80% or 4/5ths Rule Worksheet

Red – Blue Card Exercise

Step 1: Calculate Pass Rates for Each Comparator Group

For each color, divide the number of each group that passed by the total number of cards in that group

A. $\frac{Number\ of\ Successful\ Red\ Cards}{Total\ Number\ of\ Red\ Cards} =$ _____

B. $\frac{Number\ of\ Successful\ Blue\ Cards}{Total\ Number\ of\ Blue\ Cards} =$ _____

Step 2: Calculate Impact Ratio

Divide Rate for Red (A above) by Rate for Blue (B above)

$\frac{Enter\ Percent\ for\ Red\ from\ above}{Enter\ Percent\ for\ Blue\ from\ above} =$ _____ This is the Impact Ratio

The answer compares the success rate of Red Cards to the success rate of Blue Cards. To calculate the percentage, take the answer above and multiply it times 100%.

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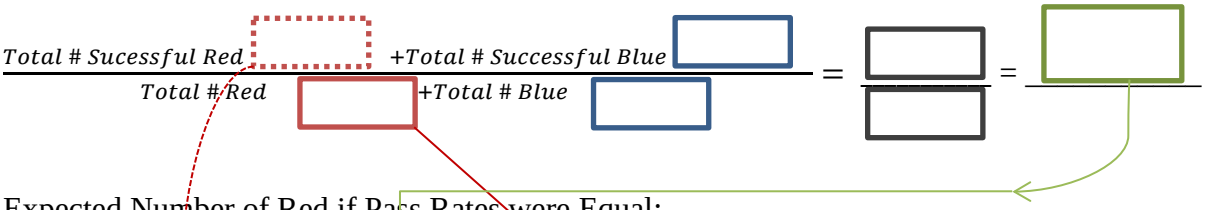
from **Uniform Guidelines on Employee Selection Procedures (1978) 41 CFR 60-3**

Adverse impact and the "four-fifths rule." A selection rate for any race, sex, or ethnic group which is less than four-fifths (4/5) (or eighty percent) of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact, while a greater than four-fifths rate will generally not be regarded by Federal enforcement agencies as evidence of adverse impact. Smaller differences in selection rate may nevertheless constitute adverse impact, where they are significant in both statistical and practical terms or where a user's actions have discouraged applicants disproportionately on grounds of race, sex, or ethnic group. Greater differences in selection rate may not constitute adverse impact where the differences are based on small numbers and are not statistically significant, or where special recruiting or other programs cause the pool of minority or female candidates to be atypical of the normal pool of applicants from that group. Where the user's evidence concerning the impact of a selection procedure indicates adverse impact but is based upon numbers which are too small to be reliable, evidence concerning the impact of the procedure over a longer period of time and/or evidence concerning the impact which the selection procedure had when used in the same manner in similar circumstances elsewhere may be considered in determining adverse impact. Where the user has not maintained data on adverse impact as required by the documentation section of applicable guidelines, the Federal enforcement agencies may draw an inference of adverse impact of the selection process from the failure of the user to maintain such data, if the user has an underutilization of a group in the job category, as compared to the group's representation in the relevant labor market or, in the case of jobs filled from within, the applicable work force.

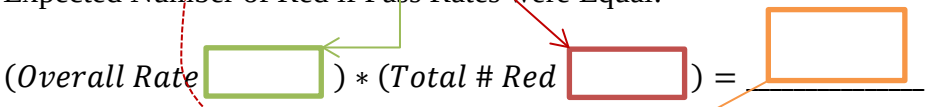
Shortfall Worksheet

The shortfall is the number of Red card that would have successful if the success rate was exactly equal for both the Red and Blue cards. This is particularly important because the 80% rule is size sensitive and even small differences in success rates impacted large number of people.

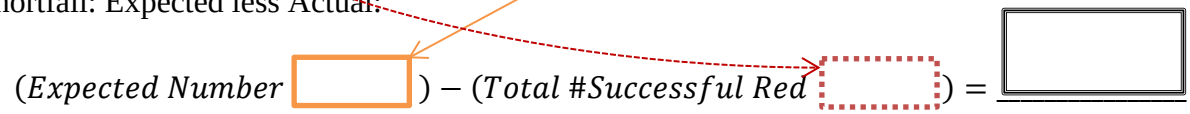
Overall Rate:



Expected Number of Red if Pass Rates were Equal:



Shortfall: Expected less Actual:



Two Standard Deviation Worksheet

Red – Blue Card Exercise

$$\sqrt{p \times (1-p) \times \left\{ \frac{1}{n_F} + \frac{1}{n_{NF}} \right\}}$$

A. $(Total\ Pass\ Rate) = \frac{Total\ Number\ Successful}{Total\ Number\ All\ Cards} =$ _____

B. $1 - (Total\ Pass\ Rate\ above\ \square) =$ _____

C. $\left(\frac{1}{Total\ Blue\ Cards\ \square} = \_\_\_\_ + \frac{1}{Total\ Red\ Cards\ \square} = \_\_\_\_\right) =$ _____

Calculate 1 Standard Error (or SD for the non-math people)

A ____ x B ____ x C ____ = _____

Square Root of ____ = _____ This One Standard Error (or 1 SD)

<u>Calculate the Number of Standard Deviations</u>

From the 80% Worksheet:

Blue Pass Rate ____ *– Red Pass Rate* ____ = _____

Divide this difference by the number of Standard Errors (or SD) above

$\frac{Difference\ in\ Pass\ Rates}{Standard\ Error} =$ _____ This is the Number of Standard Deviations