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Sustainability Report of Portuguese Municipalities: The Three Pillars of Sustainable Development

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Abstract

Studies regarding the economic, social, and environmental impacts of sustainable policies and practices in the public sector are scarce. This is an important gap, as the public sector is oftentimes one of the largest, if not the largest, employer in a region or a country. The current study characterizes the sustainability reporting of the Portuguese municipalities in terms of their most recent sustainability report published online, aiming to better understand the pillars of sustainability. The research is based on secondary data publicly available. Results show that only 28 municipalities (out of 308) published a sustainability report, and that most information are focused on showing a balance between environmental and economic data; the results also show that there is a lack of social information, and that only a few reports show an alignment with the Sustainable Development Goals.

Keywords Sustainability development · Sustainability report · Public sector organizations · Municipalities · Triple bottom line · Portugal

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1. Introduction

In recent years, public sector organizations (PSOs) have embraced a process of organizational change centred on sustainability values and concerns (Roberto et al., 2020). Both internationally and nationally there has been an increase in the need to implement means that advance the sustainable development agenda; one interesting example was the publication of sustainability reports (Ball & Bebbington, 2008; Guthrie et al., 2010; Ribeiro et al., 2018). In the case of the public sector, traditional reporting has omitted almost entirely non-financial information, with almost no attention given to the future of PSOs (Manes-Rossi, 2018); moreover, such reports rarely include accounts of social and environmental activities (Guthrie & Farneti, 2008).

Public entities are expected to take the lead in publicizing their activities to promote sustainability. However, their sustainability reporting is progressing more slowly than other sectors (Greiling & Grub, 2014), and research related to socio-environmental accounting, accountability and sustainability in the public sector is still scarce (Ball & Bebbington, 2008; Bellringer et al., 2011; Dumay et al., 2010; Greiling & Grub, 2014; Cohen, 2022). This gap is not only surprising but also disturbing, as one would thought that the public sector can in some cases serve as a beacon or a model to the rest of a society, in general, and to the business environment, in particular (Roberto et al., 2020). Moreover, the public sector in some countries is the major employer, hence it has a major impact on individuals' mindsets, attitudes, and behaviours. Understanding and conducting research on sustainability reports in the public sector becomes a highly relevant topic (Bellringer et al., 2011). Figueira et al. (2018) assert that sustainability policies and practices in public organizations are on the increase, albeit at a slow pace, which means that available data can provide some valuable insights on the current situation as far as sustainability public reporting is concerned.

The potential contributions of the current paper are several. Firstly, although sustainability reporting is still in its beginnings in the public sector (Guthrie & Farneti, 2008), it is important that governments adhere to sustainable factors when defining their agendas for the fulfilment of the general objectives for which they are responsible (Dumay et al., 2010; Global Reporting Initiative, or GRI, 2005, Ribeiro et al., 2018). Secondly, the public sector has a civic responsibility to properly manage public goods, resources, and facilities with the objective to pursue sustainable development goals in the best interest of the public; accordingly, public entities must be open and transparent in managing their actions (Tort, 2010). Thirdly, in some countries like Portugal, municipalities have acquired great historical, political, economic, administrative, financial, and legal importance over time, which has proved to be of paramount importance in the context of local public policies (Fernandes et al., 2021). In sum, this study examines sustainability reporting in the public sector, in order to better understand PSO's report content, and to clarify which factors interest PSOs the most.

The structure of the paper is as follows: after the introduction, the literature review is presented with the main concepts, approaches, and relevant studies on the topic. Next, the method section is presented with all the relevant procedures and details,

and finally, the main conclusions, limitations, and directions for future research are presented.

2. Literature Review

2.1 Sustainable Development and the Triple Bottom Line

Although definitions of sustainable development abound, they are also quite vague (Jabareen, 2008). Hopwood and colleagues (2005) provide a somehow helpful view: "[sustainable development is the] result of growing awareness of the global links between growing environmental problems, socio-economic issues related to poverty and inequality, and concerns about a healthy future for humanity" (p.39). A popular definition of sustainable development is given by the "Our Common Future" Report, also known as the Brundtland Report, which was prepared by the World Commission on Environment and Development (WCED, 1987). Sustainable development is defined as "development that seeks to meet the needs of the present without compromising the ability of future generations to meet their own needs" (p.43). Sustainability and development must proceed together, in Bello's (2006) opinion, because sustainability is a requirement for future development, and development in turn is a way of overcoming poverty and maintaining social equity across communities and generations.

Sustainable development is currently studied from different angles, being an essentially one the political (Brandon & Lombardi, 2011; Ruggerio, 2021). Hopwood et al. (2005) capture this view when they declare that sustainable development is the "result of growing awareness of the global links between growing environmental problems, socioeconomic issues related to poverty and inequality and concerns about a healthy future for humanity" (p.39).

Although the definition of sustainable development has the environment-development problem at its core, it goes beyond that concern, to include the generic idea of development. This usually comprises three elements of equal importance: economic development, social development, and environmental protection (Souter et al., 2010).

Olawumi and Chan (2018) suggest that to pursue such holistic development it is necessary to work simultaneously on the three pillars of sustainability. Elkington's Triple Bottom Line (TBL), advanced in the 1990s, had already a similar set of ideas, has it was based on the integration of profit, people, and the planet, into the corporate, strategic, and culture lives (Hallencreutz et al., 2020).

