

Corporate Social Responsibility Disclosure: the case of the Portuguese Higher Education Institutions

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ABSTRACT

Higher education institutions (HEI) are called to the social responsibility (SR) arena, where promoting sustainability practices is no longer just a responsibility of corporate entities, but also of the public sector in general, as all society actors need to participate in the challenge of achieving sustainable development. Despite universities are becoming more active in this area, sustainability disclosure is yet at an embryonic phase in a world that breathes environmental sustainability (ES) and corporate social responsibility (CSR) already for a while.

This thesis aims to analyse how the paradigm of SR has been internalised by Portuguese HEI, through the analysis of the online disclosure on their institutional websites, as well as understanding the motivation behind this disclosure, if it is used to achieve public legitimization.

Content analyses is the methodology here proposed to analyse HEIs' websites. The collected data, taken from 33 public institutions, was subject to univariate, bivariate and multivariate analyses, the former through a multiple regression using the stepwise method.

The findings obtained show that Portuguese public HEI seem to be engaged in integrating CSR in their strategic management and other contents disclosed in the institutional websites. However, it is observed a low national average of disclosures. Despite universities are using online disclosure through their websites, improving their provision of CSR information, it is still necessary a higher awareness among HEIs of the importance of this type of information.

Keywords: Higher education institutions, Online social responsibility disclosure, Stakeholders, Corporate social responsibility, Sustainable development.

RESUMO

As instituições de ensino superior (IES) são chamadas para a arena da responsabilidade social (RS) onde a promoção de práticas de sustentabilidade já não é somente responsabilidade das entidades empresariais, mas também do sector público em geral, já que todos os atores da sociedade precisam participar no desafio de alcançar um desenvolvimento sustentável. Apesar de as universidades estarem mais ativas nesta área, a divulgação da sustentabilidade está ainda numa fase embrionária, num mundo que respira sustentabilidade ambiental e responsabilidade social corporativa (RSC) há já algum tempo.

Esta dissertação tem como objetivo analisar de que modo o paradigma da RS tem sido internalizado pelas IES portuguesas, através da análise da divulgação da informação efetuada nos websites institucionais, bem como compreender qual a motivação por detrás desta divulgação, se esta é utilizada para obter legitimação pelo público.

A análise de conteúdo é a metodologia aqui proposta para avaliação dos websites das IES. Os dados recolhidos de 33 instituições públicas foram submetidos a uma análise univariada, bivariada e multivariada, esta última através de regressão múltipla com recurso ao método *stepwise*.

Os resultados obtidos mostram que as IES públicas portuguesas aparentam estar empenhadas em incorporar a RSC na sua gestão estratégica e noutros conteúdos divulgados nos websites institucionais. No entanto, verifica-se uma baixa média nacional de divulgação. Apesar de as universidades estarem a utilizar a divulgação online através dos seus websites institucionais, melhorando a prestação de informação de RSC, constata-se a necessidade de maior sensibilização das IES para a importância deste tipo de informação.

Palavras-chave: Instituições de ensino superior, Divulgação online de responsabilidade social, Stakeholders, Responsabilidade social corporativa, Desenvolvimento sustentável.

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ACRONYMS

AA1000	AccountAbility's AA1000 series
APEE	Portuguese Business Ethics Association
BSc	bachelor
CIOD	Community Involvement Online Disclosure
CSP	Corporate Social Performance
CSR	Corporate Social Responsibility
EC	European Commission
EDOD	Educational Information Online Disclosure
EHEA	European Higher Education Area
ENOD	Environmental Information Online Disclosure
EOD	Economic Information Online Disclosure
EU	European Union
FCT-NOVA	FCT – NOVA School of Science and Technology
GRI	Global Reporting Initiative
HEI	High Education Institutions
IPCA	Instituto Politécnico do Cávado e Ave
IPS	Instituto Politécnico de Setúbal
ISO	International Organization for Standardization
LHOD	Labour Practices & Human Rights Online Disclosure
MSc	master
NGO	Non-Governmental Organization
NP	Portuguese Norm

OGOD	Organizational Governance Online Disclosure
ORSIES	Observatory on Social Responsibility and Higher Education
PhD	doctoral
PURC	Portuguese University Rectors Council
RJIES	HEI Legal Regime
SA	Social Accountability
SA8000	Social Accountability International SA8000
SAI	Social Accountability International
SAMS	Social Accountability Management System
SD	Sustainable Development
SDG	Sustainable Development Goals
SOD	Social Information Online Disclosure
SR	Social Responsibility
SROD	Social Responsibility Information Online Disclosure
TBL	Triple Bottom Line
UA	Universidade de Aveiro
UBI	Universidade da Beira Interior
UL	Universidade de Lisboa
UNESCO	United Nations Educational, Scientific and Cultural Organization
USR	University Social Responsibility
VIF	Variance Inflation Factor
WCED	World Commission on Environment and Development

SYMBOLS

- α Intercept
- β Coefficient of the explanatory variable
- d** Test statistics Durbin Watson
- ϵ Experimental error (residual)
- R** Correlation coefficient

INTRODUCTION

This chapter contextualizes the problem that is proposed to be studied and the central research question. Introduces the project main objectives as well as details the research questions to be answered. It also describes the document organization.

1.1 Problem Context

High Education Institutions (HEI) are called to social responsibility Social Responsibility (SR) arena where promoting sustainability practices is no longer just a responsibility of corporate entities, but also of public sector in general, as all societal actors need to participate in the challenge for achieving sustainable development.

Despite universities are becoming more active in this area, sustainability disclosure is yet at an embryonic phase in a world that breathes environmental sustainability and corporate social responsibility Corporate Social Responsibility (CSR) already for a while.

To present an image of a socially responsible institution, as well as presenting an active participation in this field, HEI must establish communication strategies for CSR disclosure, as stakeholder's demand for more accountability and transparency in sustainability and CSR reporting. "Traditionally, information disclosure at universities has been focused on research outputs, graduates, and courses as well financial information" this last one more regulated (Hernández, 2007, as cited in Sánchez et al., 2013, p. 710). Nowadays, if HEI want to be successful, "wider considerations such as identifying and addressing stakeholders' expectations, establishing mechanisms for dialogue with them and improving university transparency" are necessary (Sánchez et al., 2013, p. 710).

Among the available communication channels, the internet reveals itself as a powerful tool to disclose CSR information since it allows "disseminating more information less expensively and in a timelier fashion", being immediately available (Branco & Rodrigues, 2006, p. 235). Additionally, by channelling the information stakeholder-oriented enables a higher level of interaction with different stakeholders' groups.

Being students now perceived as clients, as HEI are gradually becoming more self-autonomous, there's place for competition between public and private sector for the capture of their clients (Idowu, 2008). As the internet plays a considerable role in the admission

practices of HEI, the websites are a “primary means by which prospective students learn about HEI”, becoming an essential tool “to these organizations’ marketing practices as well as for serving the needs of current students” (Carnevale, 2005, as cited in Saichaie & Morphey, 2014, p. 500; Manzoor et al., 2012). According to Schimmel et al. (2010, p. 7) “potential students’ first impressions are influenced electronically via the website”, being an important tool in the decision process to select the university to attend, where some of “the most important aspects of website evaluation process are: programs, course offering, location, and accreditations”. Manzoor et al. (2012, pp. 152, 153) emphasized on the importance and features of the websites for the HEI, recalling some: “unimaginable” not to have nowadays, “to globally in print the opportunities” that institutions provide “so it can be accessed world widely”, to “provide all the information about the courses that could boost a student’s career prospects and earning potential”; “to ensure that education provided by institutions of specific higher education meets acceptable levels of quality”, “to globally compete with other HEI”, “to promote institution activities online” and “provide information on its achievements and other programmes”, “to provide online registration”, this last useful not only for the student but also to reduce administrative work, to provide “detailed course catalogue to their students” and “to maintain a detailed academic profile of each faculty”, among others.

However, considering the described features that HEI websites can offer, and despite some studies have been already done on this subject worldwide, there is yet a lack of information regarding CSR disclosure of the higher education. It is important to understand the extension of the information disclosed and what are the drivers for this disclosure.

Guidelines, standards, and tools to assess, report and manage sustainability practices and outcomes have been created to help entities reporting CSR information. Nevertheless, these standards do not include indicators specific for the academic sector. Efforts are being employed to overcome this gap, justifying the need for more research and studies on this area.

1.2 Thesis Objectives

The purpose of this study is to analyse how the paradigm of social responsibility has been internalised by the Portuguese HEI, by studying and quantify the level of CSR disclosure of the Portuguese public higher education institutions (through the analysis of the online disclosure on their corporate websites), as well as to understand the motivation behind this disclosure, if it is used to achieve public legitimization.

To accomplish these goals, several topics are described along the document to understand and define the main purposes and investigation questions, namely:

- To describe the subject of study;

- To understand stakeholders and legitimacy theories and how they justify corporate social responsibility [CSR](#) disclosure;
- To recognise the importance of [CSR](#) information disclosure, concept and historical evolution;
- To contextualize [CSR](#) information disclosure into the [HEI](#);
- To ascertain the level of disclosure of [HEI](#), what do they disclose, and which are the factors that determine this disclosure, such as size, affiliation, age, certification in relevant standards, [HEI](#) subsystem, foundational nature and amount of revenues;
- To propose a methodology for the analysis to be done.

1.3 Study Hypotheses

This study will focus on the [HEI](#)-related variables already studied size, affiliation, age, [CSR](#) certifications, which according to stakeholder theory and legitimacy theory, can influence the [CSR](#) information online disclosure (Sanchez et al., 2021) plus [HEIs'](#) subsystem, foundational nature and funding. The mentioned variables have been applied and justified in previous studies on the subject, in several industry sectors and universities, except for the variables «[CSR](#) certifications» and «subsystem, foundational nature and amount of revenues» since it was not found any mention of it in the reviewed literature. The following hypotheses were developed in accordance with current literature on the topic and available in Chapter 2 [Literature Review](#):

H1: The size of the [HEI](#) influences online [CSR](#) disclosure;

H2: The existence of schools and faculties related to the field of [CSR](#) within the Institution influences online [CSR](#) disclosure;

H3: [HEI](#) foundation date influences online [CSR](#) disclosure;

H4: [CSR](#) certifications influences online [CSR](#) disclosure;

H5: Subsystem of the [HEI](#) influences online [CSR](#) disclosure;

H6: Foundational nature of the [HEI](#) influences online [CSR](#) disclosure;

H7: The amount of revenues influences on online [CSR](#) disclosure.

1.4 Study Structure

This thesis is organized in five chapters, namely:

- The First chapter, "*Introduction*", introduces the problem to be studied, context, main objectives, and research questions to be answered.
- The Second chapter, "*Literature Review*", performs a review of the literature on the topic under study to provide this thesis a theoretical background. Starts with the presentation of the concepts of stakeholder theory and legitimization theory, definitions, and approaches from previous research. Followed by the concept and evolution of CSR Disclosure, drivers of online CSR disclosure, and university's role in the social responsibility field.
- The Third chapter, "*Methodology*", contextualizes the most adequate methodology to approach the problem under investigation, introduces the empirical model proposed, the sample description and the data collection to obtain the main variables to be used in the study.
- The Fourth chapter, "*Presentation and Results Analysis*", presents the results of the statistical analysis performed on the collected data.
- The Fifth chapter, "*Conclusions, Limitations, and Future Perspectives*", limitations and expected conclusions.

LITERATURE REVIEW

Corporate Social Responsibility (CSR) disclosure is being studied for a long while now, mainly regarding private companies, existing extensive literature available on it. As per High Education Institutions (HEI)'s CSR disclosure, we verify that there are also several studies done on the subject, having as a sample some of the most ranked universities worldwide, or the country's leading ones, and comparative studies performed between HEI's of different countries, among others.

In what concerns Portuguese HEI, where this subject is still relatively underdeveloped, seems to exist a gap of research when comparing with the existent literature for the private companies. Thus, this study aims to help to reduce this gap by investigating the level of CSR disclosure by the Portuguese HEI through their institutional websites, to understand which CSR dimensions are being internalised, as well as to identify the motivation behind this disclosure, if it is used as a differentiation factor in the pursuit of positional or competitive advantage, considering stakeholders' influence and needs, or if it is used to achieve public legitimization.

In this study, it is proposed to analyse and compare all Portuguese public HEIs, to figured out how they implemented social responsibility the concept in their mission and core business - education and learning, research and developments and knowledge transference. For this evaluation it will be considered items related to the environmental, social, and economic dimension, as well as to educational and organizational governance, which concepts are further developed in this chapter.

2.1 Stakeholder Theory and Legitimacy Theory

Among the several theories addressed to explain CSR disclosure, two main ones have been used for this purpose: the legitimacy theory and the stakeholder theory. As referred by Waller and Lanis (2009) these two theories are based on the notion that exists an implicit «social contract» between the organization and society. Both theories also share the view that “organizations seek legitimization from those various reference groups within society that have dissimilar power and influence over the organization” (Farook et al., 2011, as cited in Waller & Lanis, 2009, p. 110). Reference groups that are called «relevant publics» in the legitimacy theory literature and called «stakeholders» in the

stakeholder literature. Sassen and Azizi (2018, p. 108) note that these two theories “are in many ways complementary rather than opposed”.

It is important to previously introduce the meaning of stakeholders and legitimacy. Freeman (1984, p. 46) defines stakeholders as the “any group or individual who is affected by or can affect the achievement of an organization’s objectives”. These groups and individuals are owners, shareholders, clients, employees, suppliers, communities, pressure groups, government, regulators, among others. Suchman (1995, p. 574) adopts the definition of legitimacy as being “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions”.

Until the 1970’s “the maximisation of the shareholders’ wealth was assumed to be the singular objective of the firm” (Idowu, 2008, p. 268). Later, in the 1980s, the concept of sustainable development came to focus, and it was introduced the stakeholder’s theory (Roca & Searcy, 2012). According to this theory corporate entities shall not limit to meet the needs of one stakeholders’ group only, such as shareholders (Wijnberg, 2000), to accomplish success, good relationships must exist between corporate entities and all its critical stakeholders (Idowu, 2008). Later, it was argued that the objectives are “actually three-fold,” namely, to create economic value”, “ecological and social values for all concerned” (Elkington, 1998, as cited in Idowu, 2008, p. 266) parties, and not only one of the many stakeholder groups of a business entity.

Vilar (2012, p. 28) mentions that Stakeholder theory explains the inclusion of stakeholder’s expectations in the core activities of a company’s value creation chain. A company responds to stakeholders’ expectations “to generate value and grow in a sustained manner, offering better products and services, obtaining greater notoriety and respect from all stakeholders”.

In Branco and Rodrigues (2006, p. 236) perspective, according to legitimacy theory, “companies disclose CSR information to present a socially responsible image so that they can legitimize their behaviour to their stakeholder groups”. The authors also note that:

Society is considered to allow companies to exist and have rights, and in return expecting them to fulfil its expectations about how their operations should be conducted. Therefore, in order to survive, a company must ensure that the activities it undertakes actually are or are perceived as being in accordance with the values and norms of society. When society’s expectations are not fulfilled, that is, a company’s actual or perceived behaviour is not in accordance with social values and norms, a breach of contract exists, and a legitimacy gap may develop (p. 236).

Branco and Rodrigues (2008a, p. 685) pointed out in his study that companies engage in CSR activities and disclosure mainly due to two different kinds of motivation: that by having good relations with their stakeholders “will lead to increased financial returns by assisting in developing valuable intangible assets (resources and capabilities)” as these assets “can be sources of competitive advantage because they can differentiate a company

from its competitors” or “to conform to stakeholder norms and expectations about how company’s operations should be conducted”, establishing this way a legitimacy instrument to demonstrate companies’ adherence to such norms and expectations, convincing stakeholders that the company is fulfilling their expectations.

Several studies on the subject seem to agree “that the core objective of firms to offer **CSR** reporting is to legitimize” their existence (Mahmud, 2019, p. 9) thus, legitimacy theory presents itself as the best way to explain why companies disclose **CSR** information. Companies wish to establish legitimacy and “gain public perception of being a good corporate citizen” (Kılıç, 2016, p. 5) reacting to the environment around them (Guthrie & Parker, 1989) and pressured by the public (Farache & Perks, 2010; Patten, 1991). Organisations try to influence positively the image their stakeholders have from them, projecting an identity socially responsible by disclosing **CSR** information, obtaining this way legitimacy for their activities (Hooghiemstra, 2000, as cited in Vilar, 2012, p. 37).

Thus, the legitimacy theory is frequently used to explain the way entities disclose their **CSR**. “This theory suggests that organizations try to ensure that their respective societies perceive their activities as being legitimate” (Kılıç, 2016, p. 7). However, according to Branco and Rodrigues (2008b, p. 163) a distinction must be made between legitimacy and legitimization. “Legitimacy can be considered as condition or status”, while “legitimization is a process engaged in by companies to take them to such a state”, that can be either to “repair or to defend its lost or threatened legitimacy” and to “gain or to maintain and extend current legitimacy”.

2.2 Corporate Social Responsibility Concept and Evolution

CSR become of great importance to corporate entities in the 1980s as result of the growing global public awareness to problems related to environmental incidents, corruption scandals and violation of ethical and social principles, that hold companies accountable for the social consequences of their activities. These companies, under the pressure of public scrutiny and external agents, were required to “commit to balancing and improving environmental and social impacts without damaging their economic performance” (Nejati et al., 2011, p. 441).

According to Carroll (1999), despite some reference regarding social responsibility appeared earlier, mainly during the 1930s and 1940, **CSR** concerns and conceptualization begins in the 1950s, marking the modern era of **CSR**, with the publication of the book titled “Social Responsibilities of the Businessman” of Howard R. Bowen in 1953 (Bowen et al., 2013).

CSR issue has been subject to a long debate since the second half of the 20th century, evolving in several theories, approaches, terminologies, and definitions, that expanded during the 1960s and the 1970s. Fewer new definitions and more empirical research occurred in the 1980s and in the 1990s, alternative themes start to arise and mature, namely **Corporate Social Performance (CSP)**, stakeholder theory, and business ethics

theory. In 1992, at the United Nations Conference on Environment and Development held in Rio de Janeiro, the document called Agenda 21 established the three pillars of sustainable development: social, economic, and environment. In 1998 Elkington suggested the concept of **Triple Bottom Line (TBL)** contributing to the development of **CSR** (Ferreira & Gabriel, 2019) though, the term was used before between 1994 and 1997, taking off in the late 1990s. According to the author, which also developed the term 3P (People, Planet, Profit), “the **TBL** agenda focuses corporations not just on the economic value they add, but also on the environmental and social value that they add - or destroy” (Elkington, 2004) bringing organizations a model to comprehend sustainability through the integration of economic, environmental and social dimensions (Ferreira & Gabriel, 2019) where the three dimensions issues have the same level of importance and commitment.

In 1999 the World Business Council for Sustainable Development defined **CSR** as being “the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large” (“WBCSD’s First Report on Corporate Responsibility”, 1999, p. 2). Other definitions have been presented by different authors along the years. Ten years after, **International Organization for Standardization (ISO) 26000** (2010) defined:

Social Responsibility of an organization for the impacts of its decisions and activities on society and the environment, through transparent and ethical behaviour that contributes to sustainable development, including health and the welfare of society; takes into account the expectations of stakeholders; is in compliance with applicable law and consistent with international norms of behaviour; and is integrated throughout the organization and practised in its relationships (p. 3).

which seems more comprehensive for current goals.

According to Branco and Delgado (2016) in Portugal the dominant definition of **CSR** is the one offered by the European Commission in the Green Paper on Promoting a European Framework on **CSR** in 2001, as being “a concept whereby companies decide voluntarily to contribute to a better society and a cleaner environment” (**European Commission (EC)**, 2001, p. 5).

In Portugal, **CSR** journey started a little later than other European countries, late 1990s, gaining importance in the beginning of the twenty-first century, driven by important events related to **CSR**, such as the Lisbon Summit “that occurred in March 2000 and the publication of the European Commission’s Green Paper on Promoting a European Framework on **CSR** in 2001” (Branco & Delgado, 2016, p. 209).

Along the last decades, **CSR** revealed as being a great opportunity for companies to benefit society, since using adequate corporate strategic approaches, it can produce “social value as well as gains” (Porter & Kramer, 2006, p. 8) and competitive advantage for the business. According to authors, organizations can adopt two **CSR** strategies: a Strategic **CSR**, by integrating “a social perspective into the core frameworks that they

use to understand competition and guide their business strategy” (Porter & Kramer, 2006, p. 5) , or a Responsive CSR by just acting as the «good citizen» (Porter & Kramer, 2006; European Commission (EC), 2011). Strategies consistent with the stakeholder and legitimacy theories, respectively, already mentioned.

