

Meta – analytical output for pairwise comparisons of entire data set using dewlap extension rates (sections 1-2), head-bob rates (3-4), and pushup rates (5) with specific comparisons of species and urban vs. non-urban populations. Pushup rates were not compared by habitat as there were not enough data to analyze this comparison.

Table of Contents

1.	Dewlap rate comparison of species	2	c.	Effect Size Heterogeneity	23
	a.	Table of Studies	2	d.	Moderator Analysis
	b.	Meta-Analytic Effect Sizes	7	4.	Head-bob rates comparison of urban/ non urban zones
	c.	Effect Size Heterogeneity	7	a.	Table of Studies
	d.	Moderator Analysis	9	b.	Meta-Analytic Effect Sizes
2.	Dewlap rate comparison of urban to non-urban	10	c.	Effect Size Heterogeneity	29
	a.	Table of Studies	10	d.	Moderator analysis
	b.	Meta-Analytic Effect Sizes	16	5.	Pushup rate comparisons by species
	c.	Effect Size Heterogeneity	17	a.	Table of Studies
	d.	Moderator Analysis	18	b.	Meta-Analytic Effect Sizes
3.	Meta-analysis of Head-bobs by species	19	c.	Effect Size Heterogeneity	34
	a.	Table of Studies	19	d.	Moderator Analysis
	b.	Meta-Analytic Effect Sizes	22		

1. Dewlap rate comparison of species

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
Magna 2017	A. Carolinensis	0.01333	-0.00396	0.03063	0.38371	0.00750	5.63e-5	0.02250	9	0.113
Magna 2017	A. Carolinensis	0.00583	6.80e-5	0.01160	2.47449	0.00250	6.25e-6	0.00750	9	0.048
Magna 2017	A. Carolinensis	0.01167	0.00795	0.01538	3.98058	0.00167	2.78e-6	0.00553	11	< .001
Magna 2017	A. Carolinensis	0.00333	- 3.81e-4	0.00705	3.98058	0.00167	2.78e-6	0.00553	11	0.073
Magna 2017	A. Carolinensis	0.00717	0.00189	0.01244	2.47437	0.00250	6.25e-6	0.01061	18	0.011
Johnson and Wade2010	A. Carolinensis	0.02250	0.00365	0.04135	0.31376	0.00833	6.94e-5	0.02635	10	0.024
Yan et al 2002	A. Carolinensis	0.00933	- 9.49e-4	0.01962	1.19974	0.00400	1.60e-5	0.00980	6	0.067
Farrell et al 2016	A. Carolinensis	0.05390	0.03886	0.06894	0.45762	0.00683	4.67e-5	0.02367	12	< .001
Farrell et al 2016	A. Carolinensis	0.00643	0.00155	0.01131	2.89618	0.00222	4.91e-6	0.00768	12	0.014
Tokarz and Beck, 1987	A. Carolinensis	4.44e-4	- 2.90e-4	0.00118	7.47553	3.33e-4	1.11e-7	0.00115	12	0.210
Orell 2002	A. Carolinensis	1.39e-4	- 3.94e-4	6.72e-4	7.59726	2.50e-4	6.25e-8	0.00100	16	0.586

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
Orell 2002	A. Carolinensis	2.78e-5	- 9.05e-5	1.46e-4	7.75136	5.55e-5	3.08e-9	2.22e-4	16	0.624
Orell 2002	A. Carolinensis	1.94e-4	- 6.35e-4	0.00102	7.37800	3.89e-4	1.51e-7	0.00156	16	0.625
Orell 2002	A. Carolinensis	8.33e-5	- 3.31e-4	4.98e-4	7.66049	1.95e-4	3.78e-8	7.78e-4	16	0.675
Orell 2002	A. Carolinensis	8.33e-5	- 3.31e-4	4.98e-4	7.66049	1.95e-4	3.78e-8	7.78e-4	16	0.675
Orell 2002	A. Carolinensis	8.33e-5	- 2.72e-4	4.39e-4	7.68648	1.67e-4	2.78e-8	6.67e-4	16	0.625
Partan et al. 2011	A. Sagrei	0.26667	0.09811	0.43522	0.00327	0.08333	0.00694	0.52705	40	0.003
McMann & Patterson 2012	A. Sagrei	1.06000	0.34488	1.77512	1.95e-4	0.34167	0.11674	1.52798	20	0.006
McMann & Patterson 2012	A. Sagrei	1.44667	0.89899	1.99434	3.32e-4	0.26167	0.06847	1.17021	20	< .001
Simon 2007	A. Sagrei	0.22500	0.15604	0.29396	0.02038	0.03333	0.00111	0.16330	24	< .001
Magna 2017	A. Sagrei	0.00492	7.45e-4	0.00909	3.27839	0.00200	4.00e-6	0.00916	21	0.023
Magna 2017	A. Sagrei	0.06333	0.03552	0.09115	0.12566	0.01333	1.78e-4	0.06110	21	< .001

