

**Supplementary Table 2:** Power-law mediation of K by H

| Model                 | Model DF             | Error DF    | RMSE      | R      | Model F-stat | Model sig. |
|-----------------------|----------------------|-------------|-----------|--------|--------------|------------|
| $\zeta_+ = a (H_+)^b$ | 1                    | 181         | 1.027     | 0.6351 | 122          | 4.71e-22   |
| Parameter             | Estimate             | t statistic | p         |        |              |            |
| a                     | 2.541 [1.876, 3.441] | 6.07        | 7.479e-09 |        |              |            |
| b                     | 1.567 [1.288, 1.847] | 11.06       | 4.707e-22 |        |              |            |
| Model                 | Model DF             | Error DF    | RMSE      | R      | Model F-stat | Model sig. |
| $K_- = a (H_-)^b$     | 1                    | 282         | 0.5107    | 0.8339 | 644          | 9.05e-75   |
| Parameter             | Estimate             | t statistic | p         |        |              |            |
| a                     | 0.942 [0.785, 1.130] | -0.644      | 0.520     |        |              |            |
| b                     | 1.884 [1.738, 2.031] | 25.37       | 9.053e-75 |        |              |            |

Legend: 95% confidence intervals are in brackets. RMSE and R are measures of model fit as described in Table 3.