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B Background & Requirements 3

If you know little about the three-way repeated measures ANOVA, you are most likely to benefit from reading about the basic requirements that must be met to run a three-way repeated measures ANOVA, as well as the background to understanding the three-way repeated measures ANOVA.

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In this section, we describe the example used throughout this guide, provide an SPSS Statistics example data file you can download so you can practice as you go along, and explain the complete data setup process for a three-way repeated measures ANOVA.

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When you choose to analyse your data using a three-way repeated measures ANOVA, a critical part of the process involves checking to make sure that the data you want to analyse can actually be analysed using this test. In fact, the three-way repeated measures ANOVA has five assumptions that you have to consider, three of which you can test for using SPSS Statistics. We set out the procedure in SPSS Statistics to test these assumptions and explain how to interpret the results, as well as how to deal with possible violations of these assumptions.

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E Procedure 11

This section sets out the main **GLM Repeated Measures** procedure in SPSS Statistics to carry out a three-way repeated measures ANOVA and determine whether you have a statistically significant three-way interaction. Based on this result, there may be additional procedures you have to carry out in SPSS Statistics, but these are explained later in the Interpreting Results section. This main procedure also calculates and presents Mauchly's test of sphericity, which is used to test for the assumption of sphericity.

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Having run the three-way repeated measures ANOVA, you can now interpret the results for the assumption of sphericity. After interpreting this assumption, you will be in a position to start interpreting the results from the three-way repeated measures ANOVA.

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SPSS Statistics will have generated a number of tables and graphs when running the three-way repeated measures ANOVA procedure that provide the starting point to interpret your results. In this section, we show you how to interpret these results and follow them up. We also show how to write up this output as you work through the section.

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In this section, we show you how to report your results if you simply want to focus on the main findings or also include the results from the assumptions tests you carried out.

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