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
Magna 2017	A. Sagrei	0.03167	0.00340	0.05993	0.12566	0.01333	1.78e-4	0.05498	17	0.030
Magna 2017	A. Sagrei	0.00917	3.76e-4	0.01796	1.11922	0.00417	1.74e-5	0.01768	18	0.042
Cox et al 2009	A. Sagrei	0.01833	0.00753	0.02913	0.81312	0.00500	2.50e-5	0.01871	14	0.003
Cox et al 2009	A. Sagrei	0.00833	-0.00247	0.01913	0.81312	0.00500	2.50e-5	0.01871	14	0.119
Patternson 1999	A. Sagrei	0.04987	-0.01298	0.11271	0.03201	0.02658	7.06e-4	0.07517	8	0.103
Patternson 1999	A. Sagrei	0.03611	0.02053	0.05169	0.49001	0.00659	4.34e-5	0.01864	8	< .001
Patternson 1999	A. Sagrei	0.04598	0.02527	0.06668	0.28532	0.00876	7.67e-5	0.02476	8	0.001
Patternson 1999	A. Sagrei	0.07364	0.05265	0.09464	0.32615	0.00817	6.67e-5	0.02000	6	< .001
Tokarz 2003	A. Sagrei	0.03017	0.01871	0.04163	0.71301	0.00538	2.89e-5	0.02151	16	< .001
Tokarz 2003	A. Sagrei	0.03274	0.01914	0.04634	0.53368	0.00629	3.96e-5	0.02355	14	< .001
Tokarz 2002	A. Sagrei	0.04167	0.02282	0.06052	0.31376	0.00833	6.94e-5	0.02635	10	< .001
Drissens et al 2014	A. Sagrei	0.02000	0.00322	0.03678	0.31376	0.00833	6.94e-5	0.05652	46	0.021
Drissens et al 2014	A. Sagrei	0.01667	0.00816	0.02518	1.11925	0.00417	1.74e-5	0.02320	31	< .001
Drissens et al 2014	A. Sagrei	0.03667	0.02365	0.04969	0.52760	0.00633	4.01e-5	0.03291	27	< .001

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
Drissens et al 2014	A. Sagrei	0.01667	0.00821	0.02513	1.11925	0.00417	1.74e-5	0.02500	36	< .001
Stoud et al 2019	A. Sagrei	0.00625	0.00386	0.00864	5.29618	0.00117	1.36e-6	0.00639	30	< .001
Stoud et al 2019	A. Sagrei	0.01331	0.00685	0.01977	1.76001	0.00316	9.98e-6	0.01730	30	< .001
Patterson 2002	A. Sagrei	0.04598	0.02527	0.06668	0.28532	0.00876	7.67e-5	0.02476	8	0.001
Patterson 2002	A. Sagrei	0.05594	0.01995	0.09194	0.09677	0.01522	2.32e-4	0.04306	8	0.008
Patterson 2002	A. Sagrei	0.07364	0.05265	0.09464	0.32615	0.00817	6.67e-5	0.02000	6	< .001
Tokarz et al 2005	A. Sagrei	0.02198	0.01611	0.02786	2.10000	0.00281	7.89e-6	0.01256	20	< .001
Simon 2002	A. Sagrei	0.08333	0.03492	0.13175	0.04571	0.02222	4.94e-4	0.08012	13	0.003
Simon 2002	A. Sagrei	0.05556	0.00714	0.10397	0.04571	0.02222	4.94e-4	0.08012	13	0.028
Simon 2002	A. Sagrei	0.09444	0.03997	0.14891	0.03616	0.02500	6.25e-4	0.09014	13	0.003
Simon 2002	A. Sagrei	0.08333	0.02281	0.14386	0.02932	0.02778	7.72e-4	0.10015	13	0.011
Simon 2002	A. Sagrei	0.08194	0.06027	0.10362	0.26114	0.00917	8.40e-5	0.02593	8	< .001
Simon 2002	A. Sagrei	0.07389	0.04105	0.10673	0.11595	0.01389	1.93e-4	0.03928	8	0.001

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
Calsbeek and Manocha 2006	A. Sagrei	0.02222	0.00984	0.03460	0.67196	0.00556	3.09e-5	0.01843	11	0.003
Calsbeek and Manocha 2006	A. Sagrei	0.01111	0.00530	0.01693	2.13352	0.00278	7.72e-6	0.01242	20	< .001
Tokarz and Beck, 1987	A. Sagrei	0.03600	0.01448	0.05752	0.23045	0.00978	9.56e-5	0.03387	12	0.004
Tokarz and Beck, 1987	A. Sagrei	0.01533	0.00628	0.02438	1.14525	0.00411	1.69e-5	0.01424	12	0.003
Simon 2011	A. Sagrei	0.04167	-0.01404	0.09737	0.03616	0.02500	6.25e-4	0.08292	11	0.127
Simon 2011	A. Sagrei	0.06667	-0.04474	0.17807	0.00907	0.05000	0.00250	0.16583	11	0.212
Simon 2011	A. Sagrei	0.01333	-0.00405	0.03072	0.31376	0.00833	6.94e-5	0.03819	21	0.125
Simon 2011	A. Sagrei	0.00333	-0.00362	0.01029	1.61763	0.00333	1.11e-5	0.01528	21	0.329

b. Meta-Analytic Effect Sizes

Eff ect	Moderat or	Level	M	95% CI		SE	k	95% PI		p, two tailed	FE CI length	RE CI length
				LL	UL			LL	UL			
My eff ect	Specie s	Overall	0.00 829	0.0071 9	0.00939	5.61e- 4	5 7	0.00386	0.012 71	< .001	1.85 e-4	0.002 20
		A. Sagrei	0.01 750	0.0157 6	0.01925	8.91e- 4	4 1	0.01372	0.021 28	< .001	0.00 275	0.003 49
		A. Carolinensis	0.00 233	0.0012 3	0.00344	5.64e- 4	1 6	-0.00120	0.005 86	< .001	1.86 e-4	0.002 21

Note. Estimate is based on a random effects (RE) model.

c. Effect Size Heterogeneity

Measure	Level	Estimate	95% CI	
			LL	UL
Diamond Ratio	Overall	11.88928	120.79856	378.4804
	A. Sagrei	1.27117	.	.

