
Context Specific Personality Associations: How Place Shapes the Expression of Personality Traits

**KAYLA M GARNER &
WILLIAM REVELLE
NORTHWESTERN UNIVERSITY**



The Traditional Assumption

Traditional View

- Trait–outcome relationships are treated as stable
- Effects are averaged across people and places
- Factor and facet- outcome relationships are assumed to generalize across contexts

Critical Questions

- Do these associations look the same everywhere?
- Example: Does Compassion relate to ideology similarly in liberal and conservative regions?
- Example: Does Extraversion relate to pro-environmental behaviors similarly in pro-environmental and non-pro-environmental regions?

Geographic Psychology: Evidence for Context Effects

Personality × Life Satisfaction

Jokela et al., 2015

- Openness: Stronger link to life satisfaction in more population-dense and open neighborhoods.
- Agreeableness & Conscientiousness: Stronger link to greater life satisfaction in low-satisfaction neighborhoods.
- Study done with postal codes in the London area

Partisanship × Longevity

Ebert, Berkessel, & Jonsson, 2023

- Republicans live longer than Democrats, but only in Republican-leaning states.
- Little to no longevity gap in Democratic-leaning states.
- Study done across the US

Personality × Religiosity

Gebauer et al., 2014

- Agreeableness & Conscientiousness: Stronger association with religiosity in highly religious cultures.
- Study sample included 66 countries

Person–Culture Match

Fulmer et al., 2010

- Greater self-esteem and wellbeing when personal traits align with regional culture.
- Study sample includes 28 societies

What Are Context-Specific Personality Associations (CSPAs)?

- ❑ **Context-Specific Personality Associations (CSPAs)** describe how the strength and direction of personality traits' associations with ideologies or behaviors vary across contexts. This occurs as the expression of personality adapts to social or physical environments

Why CSPAs Occur: Theoretical Mechanisms

Socioanalytic Theory

(Hogan & Holland, 2003; Hogan & Blicke, 2018)

- Personality traits help individuals get along and get ahead in their respective environments
- Traits function adaptively within social contexts

Person-Environment Fit Theory

(Kandler et al., 2024; Kandler & Rauthmann, 2022)

- Individuals constantly work to maintain "fit" between their personality and environment
- Dynamic interaction between person and context

1

Adaptive Expression

Both theories suggest personality expression adapts to context.

2

Contextual Dependence

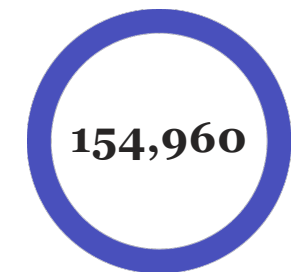
The strength and direction of trait-behavior associations depend on the environment.

3

CSPA Formation

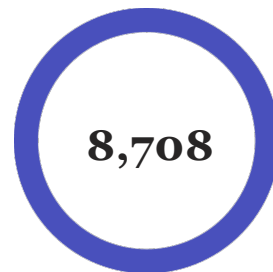
This creates context-specific patterns in how traits relate to outcomes.

Sample Characteristics



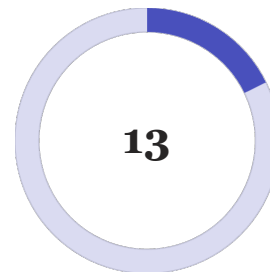
Total Participants

Included in the analysis.



ZCTAs Represented

Across the United States.



Median Participants per ZCTA

Range: 5 to 284, Mean: 17.77, SD: 15.76

39

Median Age

Range: 18-90 years, SD: 16.51, Mean: 40.8

66.2%

Women

33.7%

Men

Data Source: SAPA Project (2017-2019)

- The Synthetic Aperture Personality Assessment (SAPA) project collects global self-report data on over 6000 items. It utilizes a Massively Missing Completely at Random (MMCAR) sampling procedure, administering a random subset of items to maximize participant completion and data breadth, with oversampling of the Big Five and SAPA Personality Inventory (SPI) 27 facets.

Learn more: sapa-project.org

US Residents

Participants were residing in the United States.

ZIP Code Reported

Participants provided their Zone Improvement Plan (ZIP) code for geographic correlation.

Complete Personality Scores

Each participant had a score for every personality indicator in the analysis.

ZCTA with ≥ 5 Participants

Only ZCTAs (ZIP Code Tabulation Areas) with a minimum of 5 SAPA participants were included.

Measures: Big Five Personality Dimensions

Utilizing the SAPA Personality Inventory (SPI) 5 (Condon, 2018; Goldberg, 1992).

