Governance policies in sports federations. A comparison according to their size

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Abstract: Recent failures in the administration of sports federations have led individuals, institutions, and researchers in the field of sports to become increasingly concerned with questions of appropriate forms of governance. This paper provides a snapshot of the characteristics of the governance of Catalan sports federations by analysing key issues such as the composition of governing and executive bodies, the conservatism of presidents, participation and democratization in decision-making processes, and accountability orientation. The research was carried out based on content analysis and the operationalization of a questionnaire specific to the purpose of the research. The results point to some particularities, differences, and correlations between the size (and resources) of sports federations and their governance profile. Empirical evidence is presented on the lack of stakeholder participation in decision-making processes and mechanisms for management control and monitoring. Results identified a lack of accountability orientation and levels of transparency. Few organisations reported having created documents such as a governance code, or risk management manuals, and a low percentage of organisations were concerned about making them publicly available. The results support recent calls for good governance in sport by highlighting key areas for improvement. Authors believe that this contribution can serve as a framework for scholars to investigate other contexts.

Keywords: governance policies; sports federations development; social systems; organisations infrastructure

1. Introduction

Public and private sector collaboration is one fundamental pillar of many Western sports systems (Girginov, 2017). In Spain, the public sector distributes its functions in terms of territory (national, regional, and local), while in the private sector, a distinction needs to be made between the commercial (for-profit) and the associative (non-profit) sectors (Scheerder, et al., 2017). The latter sector is largely made up of sports federations, entities that play a prominent role in the organisation, promotion, and development of sport at all levels (Zintz and Camy, 2005), being the “federative organisational model” is the most widespread in different cultures and countries (Cabello et al., 2011). To this effect, Guevara et al. (2021) pointed out that in many continental European countries, most National Sport Governing Bodies (NSGBs) are federations administered as public services delegated by the state. In the case of Spain, they are entities controlled by the government through the Ministry of Sport (e.g., see the rules of tutelage and control that the State Administration can exercise over the Federations in Chapter III of Title III of Law 10/1990, of 15 October, on Sport). Sports
Federations are associations of a legal-private nature, to which the exercise of public functions of an administrative nature is explicitly attributed, dedicated to the promotion, management, and coordination of specific sports recognised within Spanish territory (Royal Decree 1835/1991). This pretext is also extended to the whole of the national territory, adjusting its organisation to that of the State in Autonomous Communities (see, for example, Legislative Decree 1/2000 of 31 July on the Law on Sport in Catalonia).

In Spain there are 66 national federations, each with its corresponding sporting modalities; however, regarding autonomous community organisation not all of them have territorial representation in the 17 autonomous communities of the Spanish territory (CSD licences and clubs, 2021). In this study, due to the importance of the territory for the development of national sport and obvious reasons of comparison between entities operating in the same legislative framework, specifically, we focused on the 66 sports national federations that have territorial representation in Catalonia; an autonomous community which, with 7,763,362 inhabitants, is the second most populated region in Spain (National Institute of Statistics, 2021), and the first autonomous community in the Spanish ranking in terms of the number of licences and clubs (CSD licences and clubs, 2021). Likewise, this high participation in federated sports has eventually translated into elite sporting results: to give a recent example, Catalan athletes accounted for more than a quarter (26.8%) of the 328 athletes who competed on behalf of Spain in the 2020 Tokyo Olympics (CSD Tokyo Olympics, 2020). As scholars such as Puig et al. (2010) noted, Catalonia has traditionally been one of the regions of Spain that have contributed most to the development of sport and its institutional organisation over the years, partly due to its federative system. Something that can also be illustrated anecdotally by the large volume of international sporting events that have been organised in Catalonia in recent decades, such as the 1992 Olympic Games in Barcelona, the Davis Cup final in 2000, the World Swimming Championships in 2003 and 2013, or the Roller Games in 2019, among others (Solanellas and Camps, 2017; Solanellas, Muñoz, and Petchamé, 2022); and the rankings of the most sporting cities in which the capital of Catalonia (Barcelona) has appeared in recent years as one of the 10 most sporting cities in the world (e.g., Tse Consulting Group, 2016). All these data on the Catalan territory could help the reader to identify the importance of the context analysed in this research and its international relevance.

Despite the outstanding contribution of sports federations in the organisation and development of sport for all and elite sport (Winand et al., 2014), failures in their management to comply with viability plans (Puga-González et al., 2022), or recent corruption scandals within the international, national or regional context (e.g., Pielke, 2016, Chappelet 2018; Phat et al., 2016), have led to a growing concern about the governance issues of this type of sports entities to which, as mentioned above, public functions are attributed. As a result of a critical and reflexive process experienced in recent years, sports organisations, and in particular sport’s governing bodies (such as federations), are nowadays under great pressure to adopt good governance practices that mitigate dishonest practices and promote sporting success at all levels (Chappelet, 2018). Authors such as Chappelet and Mrkonjic (2019) went further, considering that, since the beginning of the 21st century, “good” governance has become an obligation
when sports organisations are confronted with cases of corruption, doping, match-fixing, and mismanagement.

According to Dowling et al. (2018), the application of governance in the sport context should raise awareness of how sports organisations and systems are directed and controlled. In addition, authors such as Geeraert et al. (2014) point out that the implementation of good governance principles can help organisations overcome corruption problems and, in general, promote organisational success. Hoye and Cuskelly (2006) defined sport governance as “the structure and process an organisation uses to develop its objectives and strategic direction, monitor its performance against these objectives, and ensure that its board acts in the best interests of the members” (p.9). While it could be argued that there are issues surrounding the definition of the concept (Dowling et al., 2018), there is some consensus that it is a critical component of the management of sports organisations as its application is fundamental to their sustainability in an increasingly complex sporting world (Ferkins et al., 2005; Hoye and Cuskelly, 2006; Yeh and Taylor, 2008).

