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Determinants of the Sustainable Development Goals Disclosure on Websites of Portuguese Municipalities

Determinantes da Divulgação dos Objetivos de Desenvolvimento Sustentável nos Websites dos Municípios Portugueses

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Abstract

This paper aims to analyse the Sustainable Development Goals (SDG) related-disclosure practices on the internet, as well as to identify the main drivers of SDGs e-reporting in Portuguese municipalities. A qualitative methodology was adopted through the content analysis of all the 308 Portuguese municipalities' websites. Based on theoretical assumptions of legitimacy and stakeholder theories, we associate the SDGs e-reporting with some municipalities' characteristics (such as location and size) as well as with the use of *ODSLocal* platform. Our findings indicate that only a quarter of municipalities refer to the SDGs in their websites. None of the presidents' messages mention the SDGs. Only 10 entities have a separated tab on the website to disclose information related to the SDGs. Most information is generic and not about specific SDGs. Almost 64% of the disclosing municipalities disclose information related to SDG in the news. Looking to some contextual factors, the results indicate that coastal and larger municipalities are more likely to disclosure about SDGs; on the other hand, the use of ODS local platform does not seem to influence.

Keywords: SDG, e-Reporting, UN 2030 Agenda, websites, Local government, determinants

JEL classification: M4: Accounting and Auditing; M49: Other

Resumo

Este artigo tem como objetivo analisar as práticas de divulgação relacionadas aos Objetivos de Desenvolvimento Sustentável (ODS) na Internet, bem como identificar os principais

impulsionadores da divulgação de ODS nos websites dos municípios portugueses. Foi adotada uma metodologia qualitativa através da análise de conteúdo de todas as 308 páginas da web dos municípios portugueses. Com base nos pressupostos teóricos das teorias de legitimidade e dos stakeholders, associamos a divulgação dos ODS com algumas características dos municípios (como localização e tamanho) e com o uso da plataforma ODSLocal. Os nossos resultados indicam que apenas um quarto dos municípios menciona os ODS nos seus websites. Nenhuma mensagem dos presidentes menciona os ODS. Apenas 10 entidades têm um separador no website para divulgar informações relacionadas com os ODS. A maioria das informações é genérica e não se refere a ODS específicos. Quase 64% dos municípios que divulgam informações relacionadas aos ODS fazem-no nas notícias. Os resultados indicam que municípios do litoral e de maior dimensão são mais propensos à divulgação sobre os ODS; por outro lado, o uso da plataforma local ODS não parece influenciar o relato.

Palavras-chave: ODS, divulgação eletrónica, Agenda 2030 da ONU, websites, governo local, setor público.

Classificação JEL: M4: Contabilidade e Auditoria; M49: Outros

1. INTRODUCTION

Since 2015 the United Nations (UN) approved the 2030 Agenda supported by 17 Sustainable Development Goals (SDGs) and 169 targets that were globally accepted (Adams et al., 2020; Bebbington and Unerman, 2018). The 2030 agenda aims to promote economic growth, social development and environmental impact and addresses the global challenges related to poverty, inequality, and environmental degradation (UN, 2015). The basic postulate is to increase the awareness and an urgent call for global action by governments, business, and civil society, as well as the local government. Many studies have been developed in the last decade concerning the extent, implementation and drivers of SDG in profit entities, but in the public sector, and particularly at local levels, it remains an under-researched domain.

Local governments (LGs) are policy makers and catalysts of change at the local level, being at the best place to link the UN goals with local communities (Bisogno et al., 2023). The local level is addressed in several points in the UN 2030 Agenda. Specifically, the SDG 11- Sustainable Cities and Communities - highlights the need for local governments to provide basic services for citizens without compromising the future. Over the SDG 11, all the other SDGs are relevant to the local level in one way or another (Zinkernagel et al. 2018). According to literature more than 65% of the targets cannot fully be achieved without the involvement of local actors (Kanuri et al., 2016; Guarini et al., 2022). Thus, there is an international recognition of the pivotal role of local government in the implementation of the SDGs (GTF, 2016; Westphal et al., 2018; Bisogno et al., 2023).

LGs are the organizations closest to the community, they are at the forefront to align their actions with the SDGs. Thus, LGs need to accelerate its efforts towards SDGs fulfilment by identifying goals and targets and building more effective and well-performed governance systems (Joseph et al., 2021; Guarini et al., 2022). This implies a commitment from local entities to promote sustainable development as a strategic model in the mission, vision, and objective of the LGs (Bisogno et al., 2023). The SDGs framework presents an opportunity for LGs to understand and review their strategies and policies through the eyes of the SDGs (Guarini et al., 2022; Krantz & Gustafsson, 2021; Biermann et al., 2022). This agenda represents an opportunity for the improvement of LGs' management, the relationship with stakeholders and the community, and the articulation and consolidation of local policies with the SDGs.

Mapping of the SDGs Agenda represents an essential source of inspiration for improving the structure and presentation of sustainability information in LGs. The target 12.6 of Agenda 2030 encourages organizations to adopt sustainable practices and to integrate sustainability information into their reporting cycle. In this sense, it is important to align LGs' strategy and the organizational report with the SDGs, making known to stakeholders the current level of commitment to these goals.