Sustainability and sustainable development are described using the metaphor of a journey rather than a predefined result that is attained incrementally over the long term, with incremental steps (Whyte & Lamberton, 2020). Sustainability is a dynamic state that a society tries to define and achieve, as opposed to a predetermined state, which has as a reference and universal guide the United Nations SDGs, introduced in 2015 (Kioupi & Voulvoulis, 2019). SDGs were adopted by 193 countries worldwide, working as a common and shared plan to end extreme poverty, reduce inequality, and protect the planet by 2030, among other. Despite being quite ambitious, the fact is that implementing the SDGs requires a commitment from many

entities at various levels, from the individual to entire nations and even regions in the globe. Without such collective engagement and efforts, it is likely that the SDGs will fall into a vague and romantic idea with no concrete actions, which can lead to catastrophic consequences in the future. Amidst such path, Idike et al. (2021) write that the implementation of the UN SDGs are highly dependent, directly or indirectly, on effective and powerful public sectors.

2.2 Sustainable Development and the Public Sector

The institutional element is indeed paramount for the implementation of sustainable development (Jasiński & Żabiński, 2022). This includes governance at the local level, as laid down in the UN resolution adopted by the General Assembly on 27 July 2012 (A/RES/66/288 – Institutional Framework for Sustainable Development", s.a.). The public sector represents an important part of global economic activities (Ball et al., 2014; Bellringer et al., 2011; Kaur & Lodhia, 2019), and as such it should have a central role in defining and promoting the sustainable development agenda (William et al., 2011). William and colleagues (2011) explain that local governments, with their strong ties to local communities, are in a key position to stimulate a bottom-up approach to regional and national sustainable development.

Berke and Conroy (2000) argue that sustainable development requires that communities go beyond their individual interests to meet the global and regional needs of environmental, social, and economic systems. Without the commitment of the public sector, it will be impossible to create a society that embraces true and responsible development (Gazzola & Pellicelli, 2019). Interestingly, because sustainable development is usually researched from a global or national rather than a regional or local perspective, it is up to local communes to decide on the directions and dynamics of local development and on achieving development goals (Jasiński & Żabiński, 2022). Irina and Evgeny (2023) confirm this view, further saying that sustainable development issues require holistic actions to achieve them, which should include from national governments and local municipalities.

PSOs need to take an active and committed role in sustainable development (Ball & Bebbington, 2008) by adopting ideal and necessary sustainability strategies to meet current needs without compromising future generations (Roberto et al., 2020). There is a progressive interest among stakeholders about the sustainability of public services, together with greater attention from public entities to promote credibility with their public, disclosing details of their sustainable purposes (Niemann & Hoppe, 2018).

In practice, PSOs are beginning to realize that it is necessary to change the way public management is carried out, to integrate aspects of sustainability, using new practices and tools that enable managing, measuring, and reporting on the various environmental and sustainable aspects (Guthrie et al., 2010). Accounting technologies – specifically reporting practices – have emerged as a potential means for advancing sustainable development, a strategy that has yet to be mastered by the public sector (Ball & Bebbington, 2008).

The public sector encounters barriers that block integrate sustainable development into governance. Examples of such barriers include the complexity of the concept,

resistance to accepting environmental limits, and the difficulty in responding when something does not happen as planned (Sustainable Development Commission, 2011).

Thus, it is believed that the public sector, especially local government, holds a strategic position in promoting regional and national development in the pursuit of sustainable development. However, it is necessary to adjust public management in order to incorporate the particularities of sustainability, using practices and tools that make it possible to manage, measure and report environmental and sustainable aspects, particularly reporting.

2.3 Sustainability Reporting in the Public Sector

The main tool for understanding social and environmental concerns are sustainability reports (SR). Guthrie and Farneti (2008) highlight the range of SR accounting techniques that have the potential to be a powerful tool in the management, control, and accountability of organizations, especially for their social and environmental impacts. However, several studies argue that SR in public sector organizations are in their infancy compared with those in the private sector (Ball & Bebbington, 2008; Ball et al., 2014; Greiling & Grub, 2014). The delay of the public sector when compared with the private sector extends to the field of research (Williams et al., 2011), although considerable efforts to reduce the gap in recent years (Ribeiro et al., 2018).

The literature shows that Australia is the country with the highest number of studies on the scope of the dissemination of SR in the public sector (Ribeiro et al., 2018). The environmental is the predominant component of SR among researchers in the Australian public sector (Guthrie & Farneti, 2008; Sciulli, 2009; William et al., 2011). Universities and local government were the public organizations most studied regarding the dissemination of SR during the period of 2014 to 2020 (Stefanescu, 2021).

The work by Othman et al. (2017) is an example at the local government level in New Zealand, from which some results can be highlighted, namely the consistent and growing use of GRI indicators, from 32% (2009) to 44% (2013), the concentration on non-monetary information, that the public agencies and environment categories have the highest and human rights have the lowest score. Roberto et al. (2020) surveyed the Italian municipalities, and found little compliance with the GRI standards, with a score of only 27.8%.

Alcaraz-Quiles et al. (2017) explored sustainability disclosure practices on local government websites in Spain, using the GRI framework as a comparative reference. The results showed that Spanish local governments spread two thirds of the information in the GRI guidelines, with social information showing the highest level of response and general aspects having the lowest level of dissemination. In addition, local government with the greatest environmental commitment in Spain are those that publish more information on sustainability.

Yadava and Sinha (2016) compared the sustainability reports of the main companies in the public and private sectors in India, based on the 2011 GRI guidelines. The analysis used 84 GRI performance indicators, divided into economic, environmental, and social. The report of the economic dimension was comparatively more com-

prehensive in relation to the social and environmental dimensions. The companies did not show much difference in their economic performance reporting practices, however considerable differences were observed in their reporting practices in the environmental and social dimension.