From the empirical perspective in sports management contexts, according to Geeraert et al. (2014), definitions of governance depend to a large extent on the research of the scholars or the phenomenon under study. In this sense, to summarise the research that has been developed in the field, Dowling et al. (2018), in their scoping review, categorised the different studies on sports governance according to the three general approaches or types of governance anticipated by Henry and Lee (2004): organisational, systemic, and political. According to the authors, “organisational governance” refers to the ethical standards of managerial behaviour or accepted norms, values, and processes about the management and governance practices of sports organisations. “Systematic governance” focuses on the competition, cooperation, and fit between organisations within a given organisational system, in this case, sport. Finally, “political governance” refers to how governments, or any governing body in sport, “directly” or “indirectly” influence the behaviour of organisations. The study of governance can therefore be seen to have considered both how organisations are structured and operate, and the role they play in a wider network of interconnected stakeholders subject to influence by the sports systems in which they are housed (McKeag et al., 2022; Renfree and Kohe, 2019). The present research is positioned within the domain of “organisational governance”, considering the structuring and how organisations operate (depending on their size, resources, etc.). For, in line with Hoye and Cuskelly (2006), understanding management practices, and how sports organisations (in this case, Catalan sports federations “CSFs”) adopt the known standards of good sport governance will be crucial for their development, improvement, and sustainability.

In recent years various international and national bodies have published different checklists as useful indicators of good governance (e.g., Australian Sports Commission, 2012; Geeraert, 2018, Sport England, 2016). All these checklists aim to help sports organisations identify and understand the key factors and principles involved in good governance such as accountability, efficiency, effectiveness, participation, democratisation predictability, sound financial management, anticorruption, and, transparency (Geeraert et al., 2013). According to Henry and Lee (2004); Chappelet and Mrkonjic (2019); McLeod et al. (2020), and Muñoz et al. (2023)
the principles of transparency, accountability, and democracy feature prominently in virtually all guides. Transparency could be pointed to as an effective mechanism for mitigating corruption (Han, 2023; Kolstad and Wiig, 2009), as well as for democratisation, and improving accountability, as it can help stakeholders challenge management (Mulgan, 2003). There is also a body of research that highlights the benefits of sports organisations having a broad orientation towards democratic and participatory processes leading to the development of policies that address the interests of different stakeholders (Kohe and Purdy, 2016; McKeag et al., 2022; Renfree and Kohe, 2019). Governing organisations include giving certain people the power to do something they would not have done otherwise (Yeh and Taylor, 2008). In this regard, Mallin et al. (2004) noted that the most common structure found in NSGBs in Western countries is the unitary board of directors. Characterised by a single board that is responsible for all aspects of the organisation’s activities and who must act in the best interests of the sports organisations and its members (Hoye and Cuskelly, 2006). Indeed, in the Catalan context, the Catalan Sport Law establishes that the governing bodies of Catalan Sports Federations are the board of directors and the general assembly (Article 22). The general assembly, as the supreme governing body, elects the board of directors under democratic principles, thus acting as a control structure for the board’s activity (Forster and Pope, 2004). However, due to aspects such as the voluntary nature of sports federations (Thiel and Mayer, 2009), their non-profit character (Shilbury and Moore, 2006), and the problems of complex governance structures (Ferkins et al., 2010; Hoye and Cuskelly, 2006), efforts to transition from a traditionally amateur to a more professionalised, participatory, and democratised structure have in recent decades been recurrent, though sometimes contradictory, feature in the evolution of sports federations (Bayle and Camy, 2003).

In terms of accountability and internal controls, high implementation of measures related to this principle would lead to the promotion of democratic measures to monitor and control government conduct, avoid the development of concentrations of power, as well as to enhance managerial learning capacity and effectiveness (Aucoin and Heintzman, 2000; Bovens, 2007; Forsters and Pope, 2004). Indeed, the authors themselves identified accountability as a cornerstone of governance, as it is the principle that informs the processes by which those who hold and exercise authority are held accountable (Aucoin and Heintzman, 2000).

Under this pretext, in this study authors address some aspects that the literature defines as particularly problematic concerning the governance of NSGBs. To this end, empirical evidence is presented to define the situation of Catalan sports federations, with the specific aim of investigating the issues of participation and democratisation (Thibault et al., 2010), the concentration of power in boards of directors (Henry and Lee, 2004), and the accountability orientation (e.g., Pielke, 2013). In addition, since size has been consistently identified by various theorists as one of the main factors influencing the structure of an organisation (Amis and Slack, 1996), to provide a broader picture of the situation in a context as relevant as the Catalan territory, this analysis is carried out by examining the relationship between size and the structural characteristics of organisations. In doing so, our contribution helps identify certain aspects that deserve special attention for the improvement of the governance and structuring of sports federations in the Catalan territory, with the ultimate aim of
calling for the implementation of good governance practices. At the same time, it is hoped that the typology and methodology of the research will overcome some of the limitations of previous approaches to governance assessment in sports federations (e.g., Muñoz and Solanellas, 2023) and act as a catalyst for future research in territorial contexts.

This paper is structured as follows: after the introduction, the methods are explained. The third section presents and discusses the results, the fourth section presents the conclusions and, finally, the last section presents the limitations of the study, as well as possible lines of future research.

2. Methodology

As expressed by Heinemann (2008), the first step in turning the theoretical framework into an applicable study tool is the establishment of a catalog of variables. Thus, based first on previous studies on the governance of sports organisations and organisational performance measurement (Geeraert et al., 2014; Muñoz and Solanellas, 2023; Pielke et al., 2019), and then on the opinion of fifteen experts in the field (practitioners and academics in the field of study), the researchers worked on the operationalisation of the research. The reflective process in the construction of the proposal would conclude with the catalog of dimensions, variables, and indicators under study shown in Table 1.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Variable</th>
<th>Description of the indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>General information</td>
<td>Age of the organisation</td>
<td>Year of foundation of the organisation</td>
</tr>
<tr>
<td></td>
<td>Number of members of the organisation</td>
<td>Clubs, men’s licences, women’s licences</td>
</tr>
<tr>
<td></td>
<td>Number and name of the sport modalities managed by the organisation</td>
<td>Number and name of the sport modalities managed by the organisation</td>
</tr>
<tr>
<td></td>
<td>Budget of the organisation</td>
<td>Calendar year, seasonal, annual basis, business plan</td>
</tr>
<tr>
<td>Economic and financial</td>
<td>Frequency of meetings of the finance committee</td>
<td>Never, once a year, every 6 months, every 3 months, monthly, bimonthly, weekly, not applicable</td>
</tr>
<tr>
<td>Economic and financial</td>
<td>Financial result</td>
<td>2017, 2018, 2019, provisional 2020 (in euros)</td>
</tr>
<tr>
<td>Governance profile</td>
<td>Board of directors’ composition</td>
<td>Total number of members, number of men, number of women, number of independent members</td>
</tr>
<tr>
<td>Governance profile</td>
<td>President turnover</td>
<td>Total number of years in office of current and previous president (years)</td>
</tr>
<tr>
<td>Governance profile</td>
<td>Maximum terms of office and maximum duration of a president’s term of office</td>
<td>Number of maximum terms of office, length of terms of office (years)</td>
</tr>
<tr>
<td>Governance profile</td>
<td>Number of employees</td>
<td>Men, women</td>
</tr>
<tr>
<td>Governance profile</td>
<td>Average age of the employees</td>
<td>Men, women</td>
</tr>
<tr>
<td>Governance profile</td>
<td>Committees that the sports organisation has</td>
<td>Executive, financial, technical, elected board of members, referees and judges, sports, competition and discipline, appeal, ethics, board overseer</td>
</tr>
<tr>
<td>Governance profile</td>
<td>Holding of the General Assembly</td>
<td>Yes, no</td>
</tr>
<tr>
<td>Governance profile</td>
<td>Bodies represented at the general assembly</td>
<td>Clubs, athletes, coaches, referees, representatives of public bodies, others.</td>
</tr>
<tr>
<td>Governance profile</td>
<td>Meetings of all committees and of the board of directors</td>
<td>Number of meetings</td>
</tr>
</tbody>
</table>
Table 1. (Continued).

