



The hidden layer of land-use change: Cognitive Processes shaping Agro-Ecosystems in the Amazon



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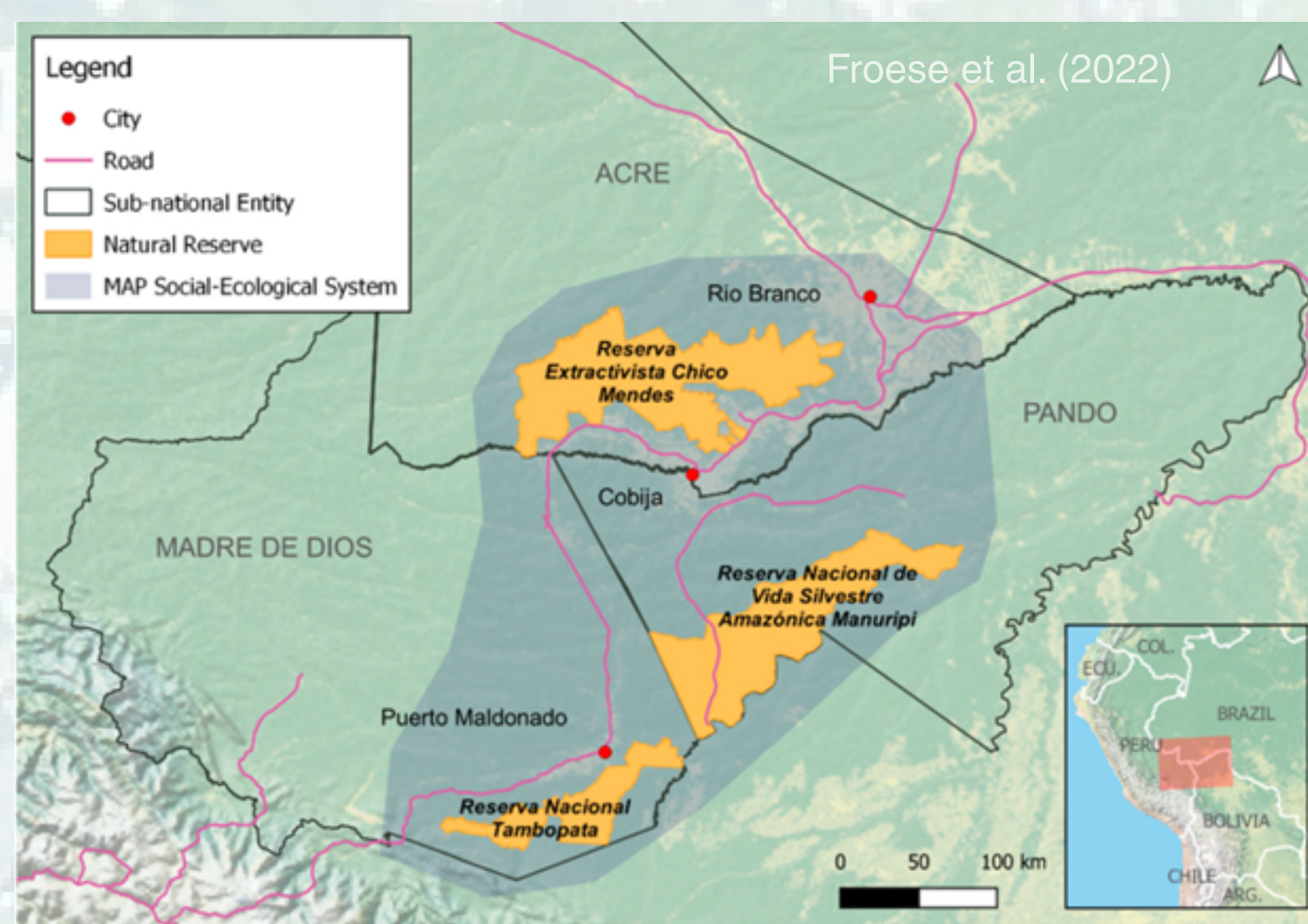
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Introduction

- Amazon 2024: ~4.5 million ha of forest lost to deforestation and fire — a record high
- MAP region (Madre de Dios, Peru – Acre, Brazil – Pando, Bolivia): shared ecology, yet diverging land use focus (crops – cattle – Brazil nut)
- Land use research has focused on structural drivers (land-use intensification through farming and ranching) — the inner, personal sphere behind land use decisions remains largely overlooked
- This study applies social and environmental psychology to land use

→ Research question: How do human values shape land use attitudes in the MAP region?