2.3 Corporate Social Responsibility Disclosure

CSR reporting has become a major communication tool with which to report CSR information to different stakeholders groups (Kılıç, 2016). This communication tool that was initially available through several channels, mainly paper based, such as annual reports, sustainability reports, annals and brochures, was after facilitated on the internet, becoming one of the key communication tools for CSR disclosure over the mentioned traditional media tools.

As referred by Kılıç (2016) and Branco and Rodrigues (2006), the internet allows disseminating more information less expensively and in a timelier fashion, being available 24 hours a day to stakeholders. Its interactive nature is also considered a benefit in the communication with the stakeholders since companies can “provide information target to different stakeholders and obtain feedback from them” (Branco & Rodrigues, 2006, p. 235), allowing to be more responsive to their stakeholders needs and demands (Sánchez et al., 2013, p. 712). As per stakeholders, they can access the information quickly and easily.

Branco and Rodrigues (2006, p. 236) also refers that some studies done to compare Social Responsibility (SR) information disclosure through the internet with similar disclosure in annual reports, among companies in different countries, suggest that, companies report more on the website than in annual reports, and that “on average, companies include more negative environmental information in their annual reports than on their websites” as well as “more sentences of positive /neutral environmental disclosure on their websites than in their annual reports”.

Larran and Giner (2002, p. 54) sustains that the Internet, as a way to communicate with their stakeholders, “increases the possibilities to manage business information, not only for internal but also for external purposes”, in what concerns ways of making commerce, publicity, and providing financial information.

Having information that is crucial to stakeholders to learn about a company (regarding financial and environmental issues) this one becomes short when presented in the traditional print-based mode channels, since it is published periodically, between large periods of time. Hence, companies have several reasons to voluntarily disclose CSR information through the Internet, as already mentioned, it allows reducing “the cost and time to distribute information” Larran and Giner (2002, p. 55), “increasing the amount and type of data disclosed” that “becomes immediately available to those connected to the Internet” p. 56) and reaching a greater number of potentially relevant stakeholders.

Also important, with no lags, as the publishing process considerably reduces, namely, “printing, editing, faxing, or mailing reports” Larran and Giner (2002, p. 56). Plus, the

advantage associated with the easiness “to include any kind of information, and to update it when necessary” (Larran & Giner, 2002, p. 56). All these aspects increase information value, therefore it seems logical to companies to include CSR information in their websites, providing their stakeholders “with useful information” (Larran & Giner, 2002, p. 56) that also helps them to take their decisions.

2.4 Sustainability Assessment and Reporting: Guidelines and Standards

In order to enable a sustainability assessment and reporting, “entities have been accompanied by several initiatives undertaken to develop guidelines, standards and tools to assess, report and manage sustainability practices and outcomes” (Gamage & Sciulli, 2017, p. 189). These include International Organization for Standardization ISO 26000 and ISO 14000 series, Global Reporting Initiative (GRI) standards, Social Accountability International SA8000 (SA8000) and AccountAbility’s AA1000 series (AA1000), among others. For better understanding and further framework of these guidelines and standards, a brief with some extracts is next provided.

2.4.1 ISO Standards

Launched in 2010, ISO 26000 is an international standard developed to provide organizations with a tool to implement a social responsibility management system, identify stakeholders, establish CSR policies, and report CSR practices. It is a voluntary guidance not a mandatory standard, thus not requiring certification or conformity assessment.

As per ISO 26000:2010, Section 7.5, *Communication on social responsibility*, communication assumes a critical role in the practices related to social responsibility, as these practices entails some form of internal and external communication. Being vital to some of its functions, it allows the monitoring of organizations’ social performance, transparency in all actions related to their business, engaging stakeholders and employees, and enhancing organization’s social reputation to strengthen stakeholder trust in the organization.

ISO 14000 created in 1996 by International Organization for Standardization it is an international family of standards related to environmental management, that provide organizations a set of tools to improve their environmental performance. It is a voluntary guidance not a mandatory standard, thus not requiring certification or conformity assessment. Companies can get certification and be assessed, but in an optional and voluntary basis.

2.4.2 Global Reporting Initiative Standards

GRI Standards created in 1997 by Global Reporting Initiative it is an international standard that provide organizations with a global common language to communicate their impacts

in the economic, environmental, and social dimensions, through sustainability reporting, using GRI's performance indicators ("Global Reporting Initiative Standards", 2021).

GRI's first version was released in 2000, and since then four generations of GRI's guidelines occurred¹, through the evolution of the structure of its indicators and aspects, aiming to develop and promote the most appropriate guidelines for the preparation of sustainability reports, improving their reporting quality, accuracy, and usefulness. GRI second version (G2) launched in 2002 quickly become a leader in the voluntary disclosure on SR of organizations. Being recognised as a remarkable initiative in this context, in 2006 there was a widespread adoption of the third version (G3). Being again expanded and improved in a new version (G4) issued in 2013 (Pineiro, 2020).

Globally considered as the most used referential in what concerns organizations' sustainability reporting, GRI seeks to adapt to its users and stakeholders needs by considering the specifics of the different organizations and the importance that each of the performance indicators has in the context of the activities carried out. Also, due to the importance it attaches to an integrated sustainability report and to the link between the economic, environmental and social perspectives, making the practice of sustainability reporting a standard (Pineiro, 2020).

2.4.3 SA8000

Within the social responsibility certification standards, one of the most known is SA8000 - Social Accountability 8000.

SA8000 was created in 1997 by Social Accountability International (SAI) it is an international standard certification that protects workers from any kind of discrimination, by encouraging organizations to develop, maintain and apply socially acceptance practices in the workplace ("SA8000 Standard", 1997). Elements of the standard include:

- Child labour;
- Forced or compulsory labour;
- Health and safety;
- Freedom of association and right to collective bargaining;
- Discrimination;
- Working hours;
- Remuneration;
- Management system.

2.4.4 AA1000

The AccountAbility's AA1000 series (AA1000) was created in 1999 by the Institute and Ethical Accountability ("AA1000 Standard", 1999), and works as a guidance to organizations to identify, understand and respond to sustainability issues, as well as to report

¹A fifth version of GRI Standards was published in 2021 ("Global Reporting Initiative Standards", 2021).

on them and to be accountable to all stakeholders. [AA1000](#) is based on a set of quality principles and ethical evaluation processes (“NEF”, n.d.), namely:

- *Inclusivity principle* “understood as the right of stakeholders’ interests to be heard, and that organisations account for themselves in relation to these interests”;
- *Materiality Principle* “requires the organisation to include in its report information about its social, environmental and economic performance required by its stakeholders for them to be able to make informed judgements, decisions and actions”;
- *Responsiveness Principle* “requires an organisation to provide evidence that it has coherently responded to stakeholder concerns, policies and relevant standards – this includes public response but also management of identified material issues, i.e., improving performance”.

2.4.5 NP 4469 Social Responsibility Management System

The [Portuguese Norm \(NP\) 4469](#) Portuguese Standard on Social Responsibility published in 2008 (part 1) and 2010 (part 2), is a certifiable [CSR](#) standard developed by the [Portuguese Business Ethics Association \(APEE\)](#), which provide companies with social certification helping them to implement a [Social Accountability Management System \(SAMS\)](#) and a model for sustainable development.

[APEE](#) was created in 2002 with the aim of promoting ethics and social responsibility in companies and other organisations, responsible in Portugal for the standardization in the fields of Ethics and Social Responsibility (Branco & Delgado, 2016).

2.5 Universities’ Role in the Social Responsibility

[CSR](#) is not only of growing importance in the mainstream business but also in the academic world, as [HEI](#) seek to promote a better and more sustainable world and are “becoming more active in the field of [CSR](#)” (Sanchez et al., 2021, p. 22). Playing an important role in the society, [HEI](#) are aware of the repercussions that their actions have in their own environment, either positive or negative, and know they must act as models of ethical behaviour to society, thus needing to take a leading part in positive actions (Ismail, 2019; Sanchez et al., 2021).

Universities are by nature places for [CSR](#) activities engagement, well-placed to identify problems and seek solutions, being them social, environmental, and/or economic. As argued by Gamage and Sciulli (2017, p. 198) “universities are power houses of research and the trainers of new generation of innovators”, they “play a key role in educating society to address the global challenges of climate change, population growth, competition for finite resources, biodiversity loss and other sustainability issues” (Gamage & Sciulli, 2017, p. 187).

Also, as considered by Branco and Delgado (2016, p. 207) CSR matters are “of particular relevance in management education, given that “the students learning at a school responsible for such kind of education, such as business schools, are likely to be future managers that will “have the responsibility of implementing and managing CSR activities or of conceiving and implementing related public policies”.

“At no time in human history was the welfare of nations so closely linked to the quality and outreach of their higher education systems and institutions” (*Final report of the Meeting of Higher Education Partners (World Conference on Higher Education + 5), 2003*) this United Nations Educational, Scientific and Cultural Organization (UNESCO) statement underlines the importance of such a contribution that HEI have exerted on developing worldwide society and defining and transmitting the values on which this is built (Martin, 2015). The social dimension of higher education became a central issue as well as the social responsibilities of higher education in developing and promoting this dimension, contributing to the values of modern, complex society. A dimension beyond the typical promotion of knowledge and research.

Roos (2019) article mentions the existence of diverse understanding of the term social responsibility in the HEI sphere, referring to some authors approaches to social responsibility of a university, namely:

the need to strengthen civic commitment and active citizenship; it is about volunteering, about an ethical approach, developing a sense of civil citizenship by encouraging the students, the academic staff to provide social services to their local community or to promote ecological, environmental commitment for local and global sustainable development (Vasilescu et al., 2010, as cited in Roos, 2019, p. 2).

other authors defined SR under a stakeholder-oriented perspective, among others.

Nevertheless, it is importance to establish a generally accepted and common definition to the development of policies and assessment tools to allow the evaluation of the social performance at HEI.

In the absence of policies or framework to support the process of developing actions to make this social dimension a priority, in terms of policies and daily practices, European Higher Education Area (EHEA) born in 1999, as an initiative of the National ministers of higher education (“Bologna Declaration”, 1999), developed a project to fill this gap and to create a Community Reference Framework for University Social Responsibility across the EHEA. This project was conceived as a response to the need for a common social responsibility strategy for universities.

Several efforts have been made in the past two decades, by various international bodies, to clarify what to consider under the term of University Social Responsibility (USR), such as definition, policies, and practices. Among them ISO 26000 (International Organization for Standardization (ISO)’s Guidelines on Social Responsibility) this last aiming to align European and global approaches to CSR.

Martin (2015) defined **USR** as “the responsibilities of universities for the impacts of their decisions and activities on society and the environment through transparent and ethical strategies” (p. 4), practices that “should be promoted and encouraged among students and staff, not only celebrating and promoting the values of justice, equality, participative democracy, social responsibility and sustainability” (p. 10), but also contributing “to sustainable development including the health and welfare of society; recognizing expectations from stakeholders; complying with the applicable law and international norms of behaviour; according “with the relevant norms of transparency and public accountability” (Martin, 2013, as cited in Martin, 2015, p. 10).

EHEA project “proposes Benchmark Standards for University Social Responsibility” covering “four distinct areas: (1) research, teaching, support for learning and public engagement; (2) governance; (3) environmental and societal sustainability, and (4) fair practices” (Martin, 2013, p. 10).

According to Amorim et al. (2015) the above-mentioned areas considered the seven core **CSR** issues established in **ISO 26000**: organizational governance; human rights; labour practices; the environment; fair operating practices; consumer issues; and community involvement and development, whose definitions are next described:

Organizational governance is the system by which an organization makes and implements decisions in pursuit of its objectives, being directed by the principles and practising of social responsibility namely accountability, transparency, ethical behaviour, respect for stakeholder interests, respect for the rule of law and respect for international norms of behaviour (“**ISO 26000**”, 2010, p. 21). Additionally, putting into practice the principles of social responsibility mentioned in clause 4 an organization should be:

- accountable for its impacts on society, the economy and the environment;
- transparent in its decisions and activities that impact on society and environment;
- behave ethically;
- consider and respond to the interests of its stakeholders;
- accept that respect for the rule of law is mandatory, as well as the international norms of behaviour;
- and respect human rights as well as recognize both their importance and universality.

Human rights are the basic rights to which all human beings are entitled. There are two broad categories of human rights. The first category concerns civil and political rights and includes such rights as the right to life and liberty, equality before the law and freedom of expression. The second category concerns economic, social and cultural rights and includes such rights as the

right to work, the right to food, the right to the highest attainable standard of health, the right to education and the right to social security (“ISO 26000”, 2010, p. 23).

Labour practices of an organization encompass all policies and practices relating to work performed within, by or on behalf of the organization, including subcontracted work. Include the recruitment and promotion of workers; disciplinary grievance procedures; the transfer or relocation of workers; termination of employment; training and skills development; health, safety and industrial hygiene; and any policy or practice affecting conditions of work, in particular working time and remuneration. Labour practices also include the recognition of worker collective bargaining and social dialogue and tripartite consultation to address social issues related to employment (“ISO 26000”, 2010, p. 33).

Environment the decisions and activities of organizations invariably have an impact on the environment, no matter where the organizations are located. These impacts may be associated with the organization’s use of resources, the location of the activities of the organization, the generation of pollution and wastes, and the impacts of the organization’s activities on natural habitats. To reduce their environmental impacts, organizations should adopt an integrated approach that takes into consideration the direct and indirect economic, social, health and environmental implications of their decisions and activities (“ISO 26000”, 2010, p. 40).

Fair operating practices concern ethical conduct in an organization’s dealings with other organizations. These include relationships between organizations and government agencies, as well as between organizations and their partners, suppliers, contractors, customers, competitors, and the associations of which they are members. Fair operating practice issues arise in the areas of anti-corruption, responsible involvement in the public sphere, fair competition, socially responsible behaviour, relations with other organizations and respect for property rights (“ISO 26000”, 2010, p. 48).

Consumer issues concern organizations that provide products and services to consumers, as well as other customers, have responsibilities to those consumers and customers. Responsibilities include providing education and accurate information, using fair, transparent and helpful marketing information and contractual processes, promoting sustainable consumption and designing products and services that provide access to all and cater, where appropriate, for the vulnerable and disadvantaged (“ISO 26000”, 2010, p. 51).

Community involvement and community development are both integral parts of sustainable development. Community in this clause refers to residential or other social settlements located in a geographic area that is in physical

proximity to an organization's sites or within an organization's areas of impact ("ISO 26000", 2010, p. 60).

Community involvement goes beyond identifying and engaging stakeholders in regard to the impacts of an organization's activities; it also encompasses support for and building a relationship with the community. Above all, it entails acknowledging the value of the community. An organization's community involvement should arise out of recognition that the organization is a stakeholder in the community, sharing common interests with the community ("ISO 26000", 2010, p. 60).

Community development is usually advanced when the social forces in a community strive to promote public participation and pursue equal rights and dignified standards of living for all citizens, without discrimination. It is a process internal to the community that takes account of existing relations and overcomes barriers to the enjoyment of rights. Community development is enhanced by socially responsible behaviour ("ISO 26000", 2010, p. 61).

HEI differentiate from the other organizations by having their campus as infrastructure, the teaching as raw material, the knowledge as the product and the students as the client (Pasinato & Brião, 2014) and as other organizations they shall maintain an organizational management to ensure a good performance, quality and results. HEI can implement sustainable development in different dimensions that goes from education and curricula, campus operation, organizational management, external community and research, to assessment and communication (Ragazzi & Ghidini, 2017).

In the sustainability context, HEI can also cause significant environmental impacts as their campus can be considered as small towns as they encompass countless activities in their daily life. The larger their size, the more expressive is the movement of people and vehicles, the higher the consumption of materials and the stronger the development of complex activities (Nejati et al., 2011).

Alshuwaikhat and Abubakar (2008, p. 1784) also expressed that "universities are systems" involving "numerous and complex scientific" activities (such as laboratory experiments), "social and educational activities" (such as teaching, learning and research), "energy consumption, transport and interaction, sports and recreation", among others.

To foster sustainability, HEI are expanding environmental research groups, "integrating sustainability matters throughout the curriculum, adopting sustainable operations and building green facilities" (McNamara, 2010, p. 48). Since "changes involving curriculum as well as operations are complex", as it "reaches across the institution and systemically impacts the core of the organization and every department", "every employee and student within the educational institution will be asked to change behaviours of purchasing, consumption, disposal, and transportation" (McNamara, 2010, p. 49), being important the commitment of all departments and community in general to accomplish such goals.

As underlined by Ragazzi and Ghidini (2017, p. 111) “the principles of sustainability and sustainable development represent key points in policy development and activities of the HEI, not only for their impact on the environment but also on the role they play in society”.

2.6 Sustainability in Portuguese HEI

The approach to Sustainable Development (SD) appeared in 1972 in the agenda of the Conference of the United Nations on SD, as a need to bring up to light the social and environmental areas as they were not taken into equal account relatively to the economic area (Aleixo et al., 2016) and gained emphasis worldwide in 1987 after the publication of the Brundtland Report titled “Our Common Future”. The Brundtland Commission formerly the World Commission on Environment and Development (WCED) defined SD as “the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs” (Keeble, 1988, p. 16).

Later in 1990 is signed the Talloirs Declaration, the first official statement made by university presidents, chancellors, and rectors of a commitment to environmental sustainability in higher education, recognizing the importance of HEI in promoting the SD (ULSF, n.d.). Other statements have been written after, regarding HEI importance on the subject, “intended to provide guidelines and framework for the incorporation of sustainability throughout the system of HEI” (Aleixo et al., 2016, p. 160).

Two of the five targets that have been set by European Union (EU) to deliver “Europe’s 2020 Strategy for Smart, Sustainable and Inclusive Growth” concern HEI, namely research and development, and education. HEI not only play an important “role in furthering the migration to sustainable development models” pursuit by EU but also on participate of that migration. HEI are simultaneously “introducing change in their own processes to adapt to the new scenario, impacting the “core education”, “research”, “institution management and community outreach” (De Filippo et al., 2019, p. 2).

Velazquez et al. (2006) (as cited in Bautista-Puig & Sanz-Casado, 2021, p. 2) defined a sustainable university as:

HEIs that addresses, involves and promotes, on a regional or a global level, the minimization of negative environmental, economic, societal, and health effects generated in the use of their resources in order to fulfil its functions of teaching, research, outreach and partnership, and stewardship in ways to help society make the transition to sustainable life-styles.

As mentioned before, aware of the impact that HEI have on the environment, “substantial efforts” are being made “to enhance their understanding of the environmental dimensions of their operations”, as well as “the implications and impact of their activities” (De Filippo et al., 2019, p. 2), the concept of sustainable university and sustainable

development arises. However, “integrating sustainability in universities entails creating tools that enable institutions to assess their engagement with the economic, social, and environmental dimensions of sustainability” (De Filippo et al., 2019, p. 2) and diagnose their performance. As no set of single criteria is provided regarding the implementation of sustainability practices in higher education, only recommendations, several universities around the world are creating and using on a voluntary basis diverse tools to identify the dimensions with formal sustainability progress achievement (De Filippo et al., 2019).

In this study it will be considered the dimensions, categories, and aspects of interception in the three main standards for social responsibility, namely the ISO 26000, GRI and Social Accountability (SA) 8000, as foreseen in point 3.6 ahead.

2.6.1 Portuguese Higher Education System

Portuguese higher education is organized in a binary system that integrates university education and college education (polytechnics institutes) characterised by the coexistence of public and private institutions. The main difference between public and private institution is in terms of their funding, whilst private institutions depend largely on the tuition fees paid by students and on private donations, public ones are mainly funded by the state. Having similar missions, “the university higher education system is more focused in the academic knowledge “and research, while “the polytechnic is more focused in professional knowledge and knowledge transfer” (Aleixo et al., 2018, p. 10).

According to Portuguese decree-law N^o 62/2007 of 10th September, the university education comprises universities, universities institutes, and other institutions of university education, while college education comprises polytechnics institutes and other institutions of college education.

Whereas university institutions grant the bachelor (BSc), master (MSc) and doctoral (PhD) academic degrees, college institutions only grant the bachelors, and master’s academic degrees. However, college institutions may also grant doctoral academic degrees when associated in partnership with other university institutions.

The universities and polytechnic institutes are organised by organic units, namely schools, faculties, research units, libraries, museums and others. Universities’ schools are called ‘faculdades’ or ‘institutos superiores’, and polytechnics institutes’ schools are called ‘escolas superiores’ or ‘institutos superiores’.

There are exceptional cases where the polytechnics’ schools can integrate into universities.

