
Subject: Re: Trend analysis with different number of 'PSU' and 'Strata'
Posted by [Janet-DHS](#) on Mon, 06 Jun 2022 20:16:39 GMT

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Following is a response from DHS Research & Data Analysis Director, Tom Pullum:

You are correct. Two means (or proportions) can be significantly different even if the confidence intervals overlap. The reason for this is that the standard error of a difference is less than the sum of the two standard errors (the widths of the confidence intervals are proportional to the standard errors). In most situations, the standard error of a difference is equal to the square root of the sum of the squares of the two standard errors. It's like a right triangle, in which the hypotenuse is always shorter than the sum of the other two sides. Check a statistics text on tests and confidence intervals for a difference.
