Svetlana Golovina¹, Sebastian Hess², Jerker Nilsson³ and Axel Wolz⁴

Social capital in Russian agricultural production cooperatives
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Abstract: As the Soviet kolkhozes and sovkhozes were converted a large number of agricultural production cooperatives were created. Most of these cooperatives still exist and some of them have a strong market position. They account for almost one-third of the aggregate volume produced by large farms. This paper explores whether social capital might be an explanation to this relative success. Perhaps the members support the cooperatives as they have trust in their fellow members as well as in the leadership. Interviews with cooperative members resulted in 1401 usable answers. Results from an Ordered Logit Model indicate that there is partial social capital. Members who consider cooperatives to be an efficient business form value social ties to other members though the leadership does not enjoy much social capital.

Key words: Russia, production cooperatives, social capital, Ordered Logit model

JEL Classification: J54, P32, D02

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¹ Svetlana Golovina, Doctor of Economic Science, Professor of the Chair of Economic Theory, Pro-rector of the Kurgan State Agricultural Academy, Ketovo district, Kurgan region, Russia 641300. E-mail: s_golovina@yahoo.com.
² Sebastian Hess, Associate Professor, Department of Economics, Swedish University of Agricultural Sciences, P.O. Box 7013, SE-750 07 Uppsala, Sweden. E-mail: Sebastian.Hess@slu.se.
³ Jerker Nilsson, Professor, Department of Economics, Swedish University of Agricultural Sciences, P.O. Box 7013, SE-750 07 Uppsala, Sweden. E-mail: Jerker.Nilsson@slu.se.
⁴ Axel Wolz, Research Associate, External Environment for Agriculture and Policy Analysis, Leibniz Institute of Agricultural Development in Central and Eastern Europe, Theodor-Lieser-Str. 2, D-06120 Halle (Saale), Germany, Phone: +49-345-2928 114. E-mail: wolz@aimo.de.
1. Introduction

1.1 Production cooperatives in the Russian agriculture

On the basis of a survey among members of Russian agricultural production cooperatives this study explores whether the social capital among the members may explain their view of this organizational form and why this organizational form is still relevant in Russian agriculture.

In the late 1980s the first steps were taken in the transformation of state and collective farms (sovkhозes and kolkhozes) which characterized Soviet agriculture (Ellman 1991). In principle, these farms could have been re-organized as individual (family) farms, investor-owned firms (i.e. limited liability or joint-stock companies) and agricultural production cooperatives, formally based on voluntary membership. It has been observed that no voluntarily established agricultural production cooperatives are found in any long-term settled farming village all over the world (Schiller, 1969). Similarly, investor-owned firms play a marginal role in the Western world’s agricultural production with the exception of plantations (Schmitt, 1993).

There is a widespread opinion among agricultural economists that family farms are the most competitive model of farm organization. It is argued that within agricultural production the technological scale economies are typically exhausted before the farm size exceeds the labor capacity of a family, and further growth of the labor force is inhibited by rising supervision costs (Binswanger et al., 1995; Eastwood et al., 2010). The governance of a family brings advantages due to the smallness of the group and its hierarchical structure, so that shirking and free-riding among family members is restricted (Pollak, 1985). Hence production cooperatives may be supposed to have high agency costs and not necessarily low production costs.

After the change of the political regime in the former Soviet Union, most political advisors strongly endorsed the family farm model (World Bank, 1992; Lerman, 1998, 2010). However, during the following years family farming did not develop as anticipated. Large-scale farms now registered as investor-owned firms or as agricultural production cooperatives, continued to play a powerful role (Uzun, 2008; Ioffe et al., 2012).

Russian agricultural production cooperatives have not only survived for more than two decades. They are also to some extent thriving as many of them have a strong market position and have high market shares in several agricultural branches and regions of the Russian Federation. In 2009, they constituted about 32 per cent of all large agricultural enterprises and their market share was 33 per cent (Golovina et al., 2013). The cooperatives are involved in a variety of agricultural industries such as breeding and fattening of cattle (39.6 per cent of the overall production), potatoes and vegetables (16.6 per cent), and honey and fish production (14.6 per cent) (Petraneva et al., 2005).

1.2 Research approach

The preceding section indicates that there are interesting issues to be investigated concerning the Russian agricultural production cooperatives, among them factors that contribute to their survival.
and relative success. One such factor is whether member support of the cooperative society and the cooperative business firm may foster strength.

An increasing amount of research about agricultural cooperatives in market economies indicates that social forces within the memberships constitute a crucial factor behind the success or failure of these firms (Nilsson and Svendsen, 2011; Nilsson et al., 2012). To be successful the members must have trust in the cooperative and each other. With limited trust they do not want to support the cooperative. Their patronage will decline and members will have low willingness to finance the cooperatives as well as low willingness to govern it. Hence a possible explanation to the relative strength of Russian production cooperatives may be that there is social capital within their memberships.