Public HEI’s may also be of foundational nature (with a semi-private management) subject to state performance evaluation.

The Portuguese public system counts with 14 universities, 15 colleges, 5 schools not integrated in any college and 15 schools integrated in universities.

2.6.2 Sustainability Measurement in Portuguese HEIs

In recent years, studies have been done to determine the extent of integration of SD into HEI and performance achievement, aiming to identify and overcome barriers faced by institutions. Below is presented some studies carried out in Portuguese HEI.

Six of the fourteen existent universities by the time belonging to the Portuguese University Rectors Council (PURC) signed the Copernicus Declaration of 1994, the first commitment to sustainable development (SD) “by top management in higher education” (Farinha et al., 2019, p. 1). The author’s study aimed to identify to what extent the integration of sustainability was achieved in the fourteen universities member of the PURC, within the period from 2005 to 2014. The research acknowledged that notwithstanding a lack of national integrated strategies or policies related to education for sustainable development, the movement made progress at university level, but they were mostly dedicated to the environmental perspective.

Farinha et al. (2019, p. 3) study built seven dimensions related to the recognized university system, according to a holistic approach, namely:

- Institutional framework (i.e., the higher education institutions commitment);
- Campus operations;
- Education: “courses on SD, programs on SD, transdisciplinary curricular reviews, including «educate-the-educators» programs (which promote competencies in education for sustainable development to enable an integrated approach of knowledge, procedures, attitudes, and values in teaching through multidisciplinary and transdisciplinary teams)”;
- Research;
- Outreach and collaboration;
- SD through on-campus experiences, working groups, policies for students and staff, among other practices; and
- Assessment and reporting.

According (Farinha et al., 2019) findings during the period of 2005-2014, the studied institutions integrated sustainability into their policies and strategies mainly through the following dimensions:

- Campus operations;
- Outreach and collaboration;
- And SD through on-campus experiences.

For data collection the following documents were used:

- Strategic activity plans, strategic plans and development plans, and activity and operational plans;
- Activity reports, strategic activity reports, sustainability reports, and annual financial reports; and
- Responsibility and assessment frameworks.

Aleixo et al. (2016) aimed to describe the content of the main websites of public Portuguese HEI, took into consideration four SD dimensions: (i) environmental, (ii) economic, (iii) socio/cultural, and (iv) institutional/political, revealed that the websites communicate mainly the economic and socio/cultural practices of the Portuguese HEIs. Also, that more than 50% of the Portuguese HEIs are in the early stages of SD implementation and communication, being the economic and social dimensions the ones more emphasized by the Portuguese HEIs.

METHODOLOGY

The research method to be used in this study to compute the level of CSR information disclosed is the content analysis technique, using as source of information the websites of sample's HEI. This technique has been widely employed in similar previous studies aiming to examine such information in annual reports and corporate and institutional websites (Branco & Rodrigues, 2006, 2008a; da Silva Monteiro & Aibar-Guzmán, 2010).

As referred by these authors, "this technique consists of classifying qualitative information disclosed into several categories of items which capture the aspects of social responsibility one wants to analyse" (Branco & Rodrigues, 2008a, p. 238).

The purpose is to obtain a disclosure index, that reflects the quantity of information disclosed by the institutions through their internet channel. "The simplest form of content analysis consists of detecting the presence or absence of information" (Branco & Rodrigues, 2008a, p. 238) therefore, to each of the disclosure indicators shown in Table 3.1, is assigned a binary value according to the following criterion: assign value one if the institution discloses information on the item in question, assign value zero if not.

The authors also mention that since "this form of content analysis does not allow the measurement of the extent of information disclosure", thus "the coded data does not reflect the" importance that companies assign "to each information item" (Branco & Rodrigues, 2008a, p. 693), its quality and quantity. Nevertheless, it is considered by Bewley and Li (2000), Bewley and Li (as cited in 2000), in view of "the number of different topics discussed" as "a reasonable measure of management's willingness to provide social responsibility information in general", and yet "more appropriate than counting sentences, words or proportion of pages when one is comparing such different media of disclosure as annual reports and webpages" (Branco & Rodrigues, 2008a, p. 693).

The disclosure score indexes are constructed using the following expression, that delivers the level of online disclosure for a specific institution of higher education:

$$\text{SROD}_j = \sum_{i=1}^{m_j} \frac{d_i}{N} \quad (3.1)$$

Where,

$SROD_j$ Social Responsibility Information Online Disclosure score index of institution j expressed in %;

j refers to a specific institution of higher education;

N is the maximum number of relevant items that an HEI may disclose;

i is the disclosure item;

d_i is equal to 1 if the indicator i is disclosed, and 0 otherwise.

When the disclosure score index is equal to 0, it means that the institution i does not disclose any item. When index values are equal to $i = 1, \dots, m_j$, it means that a level of disclosure is provided, and m_j is the maximum number of indicators d_i disclosed by an institution j .

Based in the existing literature, this thesis model considers seven independent variables, three of which have been used in previous studies to explain environmental and social disclosure. These are: Institution size, Affiliation, Age, Standards certification, HEI subsystem, Foundational Nature and Amount of Revenues.

Also considers, seven dependent variables corresponding to the dimensions of CSR disclosure, namely OGD, ECOD, ENOD, LHOD, CIOD, SOD and EOD, as shown in Table 3.1 and Table 3.2.

Table A.3 identifies the set of Corporate Social Responsibility (CSR) disclosure indicators for each of the dependent variable's previously mentioned, in a total of 135 indicators of CSR disclosure to be collected for each High Education Institutions (HEI) in this study.

3.1 Variable Description and Hypothesis Development

In this section we will detail the variables used in this study as well as the hypothesis development for the study.

3.1.1 Institution Size

"The larger an organization is, the more likely it is to draw attention from" stakeholder groups and public scrutiny, namely "government regulatory institutions, environmental protection organizations, the media, and other social groups" (Lu et al., 2017, p. 3).

Likewise, the "more vulnerable is to adverse reactions" (Perrigot et al., 2012, p. 7), which according to stakeholder theory, "when a public organization has a large number of stakeholders (mainly composed of citizens and society in general), the pressure on it to disclose additional information with regard to issues of visibility and accountability is much higher" (Sanchez et al., 2021, p. 3). Thus, due to their higher visibility are more likely to disclose more CSR information in order to meet society's expectation have from them, improve their image and reputation (legitimacy) in a broader range of CSR activities than smaller organizations.

Such disclosure can be also costly, which can explain why larger organizations disclose more than smaller ones (da Silva Monteiro & Aibar-Guzmán, 2010; Sanchez et al., 2021;

Table 3.1: Main variables.

Model		
Notation	Variable	Hypothesis
OGOD	Organizational governance information online disclosure	—
ECOD	Economic information online disclosure	—
ENOD	Environmental information online disclosure	—
LHOD	Labour practices & Human rights information online disclosure	—
CIOD	Community involvement information online disclosure	—
SOD	Social information online disclosure	—
EOD	Educational information online disclosure	—
Size	Institution size, measured through logarithm of total number of students	H1
Affiliation	Dummy variable which takes the value 1 if the institution has some schools/faculties related with CSR field of studies, and 0 otherwise	H2
Age	Logarithm of number of years since the foundation year	H3
Certification	Dummy variable which takes the value 1 if the institution is certified, and 0 otherwise	H4
HEI subsystem	Dummy variable which takes the value 1 if the institution is a university, and 0 otherwise	H5
Foundational Nature	Dummy variable which takes the value 1 if the institution is a public foundational university [with private law regime], and 0 otherwise	H6
Amount of revenues	Financial resources and support, measured through logarithm of total financial resources per total number of students	H7

Sánchez et al., 2013). Institution size can too be expressed by the number of faculties or schools that compose a university or college, respectively, or by the number of students.

Aleixo et al. (2016, p. 172) refers that “institution size has been one of the most used variables to explain the disclosure of information” and in “universities” and that “previous studies found that size is significant in explaining the total extent of disclosure”.

In view of the arguments presented, the following hypothesis was stated:

Hypothesis 1 (H1)

The size of the HEI influences online CSR disclosure.

3.1.2 Institution Affiliation

As reported by Torres et al. (2017, p. 957) being education “an essential requirement for the promotion of individual and collective attitudes and behaviours” toward “more sustainable development”, through “the education of critical, responsible, and participative citizens”, it is highlighted:

the moral obligation of universities to assume an active role in the development of more sustainable societies; the need to include sustainable development in the curriculum of all disciplines at different degree levels; and to research different dimensions which underpin the integration of SD in the HEI (Torres et al., 2017, p. 959).

According to Sanchez et al. (2021, p. 4) previous studies, “suggest that organizations with CSR-related departments are more likely to disclose information” in what respect to CSR issues as they are more qualified to address these subjects, enabling “a comprehensive” reporting and “overview of the business”. Which according to stakeholder theory having various “CSR-related departments, organizations “are more closely involved with social and environmental issues”, publishing “a greater amount of information as they seek to meet the needs of a wide range of stakeholders”.

The authors also argue that universities “composed of various schools and faculties” that offer “many different degrees and curricula” in the CSR area, will possess “qualified personnel who may intervene in decisions and in planning actions referring to CSR”, also they are in position to “provide a more complete understanding and facilitate the dissemination of CSR information” (Sanchez et al., 2021, p. 4) within their academic community and in the reporting channels.

In view of the arguments presented, the following hypothesis was stated:

Hypothesis 2 (H2)

The existence of schools and faculties related to the field of CSR within the Institution influences online CSR disclosure.

3.1.3 Institution Age

The variable age has also been considered in other studies as a factor of influence in information disclosure. The older the institution is, since foundation date, the more likely it is to have “gained more experience in the development of information of all kinds and types of policies and their subsequent disclosure”. As they exist for longer, they were probably “subject to greater scrutiny by their stakeholders”, to who they must respond regarding “needs and CSR demands”, which in accordance with “stakeholder theory an organisation’s existence depends on its ability to integrate stakeholders’ expectations into its business strategy, because stakeholders provide resources that are essential to the organisation’s successful functioning and survival” (Sanchez et al., 2021, p. 5).

In view of the arguments presented, the following hypothesis was stated:

Hypothesis 3 (H3)

HEI foundation date influences online CSR disclosure.

3.1.4 Institution Standards Certification

When an institution is certified or follows standards related to environmental and CSR principles such as ISO14000, [Global Reporting Initiative \(GRI\)](#) or ISO26000, among others, they must demonstrate their commitment on implementing good environmental, social, ethical, and safety practices, thus by inherence and principle of conformity, they will disclose more detailed information regarding their CSR activities. This study proposes to evaluate this possibility.

In view of the arguments presented, the following hypothesis was stated:

Hypothesis 4 (H4)

CSR certifications influence online CSR disclosure.

3.1.5 HEI Subsystem

The characteristics of the two subsystem by which the Portuguese HEIs are organized might reflect a difference on these institutions’ CSR disclosure, such as the aspects and categories of each social responsibility dimensions most adopted by the universities and by the polytechnics institutes. This study proposes to evaluate this possibility.

In view of the arguments presented, the following hypothesis was stated:

Hypothesis 5 (H5)

Subsystem of the HEI influences online CSR disclosure.

3.1.6 Foundational Nature

Institution's funding system applicable to HEI might determine differences in the implementation of Sustainable Development (SD) practices and CSR disclosure. An institution that has their funding based on performance criteria will disclose more detailed information regarding their CSR activities, since this funding system will provide an incentive for HEI to improve their quality management and accountability. It is the case of public HEIs with foundational nature, their public funding is subjected to performance evaluation. This study proposes to evaluate this possibility.

In view of the arguments presented, the following hypothesis was stated:

Hypothesis 6 (H6)

Foundational nature of the HEI influences online CSR disclosure.

3.1.7 Amount of Revenues

As previously mentioned, HEI's CSR disclosure can be costly (da Silva Monteiro & Aibar-Guzmán, 2010; Sanchez et al., 2021; Sánchez et al., 2013) in the other hand it can also attract more students and private subsidies, being a differentiation factor that becomes a competitive advantage. Thus, institution financial resources and economic support can depend on their size expressed by the number of faculties or schools that compose a university or college, respectively, or by the number of students, more precisely, by the average number of students per faculty or school.

In view of the arguments presented, the following hypothesis was stated:

Hypothesis 7 (H7)

The amount of revenues influences on online CSR disclosure.

3.2 Statistical Techniques

The collected data was subject to a univariate analysis through the descriptive analyses, a bivariate analysis through the correlation coefficient, and a multivariate analysis through the multiple regression analysis. For the statistical analysis purpose the software *IBM SPSS Statistics, Version 28.0.0.0* for Windows was used.

3.3 Empirical Model

It will be used a regression model suitable to the data to be treated. This statistical technique allows us to quantify and infer the relationship between an independent variable and dependent variables, in this case, to identify what factors have a significant influence on

the CSR information online disclosure level. As an example of the adopted approach, the general regression model proposed is presented below:

$$\begin{aligned} \text{SROD}_i = & \alpha_0 + \beta_{1.0} \cdot \text{Size}_i + \beta_{2.0} \cdot \text{Affiliation}_i + \beta_{3.0} \cdot \text{Age}_i + \beta_{4.0} \cdot \text{Certification} \\ & + \beta_{5.0} \cdot \text{Subsystem}_i + \beta_{6.0} \cdot \text{Foundational nature}_i + \beta_{7.0} \cdot \text{Amount of revenues} + \varepsilon_i \end{aligned} \quad (3.2)$$

$$\begin{aligned} \text{OGOD}_i = & \alpha_0 + \beta_{1.1} \cdot \text{Size}_i + \beta_{2.1} \cdot \text{Affiliation}_i + \beta_{3.1} \cdot \text{Age}_i + \beta_{4.1} \cdot \text{Certification} \\ & + \beta_{5.1} \cdot \text{Subsystem}_i + \beta_{6.1} \cdot \text{Foundational nature}_i + \beta_{7.1} \cdot \text{Amount of revenues} + \varepsilon_i \end{aligned} \quad (3.3)$$

$$\begin{aligned} \text{ENOD}_i = & \alpha_0 + \beta_{1.2} \cdot \text{Size}_i + \beta_{2.2} \cdot \text{Affiliation}_i + \beta_{3.2} \cdot \text{Age}_i + \beta_{4.2} \cdot \text{Certification} \\ & + \beta_{5.2} \cdot \text{Subsystem}_i + \beta_{6.2} \cdot \text{Foundational nature}_i + \beta_{7.2} \cdot \text{Amount of revenues} + \varepsilon_i \end{aligned} \quad (3.4)$$

$$\begin{aligned} \text{LHOD}_i = & \alpha_0 + \beta_{1.3} \cdot \text{Size}_i + \beta_{2.3} \cdot \text{Affiliation}_i + \beta_{3.3} \cdot \text{Age}_i + \beta_{4.3} \cdot \text{Certification} \\ & + \beta_{5.3} \cdot \text{Subsystem}_i + \beta_{6.3} \cdot \text{Foundational nature}_i + \beta_{7.3} \cdot \text{Amount of revenues} + \varepsilon_i \end{aligned} \quad (3.5)$$

$$\begin{aligned} \text{EOD}_i = & \alpha_0 + \beta_{1.4} \cdot \text{Size}_i + \beta_{2.4} \cdot \text{Affiliation}_i + \beta_{3.4} \cdot \text{Age}_i + \beta_{4.4} \cdot \text{Certification} \\ & + \beta_{5.4} \cdot \text{Subsystem}_i + \beta_{6.4} \cdot \text{Foundational nature}_i + \beta_{7.4} \cdot \text{Amount of revenues} + \varepsilon_i \end{aligned} \quad (3.6)$$

$$\begin{aligned} \text{CIOD}_i = & \alpha_0 + \beta_{1.5} \cdot \text{Size}_i + \beta_{2.5} \cdot \text{Affiliation}_i + \beta_{3.5} \cdot \text{Age}_i + \beta_{4.5} \cdot \text{Certification} \\ & + \beta_{5.5} \cdot \text{Subsystem}_i + \beta_{6.5} \cdot \text{Foundational nature}_i + \beta_{7.5} \cdot \text{Amount of revenues} + \varepsilon_i \end{aligned} \quad (3.7)$$

$$\begin{aligned} \text{SOD}_i = & \alpha_0 + \beta_{1.6} \cdot \text{Size}_i + \beta_{2.6} \cdot \text{Affiliation}_i + \beta_{3.6} \cdot \text{Age}_i + \beta_{4.6} \cdot \text{Certification} \\ & + \beta_{5.6} \cdot \text{Subsystem}_i + \beta_{6.6} \cdot \text{Foundational nature}_i + \beta_{7.6} \cdot \text{Amount of revenues} + \varepsilon_i \end{aligned} \quad (3.8)$$

$$\begin{aligned} \text{EDOD}_i = & \alpha_0 + \beta_{1.7} \cdot \text{Size}_i + \beta_{2.7} \cdot \text{Affiliation}_i + \beta_{3.7} \cdot \text{Age}_i + \beta_{4.7} \cdot \text{Certification} \\ & + \beta_{5.7} \cdot \text{Subsystem}_i + \beta_{6.7} \cdot \text{Foundational nature}_i + \beta_{7.7} \cdot \text{Amount of revenues} + \varepsilon_i \end{aligned} \quad (3.9)$$

Where,

$SROD_i$ is the online CSR disclosure index obtained after the content analysis of the Portuguese HEIs' website (the dependent variables in every model referring to each institution);

$OGOD_i / ENOD_i$ are the dimensions of $SROD_i$ (dependent variables, one for each

$LHOD_i / EOD_i$ dimension, in every model referring to each institution);

$CIOD_i / SOD_i / EDOD_i$

α_0 is the intercept;

$\beta_{i,j}$ are the coefficients of the explanatory (independent) variables for each evaluation model proposed, for each institution;

ε_i is the experimental error (residual).

First regression will be done for the total disclosure ($SROD_i$), followed by partial regressions, one for each dimension. This allows us to understand how HEI's behave on each category, and which is the more balanced one in all aspects.

3.4 Model Validation

The multiple regression analysis using Stepwise method is based on three assumptions: (i) *statistical independence* of the errors, (ii) *homoscedasticity* of the errors, and (iii) *normality* of the error distribution (Nau, 2020).

In order to ensure that these assumptions are not violated, validation tests shall be executed, namely, for the homoscedasticity and statistical independence of the errors the Durbin-Watson test (test D-W) can be done.

Normality tests can be done to ensure that the correct regression model is used. There are a variety of statistical tests for normality verification such as the Kolmogorov-Smirnov (K-S Lilliefors) test, Shapiro-Wilk normality test.

Problems of multicollinearity must also be prevented. To access multicollinearity in the regression model, the adequate tests will be used.

3.5 Sample Description

The target group of this study considers all Portuguese HEI in the public network as of the year 2021, comprising 13 of 14 Portuguese universities plus 15 colleges, 5 schools not integrated in any college or university, and 15 schools integrated in universities. The full list and respective URLs are presented in Tables A.1 and A.2.

One of the 14 Portuguese universities was excluded, since it is an HEI of distance education, with specifics that do not make it comparable with others who minister mostly on-site classes.

There are also 7 Portuguese HEI for the military and police, which were not included in this study as they are under the Ministry of Internal Administration ward, having a specific form of organization, educational context and objectives.

3.6 Data Collection

In the absence of a common agreed index, a disclosure index was designed. As a result of the literature review it was first identified a list with several items for measuring sustainability of HEI, after were checked the items more frequently cited by different authors in previous studies, and then select the most appropriate to the context of the current study. The selected items were then grouped in categories in accordance with the dimensions chosen from the standards and assessment tools mentioned in Chapter 2, producing the disclosure indicators list for data collection from the institution's website shown in Tables A.1 and A.2.

In this study, there is an attempt to encompass the dimensions, categories and aspects considered in the three main standards for social responsibility, namely the ISO 26000, GRI and SA8000 (at least the ones we considered most relevant for the purpose of this study). Thus, SROD nomenclature refers to Social Responsibility Information Disclosure in the following dimensions:

- Organizational governance;
- Environment;
- Labour practices and human rights;
- Economic;
- Community involvement;
- Social; and
- Educational.

The categories and aspects of disclosure considered for the above mention dimensions can be observed in Table A.3. The indicators of disclosure considered for each item/aspect are further described in Table A.3.

Table 3.2: Disclosure Items List.

