

Measuring Changes in Farmers' Attitudes to Agricultural Cooperatives: Evidence from Swedish Agriculture 1993–2013

Karin Hakelius

Department of Economics, Swedish University of Agricultural Sciences, P.O. Box 7013, 750 07 Uppsala, Sweden. E-mail: karin.hakelius@slu.se

Helena Hansson

Department of Economics, Swedish University of Agricultural Sciences, P.O. Box 7013, 750 07 Uppsala, Sweden. E-mail: helena.hansson@slu.se

ABSTRACT

This study assessed changes in farmers' attitudes to agricultural cooperatives by developing a behavioral framework based in psychological and psychometric theory for measuring attitude change. The assessment focused on a unique dataset that allowed attitude coverage and strength of evaluation derived from data collected in 1993 and in 2013 to be evaluated. Explorative factor analytical methods revealed the attitude construct to be two-dimensional in both datasets, covering the domains named "Commitment" and "Trust" in both cases. Thus, the coverage of the attitude construct seemed unchanged. However, the strength of evaluation of both attitude dimensions was significantly increased. These findings have clear policy implications for agricultural cooperatives, since understanding the nature of changes in attitudes to these organizations is important for their successful development. [EconLit citations: P13; Q13]. © 2016 Wiley Periodicals, Inc.

1. INTRODUCTION

In any organization where actual governance is separated from ownership, it is vital for the management team to understand the owners' attitudes to the organization, including how it is run (e.g., Clarke, 2004; Stiles & Taylor, 2001). Attitudes are affective responses to psychological objects (Ajzen & Fishbein, 2000; Kahneman & Sudgen, 2005), manifested in behaviors, beliefs or feelings (e.g., Fazio & Olson, 2003). Attitudes have been identified as one group of significant drivers of human behavior (Ajzen, 1991; 2002, 2005), and thus of decision making. If there are significant discrepancies in the owners' attitudes to how the organization is operating compared with how they would like it to operate, the organization risks a turbulent time, with calls for re-organization or, in some cases, with owners even divesting in the organization and perhaps investing in another (Hadani, Goranova, & Khan, 2011; Ng, Sibilkov, Wang, & Zaiats, 2011). Therefore it is vital for organizations to map these attitudes of their owners and how they change over time.

In the food supply chain, a number of processing businesses are organized as cooperatives. Farmers own these, through investing in the cooperative and thereby becoming members and hence owners of the cooperative's assets. Through this, the farmers also gain the unique right to take part in governing the cooperative by electing directors, as well as gaining residual rights (e.g., Craig, 1993; Hansmann, 1996; Hogeland, 2006; Nourse, 1922). However, having historically started from a set of core values highlighting the need for collaboration among farmers in order to achieve improved material standards, producer cooperatives in the food supply chain are now likely to face members with increasingly individualistic values, as a result of the societal value change described by, e.g., Pettersson & Esmer (2008) and World Values Survey, WVS (2014). The value change process means that people born from the 1960s onwards possess different values from those of earlier generations, having self-interest and individualism as core values instead of values focusing reaching a higher materialistic standard through collaborating with others (e.g., Inglehart, Basanez, Diez-Medrano, Halman, & Luijkx, 2004;

van Herk & Poortinga, 2012; WVS, 2014). In the WVS studies, this general value change has been detected in the Western world, taking place in all sectors and in all markets, including among Swedish farmers (a trend also indicated by Hakelius (1996)). This involves a greater focus among members on their own individual interests and the development of their own farm business. In parallel to this change, the agricultural sector in Europe has recently undergone far-reaching re-organization, including de-regulation of the market; adjustment to EU entry and EU-based agricultural support; structural changes in farm businesses due to numerous acquisitions of neighboring farms; and increased specialization among farm businesses (Statistics Sweden 2003, 2013). This development in itself may lead to a value change process, as personal values are generally considered adjustable to changes in environmental factors (Parks & Gauy, 2009).

In this situation, in order to successfully govern agricultural cooperatives in line with the aspirations of their members, it is vital for the directors to understand whether and how the developments listed above have influenced their members' attitudes to governing cooperatives. The literature on governance of cooperatives is extensive (e.g., Barbaud-Didier, Henninger, & El Akremi, 2012; Bijman, Hendrikse, & van Oijen, 2013; Bijman, Hanish, & van der Sangen, 2014; Chaddad & Iliopoulos, 2013; Cornforth, 2004; Liang & Hendrikse, 2013; Österberg & Nilsson, 2009). It includes aspects such as collective action, cooperative decision-making processes, diverse member interests, member interest in participating in governing the cooperative, director characteristics, roles and responsibilities, and trust, commitment and satisfaction among members. Farmers' attitudes to the governance of agricultural cooperatives—of special interest in this study—have been examined by, e.g., Bhuyan (2007) and Cechin, Bijman, Pascucci, and Omta (2013). The former concluded that it is crucial to understand member attitudes in order to achieve cooperative success. The latter stress four “organizational mechanisms” existing between members and the cooperative: democracy, hierarchy, market and community, which play an important role in generating positive member attitudes towards commitment. However, possible *changes* in members' attitudes to the governance of agricultural cooperatives have not been examined previously. Therefore, in this study, we sought to assess attitude change regarding how cooperatives are governed among the members of agricultural cooperatives. For this purpose, we developed a conceptual framework based on behavioral and psychometric theory and applied it in an empirical comparison of attitude change among members of Swedish agricultural cooperatives. Specifically, attitudes derived from a dataset collected in 1993 were compared with attitudes derived from a dataset collected in 2013. The 20-year period between data collection occasions encompassed a turbulent time for Swedish agriculture, including structural changes, de-regulation of the market, and adjustment to the EU agricultural policy, and is therefore of particular interest in an attitude comparison study. These unique datasets also permitted us to base our analysis on a repeated cross-sectional design; to our knowledge, datasets that permit comparisons of members' attitudes to governance of agricultural cooperatives over time have not been available for analysis in previous research.