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Variable</th>
<th>Description of the indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountability orientation</td>
<td>Distribution of the financial results before the assembly</td>
<td>Yes, no</td>
</tr>
<tr>
<td></td>
<td>Number and type of documents that are available and that account for the accountability of the organisation’s actions</td>
<td>Statutes, strategic plan, code of good governance, board minutes and meetings, delegation policy, code of ethics, democratic rules and process, conflict of interest, annual sports report, organisational chart, annual budget, financial year end, risk assessment, performance evaluation system</td>
</tr>
<tr>
<td></td>
<td>Publicly available documents</td>
<td>“Documents of the previous variable”</td>
</tr>
</tbody>
</table>

With the key variables and indicators to be considered, the researchers proceeded with data collection.

2.1. Data collection and sample

Two sources of information to collect data were used:

- Secondary data: reports that the CSFs submitted to the General Secretary of Sport of Catalonia in 2019 were analysed, as well as information that CSFs had publicly available on their websites. All this information was stored in an Excel document for further data processing and analysis.

- Primary data: a specific questionnaire for the research purpose was developed. An early version of the questionnaire was validated by seven experts in the field and, based on their comments, it was modified for pilot testing with 10 sports organisations that did not participate in the study, to ascertain the length of completion and comprehensibility. Both stages helped to refine the final questionnaire to be administered.

Thanks to the support of the General Secretary of Sport of Catalonia the questionnaire was sent to the 66 CSFs. Through the invitation emails, the organisations’ president and general secretary were informed about the aim of the research project, the voluntary nature of the research, and the anonymity and confidentiality of the data analysis. In addition, online meetings were scheduled to discuss the project in more detail, as well as to resolve possible doubts about the questionnaire. Respondents were required to complete the questionnaire based on their organisations’ practices and were asked to provide data concerning the year 2019, the year before the questionnaire was administered because it was the latest household year completed. Once the survey was received, meetings were conducted with participants from the organisations to verify that the information included in the questionnaire corresponded to what respondents wanted to capture. SurveyMonkey® software was used to collect the responses, which had a secure and rigid data protection policy and ensured that the data remained the sole property of the research team.

A total of 37 CSFs (56% of the total population) participated in the study. In this sense, it is important to highlight that, among all the Catalan sports federations participating in the research, they represented 85.76% of the total number of federative licences in Catalonia, which suggests that the sample obtained could be representative of the federative sector in the Catalan context.
2.2. Data analysis

The first step was to clean the database to standardise the data collected, that is, to check for completeness, duplications, or anomalies and, if necessary, to correct the errors detected. Then, descriptive statistics for all the variables in the study were obtained (averages, minimum and maximum values, standard deviations, and relative percentages). In addition, to explore the differences between federations in terms of their size (big size, >14 K licences; medium size, >4 K to 14 K licences; small size, <4 K licences) and their governance characteristics, nonparametric method of Kruskal-Wallis’ test was used (the normality check of the data indicated the need for non-parametric tests). Furthermore, statistical correlations between the variables were analysed.

The collected data was analysed with Microsoft Excel 2019 (17.0) and Statistical Package for the Social Sciences (SPSS), Version 23, ©IBM.

3. Results and discussion

The results and discussion are presented based on the differences and similarities identified between the organisations according to their size. First, from Table 2, general information on the year of their foundation, participation (clubs, licences, and sports modalities managed), as well as some aspects of the profit and loss accounts and budget (total income, and grants) are shown and discussed, to provide a snapshot of the sports federations that operate in the Catalan territory. Next, aspects of the characteristics of their governance structures (board of directors, paid staff, representatives, and committees) are presented and contrasted with the federations’ orientation towards participation, democratisation, and accountability (Figures 1–3 and Table 3). Furthermore, to deepen the analyses, all the results are discussed in turn with the correlations observed between the variables under study, presented in Table A1 in Appendix.

3.1. Contextualisation of the Catalan sports federations

The results and discussion are presented based on the differences and similarities identified between the organisations according to their size. First, from Table 2, general information on the year of their foundation, participation (clubs, licences, and sports modalities managed), as well as some aspects of the profit and loss accounts and budget (total income, and grants) are shown and discussed, to provide a snapshot of the sports federations that operate in the Catalan territory. Next, aspects of the characteristics of their governance structures (board of directors, paid staff, representatives, and committees) are presented and contrasted with the federations’ orientation towards participation, democratisation, and accountability (Figures 1–3 and Table 3). Furthermore, to deepen the analyses, all the results are discussed in turn with the correlations observed between the variables under study, presented in Table A1 in Appendix.

A first observation that emerges from Table 2 is that the smallest Catalan sports federations (<4 K licences) appear to be the most recently creation ones. However, it should be noted that there are also large and medium sized federations that were created very recently, such as the padel federation, created in 2004, and the pitch and
put federation, created in 2006 (the youngest of all the CSFs participating in the study). This is an interesting point to note, as the large volume of licences held by these federations is due to the large increase in a short period of participation in the sports that these federations manage within the Catalan territory; an increase that has not manifested itself in the same manner in other autonomous communities in Spain (CSD licences and clubs, 2021).