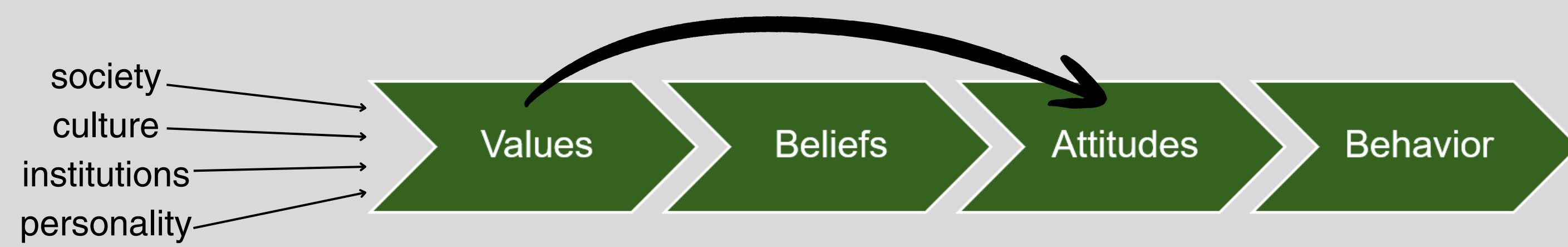


Materials and methods

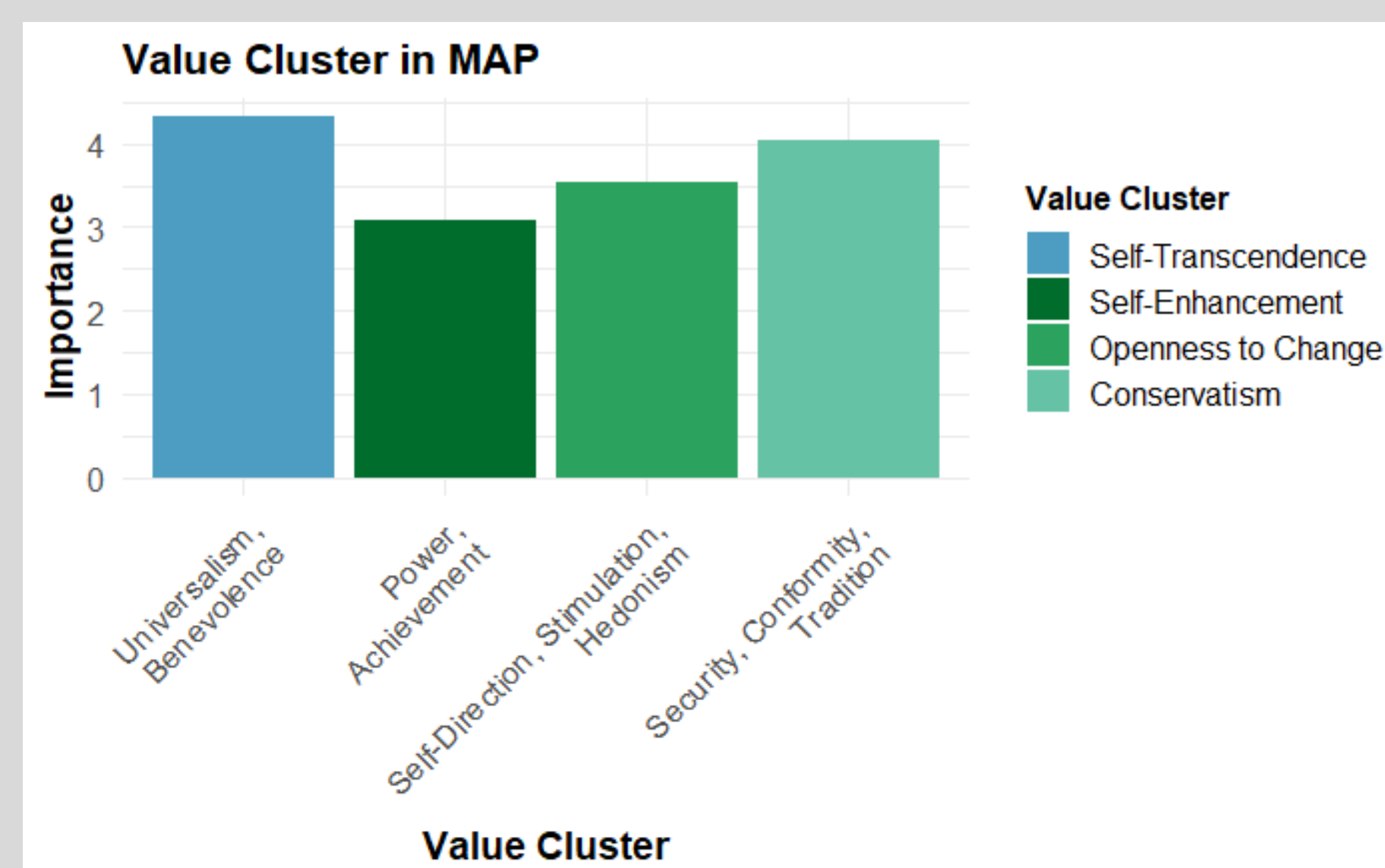
- 3 months of fieldwork from July – October 2024; 171 households surveyed in three countries
- Values: Schwartz PVQ-20 → 4 clusters: Self-Transcendence, Self-Enhancement, Openness to Change, Conservatism (Schwartz, 2012)
- Attitudes: 11 concepts (e.g. happiness) linked to photos for 5 land-use types (Hoelle, 2018)
- Regression models: OLS, OLOGIT, Binomial