However, empirical research is still very scarce in the scope of SDG reporting, and it is mainly focused on business sector (Datta & Goyal, 2022). Concerning the public sector, there are some

studies in higher education (Paletta et al., 2020, Paletta & Bonoli, 2019, Caputo et al., 2021, De la Poza et al., 2021, De Iorio et al., 2022; Monteiro et al., forthcoming) and entities from the real estate sector (Ionaşcu et al., 2020). Moreover, some studies dealt with sustainability information on local governmental websites (Alcaraz-Quiles et al. 2015; Ribeiro et al., 2016a-b; Tirado-Valencia et al., 2016, Brusca et al., 2016, Navarro-Galera et al., 2016 and 2017; Guerrero-Gómez et al., 2021). But some of them focused only on the environmental dimension of the sustainability (Ribeiro, 2007a-b, Ribeiro and Guzmán, 2008a-b, Ribeiro and Guzmán, 2011), or the social responsibility disclosure (Ribeiro et al., 2016a-b) and/or sustainability/integrated reporting in municipalities (Roberto et al., 2020; Alcaraz-Quiles et al. 2015; Niemann & Hoppe, 2018; Biondi & Bracci, 2018; Cohen & Karatzimas, 2021). However, research on the linkage between the LGs reporting and SDGs are scarce (Meschede, 2019, Walraven, 2020, Joseph et al., 2021; Guarini et al., 2022). Guarini et al. (2022) ask for more empirical studies focused on the conditions that can affect SGD implementation in LGs. Guerrero-Gómez et al. (2021) also highlight the need for further research to determine how LGs might improve their information disclosure on sustainability within the framework of the UN 2030 Agenda. Furthermore, according to the literature (Tsalis et al., 2020; Datta & Goyal, 2022), further research needs to address the determinants of SDG reporting.

In addition, as far as we know, no previous studies have explored the reporting about SDGs in the Portuguese LGs. Portuguese municipalities are the public entities that are most heavily engaged with citizens. The dissemination of sustainable development information by local entities may allow such entities to grow closely aligned with citizens by demonstrating a willingness and ability to serve the citizens.

In Portugal, past research has highlighted substantial challenges in achieving and promoting the SDGs locally, including ensuring consistent progress across the country (Almeida, 2022; Oliveira et al., 2020). Given the importance of the 2030 Agenda, it is crucial to understand how Portuguese municipalities are disclosing the SDGs on their websites and identify its key determinants. In this context, the following research question raised: “What are the SDGs on-line reporting practices of Portuguese municipalities, and their determinant factors?”

In light of the above, the aim of this article is to analyse the SDG related-disclosure practices on the internet, as well as to identify the main drivers of SDGs e-reporting in Portuguese municipalities.

This research intends to address this gap through a manifold contribution. First, it offers the first picture of the SDGs e-reporting practices (format and extent) by LGs in a particular European country that is addressing the UN 2030 agenda seriously (UN report, 2022). Second, it looks to the SDGs e-reporting as a voluntary practice and unveils some contextual drivers that can facilitate the achievement and disclosure of SDGs in LGs. In the end the study aims to provide ground for further reflections for practitioners and policymakers.

Based on data collected from the content analysis of the all 308 municipalities' websites, this research confirms that LGs are yet in an initial step toward the e-reporting of SDGs. Non-structured forms of online disclosure and different ways of communication are used. The municipalities' location and size were identified as drivers of SDGs e-reporting.

This paper is structured in 5 sections. After this brief introduction, we present some literature review related to the local government's contributions to the SDGs and their reporting, as well as the theoretical framework and research hypothesis. Concerning our study, we present the research design, namely the sample and the methodology used. After, we present the main results. We finish with the discussion and conclusive remarks, presenting some limitations of the study, its contributions and some suggestions to future research.

2. CONTRIBUTIONS OF LG TOWARDS AGENDA 2030 AND THEIR REPORTING

2.1 SDGs achievement at the local levels

Since 1992, after the UN Conference on Environment and Development (UNCED) carried out in Rio de Janeiro, the concept of sustainable development was introduced in the global political agenda for the first time, including at a local level. The 2030 Agenda is not the first global initiative where local sustainability is emphasized. Local Agenda 21 is an important predecessor that have built for local sustainability implementation (Krant & Gustafsson, 2021). According to Ansell et al. (2022), although the Local Agenda 21's slogan "think globally, act locally" tends to underestimate

the need for global action, it underlines that local action is key to solving many of the global problems and challenges that motivated the formulation of the SDGs.

A concerted and effective corporate action toward sustainable development is, therefore, possible if local and regional government align their strategies and policies to incorporate the SDGs. In general, SDGs provide a framework for the local level of government to align its priorities with the national and global levels (GTF, 2016, Raffer et al., 2022; Bisogno et al., 2023).

Successful implementation of the SDGs depends on the ability of local governments to translate the SDGs and targets into their respective contexts, and on their ability to implement measures that ensure a holistic approach to the SDGs. According to Westphal et al. (2018), one strategy to respond to this challenge, is to adopt the goal 11- *Sustainable cities and communities*, as a central axis associated to the urban dimension of other SDGs and related to government responsibilities, particularly with regards to basic services and the assurance of human rights, as well as with the social and environmental responsibilities of companies, with the support of universities and the civil society.

The SDGs must be incorporated into action local plans and planning tools, which will require involvement, collaboration and development work across sectors and authority levels, and the development of guidelines for how this can be done (Bardal et al., 2021; Biermann et al., 2022; Guarini et al., 2022). The Global Taskforce of Local and Regional Governments¹ (GTF, 2016) published a roadmap for localizing the SDGs, which aims to support local and regional governments and other local stakeholders in implementing the 2030 Agenda at local level. It is organized in 5 steps: awareness-raising, advocacy, implementation and monitoring of the SDGs at local level and going forward. The Alibašić (2018)'s book describes how local governments can design and implement sustainability policies, initiatives, and programs by offering guidance, strategies, practical models and methods in applying sustainability and resilience planning in local governments.

