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Fishermen's Associations of the small-scale fisheries: study applied to the participation in the *Cofradías* of Galicia (NW Spain).

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Highlights

- Cofradías base their activity on the marine resources management
- They inherited an associative tradition in small-scale fisheries from past times
- Their members share and benefit from the use and exploitation of the resources
- They are part of Social Economy and perform a business activity managed by members
- Cofradías are participatory firms with unique distinctive features

Fishermen's Associations of the small-scale fisheries: study applied to the participation in the *Cofradías* of Galicia (NW Spain).

Abstract

This article analyses the dynamics of fishermen's associations in small-scale fisheries and specifically their fishery agents' representation and participation. Fishermen's associations base their activity on shared marine resource management, which may include production, commercialisation and other derived activities. In turn, management is conditioned by the legal and institutional conditions by which it could be affected. In small-scale fisheries, associative activity usually acquires special relevance and specific characteristics, singularity that is considered in the article.

In the case study, referring to Galicia (NW Spain), the fishermen's associations studied ("cofradías") are characterised as firms in which workers participate in management (participatory firms), their dynamics based on their organisational structure and the business flows observed (real, decisional and financial). The approach makes it necessary to consider the institutional framework and analyse the contractual relationships between the agents that form an integral part of the association, as well as their involvement in the fisheries' management. In parallel, the analysis also emphasises the distinctive characteristics of this case in comparison with other Social Economy organisations, particularly on account of the links between the cofradías and the competent public administration.

Highlights

Fishermen's associations, small-scale fisheries, participatory firm, social economy, residual income

1. Introduction

In Galicia (NW Spain), fishing is an important and representative economic activity. Aquaculture and fishing accounts for around 3% of its primary income and employment, even more so in certain geographical areas. Small-Scale Fisheries are significant in the regional fisheries sector as a whole, although in this case economic dependence is more noteworthy in terms of employment than in terms of income, it being estimated that the SSF absorb more than 50% of regional fishery employment (Surís and Santiago, 2014; Ocupesca, 2015).

The fishermen and shellfishermen involved in this sub-sector have traditionally been organised into professionally well-identified associations, the so-called cofradías. These associations respond to specific regulations enshrined in Spanish legislation, where they are recognised as public law corporations and, as such, carry out administrative functions and are involved as advisory bodies in the organisation of the fisheries sector's production and commercialisation. Furthermore, in response to the individual interests of their members, cofradías are private in nature insofar as matters of organisation and decision-making are concerned, and their objective is to be market-oriented entities.

Starting from this reality, this study's aim is to analyse cofradías as organisations that carry out a business activity, based on the participation of the fishermen and shellfishermen of which they are comprised. Given the framework within which the activity takes place, it is necessary to distinguish between the different forms and principles of participation and the implications for the business results. To this end, the study is

based on the Theory of the Firm and the Participatory Firm Approach, aiming to respond, on such a basis, to questions on its business dynamics. With this, a lesser-studied aspect of *cofradías* is covered, although given the study's more specific interest in the analysis of the internal participation of *cofradía* members, they will not be directly considered business strategies in a more open context (Astorkiza and del Valle, 2018).

In order to achieve this objective, firstly we will characterise the case study, describing Galicia's territorial and institutional framework and the situation of the *cofradías* in this area. We will then describe the theoretical bases of participatory firms on which the analysis is based, as they form the backbone of the so-called Social Economy. In the following sections, the study of members' participation in *cofradías* will be specified from this perspective and the results obtained from the case study will be presented and discussed. The article ends by summing up the main conclusions reached.

2. Case study

Galicia covers an area of 29,574.4 km² and, administratively, is divided into four provinces, three of which are coastal. As a whole, it has a population of 2,718,525 people (Galician Statistics Institute-IGE, 2017a), although the coastal zones are more densely populated, especially the two western provinces (figure 1). The Galician coast is 1498 km long and is characterised by the existence of extensive estuarine areas (called "rías"), especially on the southern coast. This configuration has favoured ocean primary production and, in parallel, the establishment of population nuclei, contributing together to promote fishing activities for centuries. For its part, the continental shelf is narrow, which limits the expanse of the area with the highest productivity. This also meant that, as pressure on marine resources mounted, fishermen sought opportunities farther away from the coast as an alternative.

INSERT FIGURE I ABOUT HERE

Historically, Galicia has always depended heavily on fishing. Currently, highly industrialised activities (deep sea and distant water fishing, aquaculture farms) are an important chapter in the generation of primary income (43.9%), although artisanal and coastal fishing continues to be an important activity, as does shellfishing with or without a vessel, which together represent an important number of jobs (15,290 people employed; 12,243 full-time jobs, that is, 60.55% of the total number in fisheries and aquaculture in Galicia: Surís and Santiago, 2014). In the small-scale fisheries sector, vessels and gear belong to family-run businesses, managed by one or just a few people who carry out simple resource extraction processes which have little environmental impact (European Commission, 2016). In 2018, the so-called small-scale fleet in Galicia is made up of 3900 vessels, with an average 2.24 GT and 21.08 KW (IGE, 2017b; Pescadegalicia, 2018). On a slightly larger scale, the coastal fleet includes another 481 vessels (trawl, longline and gillnets in waters close to Spain's fishing grounds), with higher average sizes (72.87 GT; 141.78 kW).

This is the scenario in which the *cofradías* carry out their activity, the main (and almost exclusive) organisations for fishermen engaged in small-scale fishing and shellfishing activities. Of these, we would underline some legal, historical and economic aspects that make them quite unique.

Cofradías have an age-old tradition among Galician fishermen. The very name "Cofradía" comes from past experiences which date back to the 11th-13th Centuries, when they began to emerge in the form of guilds and with a distinctive purpose, that of protecting workers' welfare in a risk-associated trade. Having undergone a number of transformations, these experiences were extended in parallel to the trade of

fishing, adopting different structures and reformulating some of its traditional characteristics (Taboada, 2004). This line of evolution is applicable exclusively to small-scale fishing as, in Galicia and since the 20th Century, a more industrialised fisheries sector has been developed, shaping new forms of business and new organisational frameworks. This historical, deeply-rooted historical presence lies at the very foundations of *cofradías* under the current Spanish legal system.

As well as the analysis of the institutional options, the dynamic and significance of the *cofradías* as opposed to other alternative means of association has been studied from different analysis perspectives (Alegret, 1989; Cabaleiro, 2004). Fishing vessel owners' organisations, maritime cooperatives or "producers' organisations", such as other groups with more or less stable aims, are included in these formulae in order to adapt to European regulations (Caballero et al., 2008; Allo and Loureiro, 2017). Ship-owners' associations occupy a particularly significant position. As well as differences of a legal nature (ship-owners' associations are purely private, unlike the *cofradías*), in practice, each one carries out quite distinct activities to the other. Fishing vessel owners' associations have been created where capital requirements are higher and on the basis of companies in which the capital-labour relationships tend to resemble more closely those commonly found in a market economy. *Cofradías*, on the other hand, are fundamentally linked to small-scale fisheries and shellfishing, and their activities are mainly limited to coastal areas, while the deep-sea and distant-water fleets are linked to other associations.

The historical transformation and adaptation process of *cofradías* has been widely studied (García-Lorenzo et al, 2019). They originated as guilds, with freedom of association and including a variety of professions, up until the 18th Century, only changing when required to adapt and search for privileged positions (on a professional group scale). Changes were reflected above all in ordinances regulating trades and access to guilds and, on the other hand, in the extension of guild cooperation to commercialisation activities (Labrada, 1971; Alonso-Álvarez, 1976; Labarta, 1979; Taboada, 2004; Canoura, 2008).

After the 18th Century, the guild system surrounding the fisheries sector began to fall into decline. This has been linked to the gradual disappearance of feudalism and to the growth of economic liberalism, which gave rise to new economic agents in the sector. During this phase, new regimes governing property and the use of resources were established. But even after the "official" suppression of guilds (1864), associative tendencies in this sector remained: first, limited to initiatives undertaken at port or area levels; and later (after 1918-1919), under the new social protection regulations (Fishermen's Cooperatives, Marine Credit Unions) in a sector acutely exposed to personal risk (Carmona, 1989; Claver, 1989; Fernández-Casanova, 1998; López-Losa, 2008; Rodríguez-Santamaría, 2005; Astorkiza et al, 2018).

