

Table 1: Results using the k-MEANS clustering, $k = 8$

dataset	measure	%	recall	avg.support					
				1	2	3	4	5	6
WN18	Euclid.	2%	0.001	0.0	2.39	3.24	2.91	1.93	1.91
		5%	0.0004	0.0	2.39	3.17	2.85	1.89	1.86
	cos	2%	0.0028	1.00	4.10	2.12	2.00	1.84	1.81
		5%	0.0011	1.00	4.10	2.10	1.98	1.83	1.79
DBpedia15k	Euclid.	2%	0.0021	1.32	1.22	3.27	1.38	1.60	2.54
		5%	0.0021	1.32	1.22	3.27	1.38	1.60	2.54
	cos	2%	0.0019	1.24	1.17	3.13	1.38	1.62	2.62
		5%	0.0009	1.24	1.17	3.08	1.38	1.61	2.52
	acos	2%	0.0019	1.39	1.21	3.61	1.53	1.93	2.69
		5%	0.0009	1.38	1.21	3.61	1.53	1.91	2.57
FB15k	Euclid.	2%	0.0594	16.69	5.98	206.59	377.97	185.39	210.45
		5%	0.0340	15.14	5.81	193.41	366.44	172.41	187.08
	cos	2%	0.0593	16.69	5.98	206.59	377.97	185.38	210.45
		5%	0.0339	15.14	5.82	193.41	366.44	172.42	187.08

Table 2: Results using the k-MEANS clustering, $k = 10$

dataset	measure	%	recall	avg.support					
				1	2	3	4	5	6
WN18	Euclid.	2%	0.0023	0.0	4.29	3.39	3.03	1.97	1.93
		5%	0.0009	0.0	4.29	3.33	2.98	1.89	1.87
	cos	2%	0.0026	0.0	4.11	2.30	2.13	1.77	1.77
		5%	0.0010	0.0	4.11	2.28	2.11	1.73	1.73
DBpedia15k	Euclid.	2%	0.0020	1.36	1.16	3.46	1.47	1.85	2.40
		5%	0.0019	1.36	1.16	3.45	1.47	1.85	2.40
	cos	2%	0.0019	1.37	1.16	3.27	1.51	1.91	2.39
		5%	0.0009	1.36	1.16	3.21	1.51	1.89	2.31
	acos	2%	0.0018	1.38	1.17	3.23	1.51	1.90	2.42
		5%	0.0009	1.38	1.17	3.17	1.50	1.88	2.33
FB15k	Euclid.	2%	0.0588	16.84	6.10	209.89	379.13	186.64	206.64
		5%	0.0335	16.65	5.92	197.70	367.82	173.67	182.19
	cos	2%	0.0664	18.91	7.62	205.58	283.29	201.48	189.72
		5%	0.0389	18.60	7.31	183.45	251.09	179.04	159.88

Table 3: Results using the k-MEANS clustering, $k = 15$

dataset	measure	%	recall	avg.support					
				1	2	3	4	5	6
WN18	Euclid.	2%	0.0010	1.0	2.44	3.36	3.04	2.08	2.05
		5%	0.0004	1.0	2.44	3.30	2.99	2.04	2.01
	cos	2%	0.0012	1.0	2.45	2.89	2.16	2.01	2.02
		5%	0.0005	1.0	2.45	2.28	2.15	1.97	1.98
DBpedia15k	Euclid.	2%	0.0019	1.38	1.18	3.33	1.45	1.91	2.38
		5%	0.0019	1.38	1.18	3.33	1.45	1.91	2.38
	cos	2%	0.0018	1.41	1.22	3.26	1.49	2.01	2.45
		5%	0.0018	1.41	1.22	3.26	1.49	2.01	2.45
	acos	2%	0.0017	1.43	1.23	3.18	1.49	2.04	2.47
		5%	0.0009	1.38	1.21	3.61	1.53	1.91	2.57
FB15k	Euclid.	2%	0.0581	15.05	5.06	191.78	343.27	171.98	183.37
		5%	0.0332	13.88	4.65	179.41	334.69	160.08	162.97
	cos	2%	0.0659	17.52	6.50	196.28	274.44	188.76	179.53
		5%	0.0389	16.02	5.73	173.88	242.66	167.76	151.99

