Pig farmers’ exit and voice in relation to slaughterhouses with different ownership

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Introduction

In 2007, the Swedish slaughter- and processing cooperative Swedish Meats sold its operative business (Scan) to HK Ruokatalo controlled by the Finnish farmer association LSO. Swedish Meats continued to exist with the purpose to hold a minority share of the stocks in the new firm HK Scan. At this time, the members were unaware of this event and had signed up a three year contract with Swedish Meats and from now on had to continue delivering to HK Scan, a Farmer Controlled Business (FCB). The question is, do the pig producers tied to this FCB perceive that the organization embodies the same characteristics as the cooperative did, reflected in the usage of exit and voice of the farmers? Or, could it be the case that the change in ownership resulted in a new attitude towards the same, such as decreased loyalty and trust?

Cooperatives are commonly assumed to be established due to high transaction costs at the market. These costs increase if the transaction includes asset specificity, is characterized by uncertainty and is not frequently occurring (Williamson, 1989; 2000). Vertical integration may decrease the transaction costs facing the members (Fahlbeck, 1996; Ollila, 1989).

As a way to interact with the cooperative, the members may choose to use “voice” or to “exit” (Hirschman, 1970). However, the choices “exit” or “voice” are believed to depend on the costs involved within each alternative. If dealing with external actors implies high transaction costs, “exit” will be more costly. Thus the cooperative members tend to use “voice” instead. As “voice” is efficient to use, the members become more loyal to the cooperative. Efficient “voice” implies comparatively lower internal transaction costs, costs associated with monitoring and influencing the organization, than external. Studies also show that “voice” is more likely to be used when investments have been undertaken that the stakeholder cannot get compensated for when exiting the organization (Helper, 1991), such as leaving a cooperative that has large unallocated equity.

During the last decade, Swedish slaughter market became deregulated, which implied that the cooperatives faced increased competition. More “exit” alternatives arose and the tensions between cooperative members increased, which in turn raised the cost to use “voice” (Holmström, 1999).

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The hypothesis stated in this paper is that the market deregulation event implied a less costly “exit” for members and “voice” in turn, became more expensive. This was especially the case, for the members that did perceive that they had not been listened to. Hence, it can be shown that exit members show less trust for the cooperative. In addition, the case of “exit” should imply a negative relation to “voice”, as “exit” implies less control. This suggests that members of Swedish Meats choose “exit” and stop the delivering to HK Scan.

The aim of this paper is to investigate the usage of “exit” and “voice” between farmers delivering to an FCB or to investor owned firms (IOFs). More specifically, we test the hypothesis whether former cooperative members use their “voice” rather than “exit” to a larger extent than farmers delivering to other slaughterhouses and whether the former cooperative members use “exit” due to lower loyalty, as a consequence of not being listened to.

Data and empirical application

The data underlying the survey was collected during March 2009. In total, 664 pig producers in county of Skåne in the southern part Sweden received the postal questionnaire and the final response rate was 31.3%. Skåne is characterized as an area in Sweden where agricultural production is relatively intensive and also the number of pig producers constitute a relatively large share of the total pig production in Sweden (see figure 1).

Along with a relatively intensive production, there are also many slaughterhouses in southern Sweden. HK Scan has a slaughter facility in Kristianstad (see figure 2) and the
IOF slaughterhouses delivered to by the farmers in the study were Ugglarps Slakteri, KLS Livsmedel, Ginsten Slakteri, Dalsjöfors Slakteri and SLP.

Figure 2. Slaughterhouses in Sweden 2009 (KCF, 2010)

The questionnaire contains questions related to socio-psychological concepts (such as trust and reliability), perceived transaction costs of dealing with HK Scan and other investor owned slaughterhouses, as well as the farmers “exit” and “voice” behaviour.

In the empirical analysis of the data it is investigated how pig producing members of cooperatives can be characterized compared to pig producers delivering to investor owned firms, hereafter denoted IOFs. Hereby, we make the implicit assumption that producers only associated with Scan can be characterized differently from the producers associated with IOFs or producers engaged with IOFs in combination with HK Scan. For instance, the fact that members of cooperative movements could be characterized in
terms of “loyalty” and “involvement” motivates an investigation of variables such as “exit” and “voice” behavior in relation to the producer’s choice of delivering channel.