Throughout the 20th Century, the fisheries sector underwent a profound transformation, linked to economic development and, later, to the impact made by the new legal and institutional order deriving from UNCLOS III (Giráldez, 1996, 2011; Garza-Gil et al, 1996; Varela, 2000; González-Laxe, 2002; López-Losa, 2008). In this process, in which maritime fisheries rights in Spain were redefined, the *Cofradías* (which under Franco's rule had been integrated into a cooperative and union structure) were established under the new legal system as "non-profit, public law corporations, representing economic interests, acting as bodies that consult and collaborate with the competent administrations in matters regarding sea fishing and the management of the fisheries sector" (Government of Spain, 1978, 2001; Rebollo-Puig et al, 1996; Barrio, 1998). The combination of public and private aspects is established under Spanish State regulations. Although the basic legislation is unique to all of Spain's *cofradías*, on a collective and operational level specific rules have been developed in certain Autonomous Regions, making use of the devolution of powers from the central State. In this way, it has been possible to establish differences in situations, activities or traditions in these regional regulations (reflected in Xunta de Galicia 2014 in the Autonomous Community of Galicia). Moreover, this definition has been reinforced with the legislative recognition of *cofradías* as

“Social Economy entities”, both at state and autonomous community levels (Government of Spain 2011, Xunta de Galicia, 2016).

This said, the historical dynamics of this associative tradition is better interpreted by considering in parallel the adaptive processes that occurred in the *cofradías* and which affected different aspects. We can distinguish (García-Lorenzo et al, 2019): i) legal-institutional adaptations, developing the areas of competence legally attributed to the *cofradías* and including strategies that respond to the plural and democratic context of the moment, in spite of the restrictions involved in the legal definition; ii) economic adaptations, in production and commercialisation processes, or even incorporating new activities (relating to tourism, for example); iii) social adaptations, incorporating new values and trends, recognition of the representation and professionalisation of women (Marugán, 2004; Frangoudes, 2008); iv) adaptations to sustainability actions where, in any event, actions taken in the general interest and regarding long-term resource conservation take preference over short-term individual actions (López-Linage, 1991; Astorkiza, 2018; Ballesteros, 2018).

There are 63 *cofradías* in Galicia, that is, approximately one for every 24 km of coastline, although the concentration is higher in the two western provinces, A Coruña and Pontevedra (figure 1). As a whole, they have 12,734 members, who are fishermen and shellfishermen with different levels of commitment (Galician Federation of *Cofradías*, 2017). Furthermore, there is a significant level of heterogeneity in the different *cofradías*, both with regard to the production sectors in which they operate as well as their size and the different functions they can carry out in each case.

Emphasising this heterogeneity, the national law specifies that *cofradías* can exploit different resources when carrying out their activity. In the specific case of Galicia, national legislation groups together the different activities in production sectors: fishing (small-scale, purse-seine, trawl or deep-sea and distant waters), shellfishing (with or without a vessel) and specific resources (or with specific regulation, as with some shellfish and other marine resources) (Xunta de Galicia, 2014). In the Galician *cofradías*, the most common situation is one where various sectors coexist, in such a way that more than 50% combine shellfishing and fishing activities. Another distinguishing factor is the size, as most of the *cofradías* are small or very small, in comparison with typical market economy firms, and only two *cofradías* exceed 600 members (European Commission, 2013; Consello de Contas de Galicia, 2015a, 2015b; García-Lorenzo, 2016).

In relation with the functions that *cofradías* can carry out, in consonance with their dual public/private nature, two main ones stand out. On the one hand, they must fulfil obligatorily their role as a body that consults and collaborates with the Public Administration. At present, it is the Administration which controls the intensity of marine resource exploitation, thus establishing a management framework based on the definition of fishing rights and the regulatory systems that apply to said resources. The number of users and the different rights held with regard to the resource (access, exploitation, management, transferability) are determining factors (Schlager and Ostrom, 1990, 1992), creating a variety of governance and management problems (Jentoft, 2004; Mc Ginnis and Ostrom, 2014; Jentoft and Chuenpagdee, 2015; Linke and Bruckmeier, 2015). In this context, the case study diversity in Galicia has been described on several occasions, defining a situation of shared resources with a specific number of users who have the capacity to use and manage the resources in small-scale fisheries (González-Laxe, 2006; Caballero et al., 2008; Garza and Varela, 2008). Additionally, other activities carried out have been identified, such as the conservation of the environment, support for inspection and data collection (Xunta de Galicia, 2014). On the other hand, in parallel, the fact that the Administration recognises the *cofradías* as key agents in small-scale fisheries transforms *cofradías* into fishing organisations of reference as opposed to other possible associative initiatives.

The second main function of *cofradías* is that of representation and management of the economic interests of their members. In this sense, the regulations offer them the possibility to carry out organisational, production and commercialisation activities within the fisheries and aquaculture sector. Although production management is conditioned by the regulations established by the public administrations, *cofradías* adopt decisions within the established framework that affect their members and the operating results. For example, in Galicia different Management Plans are established each year as tools for the sustainable exploitation and conservation of marine resources. Thus, through the General Plan for Shellfish Exploitation and other specific or experimental plans, a system of co-management of shellfish resources between the Administration and the sector is developed (Xunta de Galicia, 2017). On the other hand, in the initial commercialisation of the products, sales take place at the fish markets, facilities for the exhibition and first sale of fresh fish products (Government of Spain, 2001). Around 75% of *cofradías* manage one of these markets (Galician Federation of *Cofradías*, information requested). It is precisely on account of this function, and the self-managing nature of *cofradías*, that Spain and Galicia's Social Economy laws include *cofradías* within their scope of application (Government of Spain, 2011; Xunta de Galicia, 2016).

Cofradías have been studied from different analytical perspectives and with different objectives in mind. Naturally, when referring to management resource problems, a multidisciplinary perspective allows significant progress to be made, especially regarding questions of governance. Therefore, such perspectives often intertwine, although the general analysis framework can normally be distinguished from partial explanatory models, the latter being more prone to narrowing down aspects of the problems and exploring certain analysis techniques for more specific research questions (McGinnis and Ostrom, 2014).

Along these lines, and in relation with the *cofradías*, we could differentiate between three identifiable, although not exclusivist, perspectives. From a legal-institutional perspective, the legal framework which affects the *cofradías* and the characteristics of the governance system (agents and rules), and their relationship with the natural resource system their activity targets has been analysed (Rebollo et al, 1996; Giráldez, 1996; Barrio, 1998; Taboada, 2004; Caballero et al, 2008; Ballesteros, 2018). With regard to the sociological and anthropological perspectives, analyses have made it possible to look in greater detail at the particular characteristics and implications of the *cofradías'* local and regional deep-rootedness, the intertwining of family and work relationships, the dynamics of co-management and mediation functions between fishermen's groups, or the characteristics and intensity of the participatory processes, all of which reveal significant differences between *cofradías* (Alegret, 1989, 1999; Galván, 1997; Pascual-Fernández, 1999; Freire and García Allut, 2000; García-Allut, 2002). The economic and business perspective also makes it possible to progress in specific corporate performance aspects, or observing the private element of the *cofradías* (taken in isolation, and in a hybrid public-private context), acting in a market economy, but with specific economic characteristics which condition their operation and results (Cabaleiro et al, 2004; Cervera, 2010; Alló-Loureiro, 2017; Astorkiza, 2018; García-Lorenzo et al, 2019).

Although it bears in mind this plurality of approaches, this study necessarily positions itself in a specific perspective in order to respond to the stated objectives, specifically, the business analysis of the *cofradías*. The article focuses especially on the aforementioned organisational, production and commercialisation activities, studying the contractual relationships and results of their internal activity. To fulfil this aim, firstly we will establish the theoretical framework of reference, as well as the applicable legislative framework in this case (Xunta de Galicia, 1993, 2008, 2014). Then, we will present an analysis of a case study with 15 Galician *cofradías*.

To this end, certain singularities are more easily visible in the region of Galicia, such as the high geographical concentration of fishing activities along the coastline and the significant weight of the sector in this Autonomous Region (contributing to the significant presence of marine activities in its very identity

traits). With relation to Galicia's *cofradías*, which make up around 30% of the Spanish total (Federación Nacional de Cofradías, 2019), the diversity of activities they can take on is notable, the importance of shellfishing being particularly significant. This distinguishes Galicia from other Autonomous Regions, especially where the composition of their members (the singularity of including shipowners and fishermen/shellfishermen in the same organisation is very closely linked to their social function) and organisational structure are concerned. In turn, this is linked to specific management methods, given the characteristics of the resources and the agents that take part in the activity.

In this sense, the choice of *cofradías* was based on geographical location criteria (ensuring representation from the three provinces), size (including different-sized *cofradías*) and production sectors (incorporating different profiles in the sample for this purpose). Thus, the *cofradías* chosen make up almost half of the total number of members, represent 40% of the largest *cofradías* (at the same time reflecting the diversity of activities carried out) and include at least 20% of the *cofradías* from each province. The information for the sample was obtained via a direct survey carried out in February, June and July, 2016, and May, 2017.

