

Worked out Example for KwIC

a.

	ECO:000008	ECO:000096	ECO:000554	ECO:000555
ECO:000008	0.4604	0.02110	0.0005823	0.0005823
ECO:000096	0.02110	1.0	0.0005823	0.0005823
ECO:000554	0.0005823	0.0005823	0.7800	0.6057
ECO:000555	0.0005823	0.0005823	0.6057	0.8257

ECO Term Pairs IC Values Matrix

Using Equation 3, calculate the IC for all ECO terms. Then, for each pair of ECO terms, find their lowest common subsumer. The IC value for the subsumer is the IC value for the pair that goes into the ECO Term Pairs IC Values Matrix. In this example, the lowest subsume for ECO:000554 and ECO:000555 has an IC value of 0.6057.

b.

Curator A	Curator B				No	Total
	ECO:000008	ECO:000096	ECO:000554	ECO:000555		
ECO:000008	3	1	1	0	1	6
ECO:000096	0	5	0	1	1	7
ECO:000554	1	0	2	1	2	5
ECO:000555	0	1	1	4	0	6
No	1	1	0	1	47	50
Total	5	8	4	7	51	75

Count Table for Annotator Agreement between Curators A and B

Construct the Count Table by aligning annotations between the two curators for each sentence as described in Methods, then count the number of ECO term pairs or the number of non-annotations (No). In this example, Curators A and B both annotated 3 of the same sentences with ECO:000008. For another sentence, Curator A chose ECO:000008 while Curator B chose ECO:000096.

c.

Curator A	Curator B				No	Total
	ECO:000008	ECO:000096	ECO:000554	ECO:000555		
ECO:000008	0.04	0.0133	0.0133	0	0.0133	0.08
ECO:000096	0	0.0667	0	0.0133	0.0133	0.0933
ECO:000554	0.0133	0	0.0267	0.0133	0.0267	0.08
ECO:000555	0	0.0133	0.0133	0.05480	0	0.08
No	0.0133	0.0133	0	0.01370	0.6267	0.667
Total	0.0067	0.1067	0.0533	0.0933	0.68	1.0

Frequency Table (Rounded)

Construct the Frequency Table by dividing the Count Table values by the total number of annotations (here, 75).

d.

Curator A	Curator B				No	Total
	ECO:0000008	ECO:0000096	ECO:0005554	ECO:0005555		
ECO:0000008	0.0184	2.813×10^{-4}	7.764×10^{-6}	0	0	0.0187
ECO:0000096	0	0.0667	0	7.764×10^{-6}	0	0.0667
ECO:0005554	7.764×10^{-6}	0	0.0208	0.00808	0	0.0289
ECO:0005555	0	7.764×10^{-6}	0.00808	0.0440	0	0.0521
No	0	0	0	0	0.6267	0.6267
Total	0.0184	0.0670	0.0289	0.0521	0.6267	0.7931

Weighted Frequency Table

Construct the Weighted Frequency Table by multiplying each cell in the Frequency Table by the appropriate ECO Term Pairs IC value (Step a). For example, the cell [ECO:0000008, ECO:0000008] is $0.04 \times 0.4604 = 0.0184$.

e.

Curator A	Curator B				No
	ECO:0000008	ECO:0000096	ECO:0005554	ECO:0005555	
ECO:0000008	0.005333	0.008533	0.004267	0.007467	0.05544
ECO:0000096	0.006222	0.009956	0.004978	0.008711	0.06347
ECO:0005554	0.005333	0.008533	0.004267	0.007467	0.05440
ECO:0005555	0.005333	0.008533	0.004267	0.007467	0.05440
No	0.04444	0.07111	0.03556	0.06222	0.4533

Unweighted P_e Table

Construct the Unweighted P_e Table by multiplying the marginal frequencies in the Frequency Table (Step c) for each row and column. For example, the cell [ECO:0000008, ECO:0000008] = $0.08 \times 0.0067 = 0.005333$ (unrounded value).

f.

Curator A	Curator B				No	Total
	ECO:0000008	ECO:0000096	ECO:0005554	ECO:0005555		
ECO:0000008	0.002455	1.800×10^{-4}	2.484×10^{-6}	4.349×10^{-6}	0	0.002642
ECO:0000096	1.312×10^{-4}	0.009956	2.899×10^{-6}	5.072×10^{-6}	0	0.01009
ECO:0005554	3.106×10^{-6}	4.969×10^{-6}	0.003328	0.004523	0	0.007859
ECO:0005555	3.106×10^{-6}	4.969×10^{-6}	0.002584	0.006165	0	0.008758
No	0	0	0	0	0.4533	0.4533
Total	0.002593	0.01015	0.005918	0.01070	0.4533	0.4829

Weighted P_e Table

Construct the Weighted P_e Table by multiplying each cell in the Unweighted P_e Table (Step e) by the appropriate ECO Term Pairs IC value (Step a).

g.

P_o = Sum of all cells in the Weighted Frequency Table (Step d) = 0.7931

P_e = Sum of all cells in the Weighted Pe Table (Step f) = 0.4829

$Kwic = (0.7931 - 0.4829) / (1.0 - 0.4829) = 0.5999$