



Organizational and personal factors influencing forestry planners' biodiversity conservation practices

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Background

- Forestry faces evolving expectations, including demand for greening and biodiversity conservation
- Actors differ in how they respond to expectations and regulations
- Foresters are the ones who integrate objectives in practice (rather than land-owners)
→ **They apply resources and personal judgment**



Biodiversity conservation as a policy objective

- Rather recent
- Already institutionalized
- Leads to integration of extractive use and conservation (=sustainable forestry)

→ **Operationalization: Habitat conservation**

Habitat conservation in forestry operations

- Valuable characteristics of habitats of special significance must be conserved (Forest Act 1996)

→ **Delineated outside operation or operated so that characteristics remain viable**

- Other habitats

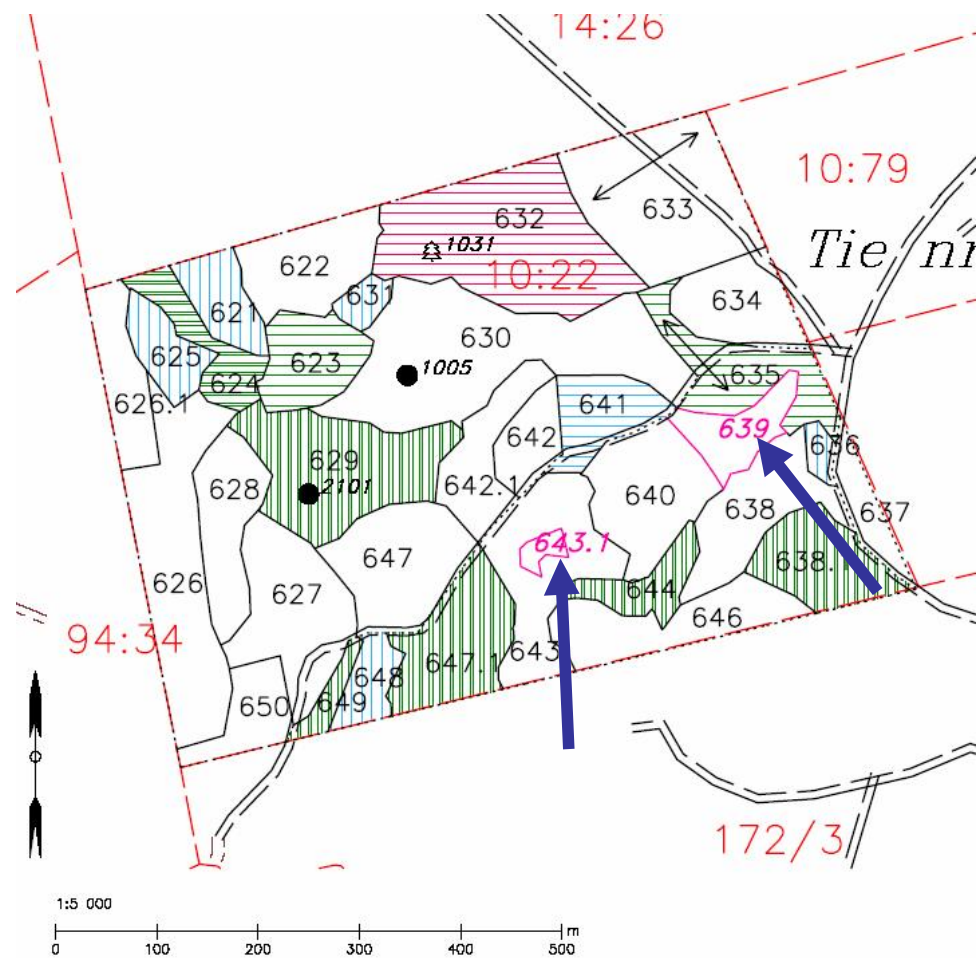
→ **Opportunity to over-comply**



Delineation in practice



Delineation of valuable habitats



Factors influencing delineation

Organizational factors

Personal factors



Factors influencing delineation

Organizational factors

Organizational resources

Human resources

External resources



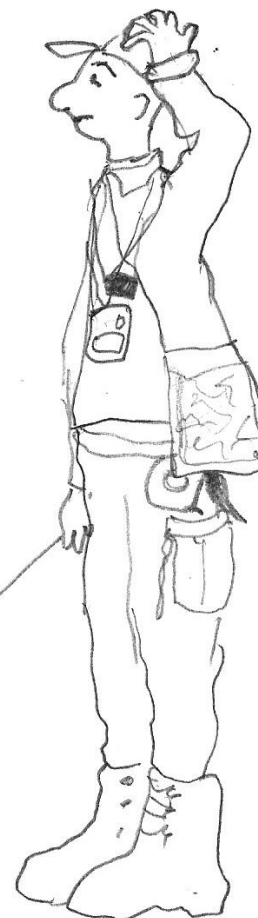
Factors influencing delineation

Organizational factors

Organizational resources

Human resources

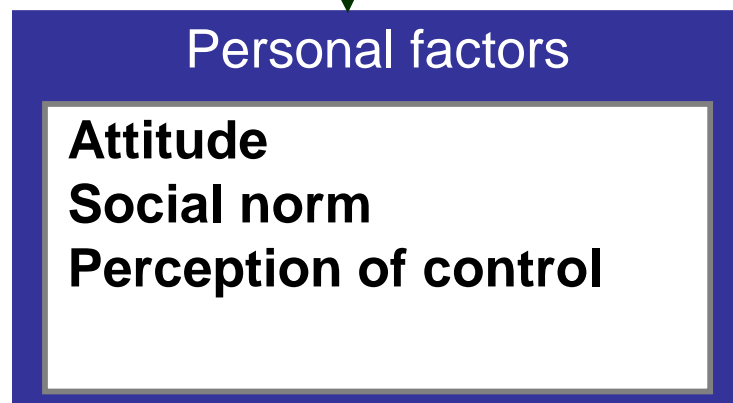
External resources



Wolf, Steven, A. and Primmer, Eeva. 2006. Between incentives and action: A Pilot Study of Biodiversity Conservation Competencies for Multifunctional Forest Management in Finland. Society and Natural Resources. 19(9): 845-861.