The findings of the study are intended to be of practical importance for managers of cooperatives in the food supply chain in terms of understanding: (i) members' current attitudes to the governance system of the cooperative, and (ii) whether and how these attitudes have changed since 1993. This would allow managers to evaluate whether action is needed. The conceptual framework introduced here for measuring attitude change concerning governance among members of agricultural cooperatives is also applicable to owners of other types of organizations.

2. CONCEPTUAL FRAMEWORK—ATTITUDES AND ATTITUDE CHANGE

We used a behavioral framework, based on psychological and psychometric theory, for assessing attitudes and attitude change. Attitudes can be defined as “a disposition to respond favorably or unfavorably to an object, person, institution, or event” (Ajzen, 2005, p. 3). Individuals have

attitudes to all objects they have to make decisions about, and also to objects they will never make decisions about (Kahneman & Sudgen, 2005). In fact, individuals may have thousands of attitudes (Grube, Mayton II, & Ball-Rokeach, 1994). In general, attitudes are summary evaluations of psychological objects and can therefore be represented in terms of feelings of liking, disliking or indifference (Ajzen, 1991, 2005; Eagly & Chaiken, 1993; Kahneman & Sudgen, 2005).

Attitudes represent immediate reactions (Ajzen & Fishbein, 2000; Kahneman & Sudgen, 2005; Pretty, Wegener, & Fabrigar, 1997; van Overwalle & Siebler, 2005) and are based on affective (e.g., a feeling associated with the cooperative), behavioral (e.g., farmers' choice of processing firm) or cognitive routes (e.g., farmers' beliefs about the processing firm), or combinations of these (Fazio & Olson, 2003). Attitudes constitute one type of driver of behaviors (e.g., Ajzen, 1991, 2002; Fazio & Olson, 2003) and are therefore interesting in the context of the governance of agricultural cooperatives, since they are likely to influence the members' decision making and therefore also actions with respect to the cooperative.

Attitudes to a general object can be evaluated as specific to different aspects, or domains of this general object. In this respect, Weber, Blais, & Betz (2002) introduced the concept of domain specificity of attitudes in an application of attitudes to risk and argued that the risk attitude is better understood if evaluated for different domains, such as financial decisions, social decisions, health/safety issues, recreational issues and ethical issues that represent risk to the individual. Hence, in the context of farmers' attitudes to the governance of agricultural cooperatives, the idea of domain specificity would imply that farmers have a general attitude to the governance of these cooperatives, but that this attitude is a function of domain-specific attitudes to particular aspects of the governance.

Attitude domains central to this study would be trust and commitment in the cooperative governance system, i.e., in the democratic process. The role of trust in organizations has been the focus in many studies dealing with relationships in markets (e.g., Doney & Cannon, 1997; Geyskens, Steenkamp, & Kumar, 1998; Morgan & Hunt, 1994), organizational structure and leadership (e.g., Atwater, 1988; Moorman, Deshpande, & Zaltman, 1993) and management by objectives (Scott, 1980). Trust has been defined as "an expectation that one would not be exploited by another" (James, 2002, cit. James & Sykuta, 2006, p. 136), requiring competence and trustworthiness for trust to evolve. It is stressed that both trustworthiness and competence have to be present in order for trust to evolve (James & Sykuta, 2005, 2006; *cf.* also Hunt & Frewer, 2001). The existing definitions embody both affective and cognitive dimensions (Hansen, Morrow, & Batista, 2002). In this study, trust is viewed mainly as a cognitive concept, with the competence of the trusted party as the main target of the trust. This standpoint is supported by Hansen et al. (2002), who found cognitive trust to be more important than affective trust when studying cooperatives with complex businesses. In the cooperative context, trust—both members' trust in the cooperative management and trust among members—has been found to be crucial (*cf.* James & Sykuta, 2005, 2006). This trust leads to "relationship commitment" (Wu, Weng, & Huang, 2012), which is the basis for the cooperative commitment, to a large extent involving taking an active role in the governance of the cooperative.

