



Explanation of *p*-values and Standard Deviations

Statistical significance tests are used to identify the "line in the sand," beyond which one can no longer assume that differences in selection rates (or a comparison of incumbency to availability, as the case may be) are caused by chance. This line in the sand is known as "statistical significance." The two most common values associated with statistical significance are a standard deviation of 1.96 and a probability value (*p*-value) of 0.05. These two values (SD = 1.96 and *p* = 0.05) have exactly the same meaning . . . that there is exactly a 5% likelihood that the observed difference in selection rates could have occurred by chance alone. It is important to note that these two values are inversely related. Which means, as the difference in observed selection rates between two groups becomes larger, the standard deviation will increase and the *p*-value will decrease.

In the example below there is a *p*-value of 0.048 and a standard deviation of 1.97 (Fisher Exact), both barely below and above (respectively) their minimum statistical significance thresholds. The *p*-value is the easier of the two to interpret. It indicates that the observed difference in selection rates (i.e., whites = 4.32%, blacks = 0.99%) is only going to happen 4.8% of the time. In other words, if one were to randomly select nine (9) people from a pool of 365 (203 minority; 162 white), the likelihood of selecting only two (2) minorities and seven (7) whites is 4.8%. Anything less than 5.0% (*p* ≤ 0.05) is considered statistically significant.

Remember, this does not necessarily mean that discrimination is occurring. It simply means that something other than chance is impacting the selection decisions. It could be job-related and defensible (e.g., education, previous experience), or not (e.g., discrimination).

Compay XYZ											
Adverse Impact: Hires											
Snapshot Date: 12/31/20xx											
Analysis : Applicants vs. Hires											
Transaction Period: 01/01/20xx - 12/31/20xx											
Job / Job Group: M1 - Management											
Steps	Total (Gender / Race)	Males	Females	Total Min.	White	Afr. Amer.	Hispanic	Asian	Nat. Amer.	NHOPI	Two +
Starting (#)	88 / 88	58	12	3	63	0	2	0	0	0	1
(%)		82.4	17.6	4.5	95.5	0.0	3.0	0.0	0.0	0.0	1.5
Completing (#)	23 / 23	22	1	0	23	0	0	0	0	0	0
(%)		95.7	4.3	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
EIGHTY-PERCENT (80%) TEST											
Completion Rate		39.3	8.3	0.0	36.5	N/A	0.0	N/A	N/A	N/A	0.00
% of Group-with-Highest-Rate		!	21.2	0.0	!	N/A	0.0	N/A	N/A	N/A	0.0
! - Group with the Highest Completion Rate											
STATISTICAL SIGNIFICANCE											
Standard Deviation (Fshr Exct, Mid-P)	1	N/A	2.14	0.82	N/A	N/A	0.97	N/A	N/A	N/A	0.41
Probability (Fisher Exact, Mid-P)		N/A	0.03	0.41	N/A	N/A	0.32	N/A	N/A	N/A	0.67
One Chance in		N/A	31.47	2.43	N/A	N/A	3.04	N/A	N/A	N/A	1.47
ADVERSE IMPACT²		NO	YES	NO	NO	NO	NO	NO	NO	NO	NO