Looking to the achievement of SDGs, Bisogno et al. (2023) investigates its implementation in local planning addressing the 5 Ps: *People* (SDG1 to SDG6), *Poverty* (SDG7 to SDG12), *Planet* (SDG13 to SDG15), *Peace* (SDG16) and *Partnership* (SDG17). However, considering the mission and goals whose achievement depends predominantly on their strategic initiatives, the authors argued that LG tend to focus more on *People* and *Prosperity* goals (Bisogno, et al., 2023: 5). There are several contributions from the literature focused on the drivers of successful SDGs implementation in local and regional planning. Financial, technological, political, cultural, institutional, and legal aspects are the main factors that affect the SDGs achievement by LG (e.g. Bardal et al., 2021; Bisogno et al., 2023; Guarini et al., 2021, 2022; Mutiarani & Siswantoro (2020).

The UN has actively engaged in the process to monitor and report on the status of the SDG implementation and to hold governments accountable for their global commitments. The last UN report (2022) states that the most sustainable developing countries are members of the European Union. Portugal is ranked in 20th place among 163 countries, evaluated with an overall score of 79.62.

In a survey applied to Portuguese municipalities, Silva (2021) found that some municipalities have already started implementing the SDGs, although much still needs to be done at the municipal level in this area. Within this context, the study “Towards 2030: Municipalities and Sustainable Development Goals” (Ferreira, 2020) provides Portuguese municipalities with groundwork for knowledge and action, through training and mobilisation that enable SDGs’ integration into their local contexts, and therefore to enhance their effective impact on global transformation. According to the author, the challenges and difficulties in implementation of the SDGs in Portuguese municipalities are to a large extent common to municipalities in other European countries, including factors such as the lack of political priority given to the 2030 Agenda, insufficient technical capacity for its implementation (either due to a shortage of human resources or lack of training), or the difficulty in overcoming rigid organizational structures. SDGs can be achieved only if local actors fully participate, not only in the implementation, but also in the agenda-setting and monitoring (Tjandradew & Srinivas, 2018), and after reporting their achievements.

¹ The Global Taskforce of Local and Regional Governments (GTF) is a coordination mechanism that brings together the major international networks of local governments to undertake joint advocacy relating to international policy processes, particularly the 2030 Agenda for Sustainable Development and the SDGs the Paris Agreement on Climate Change and the New Urban Agenda

2.2. SDG reporting

Traditionally, the assessment and reporting of organizations' performance has been based on the financial accounting model. However, the growing interest in sustainability has led to the evolution of accountability mechanisms and new reporting models to address the non-financial information needs of stakeholders. Ball and Bebbington (2008) state that public entities have increased responsibility for the dissemination of information due to the functions inherent in their own social responsibility competencies. Local governments are the ones that can manage the most effective transformations, mainly through example and transparency.

Since the adoption of the Local Agenda 21 and, later, the 2030 Agenda, Local and regional governments involvement in monitoring and reporting processes have evolved. A crucial point to contribute to sustainable development and measuring progress on the SDGs is the availability of information and data (Meschede, 2019). If the SDGs are to be achieved, it is critical to ensure the involvement of Local governments supported by more enabling institutional environment and disaggregated data. Thus, the "Towards the Localization of the SDGs report" (2022) present an overview and evolution of the policies and initiatives pursued by Local and regional governments, since 2017, contributing to the SDGs achievement. Local entities need to be able to assess their impact on the SDGs and review their strategies and practices accordingly. For that purpose, to collect and report new data are necessary. Therefore, it is important to align the LGs' strategy and their reporting with the SDG.

Among the goals of Agenda 2030, target 12.6 encourages organizations to adopt sustainable practices and to integrate sustainability information into their reporting cycle. Thus, relevant reports on SDGs are important to communicate to stakeholders how LGs are meeting with their set goals and are also a key element in the transparency and accountability. Therefore, reporting can play an important role by informing the sustainability progress of the LGs towards the SDGs of the 2030 UN Agenda.

Sustainability reports are the most common forms of sustainability information dissemination. However, even though different frameworks (from the Global Reporting Initiative (GRI), the International Organization for Standardization and the United Nations Global Compact (UNGC) present different ways to approach reporting on sustainability, none of them include specific guidance on SDGs disclosures. The need for a common set of performance indicators proves to be paramount for stakeholders to compare the contributions of companies to the achievement of SDGs. The frameworks already developed for SDGs reporting are still at a very embryonic stage (Amey & Whooley, 2018) and it is, therefore, necessary to foster their maturing.

Additionally, the target 9.C of the 2030 Agenda encourages the increasing access to information and communication technology as well as the universal access to the Internet. In this sense, integrating the SDGs topic into the LGs reporting cycle, and through an open access system, represents one big challenge.

Estévez and Janowski (2013) argue that the internet is a key element in the linkage between sustainable development and e-government, by promoting the sustainability practices and improving the interaction between public entities and citizens. Over time, in an increasingly digital world, the internet, especially websites, have an important role in disseminate information related to sustainable development practices. Due to their interactivity and potential for information dissemination, they function as a two-way communication channel of easy and broad access (Ribeiro et al., 2016b).

