Appendix S5

Results of the MacroCAIC phylogenetic analyses for linear and quadratic (hump-shaped) association between mass and richness within squamate taxa.

The results show a significant negative relationship between body mass and species richness in lizards (*p* < 0.04 in all MNS values), and a marginally-significant correlation with a positive coefficient in snakes (*p* = 0.079, 0.031, and 0.042 for MNS = 10, 20, and 30, respectively). The amount of variance explained, however, is very low (<4% for squamates, lizards and snakes under all MNS values). The results for amphisbaenians are non-significant. These contrasting functions probably resulted in non-significant correlation across the whole Squamata clade (*p* > 0.1 for all MNS values). The results obtained for the families were mostly non-significant (3 positive, 9 negative and 77 non-significant linear relationships. Eight of 89 quadratic relationships are significant: 3 negative and 5 positive).

| **Taxonomic level** | **Clade** | **sample size** | **mms** | **R2 (linear)** | **slope** | **p (linear)** | **R2 (quadratic)** | **quadratic coefficient** | **p (quadratic)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Order | Squamata | 4134 | 10 | 0.000 | -0.073 | 0.917 | 0.000 | 0.471 | 0.781 |
| Order | Squamata | 4134 | 20 | 0.000 | 0.066 | 0.951 | 0.000 | 0.074 | 0.978 |
| Order | Squamata | 4134 | 30 | 0.000 | 0.227 | 0.875 | 0.000 | -0.701 | 0.858 |
| sub-order | Amphisbaenia | 51 | 10 | 0.000 | 0.003 | 1.000 | 0.131 | -45.003 | 0.259 |
| sub-order | Amphisbaenia | 51 | 20 | 0.002 | 1.661 | 0.903 | 0.399 | -134.974 | 0.075 |
| sub-order | Sauria | 2828 | 10 | 0.007 | -2.108 | 0.032 | 0.011 | 0.842 | 0.670 |
| sub-order | Sauria | 2828 | 20 | 0.015 | -3.358 | 0.021 | 0.020 | -0.029 | 0.992 |
| sub-order | Sauria | 2828 | 30 | 0.017 | -4.042 | 0.039 | 0.024 | 1.081 | 0.803 |
| sub-order | Serpentes | 1255 | 10 | 0.010 | 1.829 | 0.079 | 0.015 | 6.192 | 0.103 |
| sub-order | Serpentes | 1255 | 20 | 0.027 | 3.511 | 0.032 | 0.030 | 7.505 | 0.224 |
| sub-order | Serpentes | 1255 | 30 | 0.034 | 4.483 | 0.042 | 0.039 | 11.903 | 0.233 |
| Family | Agamidae | 219 | 10 | 0.052 | -5.749 | 0.100 | 0.130 | 21.570 | 0.112 |
| Family | Agamidae | 219 | 20 | 0.150 | -10.316 | 0.038 | 0.254 | 28.765 | 0.181 |
| Family | Agamidae | 219 | 30 | 0.263 | -15.508 | 0.012 | 0.295 | 12.099 | 0.689 |
| Family | Amphisbaenidae | 41 | 10 | 0.006 | 1.473 | 0.848 | 0.092 | -25.553 | 0.511 |
| Family | Amphisbaenidae | 41 | 20 | 0.028 | 4.503 | 0.749 | 0.357 | -98.981 | 0.326 |
| Family | Anguidae | 34 | 10 | 0.622 | -19.951 | 0.035 | 0.675 | 19.465 | 0.712 |
| Family | Boidae | 34 | 10 | 0.000 | -0.243 | 0.969 | 0.002 | -5.859 | 0.915 |
| Family | Carphodactylidae | 22 | 10 | 0.001 | -1.714 | 0.954 | 0.186 | 302.109 | 0.473 |
| Family | Chamaeleonidae | 139 | 10 | 0.001 | 0.690 | 0.833 | 0.012 | 6.090 | 0.528 |
