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# Drivers of joint cropland management strategies in agri-food cooperatives

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ABSTRACT

In several Spanish regions, collective action through production and marketing cooperatives has traditionally concentrated the food supply of small and medium-sized farms. However, many cooperatives are threatened by the risk of abandonment of members' cropland, which reduces their sourcing capacity. In this context, joint cropland management initiatives have become a useful form of social and organizational innovation. This research's contribution is twofold: it examines the relevance of some drivers of this organizational innovation, and it determines the cooperative characteristics or combinations of characteristics that can sufficiently explain the adoption of a joint cropland management strategy. Some cooperatives' features have been *a priori* identified as related to the achievement of joint cropland initiatives: economic size, social innovation, innovative behavior, and collaborative orientation. The study is mainly based on data from a cooperatives survey, and fuzzy set Qualitative Comparative Analysis (fsQCA) methodology has been used. The analysis has been completed by surveying cooperatives' managers about their opinions on a joint cropland management strategy's main advantages and drivers. Results indicate that social and economic innovation, size, and propensity to cooperate with other cooperatives are key factors that help create a cooperative profile capable of tackling the challenge of land abandonment and the consequent loss of production.

## 1. Introduction

Previous research has underlined the role of agricultural cooperatives as key agents in rural development, especially useful when farmers face high transaction costs for marketing products, gaining economies of scale, and achieving bargaining power (Arnalte et al., 2013; Bijman et al., 2012; Hendrikse and Bijman, 2002; Kumar et al., 2018; Ma et al, 2018a, 2018b; Ortega et al., 2019; Valentinov, 2007). Some authors report how certain cooperatives are also engaged in innovative strategies to strengthen rural economies together with other local actors (Altman, 2015; Fonte and Cucco, 2017; Manda et al., 2020; Ortiz-Miranda et al., 2010; Tregear and Cooper, 2016). Our research explores the drivers of one strategy that agri-food cooperatives can follow to face the risk of land abandonment: joint cropland management.

Land abandonment is currently a challenge in Europe (Lasanta et al., 2017). In Spain, for example, 2.4 million hectares of land ceased to be cultivated in the period between the last two agricultural censuses (1999 and 2009). This area corresponds to more than 9% of Spain's utilized agricultural area (UAA), according to the Spanish National Institute of Statistics (INE). While several interrelated reasons are underlying this phenomenon, land abandonment is a concern in certain regions with a large proportion of smallholdings and where land fragmentation is an issue (Keenleyside and Tucker, 2010; Terres et al., 2015).

According to data from the survey on the structure of agricultural holdings carried out by the INE (Instituto Nacional de Estadística, 2016), 50% of the holdings have an area of 5 ha or less, with the most common size of holding in Spain (mode) being 1.48 ha UAA. These data reveal the prominent small-scale nature of Spanish farms. Smallholders are especially sensitive to market pressures on cropland profitability. The problem is particularly acute in the case of permanent crops acting as fixed assets, such as is the case with citrus orchards, vineyards, and other fruits, which are primarily cultivated in the Mediterranean areas of Spain. Reduced land mobility is also part of this backdrop. Many older

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landowners are reluctant to sell or lease their farmland and rarely find anyone in their own family to continue farming. Traditional structural policies have attempted to consolidate farmland through the aggregation of scattered production units. However, transaction costs related to farmland exchanges are significant.

Literature has suggested different strategies to reduce farmland/cropland abandonment, such as establishing cooperatives in rural villages (Ma and Zhu, 2020), improving Internet use of farmers (Deng et al., 2019), and reducing land fragmentation (Sikor et al., 2009). In the present paper, we address an emerging strategy, which refers to existing agri-food cooperatives that take charge of managing land plots at risk to be abandoned, often due to the lack of generational renewal.

In the Spanish Mediterranean region, collective action through production and marketing cooperatives has traditionally helped concentrate the supply of small and medium-scaled farms (Ajates Gonzalez, 2017; Meliá-Martí et al., 2015; Montegut et al., 2011). Spain is one of the European countries with the highest number of agri-food cooperatives (over 3500 in 2019), many of them with structural problems due to their small size. The generational renewal challenge in Spanish agri-food cooperatives is consistent with the one observed in many farm holders in Spain, where the proportion of holders below 40 years is 8.6%, (10.7% in the EU) according to the European Commission (2020). As farms disappear without generational renewal and their land is no longer cultivated, many marketing cooperatives find themselves in an awkward position. The lost production volume hinders cooperatives' role as aggregators of supply and makes it difficult for them to meet market requirements. As volumes fall, the average fixed costs of marketing cooperatives rise, undermining their competitive position, especially for small-scale cooperatives. As a result, some cooperatives enter a vicious circle of production and membership losses that eventually force them to close.

The grouping of plots for joint cultivation is a recent strategy adopted by marketing cooperatives to deal with this reality, especially useful for small-scale farming, and can be considered a form of social innovation and collective entrepreneurship (Cook and Plunkett, 2006). One significant advantage of such strategy lies in the fact that it does not necessarily change cooperatives members' land ownership, which lowers the transaction costs of the improvement in farm structures.

Through this strategy, collaboration between smallholders can make it possible to efficiently address the production and management of some crops, as shown by studies in the regions of Andalusia, Catalonia and Valencia carried out by Colombo and Perujo-Villanueva (2017), Parcerisas (2015), and Tudela-Marco and Garcia-Alvarez-Coque (2017). Joint cropland management by marketing cooperatives enables an increase in farmers' incomes through cost reductions achieved via economies of scale and more professional management.

In this paper, the main research aims to identify the economic and social attributes, or combinations thereof, that characterize a cooperative profile capable of undertaking a joint cropland management strategy. The contribution of this research is twofold. First, based on a survey administered to cooperatives in Spanish rural areas, it examines the relevance of specific drivers of this type of social innovation; and second, it proposes a framework to determine which aspects, largely related to the cooperatives' social capital, need to be strengthened in farming cooperatives interested in carrying out a joint cropland management strategy.

This paper is structured as follows: Section 2 introduces the conceptual framework of join cropland management and social innovation, and we describe the main drivers of join cropland management strategies. Section 3 introduces the data collection and methods used in our study. The analysis is mainly based on a cooperatives survey, and the methodology used is a fuzzy set Qualitative Comparative Analysis (fsQCA). Section 4 presents the fsQCA findings and possible pathways for joint cropland management, considering the relevance of certain characteristics, such as the membership's age, the existence of open and pluralistic governance, the cooperative's innovative behavior, the cooperation among cooperatives, and the cooperative's size. The analysis is completed by consulting the surveyed cooperatives' managers for their opinion on joint cropland management's main advantages and limitations. Finally, the main conclusions, implications, limitations, and areas of further research are presented.

## 2. Conceptual framework

The present study focuses on agri-food marketing cooperatives. They sell members' production and provide common supplies and services that improve cooperative members' production and marketing, who usually own the cultivated land. Tudela-Marco and Garcia-Alvarez-Coque (2017) described a noteworthy example of a marketing cooperative in Spain that has attempted consolidation through joint cropland management, though there is a lack of research identifying this practice's key social drivers. We start the conceptual discussion by considering a joint cropland management strategy as a kind of social innovation because cultivating their members' land has not been, until recently, a service provided by marketing cooperatives in Spain.

New models of land governance, through formal and informal agreements based on trust, can be considered a form of social innovation (Newell and Swan, 2000). As we focus on cooperatives as a kind of business, we consider social innovation as the collective capacity of a firm to innovate, learn, and adapt (Mc Elroy, 2002), to share knowledge (Phillips et al., 2015), and to collectively engage in purposeful actions and reflexively monitor their outcomes (Cajaiba-Santana, 2014). Unlike product and process innovations, social innovation is not only about introducing new types of production or exploiting a new market space; it also concerns new ways of fulfilling needs in terms of giving people a role in production (Spear, 2011) and, as in our case, to conceptualize the precise nature of the problem that needs to be addressed collectively (Mulgan, 2006; Spear, 2011). This characteristic implies that social innovation is supported by a significant social capital level, highly relevant for cooperative organizational formulas, such as joint cropland management.

Social capital, entrepreneurship, and the search for efficiency are concepts that help to understand why some cooperatives may undertake innovation strategies. Nilsson et al. (2012) highlight that social capital is enhanced by the cooperative model itself, with its principles, values, ownership, and corporate purpose (Ruostesaari and Troberg, 2016). More specifically, Takahashi et al. (2018) underline the relevance of social capital in rural communities for successful coordination leading to cropland consolidation projects. In this context, social capital (Ostrom and Ahn, 2003; Tregear and Cooper, 2016) is a useful concept to reflect landowners' and farmers' confidence about investing in collective actions. The literature presents three types of social capital: bonding, which describes the development of local relationship structures within a territory or organization; bridging, which is the social capital that is established between territories, groups, or organizations; and finally, linking, which refers to hierarchical links among institutional actors (Cofré-Bravo et al., 2019; Jakobsen and Lorentzen, 2015; King et al., 2019; Löwe et al., 2019; Putnam, 2000; Ruiu et al., 2017; Titeca and Vervisch, 2008; Widmalm, 2005). All three types are relevant for building trust in joint cropland management schemes, as the governance of such schemes may rely on the organization itself or its relations with other organizations, i.e., other cooperatives, local councils, and rural administration. Land management operations require collective action, which is sometimes limited by moral hazards as well as agency problems (Álvarez-Pérez et al., 2000). Cooperatives often fail to attract landowners to lease their land for joint cultivation, mostly due to what Rothstein (2005) calls a 'social trap' caused by a lack of mutual trust. Once a group suffers from persistent mistrust, it becomes difficult to overturn the situation until some event or organizational innovation re-establishes trust or improves the organization's social capital. In these situations, social capital is crucial to encourage the adoption of

innovations by farmers, particularly in terms of assessing their costs and benefits (Steenwerth et al., 2014). Strengthening social capital in the network of landowners and land users is one of the motivations for undertaking collective initiatives aimed at land consolidation (Burress and Cook, 2010).

Developing social innovations as local solutions require the cooperatives to behave as social entrepreneurs. The term describes different kinds of community ventures, voluntary, public, or private, that address social issues (Cook and Plunkett, 2006; Dufays and Huybrechts, 2014; Phillips, 2011). These ventures can arise through the pooling of resources by similar actors or organizations with different but complementary capacities or knowledge (Montgomery et al., 2012). Through a collective social enterprise, it is possible to take advantage of existing resources, create new ones, and generate institutional arrangements that support these changes. Social enterprises obtain their resources through social engagement, in which resources are exchanged through a collaborative process that supports the development and growth of individuals and communities (Meyskens et al., 2010). Therefore, social capital is favoring social entrepreneurship. A cooperative that adopts a joint cropland management strategy can be considered a form of collective (intra-organizational) entrepreneurship, as multiple individuals are collaborating to establish organizations operated for mutual benefit.

