

5.4: More Notes on Repeated Measures ANOVA

Repeated Measures ANOVAs have some special properties that are worth knowing about. The main special property is that the error term used to for the F -value (the MS in the denominator) will always be smaller than the error term used for the F -value the ANOVA for a between-subjects design. We discussed this earlier. It is smaller, because we subtract out the error associated with the subject means.

This can have the consequence of generally making F -values in repeated measures designs larger than F -values in between-subjects designs. When the number in the bottom of the F formula is generally smaller, it will generally make the resulting ratio a larger number. That's what happens when you make the number in the bottom smaller.

Because big F values usually let us reject the idea that differences in our means are due to chance, the repeated-measures ANOVA becomes a more sensitive test of the differences (its F -values are usually larger). This is a major advantage of using repeated-measures ANOVA, and within-subjects designs. The other advantage we have already mentioned before is that within-subjects design requires a smaller sample size.

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