3. Theoretical framework

In order to address the business analysis of *cofradías*, this study begins with their very uniqueness, considering them to be a particular case within the Social Economy, which is justified both by the explicit legal definition in Spanish law and by verification in different studies of similarity in philosophy and principles of *cofradías* with those relating to the Social Economy (Cervera, 2010).

In general terms, studies by Vanek (1970) on businesses self-managed by their workers, are considered pioneering, and served as a basis for research studies in this field, both on macroeconomic and microeconomic levels (Svejnar, 1982; Defourny, 1983). This study, although more specific, shares the challenge of reconciling the rights of employees to manage their own company with the legitimate demands of other capital providers, both public and private.

More recently, the analysis of participation, key in this article, has been dealt with by different authors (Svejnar, 1982; Burdín and Dean, 2013; Burdín, 2014; Pencavel, 2013; Perotin et al., 2012; Conte and Jones, 2015; Jones and Kalmi, 2015), within the scope of the IAFEP (International Association for the Economics of Participation) who, along the lines of Vanek's studies, have a clearly macroeconomic mission. With this same perspective, in the Spanish case, are the studies by García-Gutiérrez (1988-89, 2002) and other EEC researchers (Escuela de Estudios Cooperativos de la Universidad Complutense de Madrid), although they have a microeconomic and business focus.

Specifically, the aim has been to put the focus of attention on the participation of the workers/members in the activity of the firm and thus determine whether or not it can be considered a participatory firm. Applying this approach to the *cofradía* makes it necessary to previously determine the extent to which it responds to the criteria required for it to be considered a business unit. This is necessary because the Social Economy includes both entities that carry out a strictly economic activity as well as others that only have a social purpose. In this way, in the Social Economy there are two large sub-sectors, that is, business and non-business (Monzón and Chaves, 2008), and participatory firms fall within the former.

Insofar as the Theory of the Firm is concerned (Coase, 1937), the Contractual-Based Approach (Arruñada, 1990) and the Theory of Agency (Jensen and Meckling, 1976), the characterisation of a firm is centred on the analysis of the contractual relationships established within the organisation. These relationships in the company are established through the contracts obtained by the businessman, and therefore by their very nature have an associated set of rights: 1) to appropriate residual income; 2) to control factor behaviour; 3) to be the central common part with respect to the other contracts; 4) to alter the composition of the group;

and 5) to sell these rights, which define the ownership of a conventional firm (Alchian and Demsetz, 1972:783). In this way, analysing who holds these rights in a *cofradía* makes it possible to define the extent to which it can be considered a firm.

Firms in which the different actors, the workers among them, jointly determine company policy have emerged in a growing number of countries (Svejnar, 1982). The classification of a firm as one in which workers participate in management (WPM) arises when the relationship between the member and the company involves more actions/effects than those traditionally associated with this kind of relationship in other legal formulae, in which, by definition or by standard practice, property, activity and management are separate. The members of a participatory firm, as well as contributing capital to the firm, take part in the firm's activity, in the role of supplier, consumer, worker or a combination of these relationships. And it is precisely this relationship which is the company's true *raison d'être* (García Gutiérrez, 1988-89, 2002). Consequently, workers' (members') participation in the activity of the company (*cofradía*) is reflected in the three business flows: information and decisional, real and financial.

The quintessential legal structure of a participatory firm is the cooperative society, although other examples could be companies that are self-managed by their employees. In the case of Spain, the latter cover associations such as worker-owned firms, agricultural processing companies, as well as mutual companies and societies. As such, organisation of a firm on the basis of cooperative principles exists in many worker-managed companies (Table 1). The cooperative democratic management principle is related to the priority of people and the corporate purpose over the capital, and their subsequent democratic and participatory decision-making processes. The cooperative principle of economic participation is reflected in the need to apply the results obtained from the economic activity in terms of the work or service provided, or to satisfy the entity's corporate purpose. The principle of free membership and voluntary departure means that cooperatives are voluntary organisations, open to anyone with the capacity to use their services and prepared to accept the responsibility that membership brings. These cooperative principles are most relevant when studying *cofradías*, given their relation to economic activity. The remaining principles are: autonomy and independence; education, training and information; cooperation among cooperatives; and concern for the community (International Co-operative Alliance, 1995). *Cofradías* are considered apt to carry out public and private functions, and as such, the principle of autonomy and independence could be especially important, although this study is not aimed at tackling such a duality.

INSERT TABLE 1 ABOUT HERE

Subsequently, the chosen approach applied to *cofradías* enables us, firstly, to analyse the participation of fishermen, shellfishermen and small-scale fishing vessel owners, among others, in their main representative organisation. Secondly, via the analysis of business flows and compliance with cooperative principles, it will be possible to study the business nature of *cofradías*, as well as their possible configuration as a participatory firm.

4. Participation of members in Galicia's Cofradías

In small-scale fisheries, it is common for fishermen to work in different activities, given the seasonality of some sectors and the use of fishing as a complementary means of income. This participation in the real activity, fishing and shellfishing, is the cofradía's true *raison d'être*, from which participation in information, decisional and financial flows arises.

4.1. Information and decisional flows

Membership of a cofradía is free and voluntary, and follows the cooperative principle of free membership. However, there is a limitation on the number of resource users due to the fact that the cofradía carries out its activity on natural resources under a common property regime. Members must obtain an administrative certification that enables them to carry out their activity and follow certain rules, for example, not belonging to more than one cofradía, and ensuring that their certification corresponds to the territorial scope of the cofradía itself. For example, the membership process to become a cofradía's shellfisherman or exploit specific resources involves being a party to shellfishing or specific management plans.

Membership of a cofradía goes hand-in-hand with participation in fishing, shellfishing or aquaculture activity. It is possible to distinguish between them by recognising the activity they carry out and, additionally, whether they are workers or employers. This singularity relates especially to cofradías' social functions and, in any event, is a result of the option chosen in the Spanish constitution of 1977 and in secondary legislation, by granting the cofradías a significant role in fisheries' governance. Table 2 shows the different types of members, observing this dual classification.

INSERT TABLE 2 ABOUT HERE

Membership of any type involves participation in the administration and management of the cofradía. This participation is coordinated through the decision-making system in its corporate bodies, comparable to the conventional bodies of any entity, i.e., General Board, Board of Directors, Chairman and Vice-Chairmen, although in cofradías some traditional denominations have been kept. Elections to the representative bodies are held every four years and the competent Administration is in charge of regulating the process, which involves all of the cofradía's members choosing their representatives for the General Board via universal, free, equal and secret ballot. Once the Board has been formed, it democratically chooses the other decision-making bodies from among its representatives. The members of the cofradía therefore acquire a position as "member" and "administrator".

The existence of members who carry out different activities means that the cofradía is organised internally in production sectors. The aim of this organisation in groups is to ensure the fair and equitable representation of each sector within the association. Each sector has its own interests, specific characteristics and different forms of organising the activity, which has an impact on the participation of the members in the cofradía. This circumstance conditions the elections of the decision-making bodies, in that each member has a vote to choose its representatives to form a part of the General Board, but only from among members of the same production sector. This criteria of representation per sector will also be borne in mind for the formation of the Board of Directors. The legislation requires that, to the extent possible, parity between workers and employers, and between the different sectors, be respected in the composition of the decision-making bodies. Consequently, in the cofradía, decisions are made

democratically by delegation and the cooperative principle of democratic management is strictly complied with within each production sector.

In relation with information and control on the part of the members, they have the right to request information relating to the state of the administration, assets, functioning and actions of the *cofradía* that might affect them. To this end, the decision-making bodies are obliged to publicise their actions and agreements on the notice board and hear members if required.

4.2. Real flows

Cofradías carry out production and commercialisation activities in the fishing and shellfishing sectors, where members can participate as suppliers, consumers, workers or a combination of all three. The performance of these activities makes it possible to study the *cofradía* as an economic organisation and reveal the two-fold status of members in participatory firms.

All *cofradías* carry out production tasks collectively, creating a cooperative link in management, although their organisation will be different depending on the sectors (Table 2). In fishing, members are exclusively engaged in extracting the resource using their own production means (vessels and gear) while in shellfishing members not only extract the resource but also participate in collective tasks (seeding, cleaning and monitoring). These tasks are related to the abovementioned Management Plans, which, for example, establish the months given over to the cleaning and regeneration of unproductive areas or the species eligible for seeding. In both cases, the member acts as a worker.