Framework

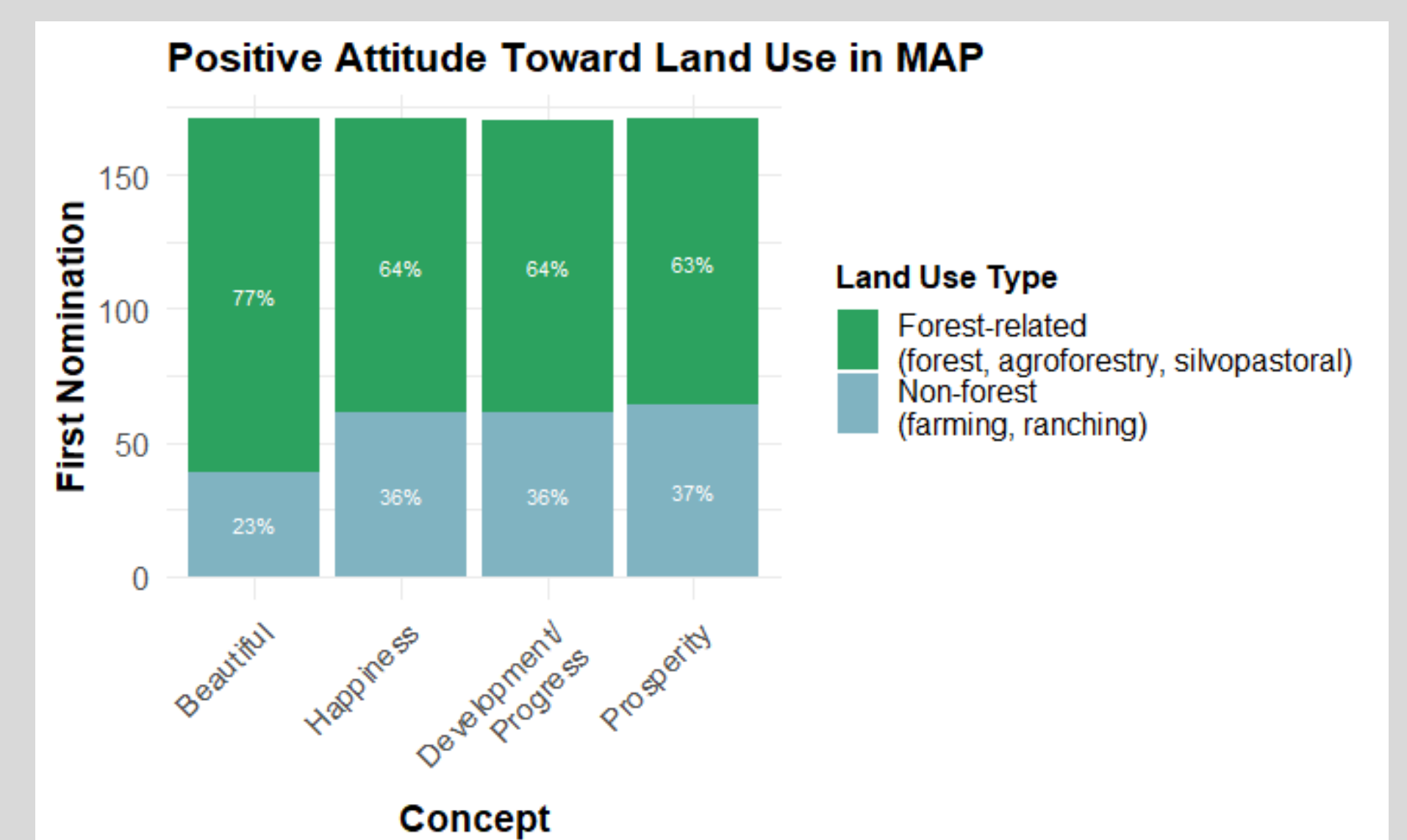
- This inner, personal sphere is theorized as a cognitive hierarchy — a chain running from values (stable, abstract) to behavior (concrete, situational) (Fulton et al., 1996; Homer & Kahle, 1988; Jones et al., 2016)



Results



- Self-Transcendence** (care for others' welfare and equality) and **Conservatism** (tradition and stability) are the value clusters dominating in the MAP region