Agreeableness

- *Example items:*
 - "Believe that others have good intentions"
 - "Sympathize with others feelings"

Conscientiousness

- *Example items:*
 - "Want every detail taken care of"
 - "Try to follow the rules"

Neuroticism

- *Example items:*
 - "Experience my emotions intensely"
 - "Panic easily"

Extraversion

- *Example items:*
 - "Am skilled in handling social situations"
 - "Find it difficult to approach others" (reverse scored)

Openness

- *Example items:*
 - "Love to think up new ways of doing things"
 - "Love to reflect on things"

Measures: Personality Facets

SAPA Personality Inventory (SPI) - 27 Facets (Condon, 2018)

Selected examples from the 27 facets:

Compassion

- Example item:
 - "Am sensitive to the needs of others"

Authoritarianism

- Example item:
 - "Believe that laws should be strictly enforced"

Honesty

- Example item:
 - "Cannot imagine lying or cheating"

Impulsivity

- Example item:
 - "Jump into things without thinking"

Sociability

- Example item:
 - "Usually like to spend my free time with people"

Measures: Cognitive Ability

The International Cognitive Ability Resource (ICAR-60) is a 60-item open-source measure assessing cognitive ability across several key domains (Condon & Revelle, 2014):

3D Rotation

Verbal Reasoning

Letter-Number Series

Matrix Reasoning

Measures: Outcomes

Conservatism

A SPI-27 Conservatism facet (Condon, 2018)

Example items:

"Tend to vote for conservative political candidates"

"Believe in one true religion"

"Like to stand during the national anthem"

"Tend to vote for liberal political candidates" (reverse scored)

"Don't consider myself religious" (reverse scored)

Pro-environmental Behaviors

Assessed via unique/non-overlapping items from the Oregon Avocational Interest Scale (ORAIS) – Green Activities (Goldberg, 2010) and the Student Environmental Behavior Scale (Markowitz et al., 2012)

Example items:

"Am willing to change habits in order to have less impact on the environment"

"Recycle paper, plastic, and metal."

How are we studying this?

1) Unique Slope For Each ZCTA

- Represents the ZCTA-specific relationship between personality traits and a given ideology, value, or interest
- e.g., Relationship/slope between **Agreeableness and Conservatism** in each individual ZCTA (**slopes ranged from -0.23 to 0.33**)

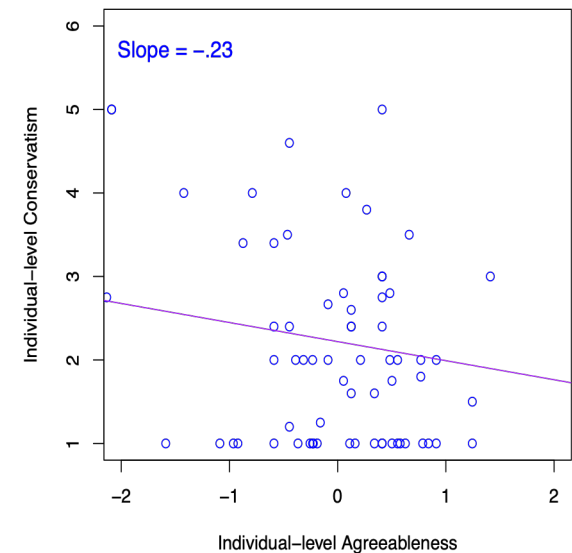
2) Cluster means

- The average level of the ideology, value, or interest within each ZCTA
- e.g., Each individual ZCTA had a different **average level of conservatism, ranging from 1.29 to 5.70** on a six-point scale.

3) Correlation between random intercepts and random slopes

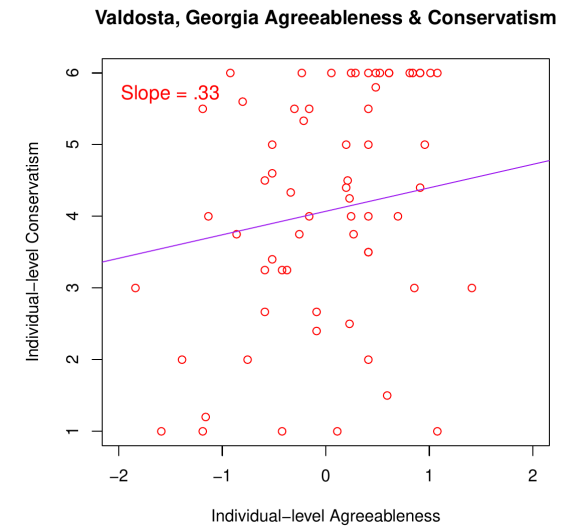
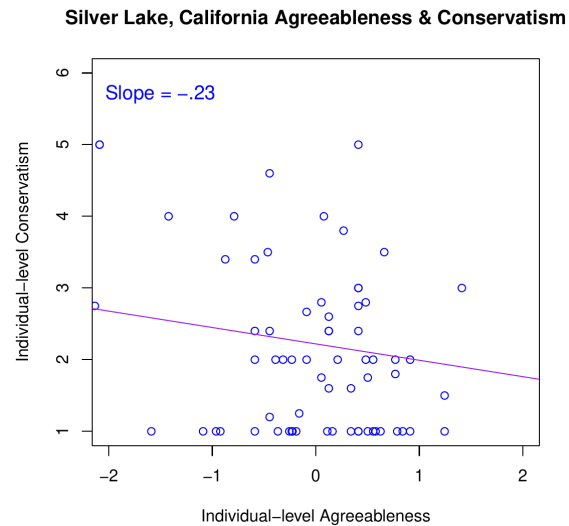
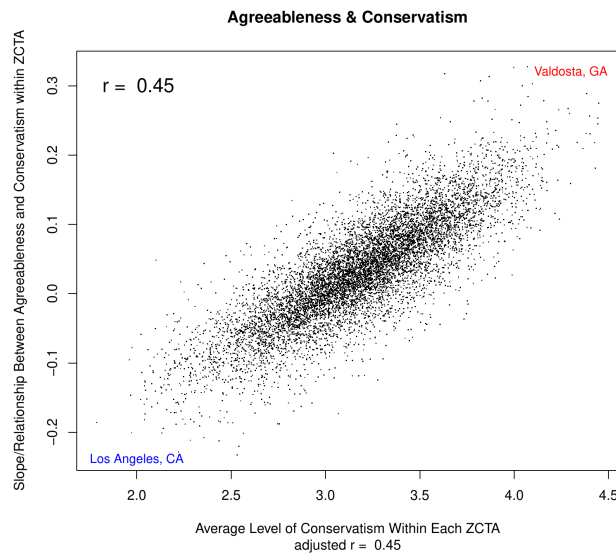
- Correlation between the unique ZCTA-specific slopes and cluster means, adjusting it for the overall fixed effects and any within cluster dependencies
- e.g., **Correlation of .45** for agreeableness and conservatism, meaning highly agreeable individuals living in more conservative ZCTAs = more likely to be conservative. Highly agreeable individuals living in less conservative ZCTAs = less conservative.

