Lab 3

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At a university, 60% of the 7400 students are female. The student newspaper reports results of a survey of a random sample of 50 students about various topics involving alcohol abuse, such as participation in binge drinking. They report that their sample contained 26 females.

1. **Explain how you can set up a variable, y, to represent gender.**

You would set up the variable with 0 & 1 to represent gender. This means that 0 is a male student with 0.4 and 1 is a female student with 0.6.

1. **Identify the population distribution of gender at this university.**

60% of the 7400 are female and 40% are male. This means that a total of 4440 students are female and 2960 are male.

1. **Identify the sample data distribution of gender for this sample.**

The sample data distribution is 52% female and 48% male, since 26 of the sample participants are female and 24 are male.

1. **Computed the expected value and standard deviation for this variable. We are told that the sampling distribution of the sample proportion of females in the sample is approximately a normal distribution. What is its standard error? Interpret your findings.**

SD = √(1 – 0.6)^2 / 50 - 1 = 0.06

The expected value is 0.6 based on the population distribution of gender at the university. The standard deviation is 0.06. The standard error is 0.06, since this is a normal distribution. The sample data distribution had 52% of the respondents as female. This number is close enough to the expected value that we can say the sample is fairly representative of the overall student population.