Agency and property rights theories in agricultural cooperatives: evidence from Spain

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Abstract

This manuscript examines the member-agricultural cooperative relationship from the point of view of the agency and the property rights theories. The sample analysed includes 277 personal surveys completed by members of agricultural cooperatives in the Region of Murcia (Spain). Results show that in all questions related to objectives and level of satisfaction, members value them with an average of 6.9 out of 10 or higher in all cases. For both objectives and satisfaction, the directors and the cooperative members who depend upon agricultural activity for a large percentage of their income have higher scores, compared with non-board members and members who are less dependent on agricultural activity (with a statistical significance of 1% and 5%, respectively). We also find that members who agree in more with the admission of new members, who think it is easy to recover their investments and who want to stay longer in the cooperative are those who are more willing to invest and to exert control. Furthermore, we find that members that prefer to have a participation in the assembly proportional to their contribution and that prefer that the cooperative diversifies more are those who are more willing to invest. In addition, control is favoured by members pertaining to the cooperative for a large period and for those members who think that investing in the cooperative is a high risk and who prefer long-term investments. Finally, directors are more willing to invest and to exert control.

Additional key words: control; investment; members' objectives and satisfaction.

Resumen

Las teorías de agencia y de los derechos de propiedad en las cooperativas agrícolas: evidencia para España

Este trabajo examina la relación socio-cooperativa agraria desde el punto de vista de las teorías de la agencia y los derechos de propiedad. La muestra analizada incluye 277 encuestas personales realizadas a los socios de las cooperativas agrarias de la Región de Murcia (España). Los resultados muestran que los niveles de valoración de los objetivos que se pueden alcanzar en la cooperativa y de satisfacción de los socios superan 6,9 sobre 10 en todas las cuestiones planteadas. Tanto para los objetivos como para el nivel de satisfacción, los miembros del consejo rector y los socios cuyo porcentaje de ingresos dependen en mayor medida de la actividad agraria presentan mayores valores (con una significación del 1 y 5% respectivamente). También encontramos los socios que están de acuerdo con la entrada de nuevos cooperativistas, que piensan que resulta fácil recuperar las aportaciones y que tienen intención de permanecer más tiempo en la cooperativa están más incentivados a la hora de invertir y de ejercer el control. Adicionalmente, se observa que aquellos que desean una participación proporcional a la aportación, y que desean diversificar más son los que están más dispuestos a realizar inversiones. Por otro lado, el control se ve favorecido por aquellos miembros más antiguos, o que piensan que invertir en la cooperativa supone un elevado riesgo o que prefieren inversiones a largo plazo. Finalmente, los consejeros se encuentran más incentivados a invertir y a realizar el control.

Palabras clave adicionales: control; inversión; objetivos y satisfacción de los miembros.

Abbreviations used: ICA (The International Co-operative Alliance), OLS (ordinary least squares).

Introduction

One characteristic of agricultural cooperatives is the peculiar relationship of the organisation with its members, because these are simultaneously the owners, users (buyers and sellers), controllers, and beneficiaries (Nilsson, 1996). Such complexity makes it possible to study this relationship from different points of view: Neoclassical Theory, Agency Theory, Transaction Costs Theory, Property Rights Theory, Resources and Capabilities Theory and Relational Theory[1].

Agency Theory (Jensen and Meckling, 1976) and Property Rights Theory (Fulton, 1995) both point out governance problems on these firms in concrete terms. In cooperatives, agency problems may arise because of clashes over objectives between members and the manager, between members and directors, and between the manager and directors. On the other hand, a lack of dynamism in the labour market for cooperative managers and the difficulty of replacing managers give considerable power to managers (Nilsson, 2001). In the cooperative property rights are not properly defined, producing low incentives to exercise control, driving to low investment (Vitaliano, 1983).

There are two main reasons why little attention has been devoted to cooperatives in the corporate governance literature. On the one hand, most research assumes that in the cooperatives there is no separation between ownership and control and, therefore, conflict does not exist (Hansmann, 1988). On the other hand, the research on corporate governance usually focuses on large firms, mainly quoted firms, where the agency problems are much more evident.

Considering that the manager's utility function depends on their power, their prestige, the probability of retaining their employment and their remuneration (Williamson, 1964), this study pursues two main objectives: a) to analyze whether some characteristics of the governance of cooperatives may reduce conflicts (measured by the possibility of discrepancy in objectives and level of satisfaction), and b) to study whether property rights variables may influence the investors' efforts and their control capacity. There is some previous evidence analyzing Spanish agricultural cooperatives. From our point of view, the more related one is López *et al.* (2005), examining the level of satisfaction of cooperative members for the wine sector in Alicante. The main contribution of this paper is, on the one hand, the fact of analyzing not only objectives and satisfaction, but also investors' efforts and control capacity, and, on the other hand, dealing with a different sector and geographical area than the scarce previous evidence.

Theoretical framework

The International Co-operative Alliance (ICA) defines a co-operative as «an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise» (ICA, 2007). The seven internationally recognized cooperative principles are: voluntary and open membership; democratic member control; member economic participation; autonomy and independence; provision of education, training and information; cooperation among cooperatives; and concern for the community. However, not all the countries adopted all these principles. For example, in 1987 the United States Department of Agriculture (USDA) adopted just the three principles of user ownership, user control and user benefit (the first three ICA principles) (Ortmann and King, 2007). As pointed by Barton (1989), essentially, a cooperative is a user-owned and user-controlled business that distributes benefits equitably on the basis of use or patronage. Thus, a farmer member who accounts for 5% of the volume of agricultural products delivered to the cooperative would receive 5% of the net earnings derived from the handling, processing and marketing of those products.

Spanish Cooperative Law (BOE, 1999), points out in Article 1.1 that, «A cooperative is a firm constituted by people that freely associate and voluntarily retire, in order to undertake managerial activities». Following this definition and other precepts of the law it is deduced that both its capital and the number of members (principals) may vary over the life of the organisation.