Silver Lake, California Agreeableness & Conservatism

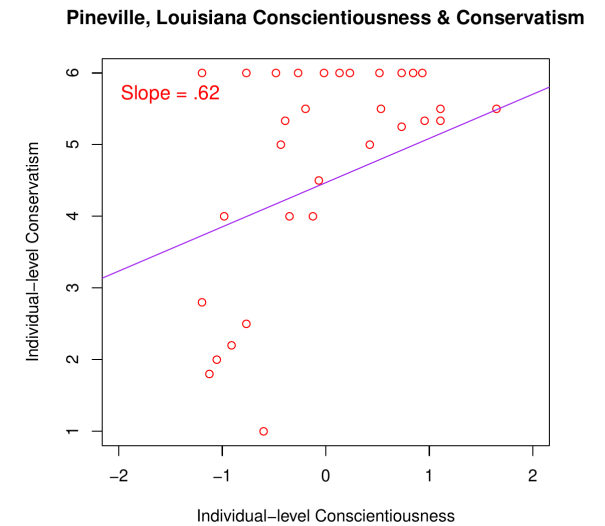
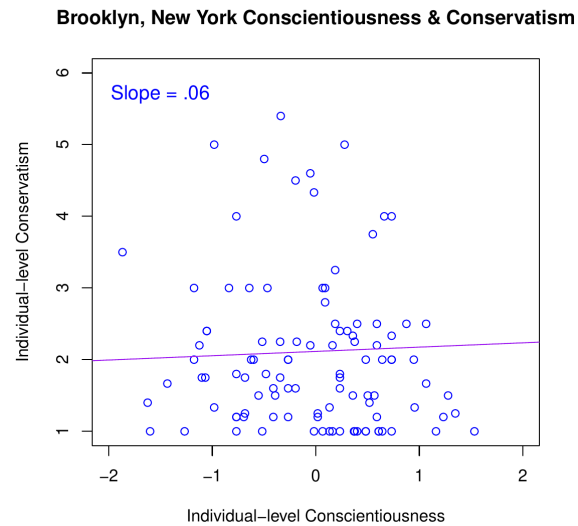
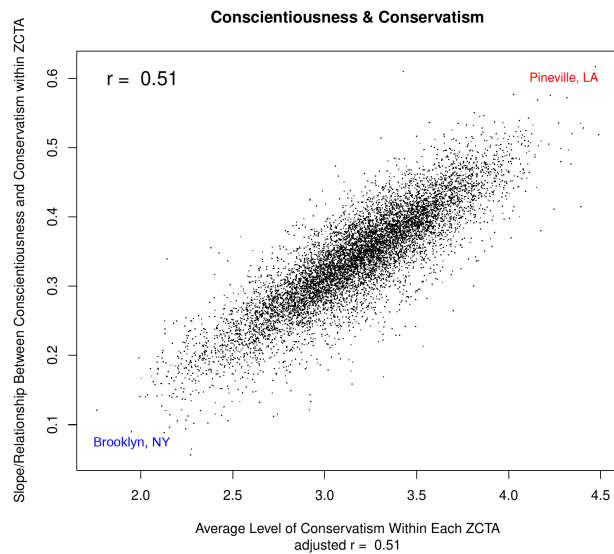


The adjusted r is effectively the interaction effect: the trait-outcome association expressed as a function of each ZCTA's average on the outcome (a trait $\times$ local-context interaction).

