

East Carolina University

Department of Psychology



PSYC 7433, Fall, 2019

Potthoff Analysis
Assignment:

Due Wednesday the
16th of October[©]

You wish to evaluate the effect of a new study method. You randomly assign 100 students to the experimental group, the group that is taught the new study method, and another 100 subjects to the control group, who are taught how to knit. All students are subsequently enrolled in Karl's comparative psychobiology class. Each student is instructed to keep a log of how many hours e spends studying for the class. At semester's end each student completes a standardized examination in comparative psychobiology. As part of your analysis of the obtained data you wish to conduct a Potthoff analysis of group differences on the regressions for predicting examination performance from study time.

Below you can link to data I have simulated for you for this exercise. Each subject's data are on one line. The first score is value of **GROUP** (numeric: 0 = Control group, 1 = Experimental group, [use FORMAT to label the values](#) or the SPSS equivalent), next is study **TIME**, next is **EXAM** performance, and next is the interaction term (Time x Group) that I have computed for you. Conduct a complete Potthoff analysis. Here is an outline of the analyses to be performed.

1. Assign value labels. If you are using SAS, this would do the trick: Proc Format; Value gr 1='Experimental' 0='Control';
2. Standardize the continuous variables. If you are using SAS, this will do the trick: Proc Standard Mean = 0 STD = 1 Out = Zs; Var Time Exam; run;
3. Prepare an interaction scatter-plot. If you are using SAS, this will do the trick: proc sgplot; reg x = Time y = Exam / group = Group; format Group gr. ; yaxis label='Exam'; xaxis label='Time'; run;
4. Conduct the test of coincidence. If you are using SAS, this will do the trick: proc reg data=Zs PLOTS=none; model Exam = Group Time Interaction; TEST Group=0, Interaction=0; Title1 "Test of Coincidence %ST"; run; QUIT;
5. If the test of coincidence is not significant, drop the interaction term from the model and conduct an analysis of covariance. If you are using SAS, this would do the trick: Proc GLM data=Zs; Class Group; Model Exam = Time Group / ss3; LSMeans Group; format Group gr. ;

6. If the test of coincidence is significant, report the tests of slopes and the test of intercepts. If you are using SAS, these will be available in the GLM output used to test coincidence.
7. If the test of slopes is significant, probe the interaction by testing the simple effects of time by group. Process Hayes will give you these.
8. Test the unconditional effects. Do the groups differ on exam performance (independent samples t test). Is the zero-order correlation between study time and exam performance significant?

Prepare a Word document (named "Nnnnn_Potthoff" where "Nnnnn" is your last name) in which you present the results of your analysis. Order the results in the order indicated above.

Prepare a second Word document (named "Nnnnn_Output" where "Nnnnn" is your last name) with the statistical output and syntax .

Email to Professor Karl these two documents. Use as the subject line "PSYC 7433: Potthoff Analysis."

Links to the Data Files

Al-Hammori, Deanna	Bond, Dillon	Crespo, Julian	Demott, Bea
Donelan, Jennifer	Eddy, Will	Long, Kelli	Mcadams, Ellie
Mcintyre, Joel	Meier, Brittany	Nguyen, Vanessa	Owens, Brittne
Robinson, Demi	Skinner, Lonnisa	Wynn, Taylor	
***** Texts From My Dog *****			



Use your browser's BACK key to return to the page you previously visited or use one of the following links.

- [Visit Karl's SAS Programs Page](#) -- find an example of how to do Potthoff analysis here.
- [Doing the Analysis with SPSS](#) -- search this document for "SPSS"
- [Example of How to Present the Results of a Potthoff Analysis](#)
- [Visit Karl's Index Page](#) -- search for other information on Karl's pages





[Contact Information for the Webmaster](#)

,
Dr. Karl L. Wuensch

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