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# Online Communication of Sustainability in the Social Economy: A Comparative study

Comunicación Online de la Sostenibilidad en la Economía Social: Un Estudio Comparativo

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#### **ABSTRACT**

Spain is the world leader in olive oil production. The aim of this article is to analyze the type of non-financial information (CSR) that companies in the sector disseminate on their websites and the factors that explain a greater online dissemination. The fsQCA methodology is applied. The results indicate that companies focus on communicating the knowledge generated on aspects related to food safety and that the dissemination of CSR is affected by factors such as having a commercial orientation towards the online market, having channels of interactivity with stakeholders and offering organic/ecological products.

Keywords: Sustainability, Corporate social responsibility, Olive oil, Online communication, ICT.

## RESUMEN

España es líder mundial en la producción de aceites de oliva. El objetivo de este artículo es analizar el tipo de información no financiera (RSC) que difunden en sus sitios webs las empresas del sector y los factores que explican una mayor difusión online. Se aplica la metodología fsQCA. Los resultados indican que las empresas se centran en comunicar el conocimiento generado aspectos vinculados con la seguridad alimentaria y que la difusión de la RSC se ve afectada por factores como tener una orientación comercial hacia el mercado online, disponer de canales de interactividad con stakeholders y una oferta de productos ecológicos.

Palabras clave: Sostenibilidad, Responsabilidad social corporativa, Aceite de oliva, Comunicación online, TIC.

JEL Classification/ Clasificación JEL: F14, L81, M14, M15, P13, Q01, Q107, Q56.

#### 1 INTRODUCTION

In recent decades we have witnessed a change in societal attitudes or values (Halman et al., 2022), which has been in line with economic growth and increases in per-capita income (Franzen & Meyer, 2010). Society is increasingly critical of unethical business practices and their environmental and social impacts. According to the latest Eurobarometer (2023), concern for the environment and climate change is one of the top five concerns for europeans (31%), along with public health (34%), hence more and more people are willing to change their habits to limit this impact (Ipsos, 2022). These same concerns were highlighted in 1987 with the so-called Brundtland Report (United Nations, 1987) which indicated that a new era of economic growth was possible: "growth that is both forceful and socially and environmentally sustainable". This report led in 2000 to the Millennium Development Goals and from 2015 to the Sustainable Development Goals (hereinafter SDGs) advocated by the United Nations (hereinafter UN) (2015).

The requirements and challenges of the 21st century suggest the need for a change in business conception, towards an ethical, socially responsible and sustainable business and management model. Being socially responsible means adapting to change, which is the fundamental ingredient for survival and development in the market (Barroso & Santos, 2014). In this sense, some studies have found evidence between stakeholder pressure and the adoption of green organizational practices by companies (Betts et al., 2018). Consequently, these pressures will have a direct impact on the income statement and competitiveness (Kim et al., 2018), but only if, on the one hand. they know how to manage the knowledge generated by these relationships and turn it into indicators, and on the other hand, they are able to disseminate or communicate these indicators and the actions generated to respond to these pressures (Guadamillas & Donante, 2008). Among this knowledge, we can cite the actions taken by companies to contribute to sustainable development, such as the implementation of practices to contribute to the SDGs, Corporate Social Responsibility (hereinafter CSR) and/or Sustainability practices. Currently, there is a growing stakeholder interest in CSR information (Albitar et al., 2020). Several studies highlight CSR in order to generate customer loyalty (Sang. 2022), improve the perceived image of the company (Cui et al., 2018) and positively influence reputation (Islam et al., 2021). It is key to disclose information on CSR, sustainability or non-financial information (different names have been used to refer to similar content).

The situation outlined here is not alien to the agri-food industry and therefore, to the olive oil production sector, which is the subject of this study. As we will detail in the theoretical framework, Spain currently leads the world production of olive oils. Despite the drought affecting Spain, on average in the last 5 seasons, it has been the main olive oil producing country with approximately 42% of the world production and 65% of the European Union (hereinafter EU) production, according to data from the International Olive Council (hereinafter IOC) (2022). These data reveal a situation of world leadership.

On the other hand, cooperatives play a predominant role in the Spanish olive oil sector. According to the Ministry of Agriculture, Fisheries and Food (hereinafter MAFF) (2022), cooperatives account for 65% of the olive oil production in Spain. Therefore, to speak of Spanish olive groves is to speak of cooperative societies (Mozas, 2019). The contribution of Social Economy (hereinafter SE) organizations to the SDGs, of which cooperatives are the leading exponents, has not gone unnoticed by the UN, the International Labor Organization, the EU and other governmental and representative organizations (Inter-Agency Task Force on Social and Solidarity Economy, 2015; EU, 2021; International Labor Organization, 2022; UN, 2023).

Despite this leadership, for decades the main problem of virgin olive oil producers has been their disengagement from the end consumer as a stakeholder group. The literature points to the importance of undertaking a change of orientation towards the end market, with digitalization being identified as a key factor both at a commercial level (Jorge et al., 2019; Bernal et al., 2019) as well as for the provision of CSR evidence/indicators to stakeholders, in order to improve their competitiveness (Tetrault & Lvina, 2019).