The search for efficiency is also moving cooperatives to undertake farmland consolidation projects. Farmland mobility is slow in many rural areas, partly because of farmland exchanges' transaction costs. Joint cropland management does not change the land's ownership but allows the cooperatives to control the cultivation process. Letting or leasing the land to the cooperative can minimize transaction costs that avoid a shift in the land ownership, so parties involved can find an efficient combination of contracting and ownership, in the sense of Hansmann (1996). We have considered joint cropland management as a "collective use of land" because the cooperative is not an external agent, but instead, it belongs to its members -among them, the landowners leasing the land- and the ultimate coordination corresponds to them, according to the cooperative governance rules. Joint cropland management offers a way to consolidate land plots into larger agricultural units, facilitating their efficient management (Takahashi et al., 2018). This, in regions or countries with a high fragmentation of the land property and smallholding, such as Spain, represents an opportunity to revitalize the economy of rural areas. As a form of collective entrepreneurship, joint cropland management increases intra-firm efficiency (Papadimitri et al., 2020). A joint management project can be successful if it can reduce transaction, agency, and collective decision-making costs. In some cases, this can be partly achieved through multi-stakeholder initiatives, involving several cooperatives or other actors such as local councils, linked to forms of bonding and bridging social capital.

Our interest is about understanding the characteristics of the agri-food cooperatives that undertake joint cropland management strategies. As we do not have sufficient published knowledge on drivers of such strategies, we need to build *a priori* propositions. To do so, we have combined the experts' consultation with the analysis of similarities found in the literature. Thus, a multi-actor focus group was created in 2018 with representatives of one marketing cooperative (Rural San Vicent); a federated cooperative, Anecoop, which integrates 69 marketing cooperatives as members; and Cooperativas Agroalimentarias, the representative organization of Spanish agricultural cooperatives. The intention was to identify drivers associated with those cooperatives that start joint land management initiatives, that could be subsequently used in a direct survey. The drivers identified in the focus group are summarized in Table 1 that describes the drivers, their underlying advantages for undertaking joint cropland strategies, and their relationship with the three main concepts discussed before. The drivers are further described in this section. Some of these identified drivers were related to the need for generational renewal in the cooperative membership, the firm's degree of innovativeness, and the pluralistic governance. Firm's dimension and willingness to collaborate with other cooperatives were also identified due to their influence on transaction costs, trust, and the delegation of land management planning capacity. The focus group also acknowledged that new legislation supporting flexible ways of land consolidation could also favor joint cropland initiatives.[1] As a complementary step, references to these drivers in the literature were searched, and *a priori* propositions were established.

**Table 1**
Underlying advantages of drivers of joint land management strategies emerging from the focus group.

| Drivers | Related advantages for each social and economic dimension | | |
|---|---|---|---|
| | Social Capital | Social entrepreneurship | Search for efficiency |
| Innovative orientation | Innovation capacity enhanced by social capital | Willingness to undertake | Increase productivity, competitive advantage, and returns |
| Pluralistic governance | Open to participation | Open to new projects | Improve decision-making and performance |
| Generational renewal | | Need to innovate | Need to reduce transaction costs of structural improvement |
| Cooperation with other organizations | Institutional support | Collaboration for innovation | Flexibility to gain dimension |
| Size | | | Resource availability decision-making costs |

### 2.1. Size

In general terms, size in agricultural cooperatives has generally been signaled as a facilitator of competitive advantage, bringing both cost reductions associated with economies of scale and differentiation through innovation (Arcas et al., 2011; Bijman and Iliopoulos, 2014). In the case of agri-food marketing cooperatives, securing product supply can be a crucial motivation for joint cropland management projects in order to achieve profitability thresholds. In this sense, land abandonment of the activity by members generates a supply problem that can undoubtedly trigger these processes.[2] There is no consensus about the size effect on members' attitudes towards cooperatives. Burt and Wirth (1990) argue state that size does not explain members' behavior towards cooperatives. On the other hand, Ruef (2010) and Montegut et al. (2011) state that size can be a crucial feature of entrepreneurial groups because it affects their internal cohesion and also the level of entrepreneurial effort by participants. Size, referred to the number of members, is perceived by some authors as a dimension of member heterogeneity that affects the costs and effectiveness of collective governance (Banerjee et al., 2001; Bijman, 2005; Hansmann, 1996; Hanf and Schweickert, 2007; Iliopoulos and Cook, 1999; Iliopoulos and Valentinov, 2018; Nilsson, 2018). Moreover, it can be more difficult for members to understand some operations in some very large cooperatives, leading to them becoming dissatisfied and uninvolved and mistrustful of the board's guidelines. This can be reflected in less face-to-face interaction

[1] The existing farm structure regulations in Spain do not support joint cropland cultivation cooperative initiatives, with the exception of the recently passed Farm Structures' Law in Valencia Region (Law 5/2019).

[2] Other solutions such as cooperatives purchasing from non-members are also implemented but their discussion and limitations is out of the scope of this paper.

between members and leaders, implying less involvement among members and more difficulties in solving collective action problems (Nilsson et al., 2012). Furthermore, small and medium-sized cooperatives may be more flexible, which could facilitate more entrepreneurial behavior even when they have limited resources. Besides, some of these small and medium-sized cooperatives have lower bureaucracy levels and learn continuously in the competitive market (Real et al., 2014).

Nevertheless, joint land management requires an organizational capacity that is not always available in small cooperatives, enjoying larger cooperatives a crucial advantage in that they have more human and financial resources and are therefore more likely to be pioneering, innovative, and risk-tolerant than their smaller counterparts (Real et al., 2014). Consequently, we hypothesize that in larger cooperatives, the benefits of greater managerial capacities, innovation, efficiency, and other economies of size outweigh potential losses in the decision-making processes. We thus raise the following:

**Proposition 1**. *Larger size cooperatives have advantages for carrying out joint land management strategies.*

### 2.2. Pluralistic governance

For cooperatives, the Board of Directors (BD) is the most important means that members have of monitoring managerial behavior (Österberg and Nilsson, 2009). Several scholars have studied the governance of cooperatives from different perspectives: through their ownership rights and organizational models (Chaddad and Cook, 2004; Chaddad and Iliopoulos, 2013; Grashius, 2019; Meliá Martí et al., 2018; Nilsson, 2018; van Bekkum and Bijman, 2006); innovations in the internal governance (Bijman et al., 2014); members participation and trust (Öesterberg and Nilsson, 2009; Barraud-Didier et al., 2012). The composition of the BD and particularly its diversity influences the decision-making and performance of the firms. Following decision-making theory, diversity increases firm-level production as diversity brings more perspectives and knowledge, ensuring that no single perspective or set of knowledge is privileged to the exclusion of others (Bae and Skaggs, 2019; Marcel et al., 2010). Firms can integrate specialized knowledge of multiple individuals through socialization, and a more pluralistic participation of social groups that view a multi-stakeholder alliance as a way of pursuing social and environmental goals can be a motivation for collective entrepreneurship (Burress and Cook, 2010; Ruostesaari and Troberg, 2016).

It is not easy to find indicators of pluralistic governance in cooperatives. A pluralistic BD should be one in which a variety of categories of members are represented. For years there has been concern about low levels of member participation and the lack of involvement of certain groups in BD of cooperatives —such as women and young people— to bring in different stakeholder perspectives (Cornforth, 2004). In this study, we have opted to consider that a BD open to young and women's participation would indicate an open perspective and higher propensity for change. The age of board members influences decision-making. Older, male, and specialized farmers are more likely to participate in decision-making processes than farmers with few resources and those dissimilar in terms of age, gender, and location (Mwambi et al., 2020). It would be expected that a BD with older members and members approaching retirement age would influence the decision-making towards less risky choices (Fulton and Giannakas, 2013). The inclusion of young members on the board of directors offers a broader perspective and may encourage board development and learning, which may in turn foster creative, innovative ideas and enrich strategic decision-making (Galia et al., 2015; Song et al., 2020).

Regarding gender diversity, the need for organizations that incorporate the advantages of a plurality of human resources should be an objective in itself that would enrich the way of managing companies (Berenguer Contrí et al., 2005). According to International Labour Organization (ILO) and the International Cooperative Alliance (ICA), in every region of the world, women's participation in both membership and leadership in cooperatives is significantly below average (Schincariol and Mcmurtry, 2005). In Spanish agri-food cooperatives, although 26% of cooperative members are women, only 7.4% of them are on the board, and only 3.6% serve as a chair of the board (Cooperativas Agroalimentarias de España, 2020). Consequently, opening up the board of directors to incorporating young people and women brings complementary new approaches to management.

**Proposition 2**. *Cooperatives that promote diversity on their boards, especially involving women and young people, have advantages for carrying out joint cropland projects.*

### 2.3. Age of the membership

There are two contradictory processes involved in influencing the average age of the membership on the likelihood of a cooperative undertaking joint cropland management initiatives. The first process concerns the more innovative or entrepreneurial character of young membership. The second is the relationship between the landowners' age and the probability of abandoning farming, and therefore, their willingness to supply land to the joint initiative.

As for the first type of influence, in a study of Spanish olive oil cooperatives (Montegut et al., 2011), generational conflicts were found between younger and older members who had different views on the cooperative activity. Such differences can be found in educational level, farm size, technology, geographical location, and social networks (Cofré-Bravo et al., 2019; Hakelius, 1999; Montegut et al., 2011). Hakelius (1999) indicates that young farmers can be less committed to the cooperative and more open to trade with other customers, avoiding cooperative exclusivity. On the contrary, other studies in Hungary (Baranyai et al., 2018) and in Kosovo (Muriqi et al., 2019) showed that younger and more educated members have a more positive attitude towards cooperation.

As for young cooperative members' propensity to adopt innovative formulas such as the one understudy, previous research is inconclusive. While young farmers are considered to be more innovative, entrepreneurial, and resilient (Hamilton et al., 2015), other works come to different conclusions. In a study of 110 young farmers in a rural area of northern Greece, Koutsou et al. (2014) found that most of them remained trapped in the old structures and were reluctant to adopt innovations, establish collective actions and receive training. Ciburiene (2015), in a study developed in Lithuania, concluded that young farmers having a lower level of education can cause problems when implementing innovations or new organizational forms.