Due to the complexity of producer’s decision making regarding marketing or delivering channels, it could be argued that the relationship between choice of marketing or delivery channels and explanatory variables exhibits a non-linear form through a function \( f(z) \). The logit model has proved to be convenient to use for a logistic relationship when the dependent variable, the choice of delivery channel, is binary. For an individual respondent, the choice of HK Scan is denoted by a “1” and the choice of an IOF or both IOF and HK Scan are denoted by a “0”. Following for example Ben Akiva and Lerman (1993) we derive a typical logit model formulation here. The derived choice probability of choosing HK Scan, \( P(\text{Scan}) \), is defined as an exponential function of \( z \) and where \( z \) is a linear function of \( n \) explanatory variables:

\[
P(\text{Scan}) = f(z) = \frac{\exp(z)}{\exp(z) + 1}
\]

where \( z = \alpha + \beta_1 x_1 + \ldots + \beta_n x_n \)

Estimation of the logit model is performed by the econometric software programme Gretl (Cottrell and Lucchetti, 2011). In order to determine the variables explaining the choice probability of delivering channel, we initially have the full set of explanatory variables of interest obtained from the survey and from there we do back ward elimination of insignificant parameters (an accepted significance level of 10%). In addition, we apply robust standard error according to Huber-White.

**Results**

The result from the estimation of the logit model is presented below in Table 1. In order to improve the interpretation of the estimated coefficient of the logit model the marginal effects on probability of the explanatory variables are also presented here.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std error</th>
<th>( z )</th>
<th>Marginal effect</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-1.29</td>
<td>0.611</td>
<td>-2.11</td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>Listen_scan</td>
<td>1.64</td>
<td>0.571</td>
<td>2.87</td>
<td>0.388</td>
<td>***</td>
</tr>
<tr>
<td>Trust_scan</td>
<td>1.33</td>
<td>0.674</td>
<td>1.98</td>
<td>0.321</td>
<td>**</td>
</tr>
<tr>
<td>Voice</td>
<td>0.834</td>
<td>0.501</td>
<td>1.67</td>
<td>0.195</td>
<td>*</td>
</tr>
<tr>
<td>Exit</td>
<td>-1.19</td>
<td>0.547</td>
<td>-2.18</td>
<td>-0.259</td>
<td>*</td>
</tr>
<tr>
<td>Fulltime</td>
<td>0.727</td>
<td>0.419</td>
<td>1.73</td>
<td>0.164</td>
<td>*</td>
</tr>
<tr>
<td>Distance</td>
<td>-0.00696</td>
<td>0.00308</td>
<td>-2.26</td>
<td>-0.00164</td>
<td>**</td>
</tr>
<tr>
<td>Information</td>
<td>1.25</td>
<td>0.453</td>
<td>2.75</td>
<td>0.270</td>
<td>***</td>
</tr>
<tr>
<td>Reliability_low</td>
<td>1.79</td>
<td>0.901</td>
<td>1.99</td>
<td>0.410</td>
<td>**</td>
</tr>
<tr>
<td>Piglets</td>
<td>-1.21</td>
<td>0.436</td>
<td>-2.78</td>
<td>-0.263</td>
<td>***</td>
</tr>
<tr>
<td>( R^2 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LogL</td>
<td>-</td>
<td>86.911</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicates significance at \( p<0.1 \) **indicates significance at \( p<0.05 \) ***indicates significance at \( p<0.01 \)
From the logit model regression we can identify several variables of interest explaining the probability that the producer use a specific delivery channel. A producer only cooperating with HK Scan, that is the FCB, considers that HK Scan also to a high extent listen to suggestions, questions and complaints than other alternative slaughterhouses. The FCB producers claim to a larger extent that they put a trust into the FCB rather than the do in IOFs. If the individual producer has complained to either an IOF or to HK Scan one or more times they are assumed to have exhibited their “voice”. Hence one or more complaints imply that the dummy variable “Voice” is equal to unity for this respondent. The use of “Voice” increases the probability of being delivering to the FCB but “Exit”, i.e. when the producers has one or more times chosen to exit delivery in favor of an IOF or vice versa, cannot be considered to characterize the producers trading with the FCB.

The variable “Distance” has a negative impact on the probability of delivering to the FCB. This indicates that increasing distance, or equivalently higher transportation costs, implies that the producer to a larger extent choose to deliver to an IOF or a combination of IOF and FCB than to FCB only.

The variable “Information” accounts for the effects of provided market and financial information from slaughterhouse to pig producer. Here it is shown that perceived information contributes positively to the probability of delivering to the FCB. However, the FCB producers assess the information to be of lower reliability. Due to the size of the marginal effect, this variable has a relatively high influence on probability of delivering to HK Scan.

Finally the results from estimation show that being a piglet producer decreases the probability of trading with the FCB, suggesting that the producers delivering to the FCB are rather engaged into integrated or slaughter pig production.

