

Table 1: Generalization to other metrics: GMAP. Table for the correlations of Pearson’s ρ , Kendall’s τ , Spearman’s r_S , Rank Biased Overlap (RBO), and τ_{AP} for the three methods SNC, WUC, and SPO (Single% and Single% - AllFive% negated) on the AH99, TB06, R04, and WEB14 collections, for the GMAP metric.

Collection	Method	ρ	τ	r_S	RBO	τ_{AP}
TREC8	SNC	0.50	0.52	0.63	0.46	0.43
TREC8	SPO Single%	0.69	0.55	0.68	0.73	0.41
TREC8	SPO AllFive%	0.76	0.55	0.70	0.73	0.47
TREC8	SPO Single% - AllFive%	0.71	0.56	0.69	0.72	0.46
TREC8	WUC Basic	0.49	0.52	0.62	0.57	0.40
TREC8	WUC V1	0.50	0.53	0.62	0.58	0.41
TREC8	WUC V2	0.47	0.45	0.56	0.64	0.29
TREC8	WUC V3	0.48	0.45	0.57	0.68	0.32
TREC8	WUC V4	0.59	0.38	0.53	0.68	0.21
R04	SNC	0.88	0.71	0.88	0.85	0.53
R04	SPO Single%	0.63	0.48	0.66	0.43	0.34
R04	SPO AllFive%	-0.05 [#]	0.24	0.27	0.32	0.12
R04	SPO Single% - AllFive%	0.48	0.41	0.54	0.37	0.26
R04	WUC Basic	0.85	0.68	0.86	0.84	0.51
R04	WUC V1	0.85	0.68	0.86	0.85	0.51
R04	WUC V2	0.81	0.65	0.83	0.82	0.52
R04	WUC V3	0.81	0.65	0.83	0.83	0.52
R04	WUC V4	0.80	0.62	0.80	0.81	0.52
TB06	SNC	0.88	0.51	0.67	0.76	0.37
TB06	SPO Single%	0.84	0.43	0.59	0.72	0.30
TB06	SPO AllFive%	0.83	0.45	0.62	0.71	0.28
TB06	SPO Single% - AllFive%	0.84	0.44	0.60	0.72	0.28
TB06	WUC Basic	0.87	0.45	0.61	0.86	0.35
TB06	WUC V1	0.87	0.45	0.62	0.86	0.34
TB06	WUC V2	0.87	0.45	0.62	0.75	0.26
TB06	WUC V3	0.87	0.46	0.62	0.75	0.31
TB06	WUC V4	0.85	0.48	0.63	0.73	0.21
TB06M	SNC	0.79	0.49	0.66	0.77	0.34
TB06M	SPO Single%	0.73	0.40	0.56	0.63	0.27
TB06M	SPO AllFive%	0.72	0.40	0.57	0.66	0.26
TB06M	SPO Single% - AllFive%	0.73	0.40	0.56	0.63	0.24
TB06M	WUC Basic	0.76	0.43	0.59	0.66	0.31
TB06M	WUC V1	0.77	0.44	0.61	0.66	0.30
TB06M	WUC V2	0.77	0.43	0.59	0.71	0.28
TB06M	WUC V3	0.78	0.42	0.58	0.67	0.26
TB06M	WUC V4	0.77	0.42	0.57	0.68	0.20
WEB14	SNC	0.93	0.74	0.89	0.66	0.70
WEB14	SPO Single%	0.35 [#]	0.09 [#]	0.19 [#]	0.49	-0.10
WEB14	SPO AllFive%	0.11 [#]	0.17 [#]	0.29 [#]	0.71	-0.08
WEB14	SPO Single% - AllFive%	0.32 [#]	0.09 [#]	0.18 [#]	0.49	-0.11
WEB14	WUC Basic	0.65	0.43	0.63	0.22	0.12
WEB14	WUC V1	0.70	0.54	0.73	0.23	0.21
WEB14	WUC V2	0.71	0.49	0.68	0.51	0.16
WEB14	WUC V3	0.73	0.54	0.75	0.51	0.35
WEB14	WUC V4	0.85	0.76	0.90	0.66	0.71

⁺ $p < .05$.

[#] $p > .05$.

All the other values have $p < .01$.

