



COOPERATIVE ESSENCE AND ENTREPRENEURIAL QUALITY: A COMPARATIVE CONTEXTUAL ANALYSIS

by

Carmen GUZMAN * and Francisco J. SANTOS 

University of Seville, Spain

and

María de la O BARROSO

University of Huelva, Spain

ABSTRACT: *This article links two different fields of research, entrepreneurship and cooperatives, and studies whether, depending on the context, differences in terms of the fulfilment of the cooperative philosophy (cooperative essence) and entrepreneurial quality exist. To this aim, a statistical analysis is carried out using data from two Spanish regions: Andalusia and the Basque Country. The results enable us to conclude, firstly, that cooperative essence differs in relation to regional context, but not in relation to entrepreneurial quality. Secondly, cooperative essence and entrepreneurial quality are positively related, suggesting that cooperative essence may be part of the entrepreneurial quality of these kinds of firms.*

Keywords: Cooperatives, Cooperative essence, Entrepreneurial quality, Regional context

JEL Classification: J54, L25, L26, R11

1 Introduction

In recent years, the interest that academics and institutions have shown in cooperatives has greatly increased. This has occurred as a consequence of their proven resistance to economic crises in comparison to that of conventional firms (Núñez-Níquel and Moyano-Fuentes 2004, Birchall and Ketilson 2009, Birchall 2013, Cantero et al. 2013, Webb and Cheney 2014). The reasons that justify this behaviour can be found in the nature and working principles held by cooperatives, which facilitate the adaptation of their structures in times of economic difficulties (Moore and Kraatz 2011, Boone and Özcan 2016). Thus, for instance, cooperative peculiarities lead these firms to prioritise the preservation of jobs over the maintenance of high profits (Núñez-Nickel

* E-mail: cguzman2@us.es; fjsantos@us.es; barroso@uhu.es

and Moyano-Fuentes 2004), which is why they tend to reduce salaries and working hours instead of firing workers (Calderón and Calderón 2012).

In this sense, when developing their business activity, cooperatives reveal their social approach since the values and principles on which they are based, such as solidarity, equity, social justice and commitment with the environment, constitute a series of guidelines that place human beings before capital. Therefore, in addition to economic value, cooperatives generate social value (Burdin and Dean 2009, Moore and Kraatz 2011, Cheney et al. 2014), such as by the generation of social cohesion and higher levels of job satisfaction and trust (Rothschild-Whitt and Whitt 1986, Zeuli and Radel 2005, Avey et al. 2012, Nelson et al. 2016).

Nevertheless, despite the latter, it is hard to find studies that measure the level of fulfilment of cooperative peculiarities, henceforth referred to as ‘cooperative essence’. The literature has focused on various aspects of cooperatives, such as the influence of worker participation on the productivity or performance of these firms (Jones and Sveinjar 1985, Kruse and Blasi 1997) or the possible existence of differences in terms of efficiency or productivity between cooperatives and conventional firms (Jones and Sveinjar 1982, Fakhfakh et al. 2012). Also, and taking into consideration the ‘social advantage’ of cooperatives, the literature has dedicated great efforts to explaining the role of cooperatives in the economic development process of a specific region (Spear 2000, Vieta and Lionais 2015). However, the comparative contextual perspective has rarely been incorporated in previous studies. Covering these gaps in the literature is the first objective of this research.

On the other hand, if cooperatives, thanks to their philosophy, do create social value and economic value at the same time, it seems appropriate to consider, in addition to their nature, their entrepreneurial capacity as engine of the generation of economic dynamism. It has been demonstrated that the entrepreneurship phenomenon constitutes one of the most widely researched topics in Economics and Management literature due to its links with the success of companies and, consequently, with regional economic development (Santos et al. 2012, Fernández and Romero 2013).

More specifically, when considering entrepreneurship, it is necessary to emphasise the role of the quality of entrepreneurial capacity since it determines the success or failure of a firm (Guzmán and Santos 2001, 2009). In this regard, various studies conclude that this capacity is affected by both entrepreneurs’ behaviour and by specific characteristics of the firm, such as its size or its type of economic sector (Romero 2011, Fernández and Romero 2013). Thus, the better the entrepreneurial behaviour and the firm’s characteristics, the better the entrepreneurial quality of the firm and its chance of success.

Nevertheless, the theoretical framework of the entrepreneurship domain has rarely been applied to research on cooperatives. Consequently, it is still unknown whether that framework is applicable to this group of firms. Likewise, examining the existence of any possible link between the entrepreneurial quality of cooperatives and regional context, such as in the case of conventional firms, is still a pending task. Filling these gaps constitutes the second objective of this research.

On the whole, this study strives to join the fields of research of cooperatives and entrepreneurship with the aim of analysing whether there is a relationship between

cooperative essence and regional context, on the one hand, and between entrepreneurial quality and regional context, on the other. Also, it seems appropriate to consider whether there is a correlation between cooperative essence and entrepreneurial quality. In this respect, the research questions that this article tackles include the following: Is cooperative essence linked to regional context? Are there any entrepreneurial quality differences in relation to regional context? Is there a relationship between cooperative essence and entrepreneurial quality?

To answer these questions, a literature review is first carried out in order to establish the fundamental issues that this research faces. After this, two different indices are created in order to measure the notions considered in this study: cooperative essence and entrepreneurial quality. At a later stage, these indices are applied to the regions of Andalusia and the Basque Country, and the results are analysed using different statistical techniques. Finally, the conclusions extracted from this analysis are presented.

2 Theoretical framework

2.1 Cooperative essence

Various definitions regarding cooperatives have been proposed by both authors and official institutions (Hansmann 1996, Novkovic 2008). Nevertheless, the one which is most widely accepted is proposed by the International Cooperative Alliance. According to this institution, a cooperative is ‘an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly owned and democratically controlled enterprise. Cooperatives are based on values of self-help, self-responsibility, democracy, equality, equity and solidarity’ (ICA 1995).