Greiling et al. (2015) investigated how much public sector entities in Austria, Germany, and Switzerland apply the SR guidelines according to GRI and what type of data was reported. External reports from public sector organizations included in the GRI database for the years 2012–2014 were analysed and findings show that the entities analysed mainly adopt the GRI guidelines, but with considerable variations in economic (75.9%), environmental (67.5%), and social (57.8%) information.

The Australian case was also looked up by Adams et al. (2014), who investigated the practice of measuring performance in the public sector. Using a sample of 109 departments in the state and federal territory, the authors concluded that the most frequently used sustainability performance measures were employee diversity and economic activity, while the least were ecological and social welfare issues. Furthermore, Goswami and Lodhia (2014) carried out a case study to identify sustainability disclosure patterns in four local councils in South Australia. To assess the extent of sustainability information disclosed, they used the 2005 GRI sectoral supplement for public bodies and their results suggest that, even if not in use, the elements of these guidelines are reported as sustainability issues in annual reports, considering financial sustainability to be more important than environmental and social sustainability.

Accordingly, public sector SR is considered to be a public rendering of the sustainability performance achieved through a combination of leadership, strategic partnership, stakeholder engagement, policy outcomes, and the management of the entity's impacts on the local environment, as well as social well-being and economic prosperity (Ball et al., 2014). Bellinger et al. (2011) suggest that internal influences, such as leadership and responsibility, drive SR practices in the public sector, specifically at the municipality level, and that the motivations for public agencies to engage in SR vary significantly. According to the GRI (2004), public entities take reports as a way to measure progress and show accountability to the public; however, such reports also help to create internal pressure to move forward, and to compare own's progress to other public entities' progress (GRI, 2004, p.23).

Costa and Crisóstomo (2017) argue that whatever the motivations of an organization for disclosing their SR, it must convey enough information and quality of presentation to meet the demands of stakeholders, enabling them to evaluate organization's actions, not least because SR are considered an important means for assessing an organization's performance in relation to economic, social, and environmental issues (Goswami & Lodhia, 2014). In the public sector, SR are essential to enable citizens to judge the extent to which a respective level of government delivers social welfare (Bellini et al., 2019).

In short, the literature seems to suggest that the SR of public entities are in their infancy when compared to those of the private sector, and that the studies found on SR in the public sector mostly favour the use of the GRI as a reference (e.g. Alcaraz-Quiles et al., 2017; Goswami & Lodhia, 2014; Greiling et al., 2015; Othman et al., 2017; Ribeiro et al., 2018; Roberto et al., 2020; Stefanescu, 2021; Yadava & Sinha, 2016).

2.4 Sustainability Reporting in the Public Sector: What About the Portuguese Context?

Studies that promote the reporting of sustainability in the public sector can positively impact the government and public policies, and provide practical and policy solutions to improve the impact of PSOs on sustainable development (Ball et al., 2012). In Portugal, this is very much needed (Figueira et al., 2018). Portugal is a Southern European country that plays an important geographical role, as it is one of the main entrances to Europe and a hub to other continents like Africa and the Americas. The country has 308 municipalities aimed at pursuing the interests of the population, through representative bodies democratically elected.

Based on the existent literature, the main objective of the current research is to describe and characterize sustainability reporting of Portuguese Municipalities, focusing on the three pillars of sustainable development (environmental, social, and economic). Several studies have focused on the use of the GRI standards; for example, the recent paper by Luque-Vílchez et al. (2023) analysed the current state of knowledge regarding the main aspects of sustainability reporting in general, and their relevance to the GRI, in particular. In order to assess whether PSOs are following this model in the preparation of their sustainability reports, the following research question has been formulated:

RQ1. Do Portuguese municipalities apply GRI standards when preparing their sustainability report?

The TBL has emerged from the sustainability and sustainable development literature in the early 1990s, after Elkington (1994) introduced novel views and refreshing ideas about sustainability in business. Since this seminal work, several organizations have adopted the TBL framework to assess sustainability policies and reporting within the scope of environmental quality, social justice, and economic prosperity (Martins et al., 2022). Following this evolution, a second research question can be formulated as follows:

RQ2. Do the sustainability reports of Portuguese municipalities address the three pillars of sustainability?

There is still relatively scarce literature that address the United Nations (UN) Sustainable Development Goals (SDGs) in sustainability reporting. Bebbington and Unerman (2020) introduce a special section devoted to the role of accounting that addresses the SDGs. In answer to the call of Bebbington and Unerman (2018) to establish and advance the role of academic accounting in the pursuit of the SDGs, which are regarded as being the most salient launch point for understanding and achieving environmental and human development ambitions, a third research question is put forward:

RQ3. Do the sustainability reports of Portuguese municipalities address SDG strategies?

Several studies have examined the issue of auditing sustainability reports by examining different aspects such as the assurance of non-financial reports, the content of assurance statements (Gillet-Monjarret, 2018; Deegan et al., 2006), the factors that influence the decision to audit non-financial reports (Sierra et al., 2013; Zorio et al., 2013), the impact of assurance on the perceived reliability of non-financial reports (Fuhrmann et al., 2017), and the perceptions of assurance providers and other actors (Channuntapipat et al., 2019). Most of these studies were conducted in the private sector. The current study focuses on collecting information regarding whether PSOs audit their sustainability reports, to understand the openness of these entities to a more transparent and external verification process. The following research question was formulated:

RQ4. Are the sustainability reports of Portuguese municipalities audited by an external entity?

In sum, the above research questions were crafted to understanding whether and how Portuguese municipalities apply the GRI standards when preparing their sustainability reports.