Table 2: Generalization to other metrics: logitAP. Table for the correlations of Pearson’s ρ , Kendall’s τ , Spearman’s r_S , Rank Biased Overlap (RBO), and τ_{AP} for the three methods SNC, WUC, and SPO (Single% and Single% - AllFive% negated) on the AH99, TB06, R04, and WEB14 collections, for the logitAP metric.

Collection	Method	ρ	τ	r_S	RBO	τ_{AP}
TREC8	SNC	0.34	0.52	0.63	0.46	0.42
TREC8	SPO Single%	0.58	0.55	0.69	0.71	0.43
TREC8	SPO AllFive%	0.70	0.55	0.69	0.72	0.48
TREC8	SPO Single% - AllFive%	0.67	0.56	0.69	0.71	0.45
TREC8	WUC Basic	0.34	0.51	0.60	0.61	0.39
TREC8	WUC V1	0.35	0.52	0.62	0.58	0.40
TREC8	WUC V2	0.32	0.43	0.55	0.64	0.31
TREC8	WUC V3	0.33	0.42	0.55	0.69	0.30
TREC8	WUC V4	0.40	0.32	0.46	0.67	0.16
R04	SNC	0.85	0.71	0.88	0.84	0.53
R04	SPO Single%	0.03 [#]	0.30	0.37	0.32	0.15
R04	SPO AllFive%	-0.20 ⁺	0.21	0.24 ⁺	0.30	0.04
R04	SPO Single% - AllFive%	0.22 ⁺	0.31	0.37	0.34	0.13
R04	WUC Basic	0.84	0.68	0.85	0.83	0.50
R04	WUC V1	0.85	0.68	0.85	0.84	0.51
R04	WUC V2	0.82	0.64	0.81	0.81	0.46
R04	WUC V3	0.82	0.64	0.82	0.81	0.50
R04	WUC V4	0.80	0.61	0.78	0.81	0.46
TB06	SNC	0.83	0.51	0.67	0.76	0.33
TB06	SPO Single%	0.61	0.42	0.59	0.69	0.27
TB06	SPO AllFive%	0.76	0.43	0.59	0.68	0.26
TB06	SPO Single% - AllFive%	0.75	0.43	0.59	0.72	0.24
TB06	WUC Basic	0.75	0.45	0.62	0.86	0.33
TB06	WUC V1	0.75	0.45	0.62	0.86	0.33
TB06	WUC V2	0.83	0.49	0.66	0.75	0.34
TB06	WUC V3	0.84	0.49	0.65	0.75	0.33
TB06	WUC V4	0.83	0.50	0.64	0.70	0.25
TB06M	SNC	0.74	0.51	0.68	0.77	0.37
TB06M	SPO Single%	0.55	0.43	0.59	0.61	0.26
TB06M	SPO AllFive%	0.63	0.39	0.54	0.64	0.24
TB06M	SPO Single% - AllFive%	0.63	0.40	0.56	0.63	0.24
TB06M	WUC Basic	0.64	0.45	0.62	0.66	0.32
TB06M	WUC V1	0.65	0.46	0.63	0.65	0.32
TB06M	WUC V2	0.68	0.42	0.58	0.65	0.31
TB06M	WUC V3	0.67	0.42	0.57	0.66	0.26
TB06M	WUC V4	0.68	0.43	0.56	0.66	0.21
WEB14	SNC	0.94	0.75	0.90	0.66	0.69
WEB14	SPO Single%	-0.02 [#]	0.14 [#]	0.21 [#]	0.49	-0.05
WEB14	SPO AllFive%	0.01 [#]	0.18 [#]	0.30 [#]	0.71	-0.07
WEB14	SPO Single% - AllFive%	0.07 [#]	0.11 [#]	0.19 [#]	0.49	-0.09
WEB14	WUC Basic	0.51	0.41	0.59	0.22	0.12
WEB14	WUC V1	0.67	0.53	0.72	0.22	0.21
WEB14	WUC V2	0.62	0.41	0.60	0.51	0.08
WEB14	WUC V3	0.71	0.49	0.68	0.51	0.39
WEB14	WUC V4	0.87	0.75	0.90	0.65	0.60

⁺ $p < .05$.

[#] $p > .05$.

All the other values have $p < .01$.

Table 3: AAP correlations. Table for the correlations of Pearson’s ρ , Kendall’s τ , Spearman’s r_S , Rank Biased Overlap (bottom-heavy) (RBO*), and τ_{AP}^* (bottom-heavy) for the three methods SNC, WUC, and SPO (Single% and Single% - AllFive% negated) on the AH99, TB06, R04, and WEB14 collections, for the AAP metric.

