



The basic motivational drivers of northern and central European farmers



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ARTICLE INFO

Article history:

Received 23 December 2015

Received in revised form

31 March 2016

Accepted 1 June 2016

Keywords:

Farmer

Values

Motivation

Agri-environmental schemes

European Social Survey

Portrait Values Questionnaire

ABSTRACT

Farmers are key actors in land management confronted with society's increasing demand for public goods. Understanding farmers' values and motivations is essential to policy makers to foster more sustainable production practices. So far, no definite value profile for European farmers exists. Based on Schwartz's theory of basic human values, we statistically analyzed six rounds of the European Social Survey to explore farmers' value orientations in Austria, Denmark, Finland, Germany, the Netherlands, Sweden, and Switzerland. Our results revealed that farmers are less open to change and instead more conservative in their value orientation than the general population. Comparison of value orientations across farmers showed that this value profile is particularly pronounced for Austrian, Finnish, and German farmers. Furthermore, there is a slight tendency for farmers to be less motivated by self-interest and instead more concerned with common welfare than the general population, but this observation needs further validation. Based on these value profiles, we argue that agri-environmental schemes will receive better acceptance when they represent a long-term modification of existing schemes, when they do not trade off commodity production, and when they provide benefits to society. Compensation for income losses resulting from reduced on-farm output appears to be an ineffective incentive.

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1. Introduction

Agriculture is increasingly challenged to satisfy growing consumer needs whilst maintaining healthy ecosystems (Tilman et al., 2002). As farmers are the main land managers, their production decisions crucially affect commodity outputs and land preservation. Understanding the values and motivations underlying farmers' decision making is a fundamental to promote environmentally friendly production practices.

Agri-environmental measures (AEM) have been introduced throughout Europe, aiming to steer farmers production decisions towards environmental stewardship (Dobbs and Pretty, 2004). In the period 2007–2013, AEM accounted for almost 12% of total direct aids in the EU-26 (European Commission, 2015). AEM offer payments on an annual basis to farmers for voluntarily committing to production practices with beneficial environmental effects. The payments are calculated to cover additional costs and income loss resulting from the change in the farming practice. The efficiency of

these measures in actually delivering the desired environmental benefits is controversial (ECA, 2011; Keenleyside et al., 2011; Kleijn and Sutherland, 2003; Pe'er et al., 2014; Westhoek et al., 2013). Far-reaching effects of agri-environmental measures and schemes are mostly hindered by policy design resulting in limited and slow uptake (Brotherton, 1991; Morris et al., 2000), limited spatial targeting (Uthes et al., 2010), or difficulties in assessing schemes for further improving their effectiveness (Finn et al., 2009; Pacini et al., 2015; Vesterager et al., 2012).

While policy design is well researched, farmers decisions to adopt AEM received less attention, perhaps because farmers are assumed to act rational and thus commit to AEM if the payments exceed the income foregone from the commitment (Willock et al., 1999). Some work, however, has challenged this assumption proposing a more agent-oriented approach including non-pecuniary motives to understand perception and adoption of AEM (Beedell and Rehman, 2000; Burton, 2004; Burton and Wilson, 2006). Such agent-oriented approaches highlight farmers' productivist attitudes as the main reason hindering broad acceptance of AEM (Burton and Wilson, 2006; Howley et al., 2015) showing that commitments to conservation practices are not positively valued

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within the farming community (Burton et al., 2008; Burton and Paragahawewa, 2011). Therefore, farmers' decision to adopt a certain AEM may be much affected by social and psychological factors such as values, preferences, and norms, and to a lesser extent by economic rationality.

In Switzerland for example, evidence suggests that commitments are not related to payment levels, as the three AEMs with the highest compensation—fallow land strips for at least two or at least one year, and field strips with perennial weed—show very modest participation rates with 3.2%, 0.7%, and 1.0% respectively (FOAG, 2015). According to Dobricki (2011) low participation rates may be rooted in the Swiss farmers' psychological disposition as they are less motivated by economic achievement, less open to change, but much keener on conserving traditional values than the general population.

The objective of this investigation is to elucidate if the value profile of Swiss farmers constitutes a pattern that can be generalized throughout Europe. For this purpose, we based our analysis on data from the Portrait Values Questionnaire (PVQ) developed by Schwartz (1992), and collected as part of the European Social Survey (ESS). We analyzed farmers' value orientations in Austria, Denmark, Finland, Germany, the Netherlands, Sweden, and Switzerland because we could replicate the value constructs as theory predicts for these seven countries. In a first step, we then compared for each country the values of farmers with the values in the general population. In a second step, we compared national farmers with an overall farmer sample.

