Vertical Coordination and Knowledge Transfer in Brazilian Poultry Industry

Antonio C L Nogueira

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Outlook

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Motivation

- Knowledge relevance for organizations:
  - Faster technological innovation;
  - Information technologies convergence;
- Knowledge Management: corporate competencies in acquisition, generation and internal dissemination of knowledge for competition.
- Agribusiness and poultry industry have been more strictly coordinated;
- Problem: What's the role of vertical coordination on knowledge transfer in a productive supply chain?

Objective and Methods

- Objective: to analyze the knowledge transfer to broiler producers by processors and the results in efficiency of production.
- Methods:
  - literature review and;
  - case study with a broiler processor and a econometric model to explain efficiency of production of partners.

Vertical Coordination and Knowledge

- Transaction Costs Economics (TCE): transaction dimensions influence the choice of governance structure, for a given institutional environment (Williamson).
- Main transaction dimension: asset specificity favors more vertical integration, to avoid opportunistic actions;
- Knowledge is a human asset specificity, being:
  - Tacit: generated by experience, difficult to transfer;
  - Explicit: general, easy to transfer.

Poultry Industry in Brazil

- Origins by the 40's in Sao Paulo State, with independent agents.
- Organizational change: partnership contracts between processors and producers, introduced by the 60's, becoming the standard.
- Strong technological advances, generating gains in efficiency and falling of prices.
- The industry is a competitive player in domestic and international meat markets.

Case Study – The Processor

- Name: Grupo Sertanejo;
- Location: Sao Paulo State, Southeast Region of Brazil.
- Capacity: 7 plants slaughtering 180,000 broilers per day, produced by 250 partners (70%) and vertical integration (30%);
- Partnership contract: payment by head based on efficiency performance in average weight gain and feed consumption of the broilers.
- Knowledge transfer strategy: capacitating technicians who visit the partners weekly, and meetings to discuss new techniques.

Case Study – The producers

- Econometric model to explain value received per broiler (proxy of knowledge transferred) by:
  - production profile: capacity, diversification, use of climate eqpt. and computer;
  - personal profile: starting as independent, experience out and in the firm, age, formal education; number and year of vehicles, participation of own resources on investments,

Case Study – Results

Experience as partner	Without climate eqpt	With climate eqpt.	Total of sample
Start as independent	1	5	6
Start as partner	6	18	24
Total	7	23	30

Case Study – Results

Experience as partner	Without computer	With computer	Total of sample
Start as independent	3	3	6
Start as partner	13	11	24
Total	16	14	30

Case Study – Results

Variable	Unit	Mean	Std dev.
Value received	R$	0.16	2.354 E-02
Exp. poultry	Years	13.83	10.09
Exp. firm	Years	6.0	4.0
Activities	Units	1.52	0.91
Capacity	1,000 broilers	45.07	88.01
Age	Years	52.37	12.67
Own resources	%	82.00	34.00
Study	Years	8.77	5.46
Vehicles	Units	2.10	1.79
Year new vehicle	Year	1990.63	12.07

Case Study – Results

Variable	Coef.	Std Error
Start independent	-0.096	0.16
Experience poultry	0.058	0.001
Experience firm	-0.334	0.002
Activities	-0.129	0.006
Climate eqpt	-0.378*	0.012
Computer	0.460	0.014
Capacity	0.173	0.000
Age	0.002	0.000
Own resources	0.508*	0.017
Study	-0.174	0.001
Vehicles	0.216	0.007
Year new vehicle	-0.406	0.001

* Significant at 10%

R^2: 0.419

Concluding Remarks

- For the case studied, the efficiency of production under partnership contracts:
  - presents low variation, for a group of partners extremely diversified in production and personal profile.
  - seems to be reached mainly by explicit knowledge transfer, since the recommendations have been followed by all kind of the partners;
  - is poorly explained by the proposed model, except for the coefficients of presence of climate equipment and participation of own resources financing constructions.