In this way, specific differences between cooperatives and conventional firms can be established with respect to the basis of their existence, their structure of governance, the use of surpluses, and the structure of workers. While a conventional firm’s aim is to maximise economic profit under a hierarchical approach in decision making, the objective of a cooperative is to create value based on a sustainable approach and democratic decision making. Moreover, conventional firms hand out dividends and accumulate reserves, while cooperatives distribute profits with the obligation to reinvest part of it in the main activity and in education. Lastly, conventional firms establish relationships with their workers through work contracts and subordination. However, in the case of worker cooperatives, on which this article is focused, workers can play the role of their partners in the firm (Hwang et al. 2001, Núñez-Níquel and Moyano-Fuentes 2004, Birchall and Ketilson 2009, Marcuello and Nachar 2013, Nelson et al. 2016).

Beyond these differences, literature on cooperatives has widely recognized that these companies exert a positive influence in socioeconomic terms over the people involved in the business and the regional context in which they are situated. The reasons for this are found in the values on which cooperatives are based, which ensure that the economic activity in question is carried out in a democratic, fair, socially committed and responsible manner, by taking into account the rest of the population and striving for the community’s welfare (ICA 1995). Cooperatives therefore bear in mind the social perspective at the same time as they create economic value with their activity

(McRobie 1981, Westlund and Westerdahl 1996, Burdin and Dean 2009, Mahazril et al. 2012, Cheney et al. 2014).

In practice, this creation of social value is translated, for instance, into the generation of stable and quality jobs (Pencavel et al. 2006, Alves et al. 2016), and into the encouragement of the participation of their workers and members, thereby bringing about an increase in their job satisfaction (Rothschild-Whitt and Whitt 1986, Miller and Monge 1986, Avey et al. 2012). All these attributes contribute to increasing the quality of life and the creation of higher levels of social cohesion and social welfare in communities (Novkovic 2008), giving rise to the so-called *cooperative advantage* of cooperatives firms over the traditional business models (Spear 2000, Vieta and Lionais 2015).

However, the ‘superiority’ of cooperatives in comparison with conventional firms is not always evident in the literature for all the business aspects. For instance, results of research are not conclusive about whether productivity and efficiency in cooperatives is greater or lower than in conventional firms (Jones and Svenejar 1982, Fakhfakh et al. 2012, Pérotin 2015, Kruse 2016, Monteiro and Straume 2018, Montero 2018). Also, regarding employment, empirical studies have found that although cooperatives eliminate fewer positions, they also seem to create fewer jobs (Pencavel et al. 2006, Alves et al. 2016). In addition, it has also been shown that despite cooperatives having more egalitarian compensation structures, they suffer from brain drain (high-ability members are more likely to quit) (Burdín 2016).

Furthermore, although by definition cooperatives are characterized by the aforementioned cooperative values, these values are not always present (Özdemir 2005, Beaubien and Rixon 2012, Bretos and Errasti 2016), which might explain the failures of some cooperatives. Indeed, there are numerous cases in which cooperatives are set up for fortuitous reasons, without members being fully aware of the implications that setting up a cooperative involves (LaFuente 1986, Díaz-Foncea and Marcuello 2014). When this is the case, it has been shown that cooperatives are less successful, probably because they fail to put the cooperative philosophy into practice (Pathak and Kumar 2008). Consequently, their connection with the community and the regional or local context is limited and vague.

Finally, there are numerous cases in which a cooperative is initially set up and fulfils its characteristic values and features in practice, but, over time, it becomes denaturalized and assimilated to conventional firms in order to increase their competitiveness. This phenomenon has been studied in great depth and is referred to as *degeneration* (Ben-Ner 1984). Although this does not always take place (Dean 2019), it is very common when a cooperative attains a substantial size and is internationalized, through establishing branches abroad. When degeneration occurs, the cooperative’s connections with the regional or local context are usually also affected (Bager 1994, Cornforth 1995, Clamp 2000, Bretos and Errasti 2016).

By taking into consideration these various situations in which the cooperative nature is encountered to different extents, we propose the concept of *cooperative essence*, defined as the degree to which a cooperative is truly a cooperative – that is to say, the extent to which its partners are aware of what cooperativism involves and fulfil its values and principles in the development of its entrepreneurial activity. In this respect, it can be stated that the less cooperative essence there is, the less its partners are aware of its cooperative nature and the less they interiorize its values and put the cooperative

philosophy into practice. Conversely, the more its partners are aware of the cooperative philosophy and its values and principles, the more cooperative essence there will be in the development of its activity and the more genuine the cooperative will become.

At this point, it seems appropriate to question whether the geographical and cultural context plays a role in the cooperative essence of a specific group of this kind of firm. In other words, it seems appropriate to pose the question: are there differences in terms of cooperative essence according to different environments or contexts? In this regard, different studies have found that the creation of cooperatives may be promoted by an environment with informal and institutional factors favourable to cooperatives, such as a high-functioning cooperative culture, a high number of already existing cooperatives, and policies and subsidies related to cooperatives (Perotin 2006, Arando et al. 2009, 2012). The reason that explains this is that this situation allows these firms to become widely recognized and embraced by society. In this vein, there are different areas in which, thanks to the success of their cooperative experiences over time, these organizations serve as a benchmark for the society of a specific context that very often develop their business activity according to the cooperative nature, reinforcing the cooperative spirit. These are the cases, for instance, of the *kibbutz* in Israel (Blasi, 2017) or *Mondragon* in Spain (Thomas and Logan, 2017). Consequently, according to all these studies, it is logical to think that contexts in which the cooperative movement is more established and interiorized would reveal a higher cooperative essence in comparison to contexts with a lower cooperative culture. Nevertheless, analysing cooperatives from a contextual perspective also implies considering other aspects of cooperatives, as explained in the next section.