This study, applied to the olive sector, focuses on the online dissemination of non-financial or CSR information as a means of communicating to stakeholders the generation of knowledge in favour of sustainable development. Specifically, the objective is to analyze, on the one hand, what CSR knowledge is communicated on their websites in the form of certifications and, on the other hand, which variables or factors explain a higher level of online dissemination of this knowledge. Specifically, we analyze the extent to which the type of company (cooperative or non-cooperative) or greater interactivity with stakeholders, measured by the existence of blogs, a forum, a complete online purchasing process and a presence on social networks or other platforms, contribute to the dissemination of CSR. The fuzzy-set qualitative comparative analysis (fsQCA) methodology is applied to achieve this objective.

The paper is structured as follows: after this introduction, the contextual framework detailing the propositions of the study is presented, followed by the technical characteristics of the research in the methodology section, an analysis of the results, and finally the conclusions and bibliographical references.



#### 2 THEORETICAL FRAMEWORK

## 2.1. Importance of the internationalization of the olive sector

The Spanish leadership in the olive sector is unquestionable. According to the National Statistics Institute of Spain (2022) there are a total of 420.485 olive grove farms with an average area of 5.86 hectares, which in total accumulate the largest olive grove in the world with 2,464,420 hectares. This fact is reflected in production. According to the IOC (2023) Spain, on average in the last 5 seasons, has been the main olive oil producing country with approximately 42% of the world production and 65% of the production of the EU, despite the drought that has been affecting Spain in recent years. Andalusia, a region located in the south of Spain and the subject of our study, is the first olive oil producing Community, with 80.11% of the national total for the 2020/21 campaign (MAFF, 2023), and 37% of the world total. According to MAFF (2023), cooperatives represent half of the total number of companies dedicated to olive oil production in Spain and the rate of cooperativization (production in cooperatives) is 65%. For the case of the Andalusian Community, and the same source (MAFF, 2023), cooperatives represent 49% of the companies but 67% of the production, due mainly to the merger processes that are being carried out and that generate structures of greater business size. Therefore, to speak of the Spanish olive grove is to speak of cooperative societies (Mozas, 2019).

Spain is also the main exporter of olive oils. Over the years, according to the database of the General Directorate of Customs (Datacomex), it can be seen that these have been increasing and have doubled in less than two decades. Italy is the main destination country for our exports, accounting for practically half of them. The first five countries (Italy, Portugal, France, Germany and the Netherlands) account for 92% of exports to Europe. Mozas (2022) identifies the quality preferences of each country according to the types of oil they purchase. In the case of Europe, 85% of oil consumers prefer virgin oils and 15% olive oils. However, countries such as Italy buy almost 85% virgin and France 97%. However, America and Asia are two increasingly important areas of export interest where quality is appreciated (Mozas, 2022). The cooperative movement is becoming increasingly powerful in exports, either through second-tier cooperatives such as Jaéncoop SCA, Oleoestepa SCA, or Agrosevilla SCA, or through trading companies whose capital is controlled by cooperatives such as Mercaoleo SL, which is the subsidiary of Dcoop SCA (Mozas, 2022).

On the other hand, the olive grove is not only income and employment, but in the framework of the multifunctionality of agricultural activity. The olive grove is considered as an agrosystem that provides public goods and healthy and quality products to the population, which contributes, if properly cultivated, to the fight against erosion, to the fixation of significant amounts of carbon dioxide  $(CO_2)$  that help mitigate climate change, to the maintenance of biodiversity and to the fixation of population in rural areas. Mozas (2019)

emphasizes the great contribution of the olive sector in general and the olive cooperative sector in particular to the achievement of the SDGs, so they are undoubtedly sustainable enterprises.

## 2.2. Corporate social responsibility and knowledge management

Under the Stakeholder Theory, CSR finds a natural fit and can itself become a source of competitive advantage (Fombrun & Shanley, 1990). This theory argues that there are more stakeholders involved in the company than just shareholders, where the objective of the company and, in particular, of the management, is to serve the interest of all its stakeholders, without whom it would cease to exist (Freeman, 1984). This same theory serves as a basis for explaining the close relationship between knowledge management and CSR (Guadamillas & Donante, 2008).

Knowledge management, defined as a process for creating, acquiring and capturing, sharing and using knowledge to improve organizational performance (Scarbrough et al., 1999), is connected to the need to obtain information from stakeholders and transform it into knowledge. However, as Guadamillas  $\Delta$  Donante (2008) indicate, it is equally necessary to ensure the dissemination of new knowledge to stakeholders through the generation of a stronger reputation as an innovative and responsible company. In this sense, Barroso  $\Delta$  Santos (2014) indicate that it will be necessary to identify stakeholders and establish dialogue with them in order, on the one hand, to obtain the necessary information that will be converted into knowledge, and on the other to transfer this knowledge, both internally and externally, through the results of the activity, including CSR actions.

