



# WILLINGNESS OF FARMERS TO COOPERATE

## Field Study Results in the Zagreb Rural Area<sup>1</sup>

Damir KOVAČIĆ, Josip JURAČAK, Đurđica ŽUTINIĆ  
Faculty of Agriculture, Zagreb

UDK: 334.73(497.5 Zagreb)  
631.115.1(497.5-22 Zagreb)

Izvorni znanstveni rad

Primljeno: 31. 5. 2000.

Development of business cooperation is one of the basic preconditions for a successful transition of Croatian agriculture and for increasing its competitiveness on the national and international markets. This research conducted in the Zagreb rural area was an attempt at answering what the farmer's general attitude was towards business cooperation in agriculture as well as the influence of socio-demographic and psychological characteristics on their willingness to cooperate. With regard to the declaratively expressed readiness for business cooperation, the farmers were divided into four groups "very willing", "willing", "less willing" and "unwilling". Statistically significant differences have been found between these groups with regard to: past experience and current inclusion in some form of business cooperation; level of education and psychological characteristics: innovativeness and entrepreneurship. The research shows a group of "more experienced" and more educated farmers showing more entrepreneurship and innovativeness which should be the basis of the process of development and more effective involvement of farmers into business cooperation systems in agriculture.



Damir Kovačić, Department of Marketing in Agriculture,  
Faculty of Agriculture, Svetošimunska 25, 10000 Zagreb, Croatia.  
E-mail: dkovacic@agr.hr

### **INTRODUCTION**

1119

Cooperation in Agriculture (CA) is any form of joint effort aimed at performance of a business activity, pooling of resources and joint management of a number of family farms. In addition to business cooperation, joint actions undertaken in agriculture

DRUŠ. ISTRAŽ. ZAGREB  
GOD. 10 (2001),  
BR. 6 (56),  
STR. 1119-1129

KOVAČIĆ, D. ET AL.:  
WILLINGNESS OF ...

include participation in activities of different associations. The farmers' cooperation is aimed at joint carrying out of business activities which they could not perform on their own and those which are better done when performed jointly. From an economical aspect, business cooperation of farms is a sort of merger of production resources, production and income of the farms. The most frequent forms of cooperation include cooperatives, production association and contractual cooperatives.

Accession of Croatia to the global trade organizations shall make competition on the local farm products market even harsher. Improvement in agricultural structure, namely an increase in competitiveness is a necessary precondition for the survival of Croatian agriculture, particularly of small farm production. One of the most important measures to be undertaken in realization of this objective is encouragement of different forms of collaboration, or rather business cooperation in agriculture. This particularly relates to distribution or rather marketing and management activities in the field of farm products sale, where the competitiveness of family farms is the lowest.

Cooperation in agriculture will be successful when it gains full support of the farmers. Negative historical heritage of Croatia, particularly with the "socialist collective drives",<sup>2</sup> years during which the farmers were actually distanced from the market, and lack of knowledge and experience with cooperative activities demand an experimental checking of "willingness" of the Croatian or rather "Zagreb" farmers for business cooperation.

## Research Background and Objectives

The starting point in recognizing the importance and need for business cooperation of farmers, either through cooperatives, contracting of production with food processing and other business actors, or in other forms, was an assumption that these forms could theoretically and practically economically strengthen the family farms which are a predominant segment of the agricultural structure within the rural area administratively falling under the City of Zagreb.<sup>3</sup> This would increase the production and economic competitiveness of the farms in the local market, particularly the Zagreb market, and might even prove capable of exporting into other markets. For that reason, the research focused on farmers participating in local small agriculture in order to determine what their general attitude is towards business cooperation in agriculture and whether they are willing to support the realization of business cooperation in practice.

The assumption underlying this research (resulting content consideration and available results of similar researches)

is the difference between the farmers as regards their "willingness" (readiness) to cooperate. We have also assumed that there is a relation between particular socio-demographic and psychological characteristics of farmers and "intensity" of their "willingness" to cooperate.

