Farmers' attitudes and behaviour towards the natural environment: a New Zealand case study

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Abstract

Scholars from the natural and social sciences have sounded the alarm regarding the future of our productivist society, calling for a change in worldview towards our relationship with the environment. Agriculture rests at the centre of such an issue. Relying on natural resources, it fulfils our basic need for food, yet has caused great damage to this same environment it depends on. Sustainability of farming lies increasingly today in farmers' ability to generate and export ecologically sound products, while remaining competitive on the international market. The New Zealand farming population represents a particularly good case study. New Zealand's short human history is associated with one of the highest rates of natural habitat destruction, enabling the country to develop a strong agricultural sector. Today, due to a lack of a comprehensive national legislation, management of native ecosystems on private land depends mainly on private owners' goodwill.

The first of the four objectives of the present research was to assess the general and specific environmental attitudes of farmers in New Zealand. Farmers' general attitudes towards the natural environment were measured using the New Ecological Paradigm (NEP) scale and the Environmental Motives scale (EMS). Farmers' specific attitudes towards New Zealand native forest were assessed using the tripartite model of attitude composed of affective, cognitive and conative dimensions. The second objective was to compare the attitudes and context affecting the pro-environmental attitudes of farmers with and without native forest on their farm. The third objective was to assess the pro-environmental attitude-behaviour relationship in farmers with native forest. Finally, the fourth objective was to investigate the context affecting the relationship between pro-environmental attitudes and behaviour in farmers with native forest.

It was found that farmers with and without native forest responded to different models of attitude towards native forest. The attitudes of farmers without forest were more cognitively based than those of farmers with forest. Farmers without forest tended to distinguish between native forest on and off the farm, while farmers with forest tended to hold more holistic environmental attitudes. Farmers' environmental attitudes predicted their behaviour towards their native forest fragments to a similar extent to that usually found in the literature. Direct experience with nature, interactions with one's family and objective and subjective knowledge were instrumental in predicting the environmental attitudes of all groups of farmers and the behaviour of farmers with native forest.

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Approval for this research has been obtained from Massey University Ethics Committee for the survey.

Finally, I would like to dedicate this thesis to my grand-father, Raymond Bastendorff, *mon étoile du Berger*…

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List of acronyms and definition of key terms

Affect: feelings towards an attitudinal object (e.g. forest)

Altruistic environmental concern: one evaluates the consequences of an environmental issue in reference to a human group

Biospheric environmental concern: one is concerned for the natural environment out of concern for the whole biosphere

CFA: Confirmatory Factor Analysis, a statistical method of analysis

CFI: Comparative Fit Index, an index to measure models' statistical fit to data

Cognition: beliefs towards an attitudinal object

Conation: behavioural intentions towards an attitudinal object

DIF: Differential Item Functioning

DSP: Dominant Social Paradigm

EFA: Exploratory Factor Analysis, a statistical method of analysis

Egoistic environmental concern: one is concerned for the natural environment out of concern for oneself or close kin

EMS: Environmental Motives Scale, also referred to as Schultz' Value-based environmental concern scales

Environmental attitude: people's feelings and/or beliefs and/or intentions towards the natural environment

Environmental behaviour: people's actions towards the natural environment

Environmental concern: the degree to which people are aware of problems regarding the environment and *agrees with* efforts to solve them and/or indicate a willingness to contribute personally to their solution

ESEM: Exploratory Sructural Equation Modeling, a statistical method of analysis.

Farmers with native forest: respondents with New Zealand native forest fragments of any size (unless specified otherwise) on their farm

Farmers with native forest by chance: respondents for whom the presence of New Zealand native forest on the farm did not influence their choice to take over the property

Farmers with native forest by choice: respondents who chose to have New Zealand native forest fragments (of any size, unless specified otherwise) on their farm

Farmers without native forest: respondents who did not have New Zealand native forest on their farm.

General environmental attitude: attitude towards the natural environment as a broad concept (see specific environmental attitude)

HEP: Human Exemptionalism Paradigm

MIMIC: Multiple Indicators Multiple Causes, a statistical method of analysis

Native forest: New Zealand indigenous forest.

NEP: New Ecological and/or Environmental Paradigm, a scale measuring people' core environmental beliefs

RMA: Resource Management Act, New Zealand's main piece of legislation on the management of the environment

RMSEA: Root Mean Square Error of Approximation, an index to measure models' statistical fit to data

SEM: Structural Equation Modeling, a statistical method of analysis

Situational variables: external factors that can influence psychological processes

Specific environmental attitude: attitude towards a specific environmental object, such as in the present thesis, New Zealand native forest.

SPSS: Statistical Package for Social Sciences

SRMR: Standardized Root Mean Square Residual, an index to measure models' statistical fit to data

TLI: Tucker-Lewis index, an index to measure models' statistical fit to data

TPB: Theory of Planned Behaviour, an attitude-behaviour model

TRA: Theory of Reasoned Action, an attitude-behaviour model

Tripartite attitude: an attitudinal model where attitude is defined by feelings (*affect*), beliefs (*cognition*) and behavioural intentions (*conation*) towards an object.

Value: high-order, general guiding principles reflecting one's life goals or standards

WLSMV : Weighted Least Squares Mean- and Variance-adjusted, an index to measure models' statistical fit to data

WRMR: Weighted Root Mean Square Residual, an index to measure models' statistical fit to data