Dimension and Categories and items of disclosure	Source
Organizational Governance	OGOD
Accountability	
Transparency	Nejati et al. (2011)
Providing facts and figures	
Expression of the vision and strategy of the university in CSR subjects	
Information on the profile of stakeholders	Sanchez et al. (2021)
Centralized or decentralized disclosure of SR information by universities	
Statement of integrity	
Code of conduct	
Bribery and corruption	Gamage and Sciulli (2017)
Press news	
Organisation chart	Gallego-Álvarez et al. (2011)
Composition of commissions and committees	
Data of economic indicators	
Data of social indicators	Sanchez et al. (2021)
Data on environmental indicators	
Promoting SR	
Providing sufficient information for current and prospective students	Branco and Rodrigues (2006 & 2008a)
Certification in social responsibility standards (GRI, ISO 26000, SA8000, AA1100, others)	<i>Proposed</i>
Environment	ENOD
Environmental policies or institution concern for the environment	Branco and Rodrigues (2006 & 2008a)
Conservation of natural resources and recycling activities	
Energy	Sanchez et al. (2021)

Dimension and Categories and items of disclosure	Source
Preserving environment	Nejati et al. (2011)
Offering specific academic programs	
Buildings and grounds	Sanchez et al. (2021)
Purchasing management	
Waste management and recycling	
Water management	Gamage and Sciulli (2017)
Transportation	Gallego-Álvarez et al. (2011)
Food	
Emissions, effluents and waste	Pasinato and Brião (2014)
Labour Practices and Human Rights	LHLOD and LHHOD
Employee health and safety	Branco and Rodrigues (2006 & 2008a)
Employment of minorities or women	
Employee training	
Employee assistance/benefits	
Employee remuneration	
Employee profiles	
Diversity and opportunity	Nejati et al. (2011) Gamage and Sciulli (2017)
Strategy and management	Gamage and Sciulli (2017)
Non discrimination	
Freedom of association and collective bargaining	
Child labour	
Forced and compulsory labour	
Disciplinary practices	

Dimension and Categories and items of disclosure	Source
Economic	EOD
Students aid and tuition	
Payments to suppliers	
Internal auditing	Sanchez et al. (2021)
External auditing	
Providers of capital (sponsored, non for profit, auxiliary enterprises, private gifts, grants, and contracts)	
Public sector (state appropriations funds)	
Community involvement	CIOD
Support for education	Branco and Rodrigues (2006 & 2008a)
Sponsoring sporting or recreational projects	
Providing grants for community projects	Nejati et al. (2011)
Providing fund and support to generate and preserve affordable housing	
Social	SOD
Continuing education with summer programs	
Opportunity to search jobs in the university or outside	
Campus service/Student life (club-organizations, sport and recreation, student affairs, housing and dining, student's organizations and activities, shopping and others)	Sanchez et al. (2021)
Campus safety services	
Campus health services	
Scholarship	
Equal opportunity where the value of diversity is recognized, and equal opportunity is afforded for all	
Diversity and equity services for students	
Disability resources (disabled, aged)	

Dimension and Categories and items of disclosure	Source
Educational	EOD
Existence of courses, seminars and conferences related to CSR Research centers linked to CSR Volunteer services	Sanchez et al. (2021)
Grants Publications and products Programs and centers Service learning Community activity and service Sustainable development monitoring in curricula Administrative support	Gamage and Sciulli (2017)

PRESENTATION AND RESULTS ANALYSIS

In this chapter are presented the results of the statistical analysis performed on the collected data, as to know the behaviour of the proposed variables, the sampling characteristics, and variables of higher interest to be considered.

4.1 Content analysis

First step was to perform a content analysis of Portuguese HEI's websites regarding online CSR disclosure, being the results summarised and displayed in Table A.3. Looking at these results, the following comments are done on according to the different dimension and categories considered in the content analysis further described.

4.1.1 Organizational Governance

Two categories were analysed in the dimension *Organizational Governance*, namely 'Transparency and Accountability', and 'Promoting SR'. This dimension comprises 29 indicators.

Starting with *Transparency and Accountability* indicators, most part of the [High Education Institutions \(HEI\)](#)s report their facts and figures in the form of PDF reports (96.97%), although 51.52% have a tab on their website with relevant information in numbers, giving the user an immediate overview on teaching and learning. (i.e., number of students, degree programmes), amount of revenues, environment and climate action (i.e., amount of renewable energy production in kWh and in %, amount of recycling in ton), etc.

Regarding expression of the vision and strategy of the university in [Corporate Social Responsibility \(CSR\)](#) subjects, 84.85% of [HEIs](#) disclose main [CSR](#) commitments, though just 45.45% include a declaration on [CSR](#) from the governing body, which suggests lower commitment.

Statement of integrity reveals an 87.88% disclosure, all channelled to mission and values statements, disregarding developed codes of conduct or principles, and policies relevant to economic, environmental, and social performance and the status of implementation, as no information was found on it. Surprisingly, most part of [HEIs](#) don't disclose a Code of Conduct, less than half (45.45%) discloses a code of conduct or an ethics code, differing from academic code of conduct to code of conduct in research, or code of fraud and plagiarism, and code of fight against harassment at work.

On bribery and corruption, 75.76% of HEIs disclose plans developed by the institution to prevent bribery and corruption, namely the '*Plano de Gestão de Riscos de Corrupção e Infrações Conexas*'.

As per information on the profile of stakeholders, some 45.45% identify their stakeholders, mainly in the HEI's quality manual, but only 27.27% characterize stakeholder's specific information about the informational needs of each group of stakeholders.

On organization and description of individual and collective governing bodies these are more widely disclosed, organization chart (100.00%), composition of commissions and committees (72.73%), existence of dedicated body in the organization structure for student's complaints, grievances, and satisfaction (100.00%), though information concerning complaint's treatment and monitoring decreases to 48.48%, usually presented by HEIs in an annual report. Information of data protection and privacy is widely disclosed in HEIs websites (96.97%).

As per data performance indicators, economic indicators attain high disclosure (96.97%), followed by social indicators (51.52%), environmental indicators (30.30%), and sustainability indicators (36.36%). It was verified the presence of this data in HEIs' Activity Plan and the monitoring results expressed in the Activity Reports as well as in the Annual Reports.

Only 12.12% of HEIs issue sustainability reports, which is considerably low, however 21.21% presents sustainability policies. Also, 12.12% of HEIs present other reports related to sustainable development, among them Assessment of Environmental Sustainability reports, Sustainable Development Goals (SDG)'s reports, and Energy Efficiency reports.

It was verified that the sustainability reports presented follow in general GRI's structure and provide much more information regarding sustainability indicators.

Promoting SR category, aims to evaluate the dissemination of CSR information, how relevant and visible this is. In 45.45% of HEIs the disclosure of CSR information is developed in a centralized way on the HEI's website, and 6.06% is developed through dependent centers at said institution. All HEIs present a press news space, of which around 75.76% present specific news about Social Responsibility (SR) or sustainability.

It was also verified that not all HEI's websites make it available a search button specific to the press news allowing the search by topics, making it difficult to find news related to SR.

On the indicator 'organization is certified or follows standards related to environmental and CSR principles', 6.06% of HEIs have a certified Environmental Management System (ISO 14001), of which one is also certified for Social Responsibility Management System (NP4469). Two HEIs refer to being partners of Global Compact Network Portugal for the Sustainable Development Goals (SDG), four refer to Global Reporting Initiative (GRI) on their sustainability report, and only one refers to the Guidance on Social Responsibility (ISO 26000). Which is a very low result.

One HEI have disclosed to be ISO 50001 (Energy Management) certified, and three have disclosed to be NP4469:2019 (Social Responsibility Management System) certified.

As per visibility of CSR subjects, 18.18% of HEIs disclose a table identifying the location of each element of the Global Reporting Initiative (GRI) Report Content, by section and indicator, or SDGs and NP4469 elements. On 42.42% of HEIs was disclosed the existence of a dedicated office/department in the organization structure, and on 63.64% of HEIs' website was verified the presence of a tab dedicated to CSR disclosure. Though, only four HEI present this tab at the first level of visualization.

In few HEIs was observed the existence of good practices guides, aimed to awareness the entire academic community by providing suggestions and simple ways to change daily habits and routines with direct impact in the institution's Campus way of living and environmental and social responsibility (e.g., FCT-NOVA 'Sustainable Good Practices Guide').

The items that are least often disclosed in *Organizational Governance* dimension, *Transparency and Accountability* category indicators are HEIs' certification in SR standards (6.06%), and the existence of sustainability reports and other reports related to sustainable development' (both with mean values of 0.12 and frequencies 12.12%).

The items most disclosed are the existence of the organization chart, and the existence of a dedicated body in the organization structure for Students' complaints/grievances and satisfaction (all with mean values of 1 and frequency 100%). It was considered the Student Ombudsman for this item. Despite all HEI in the sample have this independent body that focus mainly on the defence and protection of the students' rights and interests, just 48.48% report the complaints' treatment and monitoring through annual reports.

On *Promoting SR* category, the items that are least often disclosed are the disclosure of SR information by universities if is centralized or decentralized and if is developed through dependent centres at said university, and if the organization is certified or follows standards related to social responsibility standards (ISO 14000, GRI, ISO 26000, SA 8000, AA1100, NP4469) (both with mean values of 0.06 and frequencies 6.06%).

The item most disclosed concerns the existence of press news with general news (with mean values of 1 and frequency 100%).

4.1.2 Environment

The dimension *Environment* consists of one category, namely 'Preserving Environment' comprising 22 indicators. The items' disclosure regarding this dimension are low when comparing with the previous dimension.

Some 57.58% of HEI reveal to have environmental policies or institution concern for the environment, and 54.55% identify actions on conservation of natural resources and recycling activities.

Energy is the sub-category to which HEIs adhere more, suggesting that the increases of energy efficiency, besides bringing social and environmental benefits, also delivers considerable economic savings.

Disclosure of information regarding conservation of energy through saving systems such as movement sensors, incandescent light bulbs, or other alternative sources of energy (63.64%), and initiatives to use renewable energy sources and to increase energy efficiency (45.45%) versus control and monitorization actions such as total energy used (30.30%), and energy consumption footprint of major products (9.%), reinforced by 0.00% on identifying other indirect use and implications, such as organisational travel, product lifecycle management, and use of energy-intensive materials, may suggest a less in-depth approach to the subject.

The more common initiatives are the use of thermal solar collectors as a renewable system for hot water production, replacement of normal lighting with more efficient LED lamps in buildings, installation of monitoring systems for electricity consumption.

We found the same result (0.00%) with respect to the disclosure of information about criteria for construction, renovation, and rehabilitation of existing buildings in line with green criteria, in buildings and grounds sub-category.

On purchasing management, 12.12% of HEIs exhibit information regarding prioritization to the purchase of reusable, ecological materials that require the minimum of packaging and the reduction of the use of products packaged with plastics (i.e., the use of glass bottles in substitution of the plastic bottles used for water, the reduction in the consumption of plastics products such as cups, plates, and cutlery and other products with plastic packages).

On waste management and recycling, less than half HEIs (45.45%) promote the recycling of office material and solid waste providing recipients for articles such as paper, printer cartridges and batteries. The monitoring of total materials used other than waste, by type, is done by 12.12% of HEIs (i.e., consumption of office supplies and food goods). There's no disclosure on the percentage of materials used that are wastes (processed or unprocessed) from sources external to the reporting organisation.

On water management, 21.21% of HEIs monitor the total water used, 9.09% discloses on water sources and related ecosystems/habitats significantly affected use of water. No monitoring is disclosed on annual withdrawals of ground and surface water as percent of annual of renewable quantity of water available from the sources. Only 3.03% discloses the total recycling and reuse of water.

On transportation, the disclosure concerning creation of incentives to use public transport or alternative means of transport such as bicycles and bus is around 51.52%, these measures, that aim to reduce the CO₂ emissions, are mainly financed by the environment ministry through the Environmental Fund (Decree-Law 42-A/2016). The purpose of this fund is to support environmental policies for the pursuit of sustainable development objectives.

An example of this kind of incentive is the initiative '*IPC-a-pedalar*', or '*U-Bike*' adopted by some HEIs, among several. Institutions acquire bicycles and parking infrastructures

which are made available for the use of academic community members. Also, the acquisition of electric vehicles for the use of the academic community and creation of electric car charging points at the institutions' facilities.

Again, there's no disclosure regarding control and monitorization, such as data collection of significant environmental impacts of transportation used for logistical purpose, products, goods and materials used in the organization's operations, as well as transporting employees and clients (students) and measures taken.

In what concerns the adoption of fair trade and sustainable food through the provision of ecological products in campus cafés and shops, very little is done, a few HEIs (9.09%) refer to consumption of ecological foods from their region or own farming.

On Emissions, effluents, and waste 42.42% reveal initiatives to reduce greenhouse emissions. Nevertheless, on reductions achieved, strategies, measures, and future plans for managing the impact of emissions, effluents, and waste, there's a low disclosure (9.09%).

As per offering specific academic programmes, 75.76% of HEIs offer degrees and events on environmental sustainability. However, there's little or no emphasis on the promotion of the existence of degrees in this area.

The items that are least often disclosed in Environment dimension concern to Energy aspects of disclosure, are other indirect use and implications, such as organisational travel, product lifecycle management, and use of energy-intensive materials, on *Buildings and grounds* the information about criteria for construction, renovation and rehabilitation of existing buildings in line with green criteria. And on *Transportation*, the computation of the significant environmental impacts of transportation used for logistical purpose, products, goods and materials used in the organization's operations, as well as transporting employees and clients (students) and measures taken (all with mean values of 0.00 and frequencies 0.00%).

The item most disclosed is the offering of specific academic programmes degrees and events (with mean values of 0.76 and frequency 75.76%).

4.1.3 Labour Practices and Human Rights

The dimension *Labour Practices and Human Rights* consists of two categories, namely 'Labour Practices' and 'Human Rights' comprising 25 indicators.

On employee health and safety, less than half disclose practices on recording and notification of occupational accidents and diseases (39.39%), also on standard injury, lost day and absence rates and numbers of work-related fatalities (45.45%). However, no disclosure was found regarding description of formal joint health and safety committees comprising management and worker representatives and proportion of workforce covered by any such committees (0.00%) or evidence of substantial compliance with the ILO (International Labour Organisation) (0.00%) i.e., existence of procedures or a health and safety management system, audits performed, requirements for compliance with national law.

On employment of minorities or women, 33.33% of HEIs report this information.

Employee training and education register the greatest disclosure with 69.70% reference to existence of employee training and education, though it decreases in the report of average hours of training per year per employee by category of employee (57.58%) and in the description of programmes to support the continued employability of employees and to manage career endings (6.06%) anticipating a lack in this area, there's also a low disclosure for specific policies and programmes for skills management or for lifelong learning (24.24%).

On employee assistance and benefits, 42.42% refers to employment benefits beyond those legally mandated, and 51.52% disclose employee remuneration and total expenditure, but almost nothing on the ratio between men and woman. About 75.76% of HEIs disclose employee profiles, namely, function, age, gender and qualifications.

On diversity and opportunity, it was verified a low disclosure of description of equal opportunities policies or programmes (30.30%) few HEIs refer to the composition of senior management female/male ratio and their indicators of diversity (18.18%) and only one HEI addresses the diversity and opportunity equality — percentage of compliance with inclusion quotas (people with disabilities — PWDs, racial and others) (3.03%).

The information disclosed in *Labour Practices* category is mainly done through PDF reports such as the Social Balance report and the Sustainability Report. HEIs annual reports also disclose this information, mainly about employee training and education, and employee profiles, not as complete as in the previous reports. Also, metrics are not the same as expressed in the items of disclosure.

Almost no information is disclosed by HEIs in *Human Rights* category, only two HEI refer to non-discrimination sub-category (6.06%), one provides an Equity Plan where measures to non-discrimination are foreseen, nevertheless, no evidence of these measures were disclosed. The other HEI has an Office for the Inclusion, whose mission is to promote inclusion in the academic context, aiming at equal opportunities and providing support to students, teachers and other workers with disabilities or special needs. Only one HEI (3.03%) mentions freedom of association and collective bargaining in the form of policy.

The results obtained from the aspects of disclosure of Human Rights category, which addresses fundamental practices related to moral standards, physical protection and freedom of thinking and expression, have shown there's no disclosure of this information, making us believe that there is no public awareness on the relevance of these concepts, that people in general do not associate these criteria with good practices and human freedom, not giving it the importance that should be given and risking losing these rights as there is a direct association right-effect.

The items that are least often disclosed in *Labour Practices and Human Rights* are related to Employee health and safety, namely the evidence of substantial compliance with the ILO (international labour organisation), and Human Rights in general (means values of 0.00 and frequencies 0%). The item most disclosed is the employee profiles (with mean values of 0.76 and frequency 75.75%).

4.1.4 Economic

HEIs are obliged by Portuguese Law 62/2007 (RJIES) to disclose economic information to Portuguese Government. It was verified that HEIs do report information about annual accounts (balance sheet, income statement, financial report, budget liquidation, cash surplus), financial budgets (revenues budgets and expenses budget) and information about previous years, in the form of PDF financial annual reports.

Most HEIs disclose students' income (student aid and tuition) (90.91%), as well as cost of all goods, materials and service purchased, and supplier breakdown by organisation (93.94%).

About 63.64% HEIs disclose in their reports to be audited by an external entity 'fiscal único' nominated by the Portuguese government body, none refer to the existence of internal audits or other external audits hired by the HEI.

Around 27.27% disclose information about providers of capital (sponsored, none for profit, auxiliary enterprises, private gifts, grants, and contracts).

Only 39.39%, less than half of the HEIs, disclose the total sum of the taxes paid, broken down by country. Subsidies received, broken down by country or region (66.67%). Only 15.15% disclose information about donations to community, civil society, and other groups, broken down mainly in terms of cash.

The items that are least often, and most disclosed in Economic dimension are the existence of internal auditing (mean value of 0.00 and frequency 0%) and state appropriations (national government) (with mean values of 0.96 and frequency 96.97%) respectively

4.1.5 Community Involvement

On this dimension, it was verified the existence of little information on HEI's website. Almost half of HEIs discloses on involvement with their external community, by providing support and sponsor for education (48.48%), and for sporting or recreational projects (51.52%). As per involvement in community projects, providing grants for the realization of those projects, no disclosure was found. However, institutions provide the realization of internal cultural events open to public.

As example of support for sponsor for education "*Fábrica Centro Ciência Viva de Aveiro*" that acts in the promotion of scientific and technological culture and on the dissemination of knowledge, from preschool to secondary school students. For sporting or recreational projects, the GreTUA is an experimental theatre group, that acts as epicentre of artistic experimentation and production and as a link between culture and the city, both from UA.

Also, UL campaign '*18 Escolas, 18 Ajudas*', that promote awareness and involvement of the institution academic community with themes of social responsibility and solidarity initiatives anchored in the values and specificity of the intervention areas of the institution's organic units.

The items that are least often, and most disclosed in *Community Involvement* dimension regards the information concerning grants afford for community projects (mean value of 0.00 and frequency 0.00%) and the sponsoring sporting or recreational projects (with mean values of 0.52 and frequency 51.52%) respectively.

4.1.6 Social

Social dimension presents the highest disclosures as it is an area that HEIs traditionally take care. All HEIs disclose information about campus services/ student life (100%), campus safety services (96.97%), health services (93.94%) and scholarship (96.97%). Most HEIs also provide a tab to search jobs in the university or outside (90.91%).

About 78.79% discloses information regarding diversity and equity services for students, decreasing for 63.64% the disclosure of information concerning disability resources for disabled and aged. Lower scores were obtained for the disclosure of continuing education with summer programs (45.45%) and existence of an Office of Equal Opportunity (12.12%).

Few projects are presented aimed to promote the development and well-being of institutions' workers, e.g., 'Desenvolver + Oxigênio' project from IPS, or 'IPCB também somos nós!' a project that disclose and value the work carried out by non-teaching staff.

One HEI disclosed to allow members of the student community to decide how to apply part of the institution's budget, in a participatory budget.

The items that are least often disclosed on social dimension concern information on *equal opportunity*, namely the existence of an office of equal opportunity where the value of diversity is recognized, and equal opportunity is afforded to all (mean value of 0.12 and frequency 12.12%).

The items that are most disclosed concern *campus service/student life*, such as club-organizations, sport and recreation, student affairs, housing and dining, student's organizations and activities, shopping and others (with mean value of 1.00 and frequency 100.00%).

4.1.7 Educational

This dimension comprises three categories, 'Academic', 'Research' and 'Service'. Academic includes 'SD incorporation in curricula', 'SD capacity building', 'SD monitoring in curricula', and 'Administrative support', with a total of 37 indicators.

In *Sustainable Development (SD) incorporation in curricula*, it was verified the existence of information concerning courses, seminars and conferences related to CSR in most of HEI (78.79%) although it is not highlighted by the institution but searched by the researcher within the available information. The same situation was verified for degree programs related to SD curriculum (54.55%). Disclosure drops on information related with policies related to SD curriculum (9.09%), monitoring and control of specific data such as number and percent of courses with sustainability content relative to the total of courses taught

each year (12.12%) students enrolled in sustainability related courses (6.06%) scholarships offered (3.03%) list with courses' title and SD theme contained (3.03%).

