Interlocking directorates in agricultural enterprises in Scania, Sweden
Thomas Björklund¹, Kostas Karantininis²³ and Jerker Nilsson⁴


Abstract

Introduction

Factors that influence the degree of success of firms are a long-time theme in the business literature. This study is another contribution to this literature, though it differs from most of the preceding literature in some dimensions.

First, the explanatory variable is the composition of the boards – more precisely to which extent the various boards are overlapping. Interlocking directorates may be expected to cross-fertilize the agricultural enterprises. There are prospects for better coordination, more concerted action, and faster diffusion of good innovations (Karantininis, 2007). As the same persons meet repeatedly in different boards, a culture of mutual understanding may develop such that they all work for the same purposes. Previous research indicates that a success factor for firms might be the composition of the boards (Karantininis, 2007).

Second, this study is focused on agricultural enterprises and such of fairly large size – at least big enough to have a board of directors. It seems that there are no studies of interlocking directorates among agricultural enterprises. One explanation may be that many agricultural enterprises are family-owned, relatively small, and run as proprietary firms. Therefore they do not have a board of directors in the same sense that larger firms have. The agricultural sector’s structural development is, however, constantly changing, so by time these firms are becoming larger and the probability for them to have a board increases. There are increasingly often corporate farms around the world. Hence, the topic of interlocking directorates is successively becoming more topical in the agricultural sector.

An overriding hypothesis is that interlocking directorates create information exchange, which may have the effect of stimulating the boards and the CEOs (Chief Executive Officer) to adopt “best practices”. If one type of crop has been successful in one agricultural enterprise there is a higher probability that other enterprises will cultivate the same crop. The same may

¹ Thomas Björklund is lecturer in marketing, Department of Work Science, Business Economics and Environmental Psychology, Swedish University of Agricultural Sciences, P.O. Box 53, SE-230 53 Alnarp, Sweden. Phone: +46 40 41 50 72. E-mail: Thomas.Bjorklund@slu.se
² Kostas Karantininis is professor of industrial organization, Department of Economics, Swedish University of Agricultural Sciences, P.O. Box 7013, SE-750 07 Uppsala, Sweden. Phone: +45-30-239503. E-mail: Karantininis.Konstantinis@slu.se
³ Corresponding author.
⁴ Jerker Nilsson is professor of agricultural co-operatives and marketing, Department of Economics, Swedish University of Agricultural Sciences, P.O. Box 7013, SE-750 07 Uppsala, Sweden, as well as Department of Work Science, Business Economics and Environmental Psychology, Swedish University of Agricultural Sciences, P.O. Box 53, SE-230 53 Alnarp, Sweden. Phone: +46 18 67 17 68. E-mail: Jerker.Nilsson@slu.se
hold true for production techniques, machinery, administrative procedures, choice of trading partners, etc.

Before this hypothesis can be tested it is, however, necessary to investigate whether such interlocking directors at all exist. The present study is limited to this issue, i.e. the hypothesis is that interlocking directorates can be found within boards of agricultural enterprises.

**Previous research**

Interlocking directorates occur when a person affiliated with one organization sits on the board of directors of another organization (Mizruchi, 1996). Interlocking directorates are probably the most studied forms of inter-organizational influence – especially in the economic sociology literature. The debate and consequently the literature on interlocks began after a 1913 Congress report by the “Pujo Committee” in the U.S.A. identified interlocks as a problem in the early 20th century (Dooley, 1969).

In the context of networks, interlocking directors are the actual human “vessels” through which information flows within the network. Besides their role as information channels, it has also been argued that interlocks (a) act as a mechanism of inter-firm collusion and cooperation; (b) enable firms to monitor each other; (c) are a mechanism for personal career advancement; (d) are a source of legitimacy; and (e) are a source of information about business practices.

Interlocked directors also play a representational role, representing their organization, firm, or certain assets, knowledge, information, experience and credibility acquired in the past and the present (Halinen and Tornroos 1998). As such, they are the main carriers of “organizational memory” and serve as “boundary-spanners” which in essence link the organization with its environment (Jemison, 1984).

In the case of agriculture firms, there seems to be no research on this area. The current methodology allows the calculation and graphing of the interlocking network with use of some available algorithms (UCINET). This allows the calculation of a number of measurements of the network, which can allow the quantification of the importance and role of the interlocking directorates (Wasserman and Faust, 1984).

**Problem and aim**

In order to investigate the role of interlocking directorates in agricultural enterprises empirical data is needed. The empirical basis consists of agricultural enterprises in Scania, which is the southernmost province of Sweden. Scania, with a total population of about one million inhabitants, is considered to be the heart of agricultural production in Sweden. Farmers in the various parts of Scania are active mainly in grain and sugar beet growing, pig, cattle and poultry breeding, and dairying. Scania is by far the leading province as concerns production of vegetables (especially tomatoes and cucumber), ornamental flowers, apples and other types of fruits and root crops such as potatoes and carrots. Even though many farmers are focusing on one line of production it is very common that the farms apply a strategy of mixed production.
Scanian agriculture has for historical reasons a relatively large number of big farms or estates. After Scania was conquered from Denmark in 1658 the Swedish kings tried to secure their rule over this province by giving large land areas to reliable Swedish noble families. Furthermore there has been much consolidation of farm enterprises over many decades, especially in recent years. Hence, there are many large farms in the province of Scania, some with a few thousand of hectares.