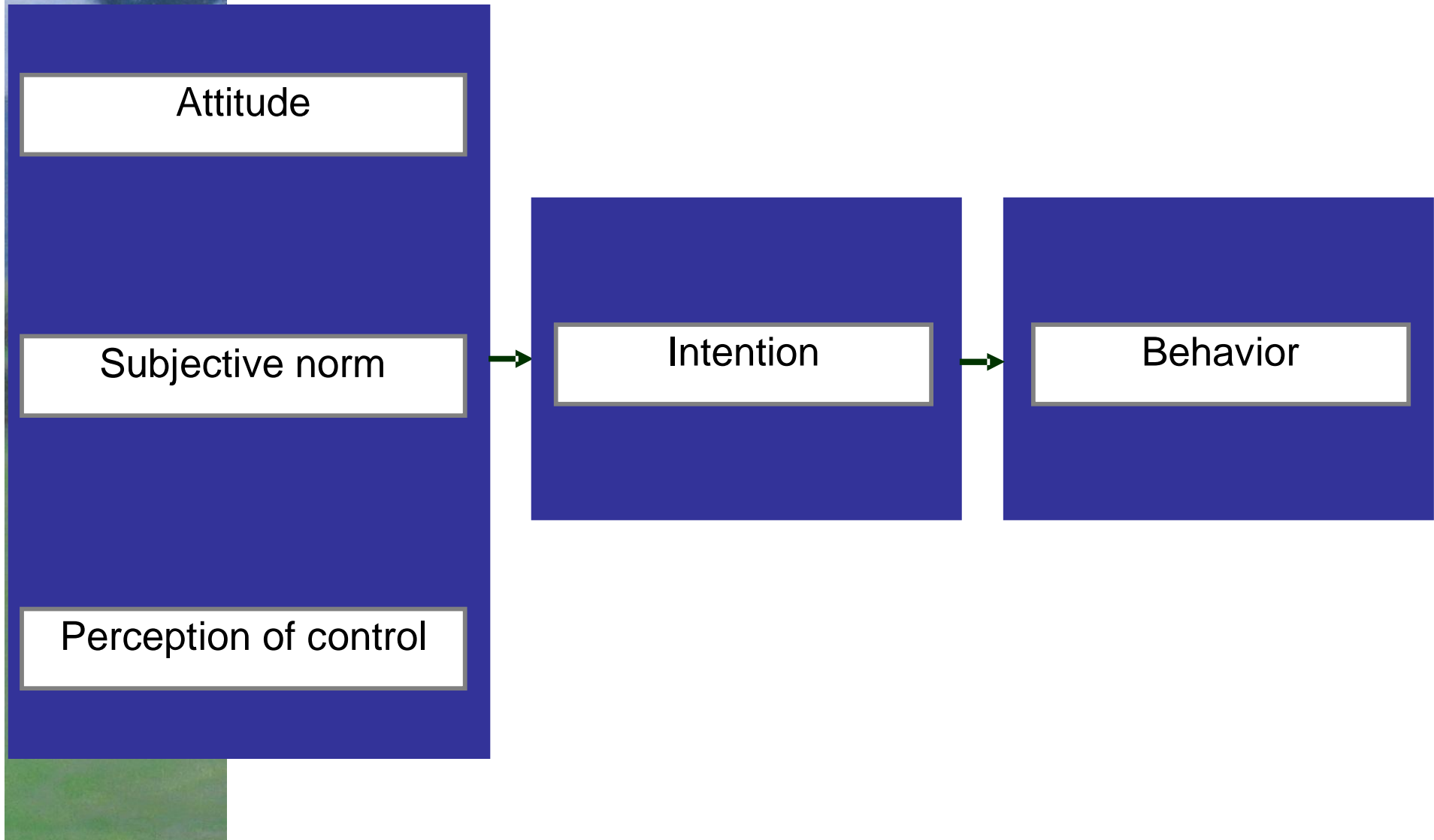
Factors influencing delineation



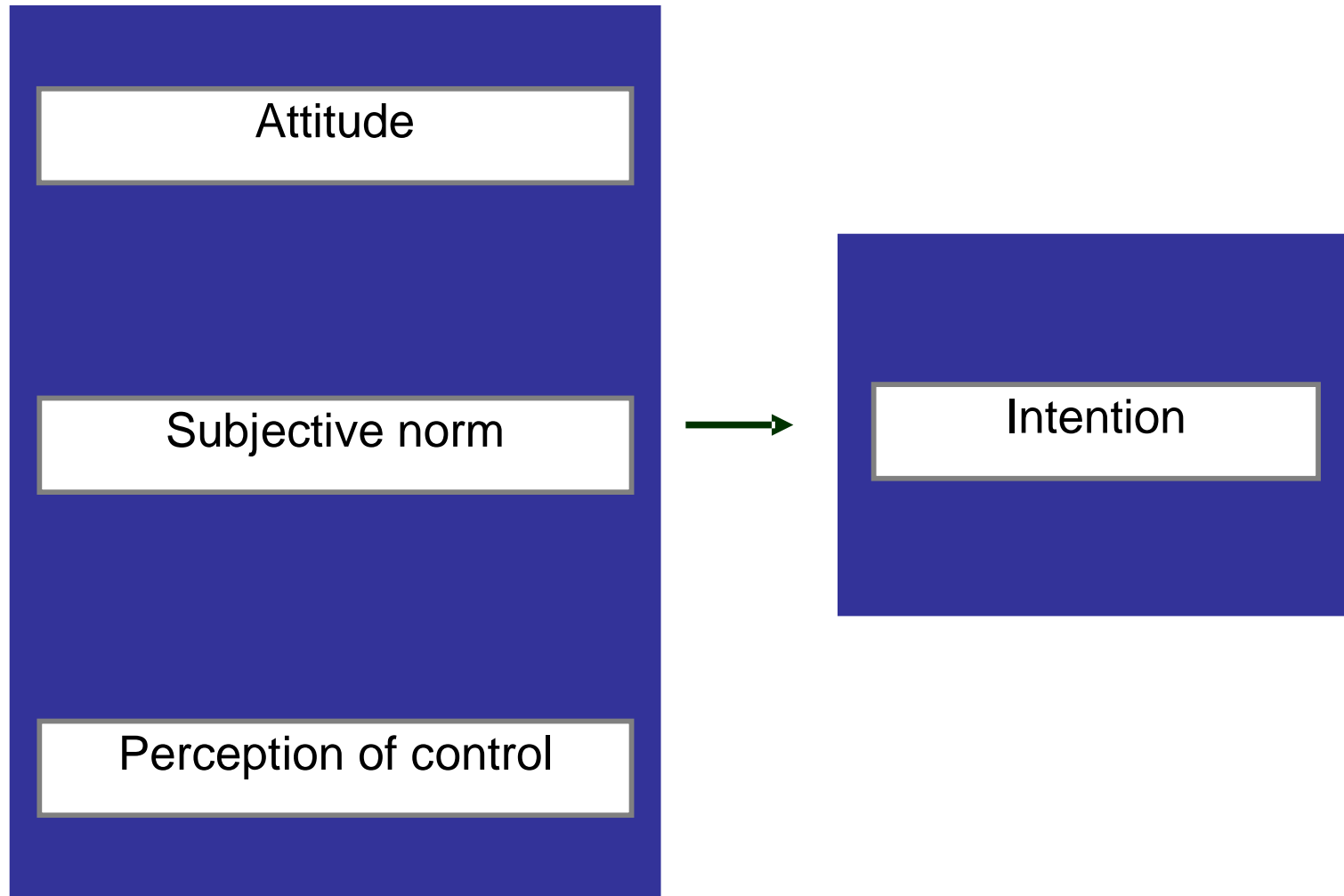
e.g. Ajzen Icek. 1991. The Theory of Planned Behavior. Organizational Behavior and Human Decision Processes. 50, 179-211.



Ajzen & Fischbein: Theory of planned behavior



Ajzen & Fischbein: Theory of planned behavior





Empirical analysis

- Survey:
- Decision to delineate valuable habitats outside forestry operations
→Over-compliance
- Organizational and personal factors shaping this decision



Survey of planning foresters

- 311 responses, response rate 58%
- Regional Forestry Centres **55**
- Local Forest Management Associations **111**
- Forest industry companies **132**
- Forest service entrepreneurs (consultants) **13**