2.2 Entrepreneurial quality

Although the study of cooperatives within the entrepreneurship domain is still incipient, it could contribute to shedding light on still unknown aspects of this kind of company, especially those aspects related to links with the environment and with their potential as a different business model.

Despite the fact that there is no universally accepted definition of entrepreneurship, the literature on this matter recognizes that its study involves two dimensions: quantitative and qualitative (Guzmán and Santos 2001, Santos et al. 2012, Baumgartner et al. 2013, Williams and Vorley 2014, Audretsch et al. 2015). The quantitative perspective refers to the amount of entrepreneurs and companies there are in a specific context, and the qualitative perspective refers to those aspects that make them more successful.

This research focuses on the qualitative dimension of entrepreneurship – that is, the entrepreneurial quality. For entrepreneurial quality to be good in a particular context it must be present in both its entrepreneurs and its firms, that being determined by a series of behaviours, such as innovation (Certo et al. 2009), risk-taking (Covin and Slevin 1989), proactiveness (Miller 1983) or ambition (Smith et al. 2001).

Regarding innovation, it can be defined as the behaviour that leads the company to engage in creative processes and to the experimentation and generation of new ideas, which in turn leads to new products, services and technological processes or management (Lumpkin and Dess 1996, Schumpeter 1934). This behaviour was deemed essential for

entrepreneurship for the first time by Schumpeter (1934), and it has become fundamental because it constitutes a key determinant of business success (Morris and Kuratko 2002, Certo 2009). In this sense, the introduction of an innovation, regardless of the type, leads to improving the performance, the competitiveness and the position of the company in the market (Morris and Kuratko 2002, Certo 2009).

As far as risk-taking is concerned, this takes place when a person gets involved in a situation from which he/she may gain high profits in the case of success, but may also suffer significant losses if the business fails (Brockhaus 1980, Miller 1983, Covin and Slevin 1989). This behaviour has been considered as being associated with entrepreneurship since the beginning of the study of the entrepreneur by Cantillón (1755), and has continued to be linked to entrepreneurial activity to date. Although specific literature recognizes that entrepreneurs may perceive risk in a different way (Busenitz, 1999), it is well known that successful entrepreneurial activity implies engaging in riskier situations with the consequent positive results (Cyert and March 1963).

Proactiveness refers to the search for opportunities in order to act in advance of changes in demand (Miller 1983, Venkataraman 1989). In this regard, Kirzner (1983) described proactive behaviour as a continuous state of 'alertness' to the opportunities that have not yet been exploited. Consequently, proactive entrepreneurs are very often the fastest ones at introducing improvements to their products or services or entering new markets. All of this will have a very positive effect on the company's production, improving their competitiveness (Penrose 1959, Lieberman and Montgomery 1988).

Finally, ambition can be defined as the entrepreneur's need to continue developing and expanding their business (Guzmán and Santos 2009). This need is shown through the growth of the company and contrasts with the feeling of conformity that entrepreneurs have once the business has reached a certain size (Davidsson 1991). Ambition is related to achievement motivation, which refers to the desire that people have to improve the results of their actions and feel responsible for them (McClelland 1961). In other words, it is the aspiration to stand out from the rest and to succeed. Thus, the more ambitious an entrepreneur is, the more probability he/she has of developing their business activity and that of the company.

On the other hand, literature also recognizes that both the size and the kind of economic sector are characteristics of the firms which are linked to entrepreneurship and, therefore, to the aforementioned behaviours. Thus, according to the specific literature on entrepreneurship, larger firms are in a better position than smaller firms when it comes to being successful in a competitive environment because the former can control the market, profit from economies of scale and develop and use new technologies thanks to their financial resources, marketing and R&D (Schumpeter 1934, Chandler 1996). In turn, literature has traditionally recognized the industry activity as adding more value to the production chain (Prebisch 1950, Singer 1950). In this way, firms in this sector would benefit from being in strategic positions that open up the possibility to experiment and create new goods, products and processes. Specifically, with the development of ICTs, the most competitive industrial sector is currently the high-technology industry (Drucker 1969, Vence and Rodil 2003), as it is oriented to international markets with the consequent growth potential.

Once all the elements that define entrepreneurial quality have been clarified, it is important to highlight the important role of context. Thus, the literature confirms

that regions with a more favourable context towards entrepreneurship have firms with a higher entrepreneurial quality. In this vein, a favourable cultural trend towards entrepreneurship leads to better entrepreneurial behaviours (Kemelgor 2002, Liñán and Fernández 2014). Likewise, political-institutional factors play a very important role when establishing policies that promote this business culture, such as the implementation of specific programmes in the education system aimed at promoting the entrepreneurial spirit (Fayolle 2000, Kuratko 2005), and these factors can also facilitate the exploitation of opportunities and boost the entrepreneurial behaviour of entrepreneurs (Baumol 1990, 1993, Acs et al. 2008) through overcoming barriers traditionally found in the development of their business activity, such as finances or bureaucracy (Barlett and Bukvic 2002).

Although the volume of literature on the relationships between entrepreneurial quality and regional or local contexts is quite high, that referring specifically to cooperatives is harder to find. Therefore, although it is widely accepted that territories with a favourable context towards entrepreneurship and higher economic development have firms with a higher entrepreneurial quality (Kemelgor 2002, Santos et al. 2012, Fernández and Romero 2013, Liñán and Fernández 2014), these studies have scarcely focused on cooperatives specifically, so the entrepreneurial quality of cooperatives has rarely been analysed. In this sense, taking into consideration all of the existing differences between cooperatives and conventional firms, it is necessary to study the entrepreneurial quality of cooperatives and to assess whether these relationships between the environment and entrepreneurial quality still exist.