The maintenance of individual property holdings of the partners joint to a coordinated management of the cooperative through administrative controls, make the cooperative having both market-associated characteristics and company-associated characteristics. For this reason the cooperative has been considered as a hybrid form of government transactions (Coque, 2008; Salazar and Galve, 2010).

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[1] For a comparison of diverse theoretical perspectives on organizational governance of cooperatives, please see (Cornforth, 2004).

In the organization of cooperatives, one source of authority is the General Assembly, which is the meeting of members, constituted in order to consider and to adopt agreements on those matters that, legal or statutorily, are their competence, and decisions of the Assembly are binding on all members. The General Assembly is the equivalent to the Shareholders' Meeting in Inc. corporations, except that shareholders differ in terms of their contribution to the firm's capital, while cooperative members differ in terms of the cooperative activity undertaken by the member.

The other source of authority within the cooperative is the board of directors. It corresponds to the board the top administration, the supervision of the managers and the representation of the cooperative. Dow and Putterman (2000) point out that the only difference between these two organizational types is that cooperative directors are chosen by the members, while, in capital based firms, the members of the board of directors are chosen by the shareholders.

One of the principles on which cooperatives are based is that of democratic governance. This feature is generally seen as the most important of all its identifying marks. This principle implies that each member has one vote in the general assembly. From the point of view of democratic governance, cooperative management rests on several premises (Chaves, 2004): 1) the members decide democratically and manage at the general assembly, 2) the members actively participate in the general assembly as well as in the election of representatives; 3) representative posts, blending into the board of directors, represent and manage, and 4) the representative posts are accountable to the membership. An additional premise can be added: 5) cooperatives, especially large ones, can be fitted with managers and other salaried staff managers, in order to implement the decisions of members and achieve good economic performance (Chaves, 2004).

Agency theory

Agency theory is an appropriate framework to examine the relationships in any firm and, therefore, in agricultural cooperatives. The concept on which this theory is based is the «agency relationship». This relationship is defined «as a contract under which one or more persons (the principal/s) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making

authority to the agent» (Jensen and Meckling, 1976). If both parts of the relationship are utility maximizers, act rationally and form unbiased expectations of the impact of the agency relationships in their utility function, then agents will try to reach their objectives, which may or may not coincide with those of the principal (Barnea *et al.*, 1985).

This issue will provoke agency conflicts. However, agency problems will arise when, in addition to conflict of objectives between the principal and the agent, there is information asymmetry between them. If a conflict of objectives takes place, but the principal has perfect information on the agent's performances, the loss of efficiency can be overcome by the principal including in the contract the performances that the agent should carry out, as well as checking if the agent has followed instructions, with the possibility of including penalties in case of breach of contract.

The agency costs are the sum of (Jensen and Meckling, 1976): 1) Monitoring expenditures: the principal will limit the autonomy of the agent by installing controls, maintaining registrations, establishing budgetary limits, making direct supervision, using payment systems to condition the agent's incentives, etc. 2) Bonding costs: agents can voluntarily accept clauses in their contracts restricting their discretion; these restrictions may cause additional costs, for example costs associated with profitable investments that may be rejected, direct cost associated with the formalization of the contract, and so on. 3) Residual loss.

As previously mentioned, the assumption of an absence of separation between ownership and control, and the fact that most previous research has focused on large quoted firms, means that little attention has been devoted to cooperatives in the corporate governance literature. However, it cannot be assumed that there is no separation of ownership and control in a cooperative, especially when the number of members of the cooperative increases (Morales, 2004). Thus, it would appear to be a mistake to overlook the separation of ownership and control in cooperatives.

In large quoted firms, it is usually assumed that shareholders have a common objective, maximizing the firm's market value, which conflicts with maximizing the managers' utility function. However, as pointed out by Hansmann (1996), given that members in the cooperative may play different roles simultaneously (owners, buyers and sellers, controllers, and beneficiaries) they may also have very diverse objectives. Avoiding the costs derived from decision taking in a collective way

may be the main reason why members usually delegate day-to-day decisions to managers.

Therefore, cooperatives face two problems. On the one hand, in most cooperatives the administration is delegated to managers or professional agents. On the other hand, the multiplicity of objectives that member may have means the objectives of the organisation are not well defined, and managers' discretion increases, making it more probable that they adopt decisions that benefit themselves to the detriment of members. In addition, as pointed out by Tirole (2001) and Orellana (2002), the multiplicity of objectives makes it much more difficult to establish incentives and control mechanisms that minimize conflicts between members and managers.

As previously mentioned, cooperatives can be fitted with managers and other salaried staff managers. In this case, cooperative would be classified pertaining to a dualist structure. As highlighted by Rodríguez and Mozas (2003) and Mozas (2004), the various laws pertaining to cooperatives in Spain allow them not only having a dualist structure, but also a monist structure, characterized this last one by a lack of professional managers. In both structures it is the members, in general assemblies, who decide on the strategies to be adopted. Further, to the general assemblies, the elected board is charged with carrying out these decisions. However, in the monist structure there are no professional managers to advise the elected board and the members' assembly on the advantages or disadvantages of a particular strategic decision. It is therefore up to the members and the elected board to manage the cooperative themselves.

Following Fama and Jensen (1983), the decision process has four steps: 1) *initiation*, which is the generation of proposals for resource utilization and structuring of contracts; 2) *ratification*, that it is the choice of decision initiatives to be implemented; 3) *implementation* or execution of ratified decisions; and 4) *monitoring* or measuring the performance of decisions agents and implementation rewards.

The first and third steps are considered as *decision* management, whether the second and forth are considered as *control* steps. The formal control of the decisions in the case of the cooperative enterprise always lies with the partners and is vested in general assembly under the principle of democracy (one man one vote). The first and third stages are responsibility of the board. However, if the cooperative opts for a dual structure, management can be delegated to management, appearing an agency relationship (Salazar and Galve, 2010).

