VEGETABLE FARMERS MARKETNG CHOICES: AN EMIPRICAL ANALYSIS

PREFERINTE DE COMERCIALIZARE ALE PRODUCATORILOR DE LEGUME: O ANALIZA EMPIRICA

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Abstract: *The dynamic of agryfood systems plays an important role in the development and the rapid increase of the number of modern retail stores. Several driving factors contribute to this situation such as industrialization, globalization and multinational systems, foreign direct investments. The purpose of this paper was to study the marketing relationship type of small vegetable farms and to test the hypothesis of small farmers' participation in the supply retail chains. In this regard a qualitative and quantitative analysis was employed using Williamson's governance structure and probit and logit models. The results infirm the hypothesis of small farm participation in retail chains The coefficients obtained have the expected signs and show that small farmers prefer to sell individually due to several constraints: high entry costs, scale factors and even price mechanisms.*

Key words*: testing hypothesis, vegetable farms, retail chains*
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INTRODUCTION

The food industry and the agri-food sector are getting industrialized and globalized at a fast rate (Cook et al., 2001). Boehlje (1996) defines agriculture industrialization as a process where the modern industrial processing, production, procurement, distribution and coordination processes are applied throughout the chain. From the micro-analytical point of view, agro-industrialization implies changes in the organizational management and the governance structure of the agri-food systems (Cook, 2001). As a result, together with the industrialization, there is an adaptation of the requirements of the retail chains that are getting oriented towards products with specific characteristics, coming from reliable suppliers that

can provide them with quality production, in the specified quantity, frequency and timing.

The increase of buyers' requirements practically transforms the traditional spot market into an inadequate supply source, thus encouraging the contractual relations between farmers and processors/retailers (Nadvi and Waltring, 2004). In Romania, the emergence of modern retail formats coincided with the accession to the European Union, which practically also led to the adoption of food safety and quality standards required by the EU legislation. However, according to the information from the main players that operate along the vegetable chain, it can be mentioned that there are differences with regard to the food safety and quality between the modern formats of retail type and the traditional shops that are obviously subject to the same EU regulations.

The globalization and the multinational system also have great institutional implications upon the agri-food systems. The globalization practically determines an increase of the capital and information flow, technological changes, foreign direct investments, global economic integration, thus facilitating agriculture industrialization and the vertical integration of the agri-food systems (Pinstrup and Anderson, 2002).

PREVIOUS STUDIES AND RESEARCH METHODOLOGY

Although several studies were carried out in order to study the type of contractual relationship and the vegetable commercialization channel at the European level, there is no empirical evidence about Romania. The analysis is necessary to asses the needs and constraints of the stakeholders involved both at farmer-wholesaler-processor level and farmer-retailer level.

As far as it concerns the contractual relationships, there is a typology of relationship produced by a matrix of different strategic options of vertical co-ordination and relationship-specific characteristics (e.g., independence, exclusivity), (Gorton 1999). Gorton shows that relationships become more complex with increasing level of formality and of vertical co-ordination. While price, supply and demand are at the core of spot market relationships, property rights, trust and negotiations increase with growing vertical collaboration.

The objective of this paper is to study the contractual relationships type in Romania and to assess the main vegetable commercialization

channels by farmers. The paper is based on data provided by 64 farmers and 6 processors located in the S-E region of Romania following a survey conducted in this region in 2011. In total, 64 semi-structured questionnaires were applied to farmers and 6 questionnaires to processors. The analysis is both qualitative and quantitative and takes into consideration stakeholder answers to the questions regarding the type of existing contractual relationship along with a set of questions regarding their main commercialization channels.

RESULTS AND DISCUSSION

The relationships types as described by Williams are classified into 2 categories, namely formal and non-formal. Respondents were asked to present which type of contractual relationships they use in their business and further, they were asked to choose more than one of the four relationships, i.d. spot market, repeated market transaction, formal-written contracts, and financial participation arrangements.