Table 4: Results (explanation) with clusters by Agglomerative Clustering, $k = 8$ clusters

dataset	measure	%	recall	avg.support					
				1	2	3	4	5	6
WN18	Euclid.	2%	0.0025	1.0	4.34	2.99	2.83	2.07	2.05
		5%	0.0010	1.0	4.24	2.99	2.71	1.93	1.90
	cos	2%	0.0024	1.0	4.34	3.07	2.83	2.02	2.00
		5%	0.0011	1.0	4.22	2.21	2.14	1.95	1.98
DBpedia15k	Euclid.	2%	0.0022	1.35	1.21	2.97	1.48	1.85	2.55
		5%	0.0010	1.34	1.22	2.93	1.47	1.84	2.45
	cos	2%	0.0019	1.19	1.13	3.02	1.30	1.57	2.44
		5%	0.0010	1.34	1.16	3.08	1.51	1.92	2.56
	acos	2%	0.0020	1.35	1.18	2.96	1.51	1.94	2.69
		5%	0.0009	1.38	1.21	3.61	1.53	1.90	2.57
FB15k	Euclid.	2%	0.06	16.70	6.01	209.49	378.15	187.45	209.97
		5%	0.0341	15.36	5.82	197.82	369.80	175.09	187.34
	cos	2%	0.0673	19.00	7.72	208.29	285.20	209.48	195.38
		5%	0.0396	17.03	7.45	184.77	253.18	186.15	165.93

Table 5: Results (explanation) with clusters by Agglomerative Clustering, $k = 10$ clusters

dataset	measure	%	recall	avg.support					
				1	2	3	4	5	6
WN18	Euclid.	2%	0.0025	1.00	4.29	2.31	2.30	2.08	2.05
		5%	0.0010	1.00	4.29	2.26	2.23	2.02	2.05
	cos	2%	0.0027	1.00	4.22	2.20	2.13	1.97	2.00
		5%	0.0011	1.00	4.22	2.16	2.10	1.93	1.96
DBpedia15k	Euclid.	2%	0.0023	1.33	1.21	2.89	1.45	1.86	2.61
		5%	0.0011	1.33	1.21	2.86	1.44	1.84	2.52
	cos	2%	0.0019	1.19	1.25	3.02	1.29	1.56	2.44
		5%	0.0009	1.19	1.12	2.97	1.28	1.55	2.35
	acos	2%	0.0019	1.38	1.21	3.61	1.53	1.92	2.69
		5%	0.0009	1.37	1.21	3.61	1.53	1.89	2.57
FB15k	Euclid.	2%	0.0599	16.79	6.01	211.22	379.76	188.33	210.39
		5%	0.0341	15.49	5.84	198.01	370.54	175.18	187.41
	cos	2%	0.0674	19.04	7.72	208.39	285.69	209.59	195.57
		5%	0.0396	17.06	7.45	184.81	253.52	186.21	166.07

Table 6: Results (explanation) with clusters by AGGLOMERATIVE CLUSTERING, $k = 15$ clusters

dataset	measure	%	recall	avg.support					
				1	2	3	4	5	6
WN18	Euclid.	2%	0.0024	1.00	4.30	2.31	2.30	2.09	2.07
		5%	0.0010	1.00	4.30	2.26	2.23	2.03	2.01
	cos	2%	0.0026	1.00	4.27	2.15	2.08	1.95	1.98
		5%	0.0011	1.00	4.27	2.12	2.05	1.91	1.94
DBpedia15k	Euclid.	2%	0.0023	1.33	1.21	2.89	1.44	1.86	2.62
		5%	0.0011	1.33	1.21	2.86	1.44	1.84	2.52
	cos	2%	0.0020	1.51	1.17	3.09	1.51	1.93	2.66
		5%	0.0009	1.19	1.12	2.97	1.28	1.55	2.35
	acos	2%	0.0019	1.16	1.13	3.52	1.36	1.67	2.68
		5%	0.0009	1.15	1.13	3.53	1.36	1.65	2.57
FB15k	Euclid.	2%	0.0599	16.79	6.01	211.28	379.84	188.33	188.33
		5%	0.0342	15.50	5.84	198.06	370.63	175.15	187.39
	cos	2%	0.0672	19.10	7.73	208.42	285.76	209.75	195.67
		5%	0.0396	17.14	7.46	184.72	253.51	186.26	166.12