

A cautious note on the relationship between social mindfulness and concern with environmental protection

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In a comprehensive study, Van Doesum et al. (1) show that social mindfulness (SoMi), that is, “being thoughtful of others in the present moment, and considering their needs and wishes before making a decision,” is related, at the country level, to the environmental performance index (EPI), a country’s performance on indicators of environmental health and ecosystem vitality (e.g., water quality, CO₂ emissions; ref. 2). Across 31 countries, the authors report a “solid effect” of $r = 0.617$, 95% CI [0.325; 0.909], and conclude that “SoMi is associated with greater concern with protecting the environment” (ref. 1, p. 4) and thus “can be linked to highly consequential outcomes at societal level” (ref. 1, p. 6).

On closer inspection, however, the effect appears less solid. First, the EPI is highly correlated with log-transformed GDP ($r = 0.80$; ref. 2),

and partialling out GDP markedly reduces the relationship between SoMi and EPI, $pr = 0.273$, $P = 0.147$. Second, the relationship is largely driven by three influential cases (India, Turkey, and Indonesia) without which the correlation is smaller and nonsignificant, $r = 0.305$, $P = 0.130$. Finally, the research remains silent on the individual-level relationship between SoMi and environmental concern, which is of utmost importance for understanding individual behavior.

We thus set out to examine the individual-level relationship between SoMi and environmental concern by sampling 600 US participants stratified by age and gender via Prolific Academic. Participants’ environmental concern was measured with four well-established criteria: the subscales ecocentric concern, environmental movement activism, and personal

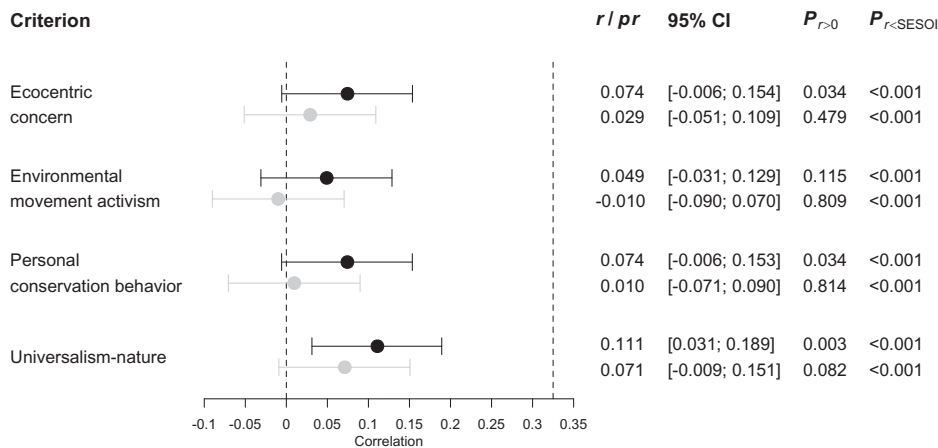


Fig. 1. Forest plot of Pearson (black) and partial (gray) correlations (partialling out social value orientation, honesty–humility, and empathic concern) between SoMi and four criteria pertaining to environmental concern. Dashed lines indicate $r = 0$ and $r = 0.325$. One-tailed P values are used.

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The authors declare no competing interest.

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Table 1. Correlation matrix including means, SDs, and Cronbach's alphas (along the diagonal) of all measured variables (n = 600)

	SoMi	Social value orientation	Honesty–humility	Empathic concern	Ecocentric concern	Environmental movement activism	Personal conservation behavior	Universalism–nature
SoMi	(0.73)				0.03 [–0.05; 0.11]	–0.01 [–0.09; 0.07]	0.01 [–0.07; 0.09]	0.07 [–0.01; 0.15]
Social value orientation	0.24 [0.16; 0.31]							
Honesty–humility	0.19 [0.11; 0.26]	0.29 [0.21; 0.36]	(0.78)					
Empathic concern	0.06 [–0.03; 0.13]	0.20 [0.12; 0.28]	0.28 [0.20; 0.35]	(0.86)				
Ecocentric concern	0.07 [–0.01; 0.15]	0.17 [0.09; 0.25]	0.18 [0.10; 0.26]	0.42 [0.35; 0.48]	(0.87)			
Environmental movement activism	0.05 [–0.03; 0.13]	0.24 [0.16; 0.31]	0.15 [0.07; 0.22]	0.43 [0.36; 0.49]	0.57 [0.52; 0.62]	(0.94)		
Personal conservation behavior	0.07 [–0.01; 0.15]	0.16 [0.09; 0.24]	0.32 [0.24; 0.39]	0.44 [0.38; 0.50]	0.52 [0.46; 0.58]	0.59 [0.53; 0.64]	(0.85)	
Universalism–nature	0.11 [0.03; 0.19]	0.17 [0.09; 0.25]	0.18 [0.10; 0.25]	0.41 [0.35; 0.48]	0.64 [0.59; 0.68]	0.70 [0.66; 0.74]	0.57 [0.51; 0.62]	(0.92)
Mean	0.65	29.39	3.57	3.90	5.98	4.49	5.05	4.44
SD	0.23	13.04	0.67	0.66	0.88	1.38	1.04	1.17

Range of measures: SoMi = 0 to 1; social value orientation = -16.26° to 61.39° ; honesty–humility and empathic concern = 1 (strongly disagree) to 5 (strongly agree); ecocentric concern, environmental movement activism, and personal conservation behavior = 1 (strongly disagree) to 7 (strongly agree); universalism–nature = 1 (not like me at all) to 6 (very much like me). Partial correlations (partialling out social value orientation, honesty–humility, and empathic concern) are shown above the diagonal. All $r \geq 0.15$ are significant at $P < 0.001$, $r \geq 0.11$ are significant at $P < 0.01$, and $pr \leq |0.07|$ are nonsignificant (two-tailed).

conservation behavior of the environmental attitudes inventory (3), as well as universalism–nature of Schwartz's values (4). Furthermore, we collected three covariates to test whether the relationship holds when partialling out basic prosocial tendencies related to proenvironmental attitudes (e.g., ref. 5): social value orientation (6), the prosocial trait honesty–humility (7), and empathic concern (8). Preregistration, syntax, data, and study materials are available on the Open Science Framework (<https://osf.io/wk9tr/>). Following an equivalence testing approach (9), we compared our estimates against a smallest effect size of interest (SESOI), which we a priori defined as the lower bound of the 95% CI of the correlation between SoMi and EPI ($r = 0.325$). All tests were one-tailed (9).

Results are shown in Fig. 1 and Table 1. SoMi was only weakly correlated with ecocentric concern ($r = 0.074$, $P =$

0.034), environmental movement activism ($r = 0.049$, $P = 0.115$), personal conservation behavior ($r = 0.074$, $P = 0.034$), and universalism–nature ($r = 0.111$, $P = 0.003$). All estimates were significantly smaller than the SESOI at $P < 0.001$. Next, we tested the correlations when partialling out the basic prosocial tendencies. All partial correlations ($pr \leq 0.071$) were significantly smaller than the SESOI at $P < 0.001$, and none reached significance when tested against zero (Fig. 1).

Overall, our analyses remind us to be wary of the ecological fallacy, stating that a relationship at the country level can be different at the individual level (10). Indeed, we found the individual-level relationship between SoMi and environmental concern to be negligible in magnitude.

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