Commitment is usually related to satisfaction and a feeling of loyalty (Österberg & Nilsson, 2009; Jiménez, Marti, & Ortiz, 2010; Cechin et al., 2013). Positive experiences in terms of trading conditions, personal contacts and good service may also create commitment, thereby increasing the chances of developing a long-term trade relationship (Barbaud-Didier et al., 2012; Karantininis & Zago, 2001). A wide definition of the term commitment is given by Fulton (1999, p. 423) as: "the preference of co-op members to patronize a co-op even when the co-op's price or service is not as good as that provided by an investor-owned firm (IOF)". Three components are discussed in studies focusing on commitment to organizations (Cechin et al., 2013; Meyer, Stanley, & Parafyonova, 2012; Solinger, van Offen, & Roe, 2008), namely continuance, normative and affective components. The continuance component relates to whether there are alternatives to the organization in question, since should few or no alternative

organizations exist, the cost of stopping being committed is too great. The normative component reflects the feeling of having to, or being expected by others to, continue being committed to the organization. The affective, or emotional, component of commitment reflects a sense of belonging to the organization and wanting to continue being part of its activities. Borgen (2001) found a link between the degree of identification with the cooperative, the degree of trust in the leaders of the cooperative and the willingness to commit to and take part in the democratic process of the cooperative (*cf.* Österberg & Nilsson, 2009; Trechter, King, & Walsh, 2002).

When members are committed, they are less likely to trade with other market actors, or even exit the cooperative. Instead, the willingness to contribute to the cooperative increases, free-riding decreases and the transaction costs in the cooperative collaboration thereby decrease (*cf.* Cechin et al., 2013; Solinger et al., 2008). Fulton and Giannakas (2001) identify two factors that influence the commitment of cooperative members, namely service and price offerings from the cooperative, while there is also “a perceived connection between the cooperative’s success and members’ own individual success” (Cechin et al., 2013, p. 42).

Values shape attitudes (*cf.* Dahlggaard-Park, 2012) and underlying values of individuals would be one determinant of their attitudes to a particular object. This implies that attitudes will change with a change in values, such as those associated with individualism. Some values constitute the core of the human value structure (e.g., Piorako, Schwartz, & Davidod, 2011; Schwartz et al., 2012), onto which additional values are added, forming a value hierarchy. The core values are more difficult to change, as are attitudes based on these, while the values added to the core values are easier to change, both for the individual and for others around that individual (e.g., Bohner & Dickel, 2011; Petty & Briñol, 2014; Petty & Krosnich, 2014). In summary, values are considered to impact on farmers’ attitude to the governance system of agricultural cooperatives. The attitude to agricultural cooperative governance systems is considered an attitude to a general object and can be evaluated as specific to different domains of this general object. In the case of farmers’ attitude to the governance system of agricultural cooperatives, the general attitude can be considered as being related to, and possible to evaluate through, the domains trust and commitment.

Building on this conceptual framework and the documented change in value systems in the Western world (e.g., Pettersson & Esmer, 2008; WVS, 2014), we suggest that a value change has also taken place among Swedish farmers. As a consequence, values have become increasingly individualistic, which is likely to lead to a change in attitudes to the governance systems of agricultural cooperatives. Hence, our starting hypothesis in this study was that attitudes to the governance systems of agricultural cooperatives among farmers today are different from the attitudes farmers held previously.

Based on the theoretical understanding of an attitude construct, we propose that attitude change can be of two types: (1) a change in the strength of the attitude, and (2) a shift in the actual domains of the attitude construct. The first type of change means that the attitude domain basically remains the same over time, but that individuals’ evaluation of the attitude object increases or decreases. The second type of change means that the actual domains of the attitude construct undergo a change, e.g., to consist completely or partly of a different combination of the domains that previously existed.

In this study, attitudes were considered latent constructs, in line with other studies examining farmers’ attitudes (e.g., Hakelius, 1996; Hansson & Lagerkvist, 2012a,b; Pennings & Leuthold, 2000; Pennings & Smidts, 2000; Pennings & Garcia, 2001). This is because attitudes exist only in the mind of individuals (Kahneman & Sudgen, 2005). A latent construct cannot be measured directly, but has to be derived indirectly via various measurement indicators (DeVellis, 2003). Psychometric methods can be used for this purpose. Measurement indicators can be assumed to be caused by the underlying attitude construct, implying a reflective relationship between attitude construct and its measurement indicators. This is in line with previous assessments of attitudes (Hansson & Lagerkvist, 2012a,b; Pennings & Garcia, 2001).

TABLE 1. Basic Characteristics of the Datasets Obtained in 1993 and 2013

Item	1993	2013	
Sample size	2,134	2,250	
Response rate, total (%)	39	40	
Response rate, subgroups	2–20 ha (%)	23	29
	21–50 ha (%)	43	37
	≥51 ha (%)	49	39
Only statutory schooling, subgroups	2–20 ha (%)	46	9
	21–50 ha (%)	35	5
	≥51 ha (%)	18	2
Proportion of males (%)	94	71	
Average farmer age	49.1	54.3	
Average number of years as director	5.9	5.8	