Students' engagement initiatives disclosure is also low (12.12%). An example of this kind of initiative is the project *'Nova women in Business students for gender equality'* which is an academic club based in Nova School of Business and Economics, that aims at empowering young women to embrace professional and personal challenges and helping them become future successful leaders by calling "on people in the academic and corporate environment, to pay closer attention to gender diversity issues, developing initiatives such as workshops, debates, and field trips with the goal of educating towards a more inclusive future" ("*Nova Women in Business*", n.d.).

Only one HEI disclosed information concerning *SD capacity building*, namely having specific courses to educate the educators in SD and course structure, goals and duration (3.03%). It was verified that there's no information disclosure regarding *SD monitoring in curricula or Administrative support* in Portuguese public HEIs.

Research is generally disclosed on HEI's websites as they have a specific focus on research. Although we find information on ongoing research projects, attributed grants, public subventions and fundings, dedicated centers, research groups and researchers involved, this information is scarce in revealing the specific allocation of human and financial resources to the CSR research field. Despite HEIs have research centres linked to the CSR Research in general (69.70%), they don't reveal the percentage of graduate students or faculties doing research in sustainability, or the institutional support and management procedures for multidisciplinary and interdisciplinary research in the area of sustainability.

Only 9.09% refer the total revenues from grants and contracts specifying sustainability related research.

Regarding Publications and Products, it was verified that some HEIs published research with focus on sustainability (24.24%). Few HEIs identify the number and function of centers on campus providing sustainability related research or services (15.15%) or list the departments and centres involved (6.06%). Only one HEI discloses the type of support provided regarding budget allocation, office and personnel especially dedicated (3.03%), or present a list of faculty members and Departments or Centers to which they belong (3.03%).

It was concluded that there is a lack of specific information that allow us to immediately identify which are the HEIs working in CSR research field, or which CSR areas are they studying and what are the resources involved in.

On *Service* sub-category *'Community activity and service'* we found that HEIs are very active providing volunteer services (84.85%). There is also information regarding student, faculty, and staff contributions to community development and service (33.33%) i.e., IPCA projects *'Somos todos Digitais'* and *'Collection of goods and food for the IPCA Social Store'*.

On institutions' collaboration (e.g. UBI) with the project *'Engineers for a day'* that is part of the National Strategy for Equality and Non-Discrimination *'Portugal + Igual'* focusing on

combating and preventing the intensification of the segregation of professional occupations based on gender and absence of women in engineering and technologies areas.

But again, it fails to acknowledge the quantity and composition of students' groups focusing on one aspect of sustainability (0.00%), the same in quantifying the total faculty, staff and students involved in service-learning projects (3.03%).

On *Service learning* sub-category only 12.12% of HEIs disclose the existence and strength of service learning programmes, and just one reveals something about total faculty, staff and students involved in service-learning projects (3.03%).

Finally, the items that are least often disclosed in *Educational dimension*, for the *Academic* category indicators, concern information on *SD monitoring in curricula* and *administrative support*, which concern to sustainable development in the curriculum, related programs, scholarships offered for this education, and student involvement, planning and budgeting (mean value of 0.00 and frequency 100.00%).

The items that are most disclosed concern *SD incorporation in curricula*, namely the existence of courses, seminars and conferences related to *CSR* (with mean value of 0.79 and frequency 78.79%) and concern *Research in general*, namely the identification of research centers linked to *CSR* (with mean value of 0.7 and frequency 69.70%).

On *community and service activity*, the items that are least often disclosed are the identification of the quantity and composition of student groups focusing on one aspect of sustainability (with mean value of 0.00 and frequency 0.00%). The items that are most disclosed are volunteer services (with mean value of 0.85 and frequency 84.85%).

4.2 Descriptive analysis

Based on the obtained results reflected in Table 4.1, on average Portuguese HEI have a Size of 1,333 students per faculty and schools, an Affiliation of 75.76% (CSR-related faculties, schools, or colleges), an Age of 52.95 years, 39.00% are universities, 15.15% are of Foundational Nature, and the Amount of Revenues is 5,504.10€ per student. Although, there are some variables with a high variability (standard deviation) namely Size, Age and Amount of Revenues.

Table 4.2 shows online disclosure average for the *CSR* disclosure index (*SROD*) and for the dimensions comprising *CSR* disclosure index (*SROD*).

We can observe that national average for *SROD* stands on 33.60%. The most reported dimensions are Social (*SOD*) with 75.42%, Economic (*EOD*) with 58.79% and Organizational Governance (*OGOD*) with 55.07%. The least reported are Educational (*EDOD*) with 13.92%, Practices and Human Rights (*LHOD*) with 20.24%, Environment (*ENOD*) with 25.07% and Labour Community Involvement (*CIOD*) with 33.33%.

Table 4.1: Descriptive statistics independent variables.

Variable	Mean	Median	Minimum	Maximum	SD
Size (Ln)	7.20	7.39	6.12	8.08	0.55
Affiliation (Ln)	0.76	1.00	0.00	1.00	0.44
Age (Ln)	3.97	3.74	2.64	6.59	0.81
Certification	0.09	0.00	0.00	1.00	0.29
Subsystem	0.39	0.00	0.00	1.00	0.50
Foundational nature	0.15	0.00	0.00	1.00	0.36
Amount of Revenues	8.61	8.66	7.43	9.17	0.33

Table 4.2: Descriptive statistics dependent variables.

Variable	Mean	Median	Minimum	Maximum	SD
SROD	33.60	34.07	10.37	60.00	11.20
OGOD	55.07	51.72	20.69	96.55	18.48
ENOD	25.07	22.73	0.00	68.18	18.64
LHOD	20.24	20.00	0.00	44.00	14.18
EOD	58.79	60.00	0.00	90.00	19.33
CIOD	33.33	33.33	0.00	66.67	26.35
SOD	75.42	77.78	55.56	88.89	12.96
EDOD	13.92	10.81	0.00	48.65	10.51

4.3 Bivariate analysis

In this section it is intended to analyse the correlation coefficients between variables, to understand how variables behave and the association between them. For this purpose, the Spearman correlation coefficient (ρ) was used given the size of the sample, being a tighter mesh will better capture the correlations.

The Spearman coefficient (ρ) varies between -1 and 1, and the closest it is to these extremes, the greater the linear association between the variables. Coefficients with positive sign means that the variables vary in the same direction (i.e., the highest factors of a variable are associated with the highest factors of the other variable). Coefficients with negative sign means that the variables vary in opposite directions (i.e., the highest factors of one variable are associated with the lowest factors of the other variable). When equals zero or near values without statistical significance, it means the absence of linear relationship between the variables.

Concerning the correlations amongst the studied variables, Table 4.3 reports the results of the Spearman correlation analysis and their significance level. As can be seen, the independent variables that are more correlated, though moderate, to HEI's online CSR index disclosure (SROD), dependent variable, are Subsystem (0.554), Foundational Nature (0.480), Age (0.464) and Size (0.464), all with positive correlation statistically significant at 0.01 level. These results stress that online CSR disclosure is mainly undertaken by universities, of Foundational Nature, and with more years of existence. The remaining independent variables, Affiliation and Certification have correlations values below 0.400 which are considered weak, and although they are statistically significant ($p\text{-value} < 0.05$) they don't contribute much to Social Responsibility Information Online Disclosure (SROD) value. As per Amount of Revenues, this correlation is negligible (0.021) and not statistically significant as $p\text{-value} > 0.05$.

Table 4.3: Spearman's correlation's coefficients.

Coefficient	OGOD	ENOD	LHOD	EOD	CIOD	SOD	EDOD	SROD	Sub-system	Age
ENOD	0.660**									
LHOD	0.525**	0.622**								
EOD	0.159	0.090	0.098							
CIOD	0.187	0.109	0.179	0.134						
SOD	0.276	0.176	0.251	0.495**	-0.030					
EDOD	0.617**	0.351*	0.366*	0.331	0.085	0.584**				
SROD	0.882**	0.807**	0.699**	0.294	0.198	0.494**	0.737**			
Affiliation	0.324	0.198	0.355*	0.156	0.272	0.329	0.377*	0.398*		
Certification	0.389*	0.217	0.100	-0.102	-0.135	0.242	0.438*	0.355*		
Sub-system	0.421*	0.449**	0.459**	0.438*	0.239	0.394*	0.278	0.554**		
Foundational nature	0.325	0.415*	0.237	0.105	0.000	0.486**	0.333	0.480**	0.351*	
Size	0.472**	0.614**	0.522**	-0.010	-0.074	-0.170	0.067	0.455**	0.254	
Age	0.398*	0.350*	0.463*	0.368*	0.342	0.278	0.206	0.464**	0.702**	
Amount of Revenues	-0.040	-0.033	0.117	0.217	0.352*	0.155	-0.096	0.021	0.547**	0.480**

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

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

The dimensions comprising the online CSR disclosure index (SROD), that have a very strong to strong, positive, and statistically significant at 0.01 level correlation to the SROD, are Organizational Governance (OGOD) with 0.882, Environment (ENOD) with 0.807, Educational (EDOD) with 0.737, and Labour and Practices & Human Rights (LHOD) 0.699. As per EOD and CIOD, they have a very weak (0.294 and 0.198 respectively) and no statistically significant correlation with SROD ($p\text{-value} > 0.05$).

4.4 Regression analysis

The regression analysis allows us to determine how much variability in a dependent variable can be explained by several predictor variables (also called independent or explanatory variables), where the aim is to determine an optimal model that may or not include all these variables. Usually, the goal is to find a combination of predictors that will account for the maximum amount of variance in the dependent variable.

Stepwise regression was used in this study to test the hypotheses previously detailed. This method employs a step-by-step iterative construction of a regression model, through the selection of predictable variables to be used in a final model. It works by adding or removing potential explanatory variables in sequence, testing it for statistical significance after each iteration. The choice of this method is due to the linear relationship between the exogenous and endogenous variables, as well as to the wish to obtain predictability or explanation of the dependent variable from the inclusion of the independent ones.

For the regression analysis purpose, the nominal/categorical variables (Affiliation, Certification, Subsystem, and Foundational nature) were coded as dummy variables (presence = 1 and absence = 0). The significance level was set at 5% ($\alpha = 0.05$).

Regression results are summarised and displayed in Tables 4.5 to 4.8.

4.4.1 Reliability Statistics

Before applying the regression using the Stepwise method, it must be assessed the internal consistency reliability of the set of measures, to understand if it follows a random pattern or if it follows a random behaviour. It is typically estimated using the statistic Cronbach's alpha that ranges from 1 to 0. Hence, values closer to 1 indicate higher reliability, being the minimum acceptable measures above 0.7 (Maroco & Garcia-Marques, 2013).

After running the reliability statistics, it was obtained a Cronbach's Alpha of 0.759 for a total of 8 items, which is in the acceptable range. Analysing in terms of how much it would be the gain in the global Cronbach's Alpha if any of the items were removed, we see on Table 4.4 that removing Community Involvement Online Disclosure (CIOD) improves the Cronbach's Alpha scale's from 75.9% to 83.4%, improving internal consistency. However, it was decided to stand to obtained value, due is suitability.

Table 4.4: Cronbach's Alpha.

Coefficient	Cronbach's Alpha if item deleted
OGOD	0.681
ENOD	0.704
LHOD	0.717
EOD	0.764
CIOD	0.834
SOD	0.740
EDOD	0.731
SROD	0.683

4.4.2 Regression Models

Regression analysis was used to identify which factors have a significant influence on the online CSR disclosure index (SROD) of each HEI in the sample. For the purpose, a multiple regression was carried out, applying the stepwise method to estimate the regression model.

As stated by Monteiro and Aibar-Guzmán (2010, p. 197) study, footnote 8:

According to the stepwise method, the first independent variable to be introduced in the model is the variable that is most correlated to the dependent variable. The remaining independent variables are introduced one by one, on the basis of their correlation coefficients. Every time a new variable is included in the model, the significance of all variables has to be analysed in order to eliminate those variables that do not have a significant explanatory power. The decision rule about the inclusion of a new explanatory variable in the model is that its t-statistic must not be smaller than a critical value and, at the same time, its inclusion in the model cannot diminish the t-statistics of the variables that have already been introduced in the model below such critical value. This process has to be repeated until all independent variables that are included in the model have a significant explanatory power, while the variables that have not been introduced in the model lack such explanatory power.

Following stepwise method and Monteiro and Aibar-Guzmán (2010)) notes, the HEIs Subsystem is the first predictor variable to be introduced in the regression model as it has the higher correlation coefficient. According to the process, the next variable that can be introduced in the regression model is Certification variable, followed by Size, and then by Affiliation. Of the seven independent variables considered in the regression model, only four were considered to have significant relationships with the online CSR disclosure index value (SROD) namely, Subsystem, Certification, Size, and Affiliation. These four variables provided a statistically significant explanation of the dependent variable. The

remaining variables were excluded from the model, as their addition does not improve the explanatory power of the model.

The same method was replicated in the partial regressions of SROD dimensions, namely, Organizational Governance (OGOD), Environment (ENOD), Labour Practices and Human Rights (LHOD) and Educational (EDOD) on the independent variables. The order of introduction of the independent variables in the models is expressed in Table 4.5 notes.

Looking at Table 4.5 columns, the correlation coefficient (R) traduces the relationship strength between the observed values of Y and the estimated values by the model of multiple regression of the outcome variable. The higher these values, the higher the correlation between the estimated and the observed values of the variable outcome.

As per R-square (coefficient of determination) this is the quantity of Y variation that can be captured by the model, or the variance in the outcome that is accounted for the predictor variables used. Adjusted R-square adjusts for a bias in R-square (R-square is positively biased when the sample's size is smaller and there are greater numbers of predictors). Values of R and R-square range from 0 to 1.

Analysing these statistics results, the Adjusted R-square obtained suggest that 63.8% of the variation in the SROD scores between the HEI's can be explained by the set of independent variables considered in the regression model. As per the partial regressions for each dimension the same reasoning applies, 52.2% in Educational Information Online Disclosure (EDOD), 49.4% in Organizational Governance Online Disclosure (OGOD), 44.2% in Labour Practices & Human Rights Online Disclosure (LHOD) and 43.9% in Environmental Information Online Disclosure (ENOD). The models with Adjusted R Square below 0.4, were not considered since they are negligible as they explain almost nothing about the dependent variable, though they have a statistically significant ($p\text{-value} < 0.05$).

Sig F Change with $p\text{-value} < 0.05$ tell us that the model is globally significant, that has accounted for a statistically significant amount of variance in the outcome variable. In view of the results showed in Table 4.5, all models are globally significant.

Durbin Watson statistic is a test for autocorrelation in the residuals from regression analysis, which should be near the value 2 (between 1.5 and 2.5) to consider that we have no homogeneity of variance problems. Looking at the values expressed in Table 4.5, we verify that there are no problems of homogeneity, as their values are suitable.

ANOVA's sig result ($p\text{-value} < 0.001$) is a significant value, which being less than 0.05 the model adjusts to the data suggests that at least one of the independents variables are significant to the model. All models comply since they have a $p\text{-value} < 0.001$.

Table 4.6 contains the coefficients for the regression equation, and the collinearity statistics to assess the existence of multicollinearity among the predictor variables (Tolerance) and to identify correlation between independent variables and strength of that correlation (Variance Inflation Factor). Two indices to judge multicollinearity in the regression output, one of the fundamental assumptions that must be verified. Variance Inflation Factor (VIF) values of 1 indicates that there is no correlation between the independent

variable and any others, between 1 and 5 suggest that there is a moderate correlation, but is not severe enough to warrant corrective actions, greater than 5 represent critical levels of multicollinearity where the coefficients are poorly estimated, and the *p-value's* are questionable. A **VIF** > 10 can be considered indicative of the presence of more severe multicollinearity involving a given independent variable. From the results available in Table 4.6 we can conclude that there's no collinearity between the predictor variables since the Tolerance is higher than 0.1, and the **VIF** of the predictor variables are between 1.0 and 1.1 (Lomax & Hahs-Vaughn, 2012).

Table 4.5: Results of the regression models.

Model	SROD ^a	OGOD ^b	ENOD ^c	LHOD ^d	EDOD ^e
R	0.826	0.736	0.688	0.703	0.753
Adjusted R ²	0.638	0.494	0.439	0.442	0.522
Sig F Change	0.021	0.004	0.009	0.026	0.042
Durbin-Watson	1.974	1.704	1.780	2.096	2.222
ANOVA's Sig	<0001	<0001	<0001	<0001	<0001

^a predictors: (Constant), Subsystem, Certification, Size, Affiliation.

^b predictors: (Constant), Subsystem, Certification, Size.

^c predictors: (Constant), Size, Foundational nature.

^d predictors: (Constant), Size, Affiliation, Age.

^e predictors: (Constant), Certification, Age, Foundational nature.

Considering our regression parameter estimates, namely the Constant (the intercept for the model) and the unstandardized partial regression slopes (B) indicated in Table 4.6, for the proposed regression model, the suggested model's equation for total regression (SROD) can be expressed as follows:

$$\text{SROD} = -35.789 + 15.828 \cdot \text{Certification} + 9.760 \cdot \text{Subsystem} + 8.176 \cdot \text{Size} + 6.965 \cdot \text{Affiliation} \quad (4.1)$$

Concerning our sample of Portuguese public HEIs, explains that higher scores of SROD are obtained for universities (HEI coded 1), than colleges and schools (HEI coded 0), for HEIs having or following CSR standards' certification than the ones without, for larger HEIs than smaller HEIs, and for HEIs with schools related to the field of CSR than without.

As per partial regressions, regressing the independent variables on each SROD dimension, namely, OGOD, ENOD, LHOD, EOD, CIOD, SOD and EDOD, suggested models would be:

$$\text{OGOD} = -50.908 + 30.208 \cdot \text{Certification} + 13.859 \cdot \text{Subsystem} + 13.588 \cdot \text{Size} \quad (4.2)$$

Table 4.6: Regression unstandardized coefficients and collinearity statistics.

Variable	SROD	OGOD	ENOD	LHOD	EDOD	
	-35.789	-50.908	-106.071	-90.930	-3.999	Constant
Size	8.176	13.588	17.821	10.930	—	B
	0.938	0.946	0.981	0.905	—	Tolerance
	1.066	1.057	1.019	1.106	—	VIF
Affiliation	6.965	—	—	12.821	—	B
	0.930	—	—	0.995	—	Tolerance
	1.075	—	—	1.005	—	VIF
Age	—	—	—	5.719	3.706	B
	—	—	—	0.908	0.994	Tolerance
	—	—	—	1.101	1.006	VIF
Certification	15.828	30.208	—	—	22.609	B
	0.957	0.989	—	—	0.969	Tolerance
	1.045	1.011	—	—	1.032	VIF
Subsystem	9.760	13.859	—	—	—	B
	0.920	0.955	—	—	—	Tolerance
	1.087	1.047	—	—	—	VIF
Foundational nature	—	—	19.227	—	7.628	B
	—	—	0.981	—	0.974	Tolerance
	—	—	1.019	—	1.027	VIF

Which traduces that higher score of Organizational Governance information online disclosure are obtained for larger HEIs, that have or follow CSR standards certification, belonging to Subsystem coded 1 (universities). Certification having strong contribution to OGOD variability, more than double of Size and Subsystem.

Higher scores of Environment information online disclosure are obtained for HEIs of Foundational Nature, and for larger HEIs than smaller. Also, Foundation Nature and size contribute with more or less similar weight to ENOD variability.

$$ENOD = -106.071 + 19.227 \cdot \text{Foundational nature} + 17.821 \cdot \text{Size} \quad (4.3)$$

On the dimension Labour Practices and Human Rights, Affiliation and Size variables have stronger contributions to LHOD variability than Age. Regarding LHOD higher scores are obtained for HEIs with schools related to the field of CSR than without, for larger HEIs than smaller, and older HEIs.

$$\text{LHOD} = -90.821 + 12.821 \cdot \text{Affiliation} + 10.930 \cdot \text{Size} + \text{Age} \cdot 5.719 \quad (4.4)$$

The regression model for the dimension Economic only includes the Subsystem as explanatory variable to Social Information Online Disclosure (SOD) variability.

$$\text{EOD} = 52.000 + 17.231 \cdot \text{Subsystem} \quad (4.5)$$

It was not possible to run the partial regression for the dimension Community Involvement (CIOD) as the statistics analysis software used (IBM SPSS Statistics version 28.0.0.0) did not recognised the existence of variables inserted in the equation.

