

## CONSTRUCTING NORMS

### *Raw Scores: Is that good?*

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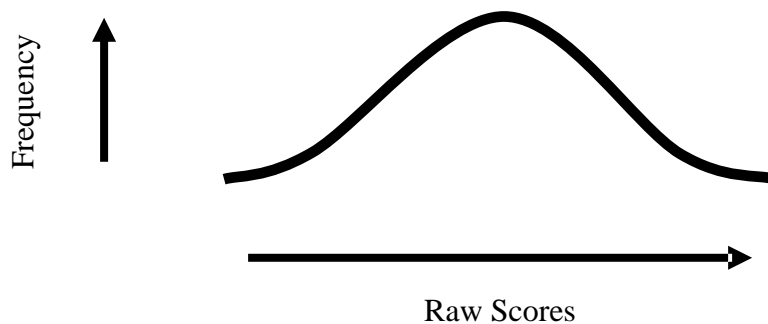
One of the most difficult parts of conducting any type of evaluation is determining how well someone actually performed. For instance, suppose that Jenny, a fourth-grader, knows 18 out of 30 words on a vocabulary test, or that Steve, a high school senior, runs a mile in 7 minutes and 40 seconds. Most people would not find these numbers to be very meaningful. Is Jenny's score an indication that she is falling behind in vocabulary, or is she right where a fourth-grader should be? Is 7 minutes and 40 seconds a poor time for a senior running a mile or should Steve consider running track in college? A logical question to ask about the performance of Jenny or Steve is "Is that good?"

Both of these examples use what is known as a "raw score." A raw score is the unadjusted value that has been measured, whether it is a score on a vocabulary test, a time for the mile run, an infant's weight, or even an organization's sales revenue. By themselves, raw scores may not very useful or informative for anyone other than a knowledgeable specialist. In short, raw scores often cannot answer the question, "Is that good?"

### *Constructing Norms: Making Raw Scores Useful*

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Fortunately, if enough raw scores are available, it is possible to create an easy way to compare across people or organizations to determine whether a particular score is common or uncommon. This occurs because in a large group most raw scores tend to cluster around some common point. A few organizations may have raw scores that are much lower or much higher than this point, but most do not. Eventually, there are enough scores that they create a normal distribution, also known as a "normal curve":



The normal curve is tallest in the middle portion and much shorter in the ends. This is because a higher frequency of organizations have raw scores that are near the middle. Fewer organizations have raw scores that are near the ends. The most commonly obtained raw score is at the exact center of the normal curve. Only a few organizations might obtain raw scores at the extreme ends. In other words, raw scores near the center of the distribution are more typical, or more "normal". Generally speaking, about 70% of organizations obtain scores at or near the center but only about 5% obtain scores in the extreme part of the ends.

Norms are useful because they allow a particular organization's raw score to be discussed in terms of a "percentile." A percentile is determined statistically to indicate the percentage of organizations with raw scores less than that of the organization. Knowing that a company has a raw score of 3.41 on an index of the Denison Organizational Culture Survey (DOCS) is not very informative. However, a score of 3.41 might be better than 83% of all organizations in the Denison Consulting database. In this case, we can say that the score is at the 83<sup>rd</sup> percentile, which is much more useful. We now know that the organization's raw score of 3.41 is actually quite good. Percentiles provide a statistical comparison against a norm.

### *An Example*

Suppose that Company X and Company Y both complete the DOCS prior to a merger. Both companies have several hundred employees complete the surveys and submit them online. Suppose that these surveys are then statistically analyzed. The raw scores for the "Empowerment" index are determined to be 3.09 for Company X and 4.23 for Company Y. These raw scores are then compared to all the other raw scores on the Empowerment index in the DOCS database. A raw score of 3.09 turns out to be only better than 12 percent of the other organizations in the database (12<sup>th</sup> percentile). A raw score of 4.23 turns out to be better than 81% of the other organizations in the database (81<sup>st</sup> percentile). Company X and Company Y receive summary reports showing their Empowerment index percentiles of 12 and 81, respectively. This shows that Company X is very weak on the index and Company Y is strong on the index.