| Family | Chamaeleonidae | 139 | 20 | 0.153 | 5.774 | 0.209 | 0.184 | 11.179 | 0.303 |
| Family | Chamaeleonidae | 139 | 30 | 0.140 | 6.716 | 0.362 | 0.250 | 30.049 | 0.334 |
| Family | Colubridae | 247 | 10 | 0.003 | -0.957 | 0.668 | 0.005 | -5.334 | 0.703 |
| Family | Colubridae | 247 | 20 | 0.013 | 2.381 | 0.520 | 0.021 | 14.392 | 0.581 |
| Family | Colubridae | 247 | 30 | 0.045 | 4.719 | 0.268 | 0.046 | 8.705 | 0.756 |
| Family | Cordylidae | 41 | 10 | 0.010 | -2.054 | 0.833 | 0.068 | -36.898 | 0.628 |
| Family | Cordylidae | 41 | 20 | 0.003 | -1.104 | 0.929 | 0.051 | -38.325 | 0.776 |
| Family | Dactyloidae | 206 | 10 | 0.023 | 3.216 | 0.355 | 0.023 | 2.058 | 0.868 |
| Family | Dactyloidae | 206 | 20 | 0.016 | -3.305 | 0.588 | 0.027 | 5.201 | 0.797 |
| Family | Dactyloidae | 206 | 30 | 0.157 | -9.779 | 0.143 | 0.172 | -19.847 | 0.405 |
| Family | Diplodactylidae | 96 | 10 | 0.000 | -0.176 | 0.973 | 0.030 | 13.691 | 0.467 |
| Family | Diplodactylidae | 96 | 20 | 0.027 | -3.764 | 0.594 | 0.031 | 1.545 | 0.957 |
| Family | Diplodactylidae | 96 | 30 | 0.007 | 3.567 | 0.859 | 0.021 | 22.569 | 0.798 |
| Family | Dipsadidae | 209 | 10 | 0.012 | 2.225 | 0.445 | 0.019 | 12.676 | 0.483 |
| Family | Dipsadidae | 209 | 20 | 0.001 | -0.757 | 0.891 | 0.026 | -26.058 | 0.450 |
| Family | Dipsadidae | 209 | 30 | 0.007 | -2.854 | 0.731 | 0.026 | -32.928 | 0.557 |
| Family | Elapidae | 144 | 10 | 0.020 | 2.750 | 0.409 | 0.075 | 29.244 | 0.138 |
| Family | Elapidae | 144 | 20 | 0.020 | 2.916 | 0.502 | 0.083 | 30.552 | 0.195 |
| Family | Elapidae | 144 | 30 | 0.024 | 3.506 | 0.569 | 0.028 | 11.290 | 0.739 |
| Family | Gekkonidae | 352 | 10 | 0.021 | 4.897 | 0.194 | 0.022 | 7.468 | 0.497 |
| Family | Gekkonidae | 352 | 20 | 0.006 | 3.017 | 0.597 | 0.021 | 15.559 | 0.354 |
| Family | Gekkonidae | 352 | 30 | 0.007 | 3.125 | 0.658 | 0.020 | 18.808 | 0.478 |
| Family | Gerrhosauridae | 28 | 10 | 0.033 | -2.231 | 0.695 | 0.111 | 26.830 | 0.616 |
| Family | Gymnophthalmidae | 80 | 10 | 0.235 | -19.668 | 0.030 | 0.265 | -37.189 | 0.118 |
| Family | Gymnophthalmidae | 80 | 20 | 0.341 | -22.509 | 0.099 | 0.647 | -90.067 | 0.027 |
| Family | Gymnophthalmidae | 80 | 30 | 0.059 | -9.173 | 0.694 | 0.482 | -100.934 | 0.307 |
| Family | Iguanidae | 31 | 10 | 0.023 | 2.016 | 0.776 | 0.339 | 165.465 | 0.312 |
| Family | Lacertidae | 185 | 10 | 0.002 | -1.507 | 0.785 | 0.002 | 0.912 | 0.971 |
| Family | Lacertidae | 185 | 20 | 0.005 | -2.578 | 0.755 | 0.037 | 29.239 | 0.455 |
| Family | Lacertidae | 185 | 30 | 0.038 | -6.906 | 0.484 | 0.041 | -19.000 | 0.776 |
| Family | Lamprophiidae | 136 | 10 | 0.139 | 6.091 | 0.050 | 0.233 | 37.103 | 0.049 |
| Family | Lamprophiidae | 136 | 20 | 0.135 | 6.476 | 0.216 | 0.516 | 71.971 | 0.013 |
| Family | Lamprophiidae | 136 | 30 | 0.129 | 6.207 | 0.277 | 0.688 | 86.162 | 0.004 |
| Family | Leptotyphlopidae | 27 | 10 | 0.390 | 50.106 | 0.260 | 0.889 | -7.874 | 0.798 |