The conditions in the Russian agriculture are, however, different from those prevailing in the Western economies. First, in the latter countries cooperatives are basically grass-root organizations. They are established and develop on the basis of popular movements. They exist because individuals experience economic problems that they could not solve individually but thanks to joint action they can balance skewed market relations (Staatz, 1984, 1987, 1989). The Russian production cooperatives, on the other hand, are generally former state or collective farms, transformed into cooperative societies. Even though these cooperatives are by law formed after voluntary decision-making by the farm workers, the workers had limited degrees of freedom when choosing the cooperative form (Golovina et al., 2013). In the establishment phase the workers were influenced by political forces and the public administration and also subject to pressure from the kolkhoz and sovkhoz leaders.

Second, the cooperatives in the Western agriculture concern inter-organizational relations as the members are independent farmers. The relationships between members and cooperatives in the Russian production cooperatives are intra-organizational. The worker-members are part and parcel of the cooperative organization, not independent units.

Nevertheless, the relative strength of the Russian production cooperatives might indicate that there exists social capital in the memberships. Perhaps the members have sympathies for each other, trust in the leadership, and are satisfied with their livelihood. The leaderships may have member interests as the loadstar in their decisions.

Several prior studies have been devoted to various aspects of Russian production cooperatives. Some of these focus on the leadership, which is claimed to be more or less autocratic (Amelina, 2000; Allina-Pisano, 2008; Lerman et al., 2004; Valentinov and Nedoborovsky, 2007; Petrick and Carter, 2009). The leaders of the cooperatives are strong persons, and the establishment of the cooperatives did not always follow a democratic path. An interpretation of these studies is that the social relationships within the memberships are of a specific kind. However, none of the studies of Russian production cooperatives had a social capital theoretical approach.

All the above-mentioned studies are based on qualitative data, collected through observations and personal communication with stakeholders though not members of the cooperatives. Allina-Pisano (2008, p. xxii) observes that directors “would not allow survey questions to be asked of their workers.” These studies are hence based on rather unsystematically collected data. None of
them have hard facts to underpin their arguments. Hence the conclusions from these studies may be uncertain. There is no quantitative study among these and none of them has data from the members themselves. Furthermore these studies do not address why the cooperatives have survived for more than two decades and are to some extent successful. That development would be difficult to achieve if there were not at least some social capital within the memberships.

The aim of this study is to explore to which extent the existence of the Russian agricultural cooperatives is based on social capital that the members have in the cooperative organization. The empirical data come from personal interviews with 1401 members of production cooperatives within the Kurgan Region, located east of the Ural Mountains.

The paper’s next section presents the social capital theoretical framework, especially as it appears in the context of cooperatives. On the basis of the theoretical presentation variables and questionnaire items are identified. Next, the empirical approach is presented. The following sections comprise an account of the results, analyses of the findings, a discussion and conclusions.

2. Theoretical framework

2.1 Social capital theory

For an individual, a group of individuals or an organization to be able to make decisions concerning future actions there is need for resources. These resources do, however, not consist of financial capital only. Except for financial capital there must also be other types of capital such as social capital, physical capital, human capital, and with respect to agricultural production, natural capital (Ellis, 2000). The human capital implies that the decision-maker has knowledge and skills in relation to appropriate actions such as profitable investment opportunities.

Social capital is a relatively vague concept in social sciences (Durlauf and Fafchamps, 2005) but there is common agreement that it matters as the actions of one human are related to the actions of others. There are interdependencies in social relations. Hence, social capital is an attribute of relationships. It may be a relationship between two individuals, between an individual and an organizational unit, within an organization, within a network of individuals or organizations, etc. The social capital in relationships may, however, be unequally distributed, i.e. one of the actors may have trust in the partner, but the opposite may not be the case.

Because social capital may be identified at different levels of the social hierarchy – individuals, groups, organizations, and society at large – several definitions have been proposed. The present study focuses on social capital at the organizational level. According to Bourdieu (1986, p. 243), social capital is “made up of social obligations (‘connections’), which is convertible, in certain conditions, into economic capital and may be institutionalized in the form of a title of nobility”. Woolcock (1998, p. 153) defines social capital as “the information, trust, and norms of reciprocity inherent in one’s social networks”. These definitions are applicable in the present study.
Social capital is as important to human behavior, business decisions, and government action as financial capital. With low trust, much decision-making is difficult. Investors would scarcely buy assets if they did not trust their suppliers to actually deliver the goods, if they believed that their employees would cheat, if they could not rely on the country’s judicial system, etc. Trust reduces the transaction and agency costs in interpersonal and organizational settings. It decreases the costs to individuals and organizations of insuring themselves against deceitful behavior by their partners, both in social life and in business relations (Nilsson et al., 2012). Trust can be higher in some specific small and large social groups than in others, for example in families, neighborhoods, clubs, workplaces, and religious communities.