CSR is an instrument that allows the company to interact with its stakeholders, to whom it provides the knowledge and technologies it develops (Werther & Chandler, 2006). The dissemination of CSR knowledge implies information transparency and results in trust and reputation as a responsible company (Nieto & Fernández, 2004), and the very dissemination of knowledge created in ethical terms strengthens the company's competitive position (Groff & Jones, 2003). Consequently, a key factor in the success of socially responsible companies will be their appropriate communication with stakeholders (Nadanyiova et al. 2020), and in this relationship the choice of media is key. As Hoştut & Deren van het Hof (2015) point out, the medium used influences the perception of CSR, as well as enabling more rational decision-making by stakeholders (Wanous, 1992).

Several studies on corporate communication show how large companies communicate their CSR using standards, CSR reports and responsible branding campaigns (Frandsen et al., 2013; Morsing & Spence, 2019). For Christensen et al. (2017) and Esposito et al. (2021), external certifications or standards are one of the tools that organizations can use to communicate their CSR practices and have the advantage of offering maximum assurance by being certified by third parties. These certifications and standards improve



the company's internationalization capacity by enabling it to compete in global markets. However, as indicated by Cea-Moure (2019), sustainability reports and corporate websites are the most common mechanisms for CSR communication by companies. Consequently, ICTs and websites are a key means to facilitate the dissemination of knowledge generated in CSR (Chaudhri & Wang, 2007; Nicoló et al., 2021) and to establish a relationship of dialogue with stakeholders (Cobelli & Wilkinson, 2020).

## 2.3 Communication of CSR or Non-Financial Information in Cooperatives

The CSR literature has highlighted the growing interest among both academics and practitioners in the disclosure of CSR information and specifically CSR reports or Sustainability reports (hereafter SR) (Singhania & Gurmani, 2023; Bartoszewicz & Szczepankiewicz, 2022). According to KPMG (2022) the number of SRs has been growing every year and the rate of SR filings, among the N100 (the 100 largest companies in each of the 58 countries analyzed) reached 79% in 2022, a percentage that is expected to increase as new regulation on SRs is introduced. Europe ranks second at the regional level, with 82% of its top 100 companies (N100) reporting SRs, with Spain (93% N100) and Italy (90% N100) among the top ten countries with the highest percentage of companies reporting SRs according to GRI standards (KPMG, 2022).

Directive 2014/95/EU of the European Parliament and of the Council regarding the disclosure of non-financial information and information on diversity by certain large companies and certain groups (EU, 2014), transposed in Spain by Law 11/2018 on Non-Financial Information and Diversity, introduced for the first time the obligation to report Non-Financial Information Statements (hereafter NFIS) or SR. In the fiscal year 2022 this obligation was extended to a greater number of companies due to the update of the scope of application included in the Law. Now, the EU has admitted new changes with regard to SR with the Corporate Sustainability Reporting Directive (hereafter CSRD) (EU, 2022). Thus SRs are no longer an option but rather an obligation for many companies and are equated to company financial reporting. In addition, sustainability reporting also affects companies within the scope of the value chain, thus including information on organizations that are not directly bound by the CSRD. In this regard, KPMG (2022) indicates that large global companies tend to lead in sustainability reporting and provide a useful trend indicator for adoption by other companies. Some cooperative laws passed in Spain, such as Law 11/2019 on Cooperatives in Euskadi and more recently, Law 2/2023 of the Community of Madrid or Law 4/2022 of the Canary Islands, have already started to regulate on SR reporting for cooperative societies. Similarly, the Spanish Association of Accounting and Business Administration (AECA) has published two technical notes related to the current situation of the NFIS in Social Economy companies and their obligations regarding its presentation (Polo, et al., 2021; Castilla-Polo et al., 2022).

Singhania & Gurmani (2023) conducted a bibliometric analysis (1992-2022) which shows that research on SR is mostly focused on developing countries, with a european predominance, on large companies and with the main research topics being the determinants for dissemination, content and quality of the reports. However, research focused on SE enterprises and in particular on cooperative societies is very scarce. Studies on SE have focused on analyzing the content of SRs in credit cooperatives (Belhourai et al., 2005; Bollas-Araya & Seguí-Mas, 2014), in agri-food cooperatives (Castilla-Polo et al., 2015; Pérez-Sanz et al., 2019) and in consumer cooperatives (Sequi-Mas et al., 2016). Other research has dealt with the level of implementation of CSR practices in agri-food cooperatives (Pérez et al., 2009; Mozas et al., 2013-2014; Fernández-Perlines et al., 2020; Richter & Hanf, 2021; Monzón et al., 2021; Lafont-Torio et al., 2023), in worker cooperatives (Arcas & Briones, 2009) and in consumer cooperatives (Sajardo-Moreno & Chaves-Sajardo, 2017), not focusing on their diffusion as such.

