

There are eight main steps to making the index. For local indexes, the steps are repeated for each county.

1. Use the national library data to sum up, for each newspaper in each month: The total number of words, and the total number of uncertainty words.

$$w_{i,t} = \text{number of uncertainty words}$$

$$t_{i,t} = \text{total number of words}$$

Where  $i$  is the newspaper, and  $t$  is the month.

2. Divide the number of uncertainty words by the total number of words in each newspaper/month. This gives us uncertainty per word, per newspaper, per month  $u_{i,t}$ .

$$w_{i,t}/t_{i,t} = u_{i,t} \quad (1)$$

3. Use the coverage data so sum up the total number of newspapers sold in each year.

$$\sum_i c_{i,t} = CT_t \quad (2)$$

4. Sum the number of newspapers sold, for each newspaper, in each county, in each year.

5. Create newspaper weights by dividing the sales numbers for each newspaper in each year by the total number of newspapers sold in each year. In other words: the weights are the number of newspapers sold as the proportion of all newspapers sold, in each year, for each newspaper.

$$c_{i,t}/CT_t = w_{i,t} \quad (3)$$

6. Multiply the weights from step five with uncertainty per word from step two. This gives us uncertainty per word per newspaper sold, per newspaper.

$$u_{i,t} \cdot w_{i,t} = U_{i,t} \quad (4)$$

7. Aggregate the newspaper level series by taking the mean over all newspapers by month for each county.

$$\frac{1}{N} \sum_i^N U_{i,t} = \bar{U}_t \quad (5)$$

8. Normalize the series to mean 100. This is done by multiplying the uncertainty series from step seven with 100, and dividing it by the series's mean.

$$U_t \frac{100}{\frac{1}{T} \sum_t^T U_t} = \bar{U}norm_t \quad (6)$$