Table 2. General information of the Catalan sports federations.

<table>
<thead>
<tr>
<th></th>
<th>Big size (n = 11)</th>
<th>Medium size (n = 12)</th>
<th>Small size (n = 14)</th>
<th>Kruskal-Wallis Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Year of foundation</td>
<td>1935.5</td>
<td>1953.6</td>
<td>1967.1</td>
</tr>
<tr>
<td>2</td>
<td>Clubs</td>
<td>580.2</td>
<td>1166.0</td>
<td>156.0</td>
</tr>
<tr>
<td>3</td>
<td>Male licences</td>
<td>30,157.3</td>
<td>46,180.8</td>
<td>3060.1</td>
</tr>
<tr>
<td>4</td>
<td>Female licences</td>
<td>9887.5</td>
<td>6397.3</td>
<td>2799.7</td>
</tr>
<tr>
<td>5</td>
<td>Total licences</td>
<td>40,044.7</td>
<td>48,460.8</td>
<td>8647.3</td>
</tr>
<tr>
<td>6</td>
<td>% Women licences</td>
<td>36%</td>
<td>19.7%</td>
<td>32.1%</td>
</tr>
<tr>
<td>7</td>
<td>N° sport modalities</td>
<td>4.2</td>
<td>4.4</td>
<td>6.1</td>
</tr>
<tr>
<td>8</td>
<td>Operating budget</td>
<td>5.6 M</td>
<td>7.3 M</td>
<td>1.2 M</td>
</tr>
<tr>
<td>9</td>
<td>Total grants</td>
<td>694 K</td>
<td>1.1 M</td>
<td>148 K</td>
</tr>
<tr>
<td>10</td>
<td>Grants per member</td>
<td>17.5 €</td>
<td>13.6 €</td>
<td>18.6 €</td>
</tr>
<tr>
<td>11</td>
<td>Grants %</td>
<td>12.9%</td>
<td>8.8%</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

The results indicate significant differences at the $^* p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$ levels.

Secondly, due to the approach implemented for the analysis (comparative of the federations according to their size), it is to be expected to find high significant differences ($p < 0.001$) in terms of the number of licences and clubs that the federations have registered, it should be noted that no significant differences were found in terms of the number of sports modalities that the federations manage, nor from the perspective of gender equity in the number of licences. On average, the CSFs reported having 30% of female sports licences, however, there were cases of both large (volleyball, 74%) and medium-sized organisations (gymnastics, 88%; equestrian, 76%) that reported having a higher-than-average percentage of female licences. On the contrary, there are cases with extremely low percentages: e.g., large size (hiking, 5%), medium size (motorcycling, 4%), or small size (billiards, 1%).

Third, regarding the financial aspects, as expected, high differences ($p < 0.001$), and high significant correlations ($r = 0.938$, $p < 0.01$) were found between the total budget of the federations and the aspects that determine their size (licences and clubs). However, it should be noted that some small CSFs also have very high operating budgets (>3 M); e.g., disabled people’s federation, and sailing federation. Likewise, a significant correlation ($r = 0.83$, $p < 0.01$) was found between total subsidies received and the number of licences, which might indicate a relationship between the level of development of the sport and the obtaining of public financial aid. This aspect could be contrasted within the Catalan territory with the CSD’s public calls for proposals for national sports federations, which establish that the level of development of sport is one of the main criteria for obtaining financial aid (Seguí-Urbaneya et al., 2022).
However, it should be noted that in the case of Catalonia, it was found that some small federations obtain public financial resources even above the average of the federations considered as large (e.g., intellectual disability, sailing, and winter sports). Therefore, although the administrations’ policies of distribution of financial aid are diffuse and not publicly available, in addition to the level of development of the sport, it is arguable that other elements that the General Secretary of Catalonia considers when distributing public resources to the CSFs. These elements might be sporting results (Winand et al., 2014), and the responsibility towards society of certain sports federations (Zeimers et al., 2020). Three of the 14 sports federations considered as small (and which could be considered to have a remarkable social responsibility character), showed high subsidy ratios per member [e.g., Catalan federations of sports for people with intellectual disabilities (€343/member), cerebral palsy (€637/member), and people with physical disabilities (€1320/member)]. Nevertheless, in this regard, it is important to note that the CSFs that receive more subsidies per member (most of the smallest ones) are the ones that show a greater dependence on public resources ($r = 0.70, p < 0.01$); (e.g., for federations such as the federations of the physically disabled and rowing, income from the administration represents >50% of their total expenses). This aspect underlines the accentuated dependence of small federations on public subsidies to develop their activity (Guevara et al., 2021), and puts the spotlight on sustainable management and the questionable capacity for development that they may have (Schulenkorf, 2017) without the subsidiary help of the administration. Therefore, as pointed out by authors such as Seguí-Urbaneja et al. (2022), to establish a more sustainable sport management model, it will be necessary for the CSFs to work to reduce dependence on public funds. The economic sustainability of federations will depend on their ability to attract resources and obtain competitive results in terms of effectiveness (De Bosscher et al., 2009), and on the rational use of those resources in terms of efficiency (Torres et al., 2018; O’Boyle and Hassan, 2014).

Once the general picture of the CSFs has been presented, the following subsection presents and discusses the results of the analysis of the aspects referring to the characteristics of their governance structures.

3.2. Governance profile of the Catalan sports federations

According to authors (Aucoin and Heintzman, 2000; Bovens, 2007), accountability in governance is important to provide a democratic means to monitor and control the conduct of government, to prevent the development of concentrations of power, as well as to improve the learning capacity and effectiveness of the administration. Thus, to understand the situation of the CSFs concerning these aspects, Figures 1–3 and Table 3 shows the results of the analysis of the governance structures of the CSFs according to their size and then, in subsections, these findings are analysed and discussed contextualising them within the Catalan territory.