3. Method

3.1 Procedures and Sample

This study included all Portuguese municipalities made available by the National Association of Portuguese Municipalities (ANMP). In specific, the study accessed data from their public websites. When accessing the websites of the 308 municipalities, the following expressions were used in the internal search engine: "sustainability report", "sustainable report", or "sustainability", with all web pages being analysed in a similar way to avoid subjective analyses. The analytical procedures followed closely those used by other authors (e.g., Ribeiro et al., 2018). The search of the municipalities' sustainability report (or other equivalent document), as displayed on the 308 municipalities' webpages occurred between March and April 2022. Of the 308 municipalities searched, only 28 displayed a sustainability report, forming the final valid sample for this study.

After the initial search procedure, a content analysis was used to develop a coding scheme (Appendix Table 8), which in turn was based on the review of the existing literature and on the GRI standards used worldwide to assess organizational sustainability. Content analysis was used to examine the extent of socio, environmental, and economic disclosures in the sustainability reports of Portuguese municipalities, using the GRI-G4 standards as the main reference. The choice for the GRI-G4 standards is justified because they represent an attempt to assess development at an international level (Ball et al., 2014).

Content analysis allows examining the extent of socio and environmental disclosures, of different reports, such as social reports, sustainable reports, and environmental reports, and is commonly used among studies that track empirical evidence

(Roberto et al., 2020). Content analysis involves coding qualitative and quantitative data into predefined categories in order to derive patterns in the presentation and reporting of information. It is a technique of coding written text into various groups or categories based on a selected criterion (Guthrie & Abeysekera, 2006).

To check the presence or absence of socio, environmental, and economic disclosure practices, a coding scheme was created based on 70 items, grouped into three categories: 24 items about social information, 24 about environmental information, and 22 about economic information. The elaboration of the coding scheme was based on the GRI-G4 standards (2015) and the guidelines developed by Nevado-Gil and Gallardo-Vázquez (2016).

The scheme registered the presence or absence of individual items within the reports. After the registration phase, a total index was constructed to reflect the percentage of possible disclosures (70 items × 28 municipalities = 1,960 possibilities), as shown in Table 1. Similar to the study by Roberto et al. (2020), the index was determined by the total number of observations in the reports, divided by the total number of possible observations. The analysis also recorded the type of information disclosed (declarative, monetary, non-monetary), based on a common classification in the literature (Guthrie et al., 2004) and used in several studies (e.g., Guthrie & Farneti, 2008; Roberto et al., 2020).

The registration of the use (or not) of an individual item in the reports was scored on a dichotomous scale for each item: 1, if the item was disclosed, and 0, if the item was not disclosed. This scoring method has been used in several studies (e.g., Alcaraz-Quiles et al., 2017; Greiling et al., 2015; Nevado-Gil & Gallardo-Vázquez, 2016; Othman et al., 2017; Ribeiro et al., 2018) and allows measurement in an objective way.

The final sample is briefly described in Table 2, which shows the municipalities that published a sustainability report in the last years and which are available on the webpages. Several municipalities did not release their reports in the recent years, and only 9% (28 out of 308) published their report online. Several municipalities released a report more than 10 years ago and have not republished one ever since. The number of pages varies greatly, between 16 (Ponte da Barca) and 535 pages (Lousada).

4. Results

In the first analysis, the aim was to identify which municipalities adopt the GRI standards as a sustainability report structure, and to identify which version is used, as well as the year of publication and the periodicity of publication of the reports (RQ1:

Table 1 Total index

Category	A = nº. items	B = nº. possibilities B = A*28	Total (%)
Social	24	672	34%
Environmental	24	672	34%
Economic	22	616	31%
Total	70	1960	100%

Table 2 Sustainability report of Portuguese municipalities

Number	Municipality	Sustainability reporting tool	Pages of the report	Structure	Year
1	Águeda	Municipality sustainability index	144	CESOP-local	2020*
					2019
					2018
2	Alfândega da Fé	Sustainability report	188	None	2017
3	Arcos de Valdevez	Sustainability report	70	GRI-G4	2017
4	Braga	Sustainability report	143	GRI-Standards	2019
5	Bragança	Sustainability report	81	GRI-G4	2018
6	Fornos de Algodres	Sustainability report	42	None	2016
7	Idanha-a-Nova	Sustainability report	128	GRI-G3	2009
8	Leiria	Financial sustainability report	64	None	2016
9	Lousada	Sustainability report	535	None	2016
10	Marinha Grande	Sustainability report	152	GRI-G3	2009
11	Matosinhos	Sustainability and social responsibility report	82	None	2015
12	Paços de Ferreira	Sustainability report	480	None	2015
13	Palmela	Municipality sustainability index	144	CESOP-local	2020
14	Paredes	Sustainability report	54	None	2016
15	Pombal	Sustainability report	17	None	2016
16	Ponte da Barca	Sustainability report	16	None	2016
17	Porto	Sustainability report	158	GRI-Standards	2019*
					2018
					2017
18	Proença-a-Nova	Sustainability report	130	GRI-G3	2008
19	Santarém	Sustainability report	27	None	2017
20	São Roque do Pico	Sustainability report	14	None	2018
21	Sertã	Sustainability report	132	GRI-G3	2009
22	Tábua	Sustainability diagnosis	133	None	2009
23	Torres Novas	Municipality sustainability index	144	CESOP-local	2020*
					2019
					2018
24	Torres Vedras	Sustainability report	106	GRI-Standards	2019*
					2016
25	Valongo	Sustainability report	102	None	2017
26	Vila Nova de Cerveira	Sustainability report	63	GRI-G4	2018*
					2017
					2016
27	Vila Nova de Famalicão	Sustainability and social responsibility report	126	GRI-G4	2020*
					2017
28	Vila Pouca de Aguiar	Sustainability report	56	None	2015

* indicates the report that was analysed in this study, always being the most recent. Some municipalities have 3 reports in the table, which means that all of these were available on the website

"Do Portuguese municipalities apply GRI standards when preparing their sustainability report?").

