

Guide for Assessing Autocorrelation in SCED using SPSS

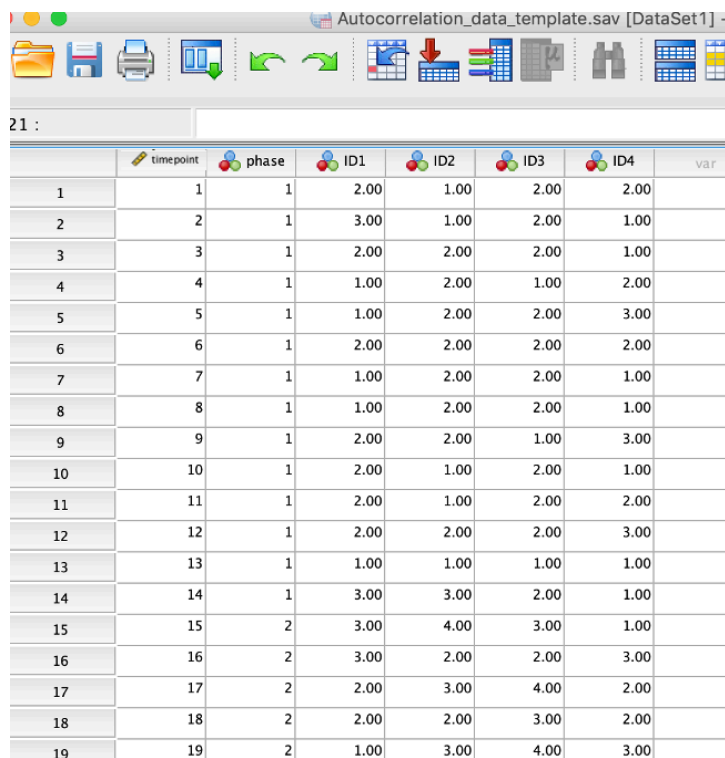
FORMAT THE DATA

Copy and paste the data in the format outlined below – a template SPSS data file has also been provided (*Autocorrelation_data_template.sav*). If you name the variables with the same labels indicated in the instructions, then you will be able to use the syntax code provided to perform the analysis on your own data (*Autocorrelation_syntax.sps*).

Format the data so that each time point is in a new row with every idiographic measure in a separate column - label the idiographic variables '*ID1*', '*ID2*'.... etc.

Include a variable that identifies the phase at each time point called '*phase*'. The variable will need to be numeric i.e. call the baseline phase = 1, the next phase = 2... etc. It doesn't matter how many phases your design has.

It may help to have a variable called 'timepoint' to indicate the number of each timepoint to sense check the phases have been labelled correctly, but this is not a necessity.



	timepoint	phase	ID1	ID2	ID3	ID4	var
1	1	1	2.00	1.00	2.00	2.00	
2	2	1	3.00	1.00	2.00	1.00	
3	3	1	2.00	2.00	2.00	1.00	
4	4	1	1.00	2.00	1.00	2.00	
5	5	1	1.00	2.00	2.00	3.00	
6	6	1	2.00	2.00	2.00	2.00	
7	7	1	1.00	2.00	2.00	1.00	
8	8	1	1.00	2.00	2.00	1.00	
9	9	1	2.00	2.00	1.00	3.00	
10	10	1	2.00	1.00	2.00	1.00	
11	11	1	2.00	1.00	2.00	2.00	
12	12	1	2.00	2.00	2.00	3.00	
13	13	1	1.00	1.00	1.00	1.00	
14	14	1	3.00	3.00	2.00	1.00	
15	15	2	3.00	4.00	3.00	1.00	
16	16	2	3.00	2.00	2.00	3.00	
17	17	2	2.00	3.00	4.00	2.00	
18	18	2	2.00	2.00	3.00	2.00	
19	19	2	1.00	3.00	4.00	3.00	

ANALYSIS

There are two ways to perform the analysis a) using the syntax file provided or b) using the click and point method in the SPSS menus.

