

Table 1. List of Web Services and their sources for the initial study

ID	Source	Description
1	Programmable Web	Returns words that rhyme with the input word
2	Programmable Web	Returns currency conversion rates for 62 available currencies
3	Programmable Web	Accepts a text string and returns song titles, and associated artist information, that best match the input text
4	Jena Geography	Accepts two locations on the Earth, given by longitude and latitude, and computes the distance between those points
5	Jena Geography	Accepts two locations on the Earth, given by longitude and latitude, and computes the distance between those points (distance algorithm differs from service pair 4)
6	Jena Geography	Accepts a latitude and longitude and returns the altitude above sea level of that location

Table 2. Similarity results for the initial study

ID	p-value	Cliff Delta	95% Confidence Interval
1	0.16	-0.15	(-0.36, 0.08)
2	* 7.43e-8	-0.73	(-0.85, -0.55)
3	* 0.002	-0.30	(-0.50, -0.07)
4	* 0.0006	-0.41	(-0.59, -0.18)
5	* 4.38e-6	-0.65	(-0.79, -0.44)
6	0.21	-0.11	(-0.32, 0.11)
P. Web	* 1.1e-9	-0.38	(-0.50, -0.26)
Jena	* 2.79e-8	-0.39	(-0.50, -0.28)
All	* 1.67e-16	-0.38	(-0.46, -0.30)

\* highlights results significant at the 0.05 level

Table 3. Decision Confidence results for the initial study

ID	p-value	Cliff Delta	95% Confidence Interval
1	* 0.03	-0.14	(-0.30, -0.01)
2	* 4.22e-8	-0.42	(-0.54, -0.29)
3	* 5.3e-9	-0.24	(-0.35, -0.11)
4	* 0.003	-0.17	(-0.30, -0.04)
5	* 5.7e-6	-0.34	(-0.45, -0.21)
6	0.84	-0.01	(-0.14, 0.11)
P. Web	* 1.90e-15	-0.26	(-0.33, -0.18)
Jena	* 7.10e-6	-0.17	(-0.25, -0.10)
All	* 3.72e-18	-0.21	(-0.26, -0.16)

\* highlights results significant at the 0.05 level

Table 4. Relative Advantage results for the initial study

ID	p-value	Cliff Delta	95% Confidence Interval
1	0.80	-0.05	(-0.18, 0.08)
2	* 4.9e-6	-0.33	(-0.44, -0.20)
3	* 0.001	-0.16	(-0.28, -0.03)
4	* 0.01	-0.14	(-0.27, -0.01)
5	* 2.17e-6	-0.29	(-0.41, -0.20)
6	0.06	0.06	(-0.07, 0.20)
P. Web	* 8.04e-7	-0.18	(-0.25, -0.10)
Jena	* 0.001	-0.13	(-0.20, -0.05)
All	* 3.09e-9	-0.15	(-0.20, -0.10)

\* highlights results significant at the 0.05 level

Table 5. List of Web Services and their sources for the expanded study

ID	Source	Description
1	Programmable Web	Returns words that rhyme with the input word
2	Programmable Web	Returns currency conversion rates for 62 available currencies
3	Programmable Web	Accepts a text string and returns song titles, and associated artist information, that best match the input text
4	Programmable Web	Takes an input word and returns the definition
5	Programmable Web	Given an artist returns upcoming performance dates and locations
6	Jena Geography	Accepts two locations on the Earth, given by longitude and latitude, and computes the distance between those points
7	Jena Geography	Accepts two locations on the Earth, given by longitude and latitude, and computes the distance between those points (distance algorithm differs from service pair 4)
8	Jena Geography	Accepts a latitude and longitude and returns the altitude above sea level of that location
9	Jena Geography	Verifies street addresses for delivery purposes. The user enters as much address information as is available and the service will validate that information against its database
10	Jena Geography	Given an IP address returns the geographic location of that IP address.

Table 6. Similarity results for the expanded study

ID	p-value	Cliff Delta	95% Confidence Interval
1	0.54	-0.04	(-0.26, 0.20)
2	* 3.73e-06	-0.54	(-0.70, -0.33)
3	* 0.001	-0.35	(-0.54, -0.12)
4	* 0.004	-0.31	(-0.51, -0.09)
5	* 0.3	-0.21	(-0.42, 0.01)
6	* 4.38e-6	-0.58	(-0.74, -0.37)
7	* 1.02e-6	-0.63	(-0.78, -0.42)
8	0.21	-0.09	(-0.31, 0.13)
9	0.90	0.01	(-0.21, 0.23)
10	0.07	-0.16	(-0.37, 0.07)
P. Web	* 2.44e-10	-0.30	(-0.37, -0.18)
Jena	* 1.36e-9	-0.28	(-0.37, -0.18)
All	* 1.97e-18	-0.28	(-0.35, -0.21)

\* highlights results significant at the 0.05 level

Table 7. Decision Confidence results for the expanded study

ID	p-value	Cliff Delta	95% Confidence Interval
1	0.051	0.04	(-0.09, 0.16)
2	0.19	-0.17	(-0.29, -0.04)
3	0.94	-0.02	(-0.15, 0.10)
4	0.06	-0.15	(-0.27, -0.02)
5	0.21	0.04	(-0.09, 0.17)
6	0.07	-0.12	(-0.24, 0.01)
7	0.01	-0.24	(-0.36, -0.12)
8	0.33	-0.07	(-0.19, 0.06)
9	0.28	-0.06	(-0.19, 0.07)
10	0.79	-0.01	(-0.14, 0.11)
P. Web	0.97	-0.05	(-0.11, 0.003)
Jena	* 0.001	-0.10	(-0.16, -0.04)
All	* 0.02	-0.08	(-0.12, -0.04)

\* highlights results significant at the 0.05 level

Table 8. Relative Advantage results for the expanded study

ID	p-value	Cliff Delta	95% Confidence Interval
1	* 0.003	0.20	(0.07, 0.32)
2	0.22	-0.05	(-0.18, 0.08)
3	* 0.047	0.07	(-0.06, 0.19)
4	0.36	-0.005	(-0.13, 0.13)
5	0.09	0.06	(-0.07, 0.18)
6	0.67	-0.02	(-0.15, 0.11)
7	0.80	-0.13	(-0.26, -0.004)
8	0.41	0.001	(-0.13, 0.13)
9	0.37	-0.01	(-0.13, 0.12)
10	0.45	0.04	(-0.09, 0.17)
P. Web	* 2.74e-5	0.05	(-0.004, 0.11)
Jena	0.28	-0.02	(-0.08, 0.04)
All	* 0.0001	0.02	(-0.03, 0.06)

\* highlights results significant at the 0.05 level