3.2.1. CSFs composition of boards of directors and workforce

Figure 1 shows the information on the composition of boards of directors and executive bodies, analysing them from a gender equity perspective.
While some results might seem obvious, such as that larger CSFs tend to have larger boards of directors ($r = 0.56$, $p < 0.01$), and larger human resources staffs ($r = 0.80$, $p < 0.01$), other findings deserve special attention. On the one hand, as can be seen from Figure 1, it could be noted that in general the CSFs have large boards of directors (on average 15.1 members) as they exceed by far the minimum established by the Generalitat of Catalonia of the three mandatory positions to form a board of directors: president, secretary and treasurer (minimum that can be increased by the statutes of each federation). Only the Life Saving and Rescue federation out of the 37 CSFs analysed is the only case where its board of directors was found to be composed of only three members. On the other hand, as can also be deduced from Figure 1, many CSFs that have more board members than employees. These findings might suggest that the board of the CSFs remains a central governing body for the organisations, despite some fears years ago that professionals (staff) would replace volunteer boards (Kikulis et al., 1992; Thibault et al., 2010). However, while this has also traditionally been the structure of most European federations (Mallin et al., 2004), it could be argued that having a structure made up mostly of voluntary forces could point to a lack of professionalisation in the human resources structures of SGBs (Ruoranen et al., 2016). In fact, the voluntary organisation in the governing bodies of sports federations is now more than ever in question, due, among other things, to the need to move from volunteer driven to a more professionalised organisation. The tasks involved in the management of today’s sports federations require a great deal of involvement and specific knowledge on the part of their leaders. Something increasingly difficult to find in people who decide to volunteer their time to these organisations (Ruoranen et al., 2016). This is not to say that voluntary forces do not contribute, or even that they are not necessary, but rather that the development towards a greater professionalisation of the human resource structures of sports federations should help to harness the respective knowledge and experience of both groups. The federation, with a more professionalised structure, could benefit from the knowledge and experience that the people in the federation bring with them, and in turn, benefit

Figure 1. Board of directors and workforce composition ($\bar{X}$).
from the conventional, more targeted, long-term commitment of the volunteers (Ruoranen et al., 2016). Thus, it would be advisable for CSFs to move towards greater professionalisation of their governing and executive structures.

When analysing equity issues in governing and executive bodies, no significant differences were found concerning the size of the federations. However, in line with other research such as Adriaanse, 2016, Henry and Lee (2004), or Geeraert et al. (2013), it was found that in general there is an overwhelming overrepresentation of male members within the boards of the CSFs (on average, only 21% of the members are women; exceptions are federations such as gymnastics, triathlon, cerebral palsy, and intellectual disabilities, which have boards with a gender balance of over 40%). Thus, it can be argued that, despite the involvement of public bodies in advocating for greater diversity within the governing bodies of sports federations (e.g., Council of Europe, 2012; 2019; Consell d’Associacions de Barcelona, 2019), CSFs are still far from achieving “acceptable” (40%–60%) gender equity ratios on their boards. This is particularly important considering that low representation of key groups, such as women, in governance and executive positions leads to situations where the interests of all stakeholders are not considered (Vega et al., 2019). In fact, this is something that can be highlighted from our findings, as curiously, it seems that those CSFs that have higher relative percentages of female licences, and manage more sport modalities, tend to have better percentages of gender equity in their boards ($r = 0.44, p < 0.01$); ($r = 0.35, p < 0.05$) and executive bodies ($r = 0.39, p < 0.05$). Therefore, as authors such as Geeraert et al. (2013) point out, female representatives need to be placed in decision-making positions so that they can bring their experiences and views to organisations and even become role models for other women who want to get involved in sports organisations (Puig and Soler, 2004). As pointed out by authors such as Adriaanse and Schofield (2014) and Valiente (2022), who investigated the impact of gender quotas in sports management (in the cases of Australia and Spain), this is an aspect on which governments should put more emphasis to promote change in the short term. In fact, in the sports sector, there have already been several cases in which quotas have been established as a measure to promote the inclusion of women in the governing bodies of sports organisations (e.g. Adriaanse, 2017; Sisjord et al., 2017; Valiente 2022) and that, if this situation occurs in the Catalan territory, it would be advisable for the CSFs to start applying measures to improve the current picture detected.

3.2.2. Concentration of power

According to Geeraert et al. (2013), the monopolisation of power in a sports organisation can be seen, for example, in the average number of years that presidents are in office. Authors such as Katwala (2000) point to the need for term limits for both chairpersons and members of the executive body, arguing that chairpersons holding office for more than two four-year terms can lead to a harmful concentration of power.

Geeraert et al. (2013), in their research on international sports federations, found that, on average, presidents are at the head of the organisations for 14 consecutive years. Although in the case in question it was possible to contrast that this average is reduced to 9 years (with some atypical cases such as the Taekwondo and Billiards CF in which the same president has been at the head of the organisation for more than 16
years; no significant differences were found depending on the number of sports licences; $\chi^2(2) = 0.41$), it is relevant to highlight the implications that regulations of term limits, as a system of control, can have. These ensure that elections are real contests on issues, provide new ideas to solve problems, and prevent the concentration of power (Cohen and Spitzer, 1992). In this regard, it was found that a high percentage of CSFs (76%) reported having a maximum of 4-year term of office regulation. However, 69% of federations reported that there is no limitation to the number of terms allowed in office. These results contrast with other research such as that carried out by Geeraert et al. (2013) in which they found that only eight out of 35 international sports federations analysed have detailed regulations in their statutes regarding the number of terms allowed in the office. Thus, it is arguable that the medium turnover of CSF chairpersons is not so much due to the limitations imposed by the statutes of the organisations themselves, but rather due to the democratic process of electing chairpersons. Hence, it seems that the established maximum term of length of mandates (4 years) acts for most of the CSFs as a catalyst for the turnover of their governing bodies. This could presumably be a problem for the sustainability and continuity of strong and coherent leadership to ensure good governance practices, as it can be argued that effective governance cannot happen on its own but must be driven by human actors. Therefore, it would certainly be desirable for more CSFs sports organisations to implement term limits into their statutes.