Therefore, in the current reporting trends, website-based reporting is the most effective medium for broader and faster coverage as well as the disclosure and dissemination of information to the stakeholders (Midin, Joseph, & Mohamed, 2016), including SDG-related information.

SDGs reporting, empirical research is few and recent. Most of them concerned to companies' SDGs-related disclosures (Schramade, 2017; Bebbington and Unerman, 2018; PwC, 2018; KPMG, 2018; Gunawan et al. 2019; Avrampou et al., 2019; Almontaser & Gerged, 2019; Hummel, 2019; Monteiro et al. 2020; Di Vaio and Varriale, 2020; Acuti et al. 2020; Wang et al., 2020; Tsalis et al. 2020).

The SDGs are often mentioned in the literature without a depth examination of their contents (Bebbington and Unerman, 2020). In this sense, Bebbington et al. (2023) conducted a systematic review of the SDG targets and linked them to accounting, identifying some research gaps, namely the relative absence of management accounting studies in SDG field, as well as the focus on public

sector activities. Concerning the local government, the empirical literature is still at an embryonic stage, mainly focused to national contexts. Nowadays, there is some debate on how SDGs should be assessed and reported by local entities and some studies have started to explore the integration of SDG in their reporting process:

- Meschede (2019) investigate information dissemination related to the SDGs on local governmental websites of the 15 largest German cities.
- Walraven (2020) and Striekwold (2020) focus on how to integrate the SDGs in the program budget and performance reporting of the Municipality of Rheden.
- Joseph et al. (2021) developed a SDGs disclosure index (SDGDi) for Malaysian local authorities, that may be a fit for development countries.
- Guerrero-Gómez et al. (2021) identify the factors that promote sustainability transparency by local governments in Latin America to help the achievement of the 2030 Agenda goals.
- Campillo and Nieva (2022) examine the voluntary local reports from six northern and southern cities around the world to understand their approach to the 2030 Agenda.
- Sawani. et al. (2023) examine the type of SDG information (financial and non-financial) and the extent of SDG information published on Malaysian city council websites.

In the Portuguese context, the studies of SDG reporting are still scarce, and mainly focus on listed companies (Monteiro et al., 2020); certified companies (Carvalho et al., 2018; Carvalho, Domingues, et al., 2019; Fonseca & Carvalho, 2019b;) and largest companies (Loureiro et al., 2022). Few studies focus on higher education institutions (Monteiro et al., 2022). Previous studies in Portuguese LGs, regarding the disclosure of social responsibility/sustainability information in general, conclude that the most used channels to disclose this information are the websites (Lima et al., 2019). Ribeiro et al. (2016a-b) focused on the on-line disclosure of social responsibility information in Portuguese LGs. However, as far as we know, no previous studies have explored the on-line disclosure on SDGs in the Portuguese LGs. Thus, our research broadens the analysis to the SDGs e-reporting practices, identifying the main drivers.

2.3. Theoretical framework and research hypotheses

This study uses the stakeholders and legitimacy' theories to explain the main drivers of SDG e-reporting in the context of local governments.

Stakeholder theory suggests that organizations should prioritize the concerns of stakeholders who have the greatest influence and impact on the organization's success and sustainability (Freeman, 1984). This theory promotes transparency and accountability to stakeholders, as organizations are expected to report on their actions and performance regarding stakeholders' concerns. According to Niemann & Hoppe (2018), meeting different information needs of several stakeholders requires smart strategies such as combining multi-year reports with executive annual updates disclosed in various media (for example, websites, social media such as twitter, Instagram, etc). For local governments, the pursuit of public legitimacy is an explicit motivation to adopt reporting practices (Marcuccio and Steccolini, 2005).

Legitimacy theory is a sociological concept that suggests organizations seek to maintain their legitimacy in the eyes of their stakeholders and society at large. Legitimacy refers to the perception that an organization's actions, behaviours, and activities are socially acceptable and in line with societal norms and values (Deegan, 2002). In this context, sustainability reporting can be viewed as a mechanism through which organizations seek to legitimize their actions and demonstrate their commitment to sustainable and responsible practices (Fernando & Lawrence, 2014). Several researchers such as Farneti et al. (2011), Alcaraz-Quiles et al. (2015), Ribeiro et al. (2016b) have applied legitimacy theory to scrutinize the practices of social responsibility/sustainability non-financial information disclosure among local governments.

The stakeholder and legitimacy theory serve as a valuable framework to understand how municipalities share information related to SDGs in response to the needs and expectations of citizens and stakeholders, with a simultaneous aim of being perceived as acceptable and legitimate by society. Although the expected increasing growth on the SDGs voluntarily reporting by LGs to legitimize their actions and attend to the needs of different stakeholders, namely citizens, literature refers to the influence of contextual factors in the evolution of these reporting practices.

As state before, Portugal is a country characterized by territorial inequalities in population distribution, economic development, and quality of life. These differences are evident when comparing inland and coastal regions, since the latter are characterized by youth, urbanism, and economic dynamics (Rego et al., 2021). Development level tends to be greater in coastal regions, and therefore is easier access to financial and human resources and the stakeholders are demanding for more actions toward sustainability. Thus, the expectation is that coastal municipalities tend to develop and disseminate more sustainability practices (Ribeiro et al., 2016a-b) to increase legitimacy and attend to the needs of conflicting interests. In this sense, it is suggested:

Hypothesis 1 (H1): The SDGs are more likely to be disclosed in the websites of the coastal municipalities.