All this research on SEs highlights the low implementation of SR development by cooperatives and, consequently, their deficit in CSR knowledge dissemination. More recent studies corroborate the fact that despite the existence of a greater demand for non-financial information by stakeholders, SE companies are still lagging behind. Sannino et al. (2019) analyzed 42 Italian banks (cooperative and non-cooperative) to see if there were differences in the degree of SR disclosure and concluded that cooperative banks had a lower level of disclosure than other banks. Campillo-Alhama & Igual-Antón (2021) conducted a study on 28 electric cooperatives that market electricity in Spain and indicate that 6% of cooperatives communicate their CSR through various channels and 16% of those disseminate their results or contributions to the SDGs to their stakeholders through SR, social balance, websites, social networks and multimedia platforms. Polo & García (2021) conducted a study of 37 of the most relevant cooperatives in the SE and concluded that only 7 had NFIs, being parent companies of business groups and not finding any cooperative in the agri-food sector. Castilla-Polo et al. (2022) analyze the NFI reports taking the census of the 100 most relevant cooperatives in Spain, concluding that the publication of non-financial information has not reached the degree of maturity shown in large companies both nationally and internationally and 52% of the cases have specific access on their website. Furthermore, as regards the standards used, the initiatives most widely followed in Spain by private companies, GRI reports (5%) or UNGC reports (3%), are only marginally followed.

In short, to the extent that stakeholders are pressing to be informed about CSR and it is becoming a key element for the competitiveness of companies, the SE cannot miss out on the use of ICTs to maintain communication with them and disseminate the knowledge generated on CSR. It is critical that cooperative enterprises make progress in the preparation of SR and communicate their responsible performance online. Some studies have begun to explore the dissemination of CSR through digital media (Carvalho et al.,



2018; Fait et al., 2019; Esposito et al., 2021; Florensa-Guiu et al., 2023), although not for cooperative societies. For all the reasons argued so far, this research aims to contribute to the literature on online disclosure in CSR or online communication of non-financial information, focusing on an understudied organizational model such as cooperative societies.

## 2.4. STUDY PROPOSITIONS

Online interactivity with stakeholders

A company's website has been configured as the space where many of the communication processes between the company and its stakeholders take place and, on many occasions, it will be the first reference when it comes to creating an image of the company (Chen & Macredie, 2005). Although the characteristics that websites must possess in order to be positively valued may vary, there is consensus that high levels of information, interactivity and services are positively related to user satisfaction (Heinze & Hu, 2006). Compared to static websites, today's websites must combine informational, relational and transactional functions associated with online commerce to ensure a strong online position (Meroño & Arcas, 2006) and improve their commercial position (Caiazza & Bigliardi, 2020). In sectors such as agri-food, it has become an attractive sales channel (Vega et al., 2014), enabling a new way of communicating at low cost (Lin et al., 2020) and improving trust and interaction with the consumer (Camanzi & Giua, 2020).

Social networks, on the other hand, stand out as close and trusted communication channels that allow sharing information about the differential attributes of products in the way they are produced, as well as about the experiences of their consumption, adding value and differentiating them in increasingly competitive markets. Indeed, the intrinsic characteristics of certain 'experiential' agricultural products make them particularly suitable for marketing through online social networks (Stricker et al., 2007). Canavari et al. (2002) indicate that the purchase and consumption of products such as oil or wine are based on an intense exchange of information referring not only to tangible aspects of the product but also to others such as symbols, tradition, culture, tourism, production methods or gastronomy, which can significantly improve the consumer's perception of value. Similarly, authors such as Hung et al. (2011) have argued that due to the more personal nature of information exchange and its indirect mode of communication, based on word of mouth, social networks are more credible tools than others for providing "green information". In this sense, for some consumers olive oil is part of their 'green consumption' shopping basket, seen as less polluting and more environmentally friendly (Calomarde, 2000).

Consequently, the more interactivity and services a website has the more information it must also have, so that it is positively valued by its users and can constitute a source of competitive advantage for companies in the

development of their commercial activity. Consequently, our first propositions will be the following:

Proposition 1. Companies with an online market orientation (complete online purchasing process) have a higher online dissemination of the knowledge generated on CSR.

Proposition 2. Companies with online interactivity with stakeholders, through blogs, forums, social networks or with a presence on other platforms such as Google Reviews, have a greater online dissemination of the knowledge generated on CSR.

# Organic Products

Marketing research shows that CSR has a positive influence on consumers (Lee et al., 2019; Kim, 2019) and that consumers prefer products from companies that invest in environmental protection actions and maintain good behavior towards society (Miles & Covin, 2000; Nadanyiova et al. 2020). In addition, consumers attribute higher quality to the products of socially responsible companies and this improves their perceived image (Cui et al., 2018). Growing social concern for healthy eating and greater awareness of environmental issues have led to organic farming having an increasing presence in consumers' shopping baskets. Studies such as Cetelem (2022) show that consumers prefer products made with sustainable ingredients, with one in two Spanish consumers taking sustainability into account when purchasing products or contracting services. Specifically, in Spain in the period 2015-2020, the growth in spending on organic products was 67.42% (MAFF, 2020).