3. MATERIAL AND METHODS

3.1. Material

The empirical data consisted of material collected in two surveys; one conducted in 1993 and one in 2013. The data for 1993 were collected with another study in mind, but the addition of the 2013 survey opened the way for a combined empirical analysis exploring the possibility of attitude change over the period. As emphasized previously, it seems probable that the general value change and the events taking place in the Swedish agricultural sector since the beginning of the 1990s have had an impact on farmers' attitudes. In the 2013 questionnaire, a set of attitudinal statements and background questions from the 1993 questionnaire were repeated and sent to a new sample of respondents. Thus, respondents encountered a set of the exact same attitudinal statements and background questions in both questionnaires. In this way, the study used a repeated cross-sectional design (Silva & Caetano, 2014). Applying the 2013 survey using the same respondents as those recruited for the 1993 questionnaire would have yielded a panel data set and the possibility to trace attitudinal changes at the level of the individual farmer. However, such a procedure was not considered feasible because many farmers are likely to have left farming over the intervening 20 years, leading to possible biased results representing only those farmers who have stayed in the business for a long period of time and who were possibly among the youngest respondents to the 1993 survey. The use of the repeated cross-sectional design allowed us to evaluate the attitude change based on a sample representing the Swedish farmers present at these two points in time.

The repeated cross-sectional design has been successfully used in previous literature examining the development of various factors among specified populations. For instance, Silva & Caetano (2014) used such a design to assess the stability of workers' perceptions of justice over a period of 8 years and van Genderen, van Thiel, Mulder, and Overbosch (2014) to study trends in disease protection rates among travellers. For this study, the repeated cross-sectional design was considered appropriate as it allowed us to trace attitude change over a long period and at the same time allowed us to draw samples from the full populations of active farmers in both survey years.

The 1993 and 2013 datasets were obtained via postal questionnaires sent to two samples of Swedish farmers. On both occasions, the samples were generated randomly from the official database of all Swedish farms. Three strata, representing farm size classes often used in statistical reports at the time of the survey in 1993, i.e., 2–50 ha, 50.1–100 ha, and >100.1 ha, were used to obtain answers from all size classes. These strata were retained when the survey was repeated in 2013. The 1993 questionnaire was mailed to 2134 farmers and two reminders were sent, while the 2013 questionnaire was mailed to 2250 farmers and one reminder was sent. Some characteristics of the two samples are presented in Table 1.

The total response rate on both occasions was approximately 40%. However, in terms of the three farm size classes used, the response rate from farms of 2–50 ha was higher in 2013 than in 1993, while the response rate for the two classes representing larger farms was lower (Table 1). A general trend for all three size classes was that the share of respondents with only statutory schooling decreased dramatically. This increase in the respondents' level of education is most likely a reflection of the general trend in Sweden over the period, with young people increasingly entering further education. The share of male respondents decreased between 1993 and 2013, while the average age of farmers increased slightly (Table 1). On average, farmers who were directors had held this position for almost 6 years. The respondents were on average members of five agricultural cooperatives. Hence, their attitudes are not typically attitudes to one specific cooperative, but to agricultural cooperatives in general.

3.2. Scale Development

In order to assess farmers' attitudes to agricultural cooperatives, a set of statements that could serve as measurement items was devised, focusing on trust and commitment to the governance system of the cooperatives. Following the idea that attitudes are latent constructs (Ajzen, 2005), and hence cannot be directly observed but rather "must be inferred from measurable responses" (Ajzen, 2005, p. 3), scales have to focus positive or negative evaluations. Hence, the statements formulated aimed at measuring farmers' beliefs and opinions about the cooperatives in terms of trusting and committing to the governance system, both as a general idea based on the *raison d'être* of cooperatives and based on the farmer's own experiences from being a member. The idea behind these different types of statements was that the former type measure/gauges attitudes built on core values, the latter attitudes that are less difficult to change. Examples of statements focusing on trust are statements 7, 11, and 12 in Table 2, while statements 5, 6 and 8 focus on commitment to the democratic process.

The farmers were asked to rate different answers on a six-point Likert scale, ranging from "agree completely" (1) to "disagree completely" (6) and with anchors on all intermediate response options to facilitate the respondents' distinctions of the response options. For the analyses, the scales were reversed, so that they ranged from "disagree completely" (1) to "agree completely" (6) in order to facilitate interpretation.

3.3. Assessment of Attitudes

Farmers' attitudes to the governance system of agricultural cooperatives were assessed by analyzing the measurement items described above using exploratory common factor analysis (ECFA), which allows the reflective relationship between attitude construct and measurement indicator to be taken into consideration (e.g., Hair, Black, Babin, & Anderson, 2010). ECFA was also suitable for this study because it allowed the measurement indicators to be freely associated with underlying factors, which were taken to represent the attitude construct based on their correlations. The factorability of the matrices was assessed with Kaiser's overall measure of sampling adequacy (KMO).

Separate ECFA were run on the two datasets, yielding measures of the attitude construct in 1993 and 2013, respectively. In both ECFA, measurement items with factor loadings lower than 0.5 were considered practically insignificant, according to recommendations by Hair et al. (2010). These were deleted, one at a time, starting with that with the lowest communality. The deletion process was finished when only significant factor loadings remained. Measurement items with significant loadings on two factors were also deleted. The numbers of factors retained in the final factor solutions of the two datasets were determined based on a combination of guidance from the Eigenvalues, scree plots and the possibility to interpret the factor solution in a meaningful way.