b. Meta-Analytic Effect Sizes

Effect	Moderator	Level	M	95% CI		SE	k	95% PI		p, two tailed	FE CI length	RE CI length
				LL	UL			LL	UL			
H ²			A. Carolinensis			11.91793				.		.
			Overall			18.66971			6056.08170		64278.6380	
			A. Sagrei			12.54491			115.74665		2095.3140	
I ² (%)			A. Carolinensis			10.24309			1063.25323		6008.0186	
			Overall			94.64373			99.98349		99.9984	
			A. Sagrei			92.02864			99.13604		99.9523	
T			A. Carolinensis			90.23732			99.90595		99.9834	
			Overall			0.00219			0.04051		0.1320	
			A. Sagrei			0.01645			0.05188		0.2216	
T ²			A. Carolinensis			8.25e-4			0.00885		0.0210	
			Overall			4.79e-6			0.00164		0.0174	
			A. Sagrei			2.71e-4			0.00269		0.0491	
			A. Carolinensis			6.81e-7			7.83e-5		4.43e-4	

b. Meta-Analytic Effect Sizes

Effect	Moderator	Level	M	95% CI		SE	k	95% PI		p, two tailed	FE CI length	RE CI length
				LL	UL			LL	UL			

Note. As of version 1.0.2 esci has implemented an improved method for calculating the CI for the diamond ratio; these will no longer match those presented in the 2nd edition of Introduction to the New Statistics.

d. Moderator Analysis

Effect	Moderator	Level	M	95% CI		SE	p, two tailed
				LL	UL		
My effect	Species	A. Carolinensis	0.00233	0.00123	0.00344	5.64e-4	< .001
		A. Sagrei	0.01750	0.01576	0.01925	8.91e-4	< .001
		A. Carolinensis – A. Sagrei	-0.01517	-0.01724	-0.01311	0.00105	< .001

Note. Estimate is based on a random effects (RE) model.

2. Dewlap rate comparison of urban to non-urban

a. Table of Studies

Study label	Moderator level	95% CI			RE weight	SE	SE ²	s	N	P, two tailed
		M	LL	UL						
Magna 2017	Urban	0.013 33	- 0.003 96	0.030 63	0.532 14	0.007 50	5.63e -5	0.022 50	9	0.11 3
Magna 2017	Urban	0.005 83	6.80e- 5	0.011 60	2.888 12	0.002 50	6.25e -6	0.007 50	9	0.04 8
Magna 2017	Urban	0.011 67	0.007 95	0.015 38	4.170 16	0.001 67	2.78e -6	0.005 53	1 1	< .0 01
Magna 2017	Urban	0.003 33	- 3.81e -4	0.007 05	4.170 16	0.001 67	2.78e -6	0.005 53	1 1	0.07 3
Magna 2017	Urban	0.007 17	0.001 89	0.012 44	2.888 00	0.002 50	6.25e -6	0.010 61	1 8	0.01 1
Johnson and Wade 2010	Non Urban	0.022 50	0.003 65	0.041 35	0.437 89	0.008 33	6.94e -5	0.026 35	1 0	0.02 4
Yan et al 2002	Urban	0.009 33	- 9.49e -4	0.019 62	1.549 95	0.004 00	1.60e -5	0.009 80	6	0.06 7
Farrell et al 2016	Urban	0.053 90	0.038 86	0.068 94	0.630 43	0.006 83	4.67e -5	0.023 67	1 2	< .0 01
Farrell et al 2016	Urban	0.006 43	0.001 55	0.011 31	3.275 65	0.002 22	4.91e -6	0.007 68	1 2	0.01 4

a. Table of Studies

Study label	Moderator level	95% CI			RE weight	SE	SE ²	s	N	p, two tailed
		M	LL	UL						
Tokarz and Beck, 1987	Non Urban	4.44e-4	- 2.90e-4	0.00118	6.32778	3.33e-4	1.11e-7	0.00115	12	0.210
Orelli 2002	Urban	1.39e-4	- 3.94e-4	6.72e-4	6.38809	2.50e-4	6.25e-8	0.00100	16	0.586
Orelli 2002	Urban	2.78e-5	- 9.05e-5	1.46e-4	6.46331	5.55e-5	3.08e-9	2.22e-4	16	0.624
Orelli 2002	Urban	1.94e-4	- 6.35e-4	0.00102	6.27887	3.89e-4	1.51e-7	0.00156	16	0.625
Orelli 2002	Urban	8.33e-5	- 3.31e-4	4.98e-4	6.41911	1.95e-4	3.78e-8	7.78e-4	16	0.675
Orelli 2002	Urban	8.33e-5	- 3.31e-4	4.98e-4	6.41911	1.95e-4	3.78e-8	7.78e-4	16	0.675
Orelli 2002	Urban	8.33e-5	- 2.72e-4	4.39e-4	6.43180	1.67e-4	2.78e-8	6.67e-4	16	0.625
Partan et al. 2011	Urban	0.26667	0.09811	0.43522	0.00469	0.08333	0.00694	0.52705	40	0.003

a. Table of Studies

Study label	Moderator level	95% CI			RE weight	SE	SE ²	s	N	p, two tailed
		M	LL	UL						
McMan n & Patterson 2012	Urban	1.0600	0.3448	1.77512	2.79e-4	0.34167	0.11674	1.52798	20	0.006
McMan n & Patterson 2012	Urban	1.44667	0.89899	1.99434	4.76e-4	0.26167	0.06847	1.17021	20	< .001
Simon 2007	Non Urban	0.22500	0.15604	0.29396	0.02922	0.03333	0.00111	0.16330	24	< .001
Magna 2017	Urban	0.00492	7.45e-4	0.00909	3.60674	0.00200	4.00e-6	0.00916	21	0.023
Magna 2017	Urban	0.06333	0.03552	0.09115	0.17841	0.01333	1.78e-4	0.06110	21	< .001
Magna 2017	Urban	0.03167	0.00340	0.05993	0.17840	0.01333	1.78e-4	0.05498	17	0.030
Magna 2017	Urban	0.00917	3.76e-4	0.01796	1.45576	0.00417	1.74e-5	0.01768	18	0.042
Cox et al 2009	Urban	0.01833	0.00753	0.02913	1.08567	0.00500	2.50e-5	0.01871	14	0.003
Cox et al 2009	Urban	0.00833	-0.00247	0.01913	1.08567	0.00500	2.50e-5	0.01871	14	0.119
Patterns on 1999	Urban	0.04987	-0.01298	0.11271	0.04585	0.02658	7.06e-4	0.07517	8	0.103