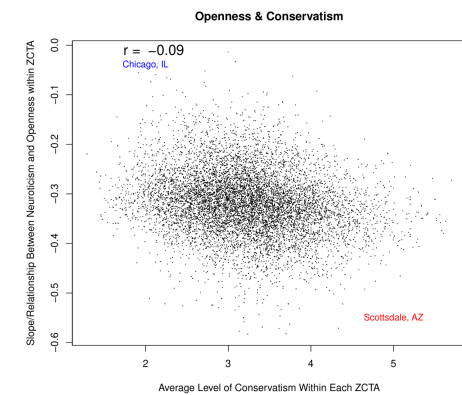
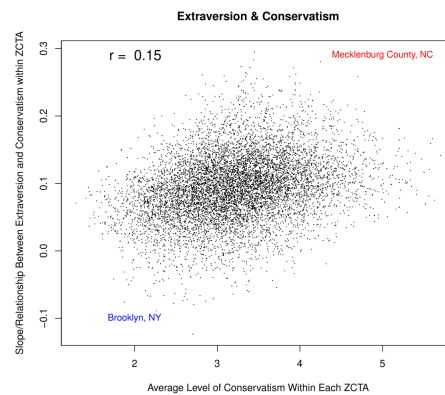
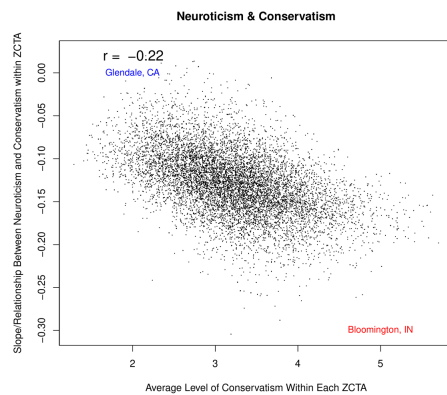
Polarized CSPAs



Amplified CSPAs

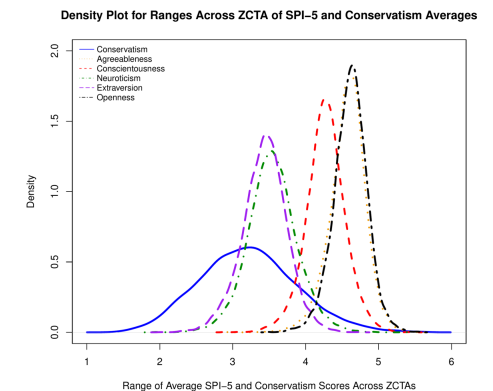
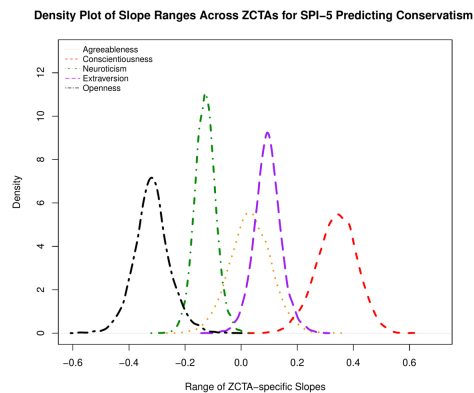


Big Five CSPAs with Conservatism



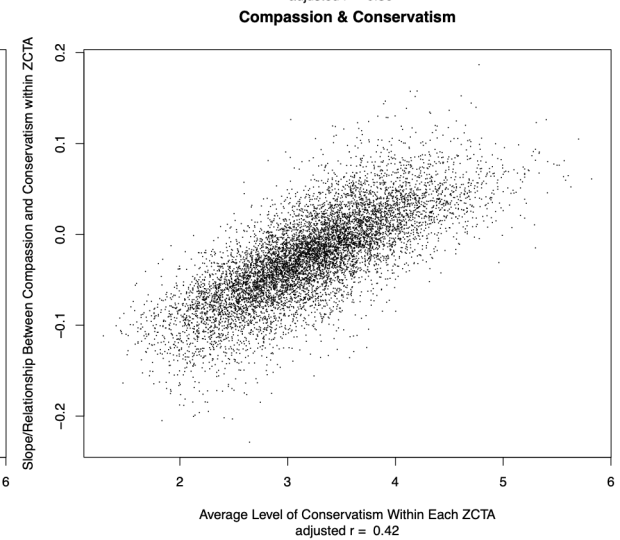
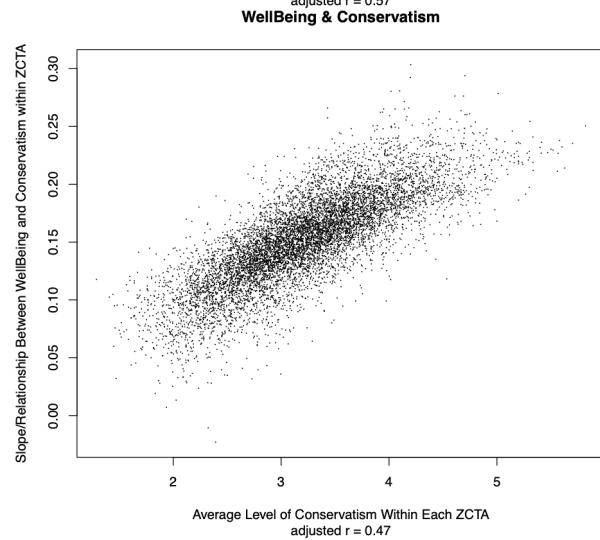
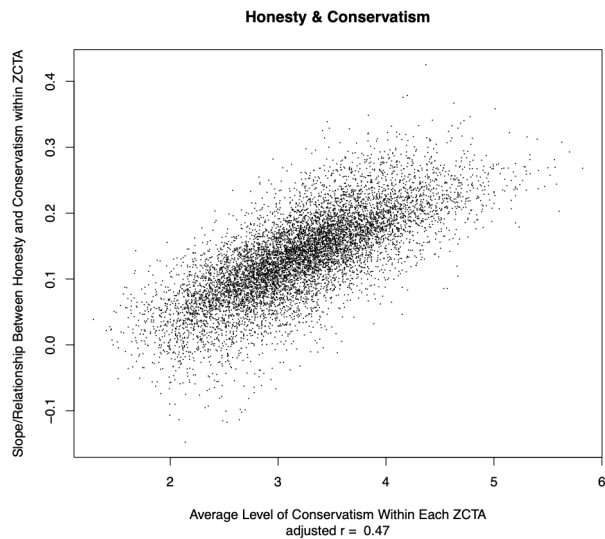
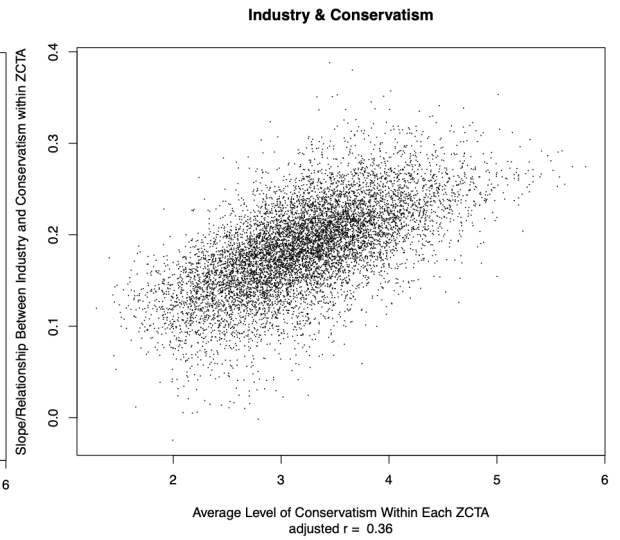
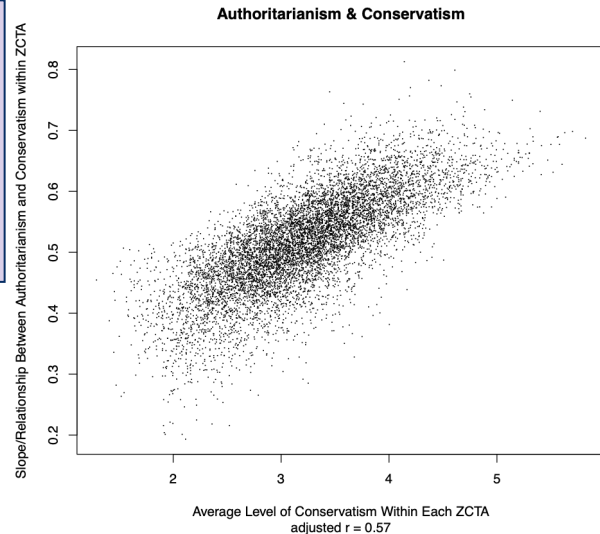
SPI-5 Factor	Zero-order Correlation	adjusted r / Interaction Effect
Agreeableness	.00	.45
Conscientiousness	.19	.51
Neuroticism	-.08	-.22
Extraversion	.04	.15
Openness	-.16	-.09