According to the results, three municipalities adopted the CESOP local reporting structure, whereas 14 developed their own reporting structure, and 11 declared that they use the GRI structure to report sustainability (Arco de Valdevez, Braga, Bragança, Idanha-a-Nova, Marinha Grande, Porto, Proença-a-Nova, Sertã, Torres Vedras, Vila Nova de Cerveira, and Vila Nova de Famalicão).

Concerning the years of publication of the GRI sustainability reports, this started back in 2008, with Proença-a-Nova, and the most recently report published by Vila Nova de Famalicão in 2020. However, there is a discontinuity in the publications, as only 4 municipalities published for more than a year in a row, namely: Porto, Torres Vedras, Vila Nova de Cerveira, and Vila Nova de Famalicão (see Table 3).

In mid-2008/2009, the first municipalities began to legitimize the use of the GRI. These are all found in the Central Region of mainland Portugal, namely: Proença-a-Nova, Idanha-a-Nova, Marinha Grande, and Sertã.

It should also be noted that despite the pioneering spirit of these municipalities in reporting local sustainable development to facilitate the comparison of data through the GRI structure, there are no other sustainability reports, that is to say, not one single publication, according to a survey carried out up until April 2022.

In view of the above results, and in accordance with the initial research question, 11 municipalities (40.74%) apply the GRI standards in their sustainability reports.

The second research question aimed to answer this question: "Do the sustainability reports of Portuguese municipalities address the three pillars of sustainability?". Starting with the general disclosure result, the analysed sample shows that out of a possible total of 1,960 items, only 506 disclosures were reported, which represents 27% of the possible items that could have been reported by municipalities. This means that municipalities can improve in 73% their competencies to transmit the sustainable responsibility information.

Table 3 Municipalities that use GRI Standards

Municipality	GRI version	Year
Arcos de Valdevez	G4	2017
Braga	Standards	2019
Bragança	G4	2018
Idanha-a-Nova	G3	2009
Marinha Grande	G3	2009
Porto	Standards	2019
		2018
		2017
Proença-a-Nova	G3	2008
Sertã	G3	2009
Torres Vedras	Standards	2019
		2016
Vila Nova da Cerveira	G4	2018
		2017
		2016
Vila Nova de Famalicão	G4	2020
		2017

Table 4 Summary of the results by categories

	Total	Social	Environmental	Economic
Items	**506**	105	221	180
% (of total max.)	**27%**	16%	33%	29%

Table 5 Disclosure of information

Type	Observations from all reports	%
1—Declarative	184	36,50
2—Monetary	94	18,65
3 – Non-monetary	198	39,28
4 – Monetary and non-monetary	28	5,55
Total	**504**	**100%**

Table 4 shows the segmentation of results by category.

From Table 4, it can be observed that the category of environmental information has a higher level of disclosure (33%), followed by the economic category (29%). These results are similar to those observed by Othman et al. (2017), in which the environmental category is one of the predominant ones, as a consequence of New Zealand's national identity as a "clean and green" country. The category with the greatest deficiency in disclosure is the social category, with only 16%, showing a disparity between the environmental and economic categories. In general, previous research indicates that reports tend to focus on a single area of sustainability in local government (Williams et al., 2011).

Regarding the type of information disclosed (Table 5), the results point to a greater use of non-financial quantitative values (with an externalized predominance in the environmental category) with 39.28%. Next is 36.5% for declarative information, expressed in descriptive terms. Monetary information attained 18.65% of the total calculated, with the primacy of the economic category.

From the results, it can also be seen that the municipalities with the greatest disclosure are Braga (57%), Bragança (56%), and Porto (56%). Furthermore, Bragança is the municipality that disseminates social (54%), environmental (58%), and economic (55%) information in a balanced way, being a reference to the others, with a tendency to intensify the dissemination of the environmental category, followed by the economic category. In contrast, the municipalities with less disclosure are Pombal (1%), Ponte da Barca (3%), Santarém (3%), and São Roque do Pico (3%), as shown in Table 6.

In the social category, regarding labour practices, it is noted that municipalities are not very concerned about setting up a health and safety committee by employees, since only 1 municipality (4%) reports this information. In addition, there is limited dedication of municipalities to continuous training programmes, with only 9 municipalities (32%). On the other hand, 10 municipalities (36%) inform the number of employees who took maternity/paternity leave by gender, and 13 municipalities (46%) inform the composition of the governance structure by gender, which are the most expressive aspects regarding labour practices.

The presence of human rights elements in the social category has the lowest representation, with only 12 municipalities (7%) reporting this subcategory, highlighting