Previous research shows that the social capital framework is relevant in a cooperative context. If a cooperative society is to enjoy member satisfaction and member loyalty, there must be some form of social relations within the membership (Hakelius, 1996; Borgen, 2001). There must be trust in the sense that the members should have at least some confidence in one another and in the leadership (Morrow et al., 2004; Jones and Kalmi, 2009; Nilsson et al., 2009). A successful cooperative presupposes that members are concerned about how the cooperative is governed (Österberg and Nilsson, 2009). They consider the cooperative to be important for them.

The existence of social capital within an organization may have the effect of inhibiting the individuals’ incentive for change. When people regard themselves as group members they might have less entrepreneurial spirit. The resulting lower economic development is, however, not necessarily a problem. It may be considered to create a balance between social satisfaction and economic benefits (Svendsen and Svendsen, 2003).

2.2 Social capital indicators

There are various ways in assessing social capital. One approach distinguishes between structural and cognitive forms. Structural social capital facilitates information sharing and collective action through established roles, rules and procedures. It is relatively objective and observable. Cognitive social capital refers to shared norms, values, trust, attitudes and beliefs that contribute to cooperative behavior. It is more subjective and intangible (Uphoff, 1999). The present study focuses on social capital of the cognitive understanding.

The variables used in earlier empirical studies about members’ view of their cooperatives comprise a large variety of socio-psychological constructs such as attitudes, knowledge, preferences, solidarity, and loyalty, which are related to cognitive social capital. In particular, several studies have focused specifically on members’ trust in their cooperative and in its leadership (Borgen, 2001; Hansen, Morrow et al., 2002; James and Sykuta, 2005; Österberg and Nilsson, 2009).

In line with Feng et al. (2014) the following four social capital indicators are used in the present study: Involvement, trust, satisfaction, and loyalty. Each of these variables is operationalized into one or more items in the questionnaire that is used in the collection of data.
3. Variables and questionnaire items

The dependent variable is the members’ view of the production cooperative form in Russia. This attitudinal variable is covered by one question:

“I think that joint farming in a production cooperative is an efficient way in doing agricultural production in Russia.” The question is answered according to a Likert scale ranging between 1 (agree) and 6 (disagree).

The independent variables consist of the four social capital constructs, namely involvement, trust, satisfaction and loyalty. Each of these is covered by one or more questions in the questionnaire. The social capital dimensions, questions, and variables are as follow:

**Involvement.** If the members are involved they are likely to take overt action concerning the production cooperative’s operations and wellbeing. They would, for example, inform themselves about the financial status, take part in discussions, and be prepared to govern the firm.

- “To which extent do you read the balance sheet and the profit-and-loss account of the annual report?” Likert scale: very carefully – not at all (1 – 6); variable “dreadbalancesheet”
- “Do you always take part in the general assembly meetings?” A Likert scale is used, running from every time (1) to never (6); variable “dparticipgenass”
- “Would you be willing to become a member of the leadership?” The answering alternatives were Yes = 1 or No = 2; variable “dwillingleader”

**Trust.** Trust can be identified both in the individual member’s relationship to other members and in their view of the leadership.

- “To which extent is it important for you to have friends and relatives close to you within the cooperative (as colleagues)?” A Likert scale was used, ranging from 1 (very important) to 6 (not important at all); variable “closefriendsincoop”
- “To which extent does the leadership care about the opinions of the members?” The Likert scale ran from Very much (1) to Not at all (6); variable “dleadercareopinion”

**Satisfaction.** The members’ degree of satisfaction with the cooperative is a relative concept. Hence, it may be compared to the conditions before the establishment of the cooperative as well as the attractiveness of private farming.

- “Compared to the situation of collective/state farms, i.e. during the time of the Soviet Union, do you think that you – as an ordinary member – have more influence in decision-making now?” The question has three response alternatives: yes = 1; no = 2; too young = 3; variable “dordinarymeminfluence”
- “Have you, after you became a member of the production cooperative, considered the option of becoming a family farmer?” The question should be answered by Yes = 1 or No = 2; variable “consideredfamfarmlater”
**Loyalty.** Loyalty may be both an expression of an individual’s propensity to act and the individual’s actual behavior. The latter interpretation cannot be used here as the members have limited possibility to express dissatisfaction through disloyalty. Hence loyalty must be measured in terms of opinions.

- “To which extent does it happen that the members have positive opinions about the way the cooperative is run?” A Likert scale is used, ranging between very often (1) to never (6); variable “dposopinioncoop”

4. **Empirical basis**

To get data for analysis of the above-mentioned variables an empirical study has been executed. A structured questionnaire was designed, comprising questions based on the dependent and independent variables as well as socio-economic variables. Data was collected in a survey conducted by one of the authors and 54 of her students through personal interviews, supplemented by phone and through mail. The interviewing students were specifically trained for this task so that best possible conformity should be attained. The data collection took place in August, September and October 2011 within the Kurgan region.