The present research was intended to determine groups of farmers (typology) on the basis of their declarative readiness (willingness) to cooperate, and establish socio-demographic and psychological differences between these groups.

The construction of an empirical typology should always take place in relation to an explicit problem (Becker, 1945; Volker, 1992). So far, no research on business cooperation in agriculture has been conducted in Croatia which would result in the establishment of a farmers "typology" based on their perception, attitudes and socio-psychological characteristics. The majority of such or similar research and works are coming from the English speaking countries, primarily from the USA. These are predominantly cognitive researches on entrepreneurship capabilities of the farmers. The research evolved in two directions, i. e.

– The older one which encompasses works in which the socio-psychological characteristics, attributes and behavior of farmers and entrepreneurs are researched. Most of those works attempt to determine the difference between the persons with developed or less developed sense of entrepreneurship.<sup>4</sup>

– The other includes works researching and attempting to explain differences in behavior of entrepreneurs/non-entrepreneurs which depend on their surrounding, i.e. social, economic and political conditions during a longer period of time (Schiebel, 1997).

Recently, there has been a number of works in this field from the German speaking countries (Klandt, 1984; Schneewind, 1985; Schiebel, 1988; Schiebel, 1997). The essential assumption in these researches is that the entrepreneurs have stronger belief in controlling the events than the general population (Schiebel, 1997). Klandt's research results point particularly to the dynamic aspects of a person, personal characteristics and entrepreneur's capabilities (Klandt, 1984). Schiebel researches entrepreneurship of Austrian farmers. The deduced "entrepreneur typology" indicates, actually groups the farmers according to their "entrepreneurship characteristics" as a background for development of target programs for farmers' education and extension services.

The results of this research should be used as the background for creation of pilot projects for implementation of business operations in agriculture, and show which farmers could be relied on when new forms of cooperation are introduced in agriculture.

## Data Sources and Methodology

For the purpose of this research, the administrative territory of the City of Zagreb has been subdivided into five sectors with regard to its relief and pedological characteristics. Additional factors affecting typification of agricultural production in particular sectors have also been taken into consideration, including water regime, distance from the consumption center, tradition, and the like.

The samples were not taken randomly, and the basic selection criteria were:

- age of the farmer, maximum 45 years or presence of successor on the farm,
- importance of agriculture as an employment and household income source,
- proportional distribution of agricultural production types within the researched sector (farms had been selected to represent various farming structures).

Since this is the first research of this type conducted in Croatia, already existing general assertions-descriptors were used of particular concepts to measure psychological determinants: *innovativeness*, *entrepreneurship*, *sociability*, *dominance* and *trust*. For measurement of production/economic and socio-demographic characteristics, the usual instruments were used.

Interviews were held at 200 farms during the period May-June 1998.

The collected data were evaluated by usual tests:

- for normal or ordinal data scaling, a cross-table was calculated, i.e. Chi-square test and Pearson's C coefficient,
- for metrically scaled data, the variance analysis (one-way ANOVA) was performed.

Hypotheses were tested at significance level of 5%.

## RESEARCH RESULTS

### Attitudes and Intentions of Respondents Regarding Business Cooperation in Agriculture

The results indicate that a comparatively small number of surveyed farmers was or is involved in some form of business co-operation in agriculture. Only one fifth of respondents actively participates in some form of collaboration in agriculture. They are mostly members of associations, while their participation in cooperations, collective farms and other forms of business co-operation is negligible. The respondents find participation in these associations useful both because of joint appearance on market, better sale opportunities, higher level of information, and generally easier resolving of the existing issues. The most frequently mentioned drawbacks of the said

DRUŠ. ISTRAŽ. ZAGREB  
GOD. 10 (2001),  
BR. 6 (56),  
STR. 1119-1129

KOVAČIĆ, D. ET AL.:  
WILLINGNESS OF ...

forms of association are their poor functioning, and low price for products sold through them.