Regarding commercialisation, the members of the *cofradía* can choose between selling their products through the *cofradía's* fish market, in other markets or in approved establishments for the first sale of fish products (Government of Spain, 2015). When a *cofradía* manages its own market, the members normally sell their products there, especially the shellfishermen. The markets have their own rules and charge a fixed percentage of sales to cover management costs and part of the *cofradía's* operating costs. In commercialisation activities, the member acts as a supplier, selling his products in his *cofradía's* market.

As well as production and commercialisation activities, *cofradías* carry out other activities to the benefit of their members, which can be classified as complementary activities. Some of these activities are directly related to production: manufacture and sale of ice, sale of bait and rental or letting of space for vessel or gear maintenance and repair. In this case, members act as consumers of the *cofradía's* products and services.

Sometimes, these complementary activities are confused with those carried out as a body that consults and collaborates with the Public Administration. It is not always possible to differentiate between the activities the *cofradía* performs on account of its public responsibility and those it performs of its own accord as an economic activity. The tasks, which go beyond what corresponds to a public function, are considered to be a service rendered to members, where the organisation bears the costs. These may be training, administrative, tourist or conservation of environmental and cultural heritage activities, among others. These tasks will include the application or monitoring of cooperative principles such as education, training and information, cooperation among cooperatives and concern for the community, inherent in Social Economy entities.

This theoretical analysis shows that members participate in the *cofradía's* real activity as suppliers, consumers, workers or as a combination of all three, acquiring the two-fold role of worker-member and even the three-fold role of the member (Table 3).

INSERT TABLE 3 ABOUT HERE

In turn, members act as managers and administrators of the *cofradía* through their participation in the decision-making system. In this way, and in relation with its business nature, a system of relationships between individuals who cooperate among themselves and are linked to the organisation by contractual ties is created, where the members are responsible for controlling factor behaviour.

4.3. Financial flows

Members' participation in the *cofradía's* financial flows is the result, on the one hand, of the positions they acquire by participating in the real activity and, on the other, from their membership status. Once they have acquired such positions, they will maintain them for as long as they carry out an activity and participate in the real flows, but if they abandon the fishing or shellfishing activity, their status will no longer exist. This relationship between members and the *cofradía* closely resembles the system of self-managed firms studied by Vanek (1970), in which the capital belonged to the State, while the members were the employees themselves, who also managed the company.

In relation with the capital, in most of the *cofradías* it is common for members to make a contribution in the form of a quota. This quota can be periodical and its existence or otherwise, as well as its amount, depends on the activities the member carries out and the decision of each association. However, this contribution grants no right of ownership whatsoever over the entity, and as such is not comparable to contributions to the capital of conventional companies with share capital.

The member of the *cofradía*, when acting as a supplier, receives the revenue from the sale of his catches via the *cofradía*. Normally, he chooses the fish market in which he wishes to sell, but selling via his association's market yields him higher profits than a direct and isolated sale in the market. Thus, the benefits of participating as a supplier can be quantified as the additional yield with respect to the price he would obtain from an individual sale in the market.

On the other hand, by adopting a position as consumer of the *cofradía's* goods and services, the operation involves a cost per price paid for the member. What he obtains in profit is the result of a price advantage (lower cost) with respect to what he would have to pay in the market. In the event that the *cofradía* provides him with supplies such as fuel, ice, etc, the price advantage will be found in the improvement of sale prices. In addition, the *cofradía* can loan the member other services free of charge. These complementary tasks are mainly external administrative services and training activities, where the advantage is the opportunity cost as compared to what acquiring them in the market would involve.

Thus, members will always receive the residual income from the activity through prices and according to whether they act as supplier, worker, consumer or a combination of the three, complying with the cooperative principle of economic participation. The results obtained from the economic activity are applied in accordance with the work contributed by members and any profits that might have been made by the end of the financial year will remain in the *cofradía* to satisfy its corporate purpose and ensure its survival. Furthermore, the very nature of *cofradías* and their activity on common resources means that a positive economic performance generates a common and public benefit, for example, the conservation of natural or historic resources.

The *cofradía* acts as an organisation that offers its members better conditions with which to carry out fishing or shellfishing activity, replacing market price mechanisms with contractual relationships, where members receive the residual income from the activity through prices. However, it can be seen that

membership of a *cofradía* is not linked to any kind of ownership right that may be transferable in the market. When members leave a *cofradía*, they receive no compensation of any kind, nor can they prevent new members who comply with the legal requirements from joining, that is, they do not have the right to sell the ownership rights or the power to alter the composition of the group. In this way, although there may not be full compliance with the defined set of rights for it to be considered a firm, in the *cofradía* a business activity managed autonomously by its members is indeed carried out.

5. Results of the case study

The case study enables us to observe how the participation of members is coordinated in practice and to what extent it complies with the theoretical analysis. To do so, we carry out an analysis of the three business flows –information and decisional, real and financial-, in accordance with the information collected from the *cofradías* chosen. As the aim of the study is to analyse business activities and member participation, the representative sample is made up of fifteen *cofradías*, chosen in terms of their size (the biggest associations account for around 40% and cover almost 50% of the total number of members) and geographical distribution (there are, at least, 20% of the *cofradías* from each province).

5.1. Information and decisional flows

The analysis of the questions relating to *cofradía* membership, preferential entry and its limitations show, in all of the case studies, that the membership system is conditional upon carrying out a fishing, shellfishing or aquaculture activity, as well as holding the corresponding administrative certificate. With regard to the limitations, neither in fishing nor shellfishing can prohibitions relating to the right to membership of workers, employers, shipowners and legal persons who comply with the established legal requirements be appreciated. The analysis also shows two *cofradías* with specific cases, the aquaculture activities known as “*bateas*”, or floating platforms, and the “private aquaculture farms”, where workers and/or owners choose whether to be members of the *cofradía* or not and, in such case, participate in the association, acquiring the same rights and obligations of the other members.

These results coincide with the theoretical study and comply with the principle of free membership and voluntary departure: the members of the *cofradía* are fishermen, shellfishermen, shipowners, owners and aquaculture producers, both employers and workers; all take part in the association under the same conditions; they can choose whether or not to belong to the *cofradía*; and the *cofradía* does not establish any entry restrictions.

In relation with the representation system of the *cofradías* studied, in the practical case their decision-making bodies have been analysed with regard to the total number of members. The data shows, in all the cases, that parity between workers and employers is strictly complied with, in such a way that half of the members of the decision-making bodies (General Board and Governing Board) belong to each group. This system prevents representation from being fully proportional and the characteristic of “one person, one vote” being strictly complied with. Thus, equal distribution means that in 46.7% of cases, the workers are underrepresented in relation with their importance in the *cofradía*. The opposite situation is also observed in 26.7% of the *cofradías*, in which the employers overall have less representation.

The consequences of this situation are, on the one hand, that members’ participation in decision-making is democratic by delegation and, on the other, that a group within the *cofradías*, generally the workers, is underrepresented in the decision-making process. In relation with the production sectors, the distribution is more equitable in all of the cases studied, where the sector with the most members has the greatest

number of representatives in 90.1% of the *cofradías* with available data. Only one *cofradía* exists which does not adhere to this proportion, due in this case to the under-representation of employers, but where it can be seen that the two sectors with the most members have a greater presence in the corporate bodies. The case study confirms that the cooperative democratic management principle is complied with in *cofradías* through a democratic system by delegation, strictly observed within each production sector.

The members of the *cofradías* studied have different methods of information and control over the representative bodies. Notification of the meetings of the General Board and the Board of Directors, their Agenda or the agreements reached is through the *cofradía's* notice board, or sometimes through more direct methods, such as mail or personal contact. Sectoral meetings also take place, for example, production organisation, extraordinary occurrences or new regulations, and decisions, suggestions or problems are relayed to the decision-making bodies by the sectoral representatives. In this way, the participation of members in the governance, administration and management of the *cofradía* and their company status as "administrators" is ensured.

5.2. Real flows

In relation with participation in real flows, through the case studies it is possible to analyse the participation of members in the activities carried out by their respective *cofradías*. Table 4 shows how participation differs according to the activity, the member acting as worker, supplier and/or consumer.

INSERT TABLE 4 ABOUT HERE

With regard to production, 60% of *cofradías* carry out fishing and shellfishing activities. In 26.7% mainly fishing activities are performed and only in 13.3% is the main activity shellfishing, either with or without a vessel. Furthermore, around 87% of the total number of *cofradías* complement their main activities by exploiting specific resources. The case analysis shows that fishermen who are members of a *cofradía* take part in the resource extraction phase, while shellfishermen also perform extraction, seeding, cleaning and monitoring activities, following the requirements established in the Management Plans. This data, therefore, confirms that the coexistence of various production is common in *cofradías* and that, furthermore, shellfishing activity involves a greater participation of members in real flows than fishing activity.