2. Schwartz's theory on basic human values

Schwartz (1992, 2012) developed a widely used model of value orientations. According to his theory, the PVQ translates into 10 values that can be aggregated further into four higher-order value constructs. These four value constructs consist of two orthogonally opposed pairs: openness to change versus conservation, and self-transcendence versus self-enhancement. The contrasting value pair openness to change and conservation displays the tension between self-determination and group conformity. Hereby, openness to change is described by self-direction and stimulation, emphasizing independence and readiness for new experiences. In contrast, conservation describes self-restriction and agreement with and preservation of order by the values conformity, security, and tradition. The second contrasting value pair—self-enhancement and self-transcendence—opposes self-interest against a concern for universal well-being. Whereas self-enhancement comprises power and achievement and emphasizes the individual's desire to pursue power over others and to have one's own status recognized, self-transcendence is defined by benevolence and universalism and describes the individual's concern for the well-being of in-group individuals, society, and nature.

According to Schwartz (1994); Schwartz and Bilsky (1990) values are hierarchically ordered universal beliefs that refer to goals and provide internal standards for the individual's evaluation of specific actions, policies, people, and events, thus serving as guiding principles in people's lives. Accordingly, basic values differ from norms and attitudes, as they usually refer to specific actions, objects, and situations (Schwartz, 2006).

3. Material and methods

3.1. Data

The ESS is a cross-national survey aiming at measuring attitudes, beliefs and behaviors. First launched in 2001, it is performed every second year. The number of participating countries has

increased from 22 in 2002 to 28 in 2012. The survey is designed in British English, but translated and pre-tested by national teams which are themselves responsible for data collection. Data are freely available and all the waves and the changes made to datasets are well documented. Furthermore, there are constant efforts to improve reliability and validity by testing and correcting for measurement errors ensuring best possible data quality (Saris et al., 2011).

In the ESS, the value orientations are measured through the 21 items of the PVQ in a supplementary questionnaire. Each item describes the values of a third person in two sentences. For example, item 19 refers to universalism in the lower-order and to self-transcendence in the higher-order value constructs and states: "He strongly believes that people should care for nature. Looking after the environment is important to him." Subjects are then asked to assess on a six-point Likert scale how similar they are to the person portrayed. The more similar respondents assess themselves to the person portrayed the stronger their respective orientation in the value dimension (a full list of the 21 items is provided in the appendix). Although in the ESS, the PVQ is translated into several languages, the two-dimensional structure of the higher-order value pairs has proven to be extremely robust despite possible distortions resulting from translation (Verkasalo et al., 2009). Furthermore, Schwartz model itself has been successfully validated on ESS data (Davidov, 2008; Davidov et al., 2008). Therefore, data and theory are one of the best validated in its field today.

For our analysis, we considered data from the first six rounds of the ESS (2002–2012). The farmers in the sample were identified according to the International Standard Classification of Occupations ISCO-88. This included field crop and vegetable growers (6111), gardeners, horticultural and nursery growers (6112), mixed crop growers (6114), livestock and dairy producers (6121), and mixed crop and animal producers (6130). After omitting the cases with missing values, only the 17 countries that included at least 70 farmers were considered for construct validation procedures.

According to Schwartz (2003), subjects differ systematically in the way they use the response scale of the PVQ. For this reason, raw data were ipsatized by subtracting the individual's mean response from their rating of each of the items (Fischer, 2004; Fischer and Milfont, 2010). Based on the transformed data, the scores in the four higher-order value types were calculated for each subject as the mean response to the items that formed the same value type. For better comprehensibility, the response scale was reversely recoded—from originally 1 = "very much like me" to 6 = "not like me at all" into 1 = "not like me at all" to 6 = "very much like me"—to ensure that higher item scores referred to stronger value orientation.

3.2. Construct validation and sampling

To ensure equivalence in meaning—as a necessary condition for cross-country comparison (Davidov, 2008; Davidov et al., 2008)—, we tested if the four higher-order value constructs existed in the country sample by means of non-metric multidimensional scaling followed by principal component analysis (PCA). The non-metric multidimensional scaling examined whether the 21 items formed clusters as theory suggests (Schwartz, 1992, 2012). We plotted the items in a two-dimensional space, based on proximities in the correlation matrix of the items. The matrices showed that the items 9, 11, 15, and 20 were displaced in the maps for most of the countries considered. After omitting these items, the higher-order value constructs could be replicated in 11 countries.

To select the countries finally considered, we performed a PCA. PCA showed that item 1 did not load in eight countries on the respective factor. After omitting item 1, the higher-order value

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