Delineating beyond minimum requirement

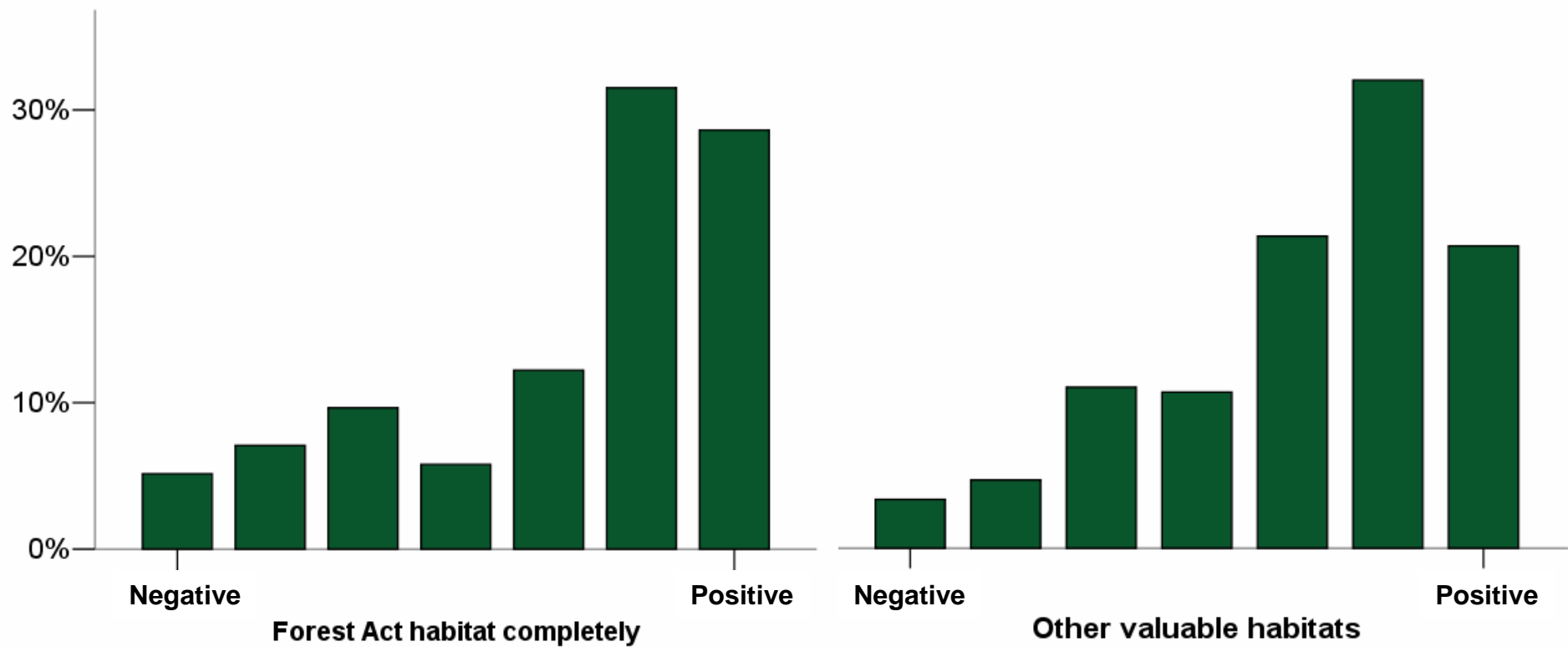
Survey questions about:

- Delineating a Forest Act habitat completely outside operation
- Delineating other habitats outside operation