Insofar as commercialisation is concerned, all of the *cofradías* studied except two, that is, 86.7%, manage a fish market. In the cases studied, the fish market represents one of the *cofradía's* main economic activities, not only on account of commercialisation, but also because the results obtained revert directly to the *cofradía*.

Lastly, the *cofradías* carry out complementary activities in which members participate as consumers. Of the activities included in the case study, the members act as consumers of goods and services in: the purchase of ice or bait, the use of space, external administrative services and training, among others. Table 3 shows that activities involving training and administrative services take place in 93.3% of the organisations. Included in this nomenclature are the complementary administration and training activities the *cofradías* carry out, exceeding those that correspond to their public function. Management of administrative procedures relating to vessels, help in procedures with other Public Administrations, members' tax management and health and safety training on board a fishing vessel, among others, are included in these activities. These functions are extremely important for *cofradías* and their members, as they make it

possible to obtain better economic results, improve fishing and shellfishing conditions and also serve as a tool for communication and cooperation with the Public Administration.

The study shows that participation in real flows can vary from cofradía to cofradía but exist in all of them. Members can participate in fishing production, in shellfishing production, commercialisation, etc., they even participate as consumers in complementary activities such as the provision of goods, external administrative services or training activities. Moreover, this training is provided in almost all cofradías, which underlines their importance to the principles of education, training and information, as well as concern for the community.

5.3 Financial flows

To acquire member status, 86.7% of cofradías do not require any type of contribution by fishermen or shellfishermen on joining. Only 13.3% require an entry fee on account of certain territorial situations. In any case, this fee is not linked to any kind of property right within the cofradía.

With regard to the periodical contribution which the cofradía may require at its discretion, a broad heterogeneity exists between the quotas members have to pay. In accordance with the surveys carried out, 46.6% of cofradías require a different quota depending on the production sector, the status of the member (worker or employer) and the vessel capacity. These cofradías establish the amount of the quotas in accordance with their needs, ranging from 12 and 60 euros per year for workers and shellfishermen without a vessel and from 24.20 euros to over 200 euros per year for shipowners. On the contrary, 26.7% of cofradías require an equal quota from all their members, while another 26.7% do not require any quota at all. The reason for not requiring any quota may lie in the fact that the association does not carry out any shellfishing activity or have any fish market, which would require greater financial resources.

In any case, and in keeping with the theoretical analysis, the case study shows that being a member is not linked to any economic contribution to the company capital and the amount paid does not grant any property right that could be transferable in the market. The member can not recover the contributions made, which remain in the cofradía's equity.

Members' main participation in the financial flows of the cofradía comes from the different activities carried out and the positions adopted. The economic benefits a member obtains for his participation in the cofradía are the revenues derived from his production sales and the lower costs for the services consumed. These financial relationships have an impact on the cofradía's results and financial structure, in such a way that studying it allows us to infer members' benefits. In this case, the profit and loss accounts are analysed in order to see the possible repercussions deriving from members' participation on the entity's results. The information on one of the cofradía's studied is not included in the analysis in order to avoid distortion, as it has formed a Producers' Organisation which operates simultaneously.

To analyse the financial flows, Table 5 shows the average data of the main items in the profit and loss accounts that can be related to the financial participation of its members (Consello de Contas, 2015b). After carrying out a first individualized analysis, it was detected that there are groups of cofradías with a similar financial behaviour, which is a function of the realization, or non-realization, of the commercializing activity through a fish market. Given such a difference in results, in Table 5 the data is grouped together in three ways: all of the cofradías, the cofradías with markets and the cofradías without markets. The data show that the dispersion of all the variables included in the analysis is very small among the cofradías with markets, that is, they share a form of organization and behaviour. However, in the cofradías without markets, there is a greater dispersion that may be due to the small number of data, only two entities, or the different organisation of the activity according to its specific conditions.

INSERT TABLE 5 ABOUT HERE

86% of *cofradías* manage a fish market. To analyse the revenue derived from members' production sales, the difference between the sales figure and the purchase expenditures can be observed. The average values show that this difference is very slight, so that purchases represent 88.68% of the volume of business, while sales represent 98.32%. This figure is the consequence of the *cofradía* buying its members' products at the best prices possible, adjusting its profit margin to the minimum revenue necessary for it to operate. This margin includes the fish market fees, the amount of which depends on the choice of each association. In the cases studied, 83.33% of the *cofradías* with a market charge an equal fee for all of the products they sell, while 16.67% apply different percentages depending on the type of product (fish, seafood or specific resources) and whether or not it belongs to the *cofradía*. In any of these situations, this fee involves a cost for members and revenue for the *cofradía* and ranges, in these cases and according to the surveys carried out, from 4% to 9.25%.

It can be seen from the *cofradías* that do not manage a fish market (14%) that there are no purchase items and that their sales are much lower. These sales and their operating revenues come, for the most part, from the insignificant sale of goods or provision of services. The complementary activities that the *cofradía* carries out, such as the sale of ice or rental or letting of space, also reverts to the members. These activities represent a revenue for the *cofradía* and a cost for the member, but lower than that offered by the market. In *cofradías* without a market, these revenues are as high as the volume of business, a situation that does not occur in *cofradías* with a market. These cases show that when the main activity is not commercialisation of products at the fish market, an economic activity in the *cofradía* involving the sale of goods and provision of services continues to exist.

Considering all of the *cofradías*, the items that represent operating costs and staff costs are shown as costs linked to the sale of goods and provision of services. Included here are both the complementary activities shown above, with a cost to the members, as well as the free activities the *cofradía* carries out to the benefit of its members, for example, administrative or training activities. In the *cofradías* studied, the average operating costs stand at 27.43% of the volume of business, while the staff costs stand at 10.70%. In accordance with the previous results, the proportion of these items with respect to the volume of business is higher in the *cofradías* without a fish market.

In general, it can be observed that when participating in the *cofradía*, the member receives the highest revenues possible via prices, with regard to both improving sales prices as well as obtaining lower costs. This fact is corroborated by the analysis of results, which are negative or practically null, the average being 0.56% of the business volume. Although this is not always so -this data is from 2012 and continues to be affected by the economic situation of 2009-, it is common for *cofradías* to obtain somewhat insignificant results with relation to their volume of business. Compliance with the principle of economic participation in the case studies the results are applied in terms of the work or service provided, that is, the residual income the member receives via prices are the consequence of the financial flow that results from their activity. Meanwhile, positive results must remain in the *cofradía* in order to satisfy its social purpose, an idea which is related to the management of common resources and the impossibility for members to sell the property rights. Furthermore, a common behaviour in the *cofradías* with a fish market can be observed, as the results of all of the items studied have a standard deviation of under 5%.

Consequently, the case study verifies compliance with the principle of economic participation in the

cofradías. Members receive the economic results exclusively for their participation in the activity, their work, receiving revenues through prices: higher sale prices for their products and lower operating costs. The cofradía aims to guarantee that this residual income is the highest possible for members, adjusting the fish market fees and investing in staff costs, operating costs and activities such as training.

Additionally, given the organisation of the activity, some profits remain in the cofradía as retained earnings. Members do not have any rights to these retained economic earnings, in contrast to cooperative societies, and they do not receive any economic compensation when they leave the cofradía, as they make no financial contribution linked to ownership. Thus, the economic result that remains in the cofradía complies with the entity's social purpose which, given its public-private nature, is related to protecting and conserving common resources and the long-term survival of the entity. The cofradías are presented as an entity that carries out an economic activity in which the organisation follows the criteria of a participatory firm.

6. Conclusions

Cofradías are the main Fishermen's Associations that, in Spain, group together those who are engaged in small-scale fisheries and develop their activity on marine natural resources. The current cofradías inherited an associative tradition from past times (based on their collaboration in production activities and mutual social assistance). The current Spanish legislative framework for small-scale fisheries has taken into account the historical presence of these cofradías and in the past decades they have been attributed an important role in fishing activities. In this sense, they participate in the management of fishing rights and the application of regulations. Moreover, they have been given the role of representation and consultation in the processes of definition and application of fisheries policies. For these purposes, they are defined in the legislation as public law entities, despite acting in a context (rules, principles) of market economy.

In this framework, cofradías perform a business activity autonomously managed by their members. They are, therefore, associative entities of a public-private nature, where their members share and benefit from the use and exploitation of marine resources.