3 Methodology

3.1 Contextualization and data

In order to verify whether context plays a role in defining the differences between cooperative essence and entrepreneurial quality in cooperatives, and whether any connection between these two characteristics exists, a survey was carried out in 2013 among a specific type of cooperative firms, worker cooperatives (WCs), in two major Spanish regions: the Basque Country in the north, and Andalusia in the south. This type of cooperative was chosen because, in addition to being one of the most numerous in the world (Birchall 2013, Cheney et al. 2014) and being widely studied within the academic field of labour-managed firms (Ward 1958, Jones and Svenejar 1982), it is the most common type in Spain with the highest number of workers (see Table 1).

Andalusia and the Basque Country were selected as the regions to be studied because, despite both having a very significant tradition of cooperative movement, their contexts differ widely (see Table 1). On the one hand, Andalusia is in the south of the country and although it has a much greater number of inhabitants (17.9% of the national population), it remains one of Spain's most backward regions (74% of the average national GDP per capita and an unemployment rate of 21.3%). On the other hand, the Basque Country, in the north, has a lower population (4.7% of the national population) but is one of the country's most highly developed regions (132% of the average Spanish GDP per capita and an unemployment rate of 9.6 %) (National Statistics Institute, INE 2019).

Table 1 – General characteristics of cooperative sector in Andalusia and Basque Country (2018)

General indicators and importance of cooperative sector in Andalusia and Basque Country					
		Total national	Andalusia	Basque Country	
Population		46,722,980	17.90%	4.70%	
GDP per capita		100%	74%	132%	
Unemployment rate		14.50%	21.3%	9.6%	
Total number of firms		3,337,646	15.3%	4.3%	
Total cooperatives	Number of firms (% over the national figure)	12,078	2,665 (22.1%)	1,023 (8.5%)	
	Number of employees (% over the national figure)	241,923	58,243 (24.1%)	29,995 (12.4%)	
Worker cooperatives	Number of firms (% over total regional cooperatives data)	6,805	1,665 (62.5%)	759 (74.2%)	
	Number of employees (% over total regional cooperatives data)	92,849	23,175 (39.8%)	15,751 (52.5%)	
Distribution of cooperatives in Andalusia and Basque Country by size and sector					
		Andalusia		Basque Country	
		Total firms	Cooperatives	Total firms	Cooperatives
Size ¹	Micro (1–9 employees)	95.3%	85.4%	93.2%	49.5%
	Small (10–49)	4.0%	12.1%	5.6%	28.3%
	Medium(50–249)	0.6%	1.7%	1.0%	18.3%
	Large (250 or more)	0.1%	0.8%	0.1%	3.9%
	Total	100%	100%	100%	100%
Economic sector ²	Industry	16.9%	19.4%	47.1%	43.6%
	Services	83.1%	80.6%	52.6%	56.1%

¹Definition by the EU Commission according to the number of employees.

²Data on this variable refer to the distribution of employment among economic sectors due to the lack of available data.

Sources: Official data provided by MEYSS, INE, Eustat and Instituto de Estadística y Cartografía de Andalucía.

Additionally, it can be also observed in Table 1 that Andalusia has a high percentage of total cooperatives in Spain (22.1%), with a very high employment proportion of the national employment in cooperatives (24.1%). Likewise, the Basque Country, despite its lower size in terms of population, has a percentage of 8.5 per cent of total cooperatives and 12.4 per cent of employment in cooperatives in relation to the total amount of cooperative employment in the country. These figures show that both regions have a strong cooperative presence, with worker cooperatives being the most important type.

Table 1 also shows that cooperatives in both Andalusia and the Basque Country are bigger compared to the figures of total firms, as the percentage of microenterprises is smaller in cooperatives than in the set of total firms. However, it is also shown that this percentage is much smaller in the Basque Country (49.5% vs. 85.4%), which is why on average, the size of Basque cooperatives is greater. Likewise, cooperatives have quite a strong presence in the industrial sector, this figure also being higher for the Basque Country (43.6% vs. 19.4%).

Table 2 – Distribution by size and by economic sector of the sample

		Andalusia	Basque Country
Size	Micro	160	113
	Small	29	31
	Medium	3	9
	Large	1	2
	TOTAL	193	155
Economic sector	Industry	61	75
	Services	132	80
	TOTAL	193	155

Source: Own elaboration.

The survey was developed during 2013 by a specialized company hired by the University of Seville. It was designed to survey a representative sample by economic sector and size – that is, worker cooperatives in both Andalusia and the Basque Country. The sample was selected by applying a simple random sampling (with a margin of error of 6.5% and a confidence level of 95%) and the worker cooperatives answered the questionnaire via email. After having finished and refined the data collection, a definitive sample of 348 worker cooperatives was obtained, of which 193 were Andalusian and 155 Basque. The characteristics of the sample are available in Table 2.

3.2 Questionnaire and measures

The questionnaire, following previous studies on entrepreneurship in cooperatives, was directed towards the Council Leader (Rodríguez and Guzmán 2013, Guzman et al. 2019) and was structured in three different parts. The aim of the first part was to identify the general characteristics of the firm, such as the name, location, year of creation, size and sector. The second and third parts were dedicated to identifying the cooperative essence and entrepreneurial quality respectively. These two sections included questions related to cooperative philosophy and entrepreneurial behaviour, the answers of which were dichotomous, multiple and 7-point Likert scale.