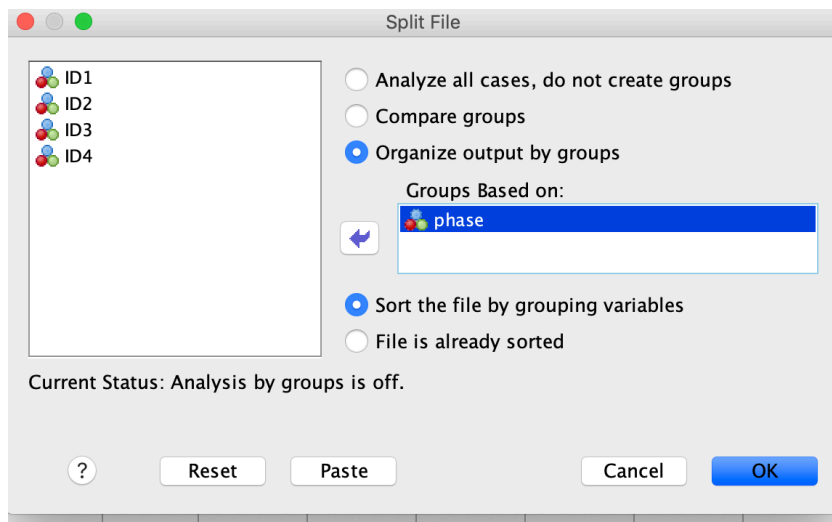
- a) To use the syntax, ensure your data file is open and then open the syntax file called *Autocorrelation_syntax.sps*. Highlight the syntax code in section 2 and click 'Run selection' - the green triangle from the menu above to perform the analysis.

- b) To use the 'click and point' method using the SPSS menu's, follow the instructions below.

Click and point method

1. Split the file so the analysis will be run for each phase separately.
From the menu go to **Data > Split file**.

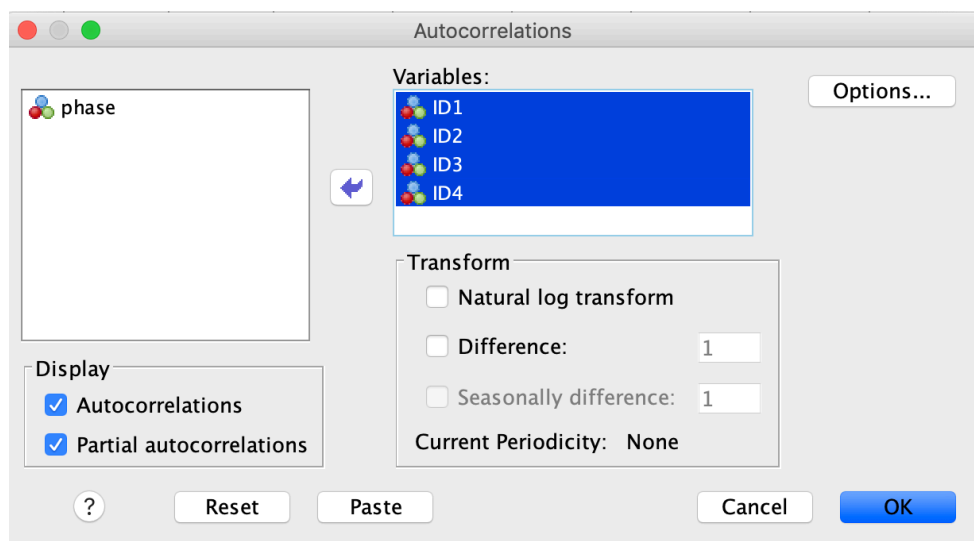
In the pop up box, select '**Organize output by groups**' and move the 'phase' variable into the '**Groups based on:**' box (see screenshot below). Click **OK**.



2. From the

menu go to **Analyse > Forecasting > Autocorrelations**.

In the pop up box, move all the idiographic variables into the '**Variables**' box. Ensure '**Autocorrelations**' and '**Partial autocorrelations**' are selected in the 'Display' section. (See screenshot below). Click **OK**.



INTERPRETING THE OUTPUT

An **Autocorrelations** table, **ACF plot**, **Partial correlations** table and **PACF plot** will be provided for each phase of every idiographic measure.

Interpret the level of autocorrelation present using the **Autocorrelation** table – the final column provides a significance value at each Lag (up to 16 lags). Use this to determine if significant autocorrelation is present ($p < .05$) and if it is, for how many lags. Report this information in the results of your assignment. It may also be useful to include the **ACF plots** in your appendix.

For example, in the table below there is significant autocorrelation present in 5 of the Lags (Lag 1, 2, 12, 13, 14).

Autocorrelations

Series: B

Lag	Autocorrelation	Std. Error ^a	Box-Ljung Statistic		
			Value	df	Sig. ^b
1	.365	.149	5.996	1	.014
2	.084	.147	6.321	2	.042
3	.066	.145	6.526	3	.089
4	.000	.143	6.526	4	.163
5	-.147	.141	7.604	5	.179
6	.055	.140	7.761	6	.256
7	.156	.138	9.053	7	.249
8	-.106	.136	9.665	8	.289
9	-.229	.134	12.599	9	.182
10	-.161	.132	14.092	10	.169
11	-.212	.130	16.770	11	.115
12	-.335	.127	23.672	12	.023
13	-.118	.125	24.556	13	.026
14	.094	.123	25.134	14	.033
15	.013	.121	25.145	15	.048
16	.075	.119	25.548	16	.061

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.