Besides, a more senior membership means that members face the generational renewal problem. This leads to the second type of influence, which depends on older landholders' propensity to abandon farming. This influence may be critical, as senior landowners can easily delegate the land plots to the cooperative.

**Proposition 3**. *Cooperatives with a higher proportion of senior farmers or a lower proportion of young farmers in their membership may be more willing to adopt joint land management strategies.*

### 2.4. Innovative orientation

Cooperatives act "entrepreneurially" when the business activity (innovation, new products, new markets, among others) is seen as a collective strategy (Cook and Plunkett, 2006; Foreman et al., 2013; Groot Kormelinck et al., 2019; van Dijk and Sverrisson, 2003). In these organizations, the learning and financial capabilities and skills of involved members can have a multiplier effect and promote productive efficiency, strengthening the organization's production base (Burress and Cook, 2010; Gómez et al., 2020). Cooperatives can also be seen as innovation intermediaries, whose function is to coordinate and facilitate

innovation processes among their members and, possibly, provide various other functions related to different aspects of innovation. Kilelu et al. (2011) found that some established organizations which initially provided more traditional extension support to smallholders have shifted their mandates and scope and have taken on a more facilitative role. Within this framework, cooperatives as innovation intermediaries can provide the necessary services to enable innovation, create ties, and secure institutional support.

Regarding land consolidation projects, they can be helpful to test or implement product or process innovations that would be difficult to develop with the current fragmentation of farms' structure. Thus, in order to scale up and commercially implement valuable product innovations (e.g., new varieties) or process innovations (e.g., organic or zero-waste farming), landholders can be encouraged to consolidate agricultural plots under centralized management.

In this case, we expect that cooperatives with skills to launch innovative processes can show similar innovative behavior when promoting and managing joint management projects.

**Proposition 4**. *Cooperatives with a more innovative orientation have advantages for carrying out joint land management strategies.*

### 2.5. Cooperation among cooperatives

A collective enterprise's success is sometimes related to the collaboration between groups of actors and organizations (Hardy and Maguire, 2008; Montgomery et al., 2012). This possibility relates to the bridging and linking aspects of social capital mentioned above. Through interactions in collaborative networks and interactive learning processes, companies can access various types of knowledge and information (Baldwin and von Hippel, 2011; Bjerke and Johansson, 2015; Miozzo et al., 2016). Interactions with research institutes, universities, and other innovation intermediaries (Lasagni, 2012; Tobiassen and Pettersen, 2018) may also be favorable for business performance. Multiple actors' actions are based on inter-institutional networks, which can be thought of as strategies to define new business models (Mourdoukoutas and Papademetriou, 2002) or as ways to achieve social and environmental objectives (Grimm et al., 2013). Agricultural cooperatives can form the first envelope of collective business activity or shared cultivation (Foreman et al., 2013) that involves the consolidation of farmland, while the multi-stakeholder networks can act as a second envelope of supporting institutions.

Cooperation among cooperatives is the sixth cooperative principle of the International Cooperative Alliance (ACI, 1995), and states that cooperatives serve their members more effectively and strengthen the cooperative movement by working together through local, national, regional, and international structures. Inter-cooperative cooperation makes it possible to create networks and horizontal links between cooperatives, which endows them with flexibility and responsiveness in dealing with change and makes it easier to achieve economies of scale (Marcuello Servós and Saz Gil, 2008).

Cooperation among cooperatives has been widely implemented in Spain (mainly through inter-cooperative agreements of different scope and federative cooperatives) as a way of responding to one of their major weaknesses, which is their small size (Arcas et al., 2019). These arrangements have allowed overcoming some of the structural and economic limitations of small cooperatives without abandoning their business model (Sánchez Pachón, 2018). Cooperation among cooperatives is also a reflection of the collaborative attitude of individual cooperatives' members.

It can be expected that more collaborative nature of both spheres (cooperative and members) can be helpful when it comes to tackling problems such as the lack of generational renewal, the exit of members, and the consequent loss of production by adopting joint land management strategies.

**Proposition 5**. *Cooperatives that carry out collaborative or integration actions with other cooperatives have advantages for carrying out joint land management strategies.*

## 3. Data and methodology

The primary source used to collect the data is a survey of agri-food marketing cooperatives' managers. It was sent online and was answered anonymously by cooperative managers during January 2019. A total of 49 responses were obtained, of which 35 were selected because they had filled out all the questions necessary for our analysis.

The survey was conducted with the collaboration of the leading regional cooperative associations in Spain (Cooperativas Agro-alimentarias and regional federations) who were supportive to select agri-food cooperatives with a primary orientation to marketing. In terms of their geographical coverage, the study mainly focused on Spanish rural areas where the problem of land abandonment is common: 71% of the responses were from the Region of Valencia and 14% from Catalonia. Regarding the portfolio of the marketed products, all the surveyed cooperatives share a specialization on Mediterranean tree crops with about two thirds including citrus fruits and one third including other fruit and tree crops. The sample reflects a balance of sizes, with 51% having more than 500 members. Although the sample size is not representative of the entire agri-food cooperative sector in the study area (there are around 800 cooperatives specialized in fruit and vegetables in Spain), the analysis may provide useful information on the scope, motivations and characteristics of marketing cooperatives that implement joint land management schemes, in particular in Mediterranean areas where permanent crops are dominant.

Based on this survey, two analyses were performed. In the first one, some attributes were analyzed by using the fuzzy set Qualitative Comparative Analysis (fsQCA) methodology (Ragin, 2008). This methodology, used mainly in the social sciences, makes it possible to identify a series of conditions for a given outcome to take place (Schneider and Wagemann, 2012), and it is suitable for exploratory analysis of conditions that lead an outcome in small samples. As such, it is a theory-building approach stemming from a joint analysis of cases. This methodology suits our study well as we are aiming to understand a social phenomenon. The starting point of the QCA is to assume that the phenomena that occurs has a complex causality.[3] Different combinations of characteristics—called routes or recipes—can give rise to the same outcome, and specific characteristics can have different effects, depending on which other characteristics they combine with (Legewie, 2013). QCA techniques and their applications are generally employed for a small or intermediate number of cases (between 10 and 50); however, QCA techniques have also been fruitfully applied in research designs with a large number of cases (Berg-Schlosser et al., 2012).

Different modalities of the QCA approach have been applied in other studies focused on the agricultural sector, aiming at shedding light on socio-economic phenomena where prior evidence is scarce or leads to inconclusive results. A common feature of these studies is the limited number of cases from which information is taken, suitable for social studies with relatively small samples (Nieto-Aleman et al., 2019; Alama-Sabater et al., 2019; Garcia-Alvarez-Coque et al., 2020). For example, Qin and Liao (2016) conducted a systematic review of 20 recent case studies on the relationships between migration and agricultural change in China. Lankoski and Thiem (2020) examined the impact of agricultural support policies on sustainable productivity in OECD countries. Florea et al. (2019) assess the conditions required for the sustainability of 20 Romanian agricultural cooperatives. Turning to collective land management, Arts and de Koning (2017) conduct a

[3] fsQCA is a particular modality of the general QCA. It considers that phenomena may vary by level or degree in a continuous way, and allows simultaneously for qualitative and quantitative assessment. See Ragin (2008) for a thorough discussion.

systematic cross-case comparison on community forest management to explain their performance.

The first step for the fsQCA analysis is selecting relevant recipes of conditions that lead to the expected outcome. This selection of recipes must be guided by theoretical criteria and for a relatively low number of cases (Berg-Schlosser and Meur, 2012; Schneider and Wagemann, 2010). In this study, the mix of possible causal configurations that lead to the outcome is formed by the following conditions:

a SIZE has been measured by a combination of turnover and the average number of employees.
b PLURALISTIC GOVERNANCE: the proportion of women and young people on the board of directors,
c YOUTH IN THE SOCIAL BASE: the proportion of cooperative members under 40 years of age.
d INNOVATIVE ORIENTATION: related to the promotion of new crops (varieties or species), organic or processed products, and sustainable products and processes; and,
e COOPERATION+: participation of the cooperative in federative cooperatives or in other partnership formulas.

With these conditions, 32 possible recipes can be formed ($2^5$). The presence or absence of the individual cooperatives in the sets showing these conditions was determined through the fsQCA method from survey data and thresholds established by calibration. The calibration was carried out by defining fuzzy sets through criteria based on data from Cooperativas Agroalimentarias (2020). This process was performed based on the calibration and good practice procedure proposed by Basurto and Speer (2012). The outcome variable is a fuzzy one named JOINT CROPLAND MANAGEMENT, and it is based on defining the set of surveyed cooperatives that claim to engage in this practice. In summary, we are defining a set of cooperatives showing certain attributes and the outcome.

The calibration of the SIZE (Table 2) condition is based on a combination of the number of members and turnover, which is in line with previous research (Hudson and Herndon, 2002; Arcas et al., 2011; Liang and Hendrikse, 2013; Meliá-Martí et al., 2020). The size, in terms of average number of members and turnover, was used for the point of total ambiguity, with those who were above this average inside the set and those who were below outside the set. The average number of members in Spanish agri-food cooperatives is 316, and the average turnover is 8 million euros (Cooperativas Agroalimentarias de España, 2020). To obtain the fuzzy size value, the number of members variable was classified into three values and combined with five values of the turnover variable. From these two numerical and monetary criteria of size, we derived five classes of size fuzzy values.

The PLURALISTIC GOVERNANCE condition refers to whether the inclusion of women and young people on the board of directors has been promoted. The answers were YES or NO, so it is translated into a binary variable where yes = 1 and no = 0.

The YOUTH IN THE SOCIAL BASE (Table 3) condition measures the proportion of young people among the total number of members. In Spanish agri-food cooperatives, the average percentage of members under 45 years is 30% (Cooperativas Agroalimentarias de España, 2005).

The INNOVATIVE ORIENTATION (Table 4) condition arises from three possible innovations promoted by agri-food cooperatives that can be considered relevant in agricultural production: i) incorporation of new species or varieties to be marketed; ii) organic or processed products, and iii) new techniques to minimize chemical residues and excess of nutrients in the field. Each possible innovation was evaluated separately in the survey through a Likert scale where 1 represented the absence of activity linked to the field and 7 when the activity is fully incorporated in the cooperative. Of the three innovations, the one with the highest value was taken as indicative of the overall innovative orientation of the cooperative (given the comments raised in the focus group and our knowledge of the cooperatives' behavior, we consider it sufficient to have innovated in one of the three possible activities).