a. Table of Studies

Study label	Moderator level	95% CI			RE weight	SE	SE ²	s	N	p, two tailed
		M	LL	UL						
Patterns on 1999	Urban	0.036 11	0.020 53	0.051 69	0.673 12	0.006 59	4.34e -5	0.018 64	8	< .0 01
Patterns on 1999	Non Urban	0.045 98	0.025 27	0.066 68	0.399 22	0.008 76	7.67e -5	0.024 76	8	0.00 1
Patterns on 1999	Urban	0.073 64	0.052 65	0.094 64	0.454 67	0.008 17	6.67e -5	0.020 00	6	< .0 01
Tokarz 2003	Urban	0.030 17	0.018 71	0.041 63	0.960 34	0.005 38	2.89e -5	0.021 51	1 6	< .0 01
Tokarz 2003	Urban	0.032 74	0.019 14	0.046 34	0.730 25	0.006 29	3.96e -5	0.023 55	1 4	< .0 01
Tokarz 2002	Urban	0.041 67	0.022 82	0.060 52	0.437 89	0.008 33	6.94e -5	0.026 35	1 0	< .0 01
Drissens et al 2014	Urban	0.020 00	0.003 22	0.036 78	0.437 88	0.008 33	6.94e -5	0.056 52	4 6	0.02 1
Drissens et al 2014	Urban	0.016 67	0.008 16	0.025 18	1.455 80	0.004 17	1.74e -5	0.023 20	3 1	< .0 01
Drissens et al 2014	Urban	0.036 67	0.023 65	0.049 69	0.722 33	0.006 33	4.01e -5	0.032 91	2 7	< .0 01
Drissens et al 2014	Urban	0.016 67	0.008 21	0.025 13	1.455 80	0.004 17	1.74e -5	0.025 00	3 6	< .0 01
Stoud et al 2019	Urban	0.006 25	0.003 86	0.008 64	5.092 83	0.001 17	1.36e -6	0.006 39	3 0	< .0 01

a. Table of Studies

Study label	Moderator level	95% CI			RE weight	SE	SE ²	s	N	p, two tailed
		M	LL	UL						
Stoud et al 2019	Non Urban	0.013 31	0.006 85	0.019 77	2.171 75	0.003 16	9.98e -6	0.017 30	3 0	< .0 01
Patterson 2002	Urban	0.045 98	0.025 27	0.066 68	0.399 22	0.008 76	7.67e -5	0.024 76	8	0.00 1
Patterson 2002	Urban	0.055 94	0.019 95	0.091 94	0.137 76	0.015 22	2.32e -4	0.043 06	8	0.00 8
Patterson 2002	Urban	0.073 64	0.052 65	0.094 64	0.454 67	0.008 17	6.67e -5	0.020 00	6	< .0 01
Tokarz et al 2005	Non Urban	0.021 98	0.016 11	0.027 86	2.522 59	0.002 81	7.89e -6	0.012 56	2 0	< .0 01
Simon 2002	Non Urban	0.083 33	0.034 92	0.131 75	0.065 38	0.022 22	4.94e -4	0.080 12	1 3	0.00 3
Simon 2002	Non Urban	0.055 56	0.007 14	0.103 97	0.065 38	0.022 22	4.94e -4	0.080 12	1 3	0.02 8
Simon 2002	Non Urban	0.094 44	0.039 97	0.148 91	0.051 77	0.025 00	6.25e -4	0.090 14	1 3	0.00 3
Simon 2002	Non Urban	0.083 33	0.022 81	0.143 86	0.042 00	0.027 78	7.72e -4	0.100 15	1 3	0.01 1
Simon 2002	Non Urban	0.081 94	0.060 27	0.103 62	0.366 19	0.009 17	8.40e -5	0.025 93	8	< .0 01
Simon 2002	Non Urban	0.073 89	0.041 05	0.106 73	0.164 77	0.013 89	1.93e -4	0.039 28	8	0.00 1

a. Table of Studies

Study label	Moderator level	95% CI			RE weight	SE	SE ²	s	N	p, two tailed
		M	LL	UL						
Calsbeek and Manocha 2006	Non Urban	0.022 22	0.009 84	0.034 60	0.908 32	0.005 56	3.09e -5	0.018 43	1 1	0.00 3
Calsbeek and Manocha 2006	Non Urban	0.011 11	0.005 30	0.016 93	2.556 17	0.002 78	7.72e -6	0.012 42	2 0	< .0 01
Tokarz and Beck, 1987	Urban	0.036 00	0.014 48	0.057 52	0.324 07	0.009 78	9.56e -5	0.033 87	1 2	0.00 4
Tokarz and Beck, 1987	Urban	0.015 33	0.006 28	0.024 38	1.486 36	0.004 11	1.69e -5	0.014 24	1 2	0.00 3
Simon 2011	Non Urban	0.041 67	- 0.014 04	0.097 37	0.051 77	0.025 00	6.25e -4	0.082 92	1 1	0.12 7
Simon 2011	Non Urban	0.066 67	- 0.044 74	0.178 07	0.013 02	0.050 00	0.002 50	0.165 83	1 1	0.21 2
Simon 2011	Non Urban	0.013 33	- 0.004 05	0.030 72	0.437 88	0.008 33	6.94e -5	0.038 19	2 1	0.12 5