Collection	Method	ρ	τ	r_S	RBO*	τ_{AP}^*
TREC8	SNC	0.26 [#]	0.24 ⁺	0.35 ⁺	0.44	0.18
TREC8	SPO Single%	0.18 [#]	0.17 [#]	0.24 [#]	0.44	0.10
TREC8	SPO AllFive%	0.33 ⁺	0.30	0.42	0.46	0.25
TREC8	SPO Single% - AllFive%	0.25 [#]	0.20 ⁺	0.30 ⁺	0.45	0.13
TREC8	WUC Basic	0.18 [#]	0.17 [#]	0.25 [#]	0.43	0.11
TREC8	WUC V1	0.20 [#]	0.19 [#]	0.28 ⁺	0.44	0.13
TREC8	WUC V2	0.21 [#]	0.16 [#]	0.26 [#]	0.43	0.09
TREC8	WUC V3	0.27 [#]	0.21 ⁺	0.31 ⁺	0.43	0.15
TREC8	WUC V4	0.54	0.37	0.54	0.52	0.32
R04	SNC	0.26	0.24	0.36	0.09	0.20
R04	SPO Single%	0.17	0.16	0.24	0.06	0.12
R04	SPO AllFive%	0.23	0.21	0.31	0.06	0.20
R04	SPO Single% - AllFive%	0.20	0.18	0.27	0.06	0.16
R04	WUC Basic	0.15 ⁺	0.15	0.22	0.06	0.09
R04	WUC V1	0.16 ⁺	0.16	0.23	0.06	0.10
R04	WUC V2	0.19	0.17	0.25	0.06	0.12
R04	WUC V3	0.23	0.19	0.29	0.06	0.15
R04	WUC V4	0.55	0.42	0.59	0.14	0.34
TB06	SNC	0.51	0.38	0.53	0.14	0.35
TB06	SPO Single%	0.47	0.33	0.46	0.19	0.32
TB06	SPO AllFive%	0.53	0.37	0.51	0.24	0.36
TB06	SPO Single% - AllFive%	0.52	0.35	0.49	0.21	0.34
TB06	WUC Basic	0.47	0.32	0.45	0.21	0.31
TB06	WUC V1	0.49	0.34	0.47	0.23	0.32
TB06	WUC V2	0.53	0.37	0.51	0.31	0.34
TB06	WUC V3	0.57	0.40	0.55	0.37	0.37
TB06	WUC V4	0.64	0.44	0.62	0.37	0.40
TB06M	SNC	0.47	0.30	0.42	0.43	0.27
TB06M	SPO Single%	0.39	0.24 ⁺	0.35 ⁺	0.30	0.26
TB06M	SPO AllFive%	0.44	0.31	0.44	0.41	0.28
TB06M	SPO Single% - AllFive%	0.42	0.27	0.39	0.32	0.27
TB06M	WUC Basic	0.37	0.25 ⁺	0.35 ⁺	0.34	0.24
TB06M	WUC V1	0.39	0.28	0.38	0.41	0.25
TB06M	WUC V2	0.45	0.32	0.45	0.43	0.28
TB06M	WUC V3	0.50	0.36	0.49	0.45	0.30
TB06M	WUC V4	0.68	0.51	0.67	0.51	0.46
WEB14	SNC	0.51	0.38	0.51	0.34	0.37
WEB14	SPO Single%	0.33 ⁺	0.29	0.39	0.08	0.33
WEB14	SPO AllFive%	0.32 ⁺	0.34	0.44	0.09	0.34
WEB14	SPO Single% - AllFive%	0.33 ⁺	0.32	0.42	0.09	0.34
WEB14	WUC Basic	0.26 [#]	0.28	0.37	0.07	0.32
WEB14	WUC V1	0.28 ⁺	0.28	0.37	0.07	0.32
WEB14	WUC V2	0.32 ⁺	0.28	0.38	0.08	0.32
WEB14	WUC V3	0.35 ⁺	0.28	0.38	0.08	0.31
WEB14	WUC V4	0.52	0.35	0.49	0.20	0.32

⁺ $p < .05$.

[#] $p > .05$.

All the other values have $p < .01$.