There are two main reasons why professional managers have increased their power in recent times (Chaves and Sajardo, 2004a,b). On the one hand there are technical and economic reasons, and on the other hand there are organisational reasons. The technical and economic reasons are due to the nature of the business activity, which makes increases demand of professional administrator with skill and competences to run a business. The organisational reason for this phenomenon is the growing dispersion of shareholders and the fragmentation of holdings among small shareholders.

Particular characteristics of social economy managers depend on two main aspects: their economic interests and their managerial culture. Focusing on their managerial culture, Davis (2004) considers two main managing types: the business school managers and the social economy managers[2]. As pointed by Chaves and Sajardo (2004a,b), compared to business school managers: «social economy managers are characterised by being sharers and carriers of the culture of the social economy sector. They are aware of (and share) the cultural baggage of the social economy as well as its specific operational methods and social project of the social economy company in which they work. Their value system and ethics are akin to those of the social economy and conflict with those of the business school manager»[3].

Corporate governance control mechanisms are designed to align the interests of owners and managers of firms. Problems associated to the governance of cooperatives have been tackled with less intensity and a certain delay relative to capitalist firms. Most studies on this subject agree that problems on cooperatives are more complicated due to the fact that there are more players relative to capitalist firms and, in addition, some of them assume more of a role. In fact, although some studies suggest that in the cooperatives there is no separation between ownership and control and, therefore, conflict does not exist (Hansmann, 1988), other studies such as Spear (2004a,b) put the emphasis in the limitations of the cooperative members to influence the

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[2] Other authors make other classifications for managing types. For example, Bataille-Chedotel and Huntzinger (2004a,b) consider three profiles: mountain-climbers, helicopters and parachutists.

[3] For recent surveys on the management of cooperatives, as well as for a proposal of evaluation of cooperatives, please see López *et al*. (2004, 2006).

behaviour of managers, to the point of concluding that in such companies the discretionallity of the managers is larger than in capitalist firms[4].

Literature usually classifies control mechanisms for Inc. corporations as either internal or external to the firm. Internal control mechanisms, which include the ownership structure of the firm, boards of directors, and compensation systems, are particularly important when markets, and hence external control mechanisms, are less well developed. An example is Spain as compared to the anglo-saxon countries. Focusing on cooperatives, the market for corporate control, which is the main external control mechanism, does not work due to the non-possibility of transmission of residual rights. Thus, in cooperatives, the only control mechanisms working are the internal to the firm. For this reason, this classification is not usually employed in cooperatives.

An alternative to that classification is the one proposed by Coque (2003, 2008), which classifies corporate governance mechanisms for cooperatives into direct and indirect mechanisms. The direct mechanisms are related to information and decision flows including the participation in the internal organization of the cooperative through the election of the positions in the General Assembly and on the other established democratic processes, and control, both ex ante and ex-post, to prevent managers adversely affects the interests of members. The indirect mechanisms are related to real and financial flows; for example to what extent members would use the services of the cooperative against the alternative use of those offered by competitors.

To reduce the agency conflicts in Spanish cooperatives, it would be interesting to include external directors in the board (Fama and Jensen, 1983), create a payment system connected with member objectives (Jensen, 1994), the separation of the common capital to encourage the supervision (Jensen and Meckling, 1976), to establish a secondary market in order to increase the information about the cooperative and to facilitate the entrance and leaving of members (Easterbrook, 1984).

Property rights theory

Previous to the publication of the work of Coase (1937), the company was considered as a «black box»

in charge of employing inputs (resources) to obtain outputs (goods and services). From the contribution of Coase (1937), the company begun to be considered as a multiplicity of contractual relationships. Based in this idea, the property right theory arises (Alchian and Demsetz, 1972).

A property rights system is a method of assigning to individuals the authority to select the final use of a specific good among different alternative uses. A property right is a protection against the election that other people could make over an asset that they do not own (Alchian, 1977; Furubotn and Richter, 2000; O'Driscoll Jr. and Lee Hoskins, 2006).

This theory focuses on the assignment of property rights in order to solve problems that may arise because of incomplete contracts (Klein *et al.*, 1978; Villasalero, 1999). According to many authors (Coase, 1937; Grossman and Hart, 1986; Hart, 1988, 1995; Hart and Moore, 1990; Milgrom and Roberts, 1993; Brynjolfsson, 1994; Royer, 1999; Sykuta and Chaddad, 1999; among others), given that transaction costs differ from zero and contracts are incomplete, property is a key question in investing and control decisions. In this context, assets will be reallocated to those uses in which they yield the highest value. If the contracts were complete, it would not be important who possesses the asset. A complete contract would point out what actions should be carried out due to any contingency that could arise and what compensation would receive each part. However, the problem is that the contracts cannot be complete. The contractible decisions are derived of a group of verifiable operative decisions. The noncontractible decisions are not materialized in decisions do not establish a priori and those that consequences are not known with certainty. These last decisions should be negotiated among the parts, and in case agreement is not possible, the decision relapses on the part that possesses the control rights on the implied assets (Royer, 1999).

The ownership of an asset implies control over the residual flows that it generates. Therefore, the owner of the good is the one that has the incentive to use it effectively, involving himself or herself in investment decisions. Following this theory, the owner of the asset is the one that has to decide what to do with them when circumstances that were not included *ex ante* in a contract take place (Tarjizán, 2003). Cook and Iliopoulos

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[4] For a survey examining the extent to which members of a cooperative can influence managers and members of the board, please see Spear (2004a,b).

(1999) argue that in the case where a person does not have clear possession of an asset, he or she will not have any incentive to protect its value. In addition, if property rights cannot be transferred, the probability that the asset is finally owned by the person who will use it best is reduced.

Alchian and Demsetz (1972) justify the existence of the company on the basis of the conflicts that arise among the members of the team when there is imperfect information about the behaviour of team members. This situation may provoke opportunist behaviour by individuals, leading to a reduced return to the firm. The need for surveillance to avoid opportunist behaviour can be solved by giving the residual property rights to persons who are willing to exercise control over the team members.