The Kurgan Region, which covers 71,500 square kilometers, is part of the Federal Region of Ural, and lies east of the Ural mountain ridge. The region is located in the south-western part of the Siberian lowland, and in the south borders Kazakhstan. Of its total population of 908,800 persons (2010), almost half (43%) live in rural areas. The regional economy is dominated by agriculture, with an agricultural area comprising about four million hectares, of which 2.2 million is arable land. Agricultural production makes up 18% of the gross regional product. Agro-food industries are the dominant source of employment and income in the region’s economy (Kurganrosstat, 2011).

The sampling of the respondents took place in two steps. First 45 out of the 73 agricultural production cooperatives in the Kurgan Region were selected. This was a convenience sample as the students made interviews in their home villages and neighboring villages. There is no reason to suspect that this procedure resulted in a non-representative sample. All the 24 districts of the Kurgan region were covered. Second, the students selected rank-and-file members in each cooperative. The respondents were both those who became members of agricultural production cooperatives when the kolkhozes and sovkhozes were restructured, i.e. they participated in the transition process, and those who joined after the transition.

The students approached 1792 cooperative members. Some of the intended respondents abstained while others gave incomplete answers. After a check of consistency some open issues were covered by mail or phone. Hence a response rate of 78.2% was achieved, i.e. the number of usable answers was 1401, which form the data set of the analyses. The socio-economic structure of the sample is shown in Table 1.
Table 1. Socio-economic structure of the sample (N = 1401)

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Mean</th>
<th>Std. dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>43.0</td>
<td>12.52</td>
</tr>
<tr>
<td>Gender (binary; 1 = male, 2 = female)</td>
<td>1.57</td>
<td>0.49</td>
</tr>
<tr>
<td>Household head (binary; 1 = yes, 2 = no)</td>
<td>1.53</td>
<td>0.50</td>
</tr>
<tr>
<td>Household size (number of persons)</td>
<td>3.5</td>
<td>0.99</td>
</tr>
<tr>
<td>Education (1 = primary education; 2 = secondary education; 3 = specialist course with degree; 4 = college; 5 = university)</td>
<td>3.3</td>
<td>0.92</td>
</tr>
<tr>
<td>Agricultural education (1 = on-the-job only; 2 = specialist course with degree; 3 = agricultural college; 4 = agricultural university)</td>
<td>2.0</td>
<td>0.87</td>
</tr>
<tr>
<td>Years of work experience</td>
<td>23.8</td>
<td>12.39</td>
</tr>
</tbody>
</table>


The average age is relatively low with about 43 years. Younger people do not seem to turn to other professions or move to other regions but stay with the production cooperative. The share of those younger than 35 years is more than 30 per cent. Females form the majority in the sample. This share is quite large as according to the Russian Census of 2006, the share of female agricultural staff is about 40 percent (Wegren, 2014). Almost half of the respondents are household heads whose households comprise 3-4 persons. This size is relatively large as the Russian average of rural households is 2.8 persons (Wegren, 2014, p. 103). The educational level is relatively high.

More than four-fifths of the respondents have earned a degree in a specialized course, from a college or even from a university. With this relatively good educational level it had be assumed that a high share of younger people might have left the cooperative. On the other side, formal agricultural education is rather low. More than one-third of the respondents did not follow any course, but just got “on the job training” and about one-quarter had earned an agricultural college or university degree. Although the share of young members is relatively high, still more than half of all respondents had already joined the predecessor farm during the time of the Soviet Union. They were actively involved in the transformation process of their farm during the early 1990s.

5. Results

5.1 Descriptive findings

The basic attributes of the eight identified social capital indicators are shown in Table 2. A first impression is that the members are locked-in with their cooperative. They are not very fond of it, but they value the collaboration with close relatives and friends. Similarly they think that becoming a private farmer, which is the most probable alternative to their present situation, is not attractive.
Table 2. Mean value of the social capital variables

<table>
<thead>
<tr>
<th>Social capital dimension/ social capital variable</th>
<th>Mean</th>
<th>Std.dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Involvement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- reading annual reports (very often = 1; never = 6)</td>
<td>3.97</td>
<td>1.24</td>
</tr>
<tr>
<td>- attending meetings (very often = 1; never = 6)</td>
<td>4.30</td>
<td>1.34</td>
</tr>
<tr>
<td>- willingness to become leader (yes = 1; no = 2)</td>
<td>1.93</td>
<td>0.24</td>
</tr>
<tr>
<td><strong>Trust</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- close friends in cooperative (very important = 1; not at all = 6)</td>
<td>2.44</td>
<td>1.49</td>
</tr>
<tr>
<td>- caring leadership (very much = 1; not at all = 6)</td>
<td>3.61</td>
<td>1.38</td>
</tr>
<tr>
<td><strong>Satisfaction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- more influence in decision-making than in Soviet times (yes = 1; no = 2)*</td>
<td>1.78</td>
<td>0.41</td>
</tr>
<tr>
<td>- considered private farming after transformation (yes = 1; no = 2)</td>
<td>1.93</td>
<td>0.25</td>
</tr>
<tr>
<td><strong>Loyalty</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- positive opinion about cooperative (very often = 1; never = 6)</td>
<td>4.02</td>
<td>1.16</td>
</tr>
</tbody>
</table>