Somewhat more than one fourth (26.5%) of respondents had earlier been involved with "collective farms", cooperations or associations. The members of the former "collective farms", cooperations or associations consider them useful for the farmers, primarily because of their mediatory role in achieving more favorable purchasing conditions for reproduction material and safer sales of their products. Interruption in their membership they explain by the closing down of associations, while expressing willingness to reenter such forms of business (and professional) cooperation.

The very idea of establishing "new" forms of business cooperation in agriculture has been well received by the respondents; 83.5% find it very good or good. According to their opinion, this sort of cooperation brings the following advantages: joint appearance on the market, more favorable conditions for purchase of reproduction material and equipment, and better utilization of the machinery. Possible disadvantages include: human factor, i.e. undefined relations between the members (lack of trust etc.).

What are the basic motives (reasons) the respondents give for associations and business cooperation? Most would join the business cooperation associations primarily because of joint purchase of reproduction material, sale of agricultural products and possibility of cross-funding (loans). The lowest interest respondents have shown for collaboration aimed at joint production and land use sharing.

### **Grouping of Respondents According to their "Willingness" to Cooperate**

The first presumption in our research is that there is a difference between the farmers regarding their "willingness" (readiness) to join business cooperations. Willingness of a person to undertake certain activities is best measured through an experimental type of research. Alternatively, the willingness may be considered on the basis of respondents' declarations about their intentions, as has been used in this research.

For segmentation of respondents according to their willingness to cooperate in agriculture, the so-called "i.racio" index was used, an index for rationally expressed willingness to cooperate. The index was obtained by reducing the answers of the respondents to three questions related to their intention to join future business cooperation organizations.<sup>5</sup> Index divides the sample into four groups of approximately same size which differ from one another regarding their declared readiness for business cooperation. The following respondents groups are obtained: "very willing", "willing", "less willing", and "unwilling".

## Formulating Hypotheses on Differences between the Groups

The next step in the analysis was determination of basic differences between the groups. To determine the differences, the following hypotheses have been formulated:

(A) There is a significant difference between the "willingness" groups regarding:

1. earlier and current experience with the business cooperation associations,
2. socio-demographic characteristics: respondents profession, education,
3. production-economic characteristics: production type and farm specialization level.

Since all variables are nominal (or ordinal), the connection between them shall be investigated by contingency tables, and contingency analysis shall be used to determine whether such a distribution is random, namely how strong the relations are (Chi-square and Pearson's C coefficient).

(B) The differences between "willingness" groups are significant regarding:

1. psychological characteristics: innovativeness, entrepreneurship, sociability, dominance and trust,
2. age of farmer.

Innovativeness, entrepreneurship, sociability, dominance and trust variables, as well as age of farmer, are metrically scaled thus their relation with the "willingness" variable shall be tested by a factorial variance analysis at the level of significance 5% ( $p < 0.05$ ).

## Testing Hypotheses and Analyses

With regard to their own experience with business cooperation associations, the respondents were divided into two groups:

- those who had earlier been involved or are actively involved in some sort of business cooperation – "experienced",
- those who have no experience – "inexperienced".

The majority of respondents from the "experienced" group has given positive rating to participation in business cooperation, thus we assumed they are more willing to cooperate than the "inexperienced". Since there is a statistically significant relation (significance  $< 0.05$ ) between the experience in business cooperation and the "willing" group, this confirms our assumption. Statistically even stronger relation has been determined between current participation of the respondents in some sorts of business cooperation (mostly cooperatives), and their intention to join "new" associations of business cooperation (Pearson's  $C = 12.02$ ;  $p = 0.00730$ ) as compared to the

entire "experienced" group (Pearson's  $C=10.57$ ;  $p=0.01427$ ).

