Agricultural Economics Society of Ireland Conference

12th and 13th May 2022

National University of Ireland (NUI) Galway

Book of Abstracts

Revealing farmers' perceptions towards private, public and community stakeholders for biodiversity-related decision-making via Perception Matrices

Verena Scherfranz*, Katie Moon°, Jochen Kantelhardt*, Lena Schaller*

*University of Natural Resources and Life Sciences, Vienna, Department of Economics and Social Sciences, Institute of Agricultural and Forestry Economics (Austria) // °UNSW Canberra, School of Business (Australia)

Introduction

Implementing more biodiversity-friendly farming practices can contribute to reduce the ongoing loss of global biodiversity (IPBES, 2019). To encourage farmers' adoption of environmentally sustainable practices, e.g. through uptake of agri-environmental schemes or other voluntary initiatives, a profound understanding of their decision-making and preferences is required (Espinosa-Goded et al., 2010; European Commission, 2019; Dessart et al, 2019). While public, private and community stakeholders have been shown to influence their decision-making (e.g.: Häfner and Piorr, 2021; Bakker et al., 2021; Stuart et al., 2018), little attention has been paid to farmers' perceptions towards these actors in informing specifically biodiversity-related decision-making. Considering that various cognitive-psychological factors, such as perceptions, are powerful in predicting farmers' pro-environmental decision-making (e.g: Dessart et al., 2019), this results in substantial need for further research. To contribute to filling this research gap, our study aims to systematically and comparatively elicit and analyse farmers' perceptions towards these stakeholders and to identify the positively perceived stakeholders along the entire primary production value chain to inform the design of inclusive, potentially more widely accepted, pro-biodiversity initiatives.

To meet this aim, we surveyed farmers across ten European countries using Perception Matrices (PMs) as described by Moon et al. (2017). This methodological approach reveals individuals' implicit perceptions relative to various stakeholders, resulting in compact, comparable quantitative data. While PMs have been demonstrated as a valuable tool for eliciting stakeholders' perceptions in Australian environmental policy (Moon et al., 2017), they have not yet been applied to reveal farmers' views regarding various stakeholders nor

to uncover potential differences of perceptions in multi-national settings. Therefore, this study concurrently aims to introduce PMs to the field of agricultural pro-environmental behavioural research facilitating its further practical use.

Methodology and data collection

PMs, as described by Moon et al. (2017), are based on the Repertory Grid technique (RGT) introduced by Kelly (1955). As a constructionist tool, RGT aims to reveal individuals' construing of their environment by systematically identifying and then rating "elements" (objects) against "constructs" (descriptors), commonly on a quantitative scale (Moon et al., 2017). PMs share this structure and rating procedure; however, as an objectivist approach, constructs and elements are pre-defined by the investigator, permitting quantitative between-subject comparisons (Moon et al., 2017).

In this study, the definition of elements (i.e. stakeholders) and constructs (i.e. perception statements) was based on a multi-actor approach guaranteeing agricultural, regional and scientific relevance of the matrix. In a first step, RGT was applied guiding three practicing farmers to uncover their personally relevant stakeholders and corresponding perception ratings. In parallel, project partners in the study areas proposed further stakeholders and perception statements reflecting regional conditions. Subsequent to summarizing the elicited components, the authors complemented and adapted them from a socio-economic perspective. After checks for redundancy and practicability, this process resulted in a PM including 12 stakeholders/columns and 8 perception statements/rows, i.e. non-profit stakeholders, stakeholders representing the value chain and societal subsets as well as biodiversity-related and general perception statements such as trustworthiness or objectiveness. To define the quantitative rating scales, each construct was worded as a negative (1-point end of scale; e.g. "not trustworthy") and a positive pole (5-point end of scale; e.g. "trustworthy").

After pre-testing (n = 2), the PM was completed in winter 2021/22 in ten European countries (UK, NL, FR, CH, RO, HU, PT, SE, ES, EE) resulting in a preliminary sample of n = 44 (*final data set: n = 50*). To identify patterns in PM ratings, descriptive statistics and non-parametric randomization tests (RT) comparing pairwise differences in means were applied in R,

conducting 10.000 repeats (largely following the procedure described by Santangelo (s.a.)). In contrast to ANOVA or t-tests, RTs are suitable for analysing non-independent, within-subject data (Craig and Fisher, 2019) originating from *single* farmers evaluating *several* stakeholders.

Preliminary Results

The pairwise comparison of stakeholders via RT reveals that some are perceived significantly differently from one another (e.g. *government* vs. *researchers* regarding the perception "biodiversity is (not) one of their major goals"), whereas some are perceived similarly (e.g. *agricultural farm advisors* vs. *other farmers* regarding the perception "(do not) treat me as a partner"). Differences in perceptions seem to depend on both perception statement and stakeholders under question. Through calculating the rating means for each stakeholder across all perception statements and countries, we were able to identify the overall most positively and negatively perceived stakeholders. Through calculating the means for biodiversity-related and general perception statements separately and comparing all perception ratings pairwise via RT for each stakeholder individually, we could demonstrate that farmers have significantly different, partly ambivalent perceptions for one and the same stakeholder (e.g. *farm input suppliers*).

Preliminary conclusions and outlook

Farmers seem to have disproportionately large scepticism towards farm input suppliers regarding their pro-biodiversity behaviour, although they might nonetheless be a trusted stakeholder. This finding indicates that positive general perceptions towards certain stakeholders, e.g. high trust, might not be sufficient for involving them in a specific, i.e. pro-biodiversity, initiative design. Stakeholders not primarily associated with profit-making (e.g. *government, researchers*) were perceived in highly variable ways in between-stakeholder comparison but were rated more consistently regarding general and biodiversity-related aspects. Further in-depth analyses are required to explain these results also considering halo effects potentially pre-determining perception ratings (Thorndike, 1920). Surprising differences in ratings we expected to be similar (e.g. *trust* and *objectiveness* being perceived

– at least partly – significantly differently) again highlight this study's importance of exploring farmers' perceptions to avoid uninformed conclusions and predict their decisions more accurately.

Whereas research techniques such as RGT are suitable to gain a deep understanding of highly individual decision-making processes, the presented PM approach allows for *quantitative* comparison of stakeholder perceptions *between* farmers. This tool also enables the authors to geographically and socio-economically cluster the farmers and compare their perceptions correspondingly, e.g. for Eastern versus Western European countries or organic versus conventional farmers. For policy-making, this approach can therefore help to design more attractive pro-biodiversity initiatives on both regional and beyond-regional level by advising which stakeholders to involve generally or in different tasks. For stakeholders themselves, this methodological approach allows for assessing their image amongst farmers and, in consequence, as an indication which stakeholder characteristics – as reflected by the comprised perception statements – to strengthen to improve collaboration.