Finally, in the face of the misinformation and confusion faced by organic consumers in their choice of purchase, the website can represent a fundamental element in the communication strategy of companies in the sector. As Baourakis et al. (2002) point out, the Internet provides the best information channel for organic products, given the large amount of information related to product characteristics that consumers of organic products need when making their purchasing choice. In this context, the internet is one of the main sources used to search for food information (Kuttschreuter et al., 2014). Social networks provide consumers with information and confidence to compensate for the lack of knowledge associated with organic food (Evelyn et al., 2015). In fact, there are studies that suggest a higher penetration and intensity of use of both social networks and websites by organic production companies compared to non-organic production companies (Bernal et al., 2019). Based on the above, our third proposition is as follows:

Proposition 3. Companies with organic production have a higher online dissemination of the knowledge generated on CSR.

#### Cooperative societies

As far as cooperative societies are concerned, contributing to territorial and sustainable development is not something new for them (Mozas & Bernal, 2009). Cooperative societies already intrinsically carry principles and values



directly related to CSR and the SDGs in their DNA (Martínez & Monteagudo, 2014; Querejeta & Gómez, 2022). The International Cooperative Alliance (2017) confirms that since the first cooperative was founded in England, co-operativism has done nothing but preserve the SDGs. Cooperativism has therefore been the forerunner of the SDGs, even before the SDGs existed. In this sense, recent studies highlight the essential role of SE and specifically cooperatives in generating positive socio-economic change (Krugman, 2023; Vaquero et al., 2023) and contributing to the SDGs (Andreiu et al., 2023; Filippi et al, 2023). Mazzucato (2023) states that there is no better model than the cooperative model.

The Inter-Agency Task Force on Social and Solidarity Economy (2015), a body set up by the UN, argued back in 2015 that cooperatives and other SE organizations play a key role in achieving the 2030 Agenda and the SDGs. The International Labor Organization (2022) points out that these organizations promote the achievement of decent work, an inclusive and sustainable economy, sustainable development and improved living standards for all. For its part, the EU (2021) approved an action plan for the defense of social and cooperative economy organizations for the benefits they generate for the well-being of the population and for sustainable development, and a UN resolution (2023) encourages Member States to promote and implement national, local and regional strategies, policies and programmes to support and strengthen the social and solidarity economy as a possible model for sustainable economic and social development.

If cooperative societies are fully linked to the SDGs and, therefore, to CSR, the dissemination and communication of their actions is a mandatory action towards their stakeholders. This is also advocated in other reports, such as that produced by SDG Compass (2019), which emphasises that information and communication with stakeholders is essential to ensuring that their work is recognized and their reputation is valued in the eyes of stakeholders. Consequently, our fourth proposition will be:

Proposition 4. Cooperative enterprises provide greater online dissemination of the knowledge generated on CSR.

# 3. Population and methodology

#### 3.1. Population

The population under study are the olive oil producing companies in the province of Jaén (Spain). The organizations analyzed in this study total 205 companies (126 cooperatives and 79 non-cooperatives). The register of olive oil producing organizations was obtained from the Food Information and Control Agency, an autonomous body attached to the Ministry of Agriculture, Fisheries and Food (MAFF) of the Spanish Government. Companies for which no financial information was available were discarded, so 150 out of 205 companies were analyzed (91 cooperative and 49 non-cooperative companies), which gives a

representativeness rate of 75%. Each of the websites, social networks and a number of comments made by stakeholders on Google Reviews were reviewed. Data was collected between November and December 2022<sup>1</sup>.

#### 3.2 Method

The Qualitative Comparative Analysis (QCA) technique, in its fuzzy sets (fsQCA) variant, has been used to identify the explanatory variables of the level of online dissemination of knowledge generated in the field of CSR. In contrast to classical regression approaches, which seek to determine the direct effect of factors on the dependent variable, the QCA technique allows the study of causal patterns in the form of necessity and sufficiency relationships between a set of antecedents or determinants and a specific outcome (Schneider & Wagemann, 2010). As strengths, this technique assumes that the relationship between the variables of interest is not symmetric (asymmetry) and that several solutions can lead to the same outcome (equifinality), and yields different causality results (causal complexity) (Elliot, 2013). The use of this technique will yield one or more antecedent combinations for obtaining a particular outcome, such as: X1 \* X2 \* X3, sufficient for an outcome (Y). Being: \* the union and ~ the absence or negation, in this case the opposite value of X2 (1- X2).

In this research, the level of online dissemination of the knowledge generated on CSR was used as the outcome variable. Similarly, six variables were included as condition variables, as detailed in Table 1. These variables were: the existence of a complete online purchasing process; having a Blog/Forum on their website to communicate with their customers; being present on Social Networks to interact with their stakeholders; generating a number of reviews on Google; the legal form (cooperative or non-cooperative) and, finally, the presence or not of an ecological offer on the company's website.