The COOPERATION+ (Table 5) is a fuzzy variable that measures the participation of the cooperative in federative cooperatives or in other cooperatives integration formulas. The data were the survey responses to a set of questions about forms of integration or association with other cooperatives.

The outcome variable is a fuzzy one named JOINT CROPLAND MANAGEMENT (Table 6), and it is based on the actual joint land management carried out by cooperatives. For the calibration, following a fuzzy approach, "presence" was defined as indicating cases that carry out cropland grouping and "absence" those that do not perform any agronomic service for cooperative members, with intermediate cases allowed by the fuzzy definition.

In summary, membership of the group of cooperatives that carry out joint cropland management was evaluated as follows:

Fs JOINT CROPLAND MANAGEMENT = Fs [SIZE, PLURALISTIC GOVERNMENT, YOUTH IN THE SOCIAL BASE, INNOVATIVE ORIENTATION, COOPERATION+]where Fs indicates the degree of membership in the fuzzy sets. It is not the coefficients of a linear function that are evaluated, but the extent to which the degree of belonging to the resulting group is associated with recipes or patterns of belonging to the groups established with the aforementioned calibration thresholds.

The recipes for joint land management strategies are selected based on consistency and coverage measures. Consistency measures the proportion of real cases that have the condition—or combination of conditions—identified as sufficient or necessary and present the outcome. According to Legewie (2013), it is equivalent to the idea of significance in statistical models. Coverage indicates the percentage of the cases presenting the desired outcome and the combination of conditions identified as necessary or sufficient. This parameter can be equated to the coefficient of determination R2 of statistical models (the percentage of the variance that is explained by the variables). Both parameters vary

**Table 2**
Calibration for Size condition.

| Members variable value | Turnover variable value | Size fuzzy value | Interpretation |
|---|---|---|---|
| 0 | 0; 0.25; 0.5; 0.75; 1 | 0 | Very small (Fully out) |
| 0.5 | 0.25 | 0.25 | Small (More out than in) |
| | 0.5 | 0.5 | Medium size (Cross-over) |
| | 0.75 or 1 | 0.75 | Big (More in than out) |
| 1 | 0.25 or 0.5 | 0.75 | Big (More in than out) |
| | 0.75 or 1 | 1 | Very big (Fully in) |

Members variable value: 0 = fewer than 100 associates, 0.5 = between 101 and 500 associates; 1 = more than 501 associates. Turnover variable value: 0 = €0 a €300 thousand, 0.25 = € 301 thousand to €1 million, 0.5 = €1 million to €10 million, 0.75 = €10 million to €50 million, 1 = more than €50 million.

**Table 3**
Calibration for youth in the social base condition.

| Percentage of members under 40 years old | Fuzzy value | Interpretation |
|---|---|---|
| 0–5 | 0 | Almost no members under 40 years old (fully out) |
| 5–10 | 0.166 | Very few members under the age of 40 (mostly but not fully out) |
| 10–15 | 0.333 | (More or less out) |
| 15–20 | 0.5 | Maximum ambiguity (Cross-over) |
| 20–25 | 0.666 | (More or less in) |
| 25–30 | 0.833 | Almost at the average for Spanish agri-food cooperatives (mostly but not fully in) |
| 30 or more | 1 | An average number of young members or more (fully in) |

**Table 4**
Calibration for innovative orientation condition.

| Likert scale response | Fuzzy value |
|---|---|
| 1 (absence of innovative activities) | 0 (fully out) |
| 2 | 0.2 (mostly but not fully out) |
| 3 | 0.2 (mostly but not fully out) |
| 4 | 0.4 (More or less out) |
| 5 | 0.6 (More or less in) |
| 6 | 0.8 (mostly but not fully in) |
| 7 (one or more innovative activity fully developed) | 1 (fully in) |

**Table 5**
Calibration for cooperation among cooperatives condition.

| Item | Fuzzy value | Interpretation |
|---|---|---|
| Has participated in fusion processes | 1 | cooperation |
| Has entered into binding agreements in the form of commercial collaboration | 1 | cooperation |
| Has participated in flexible collaboration formulas with other organizations | 0.67 | some actions for cooperation |
| Has explored integration formulas that have not materialized | 0.33 | tried but failed to achieve cooperation actions |
| Nothing at all | 0 | did not try |

**Table 6**
Calibration for the outcome condition Joint cropland management.

| Item | Fuzzy value | Interpretation |
|---|---|---|
| direct land management plus partnership agreements with farmers | 1 | Grouping (fully in) |
| direct land management | 0.75 | One step before grouping |
| one or more agricultural services to members | 0.25 | (more out than in) |
| no specific services offered | 0 | (fully out) |

between 0 and 1, with 1 being the maximum value. For practical purposes, the consistency should generally be above 0.8, with a value not less than 0.75 in any case.

The second type of analysis carried out is a qualitative study based on managers' motivation for and difficulties involved in undertaking joint cropland management. Indeed, QCA is particularly useful for combination with conventional qualitative studies (Schneider and Wagemann, 2010). The opinions of cooperative managers were evaluated in the survey through Likert-type scales (ratings from 1 to 7). The survey asked managers about the main advantages of a cooperative when it comes to grouping and directly managing cropland plots. Empirical findings derived from the surveys broaden the theoretical analysis and the subsequent data interpretation.

## 4. Results and discussion

Of the cooperatives surveyed, 66% have a relatively large concerning their turnover and number of members (more than 500 members and more than €300 thousands of turnover). Regarding the plural governance condition, 77% of the cooperatives promote the inclusion of women and young people in the BD. All of the sample's cooperatives have less than 30% of members under 40 years of age, and 75% have less than 15% of members under 40 years of age. As regards to innovativeness, 51% of the surveyed cooperatives indicate an innovative orientation. 74% of the cooperatives have participated in different forms of inter-cooperative collaboration. 57% of the cooperatives surveyed are carrying out joint cropland management, which is implemented in different ways; 50% of them with partnership agreements with farmers, and 50% managed directly by the cooperatives. As for the rest of the cooperatives, 26% offer one or more agricultural services to their members, and 17% do not offer specific agricultural services.

Table 7 shows the results of fsQCA, with the retained routes expressed through logical operators: "∼" means the logical operator "absence," and "*" means "and." In the present case, after running the program, the results of the complex solution and the intermediate solution had the same configurations, so we only present the intermediate solution in the Table.[4]

There are two possible routes with recipes or combinations of conditions that may be "sufficient" to achieve the grouping of plots for cultivation, with a significant consistency score—the model as a whole has a consistency score of 0.834. The logical equation indicates that the configurations that explain JOINT CROPLAND MANAGEMENT (Fig. 1) are usually associated with the combination SIZE and PLURALISTIC GOVERNANCE as part of any recipe that exceeds the consistency threshold. Simultaneously, the absence of YOUTH IN THE SOCIAL BASE or the combination COOPERATION+ and INNOVATIVE ORIENTATION are interchangeable as routes for joint management, a finding that merits future research.

Out of the sample of 35 cooperatives studied, 20 present the outcome and, of those 20, 17 present the retained configurations. Therefore, the two selected recipes in Table 6 are considered a good basis for achieving the outcome. These pathways are summarized in Fig. 1. The core part of the suggested recipes combines size with pluralistic governance. It suggests that larger cooperatives with pluralistic governance are in a favorable position to make inroads into collective cropland initiatives. This finding confirms Propositions 1 and 2. Besides, joint land management initiatives are an outcome of recipes that, in addition to the core attributes, feature one of the two following pathways (or both at the same time):

i) the share of young members of the social base is relatively low. This result supports Proposition 3. It would suggest that one pathway to joint cropland management strategy is having an older social base.

**Table 7**
fsQCA intermediate solution for Joint Cropland Management.

| Model | | |
|---|---|---|
| Joint Cropland Management = Fs (Size, Innovative Orientation, Pluralistic Governance, Youth in the Social Base, Inter-cooperation) | | |
| solution consistency | 0.834071 | |
| solution coverage | 0.636287 | |
| Conditions | Recipes (over consistency cut-off) | |
| | **i** | **ii** |
| Size | ● | ● |
| Pluralistic Governance | ● | ● |
| Youth in the Social Base | ○ | |
| Innovative Orientation | | ● |
| Cooperation+ | | ● |
| Consistency | 0.849398 | 0.844262 |
| raw coverage | 0.594937 | 0.521519 |
| unique coverage | 0.114768 | 0.041350 |

Note: Frequency cut-off = 1; Consistency cut-off = 0.807692. Black circles '●' indicate the presence of conditions, white circles '○' indicate the absence or negation of conditions, and blank cells indicate irrelevant conditions.

[4] The complex, parsimonious, and intermediate solutions of QCA treat "remainders" (logical causal patterns with no observed cases) differently, either excluding them (complex solution), including those which simplify the solution (parsimonious solution), or including those which simplify the solution and which are consistent with researcher-specified causal assumptions (intermediate solution). See Garson (2016).

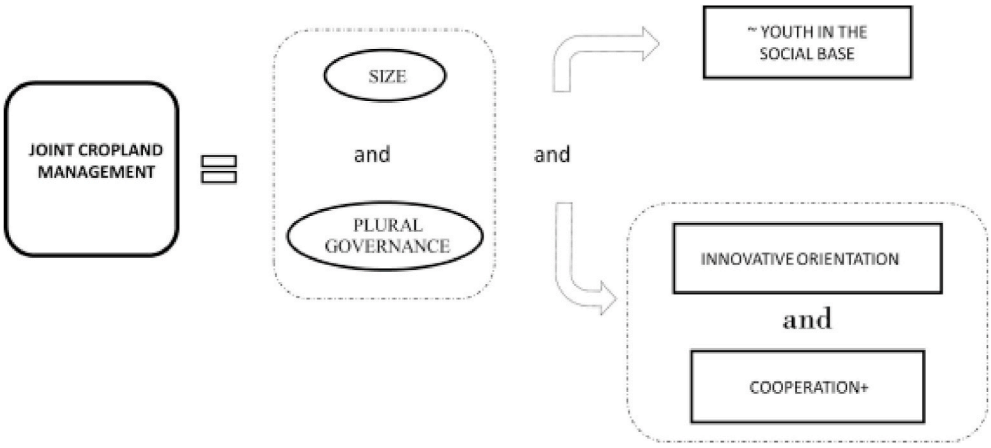


**Fig. 1.** Logical pathways of conditions that explain joint cropland management strategies.

This in turn implies that the motivation for entrepreneurship results not from the innovative nature of the social base but rather as a potential solution to abandoned plots by senior members. These farmers seem more willing to hand their plots over to the cooperative than to abandon the land. Even if younger members may be more likely to undertake new projects like this, the possible effect is masked by the large proportion of senior members.

ii) the cooperatives are more innovative and cooperate with other cooperatives. This part of the recipe confirms Proposition 4 and 5. The condition that innovative cooperatives have advantages for carrying out joint land management underlines the remarks by Kilelu et al. (2011) on the role of cooperatives as intermediaries of innovation, with appropriate internal leadership. In turn, the pathways including cooperation among cooperatives confirm that cooperatives that overcome structural and economic limitations through cooperation with other entities are more likely to be able to face up to the current problem of land abandonment and the consequent loss of production (Arcas et al., 2019).