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
Simon 2011	Non Urban	0.00333	-0.00362	0.01029	2.01908	0.00333	1.11e-5	0.01528	21	0.329

b. Meta-Analytic Effect Sizes

Moderator	Level	95% CI			95% PI						
		M	LL	UL	SE	k	LL	UL	p, two tailed	FE CI length	RE CI length
Environment	Overall	0.00829	0.00719	0.00939	5.61e-4	57	0.00386	0.0127	< .001	1.85e-4	0.00220
	Urban	0.00738	0.00614	0.00862	6.33e-4	39	0.00281	0.0120	< .001	1.87e-4	0.00248
	Non Urban	0.01319	0.01060	0.01579	0.00132	18	0.00808	0.0183	< .001	0.00127	0.00519

c. Effect Size Heterogeneity

Measure	Level	Estimate	95% CI	
			LL	UL
Diamond Ratio	Overall	11.88928	120.79856	378.48043
	Urban	13.26441	.	.
	Non Urban	4.08748	.	.
H ²	Overall	18.66971	6056.08170	64278.63801
	Urban	18.30884	7080.70584	288291.49151
	Non Urban	19.58487	60.85621	350.40247
I ² (%)	Overall	94.64373	99.98349	99.99844
	Urban	94.53816	99.98588	99.99965
	Non Urban	94.89402	98.35678	99.71461
T	Overall	0.00219	0.04051	0.13199
	Urban	0.00185	0.03743	0.23886
	Non Urban	0.01728	0.03100	0.07490
T ²	Overall	4.79e-6	0.00164	0.01742
	Urban	3.43e-6	0.00140	0.05706
	Non Urban	2.98e-4	9.61e-4	0.00561

Note. As of version 1.0.2 esci has implemented an improved method for calculating the CI for the diamond ratio; these will no longer match those presented in the 2nd edition of Introduction to the New Statistics.

d. Moderator Analysis

Effect	Moderator	Level	M	95% CI		SE	p, two tailed
				LL	UL		
My effect	Environment	Non Urban	0.01319	0.01060	0.01579	0.00132	< .001
		Urban	0.00738	0.00614	0.00862	6.33e-4	< .001
		Non Urban – Urban	0.00581	0.00294	0.00869	0.00147	< .001

Note. Estimate is based on a random effects (RE) model.

3. Meta-analysis of Head-bobs by species

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
DeCourcy and Jenssen 1994	A. Carolinensis	0.04000	0.03272	0.04728	3.209	0.00350	1.22e-5	0.01642	22	< .001
DeCourcy and Jenssen 1994	A. Carolinensis	0.00500	0.00291	0.00709	3.437	0.00100	1.00e-6	0.00458	21	< .001
Magna 2017	A. Carolinensis	0.03000	0.01078	0.04922	2.401	0.00833	6.94e-5	0.02500	9	0.007
Magna 2017	A. Carolinensis	0.01167	0.00590	0.01743	3.327	0.00250	6.25e-6	0.00750	9	0.002
Magna 2017	A. Carolinensis	0.04167	0.02310	0.06024	2.401	0.00833	6.94e-5	0.02764	11	< .001
Magna 2017	A. Carolinensis	0.02500	0.00643	0.04357	2.401	0.00833	6.94e-5	0.02764	11	0.013
Magna 2017	A. Carolinensis	0.00833	0.00397	0.02064	2.845	0.00583	3.40e-5	0.02475	18	0.171
Partan et al. 2011	A. Sagrei	0.15000	0.03201	0.26799	0.153	0.05833	0.00340	0.36893	40	0.014
McMann & Patterson 2012	A. Sagrei	0.06500	0.05942	0.07058	3.310	0.00267	7.11e-6	0.01193	20	< .001
McMann & Patterson 2012	A. Sagrei	0.16500	0.09872	0.23128	0.470	0.03167	0.00100	0.14162	20	< .001
Simon 2007	A. Sagrei	0.25333	0.14990	0.35677	0.205	0.05000	0.00250	0.24495	24	< .001
Magna 2017	A. Sagrei	0.00467	0.00206	0.00727	3.425	0.00125	1.56e-6	0.00573	21	0.001

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
Magna 2017	A. Sagrei	0.00333	0.00157	0.00510	3.444	8.33e-4	6.94e-7	0.00344	17	0.001
Magna 2017	A. Sagrei	0.01167	0.00645	0.01688	3.327	0.00250	6.25e-6	0.01146	21	< .001
Magna 2017	A. Sagrei	0.01050	0.00520	0.01580	3.327	0.00250	6.25e-6	0.01031	17	< .001
Magna 2017	A. Sagrei	0.00500	0.00148	0.00852	3.399	0.00167	2.78e-6	0.00707	18	0.008
McMann et al 2003	A. Sagrei	0.01767	0.01494	0.02039	3.420	0.00133	1.78e-6	0.00730	30	< .001
Edwards and Lailvoux 2012	A. Sagrei	0.05824	0.03482	0.08166	1.891	0.01143	1.31e-4	0.06157	29	< .001
Edwards and Lailvoux 2012	A. Sagrei	0.05201	0.03866	0.06536	2.725	0.00652	4.25e-5	0.03509	29	< .001
Patternson 1999	A. Sagrei	0.01200	0.00509	0.01891	3.265	0.00306	9.34e-6	0.00966	10	0.003
Patternson 1999	A. Sagrei	0.01094	0.00441	0.01748	3.285	0.00289	8.34e-6	0.00914	10	0.004
Patternson 1999	A. Sagrei	0.00403	0.00151	0.00655	3.434	0.00107	1.14e-6	0.00302	8	0.007
Patternson 1999	A. Sagrei	0.00653	0.00212	0.01095	3.384	0.00187	3.48e-6	0.00528	8	0.010
Patternson 1999	A. Sagrei	0.00936	0.00208	0.01663	3.263	0.00308	9.47e-6	0.00870	8	0.019
Patternson 1999	A. Sagrei	0.01357	0.00628	0.02085	3.291	0.00283	8.03e-6	0.00694	6	0.005
Tokarz 2003	A. Sagrei	0.00229	3.87e-4	0.00420	3.441	8.95e-4	8.00e-7	0.00358	16	0.022

