

Ambio

Electronic Supplementary Material

This supplementary material has not been peer reviewed.

Title: Psychosocial drivers of land management behaviour: how threats, norms, and context influence deforestation intentions

Table S1. Description of the survey items used for analysis. Unless otherwise stated, items on a 1 to 6 scale represent (1 = ‘strongly disagree’ to 6 = ‘strongly agree’). Aggregated variables (attitudes and vulnerability) represent an average score for each survey item.

Variables	Items	Scale
<i>Trees Present</i>	Are there any trees (including tree regrowth) currently on your property that are not grown or harvested for production purposes?	Yes/No
<i>Clearing Intentions</i>	"I intend to engage in tree clearing on my property during the next 6 months."	(1, 6)
<i>Attitudes</i>		
Pro-clearing	I am concerned about the rate of tree clearing in Queensland † Tree clearing should be stopped † People are clearing too many trees † People who clear trees from their property do not care about the environment †	(1, 6)
Anti-regulation	In my opinion, vegetation management regulations... Are a burden to me Are fair to farmers † Are necessary † Should be more strict †	(1, 6)
<i>Social Norms</i>		
Tree clearing	Most of the farmers in my community clear trees	(1, 6)
Compliance	Most of the farmers in my community follow the vegetation management regulations	(1, 6)
<i>Perceived Behavioural Control</i>		
Controllability	How much personal control do you feel you have over tree clearing decisions on your property? ('very little control' to 'complete control')	(1, 6)
Self-efficacy	Following the vegetation management regulations set forth by the Queensland Government is... ('extremely difficult' to 'extremely easy')	(1, 6)
<i>Threat Appraisal</i>		
Severity (relative threat of regulation)	To what degree do the following pose a threat to the property you manage? Drought and extreme weather Pest species (e.g. feral cats, pigs, foxes, rabbits) Mining activities Your personal health and well-being Escalating costs of running the business Changing prices for agricultural products Vegetation management regulations Chemical and pesticide use regulations	(-5, 5) ‡ (1, 6) (1, 6) (1, 6) (1, 6) (1, 6) (1, 6) (1, 6) (1, 6)
Vulnerability	I am confident that I can still enjoy a comfortable lifestyle while following vegetation management regulations Vegetation management regulations are a threat to my business or livelihood †	(1, 6)
<i>Coping Appraisal</i>		
Clearing efficacy	Clearing trees from my property will not harm the environment †	(1, 6)
Regulatory efficacy	Vegetation management regulations will not protect the environment †	(1, 6)
Self-efficacy	Following the vegetation management regulations set forth by the Queensland Government is... ('extremely difficult' to 'extremely easy')	(1, 6)
<i>Contextual Factors</i>		
Social capital	Are you an active member of a local community group, organisation, or club (e.g. sport, craft, social club)?	(1, 4)*
Policy uncertainty	To what extent do talks of new clearing regulations in Parliament influence how you make tree clearing decisions on your property?	(1, 6)
Years managing property	Approximately how many years have you managed your current farm or other grazing or production properties?	(1, 6)
<i>Demographics</i>		
Survey eligibility	Which of the following best describes you? Manager I manage a farm or other grazing or production property Non-manager I have a family member who manages a farm or other grazing or production property I interact with farmers or graziers for my work	
Primary decision-maker	Are you primarily responsible for making management decisions on this property?	
Education	What is the highest level of education you have completed? Did not complete high school High school Diploma or TAFE/Technical Certificate Bachelor Degree Post-Graduate Degree	
Income	The average person in Queensland has a total personal income of \$40,000 to \$50,000 per year. Is your personal income above, below or roughly equal to this average? Below this average Equal to this average	

Above this average

Postcode (residence)

What is the postcode at your main place of residence?

† Scores reversed for analysis

‡ Scale of the generated single score differs from items' scale; see main text for calculation

* Scale represents 1 = 'never a member,' 2 = 'no longer a member,' 3 = 'a member but not actively involved,' 4 = 'very actively involved'

Table S2. Comparison of the demographic, psychosocial, and clearing characteristics between the entire sample, weak intenders (intentions ≤ 3), and strong intenders (intentions ≥ 4). Continuous variables are represented as *mean (SD)* and categorical variables are represented as % (*number of participants*).

