Instructions for Using ABCalc
James Alan Fox
Northeastern University
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Thank you for using ABCalc, a statistical calculator to accompany several introductory statistics texts published by Allyn & Bacon (thus the AB in the software title, for those who wondered). The program is a self-contained Excel workbook, which requires Microsoft Excel to operate. This document will describe the features of the program, although most aspects of it are fairly straight-forward and intuitive.

ABCalc performs basic statistical calculations covered in most introductory courses. It is not intended to be a replacement for full-featured software like SPSS or SAS. It handles relatively small data sets that are entered manually, typically those with a few variables and no more than 100 cases (the case count can easily be increased by contacting the author).

There are two different versions of ABCalc: ABCalc_XL2003 for use with Microsoft Office 2003 and ABCalc_XL2007 for use with Microsoft Office 2007. The program is launched by double-clicking on the file ABCalc_XL2003 or ABCalc_XL2007. Note that the ABCalc program will not run if you have any excel workbooks already open.

There are slight differences between the two versions of the program in terms of set-up and functionality. Because ABCalc contains macros that need to run for the program to function, Excel must be configured to permit these macros:

For Excel 2003 Version:

1. Before using ABCalc, open the Excel program.
2. Select the *Tools* pull-down menu, and then choose *Options*.
3. Next, click on the *Security* tab, and then click on the *Macro Security* button in the bottom right portion of the window.
4. Select the *Medium* or *High* security level.
5. Close out of Excel, and then launch ABCalc_XL2003.
6. After launching ABCalc, you may be asked, depending on your security setting, to enable macros. You must click "Enable Macros."

For Excel 2007 Version:

1. Before using ABCalc, open the Excel program.
2. On the *Office Button*, select *Excel Options at* the bottom of the pop-up list.
3. Then choose the *Trust Center.*
4. Select the *Trust Center Settings* button on the right side of the window.
5. Next select *Macro settings* from the left-side panel.
6. Choose the option *Disable all macros except digitally signed macros.*
7. Close out of Excel, and then launch ABCalc_XL2007.
8. If a security warning about disabled content appears, click on *Options* and then select *Enable this content*. You can bypass this warning by selecting *Trust all documents from this publisher.*

Toolbar

Once ABCalc is launched, you will see the main splash screen. Click on the button that says, "Click here for Main Menu. The program has a toolbar that consists of a series of selections. In ABCalc_XL2003, the toolbar remains anchored at the top of the screen, while in ABCalc_XL2007, it is accessed by a right-click of the mouse. The toolbar selections are as follows:

Stats Menu: This causes the program to jump to the main procedure menu. It will not clear or delete any calculations currently performed within the program.

Go to top: This moves the cursor immediately to the top of any screen, which is useful if entering many rows of data.

Save data: This saves to disk the data contained in most of the screens. You will be offered a file name by default (such as "desc" for descriptive statistics), but you may choose any name you wish, The program will not warn before overwriting a currently existing data set.

Load data: This will load data that have been previously saved within the program. You may load data from a different procedure so long as it does not have more variables than can fit.

Clear data: This will clear all the data entered on the current procedure.

Copy: This allows you to copy a range of data selected (highlighted) by holding down the left mouse button in the usual way.

Paste: This will paste data last selected and copied.

Print: This will print the current screen.

Print Preview: This will preview the print screen.

Help: This launches a help screen with information regarding the current statistical procedure.

About: This places the user back to the splash screen,

Exit: This exits the program with a prompt to confirm.

Statistical Procedures

The procedure selection screen (see Figure A1) is arranged according to sections of the Levin/Fox/Forde and Fox/Levin/Forde texts. Within the program there are references to chapters within these books as well. To select a procedure, simply click on the appropriate button. These procedures are detailed below:

Central Tendency and Variability: This procedure calculates a variety of descriptive measures and a histogram (bar graph) for a set of data. Enter the scores in the grid labels "X." More details on the calculations are given on the Help screen.

Frequency Distributions: This procedure calculates a variety of descriptive measures and a grouped frequency distribution and histogram (bar graph) for a set of data. Enter the scores in the grid labeled "X." Enter the starting value and ending value for the frequency distribution and select with the buttons the number of class intervals desired. More details on the calculations are given on the Help screen.

Area under the Normal Curve: This screen calculates and displays the area corresponding to an entered X value within a normal curve with entered values of the mean and standard deviation.

Sampling Distributions: This procedure demonstrates the central limit theorem of the sample mean. You select a sample size in the upper-right box (20, 40, 60, 80. or 100). You then see the population distribution (set as a flat or uniform distribution), then one sample distribution of size N drawn randomly from this distribution, then an observed sampling distribution of the means of 200 samples drawn randomly from the population (like the eccentric professor described in the text), and finally the true (theoretical) sampling distribution of an infinite number of sample means.

Confidence Intervals from Raw Data: This screen calculates the 95% and 99% confidence intervals for the population mean based on the sample data entered in the grid on the left. More details on the calculations are given on the Help screen.

Confidence Intervals from Summary Statistics: This screen calculates confidence intervals for means or proportions using sample values entered in the appropriate grid. For the CI(95%, 99%) entry, select with the down arrow a value or type in 95 or 99 directly. More details on the calculations are given on the Help screen.

T-test for Independent Samples: Enter the scores from the two groups in the data grid. Next select alpha values (.05 or .01) and the number of tails (1 or 2) by entering values directly or using the drop down menu. More details on the calculations are given on the Help screen.