On the other hand, the entity size is one of the most common variables considered in prior studies related to sustainability/SDG reporting. According to legitimacy and stakeholders' theories, large entities are subject to greater exposure and visibility (with regard to the media, society and regulators), and so face more pressure from different stakeholders to disclosure more information compared to small entities. On the other hand, larger entities are increasingly concerned with improving their public image and reputation before society, considering that communicating information about their sustainability performance is a good way to legitimize themselves (van der Waal & Thijssens, 2020).

On the other hand, smaller municipalities have limited resources and may have greater difficulties in implementing the SDGs (Bardal et al., 2021). In the Portuguese context, the dissemination of projects framed with the 2030 Agenda tends to focus on more populated metropolitan areas, such as Oporto and Lisbon (Almeida, 2022). Thus, the following hypothesis is suggested:

Hypothesis 2 (H2): The SDGs are more likely to be disclosed in the websites of larger municipalities.

The use of digital platforms, at national and local levels, to disclosure sustainable information can be a good practice to accelerate the SDG e-reporting. The *ODSlocal* a Portuguese municipal platform launched in 2019, is an innovative and interactive solution to disclosure projects and good practices that contribute to the SDGs at municipal level. It includes a technology-based online portal with the aim to mobilize, and empower Portuguese municipalities, citizens, and other stakeholders to achieve the SDGs at local level.

The development and dissemination of projects and good practices in the *ODSlocal* platform is a way that can be used by municipalities to report practical actions that contribute to the 2030 Agenda. Thus, it is expected that the use of *ODSlocal* platform leads to higher levels of SDG disclosure in the websites too. In this sense, our third hypothesis assumes that:

Hypothesis 3 (H3): The SDGs are more likely to be disclosed in the websites of municipalities that use the ODSlocal platform.

3. RESEARCH DESIGN

3.1. Data collection and methods

Our study aims to offers a first picture of the SDGs e-reporting practices (format and extent) by Portuguese local government, and to identify some drivers that can facilitate this reporting.

According to Gallego-Álvarez *et al.* (2010), internet' use can reduce barriers between citizens and public administrations and improve information access and levels of responsibility (Gandia & Archidona, 2008). New public management has led to the introduction of electronic government (e-government) that encourages the use of websites as a medium for communication with the citizens by disclosing as much information as possible relating to sustainable development (Midin, Joseph, & Mohamed, 2016). Thus, in conducting our study, we collected SDGs-related information published on the websites of all 308 Portuguese municipalities. Data were collected between January and March 2022.

Information sources include municipality website content, which includes tabs, events, news, activity reports/plans and sustainability reports or other documents published on these sites. We use

the search engine of the website, referring to the words 'sustainable development goals', 'SDG', and 'agenda 2030'.

In collecting data, a qualitative methodology was adopted through the content analysis of the municipalities' websites, in order to verify the presence or absence of a reference to the SDGs. It would be enough to find a reference to the SDGs to consider that the municipality disclosed about SDGs. In other words, our study did not seek to assess the quantity or quality of the disclosure made.

Content analysis allows the evaluation of any kind of communication and is also accepted as an appropriate method for web content. In fact, content analysis is the most used technique in studies that evaluate non-financial information, both on websites and through other communication channels. This technique consists in the codification of qualitative information related to the SDG into pre-defined categories of analysis (Krippendorff, 2018).

The content analysis of the websites should help to respond to the specific objectives: 1) to identify the presence or absence of a reference to the SDGs., in general and specific terms; 2) identify the location of the SDGs-related information, namely in specific sections/tabs, in specific documents and in the news (including events). It is important to note that the specific section considered not only tabs named 'Agenda 2030' or 'SDGs', but also others named, for example, 'Social Responsibility' and 'Sustainability', if they included information about the SDGs.

Through a bivariate statistics analysis, we try to respond to the objective 3) to identify the drivers of SDG e-reporting, by the association between the SDG disclosure with some municipalities' characteristics (such as location and size), and the *ODSLocal* platform. The null hypothesis (H0) is the statement that there is no significant association or difference between the categorical variables. In simple terms, H0 suggests that there is no effect or relationship between the variables. The alternative hypothesis is the statement that contradicts the null hypothesis. It suggests that there is a significant association between the categorical variables. Therefore, as stated in H1, H2 and H3 referred before it is expected a significant relationship between the variable SDG disclosure and, respectively, the variables: geographical location, size and *ODSLocal*.

For database creation and statistical treatment of data it was used the software Statistical Package for Social Sciences (SPSS). Table 2 summarizes this method of data collection and analysis.

Table 2: Data collection and analysis method

Objective	Topic	Description	Statistical analysis
1) Analyze SDGs e-reporting (in general and specific terms)	SDG disclosure	The visibility of general and specific SDGs.	0 – Without disclosure 1 – General only; 2 - At least one SDG; 3 – All 17 SDGs
2) Identify where the SDGs-related information is located	Specific tab	The existence of a tab or specific section on the website with information about the SDGs.	Dichotomous: 0-No; 1-Yes
	News	The existence of news related to the SDGs.	Dichotomous: 0-No; 1-Yes
	Specific document	Reference to SDGs in at least one specific non-financial document, such as sustainability reports.	Dichotomous: 0-No; 1-Yes
3) Identify the drivers of SDG e-reporting	SDG disclosure vs size, location and <i>ODSLocal</i> platform	Association between: a) Entity location and SDG disclosure b) Entity size and SDG disclosure c) <i>ODSLocal</i> platform use and SDG disclosure	Bivariate statistics analysis: chi-square

