LAB SESSION 6 – HYPOTHESIS TESTING

Analytics Primer

PRINTER MANUFACTURER

Example

- An analyst for a printer manufacturer wants to estimate the mean number of pages printed before the ink runs out for a specific type of printer. The analyst wants a 95% confidence interval with a margin of error of 5 pages. A pilot study was conducted to show the sample standard deviation of printed pages before running out of ink was 15. What size sample does this analyst need to take?

$$n = \frac{(1.96^2 \times 15^2)}{5^2} = 34.57 \sim 35$$

CUSTOMER SERVICE CALLS

Example

- The customer service call center for a company decided that clients should not be put on hold for more than 2 minutes. Recently a manager was concerned about clients being put on hold for too long. The manager calculated from a sample of 81 calls a sample average wait time on hold as 2.4 minutes with a standard deviation of 1.2 minutes. What are the hypotheses for this problem?

$$H_0: \mu \leq 2, H_A: \mu > 2$$

UNIVERSITY GRADES

Example

- A university program would like to claim that only 10% of students taking their courses get a failing grade (F). If too many students fail, the program is worried that the university will want to change the structure of the courses. If too few a students fail, the program is worried that students will see their classes as too easy and not work as hard. The program sampled 251 students who took one of their courses over the past year and 19 of them had failed. What are the hypotheses for this problem?

$$H_0: p = 0.1, H_A: p \neq 0.1$$