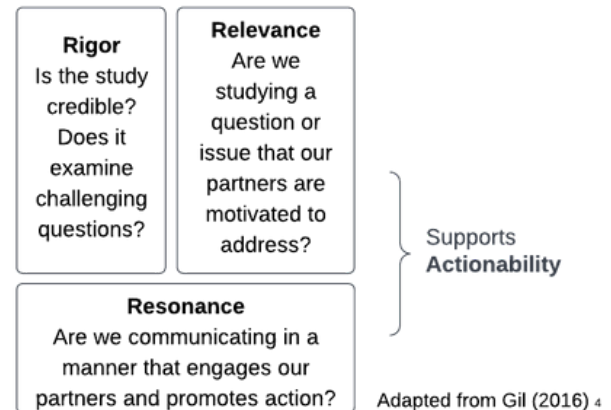
## There is No Such Thing as Objectivity

We do not believe that evaluators are objective.<sup>5</sup> Each individual comes to a study with their own history, values, and experiences. It is paramount that each of us recognize the ways in which our identities and perspectives inform our focus and approach. At each stage of a study, we strive to name our decisions and assumptions, and build in processes that hold us transparent and accountable.

Likewise, we acknowledge that data are not objective or free of bias. People are involved in all aspects of data creation; for example, deciding what data get collected and from whom, how data are analyzed and interpreted, and where and how data are presented or shared.<sup>6</sup>

## Rigor in Both Quantitative and Qualitative Inquiry

Certain kinds of data have come to be viewed as having “most” value and legitimacy, with the notion that some methods are better than others. However, we believe that quantitative and qualitative methods each have unique strengths and limitations, and one, the other, or both in combination should be employed only when appropriate based on the goals and questions at hand. It is both possible—and necessary—to ensure rigor in quantitative, qualitative, and mixed methods work.


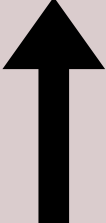


**Colorado Evaluation & Action Lab**  
UNIVERSITY OF DENVER

## Rigor At All Phases of a Research/Evaluation Study

Rigor is important for all phases of a project and across the entire evidence-building process. We apply rigor across early steps to building evidence, for example, by surfacing assumptions through a theory of change and testing implementation fidelity. In later steps to building evidence, designs such as randomized control trials still require thoughtful consideration of how to ensure rigor—in other words, rigor is not guaranteed in experimental and quasi-experimental designs.

The table below gives examples of how we consider rigor across the research/evaluation process.

Study Decision Point	Example Considerations to Enhance Rigor	 Explicate and document assumptions, decisions, and limitations 
Identify study scope and questions	<ul style="list-style-type: none"> <li>Consider the context in which the study is being implemented, including factors that may influence study priorities and the implementation or impact of the intervention (e.g., historical forces, power, norms, culture).</li> <li>Articulate the theory of change by which the intervention is expected to impact change in the desired outcome(s) for the target population.</li> </ul>	
Select a study design	<ul style="list-style-type: none"> <li>Select a design and methods that are best suited to meet study goals and answer the study questions.</li> <li>When changing approach, be transparent about the fact that such a change was made and explain why.</li> </ul>	
Select measures, data sources, and data collection tools	<ul style="list-style-type: none"> <li>Consider whose definition of “successful” outcomes you are using; consider multiple types of outcomes.</li> <li>Select measures that accurately capture the intended information.</li> <li>When using validated instruments, consider the population(s) they were validated for (e.g., language, race/ethnicity, age).</li> </ul>	
Collect or identify existing data	<ul style="list-style-type: none"> <li>Select an appropriate sample and be clear about whose perspective/experience the data do and do not represent.</li> <li>Consider how data were initially collected and how this could impact the credibility or trustworthiness of the data.</li> </ul>	
Analyze and make meaning of data	<ul style="list-style-type: none"> <li>Use a theory-informed framework to plan data analysis.</li> <li>Examine the mechanism(s) by which the intervention is fostering impacts, including the ways in which favorable outcomes are achieved and sustained.</li> <li>Examine variation and outliers, including for whom the intervention is most/least effective.</li> <li>Provide opportunities for stakeholders with different viewpoints to review and make meaning of the data.</li> </ul>	

### References

- Gill, T.G. & Gill, T.R. (2020). What is research rigor? Lessons for a transdiscipline. *Informing Science: The International Journal of an Emerging Transdiscipline*, 23, 47-76. <https://doi.org/10.28945/4528>
- Lynn, J. & Preskill, H. (2015, November 9-14). Rethinking rigor: increasing credibility and use [Conference presentation]. American Evaluation Association Annual Conference, Chicago, IL, United States.
- United States Department of Labor. (n.d.) Evaluation Policy. Retrieved from <https://www.dol.gov/evidence/evaluation-policy>.
- Gill, T.G. (2016). *Informing science, volume 2: Design and research issues* (Public, Vol. 2). Informing Science Press.
- Equitable Evaluation Initiative. (2017). Equitable Evaluation Framework (EEF) framing paper. Retrieved from <http://www.equitableeval.org>
- Hunt, S., Riegelman, A., & Myers-Kelley, S. (n.d.) Conducting research through an anti-racism lens. University of Minnesota Libraries. Retrieved from <https://libguides.umn.edu/antiracism/lens>.
- Krenn, H., & Community Science. (2021, December 8). Doing evaluation in service of racial equity. Retrieved from <https://everychildthrives.com/doing-evaluation-in-service-of-racial-equity/>.