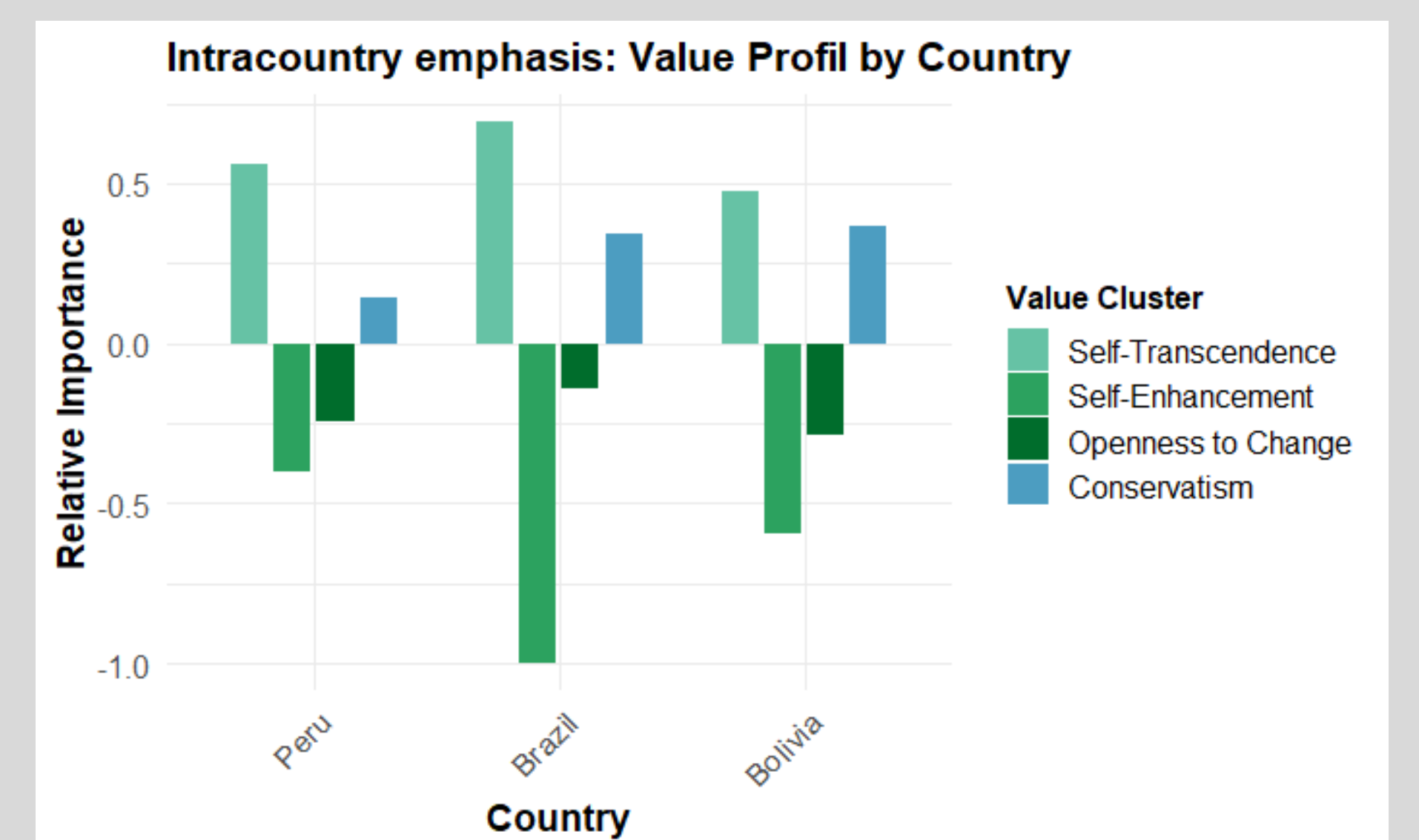


- Positive concepts** (as beauty, happiness, development/progress, prosperity) are more strongly associated with **forest-related land uses** than with agriculture or cattle

Regression Results: Value Cluster on Pro-Forest Attitude						
Variable	OLS		OLogit		Binomial	
	(1)	(2)	(3)	(4)	(5)	(6)
Self-Transcendence	0.270 (0.225)	0.141 (0.233)	0.510 * (0.310)	0.359 (0.340)	0.315 (0.193)	0.185 (0.209)
Self-Enhancement	-0.005 (0.119)	-0.005 (0.128)	0.054 (0.165)	0.001 (0.180)	-0.005 (0.100)	-0.011 (0.114)
Openness to Change	0.076 (0.175)	-0.047 (0.181)	0.139 (0.239)	-0.039 (0.259)	0.087 (0.149)	-0.060 (0.162)
Conservatism	-0.408 ** (0.196)	-0.194 (0.207)	-0.707 ** (0.288)	-0.420 (0.307)	-0.476 *** (0.172)	-0.252 (0.187)
Num. Obs.	171	166	171	166	171	166
Covariates	no	yes	no	yes	no	yes

* p < 0.1; ** p < 0.05; *** p < 0.01; Standard errors in parentheses

- Across all statistical models, higher **Self-Transcendence** consistently predicts **stronger** pro-forest attitudes, while higher **Conservatism** predicts **weaker** ones



- Peru, Brazil, and Bolivia share the **same value structure**: Self-Transcendence and Conservatism prevail everywhere, despite differences in magnitude

Take-home message

→ Values more similar across borders than land use itself

→ Shared values: a base for transboundary cooperation

Identifying shared values across cultures is urgent because societies need a common moral ground for cross-cultural dialogue and for addressing challenges that transcend national boundaries, such as forest loss and land use change (Bok, 1995).

→ Leverage point for policy

- Build on Self-Transcendence**: align outreach with stewardship, community well-being, future generations
- Account for Conservatism**: novel practices (agroforestry, silvopastoralism) may be perceived as risky or uncertain

Important references

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