The "unwilling" group includes relatively highest percentage of respondents without primary education (38.5%) or with only primary education (30.8%); in "very willing" group most of the respondents have finished secondary education (28.6%), vocational school or college (37.0%). The other two groups, "less willing" and "willing" have almost equal distribution of secondary and vocational school graduates, while the share of respondents with no formal education is higher in the "unwilling" group. On this level, no significant relation has been established between the distribution of respondents according to their education and willingness to cooperate. However, reducing of respondents on the basis of their educational level into two groups – first without formal education and with primary school education, and second with secondary and vocational school graduates, a statistically significant relation was determined between these two groups and willingness to cooperate ( $p<5$ ). In other words, more educated farmers express higher intensity of willingness to cooperate. Related to production type and specialized production variables there is no considerable difference between the groups as regards their willingness to cooperate.<sup>6</sup>

Testing of psychological characteristics in the "willingness" groups has given the following results. The respondent's innovativeness increases with increased willingness to cooperate. The lowest innovativeness is that of the farmers in the group "unwilling", and the highest in the group "very willing". The hypothesis tested by one-way ANOVA gives, even when the test level is 5%, the significance of 0.0140. The analysis of the pairs of groups has shown significant difference in the "very willing" and "unwilling", while the other groups show no statistically significant differences in comparison with the observed variable.

There is a statistically significant relation between the entrepreneurship variable and individual groups of willingness to cooperate at the given level of significance ( $p<5\%$ ). The group "unwilling" has the lowest, and the group "very willing" the highest entrepreneurship estimate. When the pairs of groups are observed, a statistically significant difference is noticed only between the groups "unwilling" and "very willing".

As compared to other tested variables, i.e. trust (social optimism), sociability (willingness to work within a group) and dominance no statistically significant relation has been determined with the "willingness" variable. Namely, particular groups do not differ from one another regarding their "willingness" as related to observed psychological determinants. This also applies to yet another tested variable, the age of farmer.

## **CONCLUSIONS**

Business cooperation, namely joint work in agriculture is one of the basic preconditions for increase in production and economic competitiveness of family farms in Croatia, therefore on the City of Zagreb territory as well. Establishment and development of different forms of business cooperation, particularly in small agriculture, must depend on initiative and willingness of the farmer to actively participate and join the organizations and associations of business cooperation. The empirical research results have shown that, opposite to the "publicly" accepted opinion, the "Zagreb" farmers have a positive attitude towards the former organizations of business cooperation, primarily towards the collective farms and cooperations. However, the results highlight deficient "cooperative" infrastructure in this region since only one fifth of the respondents is involved in some sort of business cooperation, and these are mostly members of some associations. Regardless of whether their experience was good or bad, or they had no previous experience with such cooperation, the generally accepted idea among the farmers is that certain forms of business cooperation in agriculture need to be established. In order to find the solutions to the problems arising from farm operation which they are incapable of resolving on their own, most of them would be motivated to join the business cooperation associations for joint purchase of reproduction material, joint appearance on the market and cross-funding (loans).

Although the above description might lead to the conclusion that the "Zagreb" farmers are aware of the importance and advantages of the business cooperation in agriculture, our analysis has focused on detecting those which could be the initiators of such business cooperation. The analysis has shown that, with regard to declaratively expressed readiness (intensity of willingness) the farmers may be divided into four groups "very willing", "willing", "less willing" and "unwilling". The differences have been noticed between these groups with regard to experience with business cooperation and some socio-demographic and psychological characteristics. "More experienced" farmers are more willing to join future business cooperation organizations than the "less experienced" ones, particularly the farmers which are currently involved in some form of business cooperation. For groups "very willing" and "unwilling" there is a statistically justifiable difference related to the level of education; the respondents from the "very willing" group have on average a higher level of education. This pair ("very willing" and "unwilling") has also shown significant difference in innovativeness and entrepreneurship, where these characteristics in the respondents from the "very willing" group are more pronounced.



The research shows a group of "more experienced" and more educated farmers showing more entrepreneurship and innovativeness which should be the basis of the process of development and more effective involvement of farmers into business cooperation systems on the territory of the City of Zagreb and in the greater region.