* Those who were too young for answering this question are not included (N = 816)

**Involvement.** The members’ involvement in the cooperative is quite low. Relatively few care about reading the cooperative’s annual reports and even fewer attend the annual assemblies. Only few respondents are prepared to stand for board elections and take over leadership responsibilities.

**Trust.** With respect to the dimension “trust”, a large share of the respondents says that it is important to them to work together with relatives and friends at the cooperative. There is a slight negative feeling whether the cooperative leadership cares about the opinions of the members.

**Satisfaction.** Most members consider themselves as being not satisfied with their influence on decision-making in the cooperative. The ones who used to work at the predecessor farm during the Soviet times state that ordinary members do not have more influence in decision-making in these days. For them not much seems to have changed. On the other hand just a small share of them has thought about the option of becoming private farmer after the transformation into an agricultural production cooperative, i.e. during the recent years.

**Loyalty.** With respect to “loyalty” a majority of the respondents state that most members do not have positive opinions about their cooperative. They claim that negative opinions predominate.

**5.2 Econometric analysis**

The dependent variable of the econometric analysis is formed by responses to the survey question “I think that joint farming in a production cooperative is an efficient way in doing agricultural production in Russia.” Answers to this question have been measured on a Likert scale that was ranging from (1 – 6) with scale ends “agree (=1)” to “disagree (=6)”. Thus, the dependent variable is a measure of stated relative skepticism with respect to the production efficiency of the cooperative model among survey respondents.

This six-point Likert scale can be viewed as an approximation of the ‘true’ underlying, yet unobservable, continuous distribution of this relative skepticism. Therefore, the method of analysis had to account for the fact that the ‘true’ value of the dependent variable remained
unobserved, but was approximated through the observed categorical responses on the Likert scale.

Hence, an Ordered Logit model was employed, using the previously discussed measures of social capital as explanatory variables. Using an Ordered Logit model (along with ordered probit models) is a well-established estimation approach if the dependent variable $y$ is discrete while the order of discrete categories has a meaningful interpretation such as “increasing order of answers” or, in the present case, Likert categories 1 to 6 implying subsequently higher levels of skepticism regarding the degree up to which the cooperative may be an efficient way to organize agricultural production in Russia.

The regression model thus took the following general form $y^* = x'\beta + \epsilon$, with $x$ representing explanatory variables, $\beta$ the corresponding estimated coefficients and $\epsilon$ a stochastic error term. However, the variable $y_i^*$ represents only respondents’ “true” level of attitude regarding the cooperative model, that unfortunately remained unobservable for the $i=1,\ldots,n$ respondents. Instead, the observed counterpart was a corresponding discrete variable, $y_i$; which is the abovementioned measure of relative skepticism based on the Likert-scale answers.

In general, the Ordered Logit model applies to surveys in which the dependent variable represents an ordinal ranking (as in the present case increasing skepticism with respect to the cooperative model): $y=$Likert category 1 $< y=$ Likert category 2, etc.), while the more frequently used multinomial logit model does not restrict the discrete outcomes to be ordered (e.g. $y=$“wheat” versus $y=$“maize”, etc. would be sufficient for a multi-nominal but not for an ordered approach).

The Ordered Logit model can thus be viewed as a more restrictive multinomial model that better exploits the information contained in an ordered categorical dependent variable than the conventional multinominal model would do. Ordered Logit models can either be estimated based on Maximum Likelihood, as used here, or through Bayesian methods. The probabilities, which enter the log likelihood function, can be stated as follows (Greene and Hensher, 2008):

$$P(y_i=j) = P(y_i^* \text{ falls within the } j^{th} \text{ category of } y_i)$$