As much in the cooperatives as in the capitalist firms, the property right must be exercised by the owners. Owners are in charge of carrying out the control right and they perceive the residual rents. However, important differences exist between both type of firms (Chaddad and Cook, 2004; Salazar and Galve, 2008). For example, shareholders of capitalist companies enjoy the right of control proportional to their participation on the firm capital. On the contrary, in cooperative societies, based on the principle of democratic governance, each member has only one vote on the general assembly (O'Connor and Thomson, 2001; García *et al.*, 2004)[5].

As for the residual flows, the shareholders will benefit from earnings derived for their participation in the capital of the company. However, in cooperatives, member's earnings depend on their cooperative activity.

Another important difference between cooperative and capitalist firms is the transmission of the property rights. In cooperatives this transmission presents a series of restrictions. Focusing on Spain, the two possible transmission forms are «mortis cause» and «inter vivos» (Salazar and Galve, 2008).

In «mortis cause» transmission, participation passes the deceased's heirs. If these were not members, they should previously acquire member's condition. For the «inter vivos» transmission, members will only be able to transfer their participation to other member or to a person that not being member becomes member in the three months following to the transfer. In addition, for agricultural cooperatives, the new member's exploitation should be located in the territorial area that the coope-

rative statute establishes. These limitations on transmission of the property rights also suppose a disadvantage with regard to the other types of firms.

A member leaving the cooperative would receive as compensation his economic contribution. In case that the cooperative could not refund money on the legally established period, members would also receive legal interests. As a consequence, leaving members would not benefit by the present and future rents that the assets may generate. In contrast, in Inc. Corporations, firm stock prices depend on discounted cash flows.

Some of the problems that are typically associated to cooperatives are directly connected to the property rights. Next, we briefly summarize some of them.

The free-rider problem exists because property rights are untradable, insecure, or unassigned. Royer (1999, p. 56) refers to it as «a type of common property problem that emerges when property rights are not tradable or are not sufficiently well defined and enforced to ensure that individuals bear the full cost of their actions or receive the full benefits they create». The free-rider problem has two origins, internal and external, and both are often associated with conventional cooperatives.

The internal free-rider problem is usually called the *common property problem* (Vitaliano, 1983; Nilsson, 2001), and it is cause by the «open doors» policy (Álvarez *et al.*, 2000; Pérez *et al.*, 2009). In case that the cooperative accepts new members, these new members have the same rights as established members. That is, they will receive the same patronage and residual rights as existing members although the new members are not required to make up-front investments proportionate to their use, causing an intergenerational conflict in the cooperative (Vitaliano, 1983). This free-rider will provoke that members encourage decisions that increase cash flows per member as well as creating a disincentive to invest because of the dilution of their returns (*underinvestment problem*). The external free-rider problem arises from the fact that property rights can not be transferred.

The time horizon problem arises because it is not possible to members to transmit residual rights joint to the fact that member's residual claims on the net income generated by an asset is shorter than the productive life of that asset (Vitaliano, 1983; Porter and Scully, 1987). This will provoke that members have little incentive to make investments in the long-term

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[5] However, in some cooperatives, the vote depends on the volume of activity of the member, with a series of limitations.

driving to underinvestment, which will be more acute for intangible assets (Ferrier and Porter, 1991; Cook, 1995). Therefore insiders in the cooperative will be under pressure to: a) increase the amount of cash available for payments, and b) try to have investment projects with a very short pay-back period, even if the profitability of those projects is reduced (Dow and Putterman, 2000; Nilsson, 2001).

Portfolio (risk) problem. According the portfolio selection theory, specific risk can be reduced or minimized in case of making an efficient diversification. However, diversification is much more complicated for cooperative members than for capitalist firms due to the impossible to transmit the residual rights. The diversification of the portfolios will be conditioned by the possibility of purchasing or selling the shares. This limitation leads to sub-optimal decisions for different reasons (Salazar and Galve, 2008): a) on the one hand, because it is not possible to satisfy the risk preferences of all members, so risk sharing is inefficient; b) on the other hand, members have to accept a risk that could be avoided by diversification, resulting in a decrease in their welfare. In addition, as suggested by Ortmann and King (2007), this problem is exacerbated when «member's investment in the cooperative represents a high proportion of his off-farm investment and to the extent that his farming risks are positively correlated with the risks associated to the cooperative».

The problems arising from the vagueness in the definition of property rights may provoke different incentives to control agents (Chaddad and Cook, 2004; Bialoskorski, 2006). Thus, the difficulty of transferring shares may lead to an increased desire by the cooperative members to control managers. In quoted capitalist firms, a stockholder that does not agree on how the firm is managed can easily sell his stocks. However, this possibility is much more difficult in cooperatives, which may drive to cooperative members to get involved on exerting control. In addition, an open door policy and a greater desire for permanence may incentive such control. In contrast, the democratic governance principle, that provides only one vote on the general assembly to each member, may disincentive exerting control (Orellana, 2002; Orellana and Rueda, 2004).

Different authors have proposed a series of measures in order to minimize the previously mentioned problems. First, to reduce the free-rider conflicts two mechanisms could be employed (Vitaliano, 1983; Porter and Scully, 1987; Staatz, 1987; Condon 1990; Cook and Iliopoulos, 2000; Henehan and Schmit, 2009): a)

implementing a policy of limiting entry of new members combined with contracts establishing quality standards for cooperative products (incomes and outcomes), and b) establishing a secondary market that would price, and take an active part in the transmission of, assets (residual property rights). The creation of such a secondary market, together with structured plans for refunding short term investments (Cook, 1995), are appropriate measures to solve the problem of the time horizon. Finally, the separation of the common capital and allowing the temporal assignment of the vote to other member to increase the ownership concentration or establishing alliances between members would allow members to eliminate the problem of different risk aversion levels (Spear, 2004b). In general it is possible to reduce those problems establishing trust relationship between members (Balbach and Eccles, 1989; Balbach, 1998; Casadesus-Masanell and Khanna, 2003; James and Sykuta, 2005).

