A basic and simple assessment for bias in psychometric tests – the 4/5 rule

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Psychometric tests should have been validated by a test publisher prior to being published. However, the test user should also pay due diligence and ensure that the test cannot be accused of having unjustifiable adverse impact for one group of people over another.

There is a simple guideline known as the four/fifths (4/5) rule.

Here we seek to ascertain the percentage of one group that is selected or passes through to the next round of a selection process based on test scores, compared to another group.

Let's say that we are comparing red people with green people so that we don't unwittingly offend anybody! If we find that more than 4/5 of reds to greens are reaching the mark, we have little to worry about.

On the other hand, if we discover that 4/5 or less of reds to greens are making it, we have cause for concern. In fact, in some parts of the world, we would be required by law to take action.

The next question of course is: If more reds are making the grade than greens, does this translate into work performance? That is, are red people better on the job than greens?

If so, the adverse impact is said to be justifiable because our test is accurately predicting differences in job performance.

If green people do just as well in terms of job performance as red people however, the adverse impact is unjustifiable. In this case, we must take immediate action and work with the test publisher to assess why the test is not accurately predicting job performance for both groups.

To calculate using the 4/5 rule is simple.

We ask: What percentage of group one are passing compared to group two? The groups can be red or green people (unlikely!), people of different cultural backgrounds, males and females and so on.

E.g., let's assume 80 red people and 50 green people make the grade:So, take the lower number and divide it by the higher number: 50/80 = .625 - this is almost 63%. 4/5 is 80% and so our test would be said to be violating the 4/5 rule.

The next step as noted above would be to assess whether or not this difference translates into job performance. Then we can conclude whether our test is producing a justifiable or an unjustifiable adverse impact.

As always, the best advice is to start off with a thorough job analysis and to allow the choice of psychometric test to be informed by the job analysis. Assuming the test has been chosen by a trained and competent professional and it is a reliable and valid assessment of the construct of interest, we are unlikely to encounter violations of the 4/5 rule. Even where violations may occur, if the test has been chosen based on this firm grounding, our process is highly defensible.