Based on the data extracted from this questionnaire, we built two different indices to measure cooperative essence and entrepreneurial quality. The index that measures cooperative essence is composed of the following elements:

- *Reasons why the entrepreneurs set up a worker cooperative.* This element measures whether the firm was established with the founders' conviction of creating a different kind of firm with cooperative values. To this end, the entrepreneurs answered three questions using a 7-point Likert scale (from 'completely agree' to 'completely disagree') concerning whether the reasons that led them to set up the cooperative were related to either the consultation with professionals who recommended this kind of firm (prescription-based motivation) (Pres.motiv.) (Z_1), to the lack of capital to undertake the business individually (necessity-based motivations) (Nec. Motiv.) (Z_2), or to the willingness to create a different kind of business (Dif. Motiv.) (Z_3). It is considered that the greater the level of agreement in the first two answers and the lower the level of agreement in the third, the less willingness there was

to create a different kind of firm, and, consequently, the less motivation to put the cooperative philosophy into practice. In contrast, the lower the level of agreement in the first two and the greater the level of agreement in the third answer, the higher the motivation to practice the cooperative philosophy (Pathak and Kumar 2008, Diaz-Foncea and Marcuello 2014).

- *Existence of a majority member.* It is common for a majority member to provide the entity with more money at some point, normally with the aim of continuing to develop and increase the entrepreneurial activity. These cases must be treated as important, since they contribute to business development through providing their resources to the decision of the General Assembly, without knowing whether it will decide distributing profits or not and without, according to the law, receiving anything in exchange in terms of extra votes (Bretos and Errasti 2016, Monteleone and Reito 2017). Situations such as these should be considered as one of the highest levels of manifestation of the cooperative movement, as they enable the creation and increase of the social and economic value to be maintained. Based on this idea, we introduce this variable into the ‘essence index’. This identifies whether there is a majority member and, if so, the percentage of capital that he/she provides (Z_4).
- *Degeneration.* We used Ben-Ner’s definition (Ben-Ner 1984) to measure this variable. The cooperative was asked how many member and non-member workers it had when the firm’s activity began. Likewise, the same question was asked regarding the current situation; that is to say, how many member and non-member workers the firm currently employs. Thus, it could be verified whether the proportion of the non-member workers of the total number of workers (members and non-members) had increased, and, therefore, whether degeneration had taken place (Z_5).

Using the variables above (Z_i), a scale change from their original values to a scale from 0 to 1 was carried out on those variables that were codified differently. Value 1 was given for those situations that indicated maximum cooperative essence in the variable in question, and 0 otherwise. The cooperative essence index (Coop.Essence) was subsequently calculated by applying equation (A1) for w (in the Appendix) to all the firms in the sample. This index takes values from 0 to 1. The higher values are for those cooperative firms that show a more favourable attitude towards cooperativism. The lowest values are for those cooperatives that have an indifferent or contrary attitude towards cooperativism.

For the creation of the entrepreneurial quality index, the following variables were selected and measured based on previous studies (Guzmán and Santos 2001, Romero 2011, Santos et al. 2012, Fernández and Romero 2013):

- Innovation in products (Inn_prod) (Q_1): The value ‘0’ indicates that the firm has not introduced innovations in the last three years, and ‘1’ indicates that it has.
- Cooperation in R+D (Coop_R+D) (Q_2): This takes the value ‘1’ when the firm cooperates in R+D, and ‘0’ in the case that it does not.
- Risk-taking (Risk_take) (Q_3): A 7-point Likert-type scale is used in which ‘1’ indicates ‘completely disagree’ with there being a strong preference for high-risk projects, and value ‘7’ indicates ‘completely agree’.
- Proactiveness (Proactiveness) (Q_4): In order to measure proactiveness, the respondents were asked whether they carried out planning, control, and opportunity-seeking tasks. These three variables take the value ‘1’ if the firm annually carries

out the activity in question, and '0' otherwise. In this way, to measure proactiveness, a joint indicator responds to the sum of these three variables: Proactiveness = planning + control + alertness.

- **Ambition (Ambition) (Q_5):** This variable takes the percentage by which the sales have varied in the last five years, using the sign '+' to indicate an increase, and '-' to indicate a decrease.

As in the case of cooperative essence, these variables were codified with values from 0 to 1 in order to apply equations (A1) and (A2) (in the Appendix) (taking values for variables Q_i instead of Z_i) and obtain the entrepreneurial quality index (Entrep_qual_Index). Again, as in the previous case, this index takes values from 0 to 1, meaning higher values indicate that a worker cooperative has a higher entrepreneurial quality.

Later, a t -test was carried out to find out whether there were significant differences between the Basque Country's worker cooperatives and those of Andalusia concerning these indices and the different variables included in them. Also, taking as reference the correlation matrix with the indices created and their variables, a descriptive analysis of the relationships between them has been carried out. We have also incorporated the variable 'region' in this matrix, which takes value 0 if the worker cooperative belongs to the Basque Country and 1 if it belongs to Andalusia. Moreover, in accordance with studies that have analysed the quality of entrepreneurship in a specific region (Fernández and Romero 2013, Santos et al. 2012), the size of the firm and its economic sector have also been included in the following way:

- **Firm size (Size):** This variable shows the size of the firm that was surveyed and takes value 1 if it is a micro firm, 2 if it is a small firm, 3 if it is a medium-sized firm, and 4 if it is a large firm.
- **Economic sector (Service):** This takes value 1 if the firm surveyed carries out activities from the service sector, and 0 otherwise.