The fsQCA allows the researcher to evaluate the necessary conditions, which are considered critical in the sense that their absence means the outcome is not achieved (Table 8). Our findings suggest that none of the analyzed attributes is individually necessary for the cooperatives that carry out joint cropland management strategies, as they show consistency ratios below the 0.9 consistency threshold proposed by Schneider and Wagemann (2012). The presence or absence of any of these conditions alone is not crucial for the outcome. Despite this, the presence of PLURALISTIC GOVERNANCE and the absence of YOUTH IN THE SOCIAL BASE show a higher consistency value than the other conditions and closer to the threshold.

An analysis of the cooperatives managers' opinions, included in the survey, was carried out to complement the results obtained with the fsQCA methodology. Respondents assessed, through Likert scales, the advantages of plot groupings (Fig. 2) and were divided into two groups of cooperatives, according to whether or not they choose joint land management strategies. For both groups, recovering abandoned cropland is a significant advantage of collective action, which is consistent with the problem that many farmers lack incentives to continue cultivation. Nevertheless, it is striking that one of the least valued advantages by cooperatives that carry out joint land management is the incorporation of young professionals, which suggests that many cooperatives do not identify this as a goal. This is not entirely surprising as the social base is normally made up of senior farmers who do not see a clear future for new generations in agriculture. On the critical accompanying factors for plot grouping (Fig. 3), managers of cooperatives that have already embarked on these joint activities attach more value to government support and the need to provide advice to cooperative members and landowners. Most interviewees are in favor of undertaking actions to promote joint land management initiatives among their members.

**Table 8**
Necessary conditions analysis.

| Outcome variable: Joint Cropland Management | | |
|---|---|---|
| Conditions proposed | Consistency | Coverage |
| Size | 0.78481 | 0.688889 |
| ~Size | 0.405063 | 0.64 |
| Innovative Orientation | 0.759494 | 0.694445 |
| ~ Innovative Orientation | 0.407595 | 0.600746 |
| Pluralistic Governance | **0.848101** | 0.644231 |
| ~Pluralistic Governance | 0.151899 | 0.333333 |
| Youth in the Social Base | 0.278481 | 0.507692 |
| ~Youth in the Social Base | **0.835443** | 0.682759 |
| Cooperation+ | 0.780591 | 0.642361 |
| ~Cooperation+ | 0.308017 | 0.55303 |

~ is the logical operator meaning "absence."

## 5. Conclusions

Although this research is exploratory given the limited size of the sample, it reveals that characteristics of the studied cooperatives, some of which are related to their social capital, define two possible pathways to make inroads into the grouping of plots: a) Larger cooperatives, with pluralistic governance and an older social base made up of senior members willing to provide their plots; b) Larger cooperatives, with pluralistic governance, which promote innovative activities and have a culture of cooperation with other cooperatives.

Social and economic innovation, size, and propensity for cooperation among cooperatives are key conditions that help create a cooperative profile capable of tackling the challenge of members' land abandonment and the consequent loss of production through cooperative management.

The size of the organization emerges as a crucial factor in enabling this form of innovation, insofar as the grouping of land requires a capacity and management ability that are less commonly found in small cooperatives. This result is in line with the innovation-enhancing effect of size found in literature. Furthermore, given that this practice has only recently been incorporated in many cooperatives, it is more likely to be successfully implemented in large cooperatives, given their greater social base. It should be borne in mind that in cooperatives, the flow of information among members is vital; as such, the success of some projects depends on a few members' commitment to them, which prompts other members to follow their lead. Once again, the fact that large cooperatives have more members makes this option more feasible.

Similarly, diversity in the board of directors appears as another key

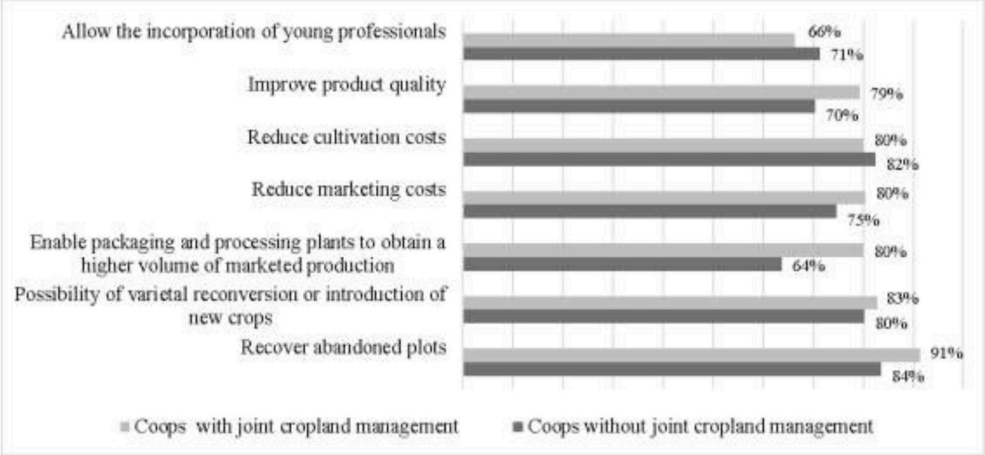


**Fig. 2.** Advantages of plot grouping and management by cooperatives.

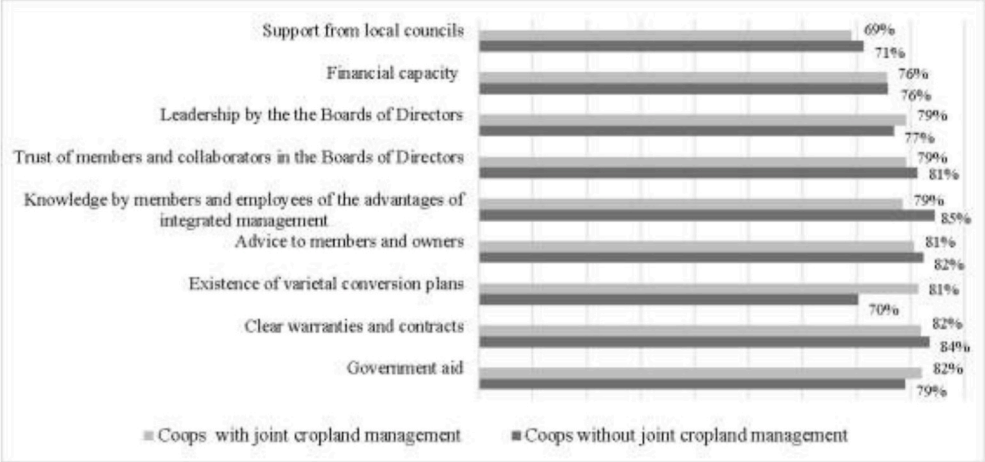


**Fig. 3.** Assessment of accompanying characteristics needed for plot grouping to be feasible.

element in all recipes. This finding consolidates postulates already proposed in the literature, such as the idea that board diversity improves companies' strategic decision-making (in this case, the decision concerning how to handle land abandonment to prevent the consequent loss of production for the cooperative). Pluralistic governance enriches the perspectives and alternatives discussed when addressing problems and challenges (Tyson, 2003), and improves the connection with the organization's relevant stakeholders (Lückerath-Rovers, 2013).

Regarding the presence of an older social base as a key factor for joint land management, it raises the debate on young membership. To our understanding from the findings of this research, young membership is not a necessary attribute of cooperatives that develop joint land management, which is consistent with the need for generational renewal.

However, in the long term, the survival of agri-food marketing cooperatives depends on their capacity to attract young people to the farming activity. Joint land management can then be understood as a temporary solution to the lack of generational renewal of cooperatives. It allows increasing farms' size, constituting then profitable operative units. Cooperatives that can keep providing their marketing services and in addition offer the possibility of cultivating profitable farms can be an excellent entry point for new entrants in the activity, as a longer-term outcome of joint cropland strategies.

This article provides some guidelines to identify the conditions observed in cooperatives that implement joint cropland management initiatives. This result can be helpful for cooperatives aiming at reorienting their organizational structure in order to adopt these strategies or have already made progress in this direction.

By the same vein, policymakers in regions with substantial abandoned lands can find allies in cooperatives. They are established firms and actors of rural development that can support domestic policies aiming at improving farm structures, preserving soil conditions and preventing exodus from rural areas while pursuing their own goals.

This article has several limitations. The first is the small size of the sample, which makes it difficult to extrapolate the results to the whole of Spain, although it forms an interesting set of firms with productive orientation to permanent crops. Nevertheless, we can underline the theory-building feature of the methodology chosen to explore a limited number of cases. The fsQCA approach followed in the present study could be complemented by a case study approach that allows to understand those cooperatives that apparently show the recipes for the outcome and don't meet it, or those cooperatives that meet the outcome without meeting all the identified conditions. Second, some conditions such as cooperation among cooperatives and size should be studied in more depth. Concerning cooperation among cooperatives, it would be interesting to look more closely at its origin, differentiating between whether the cooperation entails informal alliances or more formal types of partnership. While the size condition presents ambiguities, small and medium-sized cooperatives have advantages in terms of social capital—according to authors such as He et al. (2016), Mwambi et al. (2020) Nilsson et al. (2009), Real et al. (2014)—for joint land management and could achieve a more substantial size by cooperating with other cooperatives. Future research should be directed at a more in-depth

exploration of the drivers of this particular form of social innovation, and should also seek to distinguish between the influence of younger and more senior farmers in the social base. Third, adding this information would be a task for future work, including other characteristics such as the specific size and past profitability of the land plots, although we captured some characteristics of the social membership such as their age and, indirectly, of their innovative orientation through cooperatives' boards choices. All these possibilities would enrich the understanding of this phenomenon of joint land management in Spain and other countries where the abandonment of small plots can hamper the economic feasibility of cooperatives.

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## Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.jrurstud.2021.04.003.