Sample, data and methodology

Sample and data

In Spain there are some 4,000 agricultural cooperatives that, in 2007, had a turnover of €17,000 million, making them a very important part of the economic activity of the Spanish agricultural sector. A million members benefit from this economic activity all around Spain, providing employment for more than 100,000 people. A total of 2,862 of those cooperatives are affiliated to Cooperativas Agro-alimentarias, 76 of them based in Murcia, 2.6% of the total (Cooperativas Agro-alimentarias, 2009).

In order to locate the cooperatives and their members, we had the support of the Federación de Cooperativas Agrícolas de Murcia, FECOAM (Federation of Murcian Agricultural Cooperatives). Due to the population's characteristics (the fact that their members are in most cases active workers and/or are older) and the difficulty of obtaining information, personal surveys were used. To develop the questionnaire we previously carried out several interviews with key persons (cooperative members and directors). This allowed us to have a broader knowledge of the relationships to be analysed. Later, in order to develop the final version of the questionnaire, we made a number of pre-tests.

Geographical dispersion made it difficult to get in touch with cooperative members, so we profited from

the celebration of the XIII Day of the Agricultural Member, organized by FECOAM, which took place in 10 April, 2008 in Torre Pacheco (Murcia). The presence of about 6,000 members and the procedure employed to select the sample (simple random sampling) guarantees its representativeness. A total of 334 completed questionnaires were obtained. Given that some questionnaires were improperly answered or lacked relevant information, 57 were removed. Thus, the final sample was 277 questionnaires.

The questionnaire includes several questions related to objectives and the members' level of satisfaction, agency theory, property rights theory and members' characteristics. These questions, together with the name assigned to the variables are presented in the Appendix[6].

Table 1 shows descriptive statistics. It can be seen that members attach a high value to each of the objectives, with an average above 6.9/10 in all cases. The objectives with the higher values are «Not worrying about marketing», «To assure the sale of the products», and «To assure the collection of the products». Not far behind are «Getting a good sale price», «To assure a good purchase price», «The availability of services», and «The acquisition of useful knowledge for the development of their activity».

Focusing on the levels of satisfaction, we can also observe high values of up to 7 for all variables.

In relation to the propensity to invest, we also find high values in all the proxies that we employ for this variable. We also observe that members of the cooperative do not have strong incentives to exercise control and that the conduct of the General Assembly is considered appropriate.

Directors were 11.7% of the respondents. The level of contribution to the total product of the polled members is above average. In terms of the type of participation they desire, a large majority prefer one member one vote. This preference is quite surprising given that most of the members in the final sample make an above average contribution. The average time in the cooperative is 18 years. Members are inclined to accept new members (7.2/10), which shows that they are not aware of the free-rider problem or that they do not feel threatened by the possibility of new members. In addition, they believe it would be easy to get their contribution of funds back, even if this type of organisation imposes important restrictions in comparison with other type of companies.

Members also think that they do not assume a high risk when investing in the cooperative. However, they would like the cooperative to diversify the products offered in order to reduce risk. Therefore it seems that, in general, members are highly risk averse. They also have a slight preference for long term benefit (6.4 on 10). It also should be pointed that many members work in agricultural activity part time, and that only 54% of their total revenues come from agricultural activity.

Methodology

First, we examine the influence that several characteristics may have on objectives (Model 1). Then we examine the effect that those characteristics may have on the level of satisfaction (Model 2). These characteristics may lead to a discretionary behaviour, provoking agency conflicts. These models are analysed using ordinary least squares (OLS). The first model is:

$$OBJECTIVE_i = \beta_0 + \sum_{i=1}^{4} \beta_i INDVAR_i + \varepsilon_i \qquad [1]$$

where *OBJECTIVE* is a multi-item variable. Two forms of this variable are used. One of them uses marketing related variables and the other non-marketing related variables (see Appendix for more detail). *INDVAR* includes several independent variables related to the characteristics of cooperative members (number of years being member of the cooperative, whether the member of the cooperative is a director or not, their level of contribution to the total product of the cooperative, and the percentage of their income coming from agricultural activity). Finally, ε_i represents the term of the estimated error.

In order to measure these objectives and, with the general consensus in mind that perceptions and attitudes cannot be measured directly (Lastovicka and Thamodaran, 1991), we use a multi-item classification scale with categories of ten points, widely adopted by researchers to assess concepts such as those that concern us here. In this work, the multi-item variables have been calculated by adding the value that cooperative members assigned to the different concepts included in the multi-item variables.

The second model is:

$$SATISFACTION_i = \beta_0 + \sum_{i=1}^{4} \beta_i INDVAR_i \qquad [2]$$

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6 In many cases the name provided to the variable is the same as the question asked on the questionnaire.

Table 1. Descriptive statistics (Scale: Minimum, 0; Maximum, 10)

Variable	Average	Median	Standard deviation
Objectives			
To assure the sale of the products	8.447	9.000	2.045
To assure the collection of the products	8.367	9.000	2.096
Get a better sale price	7.777	8.000	2.115
To assure a better purchase price	6.955	8.000	2.979
Availability of services (consultancy, training, etc.)	7.727	8.000	2.261
Acquiring useful knowledge	7.577	8.000	2.302
Not worrying about marketing	8.477	9.000	2.014
Satisfaction			
Satisfaction of being cooperative member	8.413	9.000	1.665
Getting a high probability of collecting the products	8.603	9.000	1.667
Getting a satisfactory selling price	7.750	8.000	2.149
Getting a satisfactory purchase price	7.023	8.000	2.833
Getting access to satisfactory technical consultancy	7.760	8.000	2.208
Getting access to other satisfactory services (financing, training, etc.)	7.608	8.000	2.178
Getting access to useful knowledge	7.835	8.000	1.947
Being able to not worry about marketing	8.428	9.000	1.892
Propensity to invest			
Disposition to carry out economic efforts	7.515	8.000	2.175
Disposition to sacrifice short term benefit	6.358	7.000	2.895
Disposition to carry out changes in the cooperative	7.950	8.000	2.017
Propensity (o tendency) to exercise control			
Propensity (or tendency) to exercise control	3.776	3.000	3.075
Frequency of meetings of the General Assembly	8.178	8.500	2.041
Attendance at the Assembly	7.646	9.000	2.814
Other opinions and characteristics			
Numbers of years being member	18.503	17.500	10.975
Director	0.117	0.000	0.322
Percentage of income from agricultural activity	54.250	50.000	36.751
Level of contribution to the total product	0.401	0.000	0.491
Type of participation	0.267	0.000	0.443
Admission of new members	7.279	8.000	2.918
Ease to recover contributions	7.023	8.000	2.684
Investing in the cooperative is highly risky	4.357	4.000	3.041
Product diversification	7.079	8.000	2.827
Permanency desire	8.876	9.000	1.661
Preference for long-term earnings	6.382	7.000	2.609

where *SATISFACTION* refers to a multi-item variable comprised of different matters associated with the satisfaction of cooperative members (see Appendix for details). The other variables are the same as in Model 1.