Before interpreting the factor solutions, they were rotated with the oblique (oblimin) rotation technique, allowing factors to correlate and therefore be theoretically more valid. The

TABLE 2. Descriptive Statistics on Measurement Items, Indication of Qualitative Change in Item Evaluation and Indication of Significance of the Difference in item Evaluation between 1993 and 2013

Measurement item	Average score in 1993	Standard deviation in 1993	Average score in 2013	Standard deviation in 2013	Qualitative change in item evaluation	Significance of difference in distributions between 1993 and 2013 (<i>p</i> -value)
C = Commitment						
T = Trust						
1. The idea behind cooperatives is a good one. (C)	5.21	0.949	5.10	0.956	Weaker	0.004
2. I think that the agricultural cooperative movement is loyal to the cooperative ideals. (C)	4.15	1.193	3.74	1.172	Weaker	0.000
3. If members take part in their cooperatives' member democracy, then they can influence the management of the enterprise. (C)	4.09	1.344	3.69	1.286	Weaker	0.000
4. If I take part in the member democracy of my cooperative, then I can influence it in such a way that my own private economic situation improves. (C)	3.47	1.338	3.19	1.253	Weaker	0.000
5. Those who are members of an agricultural cooperative ought to, as far as possible, participate in the democratic process. (C)	4.83	1.038	4.57	1.130	Weaker	0.000
6. I think it would be (that it is) interesting to become (to be) an elected representative. (C)	3.30	1.569	3.08	1.635	Weaker	0.005
7. Today, the board and the chief executive officer usually govern the cooperative in their own way, without caring about what the members think. (T)	4.08	1.405	4.32	1.317	Stronger	0.001
8. If I commit myself to the association activities, the economic situation of all members will improve in the long run. (C)	3.44	1.304	3.51	1.199	Stronger	0.186

(Continued)

TABLE 2. Continued

Measurement item	Average score in 1993	Standard deviation in 1993	Average score in 2013	Standard deviation in 2013	Qualitative change in item evaluation	Significance of difference in distributions between 1993 and 2013 (<i>p</i> -value)
C = Commitment T = Trust						
9. If I take part in the cooperative's democratic processes, I will strengthen the special sense of belonging together within the cooperative. (C)	3.96	1.228	3.93	1.128	Weaker	0.354
10. The idea that all members can influence their agricultural cooperative, through the democratic process, is basically good, but impossible to carry out in reality. (T)	4.12	1.230	4.30	1.274	Stronger	0.002
11. The individual members cannot influence the business decisions, since it is the chief executive officer and the elected representatives who decide. (T)	3.86	1.428	4.21	1.295	Stronger	0.000
12. As an elected representative of a cooperative, you soon lose perspective on the real world and in the end you only think about making the cooperative grow. (T)	3.36	1.379	3.94	1.378	Stronger	0.000
13. If I participate in the democratic process in my agricultural cooperative, I may be part of influencing the cooperative. (C)	4.09	1.161	3.83	1.143	Weaker	0.000
14. It is important to me that as many members as possible participate in the democratic process in my agricultural cooperative. (C)	3.79	1.396	4.32	1.209	Stronger	0.000
15. If a large proportion of members participate actively in the cooperative's democratic process, the cooperative will operate better. (C)	4.58	1.109	4.37	1.136	Weaker	0.000
16. If you are a member, you should participate both in the business decisions and in the democratic process. (C)	4.20	1.118	4.14	1.151	Weaker	0.441

Note. Measurement items were measured on a 1–6 Likert scale (disagree completely; disagree; disagree partly; agree partly; agree; agree completely). The minimum score of all measurement items was 1 and the maximum score 6. Statistical inference in this table is based on the non-parametric Wilcoxon Mann-Whitney rank-sum test.

reliability of the final factor solutions was evaluated with item-to-item correlations, item-to-total correlations and Cronbach's alpha, using cut-off values of 0.3, 0.5, and 0.6 as recommended by Hair et al. (2010). The factors retained in the final factor solutions were taken as representing attitude domains in 1993 and 2013, respectively.

4. RESULTS

4.1. Description of Measurement Items

All statistical analyzes were performed in STATA 12.0 (StataCorp, 2011). Average scores and standard deviations of the statements used as measurement items to capture farmers' attitudes to agricultural cooperatives in 1993 and 2013, respectively, are shown in Table 2. In the table, 'C' indicates a commitment statement and 'T' a trust statement, together with indications of the qualitative direction of the change in statement evaluations over the study period and *p*-values indicating the statistical significance of the measured differences in statement evaluations. In both years, the strongest evaluation was associated with statement 1: *The idea behind cooperatives is a good one*, while the weakest evaluation was associated with statement 6: *I think it would be (that it is) interesting to become (to be) an elected representative*. Weaker evaluations were generally associated with statements placing the cooperative in a favorable light, whereas stronger evaluations were generally associated with statements about dissatisfaction with the cooperative. Most changes in statement evaluations were highly statistically significant.