3.2 Characterisation of Portuguese municipalities

We considered all the 308 Portuguese municipalities. According to Financial Yearbook of Portuguese Municipalities of 2021 (Fernandes et al., 2022), it includes 23 of large dimension, 97 of medium dimension and 168 of small dimension. This classification thus allows us to evaluate all

types of Portuguese municipalities rather than only the largest (a criterion typically used in other studies related to disclosure in municipalities, e.g., Marcuccio and Steccolini, 2005; Navarro et al., 2010a-b) and Navarro et al., 2011b). The municipalities are distributed in an equity way in the coast and inland of Portugal. Table 1 summarises the main characteristics of the universe in study:

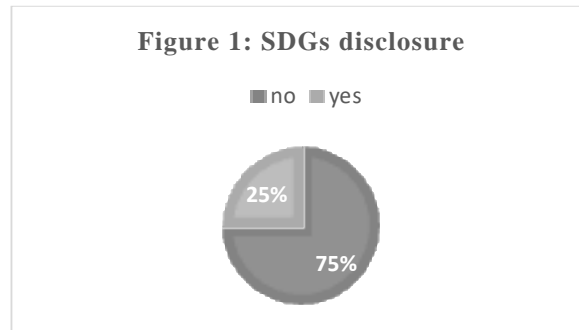
Table 1 - Summary of sample characteristics

Main characteristics	n	%
Size:		
Small ($\leq 20,000$ inhabitants)	188	61,0%
Medium ($20,000 < \text{inhabitants} \leq 100,000$)	97	31,5%
Large ($> 100,000$ inhabitants)	23	7,5%
	308	100,0%
Location:		
Coast	164	53,2%
Inland	144	46,8%
	308	100,0%

4. RESULTS

4.1 Descriptive analysis

After the content analysis of the websites, we have observed that only a quarter of the sample (77 municipalities, 25%) disclose information about the SDGs (figure 1).



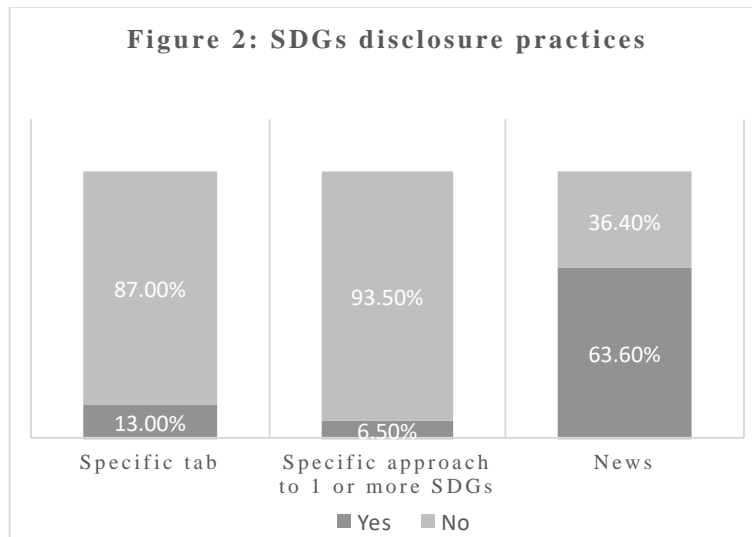
In a global overview, we can say that the information published on sustainable development is very disperse and irregularly distributed throughout many different sections of websites, with no interrelationship between contents. The websites do not include homogeneous information about how SDGs was achieved and the priorities in the issues.

Considering the 77 disclosing entities, we have observed that (Figure 2):

- only 13% (10 entities) have a specific tab on the website to disclose SDGs-related information (e.g. agenda 2030, sustainability, social responsibility, etc.)
- only 6,5% (5 entities) makes a specific approach to one or more SDGs. The Goal 4- Quality education and the Goal 5- Gender equality are the most highlighted by the municipalities, following by the Goal 17 -Partnerships for the Goals. Meschede (2019) also found that the most often occurring topic linked to the SDGs among German local governmental websites is education. The LGs intervention in goal 4 is crucial, as they are key actors in the educational implementation of each region and in improving the conditions to ensure inclusive, quality education for all. Similarly, local governments can advance in gender equality (goal 5), integrating a gender perspective into policymaking, through diverse mechanisms. In relation to SDG 4, the “Towards the Localization of the SDG 2022 report” recommends inter-municipal partnerships to advance inclusive and quality education

for the whole world. According to this report, fulfilling SDG 5 also contributes to achieving SDGs that look to end poverty and improve the well-being, livelihoods and resilience of all populations.

- More than half of the disclosing entities (49 entities, 63.6%) disclose information about the SDGs through the news: this is the most common practice of SDG disclosure among municipalities. The news usually concerns to SDG-related events and activities.



We also observed that the presidents' message does not make any mention to the SDGs. This result indicate that top management should be more sensitive to this topic, and there is a long journey to be attained in the Portuguese local government. We share Galli et al (2002)'opinion, who state that a discussion should be promoted on how to transpose the 2030 Agenda to the Portuguese municipal level and identify which are the priorities and challenges that local policies should consider.

From all 308 Portuguese municipalities, we found that the majority (244, 79,2%) do not use the ODSlocal platform. However, more than half of the e-SDGs disclosing entities disclose projects and good actions related to the SDG trough the platform.

We also found that only 23 municipalities (7,3%) have a sustainability report, but only 6 of them also disclose information about the SDGs thought the websites (this represents 7.8% of the disclosing entities).

