

Introducing the Ceiling Effect/Diminishing Returns, Regulatory Compliance Scale, and the Quality Indicators Scale to Regulatory Science

Richard Fiene PhD

Research Institute for Key Indicators/Prevention Research Center/Penn State University

May 2023

The purpose of this short paper/public policy commentary is to introduce three relatively new, recently validated concepts to regulatory science. The first of the concepts (ceiling effect) is one that I have written about a good deal in previous policy commentaries when addressing the theory of regulatory compliance (Fiene, 2019). The other two (regulatory compliance and quality indicator scales (Fiene, 2022, 2023b; NARA, 2023)) have been validated more recently so they are relatively new, but I think will have a similar impact on the regulatory science field based upon the research interest generated worldwide.

The “Ceiling Effect” is a more user-friendly term for the theory of regulatory compliance diminishing returns. I have found in recent webinars and presentations that the notion of a ceiling effect resonates with other regulatory science researchers more so than the theory of regulatory compliance diminishing returns. Scientists can wrap their heads around the ceiling effect much easier than the theory, so I am going to use this new term rather than the older. However, they do mean the same thing, same result, just different terminology. It is similar to what happened with “inferential inspections” (earlier term) and “differential monitoring” (present terminology) (Fiene, 2023a). Same concept, just different terms.

The “ceiling effect” is the same relationship between regulatory compliance and program quality. As regulatory compliance increases from substantial compliance to full 100% compliance, program quality shows either no improvement or diminished improvement over the same course. This is the essence of the theory of regulatory compliance diminishing returns (Fiene, 2019, 2023a, 2023b; NARA, 2023). No change here.

The second concept I want to introduce is the regulatory compliance scale (Fiene, 2022) which appears from recent studies to be a better metric in measuring regulatory compliance than just counting the number of violations that a program has related to their respective rules, regulations, or standards. So how does the regulatory compliance scale work. It essentially puts violations into buckets of regulatory compliance as follows: full compliance (100%) or no violations; substantial compliance (99-98%) or 1-2 violations; mediocre compliance (97-90%) or 3-9 violations; and lastly low/non-optimal compliance (89% or lower) or 10+ violations. Why buckets, because logically it works, it is the way we think about regulatory compliance. It is a

discrete rather than continuous metric and logically fits into these four categories. This is based upon 50 years of research into regulatory compliance data distributions and when the data are moved from frequency counts of violation data into these buckets/categories, the math works very well in identifying the better performing programs.

The last concept to be introduced deals with quality indicators which have been proposed as part of a differential monitoring paradigm but not utilized and validated in specific jurisdictions. Well, that has changed now with a major study completed in the Province of Saskatchewan which has clearly demonstrated in a valid and reliable fashion how quality indicators can be used effectively and efficiently when compared to other program quality scales and regulatory compliance data (NARA, 2023).

All these above results (Fiene, 2023b; NARA, 2023) were part of this Province of Saskatchewan five-year project, and they are all in the early care and education domain, but I think that the results are pertinent to any industry governed by regulatory science principles. One needs to change the content obviously, but the metrics and methodology would hold up because of their base in solid scientific principles of instrument and research design.

References:

Fiene, R. (2019). A treatise on Regulatory Compliance. *Journal of Regulatory Science, Volume 7*, 2019. <https://doi.org/10.21423/jrs-v07fiene>

Fiene (2022). Regulatory Compliance Scale, *RIKINotes Blog*, January 2022.

Fiene (2023a). *Licensing Measurement & Monitoring Systems*, Research Institute for Key Indicators, Elizabethtown, Pennsylvania.

Fiene (2023b). Ceiling Effect/Diminishing Returns, Regulatory Compliance Scale, and Quality Indicators Scale, *Mendeley Data*, doi: 10.17632/gc423hprcs.1

NARA (2023). *Saskatchewan Differential Monitoring/Quality Indicators Scale Validation Study*, National Association for Regulatory Administration, Fredericksburg, Virginia.