

Obtaining binomial probabilities in SPSS:

SPSS for Windows includes a function which provides the cumulative distribution function (cdf) for the binomial distribution. The function, CDF.BINOM(q,n,p), returns the probability that a binomial random variable with parameters n and p is less than or equal to q. To use the function, you have to define the values of q,n, and p; either as numeric values or as existing variables in a data set. We can use this function to calculate the probability that a binomial r.v takes on a specific value, say k, by making use of the fact that for any discrete r.v. X, $P(X=k)=P(X \leq k)-P(X \leq k-1)$.

The file *binomial.sps* contains SPSS syntax that illustrates this using data in *binomial1.sav* (x=number of successes, n=binomial sample size parameter, p1,p2,p3 are three different binomial success probabilities). These are the files I used in the demonstration in class on Wednesday September 19. The syntax files contain three *Compute* commands that calculate binomial probabilities for each of the three binomial distributions using the CDF.BINOM function in SPSS. To run the file first open it (by choosing *File, Open, Syntax* from the menu system) and then choose *Run, All*. Three new variables (df1, df2, df3) containing the binomial probabilities associated with the three binomial distributions should be created (see *binomial2.sav* to see what should be the result of executing these commands).

The Compute Command

The *Compute* command in SPSS is used to create (compute) new variables. It may be accessed from the menu system by *Transform, Compute*. For more information about *Compute* consult the SPSS help facility (*help, topics*, type "compute" then click the *display* button; in the newly opened help window click the *See also* button for further topics related to the *compute* command).

Syntax Files

Syntax files in SPSS contain executable commands. Syntax files may be created by either typing commands directly into a syntax file, or may be created for you by choosing the *Paste* button for any associated procedure. See *Help* for more details.

Note: Syntax pasted from dialog boxes may contain EXECUTE commands. When you run multiple commands from a syntax window, multiple EXECUTE commands are unnecessary and may slow down performance because this command reads the entire data file. If the last command in the syntax file is a command that reads the data file (such as a statistical or graphing procedure), no EXECUTE commands are necessary, and they can all be deleted. If you are unsure if the last command reads the data file, you can delete all but the last EXECUTE command in the syntax file.