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
Stoud et al 2019	A. Sagrei	0.02123	0.01194	0.03051	3.059	0.00454	2.06e-5	0.02488	30	< .001
Stoud et al 2019	A. Sagrei	0.02925	0.01902	0.03948	2.985	0.00500	2.50e-5	0.02739	30	< .001
Patterson 2002	A. Sagrei	0.00936	0.00208	0.01663	3.263	0.00308	9.47e-6	0.00870	8	0.019
Patterson 2002	A. Sagrei	0.00812	0.00321	0.01304	3.367	0.00208	4.32e-6	0.00588	8	0.006
Patterson 2002	A. Sagrei	0.01357	0.00628	0.02085	3.291	0.00283	8.03e-6	0.00694	6	0.005
Simon 2002	A. Sagrei	0.06667	0.03382	0.09951	1.555	0.01389	1.93e-4	0.03928	8	0.002
Simon 2002	A. Sagrei	0.00611	- 0.00374	0.01596	3.116	0.00417	1.74e-5	0.01179	8	0.186
Simon 2011	A. Sagrei	0.09167	0.05453	0.12880	1.252	0.01667	2.78e-4	0.05528	11	< .001
Simon 2011	A. Sagrei	0.03333	- 0.01866	0.08532	0.776	0.02333	5.44e-4	0.07739	11	0.184
Simon 2011	A. Sagrei	0.09833	0.07052	0.12615	1.625	0.01333	1.78e-4	0.06110	21	< .001
Simon 2011	A. Sagrei	0.04667	0.03971	0.05362	3.231	0.00333	1.11e-5	0.01528	21	< .001

b. Meta-Analytic Effect Sizes

Effect	Moderator	Level	M	95% CI		SE	k	95% PI		p, two tailed	FE CI length	RE CI length
				LL	UL			LL	UL			
My effect	Species	Overall	0.0222	0.0179	0.0266	0.00222	37	- 0.00145	0.0459	< .001	0.00135	0.00872
		A. Carolinensis	0.0220	0.0118	0.0322	0.00522	7	- 0.00466	0.0486	< .001	0.00342	0.02045
		A. Sagrei	0.0228	0.0177	0.0279	0.00261	30	- 0.00236	0.0479	< .001	0.00147	0.01023

Note. Estimate is based on a random effects (RE) model.

c. Effect Size Heterogeneity

Measure	Level	Estimate	95% CI	
			LL	UL
Diamond Ratio	Overall	6.4450	14.31655	28.12883
	A. Carolinensis	5.9810	.	.
	A. Sagrei	6.9474	.	.
H ²	Overall	30.8491	172.15142	704.92628
	A. Carolinensis	20.1670	8.38489	93.70993
	A. Sagrei	34.1157	218.67223	998.95821
I ² (%)	Overall	96.7584	99.41912	99.85814
	A. Carolinensis	95.0414	88.07378	98.93288
	A. Sagrei	97.0688	99.54269	99.89990
T	Overall	0.0119	0.02845	0.05770
	A. Carolinensis	0.0148	0.00916	0.03247
	A. Sagrei	0.0123	0.03166	0.06779
T ²	Overall	1.41e-4	8.10e-4	0.00333
	A. Carolinensis	2.18e-4	8.40e-5	0.00105

c. Effect Size Heterogeneity

Measure	Level	Estimate	95% CI	
			LL	UL
	A. Sagrei	1.53e-4	0.00100	0.00460

Note. As of version 1.0.2 esci has implemented an improved method for calculating the CI for the diamond ratio; these will no longer match those presented in the 2nd edition of Introduction to the New Statistics.

d. Moderator Analysis

Effect	Moderator	Level	M	95% CI		SE	p, two tailed
				LL	UL		
My effect	Species	A. Sagrei	0.0228	0.0177	0.0279	0.00261	< .001
		A. Carolinensis	0.0220	0.0118	0.0322	0.00522	< .001
		A. Sagrei – A. Carolinensis	7.81e-4	-0.0107	0.0122	0.00583	0.893

Note. Estimate is based on a random effects (RE) model.

4. Head-bob rates comparison of urban/ non urban zones

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
DeCourcy and Jenssen 1994	Non Urban	0.04000	0.03272	0.04728	3.214	0.00350	1.22e-5	0.01642	22	< .001
DeCourcy and Jenssen 1994	Non Urban	0.00500	0.00291	0.00709	3.448	0.00100	1.00e-6	0.00458	21	< .001
Magna 2017	Urban	0.03000	0.01078	0.04922	2.387	0.00833	6.94e-5	0.02500	9	0.007
Magna 2017	Urban	0.01167	0.00590	0.01743	3.335	0.00250	6.25e-6	0.00750	9	0.002
Magna 2017	Urban	0.04167	0.02310	0.06024	2.387	0.00833	6.94e-5	0.02764	11	< .001
Magna 2017	Urban	0.02500	0.00643	0.04357	2.387	0.00833	6.94e-5	0.02764	11	0.013
Magna 2017	Urban	0.00833	0.00397	0.02064	2.839	0.00583	3.40e-5	0.02475	18	0.171
Partan et al. 2011	Urban	0.15000	0.03201	0.26799	0.149	0.05833	0.00340	0.36893	40	0.014
McMann & Patterson 2012	Urban	0.06500	0.05942	0.07058	3.317	0.00267	7.11e-6	0.01193	20	< .001
McMann & Patterson 2012	Urban	0.16500	0.09872	0.23128	0.459	0.03167	0.00100	0.14162	20	< .001
Simon 2007	Non Urban	0.25333	0.14990	0.35677	0.200	0.05000	0.00250	0.24495	24	< .001
Magna 2017	Urban	0.00467	0.00206	0.00727	3.436	0.00125	1.56e-6	0.00573	21	0.001