3.2.3. CSFs democratisation and participation in decision-making

As anticipated in the introduction, the CSFs have a single board structure, which is responsible for all aspects of the organisation’s activities, and which must act in the best interests of the sports organisations and their members (Hoye and Cuskelly, 2006). However, as the Catalan Law of Sport in article 22 postulates, the general assembly, as the supreme governing body and acts a control the activity of the board of directors (Hoye and Cuskelly, 2006; Forster and Pope, 2004), elects the board of directors under democratic principles. In other words, it has the function of acting as a system of checks and balances to prevent the concentration of power in SGBs and to ensure that decision-making is robust, independent, and free from undue influence (Arnaut, 2006), giving decision-making power to the different collectives represented in the assembly through their statutory powers. However, although the Catalan Law on Sport establishes that sports federations should be constituted by associations or clubs, and, where appropriate, by athletes, coaches, referees, or other representatives of natural persons, at no point does it state the representativeness of these key actors in the general assemblies of the federations (so, presumably, federations can do as they see fit in terms of structure, as there are no guidelines or consequences for poor representation of their constituencies). Even so, it would be expected that it will be necessary to maintain a balance in the interests of the stakeholders (Geeraert, et al., 2013), as different constituencies (e.g., clubs, athletes, or coaches) may inevitably have different (even opposite) interests and should therefore be equally represented within the SGBs governing sports (Colucci and Geeraert, 2012). Figure 2 shows the different collectives represented in the general assemblies of the CSFs according to their size.
As a first point to highlight from the analysis of the different groups represented in the general assemblies of the CSFs, it was found that there are no significant differences according to the size of the organisations. Furthermore, it could be identified that while all federations reported that clubs are one of the main stakeholders represented in the general assemblies (in fact, for some CSFs clubs are the only stakeholders represented, e.g., Karate, Rugby, Cycling, or Winter Sports), this was not the case for athletes (only represented in 64% of the federations analysed), referees (59%), and coaches (48%). Only 17 of the 37 CSFs analysed reported having representation from all 4 stakeholders (clubs, athletes, coaches, and referees, e.g., Football, Rowing, Swimming, Fencing, or Handball). Moreover, another interesting aspect to highlight is that public organisations, which play a fundamental role in the financing of these entities, are not represented in any of the general assemblies of the CSFs under study (a fact that, although in other international contexts, this would not be possible due to the legislation itself, in the case of the Catalan territory analysed, it is an aspect that is worth to highlight, as the legislation does allow it). Thus, as can be extracted from these results, and in line with the findings of authors such as Geeraert et al. (2013), the representativeness of the different groups for participation in decision-making is an area for improvement for sports federations. Although it would be possible to argue that representation does not necessarily mean participation and that it should be further explored whether participation contributes to better governance (Kihl and Schull, 2020), to ensure that programs and initiatives are internally coherent, ensure equal opportunities and are inclusive of all groups, “the participation of the governed in their governance is the cornerstone of democracy” (Arnstein, 1969). For instance, while athletes have traditionally been kept out of the political processes that are decisive for the rules governing their activities (Geeraert et al., 2013), if these stakeholders were included in the decisive processes, they would most likely experience a sense of ‘ownership’. This means that they would come to see the decisions of the SGB as their own decisions, which, in turn, would lead to more
effective policy implementation (World Bank, 2003). It also might avoid potential conflicts of a hierarchical governance model, in which those who are excluded from the decision-making process show intent to question the rules and decisions of the federation (García, 2007). It would be advisable for CSFs to open communication channels where different stakeholders can openly express their concerns and have their voices considered in the organisation’s management practices.

Contrary to what was found regarding the stakeholders represented in the CSFs’ assemblies, the number and type of committees that federations have were found to be related to their size (licences; \( r = 0.36, p < 0.05 \); and board members; \( r = 0.53, p < 0.01 \)), pointing out that the larger the CSFs are, the more committees they have in their executive structure (see Figure 3). Some aspects to note, for example, are that all CSFs big size reported having referee, competition and discipline committees, and the appeal committee, and many of them (> 70%) also had technical committees. The committees that the largest number of Small Sizes federations (> 50%) reported having, were the technical, executive, referee and competition, and discipline committees. However, most notably, is that the CSFs reported a general lack of monitoring and control mechanisms for their management such as financial and ethics committees, or external members of the board of directors. These results are in line with the findings of authors such as Forster and Pope (2004), who considered that sports organisations seem to have been more concerned with dealing with malpractice on the field than with the quality of their internal functioning. This is an aspect that will be further explored in the following subsection, where authors will try to delve into the analysis of the accountability orientation of the CSFs.

![Figure 3](image)

**Figure 3.** Number and type of committees that the organisations have (\( \bar{X} \)).

### 3.2.4. CSFs accountability orientation

Several authors (Forster and Pope, 2004; Pielke, 2013) have pointed out that the governance of NSGBs is characterised by accountability deficits. This, as presented in
this sub-section, also appears to be a clear area of improvement for the CSFs analysed in this research.

As anticipated above, only 5 of the large size CSFs reported having a finance committee, 4 in the case of medium size, and only 2 of the small size. While it is arguable that the finance committee, provided it is sufficiently independent from the governing and executive bodies of the organisation (Hart, 1995), can act as a monitoring mechanism to ensure that agents use resources by the interests of stakeholders (OECD, 2004), it seems that the only financial control mechanism that the vast majority of CSFs implement are external audits. However, it is worth noting that the submission of these audits is not entirely voluntary but is imposed by the Catalan Law on Sport in Article 24, which states that “Catalan sports federations are subject to the system of their budget and assets and must submit their accounts and financial statements to an annual audit” (12), preventing them from “approving loss-making budgets without the express authorisation of the Government Administration” (12). Also, in line with these findings, it appears that the CSFs generally lack ethics committees to act as a control mechanism, not only for the governing bodies but also for the staff working in the different boards and departments of the organisation (Pieth, 2011). Only four of the CSFs (football, swimming, people with intellectual disabilities, and darts) reported having an ethics committee, but none of them indicated that it was independent of the executive body of the organisation. These results contrast with those found by Geeraert et al. (2013), who noted that only 17 international federations out of the 35 analysed in their research have adopted a code of ethics and only 12 have an ethics committee that oversees compliance with the code. This can not only be a breeding ground for corruption, concentration of power, and lack of democracy and effectiveness (Aucoin and Heintzman, 2000; Mulgan, 2003; Bovens, 2007), but also impede the momentum for change toward good governance (Geeraert et al., 2013), since, if such committee exists, it should have the power to initiate proceedings ex officio without referral from the executive body or the president. Furthermore, according to Chappelet (2018), external board members can be useful in connecting with multiple stakeholders, which would help leaders to act in the interest of all stakeholders and, in turn, benefit from improved organisational performance. In other words, they could emerge as contributing stakeholders as management control mechanisms for governing bodies, to avoid concentration of power and ensure that decision-making is sound, independent, and free from undue influence (Arnaut, 2006). However, in line with previous findings, it was noted that only 2 CSFs reported having external board members (intellectual disabilities and underwaters activities). Therefore, it would be advisable for CSFs to consider the possibility of incorporating external board members into their structures.