## NOTES

---

<sup>1</sup> The paper was presented as a poster on the IX European Congress of Agricultural Economists held in Warsaw, Poland, August 24-28, 1999.

<sup>2</sup> After World War II, the cooperative and collective drive in Croatia developed within the framework of the so-called "socialist transformation of agriculture and rural areas". Realization of this concept was based on a number of political measures and comprehensive legislation, covering all from maximum land holdings, to forceful collectivization, neglect of private and fostering of state (the so-called social) ownership and state companies (combinates, state-owned farms and the like). Long-term interventionist policy and a series of wrong decisions resulted in complete neglect of the original principles of cooperative drive and turned most farmers against collective farms and cooperatives. The majority of the former collective farms have recently been transformed into companies, some of them closed down, and only a minority still function as collective organizations (such as viticultural-wine-makers' collectives).

<sup>3</sup> Zagreb, the capital of the Republic of Croatia, is the largest consumption center. A comparatively small surface area accommodates over 900,000 citizens. This number should be supplemented by a large number of commuting workers, displaced persons and refugees which presently live in the city (estimated 200,000). Such demand offers major possibilities for local agricultural production and subsequently processing, trade and services, which have not been sufficiently exploited in the past. According to the data from the 1991 Census, the present administrative territory of the City of Zagreb included over 10,000 family farms (average size 3 ha).

<sup>4</sup> There are numerous researches in the area of diffusion and adoption of innovations in agriculture, which have used Roger's classification of ideal types to determine specific characteristics of adoption group. (Rogers, 1983)

<sup>5</sup> Index was obtained by reducing the questions (v32 a-e, v33 a-g, v37) by the so-called optimally weighted linear combination. Each item is weighted by its partial coefficient of regression so that the sum of these items gives maximum possible correlation with the criteria variable – the respondent's evaluation of business cooperation usefulness (v30). That is, the results of each respondent for a particular item are weighted with relative significance of this item for prediction of evaluation of the business cooperation idea (v29).

<sup>6</sup> As compared with the statistical and Census data for the entire area of research, and regarding the determined criteria for sample selection, the surveyed farms are above average according to their production and economic characteristics.

## REFERENCES

- Becker, H. (1945). Interpretive sociology and constructive typology, in: G. Gurvitch and W. E. Moore, eds., *Twentieth Century Sociology* (New York: The Philosophical Library) pp. 70-95.
- Cattell, R. B. (1973). *Die empirische Erforschung der Persönlichkeit*, Weinheim, Basel.
- Klandt, H. (1984). *Aktivität und Erfolg des Unternehmensgründers, Eine empirische Analyse unter Einbeziehung des mikrosozialen Umfeldes*, Bergisch Gladbach.
- Rogers, E. M. (1983). *Diffusion of Innovations* (3th edn.), New York: Free Press, pp. 247; 260-261.
- Schiebel, W. (1988). *Dynamik und Entscheidungsstärke der österr. Unternehmerinnen und Mitunternehmerinnen*, Wien.
- Schiebel, W. (1997). *Bauer und Bäuerin als Unternehmer, Agrarmarketing Aktuell*, Institut für Agrarökonomik, BOKU, Wien.
- Schneewind, K. A., Schröder, G., Cattell, R. B. (1984). *Der 16-Persönlichkeits-Faktoren-Test (16PF)*, Bern-Stuttgart-Toronto.
- Schneewind, K. A. (1985). Entwicklung personaler Kontrolle im Kontext der Familie. In: Kugemann, et al. *Psychologie und komplexe Lebenswirklichkeit*, Göttingen, pp. 203-223.
- Volker, K. (1992). Adapted Farming Systems for a Rural Landscape: A Social Typology of Duch Farmers, *Sociologia Ruralis*, Vol. XXXII, No. 1, pp. 147-162.