4.2. Drivers of SDG e-Reporting

Through a bivariate statistics analysis, and with regard to the municipalities' location, we observed (according to Table 2) that of the 77 of disclosing entities, 53 (68.8%) are located on the country's coast and 24 (31.2%) in inland, which reveals there is a major gap in disclosure between coastal and inland municipalities. This conclusion is confirmed by the Chi-square test, with p-value < 0.01, which indicates that the municipalities' geographical location influences the disclosure about the SDGs, validating hypothesis H1.

In Portugal, coastal regions have greater economic development than inland regions. More developed regions tend to have greater accessibility to financial and human resources, facilitating the adoption and dissemination of sustainability practices (Ribeiro et al., 2016b). Portugal is a small country, mainly rural, with a considerable diversity in geographical terms and with very different local authorities. Oliveira et al. (2020), refer to inequality within Portugal, which may compromise the achievement of several SDGs. Additionally, Caldas et al. (2020) question whether it makes sense to apply the SDGs equally across all LGs when they have high contextual and organizational differences.

Table 2: SDGs disclosure by the geographical location

			Location		Total (N=308)	p-value (chi-square)
			Coast (164)	Inland (144)		
SDG_Disc	Yes	n	53	24	77	p=0,002
		% in SDG_Disc	68,8%	31,2%	100,0%	
		% in location	32,3%	16,7%	25,0%	
	No	n	111	120	231	
		% in SDG_Disc	48,1%	51,9%	100,0%	
		% in location	67,7%	83,3%	75,0%	

Source: Database generated in SPSS.

Regarding the municipalities' size, of the 77 disclosing entities, 29 (37.7%) are small, 33 (42.9%) are medium-sized and the remaining 15 municipalities (19.5%) are larger. From another perspective, we can observe that only 15,9% of small municipalities disclose about SDGs. However, the percentage increases to 34.0% in the case of medium municipalities, and to 65.2% in large LGs. Thus, the chi-square test ($p < 0,001$) allows to conclude that the probability of disclosure varies depending on the municipalities' size (table 3). Thus, it is possible to validate hypothesis H2.

Table 3- SDGs disclosure by the municipalities' size

			Size categories			Total (N=308)	p-value (chi-square)
			Small (188)	Medium (97)	Large (23)		
SDG_Disc	Yes	n	29	33	15	77	p<0,001
		% in SDG_Disc	37,7%	42,9%	19,5%	100,0%	
		% in SIZE	15,9%	34,0%	65,2%	25,0%	
	No	n	159	64	8	231	
		% in SDG_Disc	68,8%	27,7%	3,5%	100%	
		% in SIZE	84,6%	66,0%	34,8%	75,0%	

Source: Database generated in SPSS

Dimension is an important factor, given that larger municipalities generally have greater pressure to legitimize their activities and disseminate sustainability-related information (Ribeiro et al., 2016a-b) and satisfy conflicting interests of different stakeholders. According to Bardal et al. (2021), the competence and capacity to work with SDG implementation may be scarcer in smaller, compared to larger municipalities. Smaller municipalities may need other types and degrees of support than larger ones.

Regarding the use of the ODSLocal platform, we observed (according to Table 4) that of the 77 of disclosing entities, 43 (55.8%) use this platform, which reveals that most Portuguese municipalities do not have projects and good actions listed in the platform. The result of Chi-square test, with $p\text{-value} > 0.01$, do not allow to confirm that the use of the ODSLocal platform does not influence the disclosure about the SDGs. Thus, we could not validate hypothesis H3.

Our results are in accordance to Almeida's (2022) research which found that most Portuguese municipalities do not use yet the *ODSLocal* platform, and it is in the larger cities (such of Porto and Lisbon) that the largest number of projects are concentrated. Since the information contained in the *ODSlocal* platform is constantly updated, it is important to carry out new analyses periodically, to verify the evolution in actions' reporting and eventual changes or trends in the profile of the disclosing municipalities, and its association with the SDG e-reporting.

Table 4: SDGs disclosure vs the use of ODSlocal platform

			ODSLocal		Total (N=308)	p-value (chi-square)
			Yes (64)	No (244)		
SDG_Disc	Yes	n	43	34	77	p=0,108
		% in SDG_Disc	55,8%	31,2%	100,0%	
		% in ODSLocal	67,1%	13,9%	25,0%	
	No	n	21	210	231	
		% in SDG_Disc	9,1%	90,9%	100,0%	
		% in ODSLocal	32,8%	86,1%	75,0%	

Source: Database generated in SPSS.

Overall, our findings corroborate the theoretical assumptions of legitimacy and stakeholder theories. According to literature, municipalities should have a leading role in promoting sustainability practices and should serve as an example. Additionally, larger municipalities have a more substantial influence on their operational environment, attract greater scrutiny, facing greater pressure from stakeholders. Consequently, they are compelled to address these demands by sharing information about their sustainability efforts. This communication serves to legitimize their actions and enhance their public image (vander Waal and Thijssens (2020). This may explain why coastal and larger Portuguese municipalities tend to prioritize the disclosure of information related to SDGs on their websites.

5. DISCUSSION AND CONCLUSIVE REMARKS

The 2030 agenda and the SDGs will help to focus the efforts of local governments in making important contributions to sustainable development. It cannot be achieved in isolation, but rather from the interaction between LGs, public and private organizations and society.

Major challenges are faced by LGs in identifying priority SDGs for their activities and stakeholders, incorporating them into their strategy, setting goals for their success, and measuring and reporting on their progress. Integrate the SDGs assessment into the reporting allows local entities to show the stakeholders their effective performance, using the emerging non-financial reporting models.

