

Temperature Changes in Florida over Sucessive years

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Abstract

This paper looks at how to calculate a p-value for temperature changes between sucessive years, using data from Florida as an example.

1 Methods

The temperatures from the sample set were randomly jumbled using R's sample function. A correlation coefficient was then determined for sucessive values on this list. This was done 10000 times to produce a distribution of values independant of the effect of year.

2 Results

The correlation coefficient for the correctly ordered data was 0.306 (3 s.f.) The sampled correlation coefficients ranged from -0.370 to 0.416, with a median of -0.010. Only 5 values were larger than the real data, giving an approximate p-value for the real data of < 0.001 . See Figure 1. for a graphical representation of the real value in relation to distribution of sampled values.

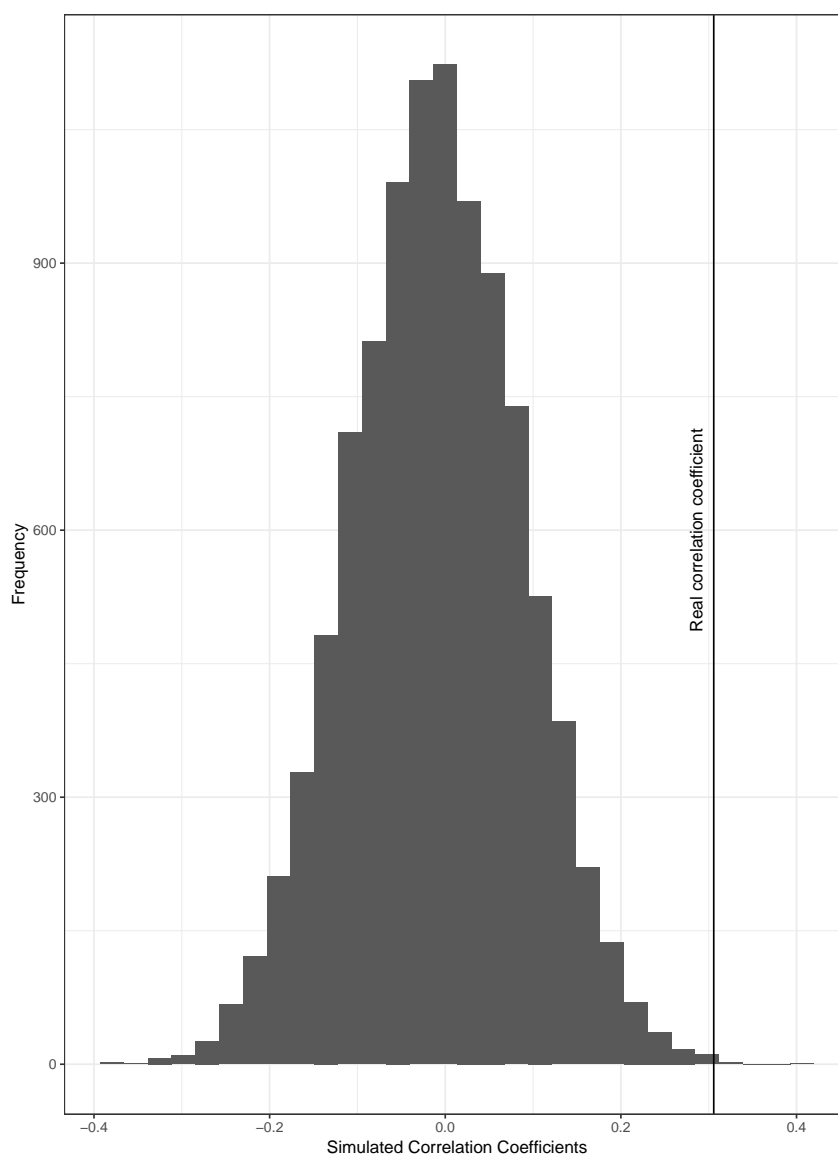


Figure 1. Distribution of $n=10000$ sampled correlation coefficients using temperature data from successive years in Florida. The correlation coefficient from the non-scrambled data is included as a line.