These adjusted correlations are effectively interaction effects: the trait–outcome association expressed as a function of each ZCTA's average on the outcome (a trait $\times$ local-context interaction). Adjusted r is the correlation across ZCTAs between each place's trait–outcome slope and its average level on the outcome (the cluster mean), after accounting for fixed effects and within-ZCTA dependence. It indexes how the association shifts with local context.



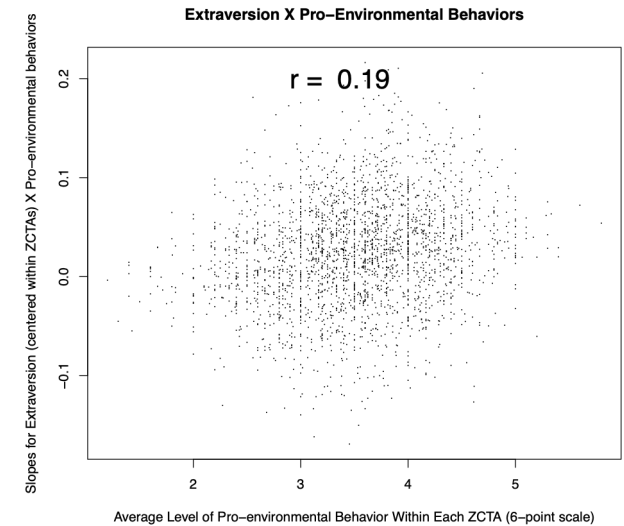
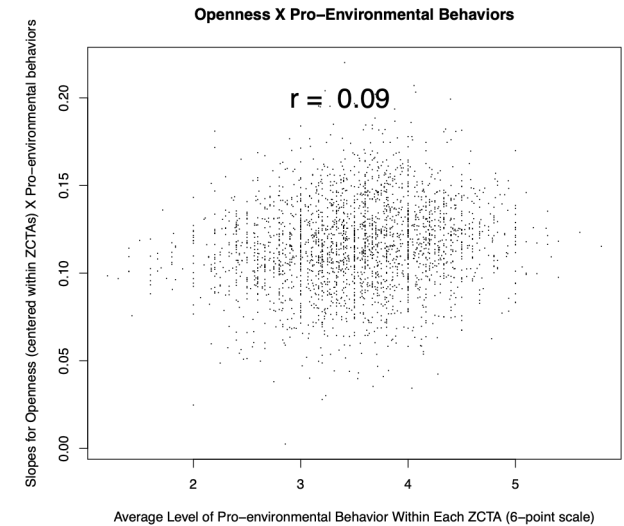