Table 4: GAAP correlations. Table for the correlations of Pearson’s ρ , Kendall’s τ , Spearman’s r_S , Rank Biased Overlap (bottom-heavy) (RBO*), and τ_{AP}^* (bottom-heavy) for the three methods SNC, WUC, and SPO (Single% and Single% - AllFive% negated) on the AH99, TB06, R04, and WEB14 collections, for the GAAP metric.

Collection	Method	ρ	τ	r_S	RBO*	τ_{AP}^*
TREC8	SNC	0.34 ⁺	0.31	0.45	0.47	0.25
TREC8	SPO Single%	0.29 ⁺	0.24 ⁺	0.33 ⁺	0.46	0.17
TREC8	SPO AllFive%	0.42	0.36	0.49	0.52	0.30
TREC8	SPO Single% - AllFive%	0.36 ⁺	0.27	0.38	0.52	0.21
TREC8	WUC Basic	0.27 [#]	0.24 ⁺	0.33 ⁺	0.50	0.17
TREC8	WUC V1	0.30 ⁺	0.25 ⁺	0.35 ⁺	0.51	0.18
TREC8	WUC V2	0.33 ⁺	0.27	0.37	0.50	0.21
TREC8	WUC V3	0.40	0.30	0.42	0.51	0.25
TREC8	WUC V4	0.60	0.42	0.58	0.60	0.37
R04	SNC	0.30	0.31	0.45	0.07	0.26
R04	SPO Single%	0.25	0.24	0.35	0.07	0.18
R04	SPO AllFive%	0.30	0.28	0.42	0.06	0.28
R04	SPO Single% - AllFive%	0.28	0.26	0.38	0.06	0.21
R04	WUC Basic	0.23	0.23	0.34	0.06	0.18
R04	WUC V1	0.25	0.25	0.36	0.05	0.19
R04	WUC V2	0.29	0.27	0.39	0.05	0.22
R04	WUC V3	0.33	0.30	0.43	0.06	0.25
R04	WUC V4	0.64	0.51	0.71	0.16	0.44
TB06	SNC	0.60	0.46	0.63	0.18	0.42
TB06	SPO Single%	0.54	0.41	0.56	0.19	0.40
TB06	SPO AllFive%	0.60	0.44	0.60	0.25	0.42
TB06	SPO Single% - AllFive%	0.59	0.43	0.59	0.23	0.42
TB06	WUC Basic	0.54	0.39	0.54	0.22	0.36
TB06	WUC V1	0.56	0.40	0.56	0.24	0.38
TB06	WUC V2	0.59	0.44	0.60	0.30	0.41
TB06	WUC V3	0.63	0.47	0.63	0.39	0.43
TB06	WUC V4	0.70	0.52	0.70	0.41	0.45
TB06M	SNC	0.58	0.44	0.58	0.47	0.41
TB06M	SPO Single%	0.49	0.38	0.52	0.33	0.41
TB06M	SPO AllFive%	0.54	0.44	0.59	0.41	0.42
TB06M	SPO Single% - AllFive%	0.53	0.41	0.55	0.35	0.42
TB06M	WUC Basic	0.49	0.40	0.53	0.36	0.39
TB06M	WUC V1	0.51	0.42	0.56	0.41	0.40
TB06M	WUC V2	0.56	0.46	0.61	0.46	0.43
TB06M	WUC V3	0.60	0.48	0.63	0.44	0.43
TB06M	WUC V4	0.75	0.59	0.76	0.54	0.50
WEB14	SNC	0.44	0.29	0.40	0.19	0.28
WEB14	SPO Single%	0.37	0.27	0.37	0.14	0.28
WEB14	SPO AllFive%	0.22 [#]	0.28	0.38	0.13	0.28
WEB14	SPO Single% - AllFive%	0.36	0.28	0.38	0.14	0.29
WEB14	WUC Basic	0.31 ⁺	0.27	0.37	0.12	0.26
WEB14	WUC V1	0.32 ⁺	0.27	0.37	0.12	0.26
WEB14	WUC V2	0.31 ⁺	0.26	0.35 ⁺	0.18	0.28
WEB14	WUC V3	0.32 ⁺	0.24 ⁺	0.32 ⁺	0.18	0.28
WEB14	WUC V4	0.45	0.30	0.42	0.24	0.30

⁺ $p < .05$.

[#] $p > .05$.

All the other values have $p < .01$.

