Tutorial 7

T7 – 1. A sample survey was conducted to assess the attitudes of parents toward university education for their children. The polling firm mailed questionnaires to 4,200 households obtained by equiprobable selecting (EPS) and received 1,188 responses; about 55% of those who responded said they had major concerns about being able to pay for their children's university education.

  (a) Explain briefly whether the figure of 55% can properly be regarded as an accurate estimate of the population proportion of parents with this concern.

  (b) Suggest briefly how the response rate might be improved; give your answer in *point form*.

T7 – 2. In a sample survey of Co-op. employers as of June 1, 1993, 100 employers are obtained by EPS from a data base containing 2,304 such employers. An appropriate contact person at each sampled employer is sent a questionnaire which asks the respondent, as one of the questions, to identify her or his organization; a total of 43 questionnaires are returned. A subsample of size 10 is then obtained by EPS from the 57 non-respondents, who are contacted by telephone in order to complete the questionnaire. One of the questions requires a *Yes* or *No* answer, and one goal of the sample survey is to estimate the population proportion of employers who would answer *Yes*. The data from the two samples are as shown at the right.

	Yes	*No*
First sample	29	14
Second sample	5	5

  (a) Explain briefly why call-back (or follow-up) is useful in this sample survey.

  (b) Give a point estimate of the population proportion of employers who would answer *Yes* to the question under consideration; explain briefly whether this estimate is *un*biased with respect to non-response.

T7 – 3. Referring to Figure 3.4b in the Course Materials on pages 3.19 and 3.20: *The Literary Digest Poll: Making of a Statistical Myth*, list, in point form, the sources of error in relevant categories *other than* sample error.

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