The Ordered Logit approach estimates the empirical effect of each explanatory variable on the probability of a respondent’s stated skepticism falling into one of the observed $j=1,\ldots,6$ (Likert) categories of the dependent variable. A disadvantage of the Ordered Logit approach is that marginal effects on $y$ of a 1-unit change in $x$ are not directly given by the estimated coefficients. Therefore, neither the sign nor the magnitude of the estimated $\beta$ receives a direct interpretation. Instead, marginal (also known as “partial”) effects have to be calculated separately (Greene and Hensher, 2008) according to the first-order partial derivatives:

$$\frac{\partial P(y_i=j|x)}{\partial x}$$

Table 3 presents the estimates of these average marginal effects from the Ordered Logit model after elimination of multicollinear- and non-significant variables. In order to detect
multicollinearity, Variance Inflation Factors (VIF) has been computed and VIF up to the critical level of 10 were tolerated. The marginal effects in Table 3 have been calculated using the Delta method implemented in Stata’s postestimation commands. The coefficients (dy/dx) in Table 3 reflect the estimated change in the unobserved variable y* after a 1-unit change in the corresponding explanatory variable. The Ordered Logit model underlying Table 3 predicts about one-third of cases correctly.
Table 3. Impact of social capital dimensions and variables on members’ opinion about the efficiency of agricultural production cooperatives in Russian agriculture, Marginal effects for the Ordered Logit Model, Delta-method

|                                | dy/dx  | Std. Err. | z     | P>|z| |
|--------------------------------|--------|-----------|-------|-----|
| **Background variables**       |        |           |       |     |
| gender                         | -0.003 | 0.002     | -1.530| 0.125 |
| agriceducation                 | -0.011 | 0.005     | -2.300| 0.021 ** |
| **Involvement**                |        |           |       |     |
| D_readbalancesheet_2 (read frequent) | 0.015 | 0.007     | 2.080 | 0.038 ** |
| D_readbalancesheet_3           | -0.001 | 0.003     | -0.520| 0.607 |
| D_readbalancesheet_5           | -0.004 | 0.003     | -1.460| 0.144 |
| D_readbalancesheet_6 (read never) | -0.005 | 0.004     | -1.230| 0.217 |
| D_participgenass_2 (participate often) | 0.012 | 0.007     | 1.620 | 0.106 |
| D_participgenass_3             | 0.012  | 0.006     | 1.860 | 0.063 * |
| D_participgenass_4             | 0.011  | 0.006     | 1.670 | 0.095 * |
| D_participgenass_5             | 0.013  | 0.006     | 2.040 | 0.042 ** |
| D_participgenass_6 (participate never) | 0.012 | 0.007     | 1.920 | 0.055 * |
| D_willingleader_2 (dummy=1 if no) | -0.029 | 0.012     | -2.500| 0.012 ** |
| agricducation × D_willingleader_2 | 0.009 | 0.005     | 1.890 | 0.059 * |
| **Trust**                      |        |           |       |     |
| closefriendsincoop             | -0.002 | 0.001     | -2.360| 0.018 ** |
| D_leadercareopinion_2 (cares more) | 0.016 | 0.006     | 2.910 | 0.004 *** |
| D_leadercareopinion_3          | 0.009  | 0.005     | 1.940 | 0.052 * |
| D_leadercareopinion_4          | 0.012  | 0.005     | 2.300 | 0.021 ** |
| D_leadercareopinion_5          | 0.007  | 0.005     | 1.510 | 0.130 |
| D_leadercareopinion_6 (cares less) | 0.008 | 0.006     | 1.460 | 0.143 |
| **Satisfaction**               |        |           |       |     |
| D_ordinarymeminfluence_2       | 0.004  | 0.003     | 1.310 | 0.189 |
| D_ordinarymeminfluence_3       | 0.004  | 0.003     | 1.230 | 0.217 |
| consideredfamfarmlater         | -0.007 | 0.004     | -1.600| 0.109 . |
| **Loyalty**                    |        |           |       |     |
| D_posopinioncoop_2 (often)     | 0.001  | 0.007     | 0.130 | 0.900 |
| D_posopinioncoop_3             | 0.001  | 0.003     | 0.400 | 0.691 |
| D_posopinioncoop_4             | 0.006  | 0.003     | 2.130 | 0.033 ** |
| D_posopinioncoop_6 (never)     | 0.004  | 0.004     | 1.050 | 0.292 |

Note: Negative coefficient points towards more appreciation of the agricultural production cooperative as an efficient way of farming. Variable names with “D_” indicate dummy variables; the numbers at the end refer to the corresponding Likert category.

Legend: *** signif. at 1%, ** signif. at 5%, * signif. at 10%, . signif. at 12%.

6. Analyses
6.1 Overview

The model chosen follows the approach of a social capital perspective. In Table 3 only those variables are listed which have been retained after dropping less significant similar variables and those with high degrees of collinearity to the existing ones. Several significant explanatory variables suggest an influence on the dependent variable. However, the overall explanatory power of only about one-third of the cases predicted correctly is rather limited. This suggests that the social capital approach can only provide a partial explanation. If the social capital approach would be the only one, the explanatory power would likely be higher. It can, however, not be ruled out that also some of the variables in the dataset contain a certain degree of measurement error which may be part of the normally distributed random error term. Further possible explanations for the rather limited predictive power of the model are that interaction effects are not included.

