Chapter 15 - Confidence Intervals

39. Hoping to lure more shoppers downtown, a city builds a new public parking garage in the central business district. The city plans to pay for the structure through parking fees. During a two-month period (44 weekdays), daily fees collected averaged $1,264 with a standard deviation of $150.

- (a) What assumptions must you make in order to use these statistics for inference?

- (b) Write a 90% confidence interval for the mean daily income this parking garage will generate, rounded appropriately.

- (c) The consultant who advised the city on this project predicted that parking revenues would average $1,300 per day. On the basis of your confidence interval, do you think the consultant was correct? Why or why not?

- (d) Give a 90% confidence interval for the total revenue earned during five weekdays.

41. A sample of 150 calls to a customer help line during one week found that callers were kept waiting on average for 16 minutes with s=8.

- (a) Find the margin of error for this result if we use a 95% confidence interval for the length of time all customers during this period are kept waiting.

- (b) Interpret for management the margin of error.

- (c) If we only need to be 90% confident, does the confidence interval become wider or narrower?

- (d) Find the 90% confidence interval.

47. Direct mail advertisers send solicitations (junk mail) to thousands of potential customers hoping that some will buy the product. The response rate is usually quite low. Suppose a company wants to test the response to a new flyer and sends it to 1,000 randomly selected people. The company gets orders from 123 of the recipients and decides to do a mass mailing to everyone on its mailing list of over 200,000. Create a 95% confidence interval for the percentage of those people who will order something.

51. In a survey of employees, Watson-Wyatt reported that 51% had confidence in the actions of senior management.[17] To be 95% confident that at least half of all employees have confidence in senior management, how many would have to be in the survey sample?

[17] http://www.watsonwyatt.com/news/press.asp?ID=14047.