**Statistics for Human Service Evaluation**

Reginald O. York

USING THE SPECIAL EXCEL FILE FOR ANALYZING YOUR DATA

**Introduction**

This file will guide you through the process of using a special Excel file (designed for this book) for the analysis of your data for your evaluative research project. This means your study entails the evaluation of the outcome of a service that has been provided to clients. It also means you have case-level data for your study and you are ready to analyze it.

*The Short Cut*

This guide is designed to carry you through the process of analyzing data using a set of special Excel files. If you believe, however, that you are familiar with necessary concepts and are ready to engage in the use of the Excel file, you can follow these simple steps:

1. Refer to Table C.1 to find the appropriate Excel file for your data.
2. Secure the special Excel file you need.
3. Enter your data into that Excel file and review the results.
4. Report your findings.

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**Finding the Special Excel Files**

You can click below to find the nine Excel files for your use in the analysis of your data.

**Enter web link here**

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*The Longer Road to Further Clarification*

This guide is designed primarily for those who are not prepared to use the short cut. It will provide more information about each step in the process. The starting point is a list of concepts you need to understand before you go forward. If you take the short cut you are assumed to understand these concepts and to understand the instructions in the special Excel files. Even if you are confident, you may find it useful to take the longer road for your first experience in using the special Excel file.

This guide assumes that you are familiar with how to determine the structure of your data with information on your research design, the level of measurement of your dependent variable and the specific situation of your data, such as, for example, you are comparing a set of scores to a single score.

It is also assumed that you understand such concepts as (1) scores, (2) dichotomous variable, (3) threshold score, (4) dependent variable, (5) p value, (6) effect size, (7) sample size, (8) matched scores, and (9) proportion. You are expected to know the two pieces of data required for concluding that your data supported your hypothesis.

You are not expected, however, to interpret the value of the statistic, such as the value of chi square or the value of t. For example, you are not expected to understand whether a t value of 1.34 is statistically significant. Instead, you need to know what is meant by the p value that you will be given in the Excel file you employ. You will be expected, however, to report the value of t and chi square and so forth, because it is a standard expectation in the reporting of statistical results, and provides some of the readers with information they need.

**Guide for Using Excel for Data Analysis**

This guide provides a set of concise instructions for using the special Excel files for the analysis of data in nine situations related to evaluative research. This means you have collected case level data for your evaluative study and you wish to examine it to determine if statistical significance has been achieved.

There are several essential tools you will be referred to in this guide:

1. Table C.1 which guides you to the statistic you need and the special Excel file you can use.
2. Appendix C.1 which explains each of the nine situations given in Table C.1.
3. The Excel files.
4. The power point file that accompanies each of the You Tube lectures that explain how to use each of the nine Excel files.

There are nine Excel concise guides, one for each of the situations in Table C.1. Your first step is to employ Table C.1 to find which of the nine situations you are in with regard to your data that needs to be analyzed. Then refer to the Excel concise guide.

*Using Table C.1 to find your statistic and Excel file*

The three appendices provide concrete guidance on finding a statistic and using the special Excel file to analyze your data. In Appendix C you will see that Table C.1 is a concise table to guide this process. Information on this guide is presented here as well as the appendix to give you an idea of how to pursue this task in a simple fashion. In Table C.1 you have a concise guide for selecting your statistic. There are nine situations listed in the rows. Each row has a set of columns that guide you through the selection and use of the statistic you need along with the appropriate special Excel file. These instructions are repeated in the instruction manual.

The first column of Table C.1, asks for the identification of the research design. For Situation 1, you can see that the research design is the *one-group pretest-posttest design* (which is also the design for situations 2 and 3). The second column asks for the level of measurement of the dependent variable. For situation number 1 you can see that the level of measurement is *interval*. The third column calls upon you to identify the data structure. For Situation 1, you can see that the data structure is described as follows: *You are comparing a set of scores to a single score.* The next column identifies the statistic you can use. For Situation 1, you can see that it is the *one sample t test*.

The column that follows identifies the special Excel file that you can use for your situation. For Situation 1, you can see that the special Excel file you need is entitled *York #1, one-sample t test, comparing interval variable to a single score*. You should secure that file through the instruction manual.

The final column provides the power point presentation and the link to a YouTube lecture that explains how to use the special Excel file. You can access the power point presentation in the instruction manual and click on the link to review the YouTube presentation. You should first review the Excel file to see if the instructions are clear enough. If so, you do not need to review the YouTube lecture and power point presentation.

Click below for a copy of Table C.1 (or get it from the book). Make a copy of this table for your use.

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Insert link to Table C.1 here

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Each of the nine situations in Table C.1 is discussed in Exhibit C.1. You are advised to review the explanation after you have selected the proper situation from Table C.1.

*Using Exhibit C.1 for understanding each of the nine situations*

This section will provide clarification of each of the nine situations presented in Table C.1. The number below corresponds with the number in Table C.1. Thus, the first one refers to situation number 1.