Examining SDGs information disclosure by LGs allows for a deeper understanding of the concerns and strategies that guide decision-making as well as messages that are conveyed to stakeholders. Internal and external stakeholders increasingly follow the actions of municipalities and analyse whether these entities behave in economically, socially and environmentally responsible ways, thus displaying sustainable behaviours. The Internet acts as an important channel for the disclosure of these practices. The use of the internet in government-citizen communication has increase government transparency and reduce information asymmetries between public local managers and the citizens.

Online data are widely used in analyses of sustainability information disclosure, in general, on local government. But there is a gap to fulfil on SDGs-related information disclosures. Studies of the visibility of the 2030 Agenda on local entities websites can offer a complementary perspective to the research on SDG. Following this line of research, it is important to understand how SDGs achievement are being communicated on the institutional websites. Thus, this paper aimed to analyse the SDG practices on the internet, seeking to characterize the Portuguese municipalities that are concerned with the SDG-related disclosure and what are the main drivers to the SDG e-reporting.

Our findings show a low level of on-line disclosure in relation to LGs' contribution to the 2030 Agenda: only a quarter of all Portuguese municipalities, refer to the SDGs in their websites. None of the municipalities' president mention the SDGs in their messages. These results indicate that Agenda 2030 it is not a priority in the Portuguese municipal strategy. Only 10 entities (13%) have a separated tab on the website to disclose information related to SDGs. Most information is generic

and not about specific SDGs. Almost 64% of the disclosing entities disclose information related to SDG in the news topic. We found that only 23 municipalities have published sustainability reports.

Through bivariate statistics analysis, that correlates the SDGs disclosure with some characteristics of the sample, we found that that dimension and the location are drivers of SDGs e-reporting:

- There is a greater probability of disclosure about SDGs among coastal municipalities than inland municipalities.

- the probability of disclosure varies depending on the municipalities' size, that is, medium and larger municipalities are those that disclose more information about SDG on their websites.

Coastal and larger Portuguese municipalities are more likely to disclose about SDGs on their websites. These findings corroborate the theoretical assumptions of legitimacy and stakeholder theories. Larger municipalities influence the environment in which they operate, are more visible, and face greater pressure from stakeholders. Thus, they need to respond to their information needs and conflicting interests, which increases the need for legitimization and improvement of their public image.

According to Joseph (2010), larger municipalities are subjected to higher degrees of scrutiny by stakeholders than smaller municipalities. Therefore, larger municipalities are more likely to institutionalise their activities and programs to legitimate themselves in agreement with societal values and norms. Likewise, Joseph and Taplin (2011) found that the disclosure of information by larger organisations can be motivated by the higher degree of political visibility to which they are subjected, resulting in greater coercive pressures to disclose information.

Contrary to our expectations, the use of *ODSlocal* platform does not influence the SDG e-reporting. The lack of stakeholder engagement, as well as the lack of skills and knowledge in SDGs and new technologies can explain the lack of use of digital platforms such as the *ODSlocal*.

Our study contributes to literature, providing a snapshot of the web visibility of the SDGs in the local Government in Portugal. However, in interpreting our findings, some limitations should be considered. One limitation relates to the subjectivity of the content analysis technique, which involves making value judgments throughout the data analysis period. Therefore, all websites were analyzed in the same way by more than one member of the research team. By other hand, the results are limited to the availability of information, regarding the keywords research; and it did not consider the type, quantity and quality of the information provided by the LGs. Additionally, the websites are often very dynamic, with constantly changing information. Therefore, this analysis must be continually updated.

This paper can be considered as a starting point for deepening the research of SDGs reporting. Future research projects should expand our sample and conduct a longitudinal study that investigates changes in the type and volume of disclosure. Another relevant direction would involve examining motivations that cause higher or lower degrees of voluntary SDGs-related disclosures by LGs using surveys and interviews. The snapshot offered here of the visibility of the SDGs on Portuguese municipalities' websites could be expanded to include European local governments. Future studies could consider the influence of other corporate governance variables on SDGs disclosure, such as the influence of the gender of elected officials and gender diversity in municipal assembly (Balaguer Coll & Ivanova-Toneva, 2021, Ribeiro-García et al., 2023) and the political orientations/ideologies (Bisogno et al., 2023). Future research could also analyze not only the information dissemination through the websites, but also the social media accounts (Facebook, Twitter, and YouTube), as conducted by Manneti and Belluci (2016).

Despite the limitations, the contributions of this paper to the literature are several. The paper extends prior empirical research regarding LGs' disclosure, which mainly focus on sustainability reports or sustainability information as general, in websites. As far as we know, few studies have addressed a SDGs reporting approach in local government sector. In Portugal, to the best of our knowledge, this is the first paper specifically concerned with SDG-related disclosure, providing empirical data in a Portuguese context. Our results are in line with literature review and leads us to conclude that the level of SDGs reporting in LGs is still very low. Therefore, political incentives should be developed to improve the sustainable performance of local entities. The results will be of interest to policy makers and regulators who decide to implement and standardize sustainability reporting at local government, as well as to local managers and finance directors that wish to follow these new trends. The findings can serve as a learning process for local entities interested in implementing sustainability reporting practices aligned with the UN goals.

Further development of an SDG-reporting framework is a process that requires time and the possibility of refinement as knowledge and data availability improve. Therefore, should be a priority research area for the future.

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