Next, we examine the effect of some Property Rights Theory variables (free-rider, risk and time horizon), as well as some member characteristics, on their tendency to invest (Model 3) and on their tendency to exercise control (Model 4). These models are also analysed employing OLS. The first model is:

$$INVESTMENT_i = \beta_0 + \beta_1 FREE_i + \beta_2 RISK_i + \\ + \beta_3 HORIZON_i + \varepsilon_i \qquad [3]$$

where *INVESTMENT* refers to a multi-item variable that measures the propensity to invest (see Appendix) and *FREE* refers to the free-rider problem (type of

participation that the member prefers, number of years being a member, sensitivity to admitting new members, ease of recovering contributions). *RISK* includes different proxies for the members' risk aversion (investing in the cooperative is highly risky, and preference for the diversification of products). *HORIZON* refers to proxies related with member view of the organisation as a long/short term business (preference for the long term earnings and permanency desire).

The second model is:

$$CONTROL_i = \beta_0 + \beta_1 FREE_i + \beta_2 RISK_i + \\ + \beta_3 HORIZON_i + \varepsilon_i \quad [4]$$

where *CONTROL* includes the members' propensity to exercise control measured by a multi-item variable (see Appendix). The other variables are the same as included in Model 3.

Results

Results of Models (1) to (4) are shown in Tables 2 to 5. Tables 2 and 3 present the effect of some member characteristics on the objectives and on the level of satisfaction, respectively. In Tables 4 and 5 the results for the influence of Property Rights Theory variables on the tendency to invest and to exercise control are presented.

We observe in Table 2 (Panels A and B) that directors place a higher value on the objectives analysed, and that this difference is statistically significant. This result could imply larger implication on exerting control by members of the Board. In addition, directors are more informed about the cooperative and thus they consider that these objectives of the cooperative will help them to reach their personal objectives. We also find that members with a high percentage of their income coming from agricultural activity value the proposed objectives more. This result is also logical, given that their incomes are less diversified and they are more dependent on the cooperative objectives.

However, there are no apparent differences when we compare members according to their contribution to the total product or the number of years they have been members of the cooperative.

Table 3 provides a similar analysis employing the members' satisfaction as the dependent variable. The results show that directors are more satisfied. We also find that members with a large percentage of their income coming from agricultural activity are overall more satisfied, and this result is statistically significant at the 1% level. The fact of assuring the sale of the product and getting a good sale price can be determinant for such a result.

Table 2. Ordinary least squares regressions on the influence of members' characteristics on the objectives

Variable	Coefficient	Standar Error
Panel A: Effect of member's characterstics on marketing related objectives		
Constant	31.743	1.173***
Numbers of years being member	−0.047	0.038
Director	3.345	1.258***
Percentage of income from agricultural activity	0.029	0.012**
Level of contribution to the total product	0.701	0.909
Adjusted R^2	0.041	
F	3.590***	
Panel B: Effect of members' characteristics on non-marketing related the objectives		
Constant	20.096	1.088***
Numbers of years being member	−0.039	0.036
Director	2.739	1.169**
Percentage of income from agricultural activity	0.039	0.011***
Level of contribution to the total product	1.143	0.844
Adjusted R^2	0.058	
F	4.767***	

Note: *** and ** denote statistical signification at a 1% and 5%, respectively.

Table 3. Ordinary least squares regressions on the influence of member characteristics on satisfaction

Variable	Coefficient	Standar Error
Constant	59.250	2.195***
Numbers of years being member	−0.039	0.071
Director	5.546	2.335**
Percentage of income from agricultural activity	0.069	0.023***
Level of contribution to the total product	0.497	1.758
Adjusted R^2	0.057	
F	4.346***	

Note: *** and ** denote statistical signification at a 1% and 5%, respectively.

In terms of contribution to the final product and the number of years being a member of the cooperative, we do not find that they have any statistically significant influence on the level of satisfaction.

Therefore, we can conclude that directors place a higher value on the objectives of the cooperative and are more satisfied with the cooperative. This may indicate that they identify more closely with the cooperative because of their direct involvement. However, there are no corresponding differences when we consider members' contribution to the final product and the number of years being member of the cooperative. This may be because these differences do not necessarily imply more or less involvement with the cooperative.

Overall, all members value the objectives and are satisfied, but directors and members with higher percentage of their income coming from agricultural activity are more positive on both dimensions.

In Table 4 we present results on the effect of Property Rights Theory variables on members' propensity to invest. In relation to the free-rider problem, we observe statistical differences on investing patterns between members that prefer different participation types in the General Assembly. Therefore, a preference for having a number of votes that depends on the contribution to the cooperative's final product can be considered an incentive to invest. This may be due to the fact that voting power based on the product contribution is a safeguard mechanism. Time in the cooperative does influence the propensity to invest. However, we find a statistically positive relationship between the preference to admit new members and the member's willingness to invest. Thus, it seems that members are not aware of the free-rider problem produced by admitting new members or

Table 4. Ordinary least squares regressions on the influence of property rights theory variables on the propensity to invest

	Coefficient	Standar Error
Constant	5.953	2.375**
Free rider		
Type of participation	1.572	0.742*
Number of years being member	0.012	0.031
Admission of new members	0.433	0.118***
Ease to recover contributions	0.249	0.127*
Risk		
Investing in the cooperative is highly risky	−0.095	0.113
Product diversification	0.204	0.122*
Time horizon		
Preference for short-term earnings	−0.074	0.126
Permanency desire	0.843	0.201***
Adjusted R^2	0.187	
F	7.992***	

Note: **, ** and * denote statistical signification at a 1%, 5% and 10%, respectively.

by other mechanisms, for example new contribution of funds. Finally, following Property Rights Theory, we find that members who think it is easier to recover their contributions are more likely to invest.

