

The ANOVA for Dependent Groups — Analysis of 2-Within-Group Data with a Quantitative DV

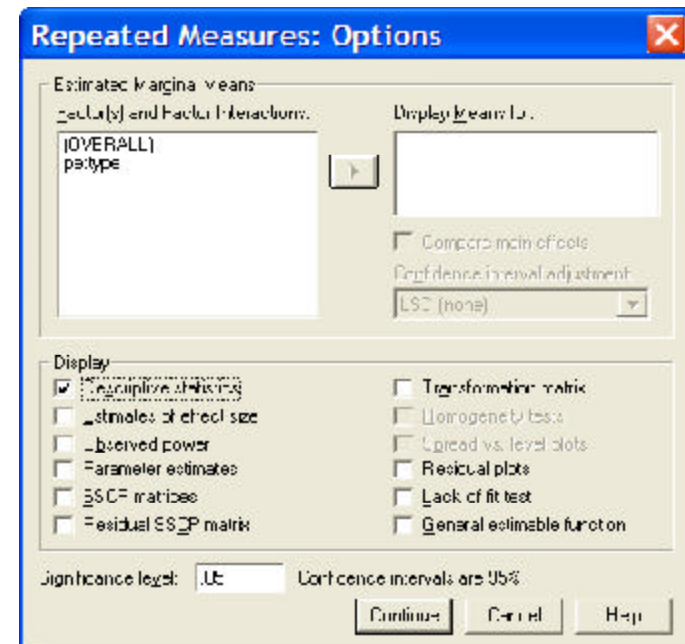
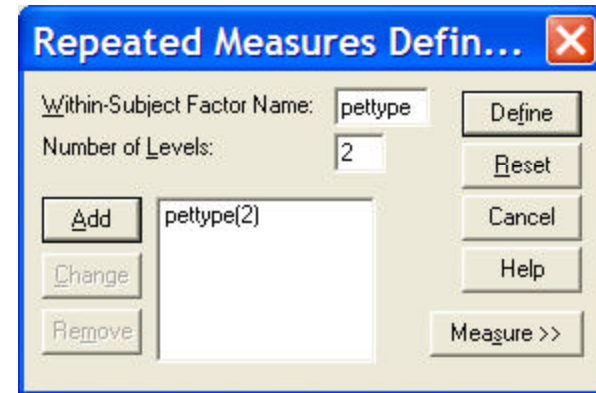
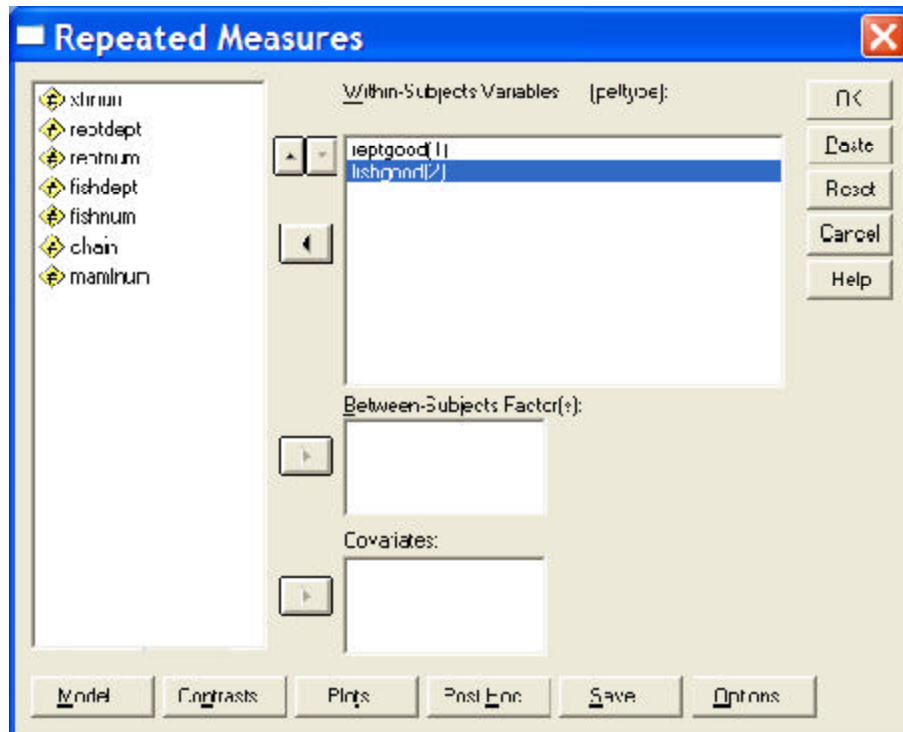
Application: To compare the means of two or more quantitative variables obtained from dependent samples (repeated measures or matched groups). The two or more scores might be the same variable measured at two or more different times or under different conditions, two or more comparable variables measured at the same time, or some combination.

Research Hypothesis: The researcher hypothesized that a store's fish would be of higher quality than its reptiles, because of the greater difficulty obtaining and maintaining healthy reptiles.

H0: for this analysis: The quality ratings of reptiles and fish displayed by pet stores have the same means.

Analyze → General Linear Model → Repeated Measures

- enter your name for the IV in the “Within-subject Factor Name” window (pettype)
- enter the number of conditions of the IV in the “Number of levels” window (2)
- click the “Add” button
- click the “Define” button
- for each IV condition — highlight the variable that is the DV score for that condition and click the arrow
- “Options” — check that you want “Descriptives”



Descriptive Statistics

	Mean	Std. Deviation	N
'rating of reptile quality - 1-10 scale'	5.67	2.50	12
'rating of fish quality - 1-10 scale'	6.67	2.15	12

Reporting the Results

Contrary to the research hypothesis, there was no difference between the mean quality ratings given to fish (mean = 5.67, $S = 2.50$) and those given to reptiles (mean = 6.67, $S = 2.15$) in these stores, $F(1, 11) = .85$, $p = .377$, $Mse = 7.091$.

Another way to report the results is to drop the univariate statistics from the paragraph above and instead provide a table or a figure similar to those shown on the Between Groups ANOVA handout.

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	
QUALITY	Sphericity Assumed	6.000	1	6.000	.846	.377
	Greenhouse-Geisser	6.000	1.000	6.000	.846	.377
	Huynh-Feldt	6.000	1.000	6.000	.846	.377
	Lower-bound	6.000	1.000	6.000	.846	.377
Error(QUALITY)	Sphericity Assumed	78.000	11	7.091		
	Greenhouse-Geisser	78.000	11.000	7.091		
	Huynh-Feldt	78.000	11.000	7.091		
	Lower-bound	78.000	11.000	7.091		

SPSS provides different "versions" of the ANOVA output. We will focus on the "traditional" analysis, which SPSS labels as "Sphericity Assumed"

df(cond), F & p-value to use

df(error) & Mean Square Error term for this analysis