4 Results

The descriptive statistics of the variables entered in the analysis are shown in Table 3. As can be observed, the mean of the size variable is higher in the Basque Country (1.35 vs. 1.20) and the mean of the service variable is higher in Andalusia (0.44 vs. 0.38). Regarding cooperative essence, the average values of the five variables included in it indicate that, in Andalusia, worker cooperatives seem to have a lower cooperative essence than in the Basque Country, since they have greater prescription-based and necessity-based motivations (5.16 and 4.47 vs. 4.74 and 3.62, respectively), lower motivations to create a different kind of business (4.93 vs. 5.26), fewer cases of majority member (0.8% vs. 4.08%), and greater situations of degeneration (86.45% vs. 18.46%). Consequently, the mean for the variable 'Cooperative Essence' is higher in the Basque Country than in Andalusia (0.61 vs. 0.56). Furthermore, the t -test for independent samples shows that, with the exception of the variable related to the willingness to create a different kind of business, which is not significant, and prescription-based motivations, which is significant at a confidence level of 90 per cent, all these differences are significant at a confidence level of 99 per cent (Table 4).

Table 3 – Descriptive statistics of the studied variables

		Minimum	Maximum	Mean	S.E.
Control variables					
Size	AND	1	4	1.20	0.471
	BC	1	4	1.35	0.652
Service	AND	0.00	1.00	0.4456	0.49832
	BC	0.00	1.00	0.3871	0.48866
Cooperative essence characteristics					
Pres._motiv.	AND	1	7	5.16	2.086
	BC	1	7	4.74	2.192
Nec._motiv.	AND	1	7	4.47	2.428
	BC	1	7	3.62	2.353
Dif._moti.	AND	1	7	4.93	2.166
	BC	1	7	5.26	2.029
Majorit._coop.	AND	0.00	80	0.8	6.475
	BC	0.00	75	4.08	14.092
Degener.	AND	-350	1272	86.4591	205.76
	BC	-375	600	18.4644	91.263
Coop._essence	AND	0.18	0.86	0.5671	0.149
	BC	0.21	0.89	0.6198	0.154
Entrepreneurial quality characteristics					
Prod_inn	AND	0	1	0.5803	0.49479
	BC	0	1	0.5032	0.50161
R+D_coop	AND	0	1	0.11	0.312
	BC	0	1	0.19	0.396
Risk_take	AND	1	7	3.52	1.756
	BC	1	7	3.16	1.657
Proactiveness	AND	0	3	2.0933	0.99562
	BC	0	3	2.271	0.92799
Ambition	AND	-90	300	-21.48	42.706
	BC	-70	300	-3.01	48.606
Entrep_qual_Index	AND	0.02	0.58	0.3426	0.1557
	BC	0.03	0.60	0.3435	0.16289

Source: Own elaboration.

With regard to entrepreneurial quality, the situation is different. Thus, as can be observed in Table 3, where Andalusia shows a higher mean for the variables of product innovation (0.58 vs. 0.50) and risk-taking (3.52 vs. 3.16), the Basque Country shows higher levels for the variables of cooperation in R&D (0.19 vs. 0.11), proactiveness (2.271 vs. 2.09) and ambition (-3.01 vs. -21.38) (concerning the ambition variable data, it is important to highlight that the negative signs may derive from the consequences of the 2009–2013 economic crisis, showing that firms experienced a decrease in their activity). As a result, there is hardly any difference between the means of both entrepreneurial quality indices, with 0.3426 for Andalusia and 0.3435 for the Basque Country. Accordingly, Table 5 presents the *t*-test used for all these variables and shows that, although there are significant differences between both regions regarding the variables of cooperation in R&D, risk-taking, proactiveness and ambition (at a confidence level of 95%,

Table 4 – *t*-test of cooperative essence*

Variable	Region	Mean	S.E.	<i>t</i>	Sig.
Pres._motiv.	AND	5.16	2.086	-1.797	0.073
	BC	4.74	2.192		
Nec._motiv.	AND	4.47	2.428	-3.279	0.001
	BC	3.62	2.353		
Dif._moti.	AND	4.93	2,166	1.484	0.139
	BC	5.26	2,029		
Majorit._coop.**	AND	0.8	6.475	2.68	0.008
	BC	4.08	14.092		
Degener.	AND	86.4591	205.76179	-4.078	0.000
	BC	18.4644	91.26397		
Coop._essence	AND	0.5671	0.149	3.219	0.001
	BC	0.6198	0.154		

*All the descriptive statistics, as well as the *t*, are calculated with the original values before moving them to the 0–1 scale for the subsequent index calculation.

**This variable takes value 0 if there is not a majority cooperativist and, if there is one, the percentage of shares which he/she has.

Source: Own elaboration.

Table 5 – *t*-test of entrepreneurial quality*

Variable	Region	Mean	S.E.	<i>t</i>	Sig.
Prod_inn	AND	0.5803	0.49479	-1.433	0.153
	BC	0.5032	0.50161		
R+D_coop	AND	0.11	0.312	2.175	0.03
	BC	0.19	0.396		
Risk_take	AND	3.52	1.756	-1.932	0.054
	BC	3.16	1.657		
Proactiveness	AND	2.0933	0.99562	1.705	0.089
	BC	2.271	0.92799		
Ambition	AND	-21.48	42.706	3.771	0
	BC	-3.01	48.606		
Entrep_qual_Index	AND	0.3426	0.1557	0.053	0.958
	BC	0.3435	0.16289		

*All the descriptive statistics, as well as the *t*, are calculated with the original values before moving them to the 0–1 scale for the subsequent index calculation.

90%, 90% and 99% respectively), differences regarding the entrepreneurial quality index are not significant.

With respect to the analysis of the relationships between all of the variables (Table 6), we can see that there are statistically significant correlations between many of them. However, after carrying out the necessary tests, we have confirmed that the highest variance inflation factor (VIF) lies below 10 (1.340), and the highest condition number below 20 (17.212). It can therefore be stated that there are no problems of multicollinearity.