In terms of risk, we find that members' propensity to invest does not depend on their opinion about the riskiness of investing in the cooperative. As it was commented previously, the members of the cooperative in the sample analysed think that investment in the cooperative does not imply excessive risk and therefore it does not influence their decision about investing or not investing. However, we observe a significant and positive relationship between members wanting more diversification and the readiness to invest. Diversification, as a safeguard mechanism for the members of the cooperative, reducing their risk, seems to influence their tendency to invest.

In terms of the investment time horizon, we do not observe that those members that prefer short term investments have a larger propensity to invest. As previously indicated, members may not be aware of the free rider problem of accepting new members who will benefit from previous investment, and thus they do not prefer short-term earnings. However, we observe a positive relationship between the permanency desire

Table 5. Ordinary least squares regressions on the influence of property rights theory variables on the propensity to exercise control

	Coefficient	Standar Error
Constant	5.466	2.682*
Free rider		
Type of participation	0.556	0.837
Number of years being member	0.085	0.036**
Admission of new members	0.223	0.113*
Ease to recover contributions	0.531	0.143***
Risk		
Investing in the cooperative is highly risky	0.229	0.128*
Product diversification	0.066	0.137
Time horizon		
Preference for short-term earnings	−0.392	0.0142***
Permanency desire	0.661	0.227**
Adjusted R^2	0.139	
F	5.867***	

Note: **, ** and * denote statistical signification at a 1%, 5% and 10%, respectively.

and the propensity to invest. The wish to remain in the cooperative for a long time is a safeguard mechanism for the members of the cooperative. This wish to remain could also be a partial explanation why they do not prefer short-term investments.

Table 5 shows the results on the relationship between Property Rights Theory variables and the propensity to exercise control. We observe that two free-rider associated variables give support to Property Rights Theory. Those members who have spent more time in the cooperative and agree with the admission of new members are more inclined to exercise control. This may be because established members are aware of the possible advantages that new members can derive from previous investments, and they wish to exercise control over the resources, and because they feel it necessary to take decisions to safeguard their interests and avoid free rider problems associated to the opportunism of new members.

On the other hand, we find that the result for the participation type variable is not statistically significant. Finally, in relation to the free-rider problem, those members who think that it is easier to recover their initial contribution are highly motivated to exercise control. This result is the opposite of the one suggested by

Property Rights Theory. One would expect that where is easy to leave the cooperative without incurring economic losses, members would not make any effort in supervision and would simply finish their relationship with the cooperative if they were not satisfied. A possible explanation is that members who think it is easy to leave are motivated to exercise control and to manage the cooperative well, to prevent the departure of other members, which might threaten the effectiveness, or even the survival, of the cooperative.

Focusing on risk, we find that members who think that investing in the cooperative is highly risky are more motivated to exercise control. This is logical and gives support to Property Rights Theory. However, we do not find a significant relationship between members who want diversification and the propensity to exercise control.

In terms of the time horizon (preference for short-term earnings and permanency desire), we observe that those members who prefer long term earnings have a larger propensity to control. This is logical if we think that the long term investments give the agent more discretion and, therefore, increase the need for supervision. At the same time, we find that permanence desire has a positive and significant effect on control. Those members that want to remain longer as cooperative members want to have more control over the administration. This greater control would help them to achieve the objectives that compensate their efforts.

In sum, we observe some influence of property rights theory variables on exercising control in the cooperative, mainly when focusing on the time horizon of investments and on some free-rider and risk related variables.

Table 6 present additional analysis to test whether there exist differences between directors and non-directors relative to their propensity to invest and their propensity to exert control, as well as for free rider, risk and horizon variables.

Results show, on the one hand, that directors are more motivated to invest in the cooperative. On the other hand, results also show that directors are more motivated to exert control. Given that the fact of being director provides them more influence on the decision-making process, both results can be considered logical.

In addition, in most cases, variables determining the propensity to invest and to exert control of members of the cooperative (shown in Tables 4 and 5) also exert influence on the propensity to invest and to exert control of directors; giving robustness to the results obtained previously.

Table 6. Differences between directors and non-directors for propensity to invest, to exert control and for the variables relatives to free rider, risk and horizon problems

	Director minus non-directors	Statistical significance
Propensity to invest	(+)	−6.680***
Propensity to exercise control	(+)	−5.562***
Free rider		
Type of participation	(+)	−1.120
Number of years being member	(+)	−1.449
Admission of new members	(+)	−2.447**
Ease to recover contributions	(+)	−2.687***
Risk		
Investing in the cooperative is highly risky	(+)	−0.279
Product diversification	(+)	−2.463**
Time horizon		
Preference for short-term earnings	(−)	−2.220**
Permanency desire	(+)	−2.963***

Note: *** and ** denote statistical signification at a 1% and 5%, respectively.

Discussion

The large power that the cooperative managers have, combined with the fact that property rights are not properly defined, mean that agency theory and property rights theory provide a good framework for the study of the member-cooperative relationship. Based on agency theory we first examined possible conflict of objectives between members and managers, and the possibility of different level of satisfaction. Next, we tested the influence of some property rights theory variables (free rider, risk and time horizon) on members' propensity to invest and to exercise control.