Most of the previous studies on cofradías have focused on considering them as entities that represent fishermen, in particular highlighting their public nature. However, this study aims to look more closely at the private side of the cofradía, in order to determine the extent to which it can be considered as a firm that develops an economic activity involving the exploitation of fishery resources. Categorizing cofradías as a constituent part of the Social Economy does not completely answer this question, since it includes both non-profit entities and firms. Nevertheless, this has allowed us to focus this study on participatory firms, as members of cofradías participate in the entity. The results obtained reinforce this definition, despite highlighting special features, with regard to both its business and participation roles.

Cofradías are the nexus through which the complex set of contractual relationships to which it is possible to associate the rights involved in their status as a firm can be coordinated. The members of the cofradía hold the ultimate right over the residual income generated by the economic activity and they exercise it through the prices received or paid. If there is an economic surplus, it reverts to the association in full. Their members also control factor behaviour and are key with respect to the rest of the contracts. The administration and management bodies, made up of members of the cofradía, are in charge of managing the entity and fulfilling the terms of all the contracts necessary to develop the economic activity. However, members do not have the right to change the composition of the group, since access to membership implies being in possession of the corresponding administrative certification, a matter that depends on the action of the Administration. And, what is even more relevant, membership status is not linked to their

participation in the entity's capital, and therefore it is impossible to transfer property rights. Consequently, the contractual relationships established between members and *cofradía* do not meet the set of requirements necessary for it to be considered a typical private firm. Despite having an organizational and formal management structure for the development of production activity, non-compliance with such criteria is due to the fact that it is a public entity exploiting natural resources that are a common good. And it is not possible to completely separate the public and private aspects.

The parallel analysis of members' participation in the business flows (decisional, real and financial) of a *cofradía* has allowed us to define it as a participatory firm. The main objective of a member when they become part of the entity is to achieve an economic rent, by participating in the three business flows. In order to acquire member status, it is necessary to participate in the *cofradía's* economic activity, whether as a supplier, consumer, worker, or as a combination of these activities. It is not possible in any case to acquire this status if a fishing activity is not performed.

Every member of a *cofradía's* governing body is involved in the decision-making processes. The decision-making system, delegated when the existence of sectors requires, is conducted democratically; each member has the right to one vote. The case studies have allowed us to detect that, due to the current regulation, workers are underrepresented with respect to employers, which to some extent contrasts with the philosophy of a participatory firm.

Members are remunerated via prices. The residual income is transferred to the members through price advantages, charged or paid in the *cofradías*, with respect to the prices they would obtain if they conducted the transaction individually in the market. The case analyses have allowed us to verify that this way of operating, typical of a participatory firm, is reflected in the limited operating margins of the *cofradías* studied. Likewise, and as a consequence of this remuneration system, the results of the fiscal years analysed are very low. In any case, any profit in a fiscal year will revert to the *cofradía* in the form of retained earnings. Members will only receive their revenues through their participation in real flows and the economic surplus, if it exists, will revert to the members as a whole and remain as part of the entity's own funds.

The consideration of the *cofradía* as a participatory firm with special characteristics enables it to be treated within the scope of a business administration study, although these distinctive features must be included in the methods of analysis used for such a study.

Moreover, this consideration is a significant consequence of the integration of an entity conceived *ab initio* as public in activities typical of a market economy. However, following criteria related to their historical presence, this decision was also a solution to guarantee the continuity of fishermen engaged in traditional fishing activities in Spain's coastal areas.

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7. Bibliography

Alchian, A.A., Demstet, H., 1972. Production, information costs, and economic organization. American

- Economic Review, December, Vol. 62, 5, 777-795.
- Alegret, J.L., 1989. Del corporativismo dirigista al pluralismo democrático: las cofradías de pescadores en Cataluña, in Pascual-Fernández, J. (coord.). Revista ERES, Serie Antropología. Museo Etnográfico/Cabildo Tenerife, Vol. 2 (I), 161-172.
- Alegret, J.L., 1999. Space, resources and history: the social dimension of fisheries in the Northwest Mediterranean, in Symes, D. (ed.), Europe's Southern Waters: Management Issues and Practice. Blackwell Science, Fishing News Books, Oxford, 55-65.
- Alló, M.; Loureiro, M.L., 2017. The role of social norms on conservation programmes in shellfish fisheries. Marine Policy, 84, 134-141.
- Alonso Álvarez, A., 1976. Industrialización y conflictos en la Galicia del Antiguo Régimen. Ed. Akal, Madrid.
- Arruñada, B., 1990. Economía de la empresa: un enfoque contractual. Editorial Ariel, S.L., Barcelona.
- Astorkiza, K., del Valle, I., 2018. An economic analysis of private side of fishermen's cofradías' activity on the Cantabrian Sea. Marine Policy, 90, 152-159.
- Ballesteros, M.A., 2018. Gobernanza policéntrica en sistemas socioecológicos complejos: la gestión de la pesquería del pulpo (*Octopus vulgaris*) en Galicia. Tesis Doctoral. Universidad de Vigo.
- Barrio García, G., 1998. Régimen jurídico de la pesca marítima. Ed. Marcial Pons, Madrid.
- Bjorndal, T., Munro, G., 2012. The Economics and Management of World Fisheries. Oxford University Press. ISBN 978-0-19-957675
- Burdín, G., Dean, A., 2013. New evidences on wages and employment in worker cooperatives compared with capitalist firms. In The Economic Of Worker Cooperatives edited by John H. Pencavel, Edward Elgar ed. ISSN / ISBN: 978 1 78100 533 0
- Burdín, G., 2014. Equality under threat by the talented: evidence from worker-managed firms. ISSN/ISBN. 1510-9305 / 1688-5090.
- Cabaleiro Casal, M.J., André Fernández, R., Gómez Cortés, S., 2004. Las sociedades cooperativas del mar: impedimentos para su implantación en Galicia. Revista de Estudios Cooperativos, 84, 7-35.
- Caballero, G., Garza, M.D., Varela, M.M., 2008. Institutions and Management of Fishing Resources: The governance of the Galician model. Ocean & Coastal Management, 51, 8-9, 625-631.
- Canoura Quintana, A., 2008. A pesca na Galicia do século XVII. Xunta de Galicia, Consellería de Pesca e Asuntos Marítimos, Santiago de Compostela.
- Carmona Badía, X., 1989. Igualdade e desigualdade nas pesquerías galegas de mediados do século XVIII. Grial 102, tomo XXVII, 216-226.
- Cervera, A., 2010. Percepción cooperativa de las cofradías de pescadores: un estudio empírico. REVESCO, Revista de Estudios Cooperativos, 3ºC, Nº 102, 7-32.
- Claver Cortés, M.C., 1989. Evolución histórica de los gremios del mar, en MAPA (ed.), Jornadas sobre Economía y Sociología de las Comunidades Pesqueras, Madrid, 453-462.
- Coase, R., 1937. The nature of the firm. Económica, New Series, Vol. 4, 16, 386-405.
- Consello de Contas de Galicia, 2015a. Informe general de fiscalización. Cofradías de pescadores de Galicia. <http://www.consellodecontas.es/gl> (accesed 15.04.15).
- Consello de Contas de Galicia, 2015b. Cuentas rendidas de cofradías de pescadores del ejercicio 2012.

<http://www.consellodecontas.es/gl> (accessed 15.04.15).