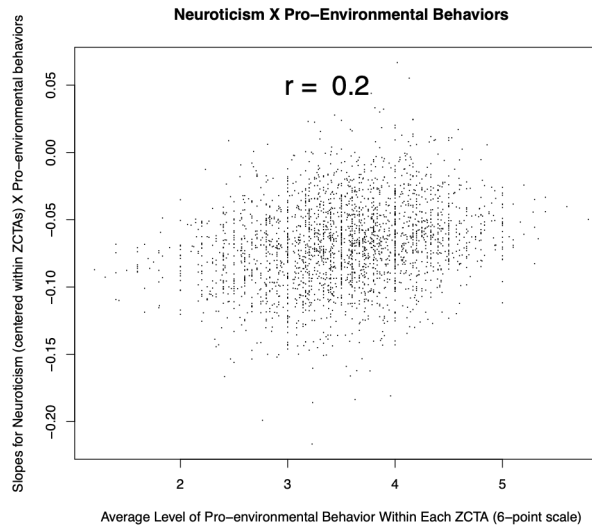
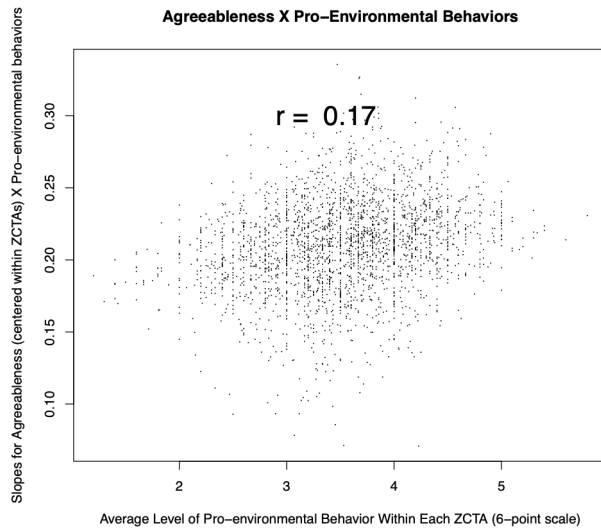
Notable Facet-level Findings with Conservatism

SPI-27 Factor	Zero-order Correlation	adjusted r/ Interaction Effect
Authoritarianism	.37	.57
Honesty	.08	.47
Wellbeing	.11	.47
Compassion	-.03	.42
Industry	.14	.36



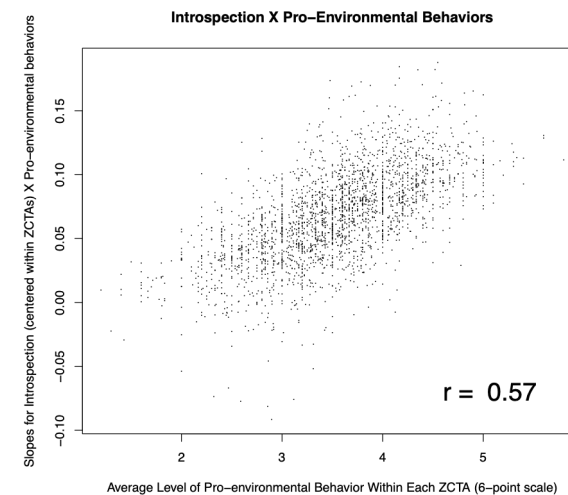
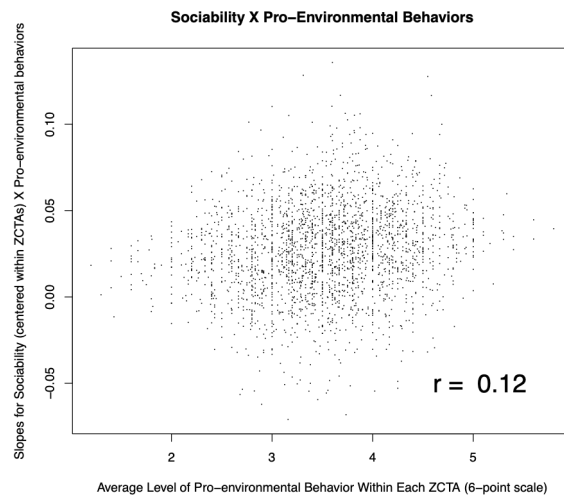
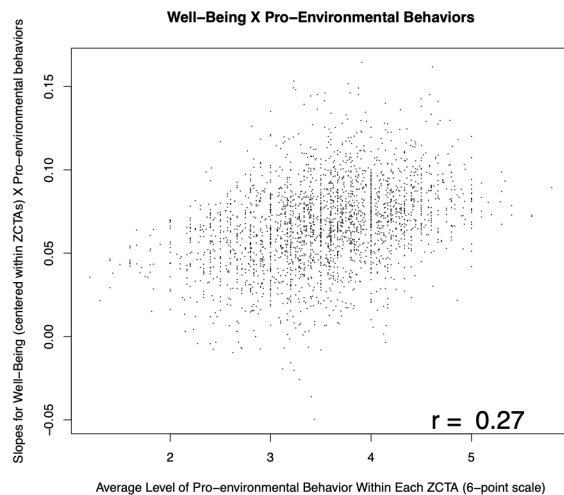
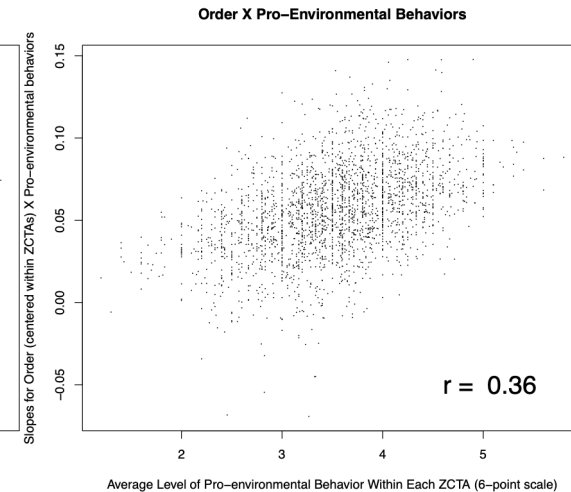
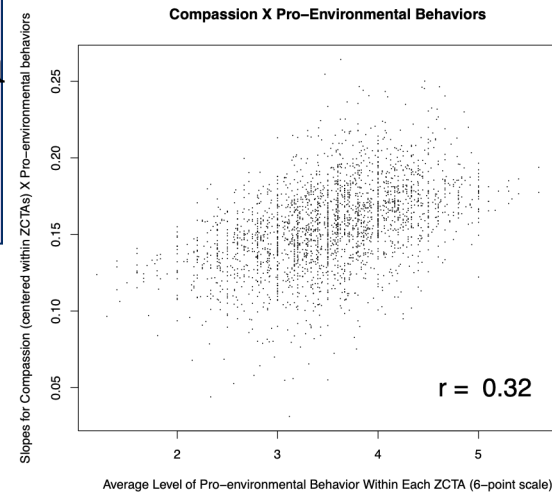
Big Five CSPAs with Pro-Environmental Behaviors