Table 6 Summary of results by categories and municipalities

	Social		Environmental		Economic		Total	
Municipalities	Nº items	%	Nº items	%	Nº items	%	Nº items	%
Braga	7	29%	17	71%	16	73%	40	57%
Bragança	13	54%	14	58%	12	55%	39	56%
Porto	12	50%	16	67%	11	50%	39	56%
Torres Vedras	11	46%	16	67%	7	32%	34	49%
Arcos de Valdevez	5	21%	13	54%	13	59%	31	44%
Proença-a-Nova	9	38%	12	50%	10	45%	31	44%
Marinha Grande	6	25%	11	46%	12	55%	29	41%
Idanha-a-Nova	7	29%	9	38%	12	55%	28	40%
Vila Nova de Famalicão	4	17%	13	54%	9	41%	26	37%
Sertã	9	38%	9	38%	7	32%	25	36%
Valongo	5	21%	12	50%	6	27%	23	33%
Vila Nova de Cerveira	6	25%	10	42%	6	27%	22	31%
Tábua	2	8%	11	46%	5	23%	18	26%
Lousada	2	8%	5	21%	7	32%	14	20%
Alfândega da Fé	1	4%	9	38%	2	9%	12	17%
Matosinhos	1	4%	4	17%	7	32%	12	17%
Paços de Ferreira	0	0%	5	21%	7	32%	12	17%
Vila Pouca de Aguiar	2	8%	6	25%	4	18%	12	17%
Águeda	0	0%	8	33%	3	14%	11	16%
Torres Novas	0	0%	7	29%	3	14%	10	14%
Palmela	0	0%	6	25%	3	14%	9	13%
Leiria	1	4%	0	0%	7	32%	8	11%
Fornos de Algodres	1	4%	1	4%	5	23%	7	10%
Paredes	0	0%	2	8%	5	23%	7	10%
Ponte da Barca	1	4%	1	4%	0	0%	2	3%
Santarém	0	0%	2	8%	0	0%	2	3%
São Roque do Pico	0	0%	2	8%	0	0%	2	3%
Pombal	0	0%	0	0%	1	5%	1	1%

the strategy to combat discrimination reported by 7 municipalities (25%). Regarding the society subcategory, 22 municipalities (13%) report information on this issue. The broad participation of the local community in municipality affairs was referenced by 13 municipalities (46%).

The second category with greater frequency is the environmental one, but with a low level of updated information: only 3 municipalities (11%). Most municipalities (23, or 82%) disclose the initiatives carried out to mitigate environmental impacts. There is high participation regarding initiatives to promote efficient energy consumption and energy consumption, with 20 (71%) and 19 (68%) municipalities, respectively. However, there is a low level of disclosure regarding the degree of reduction of the environmental impact, with only 4 municipalities (14%), and of the reduction of greenhouse gas emissions and air and noise pollution, which 5 (18%) municipalities do.

Only 3 municipalities (11%) refer to both environmental policies and sanctions and non-compliance with environmental legislation and there is low adhesion of the

municipalities regarding the choice of suppliers based on environmental criteria, with only 4 (14%). Regarding total environmental expenditures and investments, 10 municipalities (36%) disclose this information.

Finally, in the economic category, 180 items (29%) were adhered to, with direct economic value generated (revenues) and direct economic value distributed (expenses) standing out, both with 18 municipalities (64%). The difference between generated and distributed value, namely retained value, was reduced to 12 municipalities (43%). Subsequently, 14 municipalities (50%) report unemployment rates. Regarding municipal debt, 14 (50%) disclose it, and it should be noted that the evolution of the debt is reported by only 6 municipalities (21%); 8 municipalities (29%) disclose the average payment period to suppliers.

Six municipalities (21%) had a purchasing policy concerned with sustainable development and of these, 1 (4%) discloses the total percentage of goods purchased with an environmental seal or certification programmes. With regards purchases from local suppliers, 5 municipalities (18%) declare doing this.

In view of the results described above by category and considering RQ2, it is worth noticing that municipalities do not report the environmental, social, and economic dimensions in the sustainability report in a balanced way. In this study, the environmental category stands out (33%), followed by economic (29%), and social (16%).

RQ3 reads "Do the sustainability reports of Portuguese municipalities address SDG strategies?". Considering that the UN Agenda with the 17 SDGs was made public in September 2015, the sample used in the previous questions had to be adapted. Hence all municipalities that reported sustainability concerns up until 2015 were excluded. The initial sample was composed of 20 municipalities (see Table 2), however, when analysing the reports, 7 municipalities registered SDG-related activities, 1 municipality cites the creation of conditions to advance with the Development of the 2030 Agenda as a future commitment, and the remaining 12 do not demonstrate any connection with the SDGs.

Before presenting the results, it is important to note that the Centre for Studies and Opinion Surveys (CESOP) of the Universidade Católica de Portugal, developed the Municipal Sustainability Index, which enables each participating municipality to obtain an annual report of what was done on its territory for each of the 17 SDGs during the previous year. According to the CESOP data, there are currently 23 participating municipalities, however only 3 make this information available on their webpages and record data on a report. Table 7 shows the reports of the 7 municipalities that show SDG-related actions, as per in their webpages.

From Table 7, no value is attributed to the municipalities of Vila Nova de Famalicão and Porto, despite declaring and correlating their actions for some of the SDGs, which makes a comparative analysis impossible. Similarly, Torres Vedras does not quantify its actions, which suggests a lack of or poor alignment with the UN 2030 Agenda.

Table 7 shows that the municipalities of Águeda, Torres Novas, and Braga surpassed the global result (i.e., the average score of the municipality in all SDGs) with 69.2, 69.0, and 69.1, respectively, when compared to the nations' average, i.e., 66.0. The municipality of Palmela does not do so, with 64.8.