Analysis

The results from this study indicate that farmers delivering to the FCB have used their “voice” to a larger extent than the farmers delivering to IOFs who rather use “exit”. This implies that the internal transaction costs of dealing with the FCB are lower than the external transaction cost facing this group of producers. The result also suggests that the IOF producers experience lower external transaction costs than the FCB producers. The IOF producers choose the exit option and they are also able to deliver to slaughterhouses on more extensive locations than the FCB producers. This could indicate the fact that the IOF producers are more coveted than the FCB producers, a possible explanation could be relatively higher payments from the IOFs.

The results from this study supports the hypothesis that the market deregulation implies a less costly “exit” for pig producers and that “voice” in turn, becomes more expensive. It seems like the deregulation has lowered the transaction costs for pig producers delivering to an IOF but to the same extent for the FCB producers. However, opposing the hypothesis is that the data suggests that the “voice” option still is less costly to the FCB producers than the cost of “exit”. This could be explained by the fact that they still trust the FCB and they demonstrate loyalty to the organization. This trust may reduce the internal transaction costs. Possibly, the trust into the organization follows from being
listened to. These are features possibly left from when it was a cooperative. This loyalty and trust is supported by the fact that the producers receive market information from the FCB, though being of low reliability.

As mentioned previously, there are two explanations behind why FCB producers use “voice” instead of “exit”: Lower internal transaction costs due to trust or high external transaction costs. The external transaction costs would be higher for the FCB producers if they experience more asset specificity, more uncertainty or have less frequent transactions than the IOF producers. The data suggests that the FCB producers to a larger extent are full-time farmers than the IOF producers. This can indicate that they experience higher asset specificity. They are dependent on the farming activity for their livelihood as they do not have other sources of income. They are then less interested to face the uncertainty of transacting with a new slaughterhouse, encouraging the usage of “voice” instead of “exit”.

The former patrons of Swedish Meats are obliged to deliver to HK Scan for at least three years, due to contract. If it still holds that increased costs of “voice” implies “exit” the farmers presently delivering to HK Scan would leave as suppliers as soon as they are not forced by contracts. But as the results from this study indicate the present suppliers of HK Scan find this organization reliable this may cause them to stay loyal also in the future due.

Discussion

This study indicates that the FCB producers use “voice” and that the IOF producers use “exit” to larger extent in disagreements. This finding is in accordance with previous studies, stating that cooperative members (and possible former cooperative members) stay with the organization and use their “voice” to a larger extent as the organization has investments that are collectively owned that the individual otherwise will not get access to or compensation for. Another reason for why IOF producers use “exit” to a larger extent than FCB producers might be that they are less risk aversive than FCB producers. Moreover, the study indicates that IOF producers seem to be more likely to raise piglets than producers of the FCB. There is no clear cut answer to this fact. One explanation could be that larger risks are associated with raising piglets and as it might be that the IOF producers are less risk aversive, they might be more likely to produce piglets.

An interesting result is that FCB producers still perceive the old cooperative to be trustworthy. Possibly, this is partly due to the FCB providing them with market information. However, as this information is perceived to be of low reliability, it might be that the trust is declining. The inherited trust from the cooperative days may slowly be deteriorating. One indication could be the perceived low reliability of the market information. In addition, they might still feel distrust after signing the three-year contracts with Swedish Meats prior to selling.
It might be that this survey has been conducted too soon after the conversion from cooperative to FCB to show any difference in producers’ perception. As time passes and the producers become more aware of the implications of the changes in ownership structure, a less trusting and loyal culture will emerge. Hence, it could be an interesting topic for further research to follow up on the development of the producers’ attitudes towards the organization.

This study indicates that pig producers delivering to IOFs experience lower external transaction costs than FCB producers. The question is then what features that are characterizing these two producer groups and causing this difference in perceived transaction costs. Further research is needed to determine which characteristics of the two groups’ interactions with the slaughterhouses that determine the scope of the transaction costs.

Moreover, the study indicates that the FCB seems to be inheriting some of the positive features of the cooperative, such as trust among the producers. Trust lowers the transaction costs and is therefore beneficial to retain in the market. Thus, the demutualization of cooperatives does not seem to damage the trust present and therefore the change in ownership structure do not have to be prevented out of the fear of resulting in lower trust and thereby increased transaction cost. Rather, it seems like a the change in ownership structure to come to turns with the problems associated with the common ownership of a cooperative, such as the problems of vaguely defined property rights, can be undertaken without a loss in user trust and thereby loss in loyalty.

**Conclusion**

The results from this study indicate that, even though previous members of the cooperative Swedish Meats have used their “voice” to a large extent and not being listened to, they will most likely continue to deliver to the new farmer controlled business HK Scan. This is the case, despite the increased cost of using “voice” and the decreased cost of using “exit” due to more alternative slaughterhouses entering the market. This finding suggests that the farmer controlled business of HK Scan borrows some of the loyalty and trust that the members previously had toward Swedish Meats.

**References**