## Voljnost seljaka za poslovno povezivanje. Rezultati terenske studije u ruralnoj okolici Zagreba

Damir KOVAČIĆ, Josip JURAČAK, Đurđica ŽUTINIĆ  
Agronomski fakultet, Zagreb

Razvitak poslovnoga povezivanja među seljacima (zajedničkog rada, kooperacije i sl.) jedna je od temeljnih pretpostavaka uspješnoga preustroja hrvatske poljoprivrede, odnosno povećanja njezine konkurentnosti, na domaćem i na svjetskom tržištu. Istraživanjem koje je provedeno na ruralnom području Grada Zagreba pokušalo se odgovoriti na pitanje kakav je općenito odnos seljaka prema poslovnom povezivanju u poljoprivredi te u kojoj mjeri sociodemografska i psihološka obilježja ispitanika utječu na njihovu "voljnost" za poslovno povezivanje. Na osnovi deklarativno izražene voljnosti seljaka za poslovno povezivanje dobivene su četiri skupine "jako voljni", "voljni", "manje voljni" i "nevoljni". Statistički značajne razlike među tim skupinama seljaka utvrđene su s obzirom na dosadašnje iskustvo i aktivno sudjelovanje u nekom od oblika poslovnoga povezivanja, s obzirom na stupanj naobrazbe te s obzirom na psihološke osobine: inovativnost i poduzetnost. Istraživanje pokazuje da među seljacima postoji skupina "iskusnijih", izobraženijih i poduzetnijih koji trebaju biti oslonac u procesu razvitka i učinkovitijeg uključivanja seljaka u sustave poslovnoga povezivanja u poljoprivredi.

DRUŠ. ISTRAŽ. ZAGREB  
GOD. 10 (2001),  
BR. 6 (56),  
STR. 1119-1129

KOVAČIĆ, D. ET AL.:  
WILLINGNESS OF ...

## Bereitschaft zur Zusammenarbeit unter Landwirten. Ergebnisse einer Feldstudie aus der ländlichen Umgebung Zagrebs

Damir KOVAČIĆ, Josip JURAČAK, Đurđica ŽUTINIĆ  
Landwirtschaftliche Fakultät, Zagreb

Die Entwicklung geschäftlicher Verbindungen unter Landwirten (gemeinschaftliche Arbeiten, Kooperationen u.Ä.) ist eine der Grundvoraussetzungen für eine erfolgreiche Umstrukturierung der kroatischen Landwirtschaft bzw. für eine Steigerung ihrer Konkurrenzfähigkeit im In- und Ausland. Eine Untersuchung, die in den ländlichen Gebieten um die kroatische Hauptstadt Zagreb durchgeführt wurde, sollte zeigen, welche Einstellung die Landwirte zur Herstellung geschäftlicher Kontakte haben. Dabei wollte man sehen, inwiefern diese Einstellung von den soziodemographischen und psychologischen Merkmalen der Untersuchungsteilnehmer beeinflusst wird. Aufgrund der deklarativ geäußerten Bereitschaft zur geschäftlichen Kooperation konnten vier Gruppen von Landwirten unterschieden werden: Die verschiedenen Gruppen äußerten sich jeweils "sehr [zur Zusammenarbeit] bereit", "bereit", "wenig bereit" und "nicht bereit". Es ergaben sich statistisch relevante Unterschiede zwischen diesen Gruppen hinsichtlich der bisherigen Erfahrung sowie bezüglich der aktiven Teilnahme an irgendeiner Form geschäftlicher Zusammenarbeit; Unterschiede ergaben sich außerdem in Bezug auf den Bildungsstand und die psychischen Eigenschaften von Innovativität und Unternehmergeist. Die Untersuchung zeigte, dass es unter den kroatischen Landwirten "erfahrenere", unternehmungslustigere und solche mit höherem Bildungsstand gibt, auf die sich die Förderung der Landwirtschaft und die Beteiligung von Landwirten an Systemen geschäftlicher Kooperation innerhalb der Landwirtschaft stützen muss.