4.2. Exploratory Common Factor Analysis

Exploratory common factor analysis was applied to the data collected in 1993 and 2013, respectively. In both cases, Kaiser's criterion, which is based on the Eigenvalues of the extracted factors, suggested solutions with two factors. However, the scree plot suggested there were three factors. Therefore, solutions with two and three factors were evaluated for both years. However, in both years the two-factor solution was considered to have the most distinct factors and was therefore easier to interpret. The final factor solutions are displayed in Table 3. According to the conceptual framework, one type of attitude change involves change in the actual domain of the attitude construct. The two factor solutions assigned about the same measurement items to factor 1 and factor 2. Considering the fact that ECFA is based on a reflective measurement model, the attitude constructs obtained from the factor analyzes were assumed to remain unchanged in their domains, even in situations where a few measurement items had been removed or added (e.g., Jarvis, Mackenzie, & Podsakoff, 2003). This meant that even though there were some minor differences between the factor solutions based on the 1993 and 2013 data, the domains of the attitude construct could still be interpreted as remaining similar throughout the intermediate period.

Factor 1 comprised items related to the basic ideas behind cooperatives, for example that cooperatives are founded on a good idea and that members should commit themselves to the cooperative, leading to a better situation for both the cooperative and its members. Significant measurement items in this factor were exclusively of commitment type, and the factor is therefore labelled *Commitment*. Factor 2 comprised items related to the experiences of farmers, for example that member democracy is a good idea, but is not working since directors and the chief executive officer (CEO) govern the cooperative as they wish—perhaps focusing on growth. All significant measurement items in Factor 2 were of trust type, and hence the factor is labelled *Trust*.

In terms of reliability, all factors had Cronbach's alpha values well above the generally accepted cut-off of 0.6 in exploratory settings (e.g., Hair et al., 2010). Item-to-item correlations were also above, or very close to, the common cut-off value of 0.3 and item-to-total correlations were all above the cut-off value of 0.5 (e.g., Hair et al., 2010). Taken together, this shows that the ECFA produced reliable measures of the attitude domains found.

TABLE 3. Two-Factor Solutions for the Attitudes to Cooperatives in 1993 and 2013

Measurement item	1993		2013	
	Factor 1 Commitment	Factor 2 Trust	Factor 1 Commitment	Factor 2 Trust
1. The idea behind cooperatives is a good one. (C)				
2. I think that the agricultural cooperative movement is loyal to the cooperative ideals. (C)				
3. If members take part in their cooperative member democracy, then they can influence the management of the enterprise. (C)	0.587	0.074	0.611	0.072
4. If I take part in the member democracy of my cooperative, then I can influence it in such a way that my own private economic situation improves. (C)	0.552	-0.123	0.023	0.676
5. Those who are members of an agricultural cooperative ought to, as far as possible, participate in the democratic process. (C)	-0.032	0.647	0.612	-0.075
6. I think it would be (that it is interesting to become (to be) an elected representative. (C)	0.709	0.055	0.705	-0.090
7. Today, the board and the chief executive officer usually govern the cooperative in their own way, without caring about what the members think. (T)	0.751	0.025	0.036	
8. If I commit myself to the association activities, the economic situation of all members will improve in the long run. (C)	0.031	0.635	-0.024	0.619
9. If I take part in the cooperative's democratic process, I will strengthen the special sense of belonging together within the cooperative. (C)	0.009	0.807		0.830
10. The idea that all members can influence their agricultural cooperative, through the democratic process, is basically good but impossible to carry out in reality. (T)	-0.057	0.608	-0.003	0.707
11. The individual members cannot influence the business decisions, since it is the chief executive officer and the elected representatives who decide. (T)	0.638	-0.135	0.559	-0.316
12. As an elected representative of a cooperative, you soon lose perspective on the real world and in the end you only think about making the cooperative grow. (T)	0.580	-0.150	0.767	0.064
13. If I participate in the democratic process in my agricultural cooperative, I may be part of influencing that cooperative. (C)	0.70	0.080	0.729	-0.010
14. It is important to me that as many as possible participate in the democratic process in my agricultural cooperative. (C)	0.818	0.799	0.688	0.147
15. If a large proportion of members participate actively in the cooperative's democratic process, the cooperative will operate better. (C)	0.292-0.568	0.383-0.581	0.838	0.800
16. If you are a member, you should participate both in the business decisions and in the democratic process. (C)	0.621-0.752	0.735-0.869	0.292-0.646	0.387-0.628
Cronbach's alpha			0.671-0.789	0.742-0.877
Item-to-item correlation, range				
Item-to-total correlation, range				

Note. Significant factor loadings in bold. Statements without factor loadings were removed from the final factor solutions.

TABLE 4. Comparison of Strength of Evaluations of Attitude Domains in 1993 and 2013

	Factor 1		Factor 2	
	Commitment		Trust	
Average value	1993	2013	1993	2013
Standard deviation	4.03	4.10	3.84	4.19
Qualitative assessment of difference	Stronger evaluation		Stronger evaluation	
Significance of difference 1993 to 2013 (p-value)	0.040		0.000	

Note. Statistical inference in this table is based on the non-parametric Wilcoxon Mann–Whitney rank-sum test.