Table 1

Percentage of formal relationship

	Farmer–buyer (wholesaler)	Farmer-processor	Farmer-retailer	Processor-retailer
Formal relationship %	4/64 6%	6/64 9.3%	7/64 10.9%	4/6 66%

Source: Field survey, 2011

Table 1 reveals the relationship type for the four chain stages. The answers show that the percentage of formal relationship is extremely low both at farmer-wholesaler level and farmer-processor stage. A higher percentage of formal relationship can be noticed in the case of farmer-retailer level. The formal relationships include formal written contracts and financial participation arrangements, including prices, qualities, quantities and any other financial support. Retailers tend to choose more formal relationships with processors, in comparison with farmers, showing that downstream businesses are more likely to coordinate and organize their relationships more systematically and in a standardized way. Similar findings are also presented at the European level (Fischer et all, 2007), with

the difference that the percentages are much lower in Romania's case, especially at the farmer-buyer and farmer–processor level.

In order to see the determinants of the farmers' market preference, and the chance of the small farms to sell trough supermarkets, the respondents were asked to scale from 1 to 4, where 4 represents the highest importance the following statements: "the price of the product is satisfactory", "the frequency of delivery is good", "quality and grading of my production is satisfactory", "selling individually is satisfactory", "the level of cost entry is acceptable", "the institutional framework is satisfactory". For this analysis, binary logistic and probit models were used, where market preference, the dependent variable is taking the value 1=yes and 0= no was tested. The general form of the model used was: Market choice $= \alpha + \beta_1 X_1 + \beta_2 X_2 + ...B_6 X_6 + \varepsilon_i$

The results of the binary probit models are presented in table 3:

Table 3

Binary probit regression results

Variables	M1	M2	M3
Price	0.068 (0.95)	0.03 (0.86)	0.45 (0.76)
Frequency of delivery	0.59 (0.63)	0.65 (0.48)	
Quality and grading	0.24 (0.55)		
Selling individually	0.77 (1.77)	0.69 (0.97)	0.37 (0.89)
The level of the entry cost	-0.22 (0.27)	-0.34 (0.24)	-0.39 (0.24)
Institutional framework (Membership in an organization)	0.019 (0.28)	0.13 (0.25)	0.15 (0.25)
Log likelihood	-13.58542	-14.1416	-15.21545
McFadden R-squared	0.371448	0.359909	0.311307

Source: own calculations in Eviews based on farm survey 2011; the figures in parenthesis represent standard errors

The results reveal the importance of selling individually rather than by a modern retail chain especially in model M1 and M2. Negative (positive) estimates indicate that an increase of the value of the independent variables corresponds to decreasing (increasing) probability of choosing a formal marketing channel versus selling individually. The negative sign of

the variables are in line with my expectations, the level of entry cost for selling in supermarket being considered prohibitive. The frequency of delivery plays also an important role in the selling decision. The results suggest that farmers prefer to sell individually as this does not require significant investments but also as members in an organization, nevertheless to a less extent.

CONCLUSIONS

The results obtained reveal that in Romania's case there is a high degree of uncertainty among stakeholders both in terms of contractual relationships and contract enforcement. The share of contractual relationship is higher at the processing-retailing level which is in line with the EU findings, but much lower than in the EU both for the farmer-buyer and the processor-retailer level.

In this paper I tried to test also the hypothesis of small farmers' participation in the retails chains seen as a possible opportunity to increase their revenue and to adapt to the dynamic of the agry-food system, using probit and logit models. The coefficients obtained have the expected signs and the results show that small farmers prefer to sell individually due to several reasons: high entry costs, scale factors and even price mechanisms. Factors associated with scale have also important implications. One the one hand, for a small scale farm it is very difficult to establish a direct relationship with a supermarket chain due to the quantity required and frequency. For retailers seems also inconvenient to negotiate with a large number of small farmers. Thus, for the time being, only large farms and producers' organization can benefit from this opportunity. On the other hand, however, small farmers can be integrated to new marketing systems by being part of producers' organization which might allow farmers to pool produce in order to guarantee frequency, quality and quantity required by retail chains. Nevertheless, the level of the estimated coefficient for the organization variable is very small especially in model 1 and 4 which shows that farmers still bear in mind negative memoirs related to participating in different organizations. Also, due to high price fluctuations there is a strong tendency of selling aside. Selling individually seems motivating during a short period in a season, determining contracted farmers to sell aside instead of delivering to retail chains as set in contracts.

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