| Family | Liolaemidae | 119 | 10 | 0.006 | 2.489 | 0.688 | 0.093 | -95.006 | 0.137 |
| Family | Liolaemidae | 119 | 20 | 0.000 | -0.396 | 0.977 | 0.003 | -30.373 | 0.888 |
| Family | Liolaemidae | 119 | 30 | 0.001 | 1.539 | 0.935 | 0.003 | -24.549 | 0.918 |
| Family | Natricidae | 77 | 10 | 0.053 | 2.385 | 0.343 | 0.073 | 10.462 | 0.461 |
| Family | Natricidae | 77 | 20 | 0.041 | 2.403 | 0.552 | 0.052 | 8.950 | 0.691 |
| Family | Natricidae | 77 | 30 | 0.122 | 4.352 | 0.358 | 0.122 | 5.245 | 0.833 |
| Family | Phrynosomatidae | 112 | 10 | 0.005 | -2.543 | 0.742 | 0.036 | 56.032 | 0.460 |
| Family | Phrynosomatidae | 112 | 20 | 0.000 | 0.831 | 0.937 | 0.020 | 53.821 | 0.615 |
| Family | Phrynosomatidae | 112 | 30 | 0.026 | 6.497 | 0.582 | 0.056 | -84.295 | 0.596 |
| Family | Phyllodactylidae | 48 | 10 | 0.044 | -7.952 | 0.515 | 0.190 | 78.508 | 0.282 |
| Family | Phyllodactylidae | 48 | 20 | 0.000 | -0.235 | 0.990 | 0.955 | 273.289 | 0.023 |
| Family | Pygopodidae | 32 | 10 | 0.112 | 10.351 | 0.378 | 0.601 | 149.960 | 0.028 |
| Family | Pythonidae | 26 | 10 | 0.294 | -4.389 | 0.345 | 0.314 | 8.622 | 0.889 |
| Family | Scincidae | 682 | 10 | 0.012 | -2.632 | 0.167 | 0.014 | -0.621 | 0.881 |
| Family | Scincidae | 682 | 20 | 0.015 | -3.598 | 0.248 | 0.026 | 2.643 | 0.705 |
| Family | Scincidae | 682 | 30 | 0.013 | -3.691 | 0.354 | 0.023 | 2.782 | 0.758 |
| Family | Sphaerodactylidae | 92 | 10 | 0.005 | 3.443 | 0.720 | 0.029 | 8.405 | 0.474 |
| Family | Sphaerodactylidae | 92 | 20 | 0.035 | 9.366 | 0.487 | 0.096 | 17.753 | 0.286 |
| Family | Sphaerodactylidae | 92 | 30 | 0.025 | 7.327 | 0.664 | 0.148 | 16.548 | 0.404 |
| Family | Teiidae | 61 | 10 | 0.020 | -4.116 | 0.659 | 0.039 | -18.720 | 0.613 |
| Family | Teiidae | 61 | 20 | 0.423 | -22.840 | 0.114 | 0.835 | -162.549 | 0.022 |
| Family | Teiidae | 61 | 30 | 0.423 | -22.840 | 0.114 | 0.835 | -162.549 | 0.022 |
| Family | Tropiduridae | 78 | 10 | 0.062 | -13.914 | 0.278 | 0.062 | -22.420 | 0.844 |
| Family | Tropiduridae | 78 | 20 | 0.293 | -28.234 | 0.166 | 0.346 | 106.123 | 0.639 |
| Family | Tropiduridae | 78 | 30 | 0.331 | 60.741 | 0.310 | 0.584 | 527.135 | 0.341 |
| Family | Typhlopidae | 74 | 10 | 0.004 | 1.866 | 0.808 | 0.045 | -22.486 | 0.485 |
| Family | Typhlopidae | 74 | 20 | 0.001 | 0.905 | 0.923 | 0.030 | -24.762 | 0.597 |
| Family | Typhlopidae | 74 | 30 | 0.003 | -2.060 | 0.925 | 0.434 | -186.958 | 0.227 |
| Family | Varanidae | 53 | 10 | 0.483 | -4.642 | 0.026 | 0.490 | -0.231 | 0.988 |
| Family | Varanidae | 53 | 20 | 0.657 | -4.560 | 0.050 | 0.732 | -22.943 | 0.336 |
| Family | Viperidae | 206 | 10 | 0.005 | 1.028 | 0.633 | 0.008 | -5.002 | 0.772 |
| Family | Viperidae | 206 | 20 | 0.070 | 4.719 | 0.201 | 0.106 | -27.904 | 0.432 |
| Family | Viperidae | 206 | 30 | 0.001 | 0.830 | 0.924 | 0.057 | -44.570 | 0.426 |
| Family | Xantusiidae | 26 | 10 | 0.002 | -1.328 | 0.916 | 0.004 | -6.953 | 0.928 |