Table 7 Results of the SDGs by municipality

	Águeda	Palmela	Torres Novas	Vila Nova de Famalicão	Braga	Porto	Torres Vedras	Portugal
Year	2020	2020	2020	2020	2019	2019	2019	2020
Structure used	CESOP	CESOP	CESOP	GRI G4	GRI Standards	GRI Standards	GRI Standards	CESOP
SDGs Global	**69.2**	**64.8**	**69.0**	**S.V**	**69.1**	**N.V**	**N.V**	**66.0**
No poverty	79.5	62.7	61.6	S.V	74.2	√	N.V	50.3
Zero hunger	50.6	56.2	62.8	S.V	49.6	N.V	N.V	55.2
Good health and well-being	81.3	81.0	86.1	S.V	84.7	√	N.V	84.0
Quality education	70.2	61.7	74.2	√	82.0	√	N.V	69.4
Gender equality	70.9	72.5	77.1	√	76.1	N.V	N.V	69.6
Clean water and sanitation	96.3	77.2	75.5	√	83.1	√	N.V	80.1
Affordable and clean energy	89.3	80.9	81.2	√	90.4	√	N.V	85.8
Decent work and economic growth	53.5	52.5	68.3	√	61.7	√	N.V	63.1
Industry, innovation and infrastructure	72.0	98.3	73.4	√	64.5	√	N.V	69.0
Reduced inequalities	74.8	78.5	46.3	√	82.3	√	N.V	54.5
Sustainable cities and communities	58.0	51.0	71.9	√	64.2	√	N.V	55.8
Sustainable consumption and production	58.8	44.0	65.6	S.V	42.0	√	N.V	61.6
Climate action	80.9	38.8	69.0	√	58.8	√	N.V	59.3
Life below water	50.0	50.5	52.1	S.V	48.4	N.V	N.V	59.9
Life on land	62.6	79.6	55.8	√	80.8	√	N.V	83.2
Peace, justice and strong institutions	78.5	73.4	76.9	√	78.3	N.V	N.V	74.1
Partnerships for the goals	48.9	41.8	74.8	√	53.2	√	N.V	47.2

S.V. – No Verification; √—Links the SDGs to your actions but does not assign a score

Furthermore, among the individual results of the SDGs, Drinking Water and Basic Sanitation, and Renewable and Accessible Energy (both from the Environment dimension) stand out with the highest scores among the aforementioned municipalities. Next, Quality Health stands out, from the social dimension.

From the observed reports it can be concluded that despite the analysis pointing out that 7 municipalities are aligned with the SDGs, only 4 make an effort to communicate and to qualify and quantify the information regarding the SDGs.

Finally, RQ4 sought to respond to: "Are the sustainability reports of Portuguese municipalities audited by an external entity?". This is an important question because it completes the characterization of the sustainability report in Portuguese municipalities. Auditing reports assure that the information presented is relevant, complete, transparent, and responsible, both in financial and non-financial terms (Handoko & Lindawati, 2020). It should be noted that the GRI recommends that the report be audited before its publication by specialized consultants, or the GRI itself, in order to carry out an application-level certification which indicates the degree to which the report complies with the standards (GRI, 2015). In addition, the new European Directive, Corporate Sustainability Reporting Directive (Directive (EU) n. º 2022/2464) provides recommendations regarding the assurance of the sustainability report.

The date suggests that audit is absent in all the reports in the sample, including those that adopted the GRI structure, which means that Portuguese municipalities are not yet aware of the importance of the external auditing of this type of report.

5. Conclusion and Final Considerations

The main objective of this work was to characterize the sustainability reports of Portuguese municipalities, with a focus on the three pillars of sustainable development, namely: environmental, social, and economic.

The research showed that only 28 municipalities published a SR, which represents 9% of all Portuguese municipalities. Although there are no previous benchmarks, this can be seen as a red flag, and even more so because the data was collected from the municipalities' webpages, which are probably a critical front office between these public organisms and citizens. Regarding the use of GRI standards in the preparation of SR, 11 municipalities (39%) out of the 28 resorted to these standards. In fact, this minor compliance with the GRI standards has also been found in previous studies in nearby countries like Italy (e.g. Roberto et al., 2020). Moreover, 7 municipalities (25%) prepared this report once (single publication), although it was not possible to identify the reason for this occurrence.

Regarding the balance of information in sustainability reports, in relation to the three pillars of sustainability, findings suggest little if any balance in the dissemination of the three said dimensions. Municipalities tend to highlight environmental (33%) and economic (29%) information and pay less attention to social information (16%); this is also similar to other studies (e.g., Greiling et al., 2015). It should be noted that the more balanced Portuguese example is Bragança, which discloses social, environmental, and economic information on a similar percentage basis: 54%, 58%, and 55%, respectively.

Regarding the fit between municipalities' concerns and the SDGs, the results indicate that 35% (7) of the reports published after 2015 state that they align their actions

with the SDGs, and that of these, 4 municipalities make an effort to communicate, qualify, and quantify this information. In sum, the results suggest that an extra effort should be made by Portuguese municipalities regarding the match with SDG strategies and their reporting.

Although the extant research has examined the issue of auditing sustainability reports (Gillet-Monjarret, 2018; Fuhrmann et al., 2017), there is a lack of similar studies on the public sector. Thus, focusing on studying the auditing of the SR by an external entity, the current study points to an absence of external audit in all Portuguese reports, including those that applied the GRI standards. It is thus evident that the municipalities neglect the GRI guidelines with regards to the performance of external audits prior to the publication of SR.

This study contributes to the advancement of the literature on sustainability reporting in the public sector, with the aim to measure the efforts of municipalities to improve their sustainability performance, and also to encourage municipalities to improve their level of information on sustainability.

Limitations and Future Research

The sample on which this study is based was a small one, not because of the research itself, but because of the scarcity of reports generated by Portuguese municipalities that were available online. This is in itself a relevant finding; however more reports would allow a better characterisation of the situation in the public sector in the country. The reasons and motivations for such a low commitment to sustainability reporting by Portuguese municipalities is also an important venue for future investigation, as is the differences in the reporting practices of these 28 cases.