For the calculation of the outcome variable, the level of online dissemination of knowledge generated on CSR (e-CSR), we have followed the following premises. On the one hand, as already indicated in the theoretical framework, external certifications or standards are one of the tools that organizations can use to communicate their CSR (Esposito et al., 2021) and have the advantage of offering maximum guarantee as they are certified by third parties. On the other hand, there is currently no single CSR certification that accredits CSR, so the various certifications that exist in the different areas or dimensions of CSR are an informative reference of the knowledge generated by organizations in this area. Consequently, the "e-CSR" variable has been calculated according to the number of certifications in the agri-food sector that are communicated on their website from a social, economic and environmental perspective. By way of summary, the main certifications considered are shown in Table 2.

<sup>1</sup> The choice of this period coincides with the maximum activity of the sector analyzed, the harvesting period and the beginning of the marketing of the oils from the year's harvest. This is reflected in the high online activity during this period according to the Google Trends application.



Table 1. Variables considered for the fsQCA technique

Outcome variable	Description	
e-CSR	Online dissemination of knowledge generated in the field of CSR	Continuous variable
Condition variables	Description	
Complete Online Purchasing Process (COPP)	It has an online purchasing process on its website, with secure transaction and interaction with the server.	Categorical variable
Blog/Forum (BF)	Having a Blog or Forum	Dichotomous variable
Social Networks (SN)	Number of social networks in which it is present	Categorical variable
Google Reviews (GR)	Number of comments on Google Reviews	Continuous variable
Cooperative (COOP)	Legal form of cooperative society	Dichotomous variable
Organic (ORG)	Including organic products in their offer	Dichotomous variable

Source: Own elaboration.

Table 2. CSR certifications

Dimensions	Certifications
Social (SD)	DS01 Food Quality and Safety ISO 9001 /Denomination of Origin / BRC / IFS / ISO 22000 / GLOBAL GAP /ISO 22005 Traceability / "Certified Quality" Label
	DSO2 Labor and safety at work ISO 45001 /OHSAS 18001 / SA 8000 / Efr Model (Family Responsible) /SEDEX - SMETA Supply chain responsibility
Environmental (ED)	DM01 Environmental quality of the activity ISO 14001 / Zero Waste / FSC - PEFC / ISO 50001 Energy Efficiency Management / Integrated Production Andalusia / ISO 14064 Carbon footprint of organizations
	DM02 Environmental quality of the product GlobalEPD- Environmental Product Declaration / Product Carbon Footprint / Water Footprint / CAAE Organic Farming / Organic Farming Certificate - EU
Economic and Governance (EGD)	DEGO1 Economic transparency Financial reporting of the activity
	DEGO2 Responsible management Codes of Conduct or Ethics / Rural Quality / SR10 / EFQM MODEL Sustainability Report / SGE 21 / ISO 26000

Source: Own elaboration.

The categorical condition variables were calculated as follows. The variables Blog/Forum (BF), Cooperative (COOP) and Organic (ORG) take the value 0 or 1 depending on its absence or presence. The variable "Complete online purchasing process (COPP)" was calculated on the basis of three indicators: Availability of an online shop for purchasing; Secure online transaction (in the possible purchasing processes, digital signature, encryption, secure payment by card or PayPal); Interaction with the server (existence of a private registration area).

For the variable Social Networks (SN), the number of RRSS used at company level has been considered, such as Facebook, Twitter (now "X") and Instagram. The social networks analyzed in this study are considered mass-use networks (Cea-Moure, 2019) and are among the most widely used by Spanish consumers<sup>2</sup>. These social networks are the ideal medium for communicating products such as olive oil or wine, which, due to their ability to evoke sensations and transmit experiences, can be considered "experiential products" (Schmitt, 1999) and allow information to be shared about their differential attributes.

Finally, for the variable Google Reviews (GR) the number of ratings received was used. Customer reviews on Google are a key element in the online sales process. They are very important in marking the online visibility strategy of a business, not only because they collect important information about their services and user experience, but also due to their influence on the decision-making of potential customers. Customers rate their experience with the company by marking between one and five stars. On the other hand, it is worth remembering that the Internet is currently one of the main sources used to search for food information (Jacob et al., 2010; Kuttschreuter et al., 2014; Redmond and Griffith, 2006; Tian and Robinson, 2008). Among the different existing search engines Google is the main Web search engine in the world, so that 8 out of 10 users use it to search for information on the Internet. For the above reasons, we thought it would be useful to collect the reviews that consumers leave on Google.

Following the recommendations established in the literature, the variables were calibrated so that their measures in fuzzy sets present values ranging between 0 and 1. Subsequently, a necessity analysis of the e-CSR variable on the different causal variables was carried out to verify that none of the variables alone was explanatory of the outcome. In none of the cases was consistency equal to or higher than the recommended threshold of 0.9, nor was any coverage too low, below 0.5 (Ragin, 2008).