Table 5: logitAAP correlations. Table for the correlations of Pearson’s ρ , Kendall’s τ , Spearman’s r_S , Rank Biased Overlap (bottom-heavy) (RBO*), and τ_{AP}^* (bottom-heavy) for the three methods SNC, WUC, and SPO (Single% and Single% - AllFive% negated) on the AH99, TB06, R04, and WEB14 collections, for the logitAAP metric.

Collection	Method	ρ	τ	r_S	RBO*	τ_{AP}^*
TREC8	SNC	0.13 [#]	0.30	0.43	0.46	0.24
TREC8	SPO Single%	0.22 [#]	0.27	0.38	0.50	0.19
TREC8	SPO AllFive%	0.24 [#]	0.36	0.50	0.50	0.30
TREC8	SPO Single% - AllFive%	0.23 [#]	0.29	0.41	0.50	0.21
TREC8	WUC Basic	0.17 [#]	0.22 ⁺	0.32 ⁺	0.47	0.16
TREC8	WUC V1	0.18 [#]	0.26	0.36	0.48	0.19
TREC8	WUC V2	0.19 [#]	0.26	0.36 ⁺	0.48	0.20
TREC8	WUC V3	0.20 [#]	0.30	0.41	0.47	0.25
TREC8	WUC V4	0.35 ⁺	0.42	0.59	0.55	0.37
R04	SNC	0.14 ⁺	0.30	0.43	0.09	0.25
R04	SPO Single%	0.09 [#]	0.25	0.36	0.07	0.21
R04	SPO AllFive%	0.09 [#]	0.27	0.40	0.06	0.26
R04	SPO Single% - AllFive%	0.09 [#]	0.25	0.37	0.06	0.21
R04	WUC Basic	0.05 [#]	0.21	0.31	0.07	0.15
R04	WUC V1	0.04 [#]	0.22	0.33	0.06	0.16
R04	WUC V2	0.03 [#]	0.24	0.35	0.06	0.19
R04	WUC V3	0.03 [#]	0.27	0.39	0.07	0.22
R04	WUC V4	0.14 ⁺	0.48	0.68	0.15	0.42
TB06	SNC	0.49	0.45	0.61	0.16	0.42
TB06	SPO Single%	0.44	0.37	0.52	0.17	0.38
TB06	SPO AllFive%	0.54	0.43	0.59	0.24	0.41
TB06	SPO Single% - AllFive%	0.52	0.41	0.57	0.21	0.41
TB06	WUC Basic	0.41	0.38	0.53	0.21	0.36
TB06	WUC V1	0.43	0.39	0.54	0.22	0.37
TB06	WUC V2	0.50	0.43	0.58	0.37	0.40
TB06	WUC V3	0.59	0.46	0.62	0.40	0.42
TB06	WUC V4	0.50	0.49	0.67	0.40	0.44
TB06M	SNC	0.39	0.41	0.54	0.47	0.38
TB06M	SPO Single%	0.22 [#]	0.32	0.46	0.31	0.36
TB06M	SPO AllFive%	0.35 ⁺	0.40	0.55	0.41	0.38
TB06M	SPO Single% - AllFive%	0.31 ⁺	0.37	0.50	0.32	0.38
TB06M	WUC Basic	0.15 [#]	0.35	0.47	0.37	0.35
TB06M	WUC V1	0.20 [#]	0.36	0.48	0.39	0.35
TB06M	WUC V2	0.26 [#]	0.41	0.56	0.46	0.38
TB06M	WUC V3	0.47	0.44	0.59	0.47	0.40
TB06M	WUC V4	0.46	0.55	0.72	0.54	0.47
WEB14	SNC	0.48	0.31	0.42	0.17	0.30
WEB14	SPO Single%	0.12 [#]	0.28	0.38	0.09	0.30
WEB14	SPO AllFive%	0.14 [#]	0.28	0.38	0.09	0.29
WEB14	SPO Single% - AllFive%	0.22 [#]	0.30	0.40	0.09	0.30
WEB14	WUC Basic	-0.06 [#]	0.26	0.35 ⁺	0.07	0.26
WEB14	WUC V1	0.03 [#]	0.26	0.35 ⁺	0.07	0.26
WEB14	WUC V2	-0.09 [#]	0.24 ⁺	0.33 ⁺	0.07	0.26
WEB14	WUC V3	-0.07 [#]	0.25 ⁺	0.34 ⁺	0.07	0.27
WEB14	WUC V4	0.40	0.30	0.42	0.23	0.32

⁺ $p < .05$.

[#] $p > .05$.

All the other values have $p < .01$.