## References

ACI, 1995. Los principios cooperativos del siglo XXI. CIRIEC - España, Rev. Econ. Pública, Soc. Cooperativa 19, 38–39.
Ajates Gonzalez, R., 2017. Going back to go forwards? From multi-stakeholder cooperatives to Open Cooperatives in food and farming. J. Rural Stud. 53, 278–290. https://doi.org/10.1016/j.jrurstud.2017.02.018.
Alamá Sabater, L., Budí Orduña, V., García Álvarez-Coque, J.M., Roig-Tierno, N., 2019. Using mixed research approaches to understand rural depopulation. Economía Agraria y Recursos Naturales 19 (1), 99–120. https://doi.org/10.7201/earn.2019.01.06.
Altman, M., 2015. Cooperative organizations as an engine of equitable rural economic development. Journal of Co-operative Organization and Management 3 (1), 14–23. https://doi.org/10.1016/j.jcom.2015.02.001.
Álvarez-Pérez, M., Arbesú-López, P., Fé-Cantó, C., 2000. Las cooperativas en el marco de la teoría de la agencia. CIRIEC - España, Rev. Econ. Pública, Soc. Cooperativa 169–188.
Arcas, N., García, D., Guzmán, I., 2011. Effect of size on performance of Spanish agricultural cooperatives. Outlook Agric. 40 (3), 201–206. https://doi.org/10.5367/oa.2011.0051.
Arcas, N., García, D., Sánchez, J., 2019. Diagnóstico económico-financiero de las cooperativas agroalimentarias en España (2015-2017). Cajamar, Cartagena, p. 60.
Arnalte, E., Moreno, O., Ortiz, D., 2013. La dimensión social del proceso de ajuste estructural en la agricultura española. In: Gómez-Limón, J.A., Reig Martínez, E. (Eds.), La Sostenibilidad de la Agricultura Española. Cajamar Caja Rural, pp. 117–154. Almería.
Arts, B., de Koning, J., 2017. Community forest management: an assessment and explanation of its performance through QCA. World Dev. 96, 315–325. https://doi.org/10.1016/j.worlddev.2017.03.014.
Bae, K.B., Skaggs, S., 2019. The impact of gender diversity on performance: the moderating role of industry, alliance network, and family-friendly policies–Evidence from Korea. J. Manag. Organ. 25 (6), 896–913. https://doi.org/10.1017/jmo.2017.45.
Baldwin, C.Y., von Hippel, E.A., 2011. Modeling a paradigm shift: from producer innovation to user and open collaborative innovation. Organ. Sci. 22 (6), 1399–1417. https://doi.org/10.2139/ssrn.1502864.
Banerjee, A., Mookherjee, D., Munshi, K., Ray, D., 2001. Inequality, control rights, and rent seeking. Sugar cooperatives in Maharashtra. J. Polit. Econ. 109, 138–190.
Baranyai, Z., Kiraly, Z., Elam, A., Muriqi, S., Papp-Vary, A., 2018. Drivers of cooperation activity in Hungarian agriculture. Ann. Polish Assoc. Agric. Agribus. Econ. XX, 9–15. https://doi.org/10.5604/01.3001.0012.1476.
Barraud-Didier, Valérie, Henninger, Marie-Christine, El Akremi, Asâad, 2012. The relationship between members' trust and participation in governance of cooperatives: the role of organizational commitment. International Food and Agribusiness Management Review, International Food and Agribusiness Management Association 15 (1), 1–24.
Basurto, X., Speer, J., 2012. Structuring the calibration of qualitative data as sets for qualitative comparative analysis (QCA). Field Methods 24, 155–174. https://doi.org/10.1177/1525822X11433998.
Berenguer Contrí, G., Torcali Tomás, V., Torre Fernández, A., Cerver Romero, E., 2005. El estilo directivo de las mujeres y su influencia sobre la gestión del equipo de trabajo en las cooperativas valencianas. CIRIEC - España, Rev. Econ. Pública, Soc. Cooperativa 50, 123–150.
Berg-Schlosser, D., De Meur, G., Rihoux, B., Ragin, C., 2012. Qualitative comparative analysis (QCA) as an approach. In: Rihoux, B., Ragin, C. (Eds.), Configurational Comparative Methods: Qualitative Comparative Analysis (QCA) and Related Techniques. SAGE Publications Inc., London, pp. 1–18. https://doi.org/10.4135/9781452226569.n1.
Berg-Schlosser, D., Meur, G. de, 2012. Comparative research design: case and variable selection. In: Rihoux, B., Ragin, C. (Eds.), Configurational Comparative Methods: Qualitative Comparative Analysis (QCA) and Related Techniques. SAGE Publications, Inc., London, pp. 19–32. https://doi.org/10.4135/9781452226569.n2.
Bijman, J., 2005. Cooperatives and heterogeneous membership: eight propositions for improving organizational efficiency. In: Dobak, M., Hofmeister, A., Kocsis, E., Windsperger, J. (Eds.), Conference Proceedings, Franchising Networks, Alliances, Joint Ventures and Cooperatives. EMNet.
Bijman, J., Pykkönen, P., Petri, O., 2012. Support for Farmers' Cooperatives. EU Synthesis and Comparative Analysis Report on Transnational Cooperatives. Wageningen UR. https://library.wur.nl/WebQuery/wurpubs/fulltext/244826.
Bijman, J., Hanisch, M., van der Sangen, G., 2014. Shifting control? The changes of internal governance in agricultural cooperatives in the EU. Ann. Public Coop. Econ. 85 (4), 641–661.
Bijman, J., Iliopoulos, C., 2014. Farmers' cooperatives in the EU: policies, strategies, and organization. Ann. Public Coop. Econ. 85 (4), 497–508.
Bjerke, L., Johansson, S., 2015. Patterns of innovation and collaboration in small and large firms. Ann. Reg. Sci. 55 (1), 221–247.
Burress, M.J., Cook, M.L., 2010. A Primer on Collective Entrepreneurship: A Preliminary Taxonomy. Columbia. University of Missouri, Department of Agricultural Economics, Working Paper. AEWP 2009-4.
Burt, L.A., Wirth, M.E., 1990. Assessing the effectiveness of farm supply cooperatives: a comparison of farmer and manager viewpoints. Journal of Agricultural Cooperation 5, 17–26, 1141–2016-92506.
Cajaiba-Santana, G., 2014. Social innovation: moving the field forward. A conceptual framework. Technol. Forecast. Soc. Change 82, 42–51. https://doi.org/10.1016/j.techfore.2013.05.008.
Chaddad, F.R., Cook, M.L., 2004. Understanding new cooperative models: an ownership-control rights typology. Rev. Agric. Econ. 26, 348–360. https://doi.org/10.1111/j.1467-9353.2004.00184.x.
Chaddad, F., Iliopoulos, C., 2013. Control rights, governance, and the costs of ownership in agricultural cooperatives. Agribusiness 29 (1), 3–22.
Ciburiene, J., 2015. Farmers' cooperative in the context of economic transformations in Lithuania. In: Proceedings of the 2015 International Conference "Economic Science for Rural Development" N° 39 Jelgava, LLU ESAF, 23-24 April 2015, pp. 134–141.
Cofré-Bravo, G., Klerkx, L., Engler, A., 2019. Combinations of bonding, bridging, and linking social capital for farm innovation: how farmers configure different support networks. J. Rural Stud. 69, 53–64. https://doi.org/10.1016/j.jrurstud.2019.04.004.
Colombo, S., Perujo-Villanueva, M., 2017. Analysis of the spatial relationship between small olive farms to increase their competitiveness through cooperation. Land Use Pol. 63, 226–235. https://doi.org/10.1016/j.landusepol.2017.01.032.
Cook, M.L., Plunkett, B., 2006. Collective entrepreneurship: an emerging phenomenon in producer-owned organizations. J. Agric. Appl. Econ. 38, 421–428. https://doi.org/10.1017/s1074070800022458.
Cooperativas Agroalimentarias de España, 2020. El Cooperativismo Agroalimentario Español Informe Socioeconómico 2018 (accessed 6.23.20). http://www.agro-alimentarias.coop/ficheros/doc/06213.pdf.
Cooperativas Agroalimentarias de España, 2005. Observatorio socioeconómico del cooperativismo agrario español (OSCAE) (accessed 6.23.20). http://www.agro-alimentarias.coop/ficheros/doc/01867.pdf.
Cornforth, C., 2004. The Governance of cooperatives and mutual associations: a paradox perspective. Ann. Public Coop. Econ. 75, 11–32. https://doi.org/10.1111/j.1467-8292.2004.00241.x.
Deng, X., Xu, D., Zeng, M., Qi, Y., 2019. Does Internet use help reduce rural cropland abandonment? Evidence from China. Land Use Pol. 89, 104243. https://doi.org/10.1016/j.landusepol.2019.104243.
Dufays, F., Huybrechts, B., 2014. Connecting the dots for social value: a review on social networks and social entrepreneurship. J. Soc. Entrep. 5, 214–237. https://doi.org/10.1080/19420676.2014.918052.
European Commission, 2020. Common Context Indicators for Rural Development Programs (2014-2020) (accessed 11.01.21). https://ec.europa.eu/info/food-farming-fisheries/farming/facts-and-figures/performance-agricultural-policy/cap-indicators/context-indicators_en.
Florea, A.M., Bercu, F., Radu, R.I., Stanciu, S., 2019. A fuzzy set qualitative comparative analysis (fsQCA) of the agricultural cooperatives from south east region of Romania. Sustainability 11 (21), 5927. https://doi.org/10.3390/su11215927.
Fonte, M., Cucco, I., 2017. Cooperatives and alternative food networks in Italy. The long road towards a social economy in agriculture. J. Rural Stud. 53, 291–302. https://doi.org/10.1016/j.jrurstud.2017.01.019.
Foreman, P.O., Westgren, R.E., Whetten, D.A., 2013. The process of identity construction in emergent organizational collectives. Acad. Manag. Proc. 2013 (1), 13310. https://doi.org/10.5465/ambpp.2013.13310abstract.
Fulton, M., Giannakas, K., 2013. The future of agricultural cooperatives. Annu. Rev. Resour. Econ. 5 (1), 61–91.
Galia, F., Zenou, E., Ingham, M., 2015. Board composition and environmental innovation: does gender diversity matter? Int. J. Enterpren. Small Bus. 24, 117–141. https://doi.org/10.1504/IJESB.2015.066152.
Garcia-Alvarez-Coque, J.M., Roig-Tierno, N., Sanchez-Garcia, M., Mas-Verdu, F., 2020. Knowledge drivers, business collaboration and competitiveness in rural and urban regions. Soc. Indicat. Res. 1–19 https://doi.org/10.1007/s11205-020-02478-6.
Garson, G.D., 2016. Case Study Analysis & QCA. Statistical Associates Publishers, Asheboro, NC, p. 164.