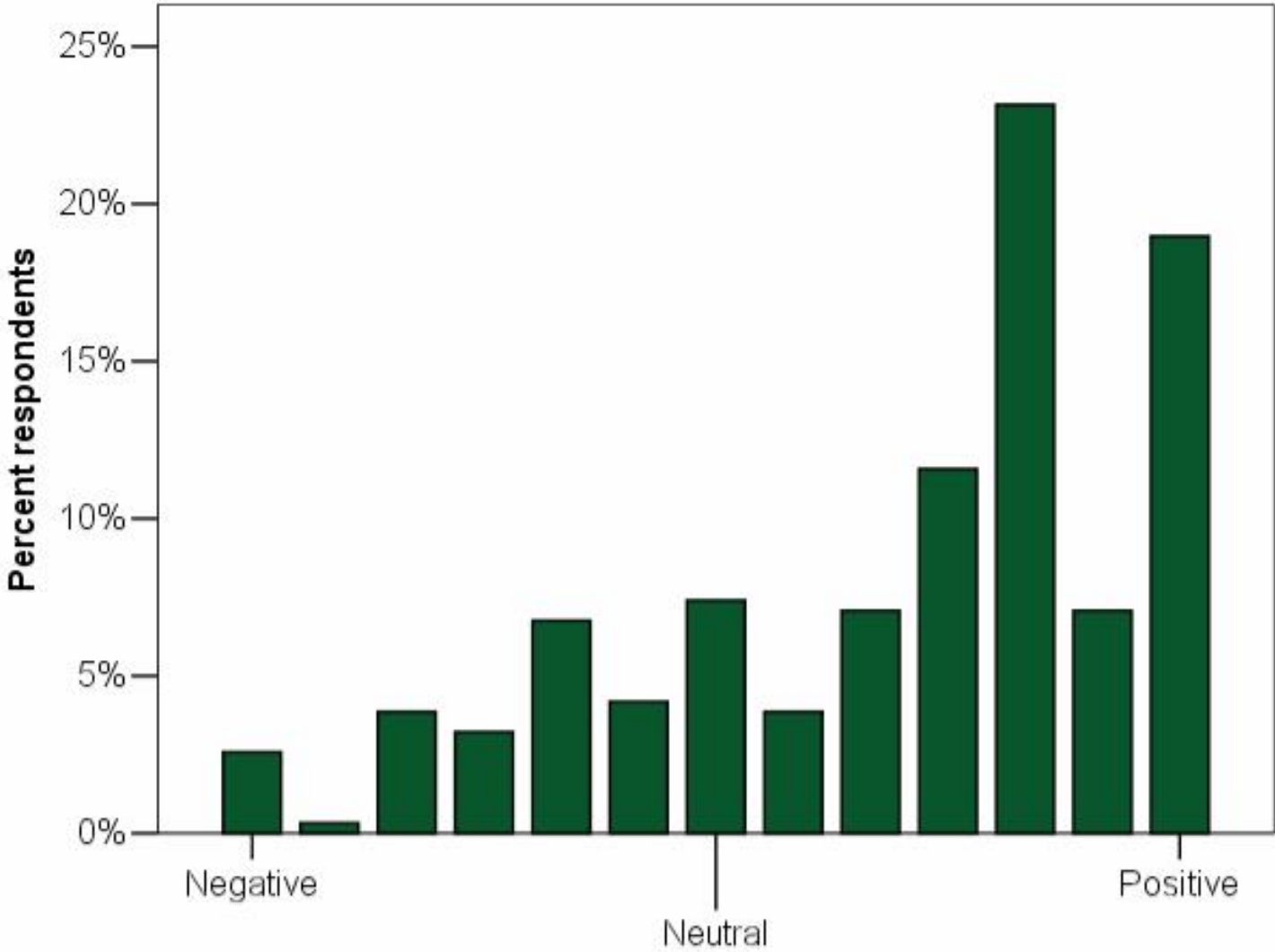


Results

Attitude towards delineation

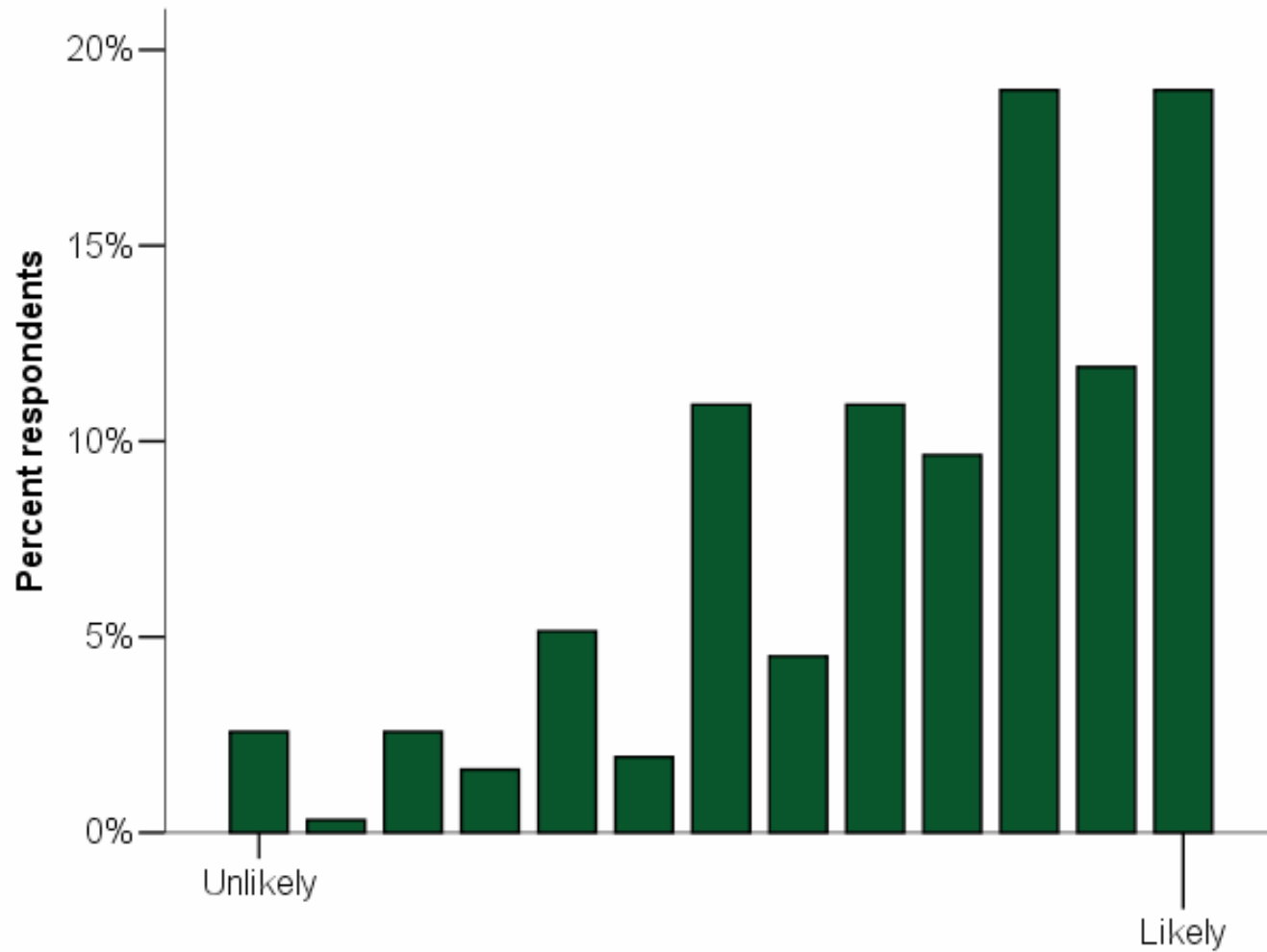


General attitude towards delineating beyond minimum requirement

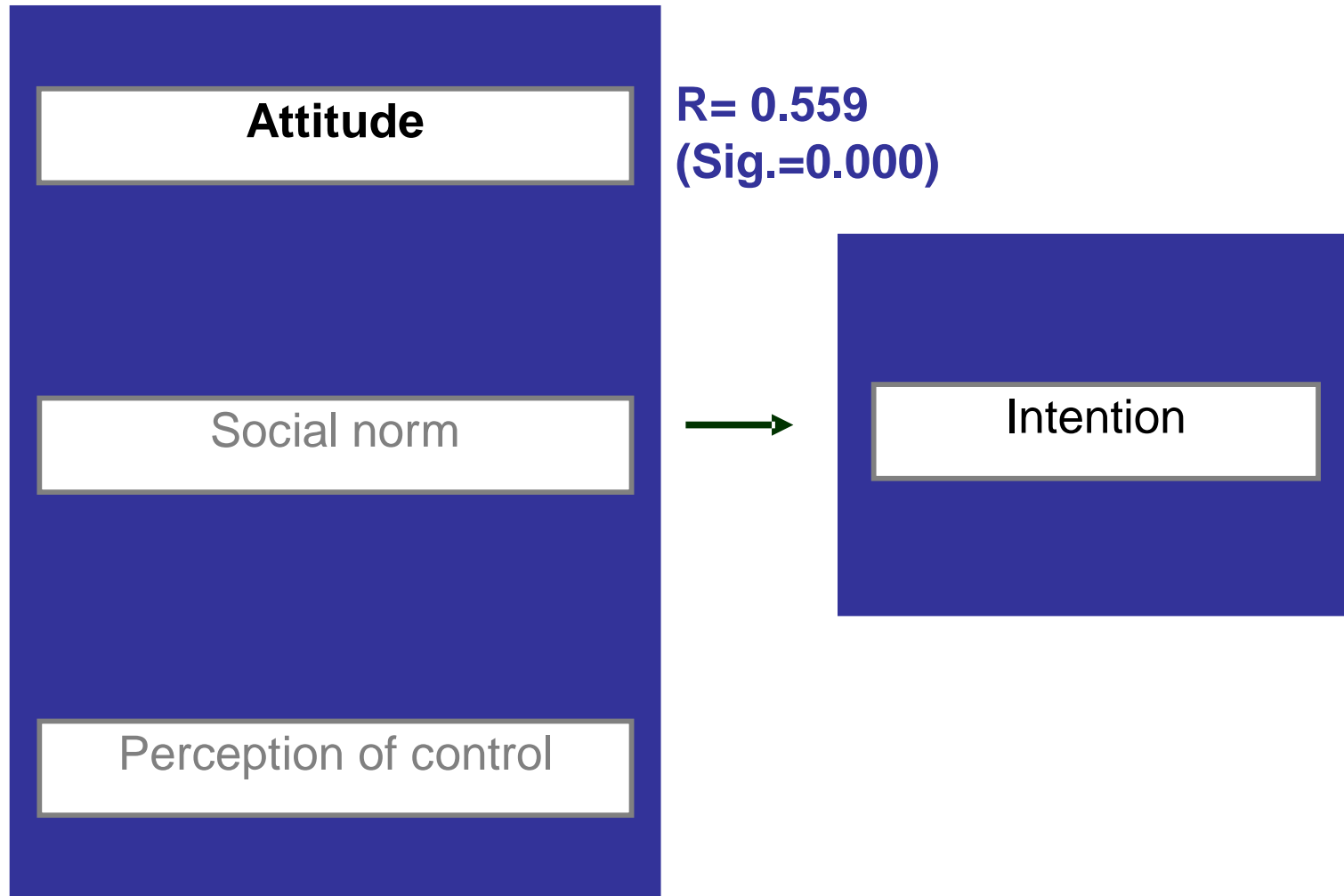




Intention to delineate beyond minimum requirement



Attitude explains intention



Belief and evaluation statements explain little

Attitude

- Only one statement pair out of 19 explained:

- *“Leaving a habitat outside the operation will conserve biological diversity”*

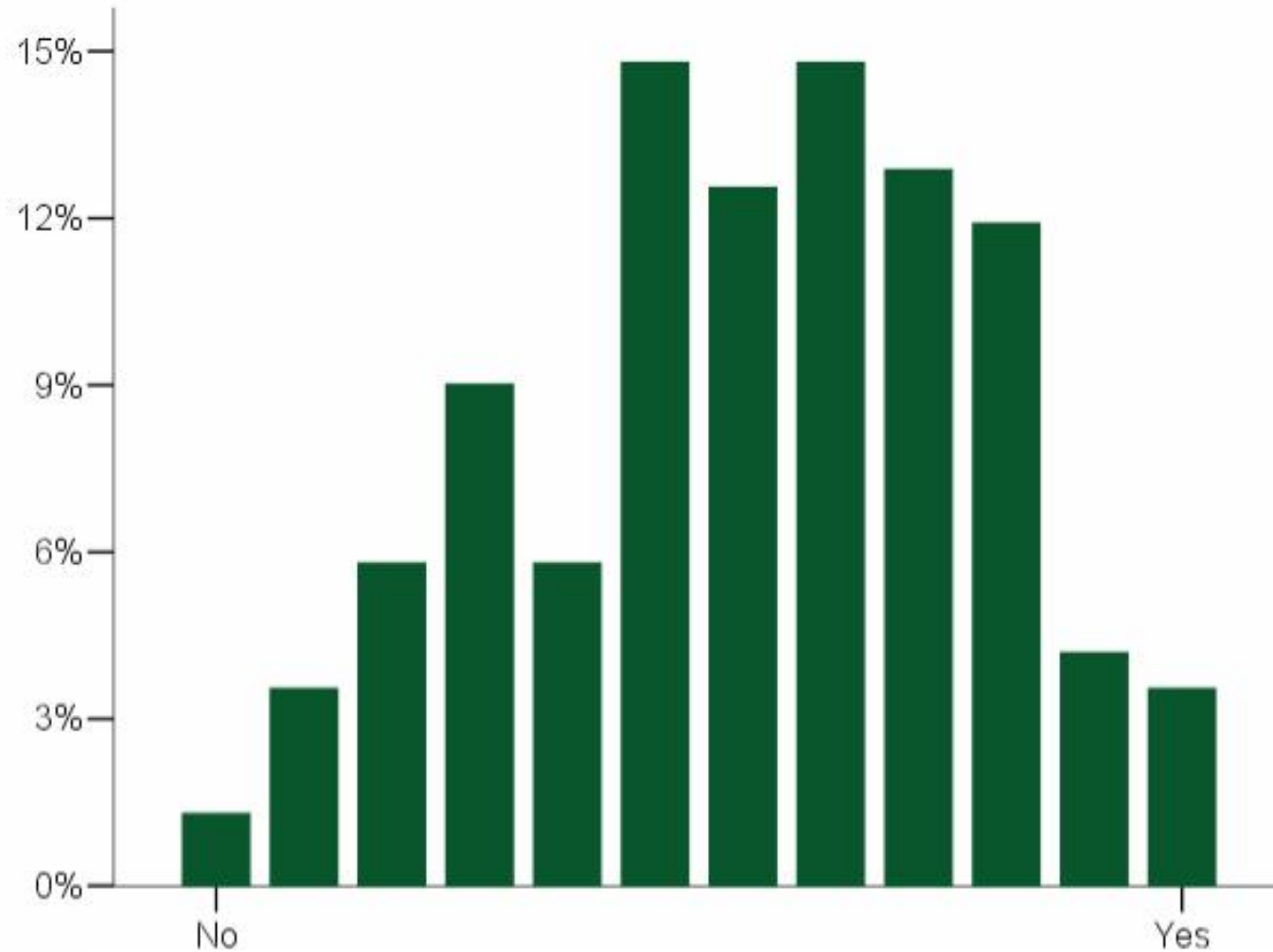
- *“Biodiversity”*

Beta: 0.113
Sig.=0.020

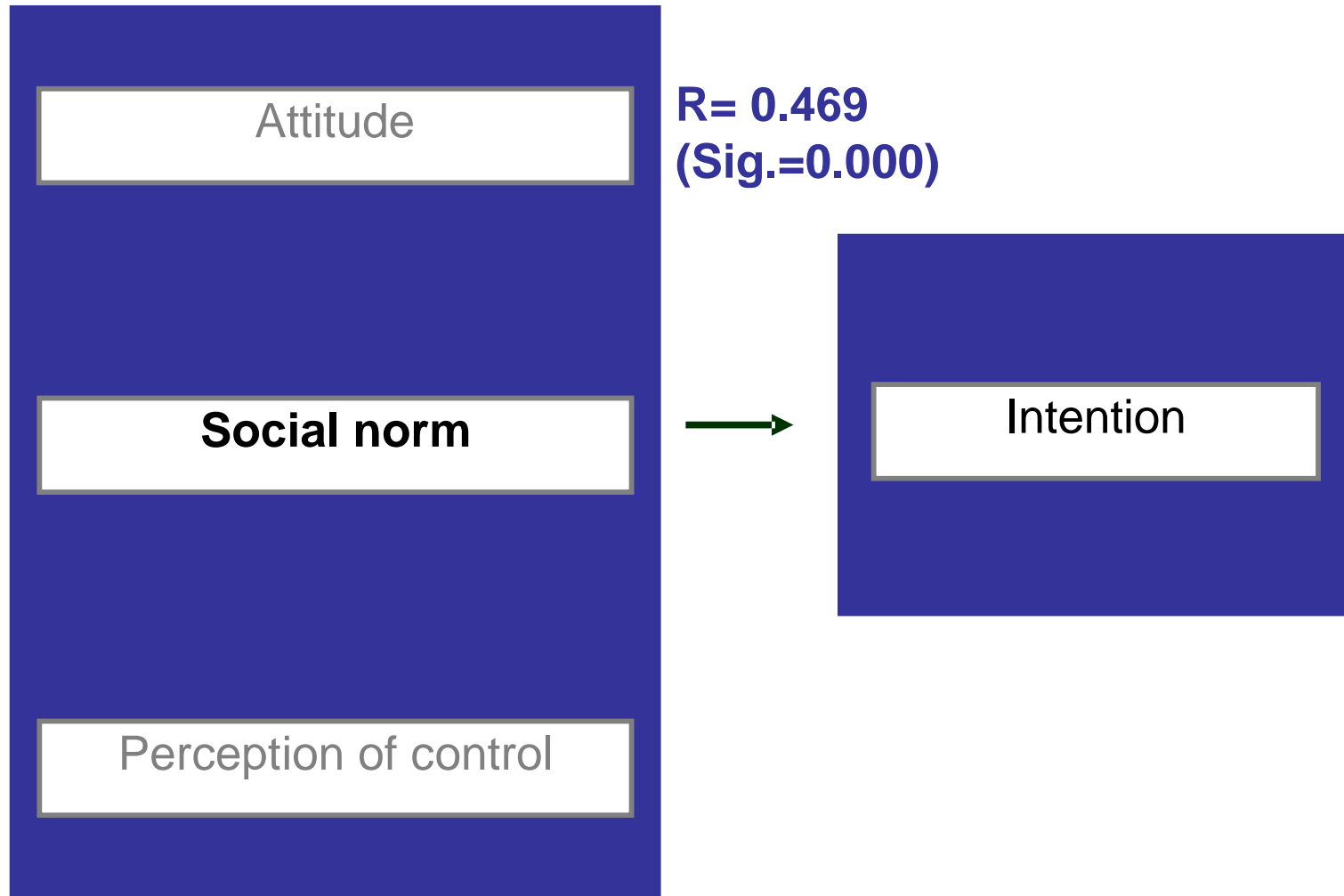


Intention

Social norm: Should be delineated beyond minimum requirements



Social norm explains intention



Some social norm statements explain intention

Social norm

Out of 12 possible actors, the following explained:

Forestry authorities

Beta (Sig.)
0.213 (0.000)

Own organization:
Supervisor

0.187 (0.000)

Forestry professionals

-0,167 (0.000)

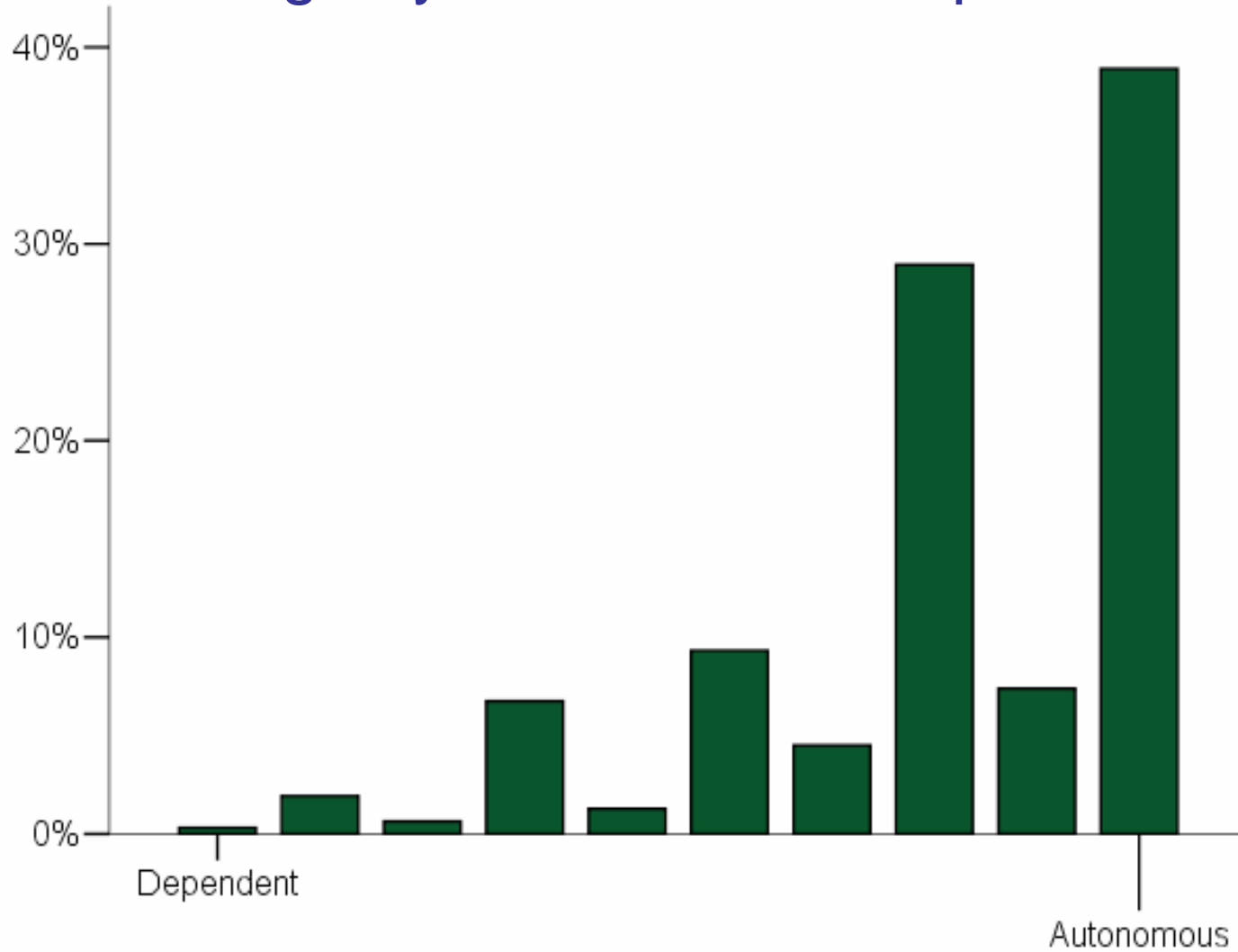
Intention





Control:

Delineating beyond minimum requirement



Control explains intention

Perception of control

Independent
- under guidance

R= 0.240
(Sig.=0.000)




Intention





Explaining intention through stepwise regression

	Beta	Sig.
(Constant)		0.097
General attitude towards delineation	0.313	0.000
Social norm: forest authorities	0.213	0.000
General social norm towards delineation	0.264	0.000
Control over Delineating Forest Act habitat completely outside operation	0.160	0.000
Social norm: supervisor	0.187	0.000
Social norm: forestry professionals	-0.167	0.003
Attitude (belief & evaluation) towards delineation conserving biodiversity	0.113	0.020



R²=0.510



Summary

At a general level intention is predicted by:

- Positive attitude
 - Belief as a cognitive element difficult to measure
- Social norms

Autonomy is straightforward. Intention is predicted by:

- Forestry authorities' and supervisors' norms
- Independence in Forest Act habitat delineation
- (Also by forestry professionals' norms - in a negative fashion)

→ **General model works well**



Concluding thoughts

General attitude:

- Measures affect,
- Is intuitive, personal

General social norm:

- Measures interpretation of expectations
- Reflects respondent's understanding of his role

Both autonomy and hierarchical messages are important

→ **Knowing the basis of professional foresters' decisions is paramount for designing and influencing policy**



Thank you!

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