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
Magna 2017	Urban	0.00333	0.00157	0.00510	3.455	8.33e-4	6.94e-7	0.00344	17	0.001
Magna 2017	Urban	0.01167	0.00645	0.01688	3.335	0.00250	6.25e-6	0.01146	21	< .001
Magna 2017	Urban	0.01050	0.00520	0.01580	3.335	0.00250	6.25e-6	0.01031	17	< .001
Magna 2017	Urban	0.00500	0.00148	0.00852	3.409	0.00167	2.78e-6	0.00707	18	0.008
McMann et al 2003	Urban	0.01767	0.01494	0.02039	3.431	0.00133	1.78e-6	0.00730	30	< .001
Edwards and Lailvoux 2012	Urban	0.05824	0.03482	0.08166	1.871	0.01143	1.31e-4	0.06157	29	< .001
Edwards and Lailvoux 2012	Non Urban	0.05201	0.03866	0.06536	2.716	0.00652	4.25e-5	0.03509	29	< .001
Patternson 1999	Urban	0.01200	0.00509	0.01891	3.271	0.00306	9.34e-6	0.00966	10	0.003
Patternson 1999	Urban	0.01094	0.00441	0.01748	3.291	0.00289	8.34e-6	0.00914	10	0.004
Patternson 1999	Urban	0.00403	0.00151	0.00655	3.445	0.00107	1.14e-6	0.00302	8	0.007
Patternson 1999	Urban	0.00653	0.00212	0.01095	3.394	0.00187	3.48e-6	0.00528	8	0.010
Patternson 1999	Non Urban	0.00936	0.00208	0.01663	3.269	0.00308	9.47e-6	0.00870	8	0.019
Patternson 1999	Urban	0.01357	0.00628	0.02085	3.298	0.00283	8.03e-6	0.00694	6	0.005
Tokarz 2003	Urban	0.00229	3.87e-4	0.00420	3.453	8.95e-4	8.00e-7	0.00358	16	0.022

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
Stoud et al 2019	Urban	0.02123	0.01194	0.03051	3.058	0.00454	2.06e-5	0.02488	30	< .001
Stoud et al 2019	Non Urban	0.02925	0.01902	0.03948	2.983	0.00500	2.50e-5	0.02739	30	< .001
Patterson 2002	Urban	0.00936	0.00208	0.01663	3.269	0.00308	9.47e-6	0.00870	8	0.019
Patterson 2002	Urban	0.00812	0.00321	0.01304	3.376	0.00208	4.32e-6	0.00588	8	0.006
Patterson 2002	Urban	0.01357	0.00628	0.02085	3.298	0.00283	8.03e-6	0.00694	6	0.005
Simon 2002	Non Urban	0.06667	0.03382	0.09951	1.535	0.01389	1.93e-4	0.03928	8	0.002
Simon 2002	Non Urban	0.00611	- 0.00374	0.01596	3.117	0.00417	1.74e-5	0.01179	8	0.186
Simon 2011	Non Urban	0.09167	0.05453	0.12880	1.232	0.01667	2.78e-4	0.05528	11	< .001
Simon 2011	Non Urban	0.03333	- 0.01866	0.08532	0.761	0.02333	5.44e-4	0.07739	11	0.184
Simon 2011	Non Urban	0.09833	0.07052	0.12615	1.605	0.01333	1.78e-4	0.06110	21	< .001
Simon 2011	Non Urban	0.04667	0.03971	0.05362	3.236	0.00333	1.11e-5	0.01528	21	< .001

b. Meta-Analytic Effect Sizes

Effect	Moderator	Level	M	95% CI		SE	k	95% PI		p, two tailed	FE CI length	RE CI length
				LL	UL			LL	UL			
My effect	Environment	Overall	0.0222	0.0179	0.0266	0.00222	37	- 0.00145	0.0459	< .001	0.00135	0.00872
		Non Urban	0.0375	0.0289	0.0461	0.00441	12	0.01176	0.0632	< .001	0.00330	0.01728
		Urban	0.0169	0.0116	0.0222	0.00270	25	- 0.00793	0.0417	< .001	0.00148	0.01059

Note. Estimate is based on a random effects (RE) model.

c. Effect Size Heterogeneity

Measure	Level	Estimate	95% CI	
			LL	UL
Diamond Ratio	Overall	6.4450	14.3165	28.12883
	Non Urban	5.2427	.	.
	Urban	7.1397	.	.
H ²	Overall	30.8491	172.1514	704.92628
	Non Urban	34.3294	62.7689	719.73731
	Urban	29.4914	93.8342	559.66018
I ² (%)	Overall	96.7584	99.4191	99.85814
	Non Urban	97.0870	98.4069	99.86106
	Urban	96.6092	98.9343	99.82132
T	Overall	0.0119	0.0285	0.05770
	Non Urban	0.0231	0.0315	0.10735
	Urban	0.0105	0.0190	0.04656
T ²	Overall	1.41e-4	8.10e-4	0.00333
	Non Urban	5.34e-4	9.90e-4	0.01152

c. Effect Size Heterogeneity

Measure	Level	Estimate	95% CI	
			LL	UL
	Urban	1.11e-4	3.60e-4	0.00217

Note. As of version 1.0.2 esci has implemented an improved method for calculating the CI for the diamond ratio; these will no longer match those presented in the 2nd edition of Introduction to the New Statistics.