Gómez, W.A., Aranda-Camacho, Y., Barrientos Fuentes, J.C., 2020. Analytical model to assess the functionality of small farmers' organizations. Agricultural and Resource Economics 20 (1), 7–35. https://doi.org/10.7201/earn.2020.01.01.
Grashuis, J., 2019. The agency cost of ownership and governance adaptations in farm producer organizations. Agric. Finance Rev. 80 (2), 200–211.
Grimm, N.B., Chapin, F.S., Bierwagen, B., Gonzalez, P., Groffman, P.M., Luo, Y., Melton, F., Nadelhoffer, K., Pairis, A., Raymond, P.A., Schimel, J., Williamson, C.E., 2013. The impacts of climate change on ecosystem structure and function. Front. Ecol. Environ. 11 (9), 474–482. https://doi.org/10.1890/120282.
Groot Kormelinck, A., Bijman, J., Trienekens, J., 2019. Characterizing Producer Organizations: the case of organic versus conventional vegetables in Uruguay. J. Rural Stud. 69, 65–75. https://doi.org/10.1016/j.jrurstud.2019.04.012.
Hakelius, K., 1999. Farmer cooperatives in the 21st century: young and old farmers in Sweden. J. Rural Cooperat. 27, 31–54. https://doi.org/10.22004/AG.ECON.61946.
Hamilton, W., Bosworth, G., Ruto, E., 2015. Entrepreneurial younger farmers and the young farmer problem in england. Agric. For. 61 (4), 61–69. https://doi.org/10.17707/agricultforest.61.4.05.
Hansmann, H., 1996. The Ownership of Enterprise. Harvard University Press, London, p. 372.
Hanf, J., Schweickert, E., 2007. 'How to deal with member heterogeneity – management implications'. International Journal of Co-operative Management 3, 40–48.
Hardy, C., Maguire, S., 2008. The SAGE handbook of organizational institutionalism. In: The SAGE Handbook of Organizational Institutionalism, pp. 198–217. https://doi.org/10.4135/9781526415066.
He, K., Zhang, J., Feng, J., Hu, T., Zhang, L., 2016. The impact of social capital on farmers' willingness to reuse agricultural waste for sustainable development. Sustain. Dev. 24, 101–108. https://doi.org/10.1002/sd.1611.
Hendrikse, G., Bijman, J., 2002. Ownership structure in agrifood chains: the marketing cooperative. Am. J. Agric. Econ. 84, 104–119. https://doi.org/10.1111/1467-8276.00246.
Hudson, D., Herndon, C.W., 2002. Factors influencing probability and frequency of participation in merger and partnership activity in agricultural cooperatives. Agribusiness: Int. J. 18 (2), 231–246. https://doi.org/10.1002/agr.10017.
Iliopoulos, C., Valentinov, V., 2018. Member heterogeneity in agricultural cooperatives: a systems-theoretic perspective. Sustainability 10 (4), 1271. https://doi.org/10.3390/su10041271.
Iliopoulos, C., Cook, M.L., 1999. The efficiency of internal resource allocation decisions in customer-owned firms: the influence costs problem. In: 3rd Annual Conference of the International Society for New Institutional Economics. Washington.
Instituto Nacional de Estadística, 2016. Encuesta sobre la estructura de las explotaciones agrícolas. Resultados (accessed 6.23.20). https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176854&menu=resultados&idp=1254735727106#!tabs-1254736194989.
Jakobsen, S.E., Lorentzen, T., 2015. Between bonding and bridging: regional differences in innovative collaboration in Norway. Nor. Geogr. Tidsskr. 69, 80–89. https://doi.org/10.1080/00291951.2015.1016550.
Keenleyside, C., Tucker, G.M., 2010. Farmland Abandonment in the EU: an Assessment of Trends and Prospects. Institute for European Environmental Policy (IEEP), London. Report prepared for WWF. https://ieep.eu/publications/farmland-abandonment-in-the-eu-an-assessment-of-trends-and-prospects.
Kilelu, C.W., Klerkx, L., Leeuwis, C., Hall, A., 2011. Beyond knowledge brokering: an exploratory study on innovation intermediaries in an evolving smallholder agricultural system in Kenya. Knowl. Manag. Dev. J. 7, 84–108. https://doi.org/10.1080/19474199.2011.593859.
King, B., Fielke, S., Bayne, K., Klerkx, L., Nettle, R., 2019. Navigating shades of social capital and trust to leverage opportunities for rural innovation. J. Rural Stud. 68, 123–134. https://doi.org/10.1016/j.jrurstud.2019.02.003.
Koutsou, S., Partalidou, M., Ragkos, A., 2014. Young farmers' social capital in Greece: trust levels and collective actions. J. Rural Stud. 34, 204–211. https://doi.org/10.1016/j.jrurstud.2014.02.002.
Kumar, A., Saroj, S., Joshi, P.K., Takeshima, H., 2018. Does cooperative membership improve household welfare? Evidence from a panel data analysis of smallholder dairy farmers in Bihar, India. Food Pol. 75, 24–36.
Lankoski, J., Thiem, A., 2020. Linkages between agricultural policies, productivity and environmental sustainability. Ecol. Econ. 178, 106809. https://doi.org/10.1016/j.ecolecon.2020.106809.
Lasagni, A., 2012. How can external relationships enhance innovation in SMEs? New evidence for Europe. J. Small Bus. Manag. 50, 310–339. https://doi.org/10.1111/j.1540-627X.2012.00355.x.
Lasanta, T., Arnáez, J., Pascual, N., Ruiz-Flaño, P., Errea, M.P., Lana-Renault, N., 2017. Space–time process and drivers of land abandonment in Europe. Catena 149, 810–823. https://doi.org/10.1016/j.catena.2016.02.024.
Legewie, N., 2013. An introduction to applied data analysis with qualitative comparative analysis. Forum Qual. Soc. Res. 14 (3) https://doi.org/10.17169/fqs-14.3.1961.
Liang, Q., Hendrikse, G., 2013. Core and common members in the genesis of farmer cooperatives in China. Manag. Decis. Econ. 34 (3–5), 244–257. https://doi.org/10.1002/mde.2587.
Löwe, A., Njambi-Szlapka, S., Phiona, S., 2019. Youth Associations and Cooperatives: Getting Young People into Work. ODI Report, London. https://www.odi.org/sites/odi.org.uk/files/resource-documents/odi-drt-youth_associations_report.pdf.
Lückerath-Rovers, M., 2013. Women on boards and firm performance. J. Manag. Govern. 17, 491–509. https://doi.org/10.1007/s10997-011-9186-1.
Ma, W., Abdulai, A., Goetz, R., 2018a. Agricultural cooperatives and investment in organic soil amendments and chemical fertilizer in China. Am. J. Agric. Econ. 100, 502–520. https://doi.org/10.1093/ajae/aax079.
Ma, W., Renwick, A., Yuan, P., Ratna, N., 2018b. Agricultural cooperative membership and technical efficiency of apple farmers in China: an analysis accounting for selectivity bias. Food Pol. 81, 122–132. https://doi.org/10.1016/j.foodpol.2018.10.009.
Ma, W., Zhu, Z., 2020. A note: reducing cropland abandonment in China – do agricultural cooperatives play a role? J. Agric. Econ. 1477–9552, 12375. https://doi.org/10.1111/1477-9552.12375.
Manda, J., Khonje, M.G., Alene, A.D., Tufa, A.H., Abdoulaye, T., Mutenje, M., Setimela, P., Manyong, V., 2020. Does cooperative membership increase and accelerate agricultural technology adoption? Empirical evidence from Zambia. Technol. Forecast. Soc. Change 158, 120160. https://doi.org/10.1016/j.techfore.2020.120160.
Marcel, J., Barr, P., Duhaime, I., 2010. The influence of executive cognition on competitive dynamics. Strat. Manag. J. 32, 115–138. https://doi.org/10.1002/smj.870.
Marcuello Servós, C.M., Saz Gil, M.I.S., 2008. Los principios cooperativos facilitadores de la innovación: un modelo teórico. REVESCO. Revista de Estudios Cooperativos (94), 59–79.
Mc Elroy, M.W., 2002. Social innovation capital. J. Intellect. Cap. 3, 1469–1930. https://doi.org/10.1108/14691930210412827.
Meliá-Martí, E., Server-Izquierdo, R.J., Lajara-Camilleri, N., 2015. Spanish citrus cooperatives: keys to success and challenges for the future. In: Acta Horticulturae, pp. 1871–1876. https://doi.org/10.17660/ActaHortic.2015.1065.240.
Meliá Martí, E., Carnicer Andrés, M.P., Juliá Igual, J.F., 2018. El gobierno de las sociedades cooperativas agroalimentarias españolas. Modelos de referencia y casos empresariales. Cajamar, Valencia, p. 272.
Meliá-Martí, E., Tormo-Carbó, G., Juliá-Igual, J.F., 2020. Does gender diversity affect performance in agri-food cooperatives? A moderated model. Sustainability 12 (16), 6575. https://doi.org/10.3390/su12166575.
Meyskens, M., Carsrud, A.L., Cardozo, R.N., 2010. The symbiosis of entities in the social engagement network: the role of social ventures. Enterpren. Reg. Dev. 22, 425–455. https://doi.org/10.1080/08985620903168299.
Miozzo, M., Desyllas, P., Lee, H.F., Miles, I., 2016. Innovation collaboration and appropriability by knowledge-intensive business services firms. Res. Pol. 45, 1337–1351. https://doi.org/10.1016/j.respol.2016.03.018.
Montegut, Y., Cristóbal, E., Marimon, F., 2011. The singularity of agrarian cooperatives management: cooperatives positioning in the olive oil sector in Spain. Int. J. Bus. Manag. 6 https://doi.org/10.5539/ijbm.v6n6p16.
Montgomery, A.W., Dacin, P.A., Dacin, M.T., 2012. Collective social entrepreneurship: collaboratively shaping social good. J. Bus. Ethics 111, 375–388. https://doi.org/10.1007/s10551-012-1501-5.
Mourdoukoutas, P., Papademetriou, S., 2002. Nurturing Entrepreneurship: Institutions and Policies. Quorum Books, Westport, C, p. 188.
Mulgan, G., 2006. The process of social innovation. Innov. Technol. governance, Glob. 1, 145–162.
Muriqi, S., Fekete-Farkas, M., Baranyai, Z., 2019. Drivers of cooperation activity in Kosovo's agriculture. Agric. For. 9, 96. https://doi.org/10.3390/agriculture9050096.
Mwambi, M., Bijman, J., Mshenga, P., 2020. Which type of producer organization is (more) inclusive? Dynamics of farmers' membership and participation in the decision-making process. Ann. Public Coop. Econ. 91 (2), 213–236. https://doi.org/10.1111/apce.12269.
Newell, S., Swan, J., 2000. Trust and inter-organizational networking. Hum. Relat. 53, 1287–1328. https://doi.org/10.1177/a014106.
Nieto-Aleman, P.A., Garcia-Alvarez-Coque, J.M., Roig-Tierno, N., Mas-Verdú, F., 2019. Factors of regional poverty reduction in Colombia: do institutional conditions matter? Soc. Pol. Adm. 53 (7), 1045–1063.
Nilsson, J., 2018. Governance costs and the problems of large traditional co-operatives. Outlook Agric. 47, 87–92. https://doi.org/10.1177/0030727018761175.
Nilsson, J., Kihlén, A., Norell, L., 2009. Are traditional cooperatives an endangered species? About shrinking satisfaction, involvement and trust. Int. Food Agribus. Manag. Rev. 12, 101–122. https://doi.org/10.22004/AG.ECON.92574.
Nilsson, J., Svendsen, G.L.H., Svendsen, G.T., 2012. Are large and complex agricultural cooperatives losing their social capital? Agribusiness 28, 187–204. https://doi.org/10.1002/agr.21285.
Ortega, D.L., Bro, A.S., Clay, D.C., Lopez, M.C., Tuyisenge, E., Church, R.A., Bizoza, A.R., 2019. Cooperative membership and coffee productivity in Rwanda's specialty coffee sector. Food Secur 11, 967–979. https://doi.org/10.1007/s12571-019-00952-9.
Ortiz-Miranda, D., Moreno-Perez, Olga M., Moragues-Faus, A.M., 2010. Innovative strategies of agricultural cooperatives in the framework of the new rural development paradigms: the case of the Region of Valencia (Spain). Environ. Plann. 42, 661–677. https://doi.org/10.1068/a42168.
Österberg, P., Nilsson, J., 2009. Members' perception of their participation in the governance of cooperatives: the key to trust and commitment in agricultural cooperatives. Agribusiness 25, 181–197. https://doi.org/10.1002/agr.20200.
Ostrom, E., Ahn, T.K., 2003. Foundations of Social Capital. Books, Edward Elgar Publishing, p. 590.
Papadimitri, P., Pasiouras, F., Tasiou, M., 2020. Do national differences in social capital and corporate ethical behaviour perceptions influence the use of collateral? Cross-country evidence. J. Bus. Ethics 1–20. https://doi.org/10.1007/s10551-019-04412-4.
Parcerisas, L., 2015. Landownership distribution, socio-economic precariousness and empowerment: the role of small peasants in Maresme County (Catalonia, Spain) from 1850 to the 1950s. J. Agrar. Change 15, 261–285. https://doi.org/10.1111/joac.12058.