Thus, one could reflect on the possibility that the existence of governmental regulations, or coercive pressures (DiMaggio, 1983) (such as the obligation to undergo an external audit, or the control of the General Secretariat of Sport) may be a reason why CSFs do not strive to create their own control mechanisms, such as financial or ethics committees, or the provision of external board members. For instance, those federations lacking resources or expertise would not endeavour to develop other actions that, although necessary, would not be mandatory for them. Or, contrary to this reflection, one could even discuss the need to extend the binding nature (mandatory
by the government) of some other aspects to force sports federations for a better orientation towards accountability for their actions (for example, see the case of the Irish sports federations where the government, through its National Sport Policy 2018–2027, sets out a series of obligations for the country’s sports federations, which Sport Ireland will review from time to time and which will have consequences on the financial support to NGBs (Government of Ireland, 2018)). Although this is something that needs to be explored in greater depth, it is clear that this is an area for improvement by the community of Catalan sports federations, because in addition to the positive implications that the existence of these own control mechanisms have on decision-making for the governing bodies of sport, they are also instruments that play a crucial role in improving the accountability of the executive and governing bodies of sports federations (Forster and Pope, 2004; Pieth, 2011).

As Bovens (2007) states in their conceptual framework for analysing and assessing accountability, it can be treated as “a relationship between an actor and a forum, in which the actor must explain and justify his or her conduct, the forum can raise questions and make judgements, and the actor can face consequences” (p. 450). It will therefore be important that the governing and executive bodies of SGBs meet frequently, so that their opinion is heard and those who govern SGBs are obliged to defend their governance regularly (Geeraert et al., 2013). Along these lines, most of the CSFs reported organising at least one general assembly per year to give the congress the possibility to examine the annually produced accounts and the general policy of the past year. Yet, our research indicated that the board of directors and the committees responsible for the different areas did not organise regular meetings with high frequency. On average, big size CSFs showed a tendency to organise meetings more frequently, probably due to the complexity associated with coordinating and implementing good governance principles in a larger organisational landscape, as in the case of small size, which have fewer people to involve in the coordination exercise, this may not be as necessary (Pielke, 2013). Moreover, in addition to the regular meetings, general assemblies, and control mechanisms discussed above for better accountability to their members, federations must work on creating documents that account for their management accountability, such as codes of good governance, minutes of meetings, codes of delegation policies, or code of ethics, among others (Pielke et al., 2019). While all these documents can contribute significantly to improving learning capacity and management effectiveness (Aucoin and Heintzman 2000; Bovens, 2007), it will also be important that these manuals and documents are made available to stakeholders to make them aware of the policies being carried out within the organisation, and in turn give them the possibility to scrutinise, criticise and demand changes (Mulgan, 2003). Table 3 shows a summary of the percentage of CSFs, according to their size, that reported having some documents that show a greater orientation towards accountability, strategic management, and transparency.
Table 3. % of CSFs that have developed documents and made them public.

<table>
<thead>
<tr>
<th></th>
<th>Big size (n = 11)</th>
<th>Medium size (n = 12)</th>
<th>Small size (n = 14)</th>
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<tr>
<td></td>
<td>Documents created</td>
<td>Publicly available</td>
<td>Documents created</td>
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<tr>
<td>1 Statutes</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
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<tr>
<td>2 Annual budget</td>
<td>100%</td>
<td>91%</td>
<td>100%</td>
</tr>
<tr>
<td>3 Financial closing of the year</td>
<td>100%</td>
<td>90%</td>
<td>100%</td>
</tr>
<tr>
<td>4 Organisational chart</td>
<td>100%</td>
<td>81%</td>
<td>100%</td>
</tr>
<tr>
<td>5 Annual sports report</td>
<td>100%</td>
<td>90%</td>
<td>91%</td>
</tr>
<tr>
<td>6 Minutes of BD meetings</td>
<td>81%</td>
<td>18%</td>
<td>100%</td>
</tr>
<tr>
<td>7 Regulations &amp; democratic process</td>
<td>100%</td>
<td>36%</td>
<td>58%</td>
</tr>
<tr>
<td>8 Delegation policy</td>
<td>100%</td>
<td>18%</td>
<td>66%</td>
</tr>
<tr>
<td>9 Code of ethics</td>
<td>63%</td>
<td>36%</td>
<td>50%</td>
</tr>
<tr>
<td>10 Strategic plan</td>
<td>64%</td>
<td>45%</td>
<td>41%</td>
</tr>
<tr>
<td>11 Conflict of interests</td>
<td>45%</td>
<td>18%</td>
<td>33%</td>
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<tr>
<td>12 Risk assessment</td>
<td>54%</td>
<td>27%</td>
<td>25%</td>
</tr>
<tr>
<td>13 Good governance code</td>
<td>45%</td>
<td>36%</td>
<td>16%</td>
</tr>
<tr>
<td>14 Performance evaluation system</td>
<td>18%</td>
<td>1%</td>
<td>33%</td>
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</table>

While significant differences were found between the different sizes of CSFs and the availability of documents they were asked about ($p < 0.5$), this was not the case for the level of transparency (public documents). It was found that, in general, big size federations tend to have more documents created (licences; $r = 0.41$, $p < 0.05$; board members; $r = 0.37$, $p < 0.05$, and total number of employees; $r = 0.45$, $p < 0.01$). As can be seen from Table 3, on average they reported having 77% of the 14 documents they were asked about, somewhat less for medium size (65%) and small size (63%).

An expected finding, after understanding that article 24 of the Catalan Law on Sport establishes the obligation of federations to account for their economic and financial statements, is that 100% of the federations reported having the budget and the annual financial closure. On the contrary, the documents that the highest number of CSFs lack are a performance evaluation system (21.6%), codes of good governance (29.7%), risk assessment (35.1%), and conflict of interest (37.8%). Also, when assessing the strategic orientation of the federations, it was found that only 18 of the 37 CSFs analysed reported having a developed strategic plan. Areas for improvement for the CSFs since, as can be understood, the provision of these documents as well as the reflective process necessary for their elaboration would show a particular sensitivity towards the application of good governance practices of sport organisations. However, although these documents may represent a first step forward, it can be argued that the provision of documents is not the only purpose and something that justifies the implementation of good practices per se, since, for instance, as the research indicated, 19 CSFs (51%) have a code of ethics, however, as we have seen in previous sections, only 4 (10%) have an ethics committee that monitors compliance with this code, and none of them is an independent body. Thus, as authors such as Geeraert et al. (2013) indicate, even if some CSFs have a code of ethics, the committee...
cannot be expected to adequately judge the behaviour of the members of the governing and executive bodies.