1. You are comparing a set of scores to a single score. The one-sample t test will work for you. One of the situations you may encounter is that you have measured a group of clients once before treatment began and once again at the end of treatment, but you are not able to match each person’s pretest score with his/her posttest score. You can compute the mean pretest score as the single score and enter each of the posttest scores into your analysis along with this single mean score for the pretest. *While this line on the chart refers only to the one group pretest-posttest design, you could also use the one-sample t test if you have posttest-only data and a threshold score for comparison. Suppose you have data showing that your trauma victims typically have a pretest score for PTSD symptoms of 25 on the scale that you have used to measure your trauma victims at posttest time (but you could not measure this group at the pretest time). You could use 25 as the single score for comparison of your posttest scores for PTSD symptoms.*
2. You are comparing a set of matched scores for a single group using the one-group pretest-posttest design. This means you have measured each of your clients on a scale once before treatment began and once again at the end of treatment and you can match each person’s pretest score with his/her posttest score. The paired t test will work for you.
3. You are comparing the proportions of positive measurements for two time periods for a single group of people. This means you have measured the dependent variable as a dichotomy at two points in time. Your dependent variable may be whether your clients were referred to the principal’s office for disciplinary action at any time during the week. This could be measured for each of your clients before you began your service and again at the end of your service. So, each client is given a rating of Yes or No both for the pretest period and again for the posttest period. In this situation, No is the positive outcome. The binomial test will show you whether the difference in the proportion of No recordings is significantly better during the posttest than the pretest.
4. You are comparing the scores of two groups. You can use the independent t test. Typically, this means you have measured the gain of a treatment group and the gain of a comparison group on the same scales and you want to see if the gain for the treatment group is significantly better than the gain for the comparison group that did not get the service. Measuring gain requires two measurements of each person in each group. *You can also use this approach when you have posttest-only data for two groups and you are comparing to see if the posttest scores for the treatment group is superior to the same for the comparison group.*
5. You are comparing the proportions of favorable behavior between two groups of people. The chi square statistic can be used here. This means you have measured your dependent variable as a dichotomy for two groups of people. Let’s suppose you have measured your middle school clients on the basis of whether they turned in a satisfactory homework project at the end of the month of the period of your service and you wish to compare these data to the same for a group of similar middle school students who have no yet had your special service. Thus, you can put your data into a 2 x 2 table (crosstabs) with groups in the columns and behavior in the rows. This means you have four cells in your table: the number of treatment group people who turned in a satisfactory homework project in one cell, the number of treatment group people who failed to turn in a satisfactory homework project in another cell, the number of comparison group people who turned in a satisfactory homework project in a third cell, and the number of comparison group people who did not turn in a satisfactory homework project in a fourth cell. The chi square statistic will tell you whether he proportion of treatment group students with favorable behavior is significantly better than the proportion of comparison group students who had favorable behavior.
6. You are comparing posttest data to a threshold proportion with data measured as a dichotomy for a single group of people. This means you have measured your clients into one of two categories (favorable versus unfavorable or something like that) at the end of treatment and you have a threshold proportion for comparison. The example used in the you tube demonstration shows data on finding a home for homeless people as compared to a threshold of 25% which was hypothetically illustrated as the proportion of homeless people who find a home on their own. You will use the binomial test to see if the proportion of successful clients in your study, given your numbers, is significantly different from the threshold.
7. You are comparing a set of treatment scores to a set of baseline scores for a single client. This means you have measured your target behavior scores several times during the baseline (at least 4 times) and several times during the treatment period. You will use the standard deviation approach, where you compute the mean baseline score, the standard deviation of baseline scores, and the mean treatment score. The treatment mean will be compared to the baseline mean to see if it is at least two standard deviations better.
8. You are comparing a set of favorable treatment behaviors to a set of baseline behaviors with behavior measured as a dichotomy. The binomial test will show you whether the proportion of favorable treatment behaviors is significantly better than the proportion of favorable baseline behaviors. You will compute the fractional equivalent of the percent of favorable baseline behaviors, the number of favorable treatment behaviors and the total number of treatment behaviors and enter these data in to the Excel file. If you have 2 favorable baseline behaviors and 10 total baseline behaviors, your fractional equivalent of the percent of favorable baseline behaviors is 0.20 (20% of the baseline behaviors were favorable).
9. You are comparing a set of treatment scores to a single baseline score for a single client. This means you were able to measure the target behavior for your client only one time before treatment began and you will compare your array of treatment scores to this one baseline score. If you were able to measure the client two times in the baseline, you could compute the mean of these scores as your baseline.

*Using the help of the You Tube presentation*

If you need help with understanding the instructions for your special Excel file, you can click on the proper link in Table C.1 for an explanation. Before you do that, you should click below to access the Power Point presentation that will be used in that You Tube presentation.

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**Finding the Power Point Presentations**

Click below to find the Power Point presentation you need for explaining the use of your Excel file.

**Insert the link to the Power Point Presentations for Table C.1.**

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