Structural Quality (RC) and Process Quality (PQ) Data Distributions

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This research abstract provides the data distributions for a series of structural (RC) and program quality (PQ) studies which show dramatically different frequencies and centralized statistics. The structural quality data distributions have some very important limitations that will be noted as well as some potential adjustments that can be made to the data sets to make statistical analyses more meaningful. These data distributions are from the USA and Canada.

It is obvious when one observes the PQ as versus the RC data distributions that the RC data distributions are much more skewed, medians and means are significantly different, and kurtosis values are much higher which means that the data contain several outliers. These data distributions are provided for researchers who may be assessing structural quality (RC) data for the first time. There are certain limitations of these data which are not present in more parametric data distributions which are more characteristic of process quality (PQ) data.

To deal with the level of skewness of RC data, weighted risk assessments have been suggested in order to introduce additional variance into the data distributions. Also, dichotomization of data has been used successfully with very skewed data distributions as well. One of the problems with very skewed data distributions is that it is very difficult to distinguish between high performing providers and mediocre performing providers because of the ever present ceiling effect when comparing structural quality to process quality. Skewed data distributions provide no limitations in distinguishing low performing providers from their more successful providers.

In looking at the process quality (PQ) data, these data are generally normally distributed and do not demonstrate any severe skewness in their respective distributions. These data are distributed as should be the case where sufficient variance is present and there is no need for weighting because of the dispersion in the data. It is easy to be able to distinguish high performing providers from mediocre performing providers and from low performing providers.

<u>For purposes of reading the following Table:</u>
Data Set = the study that the data are drawn from.
Sites = the number of sites in the particular study.
mean = the average of the scores.
sd = standard deviation.
p0 = the average score at the 0 percentile.
p25 = the average score at the 25th percentile.
p50 = the average score at the 50th percentile or the median.
p75 = the average score at the 75th percentile.
p100 = the average score at the 100th percentile.

Data Set	Sites	mean	sd	p0	p25	p50	p75	p100	PQ or RC
ECERS total score PQ	209	4.24	0.94	1.86	3.52	4.27	4.98	6.29	PQ
FDCRS total score PQ	163	3.97	0.86	1.71	3.36	4.03	4.62	5.54	PQ
ECERS and FDCRS totals PQ	372	4.12	0.91	1.71	3.43	4.12	4.79	6.29	PQ
ECERS prek PQ	48	4.15	0.74	2.56	3.6	4.15	4.65	5.56	PQ
ECERS preschool PQ	102	3.42	0.86	1.86	2.82	3.26	4.02	5.97	PQ
ITERS PQ	91	2.72	1.14	1.27	1.87	2.34	3.19	5.97	PQ
FDCRS PQ	146	2.49	0.8	1.21	1.87	2.42	2.93	4.58	PQ
CCC RC	104	5.51	5.26	0	2	4	8	25	RC
FCC RC	147	5.85	5.71	0	2	4	8.5	33	RC
CCC RC	482	7.44	6.78	0	2	6	11	38	RC
FDC RC	500	3.52	4.05	0	0	2	5	34	RC
CI Total Violations RC	422	3.33	3.77	0	1	2	5	24	RC
CLASS ES PQ	384	5.89	0.36	4.38	5.69	5.91	6.12	6.91	PQ
CLASS CO PQ	384	5.45	0.49	3.07	5.18	5.48	5.77	6.56	PQ
CLASS IS PQ	384	2.98	0.7	1.12	2.5	2.95	3.37	5.74	PQ
CLASS TOTAL OF THREE SCALES PQ	384	14.33	1.32	8.87	13.52	14.33	15.11	17.99	PQ
ECERS PQ	362	4.52	1.05	1.49	3.95	4.58	5.25	7	PQ
FDCRS PQ	207	4.5	1	1.86	3.83	4.66	5.31	6.71	PQ
CCC RC	585	5.3	5.33	0	2	4	8	51	RC
QRIS RC	585	2.78	1.24	0	2	3	4	4	RC
FDC RC	2486	2.27	3.42	0	0	1	3	34	RC
FDC PQ	2486	1.35	1.26	0	0	1	2	4	PQ
CCC RC	199	7.77	8.62	0	3	6	10	61	RC
CCC RC	199	6.69	10.32	0	1	4	8	98	RC
CCC RC	199	6.77	7.91	0	1.5	4	8.5	57	RC
QRIS RC	199	1.06	1.32	0	0	1	2	4	RC
CCC RC	199	7.08	6.96	0	2.33	5.67	9.84	52	RC
QRIS RC	381	2.55	0.93	0	2	3	3	4	RC
CCC RC	1399	1.13	2.1	0	0	0	1	20	RC
CCC RC	153	5.28	5.97	0	1	3	6	32	RC
FDC RC	82	3.52	4.36	0	0	2	4	21	RC