Taking a closer look at these relationships, it is remarkable that cooperative essence is positively correlated to entrepreneurial quality at a confidence level of 99 per cent (0.153). This means that those cooperatives that put the philosophy into

Table 6 – Correlation matrix

Region	Size	Service	Age	Pres.- motiv.	Nec.- motiv.	Dif.- molti.	Majorit.- coop.	Degener.	Coop.- essence	Prod.- inn	R+ D.coop	Risk- take	Proactiveness	Ambition	Entrep- qual- Index
1	-.140***	.059	.327***	.096*	.174***	-.080	-.153***	.201***	-.171***	.077	-.119**	.103*	-.091*	-.199***	-.003
Size	1	.155***	.188***	-.211***	-.013	.063	-.007	.340***	-.043	.054	.265***	.005	.195***	.163***	.165***
Service	.059	1	-.115**	.033	-.257***	.148***	-.013	.174***	.223***	.109**	.208***	.151***	.222***	.293***	.252***
Age	.327***	.188***	1	-.062	.252***	-.014	-.068	.119**	-.185***	-.022	-.010	-.003	-.075	-.274***	-.073
Pres.-motiv.	.096*	-.211***	.033	1	.054	-.022	.009	-.033	-.082	.009	-.070	-.028	-.013	-.028	-.017
Nec.-motiv.	.174***	-.013	-.257***	.054	1	.023	.021	-.013	-.562***	-.007	-.139***	.082	-.038	-.144***	-.024
Dif.-molti.	-.080	.063	.148***	-.022	.023	1	.001	.042	.744***	.066	.124**	.130**	.230**	.152***	.213***
Majorit.-coop.	-.153***	-.007	-.115**	-.009	.021	.001	1	.012	.005	-.032	.085	-.027	-.007	.063	-.016
Degener.	.201***	.340***	.174***	-.033	-.013	.042	.012	1	-.182***	.126**	.128**	-.006	.042	.142***	.116**
Coop.-essence	-.171***	-.043	.223***	-.082	-.562***	.744***	.005	-.182***	1	.029	.139***	.057	.189***	.167***	.153***
Prod.inn	.077	.054	.109**	.009	-.007	.066	-.032	.126**	.029	1	.198***	.130**	.312***	.149***	.779***
R+D.coop	-.119**	.265***	.208***	-.070	-.139***	.124**	.085	.128**	.139***	.198***	1	.126**	.178***	.197***	.354***
Risk.take	.103*	.005	.151***	-.028	.082	.130**	-.027	-.006	.057	.130**	.126**	1	.248***	.069	.458***
Proactiveness	-.091*	.195***	.222***	-.013	-.038	.230***	-.007	.042	.189***	.312***	.178***	.248***	1	.171***	.771***
Ambition	-.199***	.163***	.293***	-.028	-.144***	.152***	.063	.142***	.167***	.149***	.197***	.171***	.171***	1	.262***
Entrep.qual_Index	-.003	.165***	.252***	-.017	-.024	.213***	-.016	.116**	.153***	.779***	.354***	.458***	.771***	.262***	1

***Correlation is significant at the 0.01 level (2-tailed).

**Correlation is significant at the 0.05 level (2-tailed).

*Correlation is significant at the 0.09 level (2-tailed).

Source: Own elaboration.

practice and are consistent with the cooperative spirit have an entrepreneurial behaviour of higher quality, and vice versa. Specifically, cooperative essence shows a positive correlation with entrepreneurial behaviours regarding cooperation in R&D (0.139), proactiveness (0.189) and ambition (0.167) at a confidence level of 99 per cent.

Likewise, entrepreneurial quality index has a highly positive correlation (99% confidence level) with the motivation related to the willingness to create a different type of business (0.213). In this sense, the desire to have a different kind of firm is associated with higher levels of cooperation in R&D (0.124), risk-taking (0.130) (both of them at a confidence level of 95%), proactiveness (0.230) and ambition (0.152) (both of them at a confidence level of 99%). In this vein, it is also interesting that necessity-based motivation is negatively correlated to the entrepreneurial variables of cooperation in R&D and ambition (-0.139 and -0.144 respectively at 99%).

Finally, it is quite interesting that degeneration is positively correlated with entrepreneurial quality index (0.116). This means that those cooperatives with better entrepreneurial behaviour experience a high degree of degeneration, and vice versa. Specifically, degeneration is positively related to product innovation (0.126), cooperation in R&D (0.128) and ambition (0.142). All of these relationships are significant with a confidence level of 95 per cent and 99 per cent, making them very robust.

5 Conclusions and discussion

The aim of this research has been to analyse whether differences in terms of cooperative essence and entrepreneurial quality exist depending on their context. In other words, this research has examined whether a specific environment plays a role in the way its cooperatives practice the cooperative philosophy and in the way they develop their business activity. Taking worker cooperatives in the Spanish regions of Andalusia and the Basque Country as the population groups under study, we have built a different index for measuring both cooperative essence and entrepreneurial quality, making this study the first in striving to identify the cooperative essence of cooperative firms. According to the results obtained, we can extract three different main conclusions.

Firstly, different levels of cooperative essence may exist depending on the specific regional context. Thus, cooperatives in a region where the philosophy of this movement is more interiorized develop their business activity in a way that is oriented more towards the cooperative nature. This conclusion is interesting because despite the efforts made by various institutions to spread and visualize this kind of entrepreneurship in a specific context, the results show that they may be insufficient. The internalization and awareness of cooperative values must undergo serious changes in the way of doing business, which is not an easy issue because, among other reasons, it needs time.

