

Week 5

Scenarios

1. The p-value was slightly above conventional threshold, but was described as “rapidly approaching significance” (i.e., $p = .06$).

An independent samples t test was used to determine whether student satisfaction levels in a quantitative reasoning course differed between the traditional classroom and on-line environments. The samples consisted of students in four face-to-face classes at a traditional state university ($n = 65$) and four online classes offered at the same university ($n = 69$). Students reported their level of satisfaction on a five-point scale, with higher values indicating higher levels of satisfaction. Since the study was exploratory in nature, levels of significance were relaxed to the .10 level. The test was significant $t(132) = 1.8, p = .074$, wherein students in the face-to-face class reported lower levels of satisfaction ($M = 3.39, SD = 1.8$) than did those in the online sections ($M = 3.89, SD = 1.4$). We therefore conclude that on average, students in online quantitative reasoning classes have higher levels of satisfaction. The results of this study are significant because they provide educators with evidence of what medium works better in producing quantitatively knowledgeable practitioners.

2. A results report that does not find any effect and also has small sample size (possibly no effect detected due to lack of power).

A one-way analysis of variance was used to test whether a relationship exists between educational attainment and race. The dependent variable of education was measured as number of years of education completed. The race factor had three attributes of European American ($n = 36$), African American ($n = 23$) and Hispanic ($n = 18$). Descriptive statistics indicate that on average, European Americans have higher levels of education ($M = 16.4, SD = 4.6$), with African Americans slightly trailing ($M = 15.5, SD = 6.8$) and Hispanics having on average lower levels of educational attainment ($M = 13.3, SD = 6.1$). The ANOVA was not significant $F(2,74) = 1.789, p = .175$, indicating there are no differences in educational attainment across these three races in the population. The results of this study are significant because they shed light on the current social conversation about inequality.

3. Statistical significance is found in a study, but the effect in reality is very small (i.e., there was a very minor difference in attitude between men and women). Were the results meaningful?

An independent samples t test was conducted to determine whether differences exist between men and women on cultural competency scores. The samples consisted of 663 women and 650 men taken from a convenience sample of public, private, and non-profit organizations. Each participant was administered an instrument that measured his or her current levels of cultural competency. The

cultural competency score ranges from 0 to 10, with higher scores indicating higher levels of cultural competency. The descriptive statistics indicate women have higher levels of cultural competency ($M = 9.2$, $SD = 3.2$) than men ($M = 8.9$, $SD = 2.1$). The results were significant $t(1311) = 2.0$, $p < .05$, indicating that women are more culturally competent than are men. These results tell us that gender-specific interventions targeted toward men may assist in bolstering cultural competency.

4. A study has results that seem fine, but there is no clear association to social change. What is missing?

A correlation test was conducted to determine whether a relationship exists between level of income and job satisfaction. The sample consisted of 432 employees equally represented across public, private, and non-profit sectors. The results of the test demonstrate a strong positive correlation between the two variables, $r = .87$, $p < .01$, showing that as level of income increases, job satisfaction increases as well.