Most background variables like age, household size, and length of employment in the cooperative did not turn out to have importance for the members’ evaluation of the cooperative business form. Gender has a slight though not significant influence on the members’ evaluation. The only background variable with a significant influence is education.

\[\text{agriceducation}: \text{The agricultural production cooperative model is viewed as an efficient model by those with a better agricultural education.}\]

The fact that members with a better agricultural education are more satisfied with the cooperative model may be explained by their better skills when working within cooperatives. Therefore, they may have a stronger position in the social networks. They have better possibilities to understand the links between their own (and other members’) work and the outcomes from the agricultural production.

The four social capital dimensions which may have an influence on the members’ evaluation of the cooperative business form are discussed in more detail. Three of them pose explanations to the members’ positive or negative view of the cooperatives. The indicator that does not show any impact is “Satisfaction”. Members’ evaluation of the business form is not influenced by this dimension as they considered themselves to have almost no influence in the decision-making.

6.2 Involvement

\[\text{D_readbalancesheet_2}: \text{Agricultural production cooperatives are viewed as a rather inefficient model by those who frequently look at balance sheets.}\]

A negative view of production cooperatives is found among members who are worried about the cooperative to the extent that they care about the balance sheets. Hence they understand that the performance of the cooperative is not satisfactory. The same explanation may hold true for members who are not open to information about events in the cooperatives.

\[\text{D_participgenass_5}: \text{The effect of participation in meetings is ambiguous since both moderate and low participation rates are significantly associated with a rather low appreciation of the agricultural cooperative model. However, for the highest participation rates the effect is}\]

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statistically somewhat weak, indicating that the most frequent participation rates are not necessarily negative (but also not significantly positive) about the cooperative model.

Members who do not take part in the annual assemblies are not attracted to the cooperative model. These may be persons with poor social connections within the memberships, i.e. they have weak ties to others. It is also likely that the negative view of the cooperative makes them less interested in attending the meetings.

It should be noted that the general assembly has two functions. One is that of being a forum for discussion and information exchange between the members and the leadership. The other one is that of a social arena where members meet each other for having a pleasant time together. The unclear interpretation of the above-mentioned finding may be a result of the members' appreciation of each of these two functions.

\[ D_{\text{willingleader}2} \]\n
D_willingleader_2: There is a group of respondents who perceive production cooperatives as a good model but have no ambition to become the leader.

The ones who consider the cooperative model to be advantageous may realize the difficulties in managing business operations, as complex as they are in a large agricultural firm. They may have a positive view, considering that the present leadership does a good job, but they may think that they would not be able to perform just as good themselves. To shed further light on the meaning of this result the interaction effect between agricultural education and low ambition to become a leader is included:

\[ \text{agreed.} \times D_{\text{willingleader}2} \]\n
The respondents who have a relatively high agricultural education and at the same time have no ambition to become a leader are significantly convinced that the cooperative is a rather inefficient model.

A subgroup of the preceding category has a deviating opinion. Those who do not want to be leaders and are well-educated do not appreciate the cooperative form. It may be that the well-educated group has a better understanding of the difficulties of running a complex farm so they may think that it is impossible to get good achievements, even if they themselves were managing it.

6.3 Trust

\[ D_{\text{leadercareopinion}2} \text{ (cares more)}, D_{\text{leadercareopinion}3}, D_{\text{leadercareopinion}4} \] Members who feel that the leaders rather care for their opinions are less positive to the cooperative.

A negative view of the cooperatives is found among members who think that the leadership cares for the membership. A possible explanation to this result is that these members are “troublemakers” that leaders try to calm down. They are dissatisfied to the extent that they pose a problem for the leadership.

Closefriendsincoop: Member who state that they have close friends in the membership are more positive to the cooperative business form.
The members’ satisfaction with the cooperative form is better if they have close social ties within the memberships. This shows that the members particularly value the cooperative society.

6.4 Satisfaction

Consideredfamfarmlater: Those who have had ambitions to start own farming at some point in the past are more positive to the cooperative.

Members who have the thought that they will start as private farmers within some future like the cooperative form slightly more, though the difference is not significant. An explanation may be that these individuals have a hope to collect sufficient capital to be able to acquire their own farm. However, they also observe those pioneers in their neighborhoods who tried private farming and whose level of living did not improve.

Alternatively they may have a mentality, such that they see how their work is related to the results of the farming activities, similar to what private farmers have to do if they are to be successful. Hence, there may to some extent be an entrepreneurial spirit among these members. They have to believe in the cooperative if they are to be successful in their personal strivings. For those who did not succeed to start a farm but had the ambition to do so a cooperative may appear as a relatively attractive substitute.

6.5 Loyalty

D_posopinioncoop_4: Members who seldom notice positive views about the cooperative consider the cooperative form to be less efficient.

Those who are positive to the cooperative can be expected to get their opinion strengthened as they observe positive events, while the opposite is likely for those who are negative from the outset.