#### 4. RESULTS AND DISCUSSION

# 4.1 DESCRIPTIVE STATISTICS

Table 3 presents basic statistics for the variables used in this research. Next, Figures 1 and 2 show the main certifications reported by the companies analyzed on their websites. This information will be used to calculate the value of our outcome variable, the level of dissemination of knowledge generated on CSR (e-CSR).

<sup>2</sup> See: https://es.statista.com/estadisticas/500680/habitos-de-compra-online-de-los-internautas-enredes-sociales-en-espana-por-tipos/



Table 3. Descriptive statistics of the organizations analyzed

Variables	Information						
e-CSR	54% of organizations report at least one CSR certification						
Complete Online Purchasing Process (COPP)	72% of organizations have a complete procurement process.						
Blog/Forum (BF)	25% of the organizations have a blog/forum on their website.						
Social Networks (SN)	82% of organizations are present on at least one social media site						
Google Reseñas (GR)	97% of the organizations have at least one commentary						
Cooperative (COOP)	61% of organizations are cooperatives						
Organic (ORG)	20% of orga	20% of organizations sell organic products					
Statistics	e-CSR	COPP	BF	SN	GR	COOP	ORG
N Valid	150	150	150	150	150	150	150
Average	1.34	2.30	0.25	1.01	31.96	0.61	0.20
Median	1.00	3.00	0.00	1.00	19.50	1.00	0.00
Deviation	1.70	1.20	0.44	1.11	44.25	0.49	0.40
Minimum	0	0	0	0	0	0	0
Maximum	8	3	1	3	347	1	1
Frequency	81	108	38	82	147	91	30

Source: Own elaboration.

FIGURE 1. NUMBER OF CERTIFICATIONS BY CSR DIMENSIONS



Source: Own elaboration.

The first result of the study is that companies do not communicate non-financial information in the form of reports or SRs, and very few companies communicate their CSR knowledge generation through certifications. Only 54% of organizations disseminate information on CSR certifications. However, this does not mean that they do not have them but instead that they do

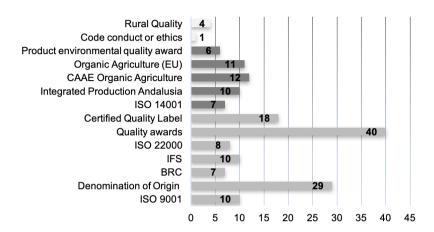


FIGURE 2. NUMBER OF MAIN CERTIFICATIONS REPORTED

Source: Own elaboration.

not disseminate them through online media, giving rise to the phenomenon of silent social responsibility (Jenkins, 2004). Similar data are obtained by Sajado-Moreno  $\delta$  Chaves-Sajardo (2017) for Valencian SE companies, where 42% disseminate certifications to the consumer. Florensa-Guiu et al. (2023) indicate that 33.2% of Catalan cooperatives disseminate these data linked to SDGs or incorporate the logos and seals corresponding to the different recognitions or accreditations.

On the other hand, with respect to the type of information reported the companies disseminate data related to the Social Dimension of CSR, specifically with their Food Quality and Safety practices, followed by the Environmental Dimension, in the area of the Environmental Quality of the product. The most followed certifications are those related to the Designation of Origin, Certified Quality Seal of the Junta de Andalucía and Organic Production Certifications, both national and european. These results are consistent with the results obtained by Santos et al. (2020) for agri-food companies which state that within the environmental dimension the most widespread indicator is related to management systems, and in the social dimension with product quality indicators. In a similar vein, Arcese (2017) studying wine companies highlights that food quality and safety together with environmental issues of the products are the CSR indicators where people pay more attention.

# 4.2 RESULTS OF THE FSQCA ANALYSIS

The results of the fsQCA analysis are presented in Table 4, which shows the intermediate solution of the established model. The various combinations



of variables considered, which explain a higher level of online dissemination of knowledge generated on CSR (e-CSR), are presented. Specifically, four solutions were identified and are presented in order of highest to lowest gross coverage.

Table 4 includes the set-theoretic consistency values for each configuration, as well as the overall model solution. As can be seen, the overall solution is above the recommended threshold of 0.80 (Pappas et al., 2021). The overall model resulting from this analysis reflects a total coverage of 0.5886. Thus, in 58.86% of the olive companies analyzed their level of e-CSR diffusion is explained by this set of combinations or causal configurations, with an overall consistency of 0.82.

The first of the configurations, with a raw coverage of 0.182645, establishes that the combination of a complete purchasing process (COPP) and online interactivity with stakeholders, existence of a blog/forum (BF), visibility on Social Networks (SN) and Google reviews (GR), explains 18.26% of the cases of a higher level of e-CSR diffusion. The corresponding consistency shows that 87.69% of the cases present such a result of interest.

The second configuration establishes that the combination of a non-cooperative company ( $\sim$ COOP), with a complete purchasing process (COPP) including organic products (ORG) in its offer, together with the presence in Social Networks (SN), explains 16.26% of the cases that achieve a higher level of e-CSR diffusion. In this case, its consistency shows that 91.44% of the cases present this result of interest.