- Conte, M.C., Jones, D.C., 2015. On the Entry of Employee-Owned Firms: Theory and Evidence from U.S. Manufacturing Industries, 1870-1960. *Advances in the Economic Analysis of Participatory and Labor managed firms*, v 16, edited Antti Kauhanen. DOI: 10.1108/S0885-333920150000016001.
- Defourny, J., 1983. L'autofinancement des cooperatives de travailleurs et la théorie économique. *Annals of Public and Cooperative Economics* 71, 201-224.
- European Commission, 2013. Directive 2013/34/UE of the European Parliament and of the Council, of 26 June 2013, on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC. Article 3.
- European Commission, 2016. Small Scale Coast Fleet in the EU. https://ec.europa.eu/fisheries/sites/fisheries/files/docs/publications/2016-small-scale-coastal-fleet_en.pdf (accessed 20.06.17).
- Federación Gallega de Cofradías de Pescadores, 2017. Cofradías. <http://confrariasgalicia.org/> (accessed 22.06.17).
- Federación Nacional de Cofradías de Pescadores, 2019. Quienes Somos. <https://www.fncp.eu/> (accessed 09.05.19).
- Fernández Casanova, C. (coord.), 1998. Historia da pesca en Galicia. Ed. Universidade Santiago de Compostela, Santiago de Compostela.
- Frangoudes, K., Marugán-Pintos, B., Pascual-Fernández, J.J., 2008. From open Access to co-governance and conservation: The case of women shellfish collectors in Galicia (Spain). *Marine Policy*, 32, 223-232.
- Freire, J, Garcia-Allut, A., 2000. Socioeconomic and biological causes of management failures in European artisanal fisheries: the case of Galicia (NW Spain). *Marine Policy*, 24, 375-384.
- Galván, A., 1997. La antropología de la pesca en Galicia: problemas y campos de investigación, en Montes del castillo, A., (ed.) *Antropología de la Pesca: debates en el Mediterráneo*. Universidad de Murcia, Servicio de Publicaciones, Torrevieja, 179-220.
- García-Allut, A., 2002. Procesos de producción pesquera en la pesca artesanal gallega, en Alegret, J.L. (ed.), *La comercialización del pescado fresco*. Universidad de Girona, 67-83.
- García-Gutiérrez, C., 1988-1989. El problema de la doble condición de los socios-trabajadores (socios-proveedores y socios-consumidores) ante la gerencia de la empresa cooperativa. *REVESCO, Revista de Estudios Cooperativos* 56-57, 83-122.
- García-Gutiérrez, C., 2002. La empresa de participación: características que la definen. *Virtualidad y perspectivas en la sociedad de la información*. CIRIEC-España, *Revista de Economía Pública, Social y Cooperativa* 40, 99-122.
- García-Lorenzo, I., Varela-Lafuente, M.M., Garza-Gil, D., 2019. Adaptive processes in small-scale traditional fishermen's organisations. The case of Cofradías in Galicia (NW Spain). *Marine Policy*, 99, 382-390.
- Garza-Gil, M.D., Iglesias-Malvido, C., Surís-Regueiro, J., Varela-Lafuente, M., 1996. The Spanish case regarding fishing regulation. *Marine Policy*, 20 (3), 249-259.
- Garza, M.D., Varela, M.M., 2008. The self-governance in the Celtic Sea Spanish fishery. *FAO Fisheries Technical Paper*, 504, 67-75.

- Giráldez Romero, J., 1996. Crecimiento y transformaciones de la pesca en Galicia (1880-1936). Ministerio de Agricultura, Pesca y Alimentación, Madrid.
- Giráldez, J.; Garza, M.D.; Varela, M., 2011. El sector pesquero. Un siglo de pesca en España, R. Robledo (coord.), Historia del Ministerio de Agricultura. 1900-2008, política agraria y pesquera de España. Ministerio del Medio ambiente, rural y marino, 326-373.
- González Laxe, F., 2002. Desarrollo y estrategia de la pesca europea. Ed. Netbiblo, A Coruña.
- González-Laxe, F., 2006. Transferability of fishing rights: The Spanish case. *Marine Policy*, 30, 379-388.
- Government of Spain, 1978. Real decreto 670/1978, de 11 de marzo, de Cofradías de Pescadores. BOE nº 87. <https://www.boe.es/boe/dias/1978/04/12/pdfs/A08439-08440.pdf>
- Government of Spain, 2001. LEY 3/2001, de 26 de marzo, de Pesca Marítima del Estado. BOE nº 75, de 28 de marzo de 2001.
- Government of Spain, 2011. LEY 5/2011, de 29 de marzo, de Economía Social. BOE nº 76, de 30 de marzo de 2011.
- Government of Spain, 2015. REAL DECRETO 418/2015, de 29 de mayo, por el que se regula la primera venta de los productos pesqueros. BOE nº 149, de 23 de junio de 2015.
- Hannesson, R., 2004. *The privatization of the Oceans*, The MIT Press.
- International Co-operative Alliance, 1995. Statement of the Co-operative Identity, General Assembly of the International Co-operative Alliance, Manchester.
- Instituto Galego de Estatística (IGE), 2017a. Padrón municipal de habitantes. <https://www.ige.eu/web/index.jsp?paxina=001&idioma=gl> (accessed 09.06.17).
- Instituto Galego de Estatística (IGE), 2017b. Buques pesqueiros da Comunidade Autónoma de Galicia. <https://www.ige.eu/igebdt/selector.jsp?COD=466&paxina=001&c=0301004> (accessed 12.07.17).
- Jensen, M.C., Meckling, W.H., 1976. Theory of the firm: managerial behaviour, agency cost and ownership structure. *Journal of Financial Economics* 3, 305-360.
- Jentoft, S., 2004. Institutions in fisheries: what they are, what they do, and how they change? *Marine Policy*, 28, 137-149.
- Jentoft, S., Chuenpagdee, R. (Eds.), 2015. *Interactive governance for small-fisheries*. Global Reflections. Centre for Maritime Research MARE. Springer Int. Pub. Switzerland.
- Jones, D.C, Kalmi, P., 2015. Membership and Performance in Finnish Financial Cooperatives: A New View of Cooperatives? *Review in Social Economy*, DOI: 10.1080/00346764.2015.1067753.
- Labarta, U., 1979. Galicia mariñeira. Historia económica e científica en VV.AA. Estudio y explotación del mar en Galicia: 11-72, Santiago de Compostela.
- Labrada, L., 1971. Descripción económica del Reino de Galicia. Ed. Galaxia (ed. Original de 1804), Vigo.
- Linke, S., Bruckmeier, K., 2015. Co-management in fisheries. Experiences and changing approaches in Europe. *Ocean & Coastal Management*, 104, 170-181.
- López Linage, J., 1991. Pesquerías tradicionales y conflicto ecológico, 1681-1794. Una selección de textos pioneros. Ministerio de Agricultura, Pesca y Alimentación, Madrid.
- López Losa, E., 2008. La pesca en el País Vasco durante el siglo XX: modernización, tradición y crisis. *Areas: Revista de Ciencias Sociales*, 27, 7-25.