The present study focuses on large farms only, at least large enough to be organised as limited liability companies. This is so because according to the Swedish companies’ act, limited liability companies with more than three employees are obliged to have a board of directors as well as an auditor. Hence the study would not make sense if it were to comprise also agricultural enterprises which are proprietary firms. These do not necessarily have any board of directors, and even if they have boards, data can not be obtained from any data base.

A limited liability company is obliged to have an auditor. This person is a professional who must be independent of the board as s/he has the task of investigate the firm’s book-keeping, scrutinizing all minutes from various meeting and otherwise inform himself or herself of the status and the operations of the firm. On this basis the auditor has the duty of presenting a report to the general assembly about these investigations. In order to preserve this independence of the auditor he or she is elected by the general meeting, and the board has no influence on who is elected as an auditor.

In order to increase the probability that the boards of directors in the farm enterprises under study have an active role to play, the population included in this study consists of enterprises with more than five employees. This minimal limit is expected to provide a sample of firms, where the board members do not consist of family members only.

The directors of these farm enterprises and the auditors may have similar duties also in one or several other firms, which are not agricultural enterprises. This fact is, however, not considered in the present study. It can not be excluded that these directors may transmit valuable information from non-agricultural firms into the agricultural firms but if so, the value of that information is due to be limited.

The aim of the study is to explore whether there are interlocking directorates within relatively large agricultural enterprises, which are organised as limited liability companies and which have a location in the province of Scania, Sweden.

**Approach**

The study includes two stages:

I. Using UCINET (and maybe other network packages, such as PAJEK) we map (graph) the network of interlocking directorates of the agricultural enterprises, and we calculate the various measures of it. These measures will be used as independent variables in stage II

II. A regression where the left-hand side (dependent variable) is the success (measured in terms of profitability or other financial indicators) of the particular firm, or the particular cluster, clique or sub-network. The dependent variables are those that indicate success or failure for agricultural enterprises. Such variables are capital return and expansion rate. The
independent variable is the interlocking directorates and their attributes. The latter comprise number of directors, and their position in the network.

Data

Data about the composition of limited liability companies’ boards in Sweden can be obtained from different sources. Such data bases contain a large amount of information – the names of directors, the various other boards these directors belong to, the turnover of the firms over several years, the location of the firm, the production orientation, etc.

The data used in this study was acquired from a firm (PAR), which is specialised in providing business information. The information is based on official data that Statistics Sweden is collecting. According to Statistics Sweden Scania has 11500 firms within the agricultural and horticultural sectors. Of these 250 have up till five employees.

Data was acquired from all these 250 agricultural and horticultural enterprises in Scania. It turned, however, out that about 60 firms were not limited liability companies and hence they do not have a board of directors – or at least their eventual boards are not registered. Therefore the sample consists of approximately 190 enterprises, from which 157 were usable in our analysis.

For each of the 190 enterprises the following data is obtained:

- Name of the agricultural or horticultural firm
- Address
- Production orientation
- Last year’s turnover (in SEK)
- Changes in turnover during the preceding four years, expressed as percentages
- Identity of the board members
- Identity of the auditor

Results

We used the UCINET package to analyse the network of the boards of directors of the farms in our data set. Figure one depicts the network. Farms that had no director overlaps are omitted. One first assessment reveals the following clusters of farms.

11 dyads: connected ia one director
1 dyad connected through two directors
3 triads: connected through one director
6 Multitudes: more than four farms clustered around one or more directors

Below we calculate the descriptive centrality statistics. The mean degree centrality (both out- and in-degree) is 18003.4, while the normalized measure of centrality is 34.3. The overall network centralization is 16.1%. This is not a very centralized network.
DESCRIPTIVE STATISTICS

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Network Centralization (Outdegree) = 16.114%
Network Centralization (Indegree) = 16.114%

Discussion

This is a very preliminary analysis. So far the analysis shows that those farms that are connected it is mainly through auditors. Although there is a number of farms that are connected through ordinary directors, it is auditors that occupy the most central. These auditors have a central role in this network. It is found that three of these auditors are serving more than 10 farms each, while they also are “bridges” to some of the farms connecting them to other farms. We continue work on this data base in order to analyse further the role and impact of these auditors and other directors that serve to connect farms in Scania.

Conclusions

So far, we only have very preliminary conclusions. Since we continue work on further analysis, we expect to have a more clear picture and more extended and in-depth results during our presentation in the EMNET conference.

Implications

It is expected that the study results in a number of relationships between the variables to be statistically significant. For example, some success or failure measures might be more influenced, and some director attributes are more influential than others.

Findings like these are highly interesting for the agricultural sector, not only in the province of Scania but also internationally. It is likely that farmer organizations, extension service bureaus, educational organizations, and many others could use findings like these in their efforts to assist agricultural producers to better profitability.
References


Figure 1. The network of Interlocking directorates. Red dots are farms, Blue squares are directors.