4.3. Changes in Strength of Evaluations of the Attitude Domains

In the conceptual framework outlined above, we also suggested that attitude change can be evaluated in terms of a change in the strength of the associated evaluations. With the purpose of comparing whether and how the strength of the evaluations within the same attitude domains have changed over the study period, measures of each one of the factors derived from the ECFA reported above were constructed. This was done by adding the evaluations of each of the significant measurement items associated with each of the factors (in each year separately), and dividing the sum obtained by the number of significant measurement items associated with each factor. The purpose of this step was to normalize the measures of the factors with respect to the number of measurement items included. This yielded measures of the attitude domains in both 1993 and 2013.

Table 4 shows the results of comparing the strength of evaluations of attitude domains in 1993 and 2013. These results indicated that the evaluations of both attitude domains represented by the factors had become stronger over the intervening period, but the difference in factor 1 has to be considered small. The findings reported in Table 4 imply that although the attitude domains have remained the same between 1993 and 2013, the evaluations of the attitude domains have become significantly stronger. Hence there seems to have been a drift towards stronger attitude domains.

Figures 1 and 2 show kernel density functions, which are non-parametric estimates of the probability density functions, in 1993 and 2013 of factor 1 and factor 2. The vertical axes show the density of the distributions and the horizontal axes shows the strength of the evaluation of the attitudes represented by the factors. As can be seen from the diagrams, the distribution of evaluations of attitude domains in 2013 lies more to the right than the corresponding distribution for 1993, again with the strongest drift observed in factor 2. Hence, the findings reported in Figures 1 and 2 also suggest that a drift towards stronger evaluations has occurred in the evaluations of attitude domains.

5. DISCUSSION AND CONCLUSIONS

In this study we sought to assess changes in attitudes to the governance system of agricultural cooperatives among the farmer members of Swedish agricultural cooperative organizations, using a specially developed conceptual framework for assessing attitude change based on psychometric and behavioural theory. This framework derives from the assumption that attitude change can be considered by measuring changes in the domains of the attitude construct, and by measuring changes in the strength of evaluations of these domains.

Many previous studies have examined the governance of agricultural cooperatives (e.g., Barbaud-Didier et al., 2012; Bijman et al., 2013, 2014; Chaddad & Iliopoulos, 2013; Cornforth, 2004; Liang & Hendrikse, 2013; Österberg & Nilsson, 2009). Aspects investigated include collective action, cooperative decision-making processes, diverse member interests, member interest in participating in governing the cooperative, director characteristics, roles and responsibilities,

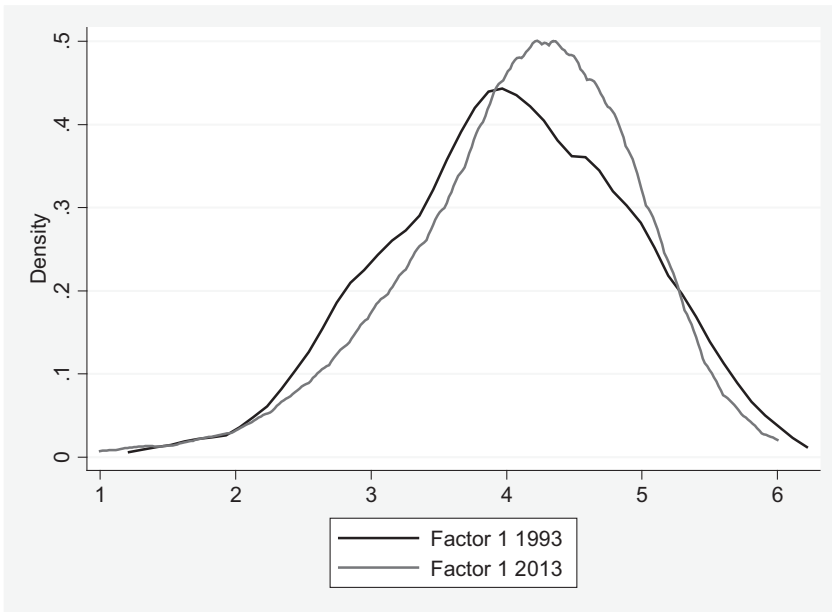


Figure 1 Kernel Density Functions of Factor 1, *Commitment*, in 1993 and 2013.