The regression model for the dimension Social only includes the Foundational nature as explanatory variable to SOD variability.

$$\text{SOD} = 73.019 + 15.871 \cdot \text{Foundational nature} \quad (4.6)$$

Finally, higher scores are obtained for Educational information online disclosure on HEIs having, or following CSR standards' certification, of Foundational Nature, and older HEIs. Certification is the variable that has stronger contribution, when compared with Age and Foundational Nature variables.

$$\text{EDOD} = -3.999 + 22.609 \cdot \text{Certification} + 7.628 \cdot \text{Foundational nature} + 3.706 \cdot \text{Age} \quad (4.7)$$

Looking at Table 4.7 - Significance tests, the gradient Beta (β) (standardized coefficients) is tested for significance. If there is no relationship, the gradient Beta (β) of the line would be 0 and therefore every HEI's index disclosure would be predicted to be the same value. Since sig value against any independent variable is less than 0.05, there is significant evidence to suggest that the gradient is not 0 ($p\text{-value} < 0.001$).

Regarding at the residuals' statistics in Table 4.8, the means of typified predicted values versus typified residual reveals the presence of random features since they are equal to zero (0.000), it is verified the homogeneity of the residues, there are no problems of heteroscedasticity or non-linearity, behaving according to a normal distribution

Finally, all assumptions required for this method are acceptable, the obtained results assure us we are towards a model statistically reliable.

Table 4.7: Significance tests.

Variable	SROD	OGOD	ENOD	LHOD	EDOD	
Size	0.403	0.406	0.527	0.425	—	β
	3.667	3.139	3.945	3.065	—	t
	0.001	0.004	<0.001	0.005	—	sig
Affiliation	0.271	—	—	0.394	—	β
	2.453	—	—	2.974	—	t
	0.021	—	—	0.006	—	sig
Age	—	—	—	0.325	0.284	β
	—	—	—	2.347	2.316	t
	—	—	—	0.026	0.028	sig
Certification	0.413	0.477	—	—	0.628	β
	3.794	3.775	—	—	5.054	t
	<0.001	<0.001	—	—	<0.001	sig
Subsystem	0.432	0.372	—	—	—	β
	3.897	2.892	—	—	—	t
	<0.001	0.007	—	—	—	sig
Foundational nature	—	—	0.376	—	0.264	β
	—	—	2.809	—	2.132	t
	—	—	0.009	—	0.042	sig

Table 4.8: Residuals statistics (mean).

	SROD	OGOD	ENOD	LHOD	EOD	SOD	EDOD
Predicted Value	33.603	55.069	25.070	20.24	58.79	75.423	13.924
Residual Statistics	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Std. Predicted Value	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Std. Residual	0.000	0.000	0.000	0.000	0.000	0.000	0.000

4.5 Results discussion

4.5.1 Content analysis

Based on the obtained scores for the online CSR disclosure index (SROD) of each HEI in the sample, displayed in Table A.4, the following charts were constructed to allow us to understand how these HEI's behave on each dimension, and which is the more balanced one in all aspects.

The chart in Figure 4.1 illustrates the SROD results obtained for each of the HEI under study. Hence, we see that universities tend to be above the national average, polytechnics are more or less within the average, and other non-integrated schools are all below average.

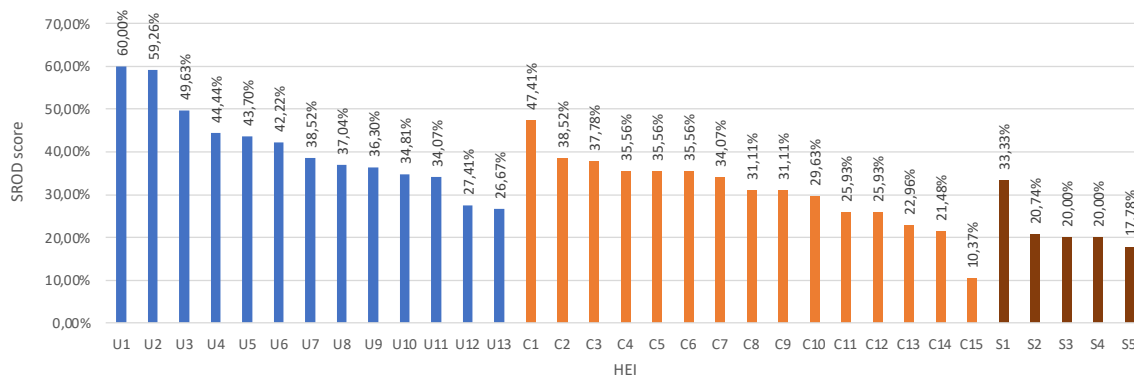


Figure 4.1: HEIs SROD scores.

The chart in Figure 4.2 considers the four highest scores in percentage obtained for the Portuguese public HEIs. All scores are above the national average (33,60%) being the three highest ones attributed to universities (U1 = 60,00%, U2 = 59,26% and U3 = 49,63%) and the fourth to a college (C1 = 47,41%).

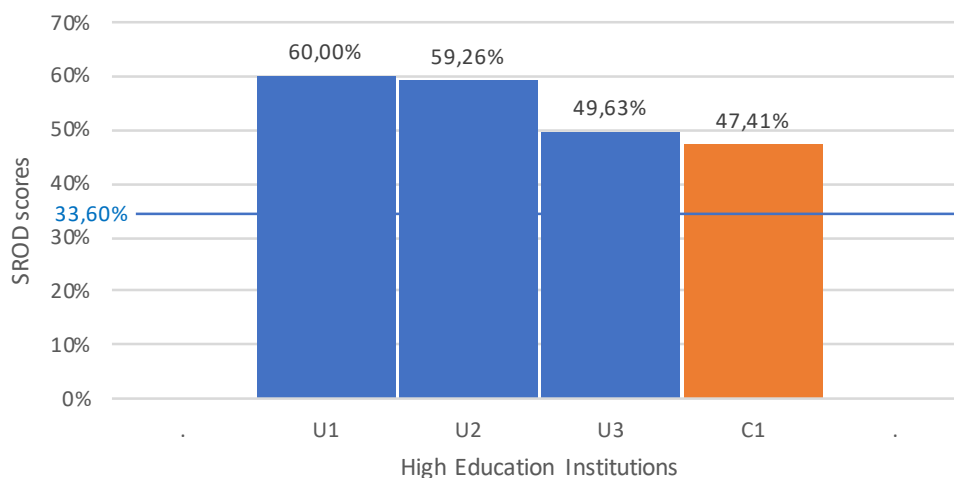


Figure 4.2: Highest SROD scores.

The chart in Figure 4.3 considers the four lowest scores in percentage obtained for the Portuguese public HEIs. All scores are below the national average (33.60%) being the lowest one attributed to a college (C15 = 10.37%) followed by three schools (S5 = 17.78%, S4 = 20.00% and S3 = 20.00%).

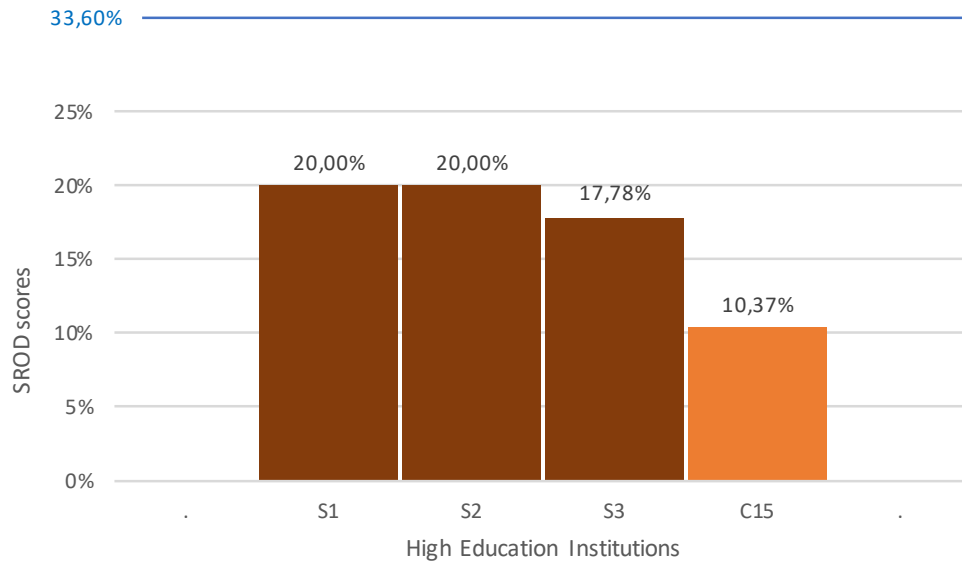


Figure 4.3: Lowest SROD scores.

In the chart of Figure 4.4 we can observe that the HEIs with higher scores on online CSR disclosure index (SROD), in general, tend to disclose more on Social (SOD), followed by Organizational Governance (OGOD), Economic (EOD) and by Environment (ENOD). The least reported are Educational (EDOD) and Labour Practices and Human Rights (LHOD).

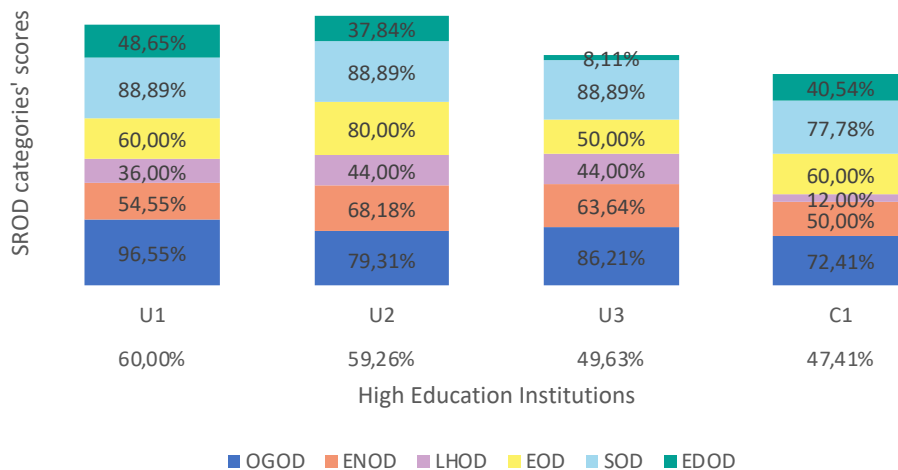


Figure 4.4: Categories' scores for HEI with highest SROD.

In the chart of Figure 4.4 we can observe that the HEIs with lower scores on online CSR disclosure index (SROD), in general, tend to disclose more on Social (SOD), and on Economic (EOD), followed by Organizational Governance (OGOD). Environment

(ENOD), Labour Practices and Human Rights (LHOD), and Educational (EDOD) are almost inexistent.

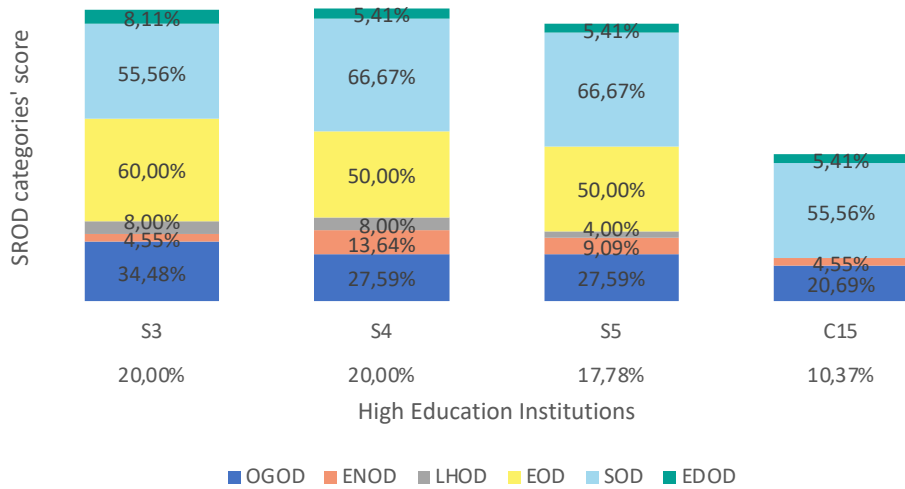


Figure 4.5: Categories' scores for HEI with lowest SROD.

When comparing the two charts of previous figures, we observe that SROD dimensions follow approximately the same order, unless OGOD and EOD that switch between the second and third place. The dimensions' disclosures on Figure 4.4 are more balanced than on the ones on Figure 4.5, with EOD having the same score for both situations except for the edge charts.

We can conclude that Environment (ENOD), Labour Practices and Human Rights (LHOD) and Educational (EDOD) are the dimensions that Portuguese Public HEIs disclose less online CSR information, being the Social (SOD) Economic (EOD), followed by Organizational Governance (OGOD), the dimensions where they disclose the most, in line with Table A.4 average results.

The obtained results confirm Aleixo et al. (2016) study, that the websites of the Portuguese HEIs communicate mainly the economic and socio/cultural practices, though the dimensions these authors considered were: (i) environmental, (ii) economic, (iii) socio/cultural, and (iv) institutional/political.

Figure 4.6 allow us to picture the geographical distribution of each HEI in the sample, as well as their dimension according to the SROD scores (represented by spheres) obtained by each one. As there is no clear trend in the size of the spheres between north and south, nor between the coast and the inner-country, we can conclude that the geographic location is irrelevant to the score.

4.5.2 Descriptive Analysis

On Figure 4.7 can be seen the national average for each of SROD categories, expressing the leading of the categories Social (SOD) with 75.42%, Economic (EOD) with 58.79% and Organizational Governance (OGOD) with 55.07 %.

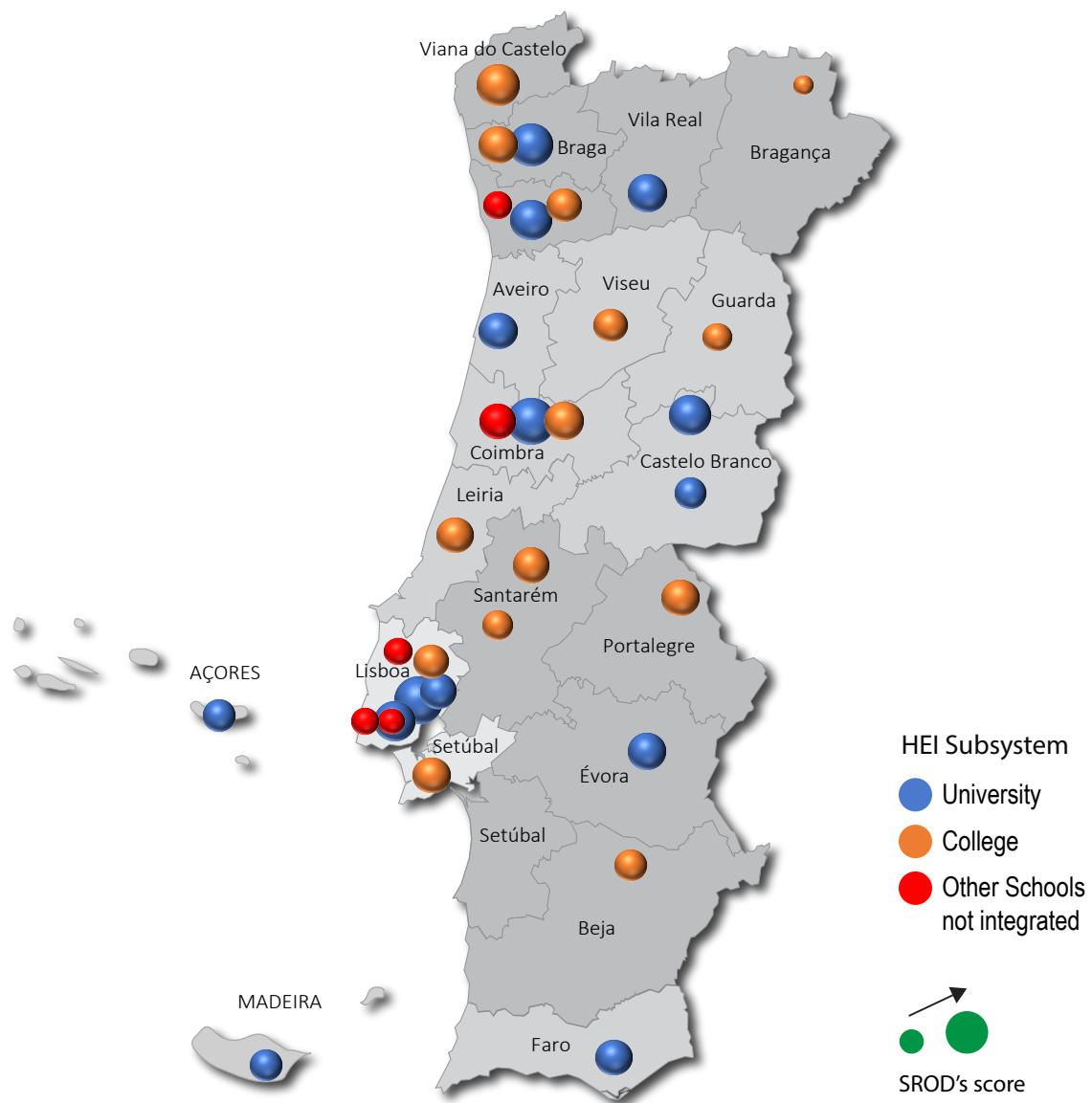


Figure 4.6: Portuguese Public HEIs' geographical distribution.

4.5.3 Regression analysis

It was performed a multiple regression with variables selection stepwise in order to obtain a model that better predicts the **CSR** online disclosure index (**SROD**) as a function of the independent variables (Size, Affiliation, Age, Certification, **HEI** subsystem, Foundational Nature and Amount of Revenues). The model assumptions were analysed, namely the normal distribution, homogeneity, and independence of the errors.

All assumptions were considered acceptable, the normal distribution and homoscedasticity of the errors was validated through the Residuals Statistics (residuals statistics < 0.001) and the independence of the errors was validated through the statistics Durbin-Watson ($d = 1.974$).

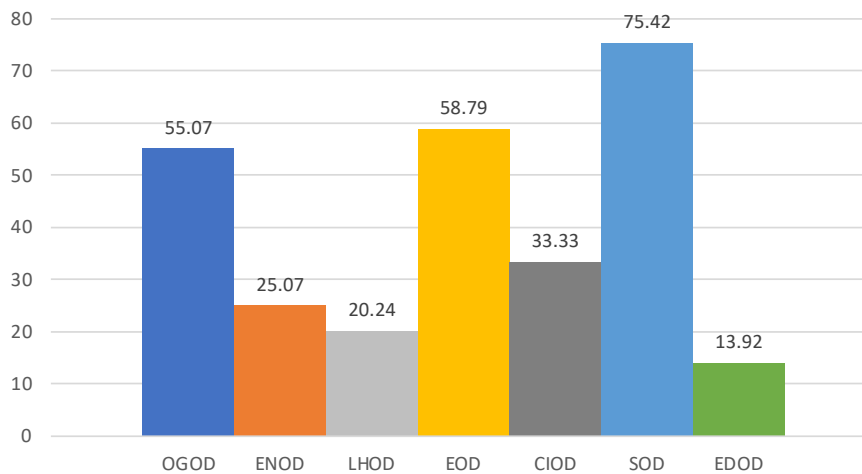


Figure 4.7: SROD categories' national average (%).

The **Variance Inflation Factor (VIF)** and the Tolerance were used to diagnose the absence of multicollinearity among the independent variables. There are no collinearity problems (Tolerance > 0.1, **VIF** of the predictor variables between 1.0 and 1.1). The multiple regression allowed to identify as predictor variables:

- Subsystem ($\beta = 0.432; t(28) = 3.897; p < 0.001$);
- Certification ($\beta = 0.413; t(28) = 3.794; p < 0.001$);
- Size ($\beta = 0.403; t(28) = 3.667; p < 0.001$);
- Affiliation ($\beta = 0.271; t(28) = 2.453; p < 0.001$).

The model is significant and explains 63.80% of the variability of **SROD** ($F(4,28) = 15.078; p < 0.001$; Adjusted $R^2=0.638$).

All analysis were done with SPSS Statistics (IBM SPSS Statistics version 28.0.0.0), software outputs are available in the [Google Drive](#).

The results obtained through the regression analysis for this thesis' sample data in accordance with the model presented in Equation (4.1), confirm some formulated hypothesis, namely, H1, H2, H4 and H5, as the sign obtained were consistent with those expected. Also, these results are consistent with some previous studies' findings.