In relation to the points made above, such is the case of Andalusia, where despite the three Andalusian agreements for the Social Economy being passed in 2002, 2006 and 2011, and despite the high number of existing cooperatives (MEySS 2019), the cooperative sector will not be considered a truly cooperative sector if it shows no awareness or behaviours in line with the cooperative nature being developed. In this respect, it is important to emphasize that Andalusian cooperatives have traditionally been linked to the agricultural sector (Vázquez et al. 2019). Therefore, changing the

association between cooperatives and the primary sector in society, and expanding the cooperative philosophy to other economic sectors, would probably require more resources and time (Núñez-Nickel and Moyano-Fuentes 2004, Thomas and Logan 2017).

In contrast, the long tradition and the specific case of Mondragon makes the Basque Country a point of reference for the cooperative research field. Thomas and Logan (2017) point to three factors as the determinants of this situation: (1) the degree of industrialization that the Basque Country has always experienced in comparison with other areas, (2) the labour movement, which showed preferences towards the cooperative phenomenon, and (3) Basque nationalism, and the tension between the Basque provinces and Spain's central government, which increased the feeling of 'collective identity', a necessary condition for cooperatives to emerge (Defourny 1995). As we can see, the cooperative movement in this region was shaped in very different circumstances, in a more advanced economically context and with an inclination towards the communal and human union. This tradition has continued to develop up to the present day, and public bodies have also taken part in this process, carrying out cooperation agreements with the private sector at industry levels (Santisteban 2006, Ahedo 2007). In this way, it would seem logical that this context is favourable towards fulfilling the cooperative essence.

The second conclusion of this research is that regional context is not linked to the entrepreneurial quality of cooperatives. Thus, even if a region provides a more favourable context for entrepreneurship, with a high entrepreneurial culture materialized in higher levels of economic development, the presence of bigger firms and an industrial-based economy, as is the case of the Basque country versus Andalusia (Castrogiovanni et al. 2011, INE 2019), no significant differences regarding entrepreneurial quality indices of cooperatives exist. This finding is of particular interest because it means that the framework of previous studies linking entrepreneurial quality and regional context (Kemelgor 2002, Santos et al. 2012, Fernández and Romero 2013, Liñán and Fernández 2014) does not fit to cooperatives. Therefore, a new door is opened for the joint study of entrepreneurship and cooperative enterprises. A possible explanation for this situation may well be linked with their nature, with a greater focus on maximizing human welfare over profits (ICA 1995). In this way, this premise may lead cooperatives to behave in a similar way in terms of entrepreneurial quality, regardless of where they are located.

The third conclusion is that despite there being no differences in terms of entrepreneurial quality, there is a positive relationship between cooperative essence and entrepreneurial quality. This idea may well suggest that entrepreneurial quality in cooperatives could be defined not only by traditional indicators of innovation, proactiveness, risk-taking and ambition, but also by cooperative essence. In other words, if a higher entrepreneurial quality is correlated with a higher cooperative essence, it seems logical to think that the latter is part of the former (Guzmán et al. 2016). In this vein, differences in entrepreneurial quality between cooperatives in different contexts could emerge due to differences in their cooperative essence, as is the case in this research. Therefore, cooperative firms that subscribe to the cooperative philosophy would naturally have higher levels of entrepreneurial quality, with the consequent effects on their performance and results (Guzmán et al. 2016). In practice, this would remove the possible degeneration that cooperatives could experience with the development of, according to results, entrepreneurial behaviours (innovation or ambition), or even give rise to a regeneration of the firm after a certain period of time (Batstone 1983, Cornforth 1995, Storey et al. 2014, Bretos and Marcuello 2017).

Two main practical implications arise from these conclusions. First, for the cooperative firm to respect the values and philosophy and not just be a legal entity, transversal policies must be carried out, the aim of which is to make this kind of entrepreneurship and its characteristics known, visible and be interiorized by society in all contexts. One example of these transversal policies is, in addition to the aforementioned public–private cooperation agreements in the Basque Country, to include subjects specialized in cooperatives in the university degrees of Economics and Business Studies and in other studies with clear links to entrepreneurial activity. This would enable future entrepreneurs to consider worker cooperatives as a possible alternative when creating a firm and be aware of their specific requirements (Santos et al. 2013, Puusa and Hokkila 2015).

Secondly, regarding the entrepreneurial behaviour of cooperatives, although there are no significant differences in the entrepreneurial quality indices in terms of context, it is clear that regional governments and other institutions give particular importance to the innovation and internationalisation of cooperative firms, but not to other entrepreneurial behaviours. Therefore, in order to boost cooperative entrepreneurial activity and revive their entrepreneurial quality, it would be desirable to promote each and every one of the cooperative entrepreneurial behaviours. This would positively influence the results of firms. In this regard, it is essential at this point to remind ourselves of the traditional problems that the literature points out as being common in cooperatives, such as their monitoring costs (Hansmann 1996), the free-rider problem (Rose-Ackerman 1982), the horizon problem (Porter and Scully 1987), and/or their difficulties in implementing economies of scale (Mosheim 2002). All of these problems may also affect their entrepreneurial quality somehow.

Lastly, it should be pointed out that this study has a series of limitations which could be overcome in future studies. It is important to bear in mind that this research is static. The information taken from the questionnaire corresponds to a specific moment in time, which does not enable us to ascertain whether the answers of the respondents are constant over time or whether they are the result of specific circumstances. In addition, this study is specifically focused on worker cooperatives, which means that one must be cautious when applying the conclusions to other types of cooperatives.

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Appendix

$$w = \beta_1 Z_1 + \beta_2 Z_2 + \beta_3 Z_3 + \beta_4 Z_4 + \beta_5 Z_5 \quad (\text{A1})$$

where

$$\beta_i = \frac{\bar{Z}_i}{\bar{Z}_1 + \bar{Z}_2 + \bar{Z}_3 + \bar{Z}_4 + \bar{Z}_5}. \quad (\text{A2})$$