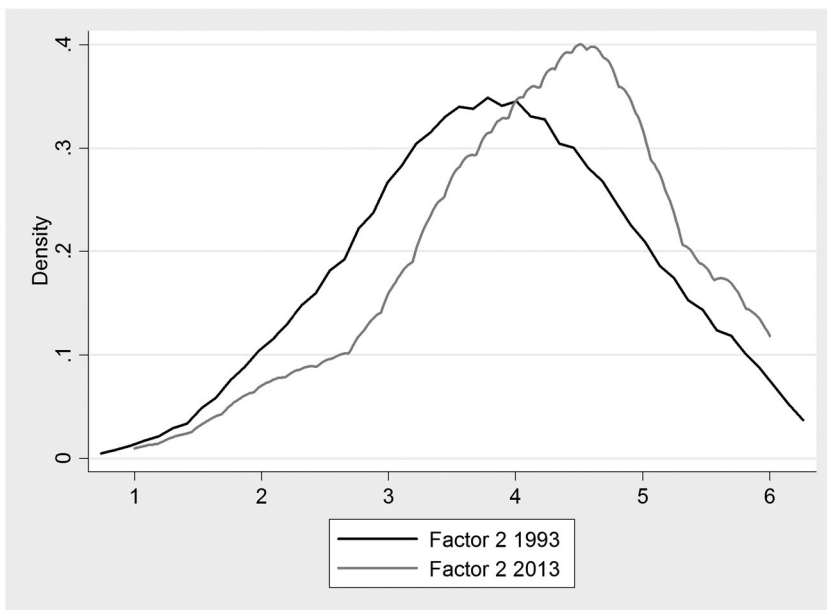


Figure 2 Kernel Density Functions of Factor 2, *Trust*, in 1993 and 2013.

and trust, commitment and satisfaction among members. Farmers' attitudes to the governance system of agricultural cooperatives, the focus of this study, have been studied by Bhuyan (2007) and Cechin et al. (2013). However, no previous study has examined *changes* in attitudes to the governance system of agricultural cooperatives over a period of time. In order to map attitude change, it is important to study long periods, since attitude development is characterized by

incremental steps, fully implemented only after a long time. The empirical dataset used in this study is unique, since it contains data on farmers' attitudes to the governance system of agricultural cooperatives from two points in time, 1993 and 2013, enabling comparison of attitudes in 1993 and 2013 by a repeated cross-sectional design (Silva & Caetano, 2014).

The results suggest that farmers' general attitudes to the cooperative governance system can be viewed as a two-dimensional construct, consisting of a domain that can be viewed as *Commitment* and a domain that can be viewed as *Trust*. Analysis of the empirical data showed that these persisted as two distinguishable domains over the 20-year period between 1993 and 2013. However, assessments of the strength of evaluations made in each domain showed that the evaluations were stronger in both domains in 2013. The difference in the strength of the evaluations associated with factor 1 (*Commitment*) was smaller than that for factor 2 (*Trust*), but changes in the evaluations of the attitude domains for both had become significantly stronger, although the attitude domains themselves remained the same between 1993 and 2013.

The statements focusing on commitment (Factor 1) were expressed using positive wording, while the statements focusing on trust (Factor 2) had negative wording. Hence an interpretation of the findings is that commitment has increased during the study period, while trust has decreased. Put differently, it appears that farmers increasingly believe that cooperatives are based on a good idea, but that they do not work in practice, which may seem contradictory and confusing. However, considering commitment and trust as representing different sides of the same coin may clarify these findings. The finding concerning commitment indicates that members believe commitment to be more important than previously, while the finding concerning trust indicates that members do not consider their democratic rights to be respected or taken seriously by the cooperative. This is an interesting finding which suggests that commitment can be increasing at the same time as trust is decreasing. Following the conclusions reached by Bijman et al. (2014), this is an indication that decisions are made without involving members to a sufficient degree and thus of a need to involve members to a higher extent.

In addition, this justifies viewing attitudes to the governance system of agricultural cooperatives as a construct covering more than one domain; in particular, farmers seem to evaluate agricultural cooperatives' governance systems in different ways when aspects related to commitment are considered compared with when aspects related to trust are considered. From a policy point of view, these divergent patterns of commitment and trust are important for agricultural cooperatives to consider in their efforts to survive in the future. In particular, agricultural cooperatives would need to adjust their governance processes in order to build and develop member trust.

Because attitudes are shaped by the underlying values of individuals (Grube et al., 1994), the development of attitudes is likely to be highly embedded in a cultural context, from where values are developed. For this study, this means that the attitude change demonstrated in the results can most likely only be generalized to countries with a similar cultural context to Sweden. In order to evaluate whether the change in attitudes to agricultural cooperative governance systems observed here has occurred throughout Europe and the USA, further studies are needed. These can benefit from the conceptual framework developed here and from the attitude measurement scale used in this study. Furthermore, future studies should examine individual differences in attitude change, which would require access to panel data on farmers' socio-economic and personality characteristics and on their attitudes to agricultural cooperatives. This would allow further clarification of how and why this attitude change occurs.

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World Values Survey (WVS, 2014): www.worldvaluessurvey.org

Karin Hakelius received her MSc in Agriculture 1990, PhD in Agricultural Economics 1996, both at the Swedish University of Agricultural Sciences. Her topics of current research interest are: farmer cooperatives; relationship between members and directors; board work in farmer cooperatives; and mergers of farmer cooperatives.

Helena Hansson received her MSc in Business Studies, 2003, at Uppsala University; PhD in Business Studies, 2007, at the Swedish University of Agricultural Sciences. Her topics of current research interest are: behavioral decision making; personality factors and values of business managers; risk analysis; animal welfare economics; and firm efficiency.