Formulated hypothesis' that were verified are:

- H1: The size of the **HEI** influences online **CSR** disclosure.
- H2: The existence of schools and faculties related to the field of **CSR** within the Institution influences online **CSR** disclosure;
- H4: **CSR** certifications influences online **CSR** disclosure;

- H5: Subsystem of the HEI influences online CSR disclosure.

Hypothesis H3 and H6 were not verified as the results revealed no statistically significant differences between the level of social responsibility online disclosure by sample HEIs with older foundation date or of foundational nature, these variables had no significant explanatory power, thus were not included by the model. Hypothesis H7 was not verified, as no significant relationship was found between social responsibility online disclosure and HEI's Amount of Revenues.

Formulated hypothesis' that were not verified are:

- H3: HEI foundation date influences online CSR disclosure;
- H6: Foundational nature of the HEI influences online CSR disclosure;
- H7: The amount of revenues influences on online CSR disclosure.

CONCLUSIONS, LIMITATIONS, AND FUTURE PERSPECTIVES

5.1 Conclusions

This thesis had as purpose to analyse how the paradigm of social responsibility has been internalised by the Portuguese Public [High Education Institutions \(HEI\)](#), through the analysis of the online [Corporate Social Responsibility \(CSR\)](#) disclosure on their institutional websites, understanding the motivation behind this disclosure, if it is used as a differentiation factor in the pursuit of positional or competitive advantage or if it is used to achieve public legitimization.

In result a description of the Portuguese Public [HEI](#) panorama concerning [CSR](#) disclosure on [HEI](#) websites was done, encompassing the dimensions, categories and aspects considered in the three main standards for social responsibility, namely the [International Organization for Standardization \(ISO\) 26000](#), [Global Reporting Initiative \(GRI\)](#) and [SA 8000](#), through a total of 135 indicators. Of the seven formulated hypotheses, four confirmed the assumptions of previous studies. In what concerns the remaining three hypotheses, two brought new evidence since no other studies were identified, although they may exist.

The accelerated demographic of last century combined with the industrial and technological development amplified the extent of human activities in the environment with disastrous consequences such as the global warming (Simão & Lisboa, 2017). Also, social consequences resulting from several changes worldwide such as globalization processes and market-oriented reform policies, violating ethical and social principles in production (Roblek et al., 2019), put into question workers' rights, equitable opportunities, racial equality, health, and safety at work. These events marked an era of public awareness and implementation of sustainability practices.

Despite the work done since then, there's yet space and need for improvement. Our mindset must continue to change if we want to preserve the planet for our descendants and live in a fair and balanced society. Every single person has the responsibility in this process of doing better, as individual and as stakeholder of distinct organizations.

[HEIs](#) intervene as a special actor that can make the difference. It is of common agreement that [HEI](#) have an important role in the achievement of social change, as agents

of education of present and future generations influencing and helping communities to engage, as researchers looking for understanding of **CSR** issues, finding solutions and open doors to innovation, as knowledge centers participating with governmental and official entities in the preparation of suitable policies, standards and legislation, and finally as entities implementing **CSR** practices in their own organisational structure.

Much has been done in the field of **CSR** practices disclosure, however the guidelines, standards, and tools to assess, developed to report and manage such practices and outcomes are not yet suitable for the **HEI** context. Several studies and research have been done in this field, different methods are being proposed to obtain an adequate list of indicators to **HEI**'s reality, however, due to the studies contexts' diversity, a consensus has not yet been reached.

Also, playing an important role are countries' government that through legislation can help organizations to improve their performance in the **CSR** field. In what concerns Portugal, the Portuguese government has not yet approved legislation about the implementation of sustainability in higher education. (Aleixo et al., 2018, p. 10). Oppositely, in Spanish higher education context, specific legislation have been approved by the Spanish government for this purpose (e.g., the organic law 4/2007 on universities and the Law 2/2011 on sustainable economy) (Jorge et al., 2015). Other initiatives were also developed by the Spanish government, such as the 2015 University Strategy to adapt Spanish universities to the guidelines proposed by the European Higher Education Area.

Nevertheless, thanks to the voluntary participation of the university community and existing human resources, some Portuguese **HEIs** are implementing **Sustainable Development (SD)** practices (Aleixo et al., 2018, p. 10).

HEI as other organizations are pressured to disclose **CSR** information, and the larger the institution the greater number of stakeholders and the greater the pressure to disclose **CSR** information. Previous studies showed that the "Institution size has been one of the most used variables to explain the disclosure of information" (Aleixo et al., 2018, p. 172). Likewise, being larger guarantee them a higher level of available resources to treat and disclose such information.

Hypothesis H1 of our study confirmed this assumption as well, which means that the size of the **HEI** influences online **CSR** disclosure.

Branco and Delgado (2016) denote that Portugal shows nowadays developed **CSR** practices, despite having joined later than many other European countries on the **CSR** movement, however, it seems to be a concern of the leading Portuguese business schools since at least the mid-1980s.

According to author's findings, they believe that the introduction of mandatory **CSR** courses in the undergraduate and master degrees in management Branco and Delgado (2016) at the national level, for those where they do not yet exist is a must, as by the nature of these courses it is important to educate future managers to understand and implement **CSR** practices.

The existence of CSR-related departments is also a plus, since having dedicated personal will allow a greater quality of provided CSR information and facilitates its dissemination not only in the disclosure channels but also within their academic community, engaging all stakeholders.

Hypothesis H2 of our study confirmed this assumption as well, which means that the existence of HEI with schools and faculties related to the field of CSR within the Institution influences online CSR disclosure.

Both Sanchez et al. (2021) and Gallego-Álvarez et al. (2011) studies refer to the positive influence of the variable age concerning disclosure of information of economic nature. This variable age has also been considered in previous studies as a factor of influence in CSR information disclosure. Older institutions tend to disclose more and better CSR information, compared to younger ones, as they have more experience in disclosing information to the stakeholders.

Based on this assumption, it was expected that hypothesis H3 would confirm HEI that foundation date influences online CSR disclosure, but we were not able to find empirical evidence about the mentioned relationship, so this hypothesis was not confirmed.

Findings of prior studies show different results concerning the dimensions valued by the HEI within and between countries. According to Aleixo et al. (2018) results, on a study aimed to analyse the state of implementation of sustainability development, Portuguese HEI give more importance to the economic and social dimensions, being those the most developed dimensions.

Regarding the practices on environmental dimension it was verified that HEIs are starting to plan, however only issues related to waste separation, recycling and waste reduction plans were actually being implemented (Aleixo et al., 2018, p. 30), and just a small number. The authors also found out that despite Portuguese HEIs are starting to have some certifications, they are mainly related to the Quality Management Systems (ISO 9001).

Hypothesis H4 of our study confirmed this assumption as well, which means that CSR certifications influences online CSR disclosure.

Being Portuguese higher education organized in a binary system that integrates university education and college education (polytechnics institutes) despite having similar missions, they have different approaches to knowledge transfer, while the first is “more focused in the academic knowledge and research”, “the polytechnic is more focused in professional knowledge and knowledge transfer” (Aleixo et al., 2018, p. 10).

Hypothesis H5 of our study confirmed this assumption as well, which means that HEI subsystem influences online CSR disclosure.

Considering the performance evaluation requirement to which public HEIs with foundational nature are subjected to by the state government (established by Portuguese decree-law 62/2007 of 10th September) it was expected that hypothesis H6 would confirm that foundational nature of the HEI influences online CSR disclosure, but we were not

able to find empirical evidence about the mentioned relationship, so this hypothesis was not confirmed.

As already mentioned, being larger, universities have more means and resources to treat and disclose CSR information. Since HEI's public funding depends on the number of students each institution is capable to attract, as also the tuition fees and taxes amount collected, or even the ability to reach private subsidies.

Based on this assumption, it was expected that hypothesis H7 would confirm that HEI amount of revenues influences online CSR disclosure, but we were not able to find empirical evidence about the mentioned relationship, so this hypothesis was not confirmed.

Based on the results obtained in Chapter 4, it is assumed that HEI online CSR disclosure is performed to present a socially responsible image so that HEI can legitimize their behaviour to their stakeholders' groups.

Our findings suggest that there's still some work to be done to achieve a social responsibility that is holistic and integrated with education in all academic areas. Students should learn and breathe social responsibility, which it's not the case.

It was found that SD it is not yet understood in a disciplinary and transdisciplinary way, the analysis done shows that there are very few degree programmes offer optional courses on this issue, being inexistent their disclosure to capture students' attention on the subject, which is important for future generations, that they are provided with insights and values that can help them to help society make the transition from unsustainable to more sustainable societies (Lozano-Ros, 2003).

Some categories and aspects of disclosure that are fulfilled in the dimensions Labour Practices and Human Rights, Economic and Social, are mainly requirements foreseen in the Portuguese law HEI Legal Regime (RJIES) (Decree-Law 62/2007) that establishes the legal regime of HEI, regulating their constitution, attributions and organization, the functioning and competence of their bodies.

Though HEI present strategic plans and activity plans which include key performance indicators, these are essentially related to the control of education quality. Indicators related to environmental, social responsibility and sustainable development are few and shy. Nevertheless, some HEI's take initiatives, having sustainability indicators that control and monitor, however different and complexes from institution to institution, reinforcing the need of standardization of these indicators.

This thesis confirmed the existence of good examples and initiatives not only in several Portuguese universities as reflected in Farinha et al. (2019) findings, but both subsystems, despite the insufficiency of national combined strategies or policies related to education for sustainable development.

Likewise, Portuguese HEI count with several initiatives that result from the work developed jointly between Portuguese HEI, State Bodies for Education and Students Associations, such as the Observatory on Social Responsibility and Higher Education

(ORSIES)'s Green Paper on Social Responsibility and Higher Education Institutions (Marques et al., 2018). ORSIES is a collaborative network that aims to promote the dimension of social responsibility of HEI, promoting the exchange of experiences on policies and practices in this context, so that new public policies could emerge. The book presents a series of recommendations and proposals for action.

Also, the Sustainability e-book (Simaens et al., 2021) an initiative to analyse the integration of the Sustainable Development Goals (SDG) in the Education and Training Institutions, that compiles sustainable practices providing an instrument for reflecting on how HEI should consider the SDGs in their mission and their corporate strategy, so that the SDGs are reached by 2030.

HEI adhere to some of these initiatives through the signing of commitment letters to SD, such as the 'Sustainable Campus Network', that aims to promote and contribute to a more sustainable society through a responsible management of all institutional procedures. A document that embraces seven principles of action that establish institutional commitments for the promotion of knowledge and training in the field of sustainability, dissemination of good practices to different audiences (companies and government agencies), support regional, national and international networks, establish partnerships and transfer advanced technology or management methods with potential impacts in the area of sustainable development.

Or the 'Centro Green Deal' a project that aims to increase circularity in public procurement, allowing public entities to acquire products, goods and services that have a reduced environmental impact, seeking to reduce energy and material consumption, avoiding negative impacts and the production of waste throughout the entire life cycle.

As an example, the initiative EcoCampus acting in terms of environmental management of the campus and actively promotes the change of behaviour and attitudes in the academic community. However, when consulting several websites, we realize we are facing just an intention, e.g. the knowledge of the signature of some commitment letter to SD, or the institution presence in an event arranged by these networks, being this the only information available.

Likewise, other initiatives are being taken by few HEI for a fair, healthy and environmentally friendly food system, still far from a Farm to Fork strategy, that considers the sustainability of the whole food system, in production, processing and distribution, consumption and food loss and waste prevention.

Moreover, it was observed that some HEI are more committed to a given dimension, such as Social through the dynamization of volunteering, or Environmental through the rehabilitation of spaces and improvement of energy efficiency, or through the recycling and control of the waste, or even with the dematerialization of the administrative processes through digital transformation and optimization of the use of resources.

As mentioned before, on Branco and Rodrigues (2006) perspective, according to legitimacy theory, the companies disclose CSR information to present a socially responsible image so that they can legitimize their behaviour to their stakeholder groups. Facing the

question on the reason behind **Social Responsibility (SR)** practices by universities, Nejadi et al. (2011) argued that legitimization does not make sense in the case of universities, if they meet the norms and standards of the society, since universities are largely supported by external stakeholders such as government, people, and **Non-Governmental Organization (NGO)**s. Wondering if the reason of practising **CSR** by universities could be the image making, the study refers that **CSR** concept has evolved “to a serious and critical concentration on corporate strategic orientation”, leaving behind the practice of “show-off” by the organizations. The authors verified this in the context of universities and through the evidence obtained, that shows universities initiatives on **CSR** practices, concluded that the university’s role in the society is evolving being rational to universities to practice **CSR**.

Given the evidence collected on this thesis, and as referred by Farinha et al. (2019), Portuguese **HEI** seem in fact to be engaged in integrating **CSR** values and goals in their mission statements, vision and other contents disclosed in the institutional websites. They are showing greater interest in social commitments, in the implementation of **SR** criteria in the institution’s management as well as in the teaching and research functions (Sánchez et al., 2013).

However, it is difficult to find this information on **HEI** websites, most of **CSR** practices is disclosed in institutions’ general annual reports (not in dedicated sustainability reports) normally dispersed through small references without emphasis when related with environment and **SD**, being the information mostly disclosed of an economic and social nature.

When looking at the obtained results and the low volume of information disclosed in the websites (i.e., a national average of 33.60%) some just an adaptation of what was previously done, the inexistence of policies oriented to the full concept of social responsibility, or evidence of an **SD** incorporation, capacity building, monitoring curricula and administrative support, basic needs to provide **CSR** internal awareness first and then expand to their teaching and research (playing the essential role in **SR** in society, and mainly in students’ learning and modelling of ethical behaviours) the reached conclusion is that **HEI** are ‘legitimizing’ the existence of **CSR** disclosures, and presenting a socially responsible image.

Which is in line with Sanchez et al. (2021) study to advance stakeholder theory by demonstrating that USA’s universities make use of online disclosure of **CSR** information in order to meet their stakeholders’ expectation and interests, enhancing also their transparency and accountability to society. These authors’ findings showed that despite universities are using online disclosure through their websites and improving their provision of **CSR** information, the outcome failed short of their expectations. Greater awareness among universities of the importance of communicating **CSR** information was still necessary.

Finally, there is a belief that a revision of the [RJIES](#), integrating the [SR](#) as a transversal principle of action of the [HEIs](#), would encourage [HEIs](#) for a socially responsible performance. A measure already implemented in other countries and verified to be successful by other studies.

Taking as an example De Filippo et al. (2019) study, according to the authors the Spanish governing bodies introduced a new approach to allocate public universities funding based on performance criteria, where universities are funded according to their outputs, rather than inputs. Doing this way, Spanish State policymakers believe they are providing an incentive for universities to improve their quality management and accountability (De Filippo et al., 2019, p. 17). That due to this performance funding system, the Spanish universities have in recent years articulated and published online a greater number of strategic plans or sustainability reports, plus ranking fifth worldwide by total number of articles on the subject. One of the findings of (De Filippo et al., 2019, p. 17) study is that in terms of transparency and accountability, public policies can actually help to promote measures that encourage information on the impact of [HEI](#) actions on society.

5.2 Study limitations

As previously mentioned, the content analysis technique used in this study to perform the evaluation of the online [CSR](#) disclosure on [HEI](#)'s website, of detecting the presence or absence of information, has the limitation of not allowing the measurement of the extent of information disclosure, thus, the coded data does not reflect the emphasis that [HEI](#)' attach to each disclosed information item (Branco & Rodrigues, 2008b).

There's also to consider the introduction of subjectivity in the interpretation of the [CSR](#) information collected from [HEIs](#)' websites by the author (Perrigot et al., 2012) as this study was performed by an author only, and not subject to a group analysis and discussion for comparing obtained results on the content analysis performed, which could reduce the subjectivity.

As well as mentioned by Nejati et al. (2011) the lack of considering the effectiveness of social practices of studied [HEIs](#) is another limitation on this study. It only investigates [CSR](#) disclosure based on their website and reports contents, leaving behind the perceptions' measurement of their stakeholders about the social practices disclosed by [HEIs](#).

In what concerns the analysed data in the form of PDF documents and reports, some of these don't report to the same year for all [HEI](#), since some institutions don't have their websites updated.

When applying the binary coding, three different situations were detected: (i) one in which the institution does not hold any information; (ii) one in which the institution holds and makes the information available; (iii) and another, similar to this, which by management option, we know that the information exists but is not made available to personnel outside the institution. To the last two cases was assigned the value 1, and this equivalence stems from a limitation of the method used.

The amount of revenues of one HEI was calculated using the substitution method. The assigned value resulted from the simple arithmetic average of the other institutions, since this data was not available in the documents published or information available on the institution's website at the moment this study content analysis was done (August and September 2021). There was reference to the document on the website, yet the access to it was denied, as it was subject for internal access only.

It was not possible to analyse the partial regression for the dimension **Community Involvement Online Disclosure (CIOD)**, as the statistics analysis software used (IBM SPSS Statistics version 28.0.0.0) did not recognised the existence of variables inserted in the equation, configuring a program bug situation.

5.3 Suggestions and future research

This study should be extended to the Portuguese Private HEI in order to compare behaviours regarding the online CSR disclosure. Since private HEI need to compete for capturing students and private donations, it is important to understand if and how they differ from Public HEI.

This study reveals that there is a lack in the disclosure of stakeholders' identification and their information needs, suggesting that the importance of communication with stakeholders is not understood by HEI as a main core of social responsibility. Being a vehicle to CSR success, Stakeholders should be inquired through specific surveys on CSR practices to assess their knowledge of institutions' CSR initiatives, awareness, expectations and opinion, helping HEI to improve their actuation on all CSR dimensions.

It should be identified what are the barriers that are preventing HEIs' CSR online disclosure. Being the website a powerful tool to disclose CSR information and to channel the expectations of different stakeholders, involving and interact with them in HEIs management of SR subjects, this opportunity is overlooked by HEIs, which also influences students' choice of HEI.

It was realized that when entering a website, it is desirable to immediately see the key information on social responsibility without having to look through layers of website tabs and documents archives to find it. Users should be able to easily identify programmes degrees, courses, research, initiatives, events and seminars that HEIs offers on social responsibility and sustainability development, whether being a dedicated programme of SR area or not. These should pop up on HEI's web homepage and have its own tabs at first level of contact, capturing users' attention. The use of communication design graphical rules could be analysed, allowing to understand if websites are constructed in a way that users are naturally orientated to the relevant aspects of social responsibility and sustainable development that HEI as to offer, reinforcing HEI commitment in this area.

It was also verified that HEI shall move from punctual actions traditionally oriented to social and environmental dimensions, to a sustainability strategy, integrating social,

economic, environment and educational dimensions together. A strong concern of connection with external community and territory is also important, becoming a key element in the differentiation of the positioning of each institution. Further research should be made to understand [HEI](#) strategies in this field.

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Table A.1: Portuguese Public Universities.

University	URL
Açores	www.uac.pt
Algarve	www.ualg.pt
Aveiro	www.ua.pt
Beira Interior	www.ubi.pt
Coimbra	www.uc.pt
Evora	www.uevora.pt
Instituto Superior de Ciências do Trabalho e da Empresa	www.iscte-iul.pt
Lisboa	www.ulisboa.pt
Madeira	www.uma.pt
Minho	www.uminho.pt
Nova de Lisboa	www.unl.pt
Porto	www.up.pt
Trás-os-Montes e Alto Douro	www.utad.pt

Table A.2: Portuguese Public Colleges.

Colleges	URL
Escola Náutica Infante D. Henrique	www.enautica.pt
Escola Superior de Enfermagem de Coimbra	www.esenfc.pt
Escola Superior de Enfermagem de Lisboa	www.esel.pt
Escola Superior de Enfermagem do Porto	www.esenf.pt
Escola Superior de Hotelaria e Turismo do Estoril	www.eshte.pt
Instituto Politécnico de Beja	www.ipbeja.pt
Instituto Politécnico de Bragança	www.ipb.pt
Instituto Politécnico do Cávado e do Ave	www.ipca.pt
Instituto Politécnico de Castelo Branco	www.ipcb.pt
Instituto Politécnico de Coimbra	www.isec.pt
Instituto Politécnico da Guarda	www.ipg.pt
Instituto Politécnico de Leiria	www.iplei.pt
Instituto Politécnico de Lisboa	www.ipl.pt
Instituto Politécnico de Portalegre	www.ipportalegre.pt
Instituto Politécnico do Porto	www.ipp.pt
Instituto Politécnico de Santarém	www.ipsantarem.pt
Instituto Politécnico de Setúbal	www.ips.pt
Instituto Politécnico de Tomar	www.ipt.pt
Instituto Politécnico de Viana do Castelo	www.ipvc.pt
Instituto Politécnico de Viseu	www.ipv.pt

Table A.3: Disclosure Indicators List and Content Analysis Result.