7. Discussion

The observations in the preceding section indicate a specific pattern. The members regard the cooperative largely as a social entity, not a production unit. There is a good portion of social capital among the membership but this is related to the fellow members, not the cooperative enterprise. The members have trust in one another and experience social cohesion, but their trust in the leadership is limited. For the members the farm is a means to get their livelihood even though this is not very satisfactory. Being a member fills predominantly other functions for the individual, except for that of being a laborer.

The members do not consider themselves to be business owners. The cooperatives’ economic development does not bother members very much. Quite a share of members participates in the annual assemblies. A general assembly meeting is, however, not only a forum for discussions of the business firm’s results but also a social forum. Another indicator of relative ignorance of the business firm is that members are not interested in taking over the responsibility of leadership.
Those who once abandoned the thought of starting private farming during the last years have later become more positive to the cooperative model.

The social dimension of membership may be enhanced by the fact that most production cooperatives are continuations of the Soviet farms. The cooperatives had to take the responsibility for not only the labor force but also all inhabitants of a village, some of whom do no longer belong to the active labor force. Many members are not needed for the sake of the production but the cooperative cannot dismiss the redundant persons. These would not have anywhere to go.

Members who realize that they are not contributing to the production are likely to focus on the social aspects. The worker-members with the best labor opportunities may be expected to leave, whereby the less productive ones remain. There are hence economic and practical problems that follow from the fact that the cooperative is also a social unit and not only an enterprise.

The fact that most production cooperatives are converted Soviet farms means that the cooperatives have the responsibility for all social life in the village. At the time of the conversion the production cooperatives generally took over tasks such as medical care, leisure activities, old age pensions, schooling and other services of public character. While these services had to be cut compared to Soviet times, the members in general still have access to some basic social services (Davydova and Franks, 2006).

The heritage of the production cooperatives may explain the fact that the leaders are not in high regard by the members. When the workers of the Soviet farms decided to substitute those farms with a cooperative they were in time pressure so they had not time to consider alternatives (Golovina et al., 2013). Many political and administrative leaders recommended a conversion into a cooperative. The members were badly informed. The leaders of the former Soviet firms were in favor of a cooperative solution. Hence, even though the legislation says that cooperatives are voluntarily established the members had not very much of a choice.

Hence, the balance between the social and the economic dimensions has become skew. In the Soviet times there was a balance in the sense that the two were united. As the cooperative business form was created the economic dimension should have been stressed, but this turned out to be impossible. As people have no other income opportunities in the village they have to consider the cooperative as their “own” firm. The consequence is that the financial results of the cooperative are not considered very much by the members. To them efficiency in terms of input-output is not important.

As the cooperatives are not a production form in the eyes of the members, the social capital paradigm has a limitation. The members feel attachment to each other while their responsibility for the enterprise is weak. The sense of social capital in relation to the firm is limited.

This finding is in line with what Golovina et al. (2013) find in their transaction cost theoretical analysis of the Russian agricultural production cooperatives. If the members were to choose another organizational model than the cooperative one, they would have faced exorbitantly high transaction costs. They were locked-in into the village.
This study presents hard facts that support previous studies, which express critical views about the role of leaderships of the production cooperatives (Amelina, 2000; Allina-Pisano, 2008; Lerman et al., 2004; Valentinov and Nedoborovsky, 2007). “… managers may treat reform ideas (and those that live them) as strange, inappropriate and foreign. They may also withhold information concerning privatization and other civil rights, prevent political organization of farm workers, exclude outsiders (‘change agents’) from the village, inhibit the creation of support networks or businesses for private farmers, frighten defectors and stress collective identity and local ‘collective solutions’ to problems.” (Petrick and Carter, 2009, p. 237).

The observation that members have social capital in relation to each other may be a reaction to their distrust in the leadership. This is especially so as the members have limited possibilities to get the present leaders substituted by ones that they would trust.

8. Conclusions

As the Soviet kolkhozes and sovkhozes were converted a large number of them became agricultural production cooperatives. Most of these cooperatives still exist and some of them have a strong market position. They account for almost one-third of the aggregate volume produced by large farms.

This paper explores whether social capital might explain the cooperatives’ relative success. It is hypothesized that the members support the cooperatives as they have trust in their fellow members as well as in the leadership. This hypothesis was analyzed with the help of a survey among rank-and-file cooperative members in the Kurgan Region. An Ordered Logit Model was used to estimate findings.

The findings indicate that there is social capital in the memberships, though the amount is not overwhelming and it is unevenly distributed. Members who consider cooperatives to be an efficient business form have social ties to other members while the leadership does not enjoy much social capital. The members regard the cooperative basically as a social unit, not as a business enterprise.

The social capital within the memberships explains members’ support of the cooperative society but not any support to the cooperative business. The Russian agricultural production cooperatives exist rather in spite of members having little trust in their leaderships. Other reasons for the cooperatives’ relative success may be that competing agricultural enterprises are inefficient or that the leaderships, in their striving to preserve their position, are performing well.
References