Phillips, F., 2011. The state of technological and social change: Impressions. Technol. Forecast. Soc. Change 78, 1072–1078. https://doi.org/10.1016/j.techfore.2011.03.020.
Phillips, W., Lee, H., Ghobadian, A., O'Regan, N., James, P., 2015. Social innovation and social entrepreneurship: a systematic review. Group Organ. Manag. 40, 428–461. https://doi.org/10.1177/1059601114560063.
Putnam, R., 2000. Bowling Alone: the Collapse and Revival of American Community, Bowling Alone: the Collapse and Revival of American Community. Simon and Schuster, New York. https://doi.org/10.4324/9781912282319.
Qin, H., Liao, T., 2016. Labor out-migration and agricultural change in rural China: a systematic review and meta-analysis. J. Rural Stud. 47 (part B), 533–541. https://doi.org/10.1016/j.jrurstud.2016.06.020.
Ragin, C., 2008. Redesigning Social Inquiry: Fuzzy Sets and beyond. University of Chicago Press, Chicago and London, p. 224.
Real, J.C., Roldán, J.L., Leal, A., 2014. From entrepreneurial orientation and learning orientation to business performance: analysing the mediating role of organizational learning and the moderating effects of organizational size. Br. J. Manag. 25, 186–208. https://doi.org/10.1111/j.1467-8551.2012.00848.x.
Rothstein, B., 2005. Social Traps and the Problem of Trust, Social Traps and the Problem of Trust. Cambridge University Press. https://doi.org/10.1017/CBO9780511490323.
Ruef, M., 2010. Entrepreneurial groups. In: Historical Foundations of Entrepreneurship Research, pp. 205–228. https://doi.org/10.4337/9781849806947.00020.
Ruiu, M.L., Seddaiu, G., Roggero, P.P., 2017. Developing adaptive responses to contextual changes for sustainable agricultural management: the role of social capital in the Arborea district (Sardinia, Italy). J. Rural Stud. 49, 162–170. https://doi.org/10.1016/j.jrurstud.2016.11.017.
Ruostesaari, M.L., Troberg, E., 2016. Differences in social responsibility toward youth-A case study based comparison of cooperatives and corporations. J. Co-op. Organ. Manag. 4, 42–51. https://doi.org/10.1016/j.jcom.2016.03.001.
Sánchez Pachón, L.Á., 2018. Los acuerdos de intercooperación como mecanismo jurídico de integración de cooperativas. REVESCO. Revista de Estudios Cooperativos 126, 154–176. https://doi.org/10.5209/REVE.58616.
Schincariol McMurtry, L., McMurtry, J.J., 2015. Advancing Gender Equality: the Co-operative Way. ILO, Geneva available at. www.ilo.org.
Schneider, C.Q., Wagemann, C., 2012. Set-theoretic Methods for the Social Sciences: A Guide to Qualitative Comparative Analysis. (Strategies for Social Inquiry). Cambridge University Press, Cambridge. https://doi.org/10.1017/CBO9781139004244.
Schneider, C.Q., Wagemann, C., 2010. Standards of good practice in qualitative comparative analysis (QCA) and fuzzy-sets. Comp. Sociol. 9, 397–418. https://doi.org/10.1163/156913210X12493538729793.
Sikor, T., Müller, D., Stahl, J., 2009. Land fragmentation and cropland abandonment in Albania: implications for the roles of state and community in post-socialist land consolidation. World Dev. 37, 1411–1423. https://doi.org/10.1016/j.worlddev.2008.08.013.
Song, H.J., Yoon, Y.N., Kang, K.H., 2020. The relationship between board diversity and firm performance in the lodging industry: the moderating role of internationalization. Int. J. Hospit. Manag. 86, 102461. https://doi.org/10.1016/j.ijhm.2020.102461.
Spear, R., 2011. Working Paper Innovation and Collective Entrepreneurship. International Forum on the Social and Solidarity Economy. https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/47357/133708.pdf.
Steenwerth, K.L., Hodson, A.K., Bloom, A.J., Carter, M.R., Cattaneo, A., Chartres, C.J., Hatfield, J.L., Henry, K., Hopmans, J.W., Horwath, W.R., Jenkins, B.M., Kebreab, E., Leemans, R., Lipper, L., Lubell, M.N., Msangi, S., Prabhu, R., Reynolds, M.P., Sandoval Solis, S., Sischo, W.M., Springborn, M., Tittonell, P., Wheeler, S.M., Vermeulen, S.J., Wollenberg, E.K., Jarvis, L.S., Jackson, L.E., 2014. Climate-smart agriculture global research agenda: scientific basis for action. Agric. Food Secur. 3 (1), 1–39. https://doi.org/10.1186/2048-7010-3-11.
Takahashi, D., Chang, T., Shobayashi, M., 2018. The role of formal and informal institutions in farmland consolidation: the case of Shiga Prefecture, Japan. Int. J. Commons 12, 80–107. https://doi.org/10.18352/ijc.829.
Terres, J.M., Scacchiafichi, L.N., Wania, A., Ambar, M., Anguiano, E., Buckwell, A., Coppola, A., Gocht, A., Källström, H.N., Pointereau, P., Strijker, D., Visek, L., Vranken, L., Zobena, A., 2015. Farmland abandonment in Europe: identification of drivers and indicators, and development of a composite indicator of risk. Land Use Pol. 49, 20–34. https://doi.org/10.1016/j.landusepol.2015.06.009.
Titeca, K., Vervisch, T., 2008. The dynamics of social capital and community associations in Uganda: linking capital and its consequences. World Dev. 36, 2205–2222. https://doi.org/10.1016/j.worlddev.2007.10.021.
Tobiassen, A.E., Pettersen, I.B., 2018. Exploring open innovation collaboration between SMEs and larger customers: the case of high-technology firms. Baltic J. Manag. 13, 65–83. https://doi.org/10.1108/BJM-01-2017-0018.
Tregear, A., Cooper, S., 2016. Embeddedness, social capital and learning in rural areas: the case of producer cooperatives. J. Rural Stud. 44, 101–110. https://doi.org/10.1016/j.jrurstud.2016.01.011.
Tudela-Marco, L., Garcia-Alvarez-Coque, J.M., 2017. Innovación en la gestión de tierras bajo la fórmula cooperativa. In: XI Congreso de la Asociación Española de Economía Agraria Sistemas Alimentarios y Cambio Global Desde el Mediterráneo Orihuela-Elche, 13-15 Septiembre de 2017, pp. 365–367.
Tyson, L., 2003. The Tyson Report on the Recruitment and Development of Non-executive Directors. Sch, London Bus.
van Bekkum, O.F., Bijman, J., 2006. Innovations in cooperative ownership: converted and hybrid listed cooperatives. In: Business Paper Presented at the 7th International Conference on Management in AgriFood Chains and Networks, vol. 31. Ede, The Netherlands, pp. 1–15.
van Dijk, M.P., Sverrisson, A., 2003. Enterprise clusters in developing countries: mechanisms of transition and stagnation. Enterpren. Reg. Dev. 15, 183–206. https://doi.org/10.1080/08985620210159239.
Valentinov, V., 2007. Why are cooperatives important in agriculture? An organizational economics perspective. J. Inst. Econ. 3 (1), 55–69. https://doi.org/10.1017/S1744137406000555.
Widmalm, S., 2005. The utility of bonding social capital. J. Civ. Soc. 1, 75–95. https://doi.org/10.1080/17448680500210680.