Finally, from the perspective of transparency, Table 3 shows that the CSFs, whatever their size, show ample room for improvement. However, one aspect to consider is that levels of transparency were positively associated (see Table A1) with total grants received ($r = 0.41, p < 0.05$), board size ($r = 0.37, p < 0.05$), and total number of employees ($r = 0.42, p < 0.01$), suggesting that those CSFs that have a broader structure of governing and executive bodies, e.g., are somewhat more complex, show greater commitment with respect to transparency of their actions.

4. Conclusion

This research aimed to address some aspects that have been identified as problematic in the literature on the governance of NSGBs. Thus, although the picture provided in this paper is far from comprehensive, resulting from the specific issues addressed on the structural governance characteristics of Catalan sports federations, the paper contributes valuable empirical insights to the growing body of literature on the governance of sport organisations.

First, this paper presents empirical evidence of the importance that boards of directors still have as the central governance body for Catalan sports federations. In line with other research (Henry and Lee, 2004; or Geeraert et al., 2013), it was found an overrepresentation of male members within the governing bodies (on average, only 21% of the members are women). In addition, although it was reported that on average the turnover of chairpersons is effective every 9 years, the general lack of term limits could pose threats about the concentration and continuity of power, and the delirious effects of its’ enactment, in some of the CSFs.

Secondly, the research results show that the CSFs have generally not institutionalised the participation of different stakeholders in decision-making processes. As it could be seen, groups such as athletes, coaches, or referees are underrepresented in the general assemblies of the Catalan federations. This indicates that the CSFs should strive to improve aspects of democratisation and participation in decision-making processes. But also, do so in ways that are sensitive to the issues of participation, and the need to genuinely provide meaningful spaces for alternative voices to come to the fore.

Thirdly, some accountability deficits were found to exist. It was found that CSFs generally lack management monitoring and control mechanisms such as financial and ethics committees, or external board members. In line with research such as that of Geeraert et al. (2013), it could be said that the most current problem is the total lack of independent ethics committees, as no control system can carry out ex officio investigations. In addition, in general, CSFs reported establishing monitoring and control meetings with low frequency and, they need to work on manuals and documents that would provide more accountability orientation towards their stakeholders and society at large and would also enable them to improve their learning capacity and management effectiveness. Documents such as performance evaluation, codes of good governance, risk assessment, or conflict of interest are developed by only one-third of the sports organisations analysed. Likewise, it was found that CSFs
should work towards improving transparency in all areas of their management. In this regard, it is perhaps worth noting that there is little oversight or guidance on ethical control by the governmental organisations, in this case the General Secretariat of Sports, or the national federations to which the CSFs are attached.

Fourthly, in contrast to the trends identified in the organisational theory literature, it was found that size of CSFs is not a binding characteristic of their governance features.

As suggested by different scholars in the field who have studied governance issues in sport organisations, the analysis carried out in this study can help to raise awareness of how sports federations and sport systems are managed and controlled. We believe that the results shown here can help both the organisations under study to overcome some of the problems detected, as well as organisations at higher hierarchical levels (such as the CSD or the General Secretariat of Sport of Catalonia), to understand the situation of the CSFs from the point of view of organisational governance. And that this, in turn, can contribute to the processes of establishing sports policies that help the continuous development of the sport model of the territory.

5. Limitations and future lines of research

The empirical evidence presented supports recent calls for good governance in sport, considering that sports federations should strive to improve and adopt the known standards of good governance (Hoye and Cuskelley, 2006; Scheerder et al., 2017). The authors believe that such studies can contribute in practice to the preservation, reinforcement, and promotion of the sport model of the territory, as well as to the continued advancement and survival of sport organisations and sport for all and elite sport. However, this document does not pretend to draw a complete picture of the governance problems of sports federations related to the characteristics of their organisational structures. Indeed, there are still many aspects to be discovered and avenues of research to be explored. Since this research applies a specific model for the analysis of good governance practices, and while basing it on previous literature and the opinion of experts in the field, this methodology does not escape some limitations of previous implemented approaches. It is worth noting that this is a model that comes from a purely quantitative measurement approach that attempts to quantify some aspects that it would be advisable to examine in greater depth. For instance, as Pielke et al. (2019) anticipated, good governance involves intangibles such as culture, leadership and behaviour that are difficult or even impossible to capture quantitatively, so qualitative approaches are necessary to understand some aspects that at first sight might go unnoticed. For example, while the professionalisation of the CSFs in terms of their governance and executive structures has been discussed, more research is needed on the relationships between them, and the possible benefits or problems of the different structures in the different types of federations in the territory. Future research could also focus on what is the real influence that stakeholders can exert on decision-making processes, such as, for example, exploring how governments influence the organisational capacity of sports federations. That is, investigating how governance structures respond to internal or external environmental influences (e.g., from a “systematic or political governance” approach). Thus, from the approach of the
present research, it is assumed that each factor could not be analysed in depth and there is scope for further studies to focus on different elements of these findings. Finally, although this is self-evident, it is essential to emphasise that, although we believe that the evidence presented can have great relevance for academics wishing to explore other international contexts, the specific results shown cannot be extrapolated to any other territory than the one analysed here, and further research is needed to address aspects that might be similar or different in other contexts, or even, why not, to address national or international comparison, even, through longitudinal studies.

**Author contributions:** Conceptualization, FS and JM; methodology, FS and JM; validation, FS, JM and JP; formal analysis, FS, JM and JP; investigation FS and JM; resources, FS, JM and FG; data curation, JM and FG; writing—original draft preparation, FS, JM and JP; writing—review and editing, JM and FG; visualization, FS, JM and FG; supervision, FS, JM and JP; project administration, FS and JM; funding acquisition, FS and JM. All authors have read and agreed to the published version of the manuscript.

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**Conflict of interest:** The authors declare no conflict of interest.

**References**


Appendix

Table A1. Correlations relationship of the analysed variables.

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<td>-0.24</td>
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<td>0.44**</td>
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</tbody>
</table>

The results indicate significant differences at the *p < 0.05, **p < 0.01 levels.