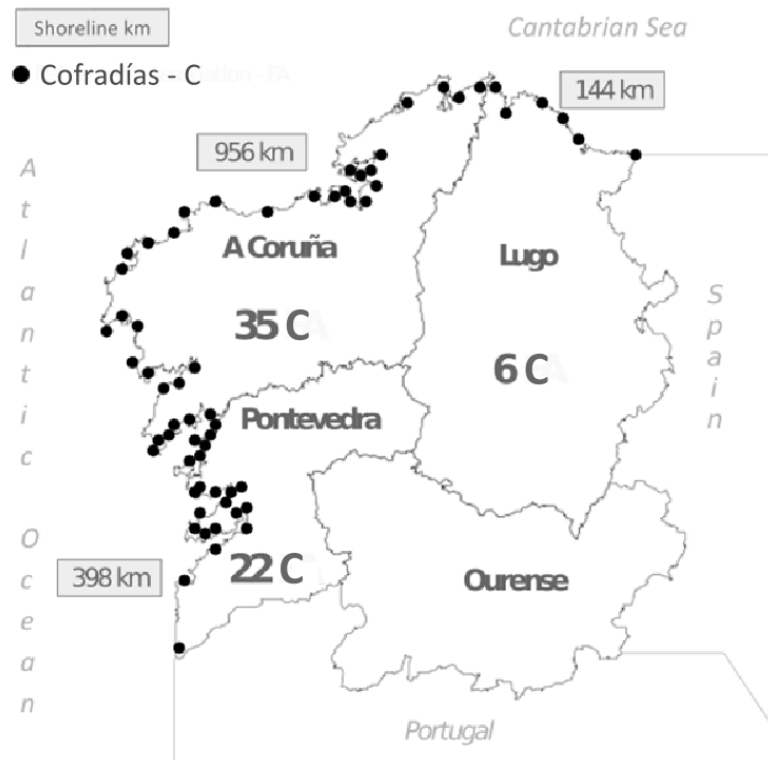
- Marugán Pintos, B., 2004. E colleron ese tren... Profesionalización das mariscadoras galegas. Consellería de Pesca e Asuntos Marítimos, Xunta de Galicia. ISBN: 84-453-3927-3.
- Mc Ginnis, M.D., Ostrom, E., 2014. Social-ecological system framework: initial changes and continuing challenges. *Ecology and Society*, 19 (2): 30.
- Monzón, J.L., Chaves, R., 2008. The European Social Economy: concept and dimensions of the third sector. *Annals of Public and Cooperative Economics* 79:3/4, 547-577.
- Neher, P., Arnason, R., Mollet, N., 1989. *Rights Based Fishing*. Kluwer Academic Pubs, Dordrecht.
- Ocupesca, 2015. Working population in the extractive fishing. <http://www.pescadegalicia.gal/Publicaciones/Ocupesca2015/Informes/1.1.html> (accessed, 07.11.2017).
- Ostrom, E., 1990. *Governing the commons. The evolution of institutions for collective action*. Cambridge University Press, Cambridge.
- Pascual-Fernández, J., 1999. The share system in fishing: the case the Canary Islands. *Europea*, 2, 65-87.
- Pencavel, J.H., 2013. Worker Cooperatives and Democratic Governance. In Anna Grandori, ed., *Handbook Of Economic Organization*, Edward Elgar, Northampton, MA, 462-480.
- Perotin, V., Fakhfakh, F., Gago, M., 2012. Productivity, capital and labor-managed and conventional firms. *Industrial and Labor Relations Review*.
- Pesca de Galicia, 2018. Registro de buques pesqueros de la Comunidad Autónoma de Galicia. https://www.pescadegalicia.gal/rexbuque/rexBuque_tabla.aspx (accessed 10.07.18).
- Rebollo-Puig, M., Falcón y Tella, R., López-Benítez, M., 1996. *Naturaleza y régimen jurídico de las Cofradías de Pescadores*. Universidad de Córdoba.
- Rodríguez Santamaría, B., 2005. *Los pescadores del Norte y Noroeste de España: su vida social y particular por provincias (edición facsímil de la original, 1916)*. Consello da Cultura Galega, Santiago de Compostela.
- Schlager, E., Ostrom, E., 1992. Property-rights regimes and natural resources: a conceptual analysis. *Land Economics* 68(3), 249-262.
- Suris-Regueiro, J.C, Santiago, J.L., 2014. Characterization of fisheries dependence in Galicia (Spain). *Marine Policy* 47, 99-109.
- Svejnar, J., 1982. On the theory of a participatory firm. *Journal of Economic Theory* 27, 313-330.
- Taboada, M. S., 2004. *El papel de las instituciones en el origen y en la evolución de la cofradía de pescadores gallega. Estudio de casos*. Universidad de Santiago de Compostela, Santiago de Compostela.
- Vanek, J., 1970. *The General Theory of Labour-Managed Market Economies*. Cornell University Press, Ithaca, New York.
- Varela-Lafuente, M., Surís-Regueiro, J., Garza-Gil, M.D., Iglesias-Malvido, C., 2000. *Economía de la pesca. Presente y futuro de la regulación pesquera en Galicia*. Ed. Instituto de Estudios Económicos P. Barrié de la Maza, A Coruña.
- Xunta de Galicia, 1993. LEY 3/1993, de 8 de julio, de cofradías de pescadores de Galicia. DOG nº 134, de 13 de julio de 1993 y BOE nº 203, de 25 de agosto de 1993.
- Xunta de Galicia, 2008. LEY 11/2008, de 3 de diciembre, de pesca de Galicia. DOG nº 243, de 16 de diciembre de 2008 y BOE nº 15, de 17 de enero de 2009.

Xunta de Galicia, 2014. DECRETO 8/2014, de 16 de enero, por el que se regulan las cofradías de pescadores de Galicia y a sus federaciones. DOG nº 19, de 29 de enero de 2014.

Xunta de Galicia, 2016. LEY 6/2016, de 4 de mayo, de la economía social de Galicia. DOG nº 93, de 18 de mayo de 2016 y BOE nº 147, de 18 de junio de 2016.

Xunta de Galicia, 2017. ORDEN de 22 de diciembre de 2017 por la que se aprueba el Plan general de explotación marisquera para el año 2018. DOG nº 246, de 29 de diciembre de 2017.

Figure 1. Geographical distribution of cofradías in Galicia



Source: Authors compilation on the information from Federación Gallega de Cofradías de Pescadores, 2017.

Table 1. Cooperative principles

Voluntary and Open Membership	Cooperatives are voluntary organisations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination.
Democratic Member Control	Cooperatives are democratic organisations controlled by their members, who actively participate in setting their policies and making decisions. Men and women serving as elected representatives are accountable to the membership. In primary cooperatives members have equal voting rights (one member, one vote) and co-operatives at other levels are also organised in a democratic manner.
Member Economic Participation	Members contribute equitably to, and democratically control, the capital of their cooperative. At least part of that capital is usually the common property of the cooperative. Members usually receive limited compensation, if any, on capital subscribed as a condition of membership. Members allocate surpluses for any or all of the following purposes: developing their cooperative, possibly by setting up reserves, part of which at least would be indivisible; benefiting members in proportion to their transactions with the cooperative; and supporting other activities approved by the membership.
Autonomy and Independence	Cooperatives are autonomous, self-help organisations controlled by their members. If they enter into agreements with other organisations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their cooperative autonomy.
Education, Training and Information	Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their co-operatives. They inform the general public - particularly young people and opinion leaders - about the nature and benefits of co-operation.
Cooperation among Co-operatives	Cooperatives serve their members most effectively and strengthen the cooperative movement by working together through local, national, regional and international structures.
Concern for Community	Cooperatives work for the sustainable development of their communities through policies approved by their members.

Source: International Co-operative Alliance: <https://www.ica.coop/en>.

Table 2. Members of the Galician cofradías

ENTREPRENEURS	EMPLOYEES
Fishing activity	
Owner: Natural or legal persons who carry out an activity as owner of vessels engaged in fishing activity	Crew member: Workers enrolled on vessels engaged in fishing activity
Shellfishing activity	
Ship Owner: Natural or legal persons who carry out an activity as owner of vessels engaged in shellfishing activity	Shell-fishermen with vessel: Workers enrolled on vessels engaged in shellfishing activity
Holder of a "Shellfishing authorisation": Holders of shellfish concessions or authorizations	Shell-fishermen without vessel and others: Self-employed who carry out the tasks necessary for the extraction of marine resources
Aquaculture*	
Holders of an "Aquaculture authorisation": farm parks or floating nurseries	Aquaculture employees: Employed employees in farm parks or floating nurseries

Source: Authors compilation from Xunta de Galicia, 2014.

* Due to its small presence in the cofradías, in this study the aquaculture activity it is not analysed in depth.

Table 3. Real Participation of the members in the Galician cofradías

FISHING	SHELLFISHING
Production → Member's participation as a worker - producer	
Small-scale fishing Purse-seine fishing Trawl fishing Deep-sea fishing Specific resources	Shellfishing without vessel Shellfishing with vessel Specific resources Fish market
Commercialisation → Member's participation as a supplier	
Fish market	Fish market
Complementary activities → Member's participation as a consumer	
Sale of ice Sale of bait Space assignment Training External administrative services Others	Sale of ice Sale of bait Space assignment Training External administrative services Others

Source: Authors compilation from Xunta de Galicia, 2014.

Table 4. Real participation of members in the case study

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Production → Participation as a worker - producer															
Shellfishing without vessel		x	x		x	x	x		x	x	x	x		x	
Shellfishing with vessel*			x		x	x	x	x	x	x	x	x		x	
Small-scale fishing		x	x	x	x	x			x	x	x	x	x	x	x
Purse-seine fishing		x		x							x	x	x		
Trawl fishing		x													
Deep-sea fishing		x	x												x
Specific resources			x	x		x	x	x	x	x	x	x	x	x	x
Commercialisation → Participation as a supplier															
Fish market			x	x	x	x	x	x	x	x	x	x	x	x	x
Complementary activities → Participation as a consumer															
Sale of ice		x	x	x	x		x					x	x	x	x
Sale of bait		x	x		x		x					x			
Space assignment		x	x		x			x			x			x	x
Training		x	x	x		x	x	x	x	x	x	x	x	x	x
External administrative services		x	x	x	x	x	x	x	x	x	x	x	x	x	x
Others										x			x		

Source: Authors compilation from information derived from the case studies

* Includes the mussel sector and vessel for aquaculture activities, which are only relevant in two cofradías

Table 5. Principal items of the Cofradía's Profit and Loss Accounts for the year 2012 related to the member's participation. Data in percentage of the net revenues

	All cofradías		Cofradías with fish market		Cofradías without fish market	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Net revenues	100	0	100	0	100	0
Sales	92,75	15,84	98,32	1,53	59,31	25,01
Supplies	-77,90	32,88	-90,72	4,67	-0,96	1,35
Purchases	-76,01	32,44	-88,68	4,22	0,00	0,00
Other operating income	17,61	40,86	3,85	2,81	100,18	75,55
Staff costs	-10,70	14,29	-7,65	4,16	-29,00	41,01
Other operating costs	-27,43	56,46	-6,05	3,67	-155,72	53,72
Outcome	0,56	19,97	-1,01	2,88	9,93	69,92

Source: Authors compilation from Consello de Contas, 2015b