d. Moderator analysis

95% CI						
Moderator	Level	M	LL	UL	SE	p, two tailed
Environment	Urban	0.0169	0.0116	0.0222	0.00270	< .001
	Non Urban	0.0375	0.0289	0.0461	0.00441	< .001
	Urban – Non Urban	-0.0206	-0.0307	-0.0105	0.00517	< .001

5. Pushup rate comparisons by species

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
Calsbeek and Manocha 2006	A. Sagrei	0.03889	-0.01063	0.08840	1.904	0.02222	4.94e-4	0.07370	11	0.111
Calsbeek and Manocha 2006	A. Sagrei	0.00556	0.00323	0.00788	10.048	0.00111	1.23e-6	0.00497	20	< .001
Drissens et al 2014	A. Sagrei	0.00667	- 4.67e-5	0.01338	9.254	0.00333	1.11e-5	0.02261	46	0.052
Drissens et al 2014	A. Sagrei	0.02167	0.00465	0.03869	6.310	0.00833	6.94e-5	0.04640	31	0.014
Drissens et al 2014	A. Sagrei	0.06500	0.03759	0.09241	3.967	0.01333	1.78e-4	0.06928	27	< .001
Drissens et al 2014	A. Sagrei	0.00500	-0.00193	0.01193	9.254	0.00333	1.11e-5	0.01563	22	0.149
Drissens et al 2014	A. Sagrei	0.04167	0.01460	0.06874	3.967	0.01333	1.78e-4	0.08000	36	0.004
Drissens et al 2014	A. Sagrei	0.00833	0.00138	0.01529	9.254	0.00333	1.11e-5	0.01528	21	0.021
Edwards and Lailvoux 2012	A. Sagrei	0.00385	- 2.98e-4	0.00800	9.804	0.00203	4.10e-6	0.01090	29	0.068
Edwards and Lailvoux 2012	A. Sagrei	0.01225	0.00520	0.01930	9.200	0.00344	1.18e-5	0.01853	29	0.001
Partan et al. 2011	A. Sagrei	0.14167	-0.02689	0.31022	0.164	0.08333	0.00694	0.52705	40	0.097

a. Table of Studies

Study label	Moderator level	M	95% CI		RE weight	SE	SE ²	s	N	p, two tailed
			LL	UL						
Simon 2002	A. Sagrei	0.01389	-0.00779	0.03556	5.845	0.00917	8.40e-5	0.02593	8	0.174
Simon 2002	A. Sagrei	0.01833	0.00520	0.03147	7.992	0.00556	3.09e-5	0.01571	8	0.013
Simon 2007	A. Sagrei	0.14667	0.05013	0.24320	0.505	0.04667	0.00218	0.22862	24	0.005
Farrell et al 2016	A. Carolinensis	0.26520	0.19811	0.33229	1.109	0.03048	9.29e-4	0.10560	12	< .001
Farrell et al 2016	A. Carolinensis	0.01220	0.00171	0.02269	8.468	0.00477	2.27e-5	0.01651	12	0.027
Yan et al 2002	A. Carolinensis	0.06000	0.01716	0.10284	2.954	0.01667	2.78e-4	0.04083	6	0.016

b. Meta-Analytic Effect Sizes

Effect	Moderator	Level	M	95% CI		SE	k	95% PI		p, two tailed	FE CI length	RE CI length
				LL	UL			LL	UL			
My effect	SP	Overall	0.0194	0.01264	0.0261	0.00343	17	- 0.00283	0.0416	< .001	0.00317	0.0135
		A. Sagrei	0.0154	0.00831	0.0226	0.00364	14	- 0.00666	0.0375	< .001	0.00322	0.0143
		A. Carolinensis	0.0459	0.02703	0.0647	0.00961	3	0.01771	0.0740	< .001	0.01776	0.0377

Note. Estimate is based on a random effects (RE) model.

c. Effect Size Heterogeneity

Measure	Level	Estimate	95% CI	
			LL	UL
Diamond Ratio	Overall	4.24368	13.39508	31.18846
	A. Sagrei	4.42613	.	.
	A. Carolinensis	2.12036	.	.
H ²	Overall	8.56371	112.12018	670.37176
	A. Sagrei	4.15819	8.76285	264.32228
	A. Carolinensis	36.52713	19.29447	3071.49918
I ² (%)	Overall	88.32282	99.10810	99.85083
	A. Sagrei	75.95105	88.58819	99.62167
	A. Carolinensis	97.26231	94.81717	99.96744
T	Overall	0.01079	0.04137	0.10153
	A. Sagrei	0.00649	0.01017	0.05924
	A. Carolinensis	0.09083	0.06518	0.84438
T ²	Overall	1.16e-4	0.00171	0.01031
	A. Sagrei	4.21e-5	1.03e-4	0.00351

c. Effect Size Heterogeneity

Measure	Level	Estimate	95% CI	
			LL	UL
	A. Carolinensis	0.00825	0.00425	0.71297

Note. As of version 1.0.2 esci has implemented an improved method for calculating the CI for the diamond ratio; these will no longer match those presented in the 2nd edition of Introduction to the New Statistics.

d. Moderator Analysis

Effect	Moderator	Level	M	95% CI		SE	p, two tailed
				LL	UL		
My effect	SP	A. Carolinensis	0.0459	0.02703	0.0647	0.00961	< .001
		A. Sagrei	0.0154	0.00831	0.0226	0.00364	< .001
		A. Carolinensis – A. Sagrei	0.0304	0.01029	0.0506	0.01027	0.003

Note. Estimate is based on a random effects (RE) model.