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
Organizational Governance						
Transparency and Accountability	Providing facts and figures	OGA1	Facts in figures in the form of online and PDF reports accessible for all the visitors.	Nejati et al. (2011)	32	96.97%
		OGA2	Existence of a tab with relevant information in numbers on the website.	<i>Proposed</i>	17	51.52%
	Expression of the vision and strategy of the university in CSR subjects	OGA3	If main CSR commitments are disclosed.	Sanchez et al. (2021)	28	84.85%
		OGA4	If the webpage or Sustainability report includes a declaration on CSR from the governing body.	Sanchez et al. (2021)	15	45.45%
		OGA5	If the university webpage or the CSR/Sustainability Report identify the stakeholders.	Sanchez et al. (2021)	15	45.45%
		OGA6	If there is specific information about the informational needs of each group of stakeholders.	Sanchez et al. (2021)	9	27.27%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
	Statement of integrity	OGA7	Mission and values statements, internally developed codes of conduct or principles, and policies relevant to economic, environmental, and social performance and the status of implementation.	Lozano-Ros (2003)	29	87.88%
	Code of conduct / ethics code	OGA8	Existence of conduct and/or ethics code.	Sanchez et al. (2021)	15	45.45%
	Bribery and corruption	OGA9	Existence of plans and procedures developed by the institution to prevent bribery and corruption.	<i>Proposed</i>	25	75.76%
	Organisation chart	OGA10	Governance structure of the organisation, including major committees under the board of directors that are responsible for setting the strategy and the oversight of the organisation.	Lozano-Ros (2003)	33	100%
	Composition of commissions and committees	OGA11	Composition of commissions and committees.	Gallego-Álvarez et al. (2011)	24	72.73%
	Student's complaints/grievances/satisfaction	OGA12	Existence of dedicated body in the organization structure.	<i>Proposed</i>	33	100%
		OGA13	Complaint's treatment and monitoring.	<i>Proposed</i>	16	48.48%
		OGA14	Data protection and privacy.	<i>Proposed</i>	32	96.97%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
	Data on performance indicators	OGA15	Economic indicators.	Sanchez et al. (2021)	32	96.97%
		OGA16	Social indicators.	Sanchez et al. (2021)	17	51.52%
		OGA17	Environmental indicators.	Sanchez et al. (2021)	10	30.3%
		OGA18	Sustainability development indicators.	<i>Proposed</i>	12	36.36%
	Sustainability report	OGA19	Disclosure of sustainability reports.	<i>Proposed</i>	4	12.12%
	Sustainability policy (proposed indicator)	OGA20	Disclosure of sustainability policy.	<i>Proposed</i>	7	21.21%
	Other reports related to sustainable development (SDGs, etc.)	OGA21	Other reports related to sustainable development (SDGs, etc.).	<i>Proposed</i>	4	12.12%
Promoting SR	Centralized or decentralized disclosure of SR information by universities	OGA22	If the disclosure of CSR information is developed in a centralized way on the university webpage.	Sanchez et al. (2021)	15	45.45%
		OGA23	If this disclosure is developed through dependent centres at said university.	Sanchez et al. (2021)	2	6.06%
	Press news	OGA24	General news.	Gallego-Álvarez et al. (2011)	33	100%
		OGA25	Specific news about SR or sustainability.	<i>Proposed</i>	25	75.76%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
	Certification in social responsibility standards	OGA26	If the organization is certified or follows standards related to environmental and CSR principles (ISO 14000, GRI, ISO 26000, SA 8000, AA1100, NP4469).	<i>Proposed</i>	2	6.06%
	Visibility of CSR subjects	OGA27	A table identifying location of each element of the GRI Report Content, by section and indicator or SDGs or NP4469.	Adapted from Lozano-Ros (2003) and Sanchez et al. (2021)	6	18.18%
		OGA28	Existence of dedicated office/department in the organization structure.	<i>Proposed</i>	14	42.42%
		OGA29	Existence of own tab in the webpage.	<i>Proposed</i>	21	63.64%
	Number of indicators	29 of 29				
Environment						
Preserving environment	Environmental policies or institution concern for the environment	EN1	Environmental policies or institution concern for the environment.	Branco and Rodrigues (2006, 2008a)	19	57.58%
	Conservation of natural resources and recycling activities	EN2	Conservation of natural resources and recycling activities.	Branco and Rodrigues (2006, 2008a)	18	54.55%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
	Energy	EN3	Conservation of energy through saving systems such as movement sensors, incandescent light bulbs, or other alternative sources of energy.	Adapted from Sanchez et al. (2021)	21	63.64%
		EN4	Total energy used.	Lozano-Ros (2003)	10	30.3%
		EN5	Initiatives to use renewable energy sources and to increase energy efficiency.	Lozano-Ros (2003)	15	45.45%
		EN6	Energy consumption footprint of major products.	Lozano-Ros (2003)	3	9.09%
		EN7	Other indirect use and implications, such as organisational travel, product lifecycle management, and use of energy-intensive materials.	Lozano-Ros (2003)	0	0%
	Offering specific academic programs	EN8	Degrees and events.	Nejati et al. (2011)	25	75.76%
	Buildings and grounds	EN9	Information about criteria for construction, renovation and rehabilitation of existing buildings in line with green criteria.	Sanchez et al. (2021)	0	0%
	Purchasing management	EN10	Prioritization to the purchase of reusable, ecological materials that require the minimum of packaging.	Sanchez et al. (2021)	4	12.12%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
	Waste management and recycling	EN11	Promotion of the recycling of office material and solid waste providing recipients for articles such as paper, printer cartridges and batteries.	Sanchez et al. (2021)	15	45.45%
		EN12	Total materials used other than waste, by type.	Lozano-Ros (2003)	4	12.12%
		EN13	Percentage of materials used that are wastes (processed or unprocessed) from sources external to the reporting organisation.	Lozano-Ros (2003)	0	0%
	Water management	EN14	Total water used.	Lozano-Ros (2003)	7	21.21%
		EN15	Water sources and related ecosystems/habitats significantly affected by use of water.	Lozano-Ros (2003)	3	9.09%
		EN16	Annual withdrawals of ground and surface water as percent of annual of renewable quantity of water available from the sources.	Lozano-Ros (2003)	0	0%
		EN17	Total recycling and reuse of water.	Lozano-Ros (2003)	1	3.03%
	Transportation	EN18	Creation of incentives to use public transport or alternative means of transport such as bicycles and bus.	Sanchez et al. (2021)	17	51.52%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
		EN19	Significant environmental impacts of transportation used for logistical purpose, products, goods and materials used in the organization's operations, as well as transporting employees and clients (students) and measures taken.	Lozano-Ros (2003)	0	0%
	Food	EN20	Adoption of fair trade and sustainable food through the provision of ecological products in campus cafés and shops.	Sanchez et al. (2021)	3	9.09%
	Emissions, effluents, and waste	EN21	Initiatives to reduce greenhouse gas emissions and reductions achieved.	Pasinato and Brião (2014)	14	42.42%
		EN22	Strategies, measures, and future plans for managing the impact of emissions, effluents and waste.	Pasinato and Brião (2014)	3	9.09%
	Number of indicators	22 of 22				
Labour Practices and Human Rights						
Labour Practices	Employee health and safety	LHL1	Practices on recording and notification of occupational accidents and diseases.	Lozano-Ros (2003)	13	39.39%
		LHL2	Description of formal joint health and safety committees comprising management and worker representatives and proportion of workforce covered by any such committees.	Lozano-Ros (2003)	0	0%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
		LHL3	Standard injury, lost day and absence rates and numbers of work-related fatalities.	Lozano-Ros (2003)	15	45.45%
		LHL4	Evidence of substantial compliance with the ILO (international labour organisation).	Lozano-Ros (2003)	0	0%
	Employment of minorities or women	LHL5	Employment of minorities or women.	Branco and Rodrigues (2006, 2008a)	11	33.33%
	Employee training and education	LHL6	Reference to existence of employee training and education .	Branco and Rodrigues (2006, 2008a)	23	69.7%
		LHL7	Average hours of training per year per employee by category of employee.	Lozano-Ros (2003)	19	57.58%
		LHL8	Description of programmes to support the continued employability of employees and to manage career endings.	Lozano-Ros (2003)	2	6.06%
		LHL9	Specific policies and programmes for skills management or for lifelong learning.	Lozano-Ros (2003)	8	24.24%
	Employee assistance/benefits	LHL10	Employment benefits beyond those legally mandated.	Lozano-Ros (2003)	14	42.42%
	Employee remuneration	LHL11	Ratio between men and women, total expenditure .	Branco and Rodrigues (2006, 2008a)	17	51.52%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
	Employee profiles	LHL12	Employee profiles.	Branco and Rodrigues (2006, 2008a)	25	75.76%
	Diversity and opportunity	LHL13	Description of equal opportunities policies or programmes.	Lozano-Ros (2003)	10	30.3%
		LHL14	Composition of senior management female/male ratio and their indicators of diversity.	Lozano-Ros (2003)	6	18.18%
		LHL15	Diversity and opportunity equality - percentage of compliance with inclusion quotas (people with disabilities - PWDs, racial and others).	Pasinato and Brião (2014)	1	3.03%
	Number of indicators	15 of 25				
Human Rights	Strategy and management	LHH1	Description of policies, guidelines, corporate structure, and procedures to deal with all aspects of human rights relevant to operations.	Lozano-Ros (2003)	0	0%
		LHH2	Evidence of consideration of human rights impacts as part of investment and procurement decisions, including selection of suppliers/contractors.	Lozano-Ros (2003)	0	0%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
		LHH3	Description of policies and procedures to evaluate and address human rights performance within the supply chain and contractors.	Lozano-Ros (2003)	0	0%
		LHH4	Employee training on policies and practices concerning all aspects of human rights relevant to operations.	Lozano-Ros (2003)	0	0%
	Non discrimination	LHH5	Description of global policy and procedures/programmes preventing all forms of discrimination in operations.	Lozano-Ros (2003)	2	6.06%
	Freedom of association and collective bargaining	LHH6	Description of freedom and association policy and extent to which this policy is universally applied independent of local laws.	Lozano-Ros (2003)	1	3.03%
	Child labour	LHH7	Description of policy to prevent child labour and extent to which this policy is visible stated and applied.	Lozano-Ros (2003)	0	0%
	Forced and compulsory labour	LHH8	Description of policy to prevent forced and compulsory labour and extent to which this policy is visible stated and applied.	Lozano-Ros (2003)	0	0%
	Disciplinary practices	LHH9	Description of appeal practices, including, but not limited to, human rights issues.	Lozano-Ros (2003)	0	0%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
		LHH10	Description of non-retaliation policy and effective confidential employee grievance system.	Lozano-Ros (2003)	0	0%
Number of indicators		10 of 25				
Economic						
	Students aid and tuition	EC1	Students' income (student aid and tuition)		30	90.91%
	Payments to suppliers	EC2	Cost of all goods, materials, and service purchased, supplier breakdown by organisation and country% of contracts that were paid in accordance with agreed terms, excluding agreed penalty arrangements.	Lozano-Ros (2003)	31	93.94%
	Auditing	EC3	Existence of Internal auditing.	Sanchez et al. (2021)	0	0%
		EC4	External auditing report.	Sanchez et al. (2021)	21	63.64%
	Providers of capital	EC5	Sponsored, non for profit, auxiliary enterprises, private gifts, grants, and contracts.	Sanchez et al. (2021)	9	27.27%
	Public sector	EC6	State appropriations (federal government).	Sanchez et al. (2021)	32	96.97%
		EC7	Total sum of taxes of all types paid broken down by country.	Sanchez et al. (2021)	13	39.39%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
		EC8	Subsidies received broken down by country or region.	Sanchez et al. (2021)	22	66.67%
		EC9	Donations to community, civil society, and other groups broken down in terms of cash and in-kind donations per type of groups.	Sanchez et al. (2021)	5	15.15%
	Employees	EC10	Total payroll and benefits.	Sanchez et al. (2021)	31	93.94%
	Number of indicators	10 of 10				
Community involvement						
		CI1	Support for education.	Branco and Rodrigues (2006, 2008a)	16	48.48%
		CI2	Sponsoring sporting or recreational projects.	Branco and Rodrigues (2006, 2008a)	17	51.52%
		CI3	Providing grants for community projects.	Nejati et al. (2011)	0	0%
	Number of indicators	3 of 3				
Social						

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
	Summer programmes	S1	Continuing education with summer programs.	Sanchez et al. (2021)	15	45.45%
	Employment	S2	Opportunity to search jobs in the university or outside.	Sanchez et al. (2021)	30	90.91%
	Campus services/ Student life	S3	Club-organizations, sport and recreation, student affairs, housing and dining, student's organizations and activities, shopping and others.	Sanchez et al. (2021)	33	100%
	Campus safety	S4	Campus safety services.	Sanchez et al. (2021)	32	96.97%
	Health services	S5	Campus health services.	Sanchez et al. (2021)	31	93.94%
	Support for education	S6	Information about the Scholarship.	Sanchez et al. (2021)	32	96.97%
	Equal opportunity	S7	Existence of an Office of Equal Opportunity where the value of diversity is recognized, and equal opportunity is afforded for all.	Sanchez et al. (2021)	4	12.12%
	Diversity and equity	S8	Diversity and equity services for students.	Sanchez et al. (2021)	26	78.79%
	Disability resources	S9	Disability resources (disabled, aged).	Sanchez et al. (2021)	21	63.64%
	Number of indicators	9 of 9				%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
Educational						
Academic	SD incorporation in curricula	EA1	Existence of courses, seminars and conferences related to CSR.	Sanchez et al. (2021)	26	78.79%
		EA2	Number and percent of courses with sustainability content relative to the total of courses taught each year.	Sanchez et al. (2021)	4	12.12%
		EA3	Number of students enrolled in sustainability related courses.	Sanchez et al. (2021)	2	6.06%
		EA4	Number of courses with some content on SD themes.	Sanchez et al. (2021)	6	18.18%
		EA5	Policies related to SD in the curriculum.	Sanchez et al. (2021)	3	9.09%
		EA6	Degree programs related to SD curriculum.	Sanchez et al. (2021)	18	54.55%
		EA7	Scholarships offered to sustainability related education.	Sanchez et al. (2021)	1	3.03%
		EA8	Students' engagement initiatives.	Sanchez et al. (2021)	4	12.12%
		EA9	List with courses' titles and content.	Lozano-Ros (2003)	1	3.03%
		EA10	List with courses' title and SD theme contained.	Lozano-Ros (2003)	1	3.03%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
	SD capacity building	EA11	Specific courses to educate the educators in SD.	Lozano (2006)	1	3.03%
		EA12	Course structure, goals, and duration.	Lozano (2006)	1	3.03%
	SD monitoring in curricula	EA13	Management procedures to monitor incorporation of SD themes into curricula.	Lozano (2006)	0	0%
		EA14	Management structure and incorporation follow up procedures, continuous improvement methods etc.	Lozano (2006)	0	0%
	Administrative support	EA15	Administrative support with detailed plan and budget.	Lozano (2006)	0	0%
		EA16	Number of departments and colleges including sustainability courses and curricula.	Lozano (2006)	0	0%
		EA17	Number and percentage of departments and colleges including sustainability in their curricula.	Lozano (2006)	0	0%
		EA18	Sustainability courses included in general education requirements.	Lozano (2006)	0	0%
	Number of indicators	18 of 37				
Research	Research in general	ER1	Research centers linked to CSR Research in general.	Lozano-Ros (2003)	23	69.7%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
		ER2	Percentage of graduate students doing research in sustainability.	Lozano-Ros (2003)	0	0%
		ER3	Percentage of faculty doing research in sustainability issues.	Lozano-Ros (2003)	0	0%
		ER4	Institutional support and management procedures for multidisciplinary and interdisciplinary research in sustainability.	Lozano-Ros (2003)	0	0%
		ER5	Number of research projects that are multidisciplinary and interdisciplinary in the area of sustainability.	Lozano-Ros (2003)	2	6.06%
		ER6	List issues addressed: Renewable energies, ecological economics, urban planning, etc.	Lozano-Ros (2003)	4	12.12%
		ER7	List of knowledge field involved.	Lozano-Ros (2003)	1	3.03%
		ER8	List of faculty members and Departments or Centres to which they belong.	Lozano-Ros (2003)	1	3.03%
		ER9	Type of support provided: budget allocation, office and personnel especially dedicated, etc.	Lozano-Ros (2003)	1	3.03%
		ER10	List of Departments and Centres involved.	Lozano-Ros (2003)	2	6.06%
Grants		ER11	total revenues from grants and contracts specifying sustainability related research.	Lozano (2006)	3	9.09%

Dimension	Category/ Aspects of disclosure	Indicator	Description		Frequency	Percentage
	Publications and products	ER12	published research with a focus on sustainability.	Lozano (2006)	8	24.24%
	Programmes and centers	ER13	number and function of centres on campus providing sustainability related research or services.	Lozano-Ros (2003)	5	15.15%
	Number of indicators	13 of 37				
Service	Community activity and service	ES1	Volunteer services.	Sanchez et al. (2021)	28	84.85%
		ES2	Student, faculty, and staff contributions to community development and service.	Lozano (2006)	11	33.33%
		ES3	Partnerships for sustainability with educational, business, and government entities at the local level.	Lozano (2006)	8	24.24%
		ES4	Quantity and composition of student groups focusing on one aspect of sustainability.	Lozano (2006)	0	0%
	Service learning	ES5	Existence and strength of service-learning programmes.	Lozano (2006)	4	12.12%
		ES6	Total faculty, staff, students, involved in service-learning projects.	Lozano (2006)	1	3.03%
	Number of indicators	6 of 37				
	Total number of indicators	135				%

Table A.4: Disclosure index scores.

ID	OGOD	ENOD	LHOD	EOD	CIOD	SOD	EDOD	SROD
1	65.52	40.91	36.00	90.00	0.00	88.89	16.22	44.44
2	48.28	0.00	8.00	70.00	33.33	88.89	10.81	26.67
3	68.97	31.82	4.00	70.00	66.67	88.89	13.51	37.04
4	79.31	68.18	44.00	80.00	33.33	88.89	37.84	59.26
5	58.62	22.73	28.00	50.00	66.67	77.78	16.22	36.30
6	96.55	54.55	36.00	60.00	0.00	88.89	48.65	60.00
7	48.28	40.91	40.00	60.00	66.67	55.56	0.00	34.07
8	72.41	40.91	12.00	80.00	0.00	77.78	10.81	38.52
9	51.72	40.91	28.00	50.00	66.67	55.56	10.81	34.81
10	86.21	63.64	44.00	50.00	33.33	88.89	8.11	49.63
11	58.62	36.36	36.00	80.00	66.67	88.89	18.92	43.70
12	34.48	9.09	12.00	90.00	33.33	88.89	10.81	27.41
13	75.86	18.18	36.00	70.00	66.67	77.78	16.22	42.22
14	27.59	9.09	4.00	50.00	0.00	66.67	5.41	17.78
15	65.52	22.73	24.00	60.00	33.33	55.56	8.11	33.33
16	34.48	4.55	8.00	60.00	0.00	55.56	8.11	20.00
17	41.38	22.73	8.00	30.00	0.00	55.56	2.70	20.74
18	27.59	13.64	8.00	50.00	33.33	66.67	5.41	20.00
19	27.59	4.55	0.00	70.00	33.33	88.89	10.81	21.48
20	37.93	9.09	12.00	60.00	66.67	77.78	10.81	25.93
21	20.69	4.55	0.00	0.00	0.00	55.56	5.41	10.37
22	41.38	9.09	8.00	80.00	66.67	77.78	5.41	25.93
23	65.52	45.45	36.00	10.00	66.67	77.78	10.81	38.52
24	68.97	31.82	4.00	60.00	33.33	77.78	16.22	35.56
25	58.62	18.18	28.00	40.00	0.00	66.67	10.81	31.11
26	68.97	9.09	24.00	50.00	33.33	88.89	16.22	35.56
27	51.72	4.55	0.00	50.00	33.33	66.67	8.11	22.96
28	72.41	9.09	20.00	60.00	66.67	55.56	18.92	35.56
29	48.28	22.73	36.00	60.00	33.33	77.78	10.81	34.07
30	72.41	50.00	12.00	60.00	33.33	77.78	40.54	47.41
31	41.38	4.55	32.00	60.00	0.00	88.89	13.51	29.63
32	48.28	36.36	24.00	60.00	0.00	88.89	24.32	37.78
33	51.72	27.27	16.00	70.00	33.33	66.67	8.11	31.11