Variable	Sample	Weak intenders	Strong intenders
<i>Clearing intentions</i>	2.85 (1.89)	1.56 (0.80)	5.09 (0.87)
<i>Attitudes</i>			
Pro-clearing	4.63 (1.28)	4.54 (1.36)	4.78 (1.11)
Anti-regulations	4.60 (1.08)	4.46 (1.15)	4.86 (0.91)
<i>Social norms</i>			
Tree clearing	3.19 (1.71)	2.94 (1.76)	3.63 (1.53)
Regulatory compliance	4.61 (1.31)	4.47 (1.36)	4.85 (1.19)
<i>Perceived behavioural control</i>			
Controllability	2.66 (1.67)	2.85 (1.72)	2.34 (1.52)
Self-efficacy	2.16 (1.17)	2.28 (1.22)	1.97 (1.05)
<i>Threat appraisal</i>			
Severity	0.54 (1.35)	0.30 (1.47)	0.96 (0.98)
Vulnerability	3.97 (1.47)	3.77 (1.46)	4.32 (1.43)
<i>Coping appraisal</i>			
Clearing efficacy	3.30 (1.78)	3.44 (1.76)	3.05 (1.79)
Regulatory efficacy	3.57 (1.76)	3.78 (1.78)	3.20 (1.68)
Self-efficacy	2.16 (1.17)	2.28 (1.22)	1.97 (1.05)
<i>Social capital</i>	2.76 (1.26)	2.57 (1.25)	3.08 (1.23)
<i>Policy uncertainty</i>	2.53 (1.90)	1.98 (1.65)	3.50 (1.94)
<i>Years managing property</i>	30.1 (17.1)	32.0 (17.3)	26.8 (16.4)
<i>Demographics</i>			
Age	59.2 (13.5)	61.7 (13.4)	54.9 (12.8)
Gender			
Male	76.7% (135)	73.2% (82)	82.8% (53)
Female	23.3% (41)	26.8% (30)	17.2% (11)
Education			
High school	52.8% (93)	55.4% (62)	48.4% (31)
Tertiary (e.g. TAFE, University)	47.2% (83)	44.6% (50)	51.6% (33)
Income			
Less than \$50,000	29.5% (52)	33.0% (37)	23.4% (15)
Equal to \$50,000	29.5% (52)	27.7% (31)	32.8% (21)
More than \$50,000	40.9% (72)	39.3% (44)	43.8% (28)
Sample size	176	112	64

Table S3. Estimates of the variable inflation factors (VIF) for each behavioural model.

Model	Variable	VIF
Theory of Planned Behaviour (clearing)	Age	1.818
	Gender (female)	1.047
	Attitudes – Pro-clearing	1.185
	Norms – Tree clearing	1.038
	PBC – Controllability	1.255
	Social capital	1.065
	Policy uncertainty	1.146
	Years managing property	1.709
Theory of Planned Behaviour (regulations)	Age	1.916
	Gender (female)	1.061
	Attitudes – Anti-regulation	1.302
	Norms – Regulatory compliance	1.048
	PBC – Self-efficacy	1.310
	Social capital	1.077
	Policy uncertainty	1.136
	Years managing property	1.811
Protection Motivation Theory	Age	1.818
	Gender (female)	1.147
	Threat – Severity	1.377
	Threat – Vulnerability	1.535
	Coping – Self-efficacy	1.526
	Coping – Clearing efficacy	1.068
	Coping – Regulatory efficacy	1.234
	Social capital	1.078
	Policy uncertainty	1.160
Years managing property	1.757	
Integrated model	Age	1.748
	Gender (female)	1.154
	Attitudes – Pro-clearing	2.121
	Norms – Tree clearing	1.163
	Attitudes – Anti-regulation	2.102
	Norms – Regulatory compliance	1.227
	Threat – Severity	1.510
	Threat – Vulnerability	1.784
	Coping – Regulatory efficacy	1.217
	Social capital	1.097
	Policy uncertainty	1.197
	Years managing property	1.662