Finally, it is also worth mentioning the third causal configuration, which covers 15.35% of the cases and encompasses organizations with a complete purchasing process (COPP) including ecological products (ORG) in their offer and with online interactivity with stakeholders through Social Networks (SN) and Google reviews (GR).

CONFIGURATION	1	2	3	4
Complete Online Purchasing Process (COPP)	•	•	•	•
Blog/Forum (BF)	•			•
Social Networks (SN)	•	•	•	•
Google Reviews (GR)	•		•	
Cooperative (COOP)		Ø		Ø
Organic (ORG)		•	•	
Raw coverage	0.182645	0.162645	0.153554	0.112562
Unique coverage	0.051405	0.048429	0.020991	0.019834
Consistency	0.876984	0.914498	0.969729	0.829476
Model coverage	0.588594			
Model consistency	0.826986			

TABLE 4. RESULTS OF THE FSQCA ANALYSIS

Source: Own elaboration.

<sup>(•)</sup> denotes the presence of a condition; (Ø) indicate the absence of a condition

In computation, all the variables considered are present in the model with a positive relationship with the level of e-CSR diffusion, except for the variable "Cooperatives". We are not surprised that this variable has a negative relationship, insofar as there are studies that indicate that companies with the cooperative legal form have deficiencies or deficits in digitization (Cristóbal et al., 2017; Jorge et al., 2019; Araujo-Batlle et al., 2020) as well as in digital communication (Bernal et al, 2019; Marín & Gómez, 2021; Herranz & García, 2021). There is evidence that this situation, although widespread in the cooperative sector, is more accentuated among first-tier co-operatives than among later-tier co-operatives (Muñoz & Tirado, 2013). Despite the existing link between co-operative principles and CSR, the lack of a strategy and an integrated management system on CSR in this type of enterprise are identified as explanatory factors for the low visibility of their commitment to the social responsibility of their activities (Pérez & Gallardo, 2005). In view of these results, we can accept all the propositions put forward in this research, except for proposition 4, on the cooperative legal form.

## 5. Conclusion

Society is increasingly critical of unethical business practices and their environmental and social impacts. Stakeholder pressure is influencing business practices and the dissemination of CSR knowledge. This research has highlighted the importance of ICTs for the dissemination of organizational knowledge. Transparency and knowledge sharing are key areas of CSR knowledge management. Effective communication of socially responsible information is crucial for corporate reputation and competitiveness. Sustainability reports, external certifications and standards are tools used to communicate the knowledge generated in CSR and ICTs and, in particular, the Internet plays an important role in facilitating the dissemination and accessibility of this knowledge online.

In line with the theoretical approach, the aim of this study was to analyze the type of CSR knowledge disseminated by olive oil companies in the province of Jaén and the factors or variables that explain a greater or lesser level of dissemination. Specifically, the propositions that we defended in this study were that the dissemination of this CSR knowledge, measured through the number of certifications that they communicate on their website, was conditioned by factors such as: the existence of a complete online purchasing process; having a Blog/Forum on their website to communicate with their customers; being present on Social Networks and other platforms such as Google Reviews to interact with their stakeholders; the legal form of the organization, considering whether or not it is a cooperative society; and, finally, the presence or not of an organic offer on the company's website.

The first relevant result of this study is that olive companies do not disclose their SRs and follow SR indicators very selectively. Online communication is mainly focused on certifications linked to the product and not so much to



the activity (Arcese et al., 2017). The most widespread certifications are the ones related to the Denomination of Origin, Certified Quality Seal of the Junta de Andalucía and the Organic Production Certifications, both national and EU. Only 54% of the population under study report any CSR certification, a percentage that is within that obtained by other studies (Santos et al., 2021; Esposito et al., 2021). Consequently, it can be stated that there is little culture of dissemination of knowledge in SR or online communication of non-financial information in olive companies and even less of elaboration of non-financial reports or SR (Mozas et al., 2014; Bollas-Araya & Seguí-Mas, 2014; Castilla-Polo et al., 2015, Santos et al., 2021). Olive companies do not follow the communicative patterns highlighted for large capitalist companies in terms of SR communication (Castilla et al., 2022).

The results obtained in this research show, using the Fuzzy Set Qualitative Comparative Analysis (fsQCA) methodological technique, that in general terms the dissemination of knowledge on CSR is favored by the existence of a complete online purchasing process with the presence of organic products and by interactivity with stakeholders through Blogs, Forums, Social Networks or Google reviews. However, it is not favored by the legal form of the company as a cooperative society, insofar as this social type does not communicate its CSR knowledge generation well, despite being a benchmark of a socially responsible company.

This paper is not without limitations. The main one is that it has been carried out in one sector and in one country, so our future lines of research involve replicating this work in other sectors and in other countries to check that the results are homogeneous and consistent.

On the other hand, we believe that the results are a warning to the cooperative sector. If co-operatives are socially responsible entities aligned with sustainability and consumers value these factors in their purchases, cooperative societies should communicate their activities and non-financial indicators to their stakeholders so that their products will be more highly valued.

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