Another possible worth exploring is by expanding the search expressions, as in Portugal the words “sustainability” and “sustainable” might have different ways of being approached. Suggestions include social balance sheet, integrated report, and management report. Primary data collection techniques would also allow a deeper and more extended picture of the national reality. For example, online surveys and/or interviews can be used by researchers to explore other dimensions of the phenomenon. Finally, it would also be advisable to increase the sample for a longer period and to carry out international comparison studies where more countries are included in the sample.

Appendix

Table 8 Coding scheme for SR in the public sector

Category	Indicator	Keywords	Items
Social	Labour Practices	New Hirings	1. Informs the total number and rate of new hirings by age group, gender and region
		Life insurance	2. Informs life insurance provided on a regular basis to full-time employees
		Disability aid	3. Reports the total number of disability or incapacity aids granted regularly to full-time employees
		Maternity/Paternity Leave	4. Reports the total number of employees who took maternity/paternity leave by gender
		Collective agreement	5. Informs a minimum notice period for collective agreements
		Security	6. Informs formal health and safety committee made up of employees. 7. Inform whether formal agreements with trade unions address health and safety topics
		Occupational disease	7. Informs if there are employees involved in occupational activities that present high incidence or high risk of occupational disease
		Training	8. Informs continuous improvement programme
		Governance	9. Reports members of governance bodies by gender, age group, or other indicators of diversity
		Remuneration/ Salary	10. Informs the remuneration by functional category
		Complaint	11. Reports the total number of complaints related to labour practices
	Human Rights	Training	1. Reports the total number of hours invested in staff training on human rights policies
		Discrimination	2. Reports the total number of incidents of discrimination and corrective actions
		Association	3. Report whether the right to freedom of association and collective bargaining is being violated or is at risk of violation in operations and suppliers
		Child labour	4. Informs whether there is a risk of child labour in operations and suppliers
		Training	5. Does it inform any training with security personnel on specific human rights policy or procedure?
		Complaint	6. Reports the total number of grievances related to human rights
	Society	Local Involvement	1. Informs wide consultation with the local community
		Social impact	2. Whether there are social impact assessments
		Corruption	3. Reports the total number of operations assessed for corruption
		Fine	4. Reports the total value of fines imposed for non-compliance with laws and regulations
		Supplier	5. Informs suppliers selected based on criteria of impacts on society
		Complaint	6. Reports the total number of grievances about impacts on society

Table 8 Coding scheme for SR in the public sector

Category	Indicator	Keywords	Items
Environmental	Half environment	Diagnosis/ Environmental assessment	1. Up-to-date information on the environmental situation
		Environmental impact	2. Disclosure of initiatives undertaken to mitigate environmental impacts 3. Indicates the degree of reduction in environmental impact
		Energy	4. Information on initiatives to promote efficient energy consumption 5. Information on the degree of reduction of such initiatives 6. Energy consumption information
		Water	7. Information on total water consumption 8. Information on discharges and waste water destinations
		Materials	9. Information on total renewable and non-renewable materials used
		Supplier	10. Information on the percentage of suppliers selected based on environmental criteria
		Environmental investment	11. Information on total environmental expenditures and investments
		Environmental management system	12. Information on the environmental management system is disclosed
		Environmental award	13. There is information on the obtaining of environmental awards
		Waste collection	14. Information on rubbish-collection points 15. Information collected on total waste
		Recycling	16. Information on recycling collection points
		Sanction	17. Information on sanctions and non-compliance with environmental legislation
		Pollution	18. There is up-to-date information on air and noise pollution in the various areas of the municipality
		Greenhouse effect	19. Information on total greenhouse gas emissions 20.Information on the reduction of greenhouse gas emissions
		Habitat	21. Information on size and location of protected and restored habitat areas
		Species	22. Information on the total number of species included on national conservation lists by risk of extinction
		Environmental policy	23. Information on environmental policies is disclosed
		Complaint	24. Reports the total number of grievances related to environmental impacts

Table 8 Coding scheme for SR in the public sector

Category	Indicator	Keywords	Items
Economic	Economic	Economic value generated	1. Reports the direct economic value generated (revenues)
		Economic value distributed	2. Reports the economic value distributed
		Retained economic value	3. Informs the retained value (difference between the value generated and distributed)
		Revenue	4. Provides information on tax revenue per inhabitant
		Expenditure	5. Reports the expenditure per inhabitant
		Debt	6. Reports indebtedness 7. Informs the evolution of the debt
		Pension/ retirement	8. Reports the level of participation in pension/retirement plans
		State	9. Reports the total amount received by the State
		Risks/ Opportunities	10. Reports risks or opportunities raised by climate change 11. Reports the costs of measures taken to manage the risk or opportunity
		Employment	12. Reports the employment rate 13. Report the unemployment rate
		Salary	14. Reports the proportion of the lowest wage by gender compared to the local minimum wage
		Senior Management / Top Management	15. Reports the proportion of senior management hired from the local community
		Investment Infrastructure	16. Reports the level of development of infrastructure investments
		Indirect impact	17. Reports identified examples of significant indirect economic impacts (indirect employment, strengthening of a region, etc.)
		Suppliers	18. Reports percentage of purchases with local suppliers (e.g. county) 19. It informs the average period for payment to suppliers
		Purchasing policy	20. Presents a purchasing policy concerned with sustainable development
		Acquisition of goods	21. Reports the total percentage of assets purchased with an environmental seal or certification program
		Sustainable development	22. Describe the concept of sustainable development
Independent coding			
P3. Does the report adhere to SDG strategies?			
P4. Is the report audited?			

Source: Own preparation, based on GRI-G4 standards and Nevado-Gil & Gallardo-Vázquez (2016)

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Declarations

Conflict of Interest The authors declare that there is no conflict of interest.

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