SPI-5 Factor	Zero-order Correlation	adjusted r/ Interaction Effect
Agreeableness	.09	.17
Conscientiousness	.05	NA
Neuroticism	-.04	.20
Extraversion	.02	.19
Openness	.06	.09

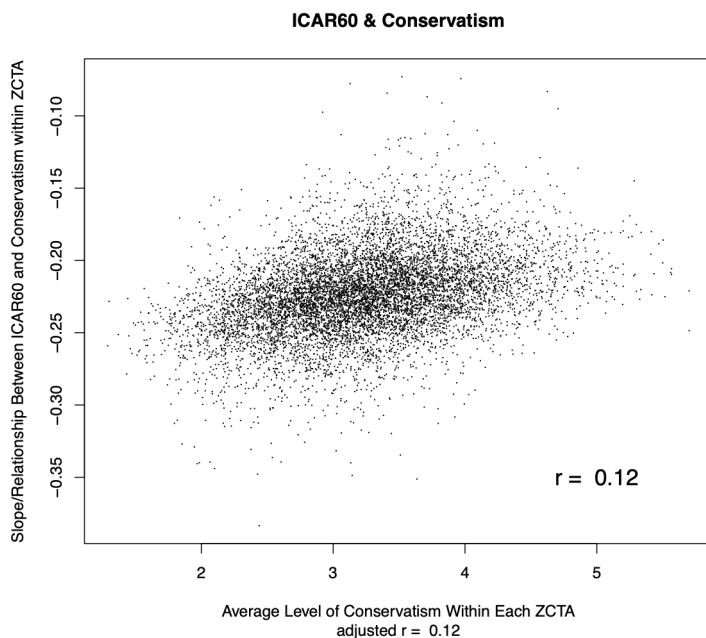


Facet-level Findings with Pro-Environmental Behaviors

SPI-27 Factor	Zero-order Correlation	adjusted r/ Interaction Effect
Compassion	.07	.32
Order	.04	.36
Wellbeing	.05	.27
Sociability	.02	.12
Introspection	.04	.57



Conservatism and Cognitive Ability



ICAR Factor	Zero-order Correlation	adjusted r / Interaction Effect
ICAR-60	-.13	.12
Letter-Number Series	-.08	.22
Matrix Reasoning	-.07	-.03
3D Rotation	-.09	.02
Verbal Reasoning	-.11	.01

*Also presented at ISIR 2026: Context-Specific Personality Associations Between Cognitive Ability and Political Ideology (Garner & Revelle, 2026) [[linked here](#)]

Four Ways of Showing the Personality × Attitude Relationship

- The associations of personality traits with Pro-environmental Behaviors and Conservatism vary across neighborhoods as a function of how prominent Pro-environmental Behaviors and Conservatism are in those neighborhoods.

	Agreeableness	Conscientiousness	Neuroticism	Extraversion	Openness
Overall Correlations					
Conservatism	.00	.19	-.08	.04	-.16
Pro-environmental Behaviors	.09	.05	-.04	.02	.06
Pooled Within-ZCTA Correlations					
Conservatism	-.12	.25	-.02	-.10	-.29
Pro-environmental Behaviors	.12	.03	-.07	.06	.11
Range in Slopes Across ZCTAs					
Conservatism	-.23 to .33	.06 to .62	-.30 to .02	-.12 to .29	-.58 to -.01
Pro-environmental Behaviors	.04 to .36	NA	-.20 to .05	-.15 to .25	.01 to .29
Correlations between Random Intercepts and Random Slopes					
Conservatism	.45	.51	-.22	.15	-.09
Pro-environmental Behaviors	.17	NA	.20	.19	.09

Key Findings

Individual Differences

People vary in their motivations and capabilities to *get along* and *get ahead* within their environments.