The sample examined includes 277 personal surveys to members of agricultural cooperatives based in the region of Murcia. The results show that all members value all the proposed objectives and they are highly satisfied with being cooperative members. We also find that members belonging to the board and members with a higher percentage of their income depending on agricultural activity attach higher values to both objectives and level of satisfaction. These results may be due to the fact that directors and members with higher percentage of their income depending on agricultural activity have more involvement in the cooperative and have more influence in day-to-day decision making, identifying themselves more with the cooperative and valuing its advantages.

In relation to property rights, the variables related with the problem of the free rider (apart for the wish to stay in the cooperative) have a positive influence on the propensity to invest. Members who prefer that the vote in the general assembly is proportional to the quantity of product they contribute are willing to invest more, because this voting pattern would protect the investments that they make. Those members that prefer the admission of new members are more inclined to invest, because they do not appreciate that the free-rider is a problem. This may be due to the fact that some mechanism exists to minimize this problem. For example, there may be a requirement for the new member to contribute additional entrance quotas to the social capital. Finally, the members who think that it is easier to leave the cooperative without incurring losses are more interested in investing. Probably they consider that they will not have problems recovering their contributions. In relation to risk, the members who want to diversify investments are willing to invest more to achieve this objective. Finally, member who want to be in the cooperative for more time want to invest more.

Focusing on the effect that property rights theory variables have on the propensity to exercise control, we observe some evidence of the presence of a free-rider problem when exercising control, shown by the variables related to the members' time of membership

and the admission of new members. However, the type of participation that the member prefers and the ease of recovering initial investments present no significant effect and the opposite sign to that predicted by property rights theory, respectively. We also find that members who think that investing in the cooperative is highly risky are more motivated to exercise control. We also find evidence of the problem of the time horizon in relation to the propensity to exercise control. Members who want longer term benefits and intend to remain in the cooperative longer are more inclined to supervise. Therefore, we find certain evidence of the free-rider and risk problems and a clear effect of the time horizon. Besides, directors have a larger tendency to invest and to exert control that non-directors.

To avoid the agency and property right problems in the cooperatives, Fama and Jensen (1983), Vitaliano (1983), Easterbrook (1984), Staatz (1987), Spear (2004b), and Salazar and Galve (2008), among others, make several proposals. For example, it would be interesting to limit the entry of new members, separate the common capital, to impose quality standards, and create a secondary market. These measures involve the introduction of the so-called «new generation cooperatives», which are mainly proliferating in USA. It would also be interesting incorporating external directors to the Board, introducing payment systems that connects the principals' utility function to members' objectives and ensuring members have information and participle actively in the management of the cooperative in order to improve their satisfaction levels.

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Appendix. Variables used in this study

Variable	Question in the questionnaire
Objectives	Indicate whether the following reasons influenced your decision to join the cooperative (0 = Not at all. 10 = Yes, very much)
Marketing related objectives	
To assure the sale of the products	To assure the sale of the products
To assure the collection of the products	To assure the collection of the products
To get a better sale price	To get a better sale price
To assure a better purchase price	To assure a better purchase price
Non-marketing related objectives	
Availability of services (consultancy, formation...)	Availability of services (consultancy, formation...)
Acquiring useful knowledge	To acquire useful knowledge for the development of this activity
Not worrying on marketing	Easiness of the commercialization in order to focus on production
Satisfaction	Indicate the extent of your agreement with the following statements (0 = total disagreement. 10 = total agreement)
Satisfaction of being cooperative member	Level of satisfaction with the overall relationship with the cooperative
To assure the collection of the products	To assure the collection of the products

Appendix (cont.). Variables used in this study

Variable	Question in the questionnaire
Getting a good sale price	Getting a good sale price
Getting a good purchase price	Getting a good purchase price
Availability of technical services	Availability of technical services
Availability of services (consultancy, training, etc.)	Availability of services (consultancy, training, etc.)
Acquiring useful knowledge	To acquire useful knowledge for the development of this activity
Not worrying about marketing	Ease of the commercialization in order to focus on production
Propensity to invest	Indicate the extent of your agreement with the following statements (0 = total disagreement. 10 = total agreement)
Disposition to carry out economic efforts	You are willing to carry out economic efforts for the appropriate running of the cooperative.
Disposition to sacrifice the short term benefit	You are willing to sacrifice your own immediate benefit in order to get a better position for the cooperative in the long run
Disposition to carry out changes in the cooperative	You are willing to carry out the necessary changes in order that the cooperative can adapt to the market
Propensity to exercise control	Indicate the extent of your agreement with the following statements (0 = total disagreement. 10 = total agreement)
Time spent on exercising control	Does it take you much time to exercise control?
Frequency of meetings of the General Assembly	You think the General Assembly meets at the right intervals
Attendance at the Assembly	You attend to all the meetings of the General Assembly
Other opinions and characteristics	
Numbers of years being member	How long (in years) have you been you member of the cooperative?
Director	Are you member of the board of directors right now (0 = no. 1 = yes)
% Incomes from agricultural activity	From your total revenues, what percentage comes from agricultural activity?
Level of contribution to the total product	Comparing product with the other members of your cooperative, you are: 0 = among the members that contribute more; 1 = among those that contribute less
Type of participation	What type of participation do you prefer for the General Assembly? 0 = only one vote per member. 1 = a number of votes according to the product contribution.
Admission of new members	Indicate the extent of your agreement with the following statement (0 = total disagreement. 10 = total agreement): I would like that new members join the cooperative
Easiness to recover contributions	Indicate the extent of your agreement with the following statement (0 = total disagreement. 10 = total agreement): If I were interested, it would be easy to get the money I invested back.
Investing in the cooperative is highly risky	Indicate the extent of your agreement with the following statement (0 = total disagreement. 10 = total agreement): Investing in the cooperative is highly risky
Product diversification	Indicate the extent of your agreement with the following statement (0 = total disagreement. 10 = total agreement): I would like the cooperative to diversify its products in order to diminish its risk
Permanency desire	I wish to continue being member of the cooperative (0 = total disagreement. 10 = total agreement)
Preference for short-term earnings	Indicate the extent of your agreement with the following statement (0 = total disagreement. 10 = total agreement): I prefer short-term earnings.