T-test for Independent Samples from Summary Statistics: Enter the sample sizes, means and variances for the two groups in the data grid. Next select alpha values (.05 or .01) and the number of tails (1 or 2) by entering values directly or using the drop down menu. More details on the calculations are given on the Help screen.

Z-test of Difference in Proportions: Enter the sample sizes and proportions for the two groups in the data grid. Next select alpha values (.05 or .01) and the number of tails (1 or 2) by entering values directly or using the drop down menu. More details on the calculations are given on the Help screen.

ANOVA from Raw Data: Enter the scores for up to five groups in the data grid. Statistics for each group and for the analysis of variance are displayed along with a graph

showing the mean and dispersion of each group. More details on the calculations are given on the Help screen.

ANOVA from Summary Statistics: Enter sample sizes, mean and variance for up to five groups in the data grid. Results of the analysis of variance are displayed. More details on the calculations are given on the Help screen.

Chi-Square Test: Enter a cross-tabulation of up to five row and five columns in the top data grid. Next select either row, column, or total percents (if desired) in the selection box in the top-left corner of the grid below. Various calculations for the crosstab are displayed at the bottom of the screen. More details on the calculations are given on the Help screen.

Correlation and Regression: This screen performs a simple (two variable) correlation and regression using X (independent variable) and Y (dependent variable) values entered in the data grid. Various calculations are derived and a scatterplot with a regression line is displayed. More details on the calculations are given on the Help screen.
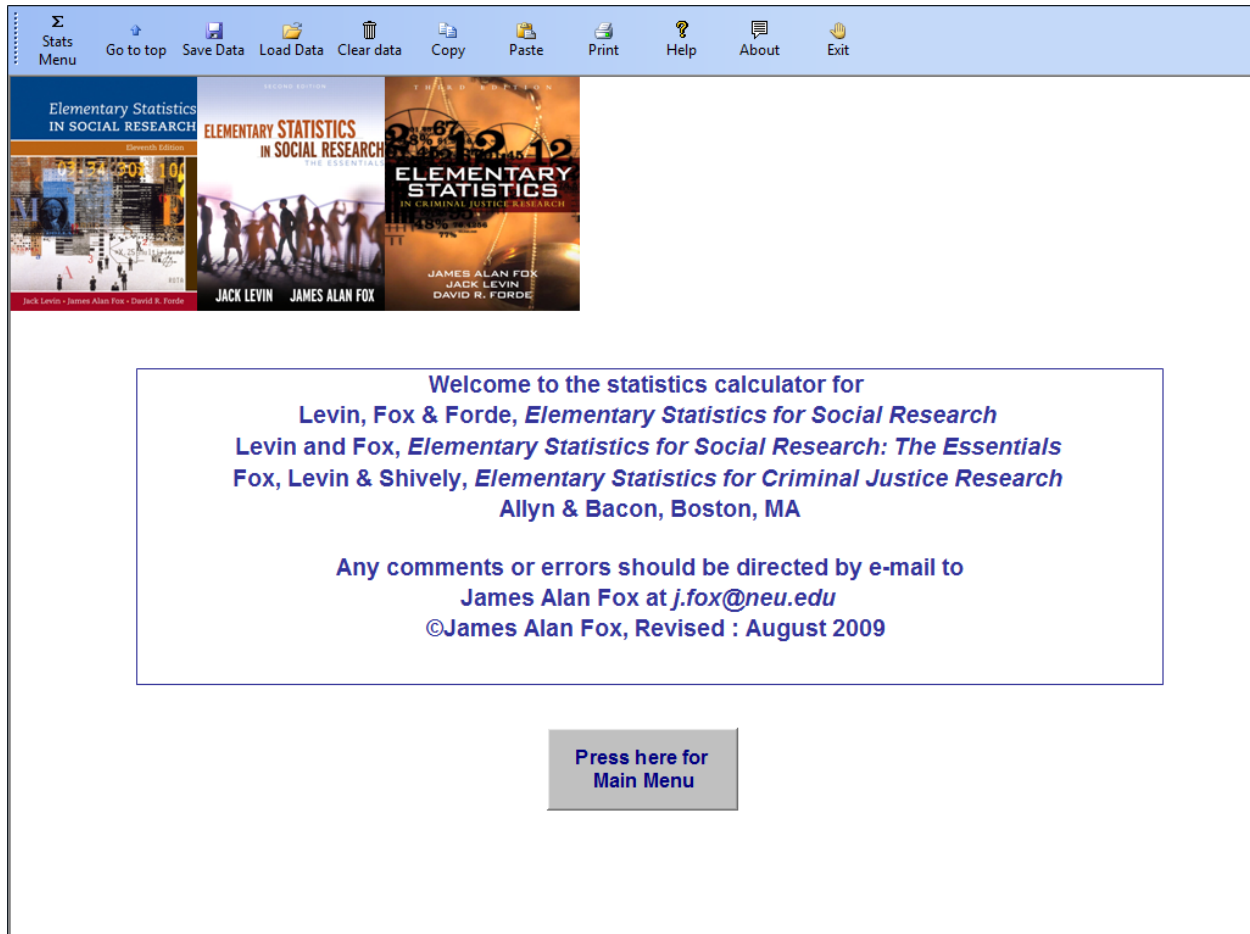
Figure A1: Statistical Procedures Screen in ABCalc