Social Integration

Those with personality traits oriented towards *getting along* and *getting ahead* tend to have ideologies and behaviors aligned with their local community.

Adaptive Function

This integration is highly adaptive, allowing individuals to successfully navigate and thrive within their social contexts.

This adaptive function is supported by key theoretical frameworks:

Socioanalytic Theory

Focuses on *Getting along* and *getting ahead* (Hogan & Holland, 2003; Hogan & Blicke, 2018).

Person-Environment Fit Theory

Emphasizes meeting environmental demands to maintain fit (Kandler et al., 2024; Kandler & Rauthmann, 2022).

Thank You!

QR Code for publications
and personal website

Kmgarner.com

https://scholar.google.com/citations?hl=en&user=_DzUC5kAAAAJ



References

- Condon, D. M. & Revelle, W. (2014). The International Cognitive Ability Resource: Development and initial validation of a public-domain measure. *Intelligence*, 43, 52–64.
- Condon, D. M. (2018). The SAPA personality inventory: an empirically-derived, hierarchically-organized self-report personality assessment model. *PsyArXiv*. <https://doi.org/10.31234/osf.io/sc4p9>
- Ebert, T., Berkessel, J. B., & Jonsson, T. (2023). Political person–culture match and longevity: The partisanship–mortality link depends on the cultural context. *Psychological Science*, 34(11), 1192–1205. <https://doi.org/10.1177/09567976231196145>
- Fulmer, C. A., Gelfand, M. J., Kruglanski, A. W., Kim-Prieto, C., Diener, E., Pierro, A., & Higgins, E. T. (2010). On “feeling right” in cultural contexts: How person-culture match affects self-esteem and subjective well-being. *Psychological Science*, 21(11), 1563–1569. <https://doi.org/10.1177/0956797610384742>
- Garner, K. M., & Revelle, W. (2024). Geographically varying associations between personality and pro-environmental behaviors across the USA. *European Journal of Personality*, 0(0), 08902070241296977. <https://doi.org/10.1177/08902070241296977>
- Garner, K. M., & Revelle, W. (2025). Context specific personality associations with political ideology are shaped by geographical variation. *Scientific Reports*, 15, 37606. <https://doi.org/10.1038/s41598-025-21447-y>
- Gebauer, J. E., Bleidorn, W., Gosling, S. D., Rentfrow, P. J., Lamb, M. E., & Potter, J. (2014). Cross-cultural variations in Big Five relationships with religiosity: A sociocultural motives perspective. *Journal of Personality and Social Psychology*, 107(6), 1064–1091. <https://doi.org/10.1037/a0037683>
- Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, 4, 26–42. <https://doi.org/10.1037/1040-3590.4.1.26>
- Goldberg, L. R. (2010). Personality, Demographics, and Self-Reported Behavioral Acts: The Development of Avocational Interest Scales from Estimates of the Amount of Time Spent in Interest-Related Activities. In C. R. Agnew, D. E. Carlston, W. G. Graziano, & J. R. Kelly (Eds.), *Then A Miracle Occurs: Focusing on Behavior in Social Psychological Theory and Research*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780195377798.003.0011>
- Hogan, R., & Blickle, G. (2018). Socioanalytic theory: Basic concepts, supporting evidence and practical implications. In V. Z.-H. T. K. Shackelford (Ed.), *The SAGE handbook of personality and individual differences: The science of personality and individual differences* (pp. 110–129). Sage Reference. <https://doi.org/10.4135/9781526451163.n5>
- Hogan, R., & Holland, B. (2003). Using theory to evaluate personality and job-performance relations: A socioanalytic perspective. *Journal of Applied Psychology*, 88(1), 100–112.
- Jokela, M., Bleidorn, W., Lamb, M. E., Gosling, S. D., & Rentfrow, P. J. (2015). Geographically varying associations between personality and life satisfaction in the London metropolitan area. *Proceedings of the National Academy of Sciences*, 112(3), 725–730. <https://doi.org/10.1073/pnas.1415800112>
- Kandler, C., Kühn, S., Mönkediek, B., Forstner, A. J., & Bleidorn, W. (2024). A multidisciplinary perspective on person-environment fit: Relevance, measurement, and future directions. *Current Directions in Psychological Science*, 33(3), 198–205. <https://doi.org/10.1177/09637214241242451>
- Kandler, C., & Rauthmann, J. F. (2022). Conceptualizing and studying characteristics, units, and fits of persons and environments: A coherent synthesis. *European Journal of Personality*, 36(3), 293–318. <https://doi.org/10.1177/08902070211048728>
- Markowitz, E. M., Goldberg, L. R., Ashton, M. C., & Lee, K. (2012). Profiling the “pro-environmental individual”: A personality perspective. *Journal of Personality*, 80(1), 81–111. <https://doi.org/10.1111/j.1467-6494.2011.00721.x>

Appendix: Additional Facets

